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TRADE GDP NEXUS IN GREECE: AN APPLICATION OF ARDL MODEL

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ABSTRACT

This paper examines the relationship between capital investment, trade and economic growth in Greece from 1970-2015, using autoregressive distributed lag (ARDL) models. Greece experienced a miraculous economic growth, as well as some economic downturn during the years considered in this paper. Despite such fluctuations in the economy, our analyses confirm existence of long-run relationships and equilibriums between Capital Investment (INV), Net Exports (NX) and Gross Domestic Product (GDP). Further, our ARDL models suggest a faster recovery back to a long-run equilibrium, if there is disequilibrium between NX and GDP, compared to disequilibrium between INV and GDP in Greece.

Keywords: Trade; Economic Growth; Autoregressive Distributed Lag (ARDL) Analysis.

1. INTRODUCTION

Greece, a founding member of the Organization for Economic Cooperation and Development (OECD), experienced numerous favorable and unfavorable shocks in the economy. Economic growth in Greece from 1950-1973 was substantial (Bosworth and Kollintzas, 2001), the Greek economy grew by an average of 7.7% per year for the period second only worldwide to Japan and therefore this time is referred to as the Miracle Economic Growth period. Even in the early 2000s Gross Domestic Product (GDP) growth in Greece was well above the average of the Eurozone's GDP growth average (see Figure 1). Following the economic miracle growth period, the economy in Greece experienced different regime shifts/structural changes, which affected the momentum in the economy's growth by either impeding or facilitating necessary change. Noteworthy regime shifts/structural changes include Greece becoming a member of the European Union (EU) in 1981, a shift of the currency from Greek Drachma to the Euro in 2001, the Great Recession at the end of 2009, and a combination of rising debt and the crisis in international confidence in Greece's ability to repay debt (Nelson, Belikin and Mix, 2010). As shown in Figure 2, real GDP in Greece has continued to grow with some minor fluctuations between 1960-2009. However, starting in 2009, there is a gradual decline in real GDP. Similarly, imports and exports have started to decline as well.

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In macroeconomic accounting, GDP is an aggregate value measure of final goods and services produced in an economy. According to Hubbard and O'Brien (2015), the above mentioned aggregate value is commonly measured using the expenditure approach or the income approach. According to the expenditure approach, the value consists of final private consumption expenditure (C), domestic investment/capital formation (INV), government spending (G) and net exports (NX). NX is the difference in value between exports and imports. Figure 3 shows patterns of C, INV, G and NX in Greece from 1970 to 2015. Accordingly, C is the leading component in the economy's GDP accounting, and shows almost the same fluctuation as does GDP in Figure 2. Similarly, INV and G also show a continuous decline since 2009 (see Figure 3). In contrast to the gradual decline of GDP, C, G and INV, net exports (NX) depict a recovery towards 2015.

The aim of this paper is to present evidence on whether or not NX and INV have shaped the economic performance in Greece from 1970 to 2015, and if so, how. We use real GDP, exports, imports and INV data (all annual data in 2010 constant U.S. dollars) from World Development Indicators (World Bank, 2016). INV is important for an economy's growth (Hubbard and O'Brien, 2015), and therefore, our first hypothesis of the study asserts there is a long-run direct relationship between INV and GDP, even if there are short-run regime shifts/structural changes in the economy. Our second hypothesis suggests an increase in NX leads to an increase in GDP, at least in the short-run.

The remainder of the paper proceeds as follows. Section 2.0 presents a brief literature review related to trade-GDP nexus, use of ARDL, and integration of structural breaks in ARDL analysis. Section 3.0 presents the methodology and a detailed description of models in the paper, while section 4.0 provides results of unit root tests, ARDL estimations and post-estimation tests to prove the validity of the results. Finally, section 5.0 presents concluding remarks about the economy in Greece and the impacts of recent regime shifts on economic growth.

2. LITERATURE REVIEW

The new growth theory, the Paul Romer model, provides a better explanation of long-run economic growth (Hubbard and O'Brien, 2015), where knowledge capital is emphasized as a key determinant in economic growth. In an economy with increased physical capital, along with knowledge capital would help overcome decreasing returns (Hubbard and O'Brien, 2015). In contrast to the importance of capital, trade is also emphasized as a major determinant in economic growth. Benefits of trade in an economy roots from the comparative advantage concept, where specialization yields benefits for countries involved in trade—the Ricardian model (Suranovic, 2010). Economic growth achieved from trade is also facilitated from indirect effects of trade openness, such as increased competition faced by domestic producers, spill-over

technological effects on non-export oriented industries, and more importantly, increased mobilization and productivity of domestic resources. Such direct and indirect effects should lead to beneficial outcomes in an economy involved in trade.

Belloumi (2014) studied the relationship between foreign direct investment (FDI), trade, labor, capital investment and economic growth in Tunisia for the period 1970-2008, using annual data from the Central Bank in Tunisia and World Development Indicator data of the World Bank. Belloumi used ARDL approach, along with unit root tests, Granger causality tests and bounds tests for cointegration analyses. Belloumi's results suggest long-run relationships, if FDI was the dependent variable, but suggest no significant short-run Granger causalities from FDI to per capita real GDP (a proxy for economic growth) or from trade to economic growth.

Pahlavani et al (2005) studied trade-GDP nexus in Iran using annual data on exports, imports and economic growth for the period 1960-2003. The paper also highlights the importance of endogenously determining structural breaks in time series data in order to use in ARDL estimation and suggest the possibility on spurious or misleading cointegration techniques, if structural breaks are not dealt appropriately. Data for analyses come from the Central Bank of Iran and from the International Financial Statistics (IFS). The authors test for two structural breaks: in the intercept and in the slope of the trend function. Following Lumsdaine and Papell procedure, the authors suggest oil boom in 1975 and the Islamic revolution in 1978 as reasons for structural breaks in the series. Using the error correction coefficient from the ARDL procedure, the authors suggest a 46-60 percent correction of GDP in the following year, if there is any deviation from the long-run economic growth in Iran.

Similar to the studies discussed above, the paper by Omoniyi and Olawale (2015) also uses ARDL bounds testing procedure in their analysis to estimate the relationship in exchange rate, crude oil price and inflation rate in Nigeria. The authors suggest inflation rate is ineffective in stabilizing exchange rates in Nigeria, and the exchange rate is a "weak shock absorber", just because the exchange rate adjusts slowly for any changes in the macroeconomic variables considered in the paper.

Busse and Königer (2012) paper, addresses the empirical ambiguity of trade as a principle determinant of economic growth, focusing more on the impact of the trade volume on economic growth rates. The authors use an economic panel dataset which consists of 108 countries for the period 1970-2005. The dependent variable used in analyses is the growth rate of income, calculated from the differences in real per capita GDP. Independent variables considered in Busse and Königer (2012) are savings rate, investment share of real GDP, average population growth (a proxy for growth in labor force), average years of secondary schooling (a proxy for investment in human capital) and a new index to represent trade openness (lagged values of total GDP for the trade openness ratio) as independent variables. Panel data fixed-effect estimation and the system generalized method of moments (GMM) are used in the analyses, and

the results confirm positive and significant impact of trade in fostering economic growth.

Following Belloumi (2014), Pahlavani et al (2005) and Omoniyi and Olawale (2015) recommendations, we proceeded with ARDL estimation in our analyses. The next section provides a detailed description of our methodology, starting from the equations that specify the long-run relationships we are interested in studying, verifications needed in use of ARDL, and post-estimation tests used in confirming our choice of models.

3. METHODOLOGY

3.1 Error Correction Version of the Autoregressive Distributed Lag (ARDL) Model

Long-run relationships and equilibriums between economic time series variables are important for an economy's stable growth. Most economic variables are autoregressive, where the values in the past are good predictors of current economic performances. Therefore, time series analysis, a method that could explain the autoregressive nature of economic variables, is important. Autoregressive Distributed Lag (ARDL) models introduced by Pesaran, Shin and Smith (2001) are at the forefront of such analyses. ARDL models could include variables of integrated orders (*I*) of 0 and 1, whereas other time series analyses require variables of interest to be stationary at the same order. Therefore, to examine short and long-run effects of INV and NX on GDP, we used ARDL models.

Following reduced form equations that specify long-run relationships we considered in the paper.

$$GDP_t = \alpha_0 + \alpha_1 INV_t + \alpha_2 NX_t + \varepsilon_t \qquad (1)$$
$$GDP_t = \beta_0 + \beta_1 INV_t + u_t \qquad (2)$$
$$GDP_t = \gamma_0 + \gamma_1 NX_t + \epsilon_t \qquad (3)$$

GDP and INV are the logarithms of real value GDP and INV, where NX represents net exports in 2010 U.S. dollars, where ε_t, u_t and ϵ_t are the error terms representing other causes of GDP fluctuations in Greece. We augmented equations 1-3 to include both short-run and long-run relationships of the variables and the resulting equations are:

$$\Delta GDP_t = \alpha_0 + \sum_i \delta_i \Delta GDP_{t-i} + \sum_j \alpha_j \Delta INV_{t-j} + \sum_k \alpha_k \Delta NX_{t-k} +$$
$$\emptyset_0 GDP_{t-1} + \emptyset_1 INV_{t-1} +$$
$$\emptyset_2 NX_{t-1} + \varepsilon_t$$

$$(4)$$

$$\Delta GDP_t = \alpha_0 + \sum_i \delta_i \Delta GDP_{t-i} + \sum_j \alpha_j \Delta INV_{t-j} + \mu_0 GDP_{t-1} + \mu_1 INV_{t-1} + \varepsilon_t$$

$$(5)$$

$$\Delta GDP_t = \alpha_0 + \sum_i \delta_i \Delta GDP_{t-i} + \sum_j \alpha_j \Delta NX_{t-j} + \sigma_0 GDP_{t-1} + \sigma_1 NX_{t-1} + \varepsilon_t$$

$$(6)$$

We considered lagged values of GDP, INV and NX as predictors of respective variable values in the future, because of the autoregressive nature of data. Δ is the difference operator to estimate short-run effects of variables; whereas, *i* and *j* are the number of lags specified in ARDL estimation. Long-run effects are represented by the lagged level variables with $\emptyset_1, \emptyset_2, \mu_1$ and σ_1, which are being normalized by $\emptyset_0, \mu_0$ and σ_0, respectively, to form a co-integrating vector.

According to Pesaran et al. (2001), integrated order (*I*) of the variables used in ARDL estimation needs to be either *I*(0) or *I*(1). Advantages in using ARDL in time series analysis include the ability to use both *I*(0) and *I*(1) series, and the possibility of obtaining long-run and short-run effects in the same model (Pahlavani, Wilson and Worthington, 2005). The modified Dickey-Fuller test (DF-GLS) is commonly used to verify the integrated order of a variable (Belloumi, 2014; Cheung and Lai, 1995), if there are no structural breaks/regime shifts in the series. However, if there are any structural breaks/regime shifts, which are common in most economic variables, then DF-GLS test results on unit root analysis would be invalid (Kapetanios, 2005). Structural change/regime shifts in time series could occur due to any number of reasons: economic crises, changes in institutional policies, war etc. (Chen and Hong, 2012; Pahlavani et al., 2005). Therefore, we first verified the variables for possible structural breaks. According to Glynn, Perera and Verma (2007), the Zivot-Andrews (Z-A) test we used in the analysis is the least restrictive; i.e. it allows for structural breaks in the trend as well as in the intercept. Once the structural breaks are endogenously determined (Pahlavani et al., 2005; Bai and Perron, 2003; Lumsdaine and Papell, 1997; Zivot and Andrews, 1992; Perron and Vogelsang, 1992), variables can be included in ARDL estimations with impulse and/or shift dummy variables (D) to represent structural breaks. Therefore, in addition to GDP, INV and NX, we used two pulse dummies in 2003 and 2006 (pulse dummy=1 in 2003 and 2006), to represent possible structural breaks/regime shifts in the GDP series. Equations 7-9 show our final models of estimation.

3 Variables Model:

$$\Delta GDP_t = \alpha_0 + \sum_i \delta_i \Delta GDP_{t-i} + \sum_j \alpha_j \Delta INV_{t-j} + \sum_k \alpha_k \Delta NX_{t-k} + \emptyset_0 GDP_{t-1} + \emptyset_1 INV_{t-1} + \emptyset_2 NX_{t-1} + \beta_t D_t + \varepsilon_t$$

(7)

INV Model:

$$\Delta GDP_t = \alpha_0 + \sum_i \delta_i \Delta GDP_{t-i} + \sum_j \alpha_j \Delta INV_{t-j} + \mu_0 GDP_{t-1} + \mu_1 INV_{t-1} + \beta_t D_t + \varepsilon_t$$

(8)

NX Model:

$$\Delta GDP_t = \alpha_0 + \sum_i \delta_i \Delta GDP_{t-i} + \sum_j \alpha_j \Delta NX_{t-j} + \sigma_0 GDP_{t-1} + \sigma_1 NX_{t-1} + \beta_t D_t + \varepsilon_t$$

(9)

Our next step to proceed with ARDL estimations was to confirm whether there is any co-integration among variables, at least one, using Johansen test, which provides information on the number of co-integrated relationships (ranks) based on SBIC, SQIC and AIC criteria[1]. According to Belloumi (2014), Bounds Test further confirms the use of ARDL in long-run time series analysis, and the test validates the use of ARDL models by using the F statistic. If the F statistic result is inconclusive, the t-statistic from the bounds test may also be used to verify the use of ARDL specification (Belloumi, 2014). Null hypothesis of the ARDL bounds test, no levels relationship ($\emptyset_0 = \emptyset_1 = \emptyset_2 = 0$), is tested against the alternative hypothesis that there is a long-run relationship among variables in the model (Omoniyi and Olawale, 2015). If the F statistic is less than the lower bound, there is no long-run relationship in variables used in the analysis. In contrast, if the F statistic is greater than the upper bound, then the F statistic suggests a long-run relationship and ARDL analysis can be justified. However, if the F statistic is between the lower and upper bounds, a test result is inconclusive. Therefore, further confirmation is required using bounds test's t-statistic. In the t-statistic of the bounds test, the null hypothesis is $\emptyset_0 = 0$, against the alternative hypothesis of $\emptyset_0 < 0.$ If the t-statistic is smaller than the lower bound critical values, then the null hypothesis is rejected. This confirms long-run relationships. With confirmed long-run relationships and co-integration in the variables of the study, use of ARDL in our analysis was justified.

4. RESULTS AND DISCUSSION

4.1 Descriptive Statistics

Table 1 presents summary statistics at 10 year intervals for the period from 1960-2015. Greece's economic growth from 1960s to mid-2000s was substantial, at least 20% growth in GDP (in 2010 dollars) in each decade. However, starting from 2007, GDP shows a continuous decline. The decline in GDP from 2007-2015 is 26%. Despite the declines in GDP, exports show a growth from 2010-2015. A noteworthy change in exports in Greece is seen in that about 60% of merchandise exports in 1960s is from food exports, and then this percentage shows a gradual decline over the years. In contrast to the decline in the percentage of food exports (of total merchandise exports), fuel export percentage (of total merchandise exports) has increased to 34 percent (of total merchandise exports).

4.2 Verification of Using ARDL in the Estimation: Using Structural Break Test, Johansen Co-Integration Test and ARDL Bounds Test (1970-2015)

Due to the unavailability of INV data from 1960-1969, we used GDP, INV and NX data from 1970-2015 to estimate equations 7-9. First, we used the Z-A test for structural break analysis in all variables. According to our Z-A test statistic in the GDP series and INV, we cannot reject the null hypothesis, the series is $I(1)$, and there are structural breaks. The Z-A test provides a structural break based on the minimum break point t-statistic. However, as shown in panels A-B in Figure 4, the breakpoints are apparent in two years, 2003 and 2006, in both of the series. In contrast, in the NX series, our results suggest acceptance of the null hypothesis of the Z-A test only up to 5% level, but not at 1% level (see Table 2). Therefore, we further tested our NX series using the DF-GLS test to verify the integrated order of the series. In DF-GLS, we used the least restrictive model with a constant and a trend. Therefore, the null hypothesis is that the series is $I(1)$. We used up to 3 lags in DF-GLS and in all the lags, we see acceptance of the null, confirming our NX series to be $I(1)$ as well (see Table 3).

The next step in the analysis was to confirm co-integration among variables, to validate the use of ARDL analysis. Tables 4a - 4c show results of the Johansen test for co-integration. SBIC, SQIC and AIC criteria all suggest a single co-integrated relationship between variables in all the models (see Tables 4a and 4b), except in the NX model (Table 4c). In the NX model, SBIC and HQIC criteria provide mixed results in possible long-run co-integration between NX and GDP.

The ARDL bounds test further verifies the use of ARDL in long-run analysis. In the three variables model, as given above, the F statistic is between the lower and

upper bounds at 10%, 5% and 2.5% levels (see Table 5). However, the F statistic firmly rejects a long-run relationship between the variables at the1% level. If the bounds test provides mixed results as above, Belloumi (2014), suggests further analysis to justify the use of ARDL. In such situations, the t-statistic is used. The t-statistic of the bounds test reinforces a long-run relationship between the variables used in the analysis at all levels (see Table 5). That is, the t-statistic is smaller than critical values at lower and upper bounds at all levels. Hence, our bounds test statistic validates use of ARDL in the analysis in the three variables model. Similarly, the F statistic of the bounds test in the INV model provides mixed results of a long-run relationship between variables, and the t-statistic confirm a long-run relationship.

4.3 ARDL Analysis Results

Short-run and long-run analysis results of our 3 models are given in Tables 6-8. Table 6 shows the full information estimate of ARDL in our three regressors model, followed in INV and NX models respectively in Tables 7 and 8. In order to verify the validity of our ARDL estimation, post-estimation tests were used. These include: Durbin Watson (D-W) statistic to test for correlation of residuals; Autoregressive conditional heteroscedasticity (ARCH-LM) to test for serial dependence; Breusch Godfrey LM (BG–LM) to test for serial correlation in number of lags of the residuals; Ramsey Regression Equation Specification Error test (RESET) to verify the correctness of the functional form; and Variance Inflation Factors (VIF) test to verify for multi-collinearity (Greene, 2002). Along with ARDL estimation results, Tables 6-8 present D-W statistics and ARCH-LM results, and Tables 9-12 present BG-LM, RESET and VIF test results of all 3 models used in this paper.

4.3.1. Short-run and Long-run ARDL Results: Three Variables Model (GDP, INV and NX)

Short-run and long-run ARDL estimates and long-run relationship (co-integration) diagnostic statistic are presented in Table 6. The co-integration diagnostic statistic, i.e. the Error Correction (EC) coefficient, is -0.042 in our three variables model. The EC statistic, a negative value, supports a long-run relationship between variables, and a long-run equilibrium as well (Muller, 2004). The magnitude of the EC statistic suggests about 24 years (1/0.042) to move from a short-run disequilibrium back to a long-run equilibrium in Greece. However, the test statistic is not significant in this three variables model. The coefficient of INV is positive and significant at the 1% level; this suggests an increase in INV by 1 percent which leads to an increase in real GDP by 0.27 percent. In contrast, NX also has a positive impact on real GDP values in Greece. However, it is not significant. In the long-run, both NX and INV are not significant, although both variables have a positive influence on GDP in Greece.

In post-estimation, D-W statistic, 1.811 confirms no correlation in the residuals of the model used (see panel D in Table 6). Serial dependence in a residual series could lead to biased estimates, and therefore, residuals of models estimated in this research were verified using the LM test for autoregressive conditional heteroskedasticity (ARCH). The null hypothesis of ARCH test is that there are no ARCH effects. In the alternative hypothesis, however, there are ARCH disturbances in the residuals. The ARCH test statistic, 1.083 with a P-value of 0.298, confirms no rejection of the null, i.e. no ARCH effects in the specified model.

In time series analysis, there could be correlated residuals of a model at any period, resulting in biased estimates. Therefore, testing for serial correlation for the number of lags of residuals of a model is important. The BG-LM test provides chi-square statistic for a number of lags, in this case up to six lags to verify for serial autocorrelation. According to our results, the null hypothesis of the BG-LM test cannot be rejected, and, therefore, we can confirm no evidence of serial correlation up to six lags in our model (see Table 9).

We used the Ramsey RESET test in our analysis to verify the correctness of the functional form, especially to make sure there is no bias in the specification due to omitted variables. In the Ramsey RESET test, the null hypothesis is: model has no omitted variables to add any misspecification to the linear form. The alternative hypothesis is: omitted variable/s cause dynamic misspecification. F values of the Ramsey RESET test in both short-run and long-run versions of the three variables model confirm no model misspecifications due to omitted variables.

Multicollinearity in variables used in regression analysis could also generate biased estimates. In order to understand the severity of multicollinearity of our regression models, we used the VIF test. As a rule of thumb, a VIF factor of below 10 suggests not so severe multicollinearity in the variables of a specified model. However, according to O'Brien (2007), the above rule of thumb should not be the only reason researchers make the decision to reject the model specified. This is because VIF factors above 10, even up to 40, do not discount the results of regression analysis. In our three variables model, the VIF test marginally indicates a possible multicollinearity issue: VIF values for INV and NX were both about 14. However, the average VIF value for the model is 8.6, which confirms the validity of the model specified. Hence, our results in VIF test are mixed. Therefore, in order to check whether our post-estimation results improve, we used our INV and NX models. Tables 7 and 8 show our ARDL estimates of INV and NX models, along with D-W statistics and ARCH-LM test results. Tables 9-12 show post-estimation BG-LM, RESET and VIF test results of INV and NX models.

4.3.2. Short-run and Long-run ARDL estimates of NX and INV Models

In the models with two variables (equations 8 and 9), EC statistics are -0.055 and -0.119 in INV and NX models, respectively. According to the magnitudes of the EC statistics, a short-run disequilibrium that happens between GDP and INV would return to a long-run equilibrium in 18 years (1/0.055), where it takes only 8 years (1/0.119) to reach a long-run equilibrium between GDP and NX. The coefficient of INV is positive and significant at the 1% level; this suggests that a 1% increase in INV leads to an increase in real GDP by 0.25%. In contrast, in the NX model, in the short-run, the NX coefficient is negative (see Table 8) as expected and significant at 1%. Even in the long-run, in both models, relationships of INV and NX on GDP are consistent with short-run predictions, and are significant at the1 % level as well.

Similar to the three variable post-estimation, we used post-estimation tests in both NX and INV model estimations. In the INV model, the D-W statistic of 1.779 suggests no serial correlation in the residuals. In the NX model, the D-W statistic of 1.405 neither rejects nor confirms serial correlation in the residuals. In the ARCH-LM test on serial dependence in residuals, both models do not reject the null hypothesis and confirm no ARCH effects (see panel D in Tables 7 and 8). According to the BG-LM test results in both INV and NX models, there is no serial correlation in the residuals at any period, up to six lags (see Table 9). Similar to the results obtained in the Ramsey RESET test in our three variables model, both INV and NX models confirm no misspecification due to omitted variables or due to dynamic misspecification. Compared to the three variables model, the INV model shows no multicollinearity in the variables used, with VIF factors less than 10 (see Table 12).

5. CONCLUSIONS

This paper examines the relationship between capital investment (INV) and net exports (NX) on economic growth in Greece, using World Banks's World Development Indicator (WDI) data for the period 1970-2015. Greece's economy was one of the fastest growing economies during 1950-1973, and then one of the leading economies in the European region up until the early 2000s. Our analysis confirms this economic miracle period with at least 20% growth in real GDP in each decade from 1970s to early 2000s. Then the economy experienced major fluctuations in economic growth, leading to a 26% decline in real GDP from 2007-2015. Such volatility in Greece's economic performance makes Greece a good candidate to study the nature and direction of the two variables in which we are interested, INV and NX, on economic growth.

The time series nature of our data, the ability to explain the dependent variable using the lag value of itself, the nature of short-run and long-run dynamics of variables interested, and the use of autoregressive distributed lag (ARDL) model in the analysis

is justified. Our pre-estimation and post-estimation tests validated the use of ARDL models as well. In pre estimations, we confirmed the integrated (*I*) order of our variables and verified the times of structural breaks using the Zivot-Andrews (Z-A) test. According to the Z-A test, years 2003 and 2006 have possible structural breaks in Greece's GDP series. In order to control for those structural break years, in addition to INV and NX variables, we used a dummy variable in our models as well. We used three models: to study the combined effect of INV and NX on GDP, and then two models, NX and INV, to study individual effects of NX and INV on GDP.

According to our ARDL results, there are long-run relationships between GDP and INV, and GDP and NX. Further, based on our error correction (EC) statistic of the three variables model, considering both INV and NX, the economy takes 24 years to reach a long-run equilibrium. However, the above result is not significant. Whereas, in the INV model, the EC statistic suggests 18 years to move back to long-run equilibrium. In contrast, NX takes only 8 years to move back to a long-run equilibrium. Hence, a regime shift/structural change that affects INV in an economy has significant and prolonged impacts in an economy, in contrast to regime shift/structural change that affects the export-import values in the economy.

As expected, INV in the economy has significant positive influence in the country's GDP, as suggested in the three variables model as well as in the INV model. According to our long-run estimates, the influence of INV on GDP is also positive. However, it is only significant in the INV model. In contrast, our three variables model and the NX model do not suggest a positive short-run influence of NX on GDP. In the long-run, NX has negative and significant influence on GDP. As suggested by the dummy variable in the three variables model and in the INV model, in years 2003 and 2006, the economy in Greece has experienced a considerable decline in economic activity, compared to the years prior to 2003.

NOTES

1. Schwarz's Bayesian information criterion (SBIC), the Hannan and Quinn information criterion (HQIC), and Akaike's information criterion (AIC).

2. Gross national expenditure (formerly domestic absorption) is the sum of household final consumption expenditure (formerly private consumption), general government final consumption expenditure (formerly general government consumption), and gross capital formation (formerly gross domestic investment).

TABLES AND FIGURES

FIGURE 1: REAL GDP GROWTH RATES IN EUROZONE AND GREECE FROM 1970 TO 2015
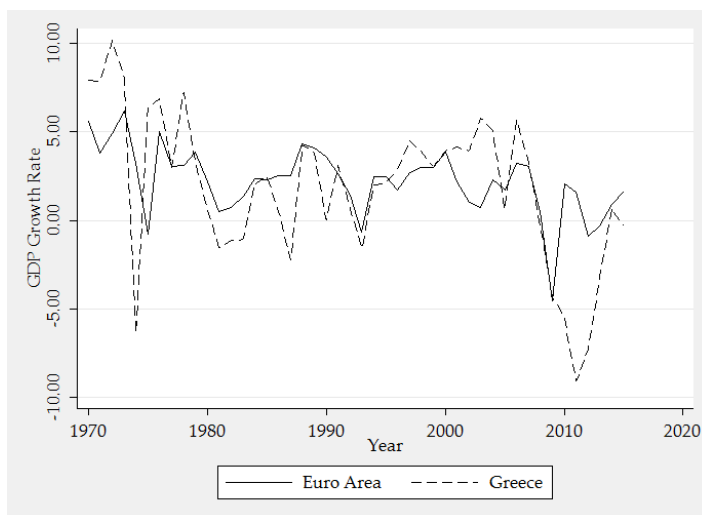
Source: World Development Indicators, World Bank (2016)

FIGURE 2: REAL GDP AND EXPORTS (2010 CONSTANT U.S.$) 1960 TO 2015
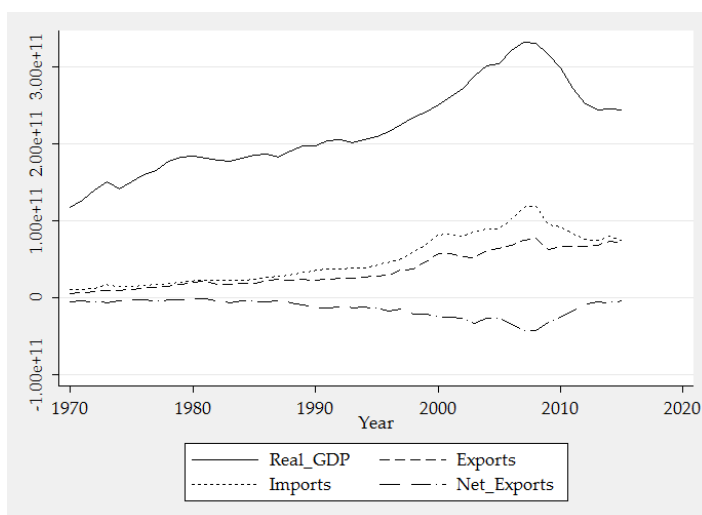
Source: World Development Indicators, World Bank (2016).

FIGURE 3: PRIVATE CONSUMPTION EXPENDITURE (C), FINAL
GOVERNMENT EXPENDITURE (G), GROSS CAPITAL FORMATION (I), NET
EXPORTS (NX): 1970 TO 2015
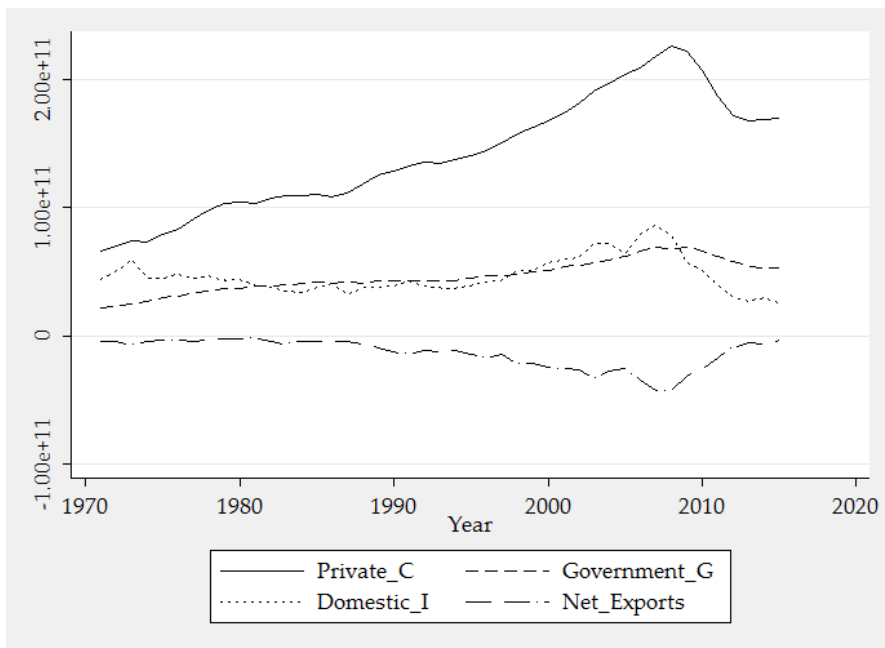
Source: World Development Indicators, World Bank (2016).

FIGURE 4: Z-A GRAPHS OF STRUCTURAL BREAK DETERMINATION

Panel A: Panel B:
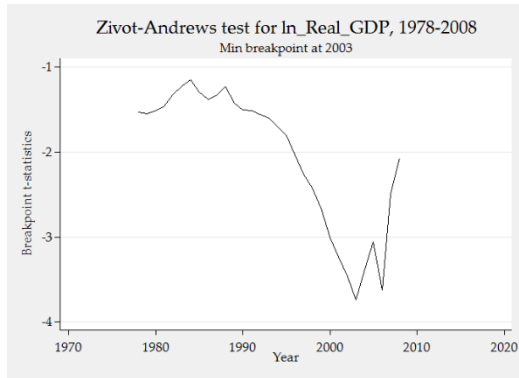
Possible Breaks: 2003 (most prominent), 2006
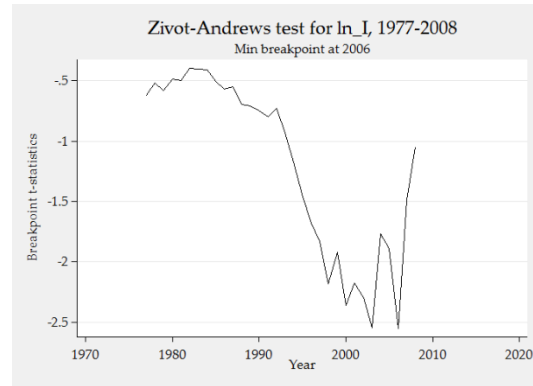
Possible Breaks: 2003, 2006 (most prominent)

Panel C:
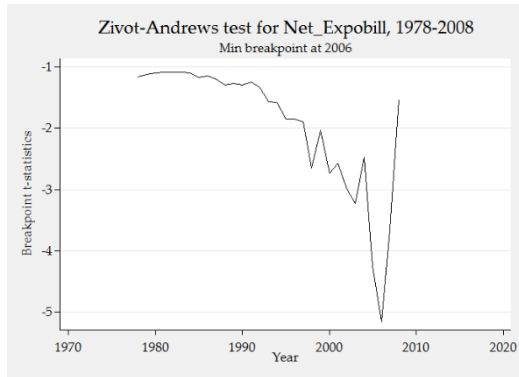
Possible Breaks: 2006 (most prominent, not significant at 1%)

TABLE 1: SUMMARY STATISTICS 1960-2015

	1960-1969	1970-1979	1980-1989	1990-1999	2000-2009	2010-2015	Sample
Variable	Mean	Mean	Mean	Mean	Mean	Mean	Mean
GDP at market prices (constant 2010 US$)	8.02E+10	1.52E+11	1.85E+11	2.14E+11	2.98E+11	2.60E+11	1.94E+11
Gross national expenditure[2] (constant 2010 US$)	8.33E+10	1.56E+11	1.90E+11	2.30E+11	3.30E+11	2.71E+11	2.05E+11
Net Exports (NX) (constant 2010 US$)	-3.06E+09	-4.15E+09	-4.83E+09	-1.52E+10	-3.15E+10	-1.13E+10	-1.17E+10
Exports of goods and services (constant 2010 US$)	3.14E+09	1.09E+10	2.06E+10	3.02E+10	6.29E+10	6.87E+10	3.02E+10
Imports of goods and services (constant 2010 US$)	6.20E+09	1.50E+10	2.54E+10	4.54E+10	9.44E+10	8.00E+10	4.19E+10
Domestic Investments (INV) (constant 2010 US$)	-	4.66e+10	3.76e+10	4.22e+10	6.86e+10	3.40e+10	4.68e+10
Food exports (% of merchandise exports)	60.1	34.6	29.0	29.4	21.6	18.6	32.2
Fuel exports (% of merchandise exports)	0.6	6.9	8.9	7.9	12.5	34.1	10.6
Food imports (% of merchandise imports)	13.7	10.3	14.1	14.7	11.5	12.9	12.8
Fuel imports (Crude Oil) (% of merchandise imports)	7.7	15.6	20.1	8.5	16.0	32.0	15.8

TABLE 2: STRUCTURAL BREAK TEST – Z-ANDREWS TEST

Series (lags by BIC on d.variable)	Test Statistic*	Min Break Point Year	Decision
ln_Real GDP	-3.736	2003	Do not reject null: There is break and the series is I(1)
ln_I	-2.554	2006	Do not reject null: There is break and the series is I(1)
Net_Exports	-5.160*	2006	Reject the null at 5%; there is no break in the series at 5%; Could use DF-GLS to decide the order of Integration.

Critical Values: at 1%: -5.57; 5%: -5.08; 10%: -4.82

TABLE 3: DF-GLS TEST STATISTICS ON NX SERIES

Series (Number of Lags)	Test Statistic*	MacKinnon p-value for Z(t)	Co-efficient of Lag 1 (P-Value)	Conclusion
Net_Exports (L=1)	-1.333	0.879	-0.102 (0.190)	Null Accepted; Series I(1)
Net_Exports (L=2)	-1.190	0.912	-0.112 (0.241)	Null Accepted; Series I(1)
Net_Exports (L=3)	-1.567	0.805	-0.182 (0.126)	Null Accepted; Series I(1)

Critical Values: at 1%: -4.22; 5%: -3.53; 10%: -3.19

TABLE 4(A): JOHANSEN TEST FOR COINTEGRATION - 3 VARIABLES: GDP, NX AND INV

Rank	LL	Eigen Value	Max Statistic	5% critical value	SBIC	HQIC	AIC
0	48.691	.	24.587	20.970	-0.428	-0.971	-1.288
1	60.985	0.435	6.972	14.070	-0.562*	-1.234*	-1.627
2	64.470	0.150	3.241	3.760	-0.462	-1.212	-1.650
3	66.091	0.073			-0.450	-1.226	-1.679

Sample: 1973-2015; 3 lags

TABLE 4(B): JOHANSEN TEST FOR COINTEGRATION - 2 VARIABLES: GDP AND INV

Rank	LL	Eigen Value	Max Statistic	5% critical value	SBIC	HQIC	AIC
0	138.947		11.673	14.07	-5.587	-5.846	-5.997
1	144.783	0.237	2.543	3.76	-5.597*	-5.933*	-6.129
2	146.055	0.057			-5.568	-5.931	-6.142

Sample: 1973-2015; 3 lags

TABLE 4(C): JOHANSEN TEST FOR COINTEGRATION - 2 VARIABLES: GDP AND NX

Rank	LL	Eigen Value	Max Statistic	5% critical value	SBIC	HQIC	AIC
0	-939.089		10.521	14.07	43.048*	43.048	42.958
1	-933.825	0.212	3.366	3.76	42.991	42.991*	42.855
2	-932.145	0.073			42.975	42.975	42.824

Sample: 1973-2015; 3 lags

TABLE 5: BOUNDS TEST RESULTS

	Critical Values								Bound Test Statistics
	10%		5%		2.5%		1%		
	Lower Bound [I_0]	Upper Bound [I_1]	Lower Bound [I_0]	Upper Bound [I_1]	Lower Bound [I_0]	Upper Bound [I_1]	Lower Bound [I_0]	Upper Bound [I_1]	
3 Variables Model (GDP, I and NX)									
F-Statistics	2.72	3.77	3.23	4.35	3.69	4.89	4.29	5.61	3.722
t-Statistics	-2.57	-3.46	-2.86	-3.78	-3.13	-4.05	-3.43	-4.37	-1.226
INV Model (GDP and I)									
F-Statistics	3.17	4.14	3.79	4.85	4.41	5.52	5.15	6.36	5.087
t-Statistics	-2.57	-3.21	-2.86	-3.53	-3.13	-3.80	-3.43	-4.10	-3.307
NX Model (GDP and NX)									
F-Statistics	3.17	4.14	3.79	4.85	4.41	5.52	5.15	6.36	2.565
t-Statistics	-2.57	-3.21	-2.86	-3.53	-3.13	-3.80	-3.43	-4.10	-2.769

TABLE 6: SHORT-RUN AND LONG-RUN ARDL ESTIMATES OF 3 VARIABLES MODEL

	Lag Order		
	0	1	
Panel A: Short-Run Estimates			
Δ ln_Real_GDP		0.958*** (0.000)	Log-likelihood: 106.68
Δ ln_INV	0.271*** (0.000)	-0.215*** (0.000)	Adjusted R-Squared: 0.992
Δ NX	0.0004 (0.683)		Root MSE: 0.021
Break	-0.011 (0.517)		
Constant	-0.252 (0.856)		
Panel B: Long-Run Estimates			
ln_INV	1.329 (0.394)		Log-likelihood: 106.68
NX	0.010 (0.754)		Adjusted R-Squared: 0.717
Break (Pulse Dummy)	-0.271 (0.593)		Root MSE: 0.021
Panel C: Long-Run Cointegration Diagnostic Statistic			
ADJ. ln_Real GDP (EC)	-0.042 (0.228)		
Panel D: Post-Estimation Test Results			
D-W Statistic	ARCH-LM		
1.811	1.083 (0.298)		

TABLE 7: SHORT-RUN AND LONG-RUN ARDL ESTIMATES OF THE INV MODEL

	Lag Order		
	0	1	
Panel A: Short-Run Estimates			
Δ ln_Real_GDP		0.945*** (0.000)	Log-likelihood: 106.58
Δ ln_INV	0.258*** (0.000)	-0.211*** (0.000)	Adjusted R-Squared: 0.992
Break (Pulse Dummy)		-0.011 (0.536)	Root MSE: 0.020
Constant		0.290 (0.472)	
Panel B: Long-Run Estimates			
ln_INV	0.861*** (0.002)		Log-likelihood: 106.58
Break (Pulse Dummy)	-0.196 (0.556)		Adjusted R-Squared: 0.724
			Root MSE: 0.020
Panel C: Long-Run Cointegration Diagnostic Statistic			
ADJ. ln_Real GDP	-0.055*** (0.002)		
Panel D: Post-Estimation Test Results			
D-W Statistic	ARCH-LM		
1.779	0.696 (0.404)		

TABLE 8: SHORT-RUN AND LONG-RUN ARDL ESTIMATES OF THE NX MODEL

	Lag Order		
	0	1	
Panel A: Short-Run Estimates			
Δ ln_Real_GDP		0.880*** (0.000)	
Δ NX	-0.005*** (0.000)	0.003** (0.042)	Log-likelihood: 90.556
Break (Pulse Dummy)	0.0144 (0.575)		Adjusted R-Squared: 0.983
Constant	3.108*** (0.008)		Root MSE: 0.029
Panel B: Long-Run Estimates			
NX	-0.017*** (0.000)		Log-likelihood: 90.556
Break (Pulse Dummy)	0.121 (0.570)		Adjusted R-Squared: 0.408
			Root MSE: 0.029
Panel C: Long-Run Cointegration Diagnostic Statistic			
ADJ. ln_Real GDP	-0.119*** (0.009)		
Panel D: Post-Estimation Test Results			
D-W Statistic	ARCH-LM		
1.405	0.382 (0.537)		

TABLE 9: BREUSCH GODFREY LM (BG-LM) TEST

Number of Lags	3 Variables Model Chi Square SR/LR Model (P-Value)	INV Model Chi Square SR/LR Model (P-Value)	NX Model Chi Square SR/LR Model (P-Value)
1	0.074 (0.786)	0.027 (0.868)	1.166 (0.280)
2	0.076 (0.962)	0.030 (0.984)	1.177 (0.555)
3	0.140 (0.986)	0.041 (0.997)	1.560 (0.668)
4	2.378 (0.666)	2.481 (0.948)	5.112 (0.276)
5	2.790 (0.734)	2.943 (0.708)	5.401 (0.368)
6	3.739 (0.712)	4.383 (0.625)	7.621 (0.267)

TABLE 10: BREUSCH-PAGAN / COOK-WEISBERG TEST FOR HETEROSKEDASTICITY: SR

	3 Variables		2 Variables (GDP and INV)		2 Variables (GDP and NX)	
	Long-Run#	Short-Run*	Long-Run#	Short-Run*	Long-Run*	Short-Run#
Chi2(P)	4.97 (0.025)	0.59 (0.441)	4.87 (0.027)	0.62 (0.432)	0.41 (0.521)	3.19 (0.074)

TABLE 11: RAMSEY RESET (REGRESSION EQUATION SPECIFICATION ERROR) TEST

	3 Variables (3, 33)		2 Variables (3, 34): GDP and INV		2 Variables (3, 34): GDP and NX	
	Long-Run#	Short-Run*	Long-Run#	Short-Run*	Long-Run#	Short-Run*
F(P)	0.26 (0.856)	0.28 (0.842)	0.33 (0.801)	0.32 (0.807)	1.81 (0.164)	0.75 0.527)

TABLE 12: VIF (VARIANCE INFLATION FACTORS) TEST

	3 Variables		2 Variables (GDP and INV)		2 Variables (GDP and NX)	
	Short-Run	Long-Run	Short-Run	Long-Run	Short-Run	Long-Run
Variable	VIF	VIF	VIF	VIF	VIF	VIF
ln_INV	14.080	5.56	6.68	1.64	-	-
NX	14.070	14.070	-	-	10.91	4.70
L1.NX	-	-	-	-	14.47	
D1.NX	-	-	-	-	-	1.79
L1. ln_INV	7.150	-	6.64	-	-	-
D1. ln_INV	-	1.47	-	1.37	-	-
L1.ln_Real_GDP	6.380	6.380	1.50	1.50	4.76	4.76
Break	1.380	1.380	1.37	1.37	1.40	1.40
Mean VIF	**8.610**	**5.77**	**4.05**	**1.47**	**7.88**	**3.16**

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THE MORPHOLOGY OF SECTORAL COMPOSITION DURING THE PERIOD OF CRISIS: AN EMPIRICAL RESEARCH ON THE EUROPEAN UNION COUNTRIES WITH A SPECIAL FOCUS ON THE CASE OF GREECE

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ABSTRACT

The current study analyzes the relationship between sectoral activity and the recent economic crisis for the countries of European Union with a special focus on the case of Greece. In particular, as far as Greece is concerned, greater accumulation of tourism activity and agriculture has been recorded in the period of crisis. Therefore, it emerges that the broader significance of sectoral specialization is related to the general socioeconomic environment and the structural characteristics of the country. As a result, the support of production in dynamic sectors for countries that confront fiscal problems, may decisively contribute to the quicker exit from the crisis.

Keywords: Sectoral Specialization; Economic Crisis; Tourism; Empirical Analysis; Greece.

1. INTRODUCTION

The current paper examines in a quantitative manner the sectoral structure of productive activity in European Union countries in the recent years of crisis, namely 2008 and 2013 respectively, with a special focus on the case of Greece. By the year 2013 the severe consequences of financial crisis in Europe were already prevalent. Also, it should be noted that the contribution of individual sectors to the total economic activity is not of equal importance to all country members and regions of the European Union. As a result, spatial distribution of the associated activities in the map of Europe shall be examined. Moreover, thematic maps depicting the schematization of countries and/or wider areas with intensive activity in each of the examined economic sectors are used.

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This analysis is conducted in order to investigate the existence of sectoral specialization, and as a result the fundamental sectors of economic activity, as far as the countries and regions of Europe are concerned, which display great export potential. Therefore, the examination of individual sectors permits to identify some of the factors that lie behind the acceleration or stagnation of productivity growth (Triplett and Bosworth, 2004). The diversity in growth across European countries indicates that some countries have been addressing issues related to productivity relatively successfully, while others have not (Timmer et. al., 2011). Besides, a vast theoretical and empirical literature has been devoted to identify the sources of the large and persistent differences in productivity across countries (Bartelsman, Haltiwanger and Scarpetta, 2013). The current paper seeks to extend the empirical basis of productivity analysis (Baily, Hulten and Campbell, 1992).

Based on the preceding analysis, regions of Europe that are specialized in dynamic sectors of economic activity shall be located and, as a result, have a comparative advantage over the others. Therefore, groups of countries shall emerge on the grounds of sectors that are developed and specialized. In this way, ("fair") exchange relationships between different groups of countries shall be determined. Besides, it is well known that distinct sectors of economic activity, independent of their real value and significance, do not have equivalent exchange value, such as the industrial against agricultural production. In other words, terms of trade between different sectors of economic activity are not static, but on the contrary dynamic, which is a fact that should not be ignored by policy makers. Moreover, it should be pointed out that the development of productive sectors is related to structural performance of each economy (Organisation for Economic Co-operation and Development, 1992).

Moreover, the study of the years 2008 and 2013 respectively permits locating the transitions of productive activity in the economic map of Europe because of the financial crisis. In addition, restructuring of the economic activity affects significantly the configuration of contemporary economic phenomena. Furthermore, based on the grouping of countries useful results shall emerge concerning the developmental archetypes of European space. According to this study, the aforementioned discrimination does not lie on the traditional axis (of favored) North – (less favored) South, but on the under configuration axis (of favored) West – (less favored) East. It should be pointed out that as far as the examined countries and regions are concerned, the term "favored" is used instead of the term "developed", which is mostly prevalent in the relevant empirical and theoretical research. This is attributed to the fact that over the course of the past decades central interfering policies on European level have been recorded that privileged or not the evolution of specific economic sectors. Therefore, these policies have determined up to a degree the distribution of sectoral productivity in the European space.

2. CLASSIFICATION OF ECONOMIC ACTIVITY

The distinction of production is necessary in order to understand the factors that contribute to the development of individual economic sectors (Vavouras, 2008). Based on this criterion, economic activity is categorized in the primary, secondary and tertiary sector of production (Fisher, 1939). Primary production consists of goods that people may obtain directly from nature, such as agriculture, forestry and fishing. Primary sector provides the raw material that is necessary for the development of secondary and tertiary sector of production. Secondary production refers to products that are the result of processing the raw material of primary production, such as industry and construction. Tertiary sector consists of the production of immaterial goods that satisfy human needs through the provision of services. This category comprises of trade, transport, tourism, financial transactions and state provision, among others. The categories mentioned above are further classified into sectors so as to analyze structural characteristics of productive activity.

It should be noted that the issue of sectoral classifications is very complex and national modulation is proved to be difficult (Rontos, 1994). Nevertheless, for the purposes of the current study, the classification of productive sectors is in line with the generalized archetypes of Statistical Classification of economic activities in the European Community (NACE). More specifically, the last revised version of the aforementioned classification is employed. Within this framework of analysis, it should be noted that NACE classification is legally safeguarded in European Union countries, so as to comply with uniformity in its application. The codification of productive sectors in one-digit form along with the basic activities included in each one of them is presented in table 1 that follows. Moreover, it should be stressed that regional analysis at the European level was conducted according to the NUTS2 classification.

TABLE 1: CLASSIFICATION OF ECONOMIC ACTIVITIES IN THE
EUROPEAN COMMUNITY

A	Agriculture, forestry and fishing
B-E	Manufacturing
F	Construction
G-I	Wholesale and retail trade, transportation and storage, accommodation and food service activities
J	Information and communication
K	Financial and insurance activities
L	Real estate activities
M-N	Professional, scientific and technical activities, administrative and support

	service activities
O-Q	Public administration and defense, compulsory social security, education, human health and social work activities
R-U	Arts, entertainment and recreation, other service activities, activities of households as employers, undifferentiated goods and services, producing activities for own use, activities of extraterritorial organizations and bodies

Source: Eurostat (2008)

Therefore, it emerges that the classification above includes sectors with significant presence in contemporary economy and society.

3. METHODOLOGY

In the empirical research conducted an indicator of regional science is employed, namely the Location Quotient of a country or region in relation to Europe as a whole (Isard, 1960). The principal variable of analysis is employment, as compiled by Eurostat. The calculation of Location Quotient is based on the number of employed in the economic sectors examined. More specifically, the associated ratio measures the participation of an economic sector in a country or region in relation to the corresponding participation of the sector in the European Union. It should be noted that regional analysis at the European level was conducted according to the NUTS2 classification. Based on the preceding analysis, the Location Quotient is calculated as follows:

Location Quotient: $QL = \dfrac{\dfrac{Air}{Ain}}{\dfrac{Ar}{An}}$

where,

A: employment
i: sector of economic activity
r: country or region of Europe
n: Europe

A sector of economic activity may be characterized as basic or not depending on the score of the associated indicator. More specifically, the interpretation of Location Quotient depends on its value and whether it is greater than unit or not. More analytically, the interpretation of Location Quotient in the applications below is based on the following criteria:

- If QL > 1, then the examined spatial unit r is specialized in the specific sector of economic activity i. To put it differently, the country/region participates in the examined sector at a greater percentage than it participates in the whole of the European Union.

- If QL < 1, then the sector of economic activity i is considered as not basic. To put it differently, the country/region participates in the examined sector at a lower percentage than it participates in the whole of the European Union.

- If QL = 1, then sector activity is considered balanced. To put it differently, the country/region participates in the examined sector at the same percentage as it participates in the whole of the European Union.

4. EMPIRICAL ANALYSIS

4.1 Sectoral production at the country level

Sectoral structure of the European Union countries for the years 2008 and 2013 is presented in tables 2 and 3 respectively. The comparative analysis in the recent period of crisis permits the study of the restructuring characteristics of sectors in the countries or regions examined. Moreover, with the use of thematic maps countries or regions with high sectoral specialization are illustrated.

TABLE 2: LOCATION QUOTIENT OF ECONOMIC SECTORS IN THE COUNTRIES OF THE EUROPEAN UNION (2008)

Sector / Countries	Agriculture, forestry and fishing	Manufacturing	Construction	Wholesale and retail trade, transportation and storage, accommodation and food service activities	Information and communication	Financial and insurance activities	Real estate activities	Professional, scientific and technical activities, administrative and support service activities	Public administration and defense, compulsory social security, education, human health and social work activities	Arts, entertainment and recreation other service activities, activities of households as employers, undifferentiated goods and services, producing activities for own use, activities of extraterritorial organizations and bodies
Belgium	0,301	0,922	0,868	0,948	1,042	1,333	0,694	0,997	1,315	0,936
Bulgaria	1,450	1,392	1,213	1,122	0,757	0,571	0,563	0,566	0,758	0,563
Czech Republic	0,616	1,637	1,152	0,953	0,842	0,780	1,075	0,779	0,784	0,670
Denmark	0,489	0,832	0,822	0,969	1,438	1,048	1,509	0,927	1,345	0,845
Germany	0,344	1,198	0,793	0,938	1,138	1,155	0,778	1,156	1,049	1,053
Estonia	0,748	1,221	1,478	1,073	0,832	0,533	2,085	0,694	0,838	0,839
Ireland	1,035	0,722	1,356	1,063	1,205	1,498	0,683	1,082	0,950	0,905
Greece	2,200	0,721	1,038	1,262	0,587	0,874	0,259	0,816	0,869	0,965
Spain	0,784	0,836	1,451	1,178	0,984	0,844	0,779	1,074	0,774	1,421
France	0,516	0,813	0,867	0,909	0,915	1,065	1,836	0,999	1,236	1,213
Croatia	2,599	1,150	1,080	1,097	0,815	0,715	0,279	0,588	0,719	0,696
Italy	0,719	1,131	1,017	1,045	0,842	0,942	0,708	1,192	0,852	1,200
Cyprus	0,821	0,580	1,446	1,211	0,858	1,725	0,981	0,936	0,815	1,742
Latvia	1,529	0,932	1,371	1,165	0,867	0,587	1,169	0,632	0,875	0,912
Lithuania	1,529	1,044	1,313	1,128	0,608	0,452	1,086	0,678	0,923	0,711
Luxembourg	0,326	0,395	0,935	0,809	1,200	3,580	0,729	1,144	1,284	1,872
Hungary	0,837	1,287	0,960	1,094	0,888	0,817	0,685	0,789	0,919	0,777
Malta	0,339	0,941	0,934	1,247	1,426	1,303	0,586	0,745	1,053	0,771
Netherlands	0,505	0,615	0,718	0,965	1,354	0,999	1,184	1,255	1,244	0,790
Austria	1,044	0,900	1,103	1,158	0,848	1,182	1,073	1,024	0,907	0,895
Poland	2,710	1,274	0,936	0,948	0,666	0,725	1,218	0,591	0,814	0,540
Portugal	2,170	0,988	1,280	1,031	0,640	0,624	0,699	0,718	0,809	1,164

Romania	5,571	1,250	0,958	0,804	0,453	0,397	0,217	0,366	0,565	0,350
Slovenia	1,660	1,497	0,800	0,936	1,033	0,812	0,336	0,752	0,799	0,661
Slovakia	0,768	1,564	1,268	0,973	0,672	0,767	0,716	0,677	0,842	0,552
Finland	0,873	0,936	0,879	0,925	1,338	0,688	1,044	1,208	1,116	1,040
Sweden	0,409	0,772	0,796	0,870	1,414	0,685	1,899	1,422	1,350	0,922
United Kingdom	0,209	0,688	1,070	1,031	1,403	1,450	1,167	1,140	1,208	1,042

The extent of specialization in the sense of regional accumulation of economic activity for the year 2008, as estimated by the application of Location Quotient in each of the productive sectors, is listed in table 2. More specifically, in the sector of Agriculture, forestry and fishing high value of the specialization indicator is observed in Romania (5.571), Poland (2.710), Croatia (2.599), Greece (2.200) and Portugal (2.170). Luxembourg scores the lowest value in the relevant indicator.

It should be noted that the accumulation of economic activity in a country does not always concern the whole territory and as a result the application of the relevant indicator should be extended at regional level as well. In practical terms, as depicted in the Thematic map 2, the specialization in industry refers to North Italy, while the South part is specialized in agriculture (Thematic map 3). For the purposes of this study, specific cases of countries shall be presented in which the accumulation of an activity is located at a specific region of the country.

In the Construction sector countries such as Estonia (1.478), Spain (1.451) and Cyprus (1.446) score the highest value in the indicator referring to the accumulation of the associated economic activity. In the sector of Wholesale and Retail trade, transportation and storage, accommodation and food service activities, the highest values of the relevant indicator are observed in Greece, Malta and Cyprus. In the Information and Communication sector high value of the indicator is observed in Denmark (1.438), Malta (1.426), Sweden (1.414) and the United Kingdom (1.403). Romania scores the lowest value in the relevant indicator.

In the Financial and insurance activities sector, high value of the indicator is observed in Luxembourg (3.580), Cyprus (1.725), Ireland (1.498) and the United Kingdom (1.450). In the Real Estate activities sector, high value of the specialization indicator is observed in Estonia (2.805), Sweden (1.899), France (1.836) and Denmark (1.509). On the contrary, Romania scores the lowest value in the corresponding indicator.

In the Professional, Scientific and Technical activities, Administrative and Support service activities, the highest value in the specialization indicator is discerned in Sweden (1,422), the Netherlands (1,255) and Finland (1,208). In the Public Administration and Defense, Compulsory Social security, Education, Human health and Social work activities sector, the highest value in the associated indicator is discerned in Sweden (1,350), Denmark (1,345) and Belgium (1,315).

In the sector of Arts, Entertainment and Recreation, other service activities, activities of households and extraterritorial organizations and bodies, the highest value of the relevant indicator is observed in Luxembourg (1.872), Cyprus (1.742) and Spain (1.421). Romania scores the lowest value in the associated indicator.

THEMATIC MAP 1: COUNTRIES THAT PRESENT HIGH CONCENTRATION IN THE SECTORS OF AGRICULTURE, FORESTRY AND FISHING AND INDUSTRY (2008)
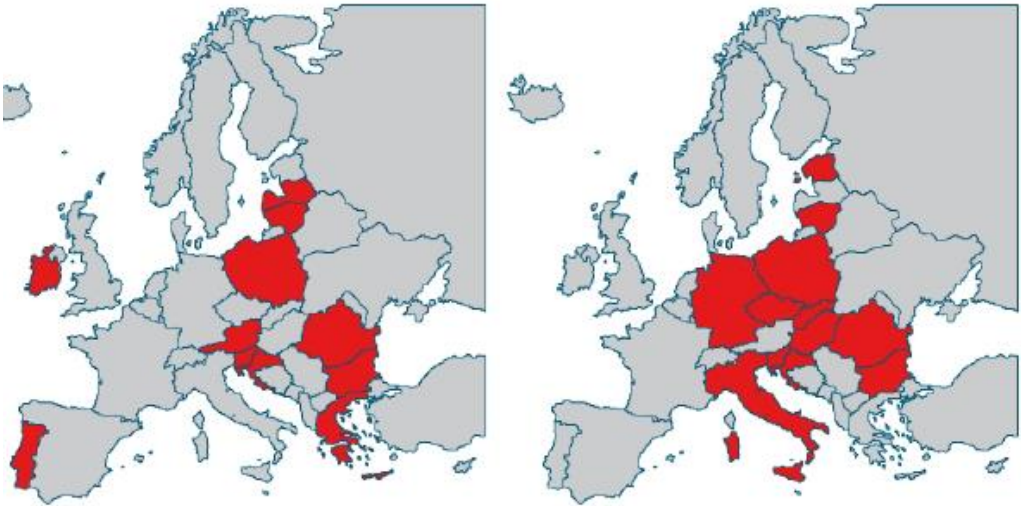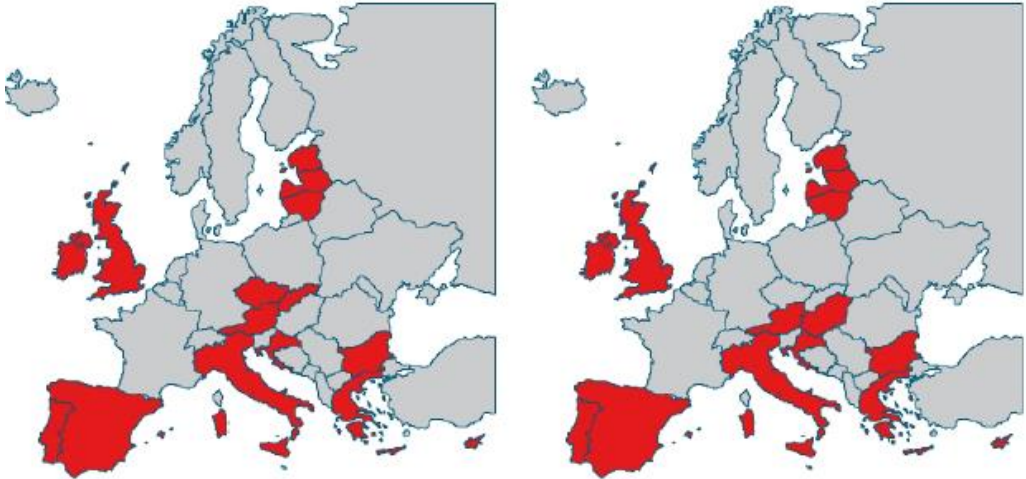
**THEMATIC MAP 2:** THE SECTOR OF INDUSTRY FOR THE CASE OF ITALY (2008)

THEMATIC MAP 3: THE SECTOR OF AGRICULTURE, FORESTRY AND FISHING FOR THE CASE OF ITALY (2008)
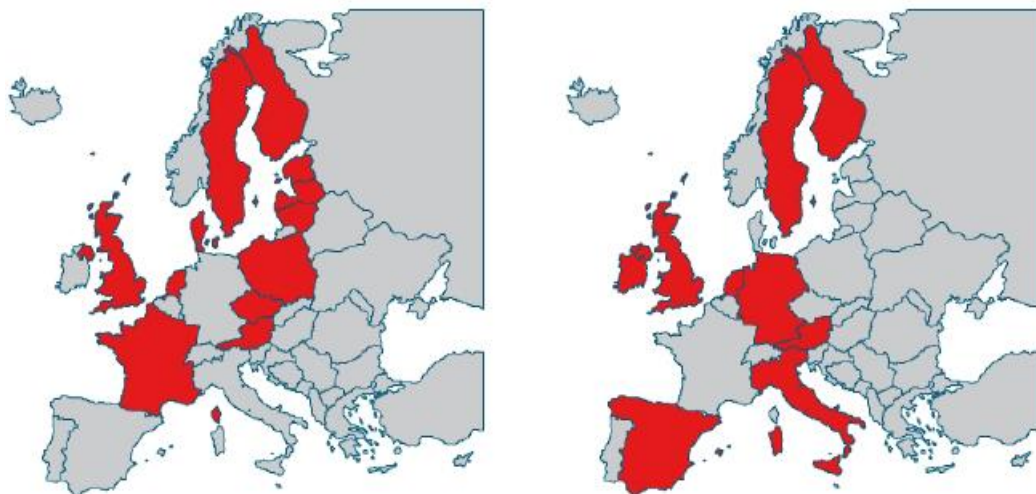
THEMATIC MAP 4: COUNTRIES THAT PRESENT HIGH CONCENTRATION IN THE SECTORS OF CONSTRUCTION AND WHOLESALE AND RETAIL TRADE, TRANSPORTATION AND STORAGE, ACCOMMODATION AND FOOD SERVICE ACTIVITIES (2008)

THEMATIC MAP 5: COUNTRIES THAT PRESENT HIGH CONCENTRATION IN THE SECTORS OF INFORMATION AND COMMUNICATION AND FINANCIAL AND INSURANCE ACTIVITIES (2008)
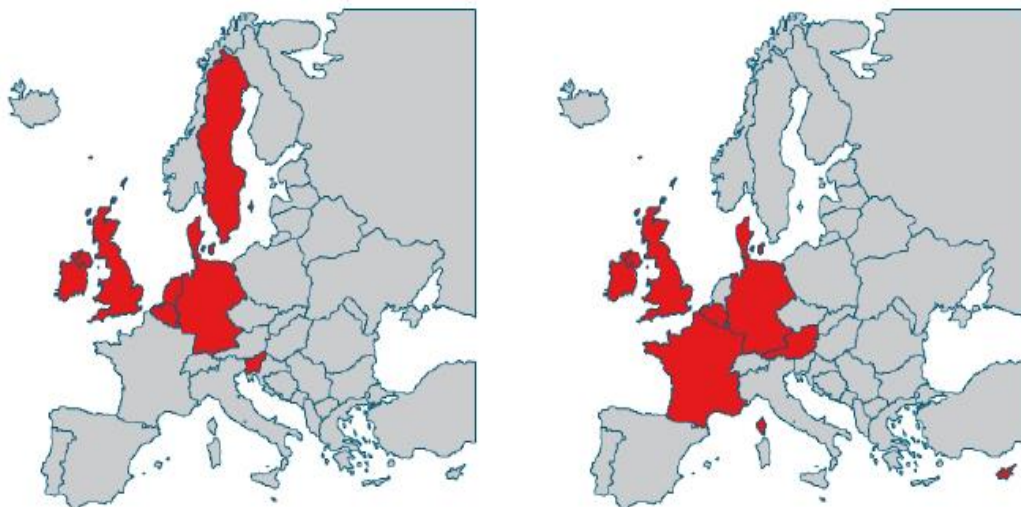
THEMATIC MAP 6: COUNTRIES THAT PRESENT HIGH CONCENTRATION IN THE SECTORS OF REAL ESTATE ACTIVITIES AND PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES, ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES (2008)

THEMATIC MAP 7: COUNTRIES THAT PRESENT HIGH CONCENTRATION IN THE SECTORS OF PUBLIC ADMINISTRATION AND DEFENSE, COMPULSORY SOCIAL SECURITY, EDUCATION, HUMAN HEALTH AND SOCIAL WORK ACTIVITIES AND ARTS, ENTERTAINMENT AND RECREATION, OTHER SERVICE ACTIVITIES, ACTIVITIES OF HOUSEHOLDS AS EMPLOYERS, UNDIFFERENTIATED GOODS AND SERVICES, PRODUCING ACTIVITIES FOR OWN USE, ACTIVITIES OF EXTRATERRITORIAL ORGANIZATIONS AND BODIES (2008)
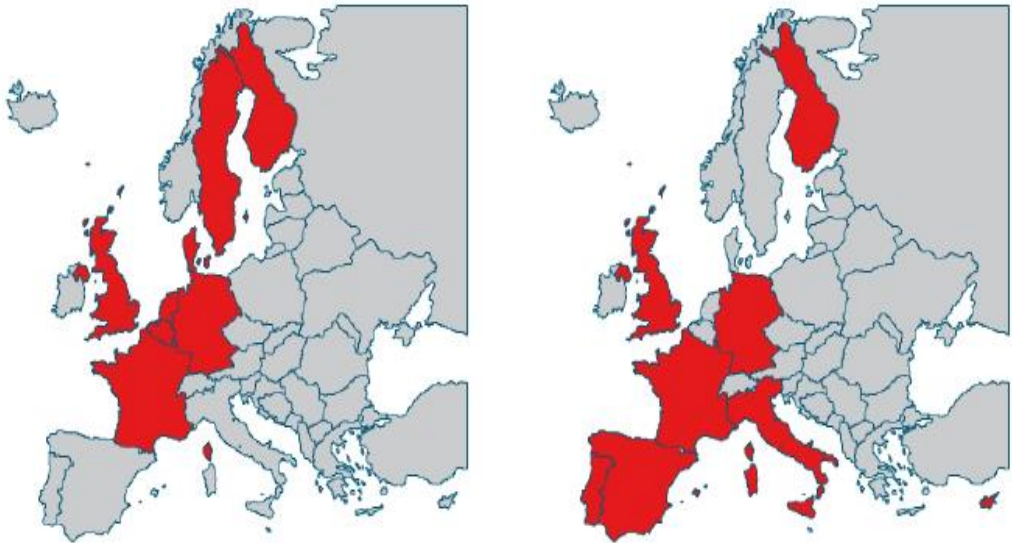
The above thematic maps illustrate the grouping of countries that demonstrate or not specialization in each of the examined sectors mainly in the axis of East-West instead of North-South.

TABLE 3: LOCATION QUOTIENT OF ECONOMIC SECTORS
IN THE COUNTRIES OF THE EUROPEAN UNION (2013)

Sector / Countries	Agriculture, forestry and fishing	Manufacturing	Construction	Wholesale and retail trade, transportation and storage, accommodation and food service activities	Information and communication	Financial and insurance activities	Real estate activities	Professional, scientific and technical activities, administrative and support service activities	Public administration and defense, compulsory social security, education, human health and social work activities	Arts, entertainment and recreation other service activities, activities of households as employers, undifferentiated goods and services, producing activities for own use, activities of extraterritorial organizations and bodies
Belgium	0,281	0,833	1,050	0,944	1,078	1,169	0,797	1,134	1,247	0,992
Bulgary	1,375	1,337	1,017	1,221	0,886	0,589	0,403	0,742	0,771	0,591
Czech Republic	0,625	1,675	1,229	0,925	0,978	0,931	1,206	0,759	0,790	0,732
Denmark	0,523	0,780	0,856	0,948	1,426	0,973	1,108	0,903	1,344	0,962
Germany	0,296	1,214	0,983	0,973	1,007	1,075	0,685	1,103	1,023	0,918
Estonia	0,880	1,221	1,315	1,025	1,095	0,550	2,298	0,842	0,871	0,858
Ireland	1,172	0,738	0,782	1,098	1,479	1,614	0,551	0,974	1,035	0,980
Greece	2,826	0,632	0,667	1,272	0,749	1,020	0,101	0,790	0,923	0,864
Spain	0,887	0,794	0,867	1,230	1,053	0,887	0,656	1,073	0,887	1,519
France	0,629	0,813	0,996	0,913	0,930	1,094	1,762	0,977	1,217	1,142
Croatia	2,223	1,183	1,026	1,107	0,827	0,868	0,320	0,648	0,787	0,769
Italy	0,749	1,164	1,024	1,053	0,848	0,943	0,798	1,085	0,810	1,421
Cyprus	0,639	0,547	1,166	1,290	0,842	2,044	0,468	0,999	0,787	1,960
Latvia	1,660	0,945	1,086	1,116	0,939	0,786	3,099	0,705	0,909	0,815
Lithuania	1,738	1,031	1,108	1,156	0,662	0,458	1,491	0,778	0,896	0,800
Luxembourg	0,320	0,341	0,840	0,657	1,331	4,207	0,920	1,116	1,207	1,940
Hungary	1,015	1,360	0,916	1,031	0,984	0,818	0,613	0,800	0,944	0,690
Malta	0,271	0,886	0,913	1,204	1,338	1,546	0,696	0,762	1,083	0,926

Netherlands	0,402	0,584	0,716	0,965	1,048	1,100	0,920	1,238	1,147	0,791
Austria	0,977	0,980	1,289	1,078	0,947	1,175	1,102	0,954	0,919	0,853
Poland	2,475	1,324	1,098	0,94	0,734	0,815	1,087	0,647	0,823	0,549
Portugal	2,111	0,993	0,939	1,056	0,698	0,654	0,760	0,746	0,915	1,191
Romania	5,878	1,222	1,079	0,847	0,568	0,461	0,248	0,419	0,516	0,491
Slovenia	1,745	1,440	0,857	0,939	1,105	0,939	0,498	0,748	0,829	0,676
Slovakia	0,683	1,491	1,443	1,011	0,766	0,753	0,964	0,619	0,905	0,569
Finland	0,849	0,901	1,032	0,899	1,405	0,664	1,123	1,134	1,113	1,084
Sweden	0,417	0,712	0,971	0,848	1,443	0,687	1,823	1,359	1,296	0,979
United Kingdom	0,217	0,665	1,044	0,988	1,347	1,300	1,376	1,234	1,191	1,012

As far as sectoral specialization of European Union countries for the year 2013 is concerned, it is prevalent that for Agriculture, Forestry and Fishing countries that get the highest score are Romania (5.878), Greece (2.826), Poland (2.475) and Croatia (2.223). The lowest value of the associated indicator is observed in the United Kingdom.

In the sector of Industry, countries that get the highest score in the relevant indicator are the Czech Republic (1.675), Slovakia (1.491) and Slovenia (1.440). The lowest value of the relevant indicator is recorded in Luxembourg. In the sector of Construction, countries with high concentration of economic activity as captured by the relevant indicators are Slovakia (1.454) and Estonia (1.315).

In the sector of Wholesale and Retail trade, Transportation and Storage, Accommodation and Food service activities high value of the indicator is recorded in Cyprus (1.290), Bulgaria (1.221), Spain (1.230), Greece (1.272) and Malta (1.204). On the contrary, the lowest value of the associated indicator is observed in Luxembourg.

In the sector of Information and Communication high concentration of economic activity is observed in Ireland (1.479), Sweden (1443), Denmark (1.426), Finland (1.405) and the United Kingdom (1.347). The lowest value of the associated indicator is observed in Romania (0.568). In the sector of Financial and Insurance activities the highest value of the associated indicator is observed in Luxembourg (4.207), Cyprus (2.044), Ireland (1.614) and Malta (1.514). In the sector of Real Estate activities, the highest specialization is observed in Latvia (3.099), Estonia (2.298) and France (1.762). On the contrary, Greece scores the lowest value in the associated indicator (0.101).

In the sector of Professional, scientific and technical activities, Administrative and Support service activities high value of the associated indicator is observed in Sweden (1,359), Netherlands (1,238) and the United Kingdom (1,234). The lowest value of the associated indicator is observed in Romania. In the sector of Public Administration and Defense, Compulsory social security, Education, Human health and Social work

activities, the greatest concentration is observed in Denmark (1.344), Sweden (1.296), Belgium (1.247), France (1.217) and Luxembourg (1.207). Other service activities, activities of households as employers, undifferentiated goods and services, producing activities for own use, activities of extraterritorial organizations and bodies, the highest specialization is observed in Cyprus (1.960), Luxembourg (1.940) and Spain (1.519).

Moreover, it emerges that Italy is among the countries with high specialization in the sector of Manufacture mainly due to the industrialized North. On the other hand, the South of Italy presents a totally different performance and, more specifically, it is specialized in the sector of Agriculture.

THEMATIC MAP 8: COUNTRIES THAT PRESENT HIGH CONCENTRATION IN THE SECTORS OF AGRICULTURE, FORESTRY, FISHING AND INDUSTRY (2013)
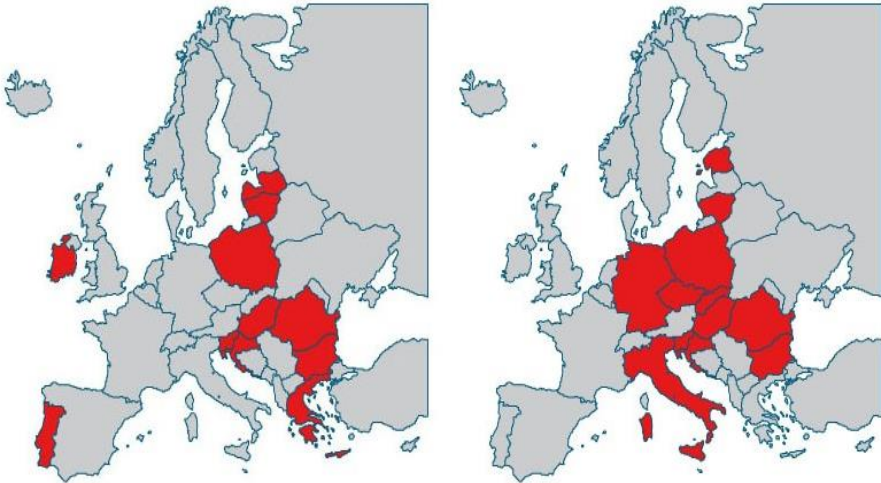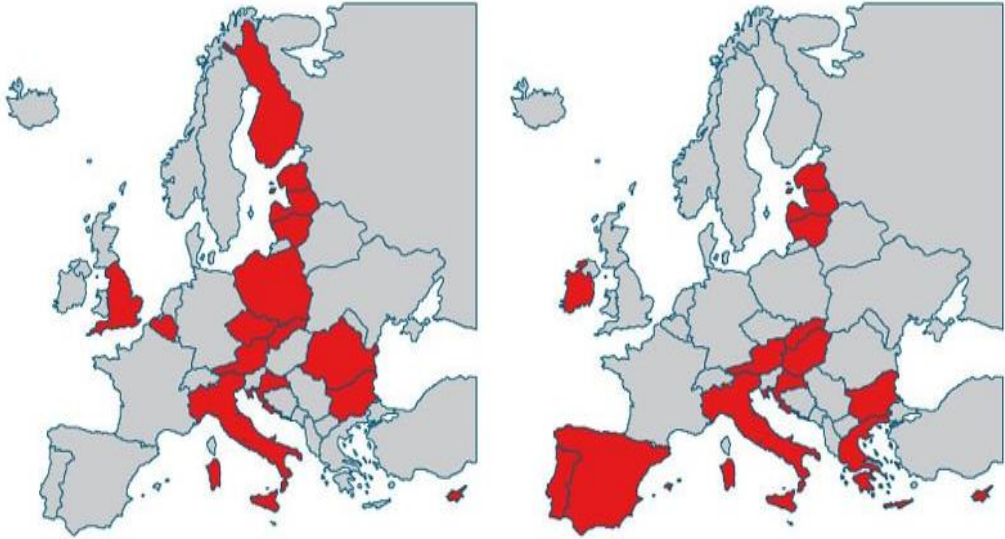
**THEMATIC MAP 9:** THE SECTOR OF INDUSTRY FOR THE CASE OF ITALY (2013)

THEMATIC MAP 10: THE SECTOR OF AGRICULTURE, FORESTRY AND FISHING FOR THE CASE OF ITALY (2013)
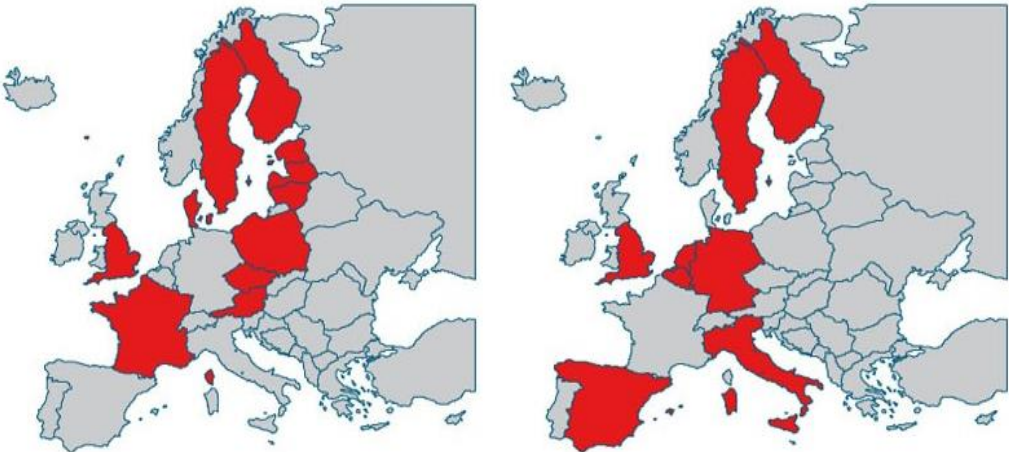
THEMATIC MAP 11: COUNTRIES THAT PRESENT HIGH CONCENTRATION IN THE SECTORS OF CONSTRUCTION, WHOLESALE AND RETAIL TRADE, TRANSPORTATION AND STORAGE, ACCOMMODATION AND FOOD SERVICE ACTIVITIES (2013)

THEMATIC MAP 12: COUNTRIES THAT PRESENT HIGH CONCENTRATION IN THE SECTORS OF INFORMATION AND COMMUNICATION, FINANCIAL AND INSURANCE ACTIVITIES (2013)
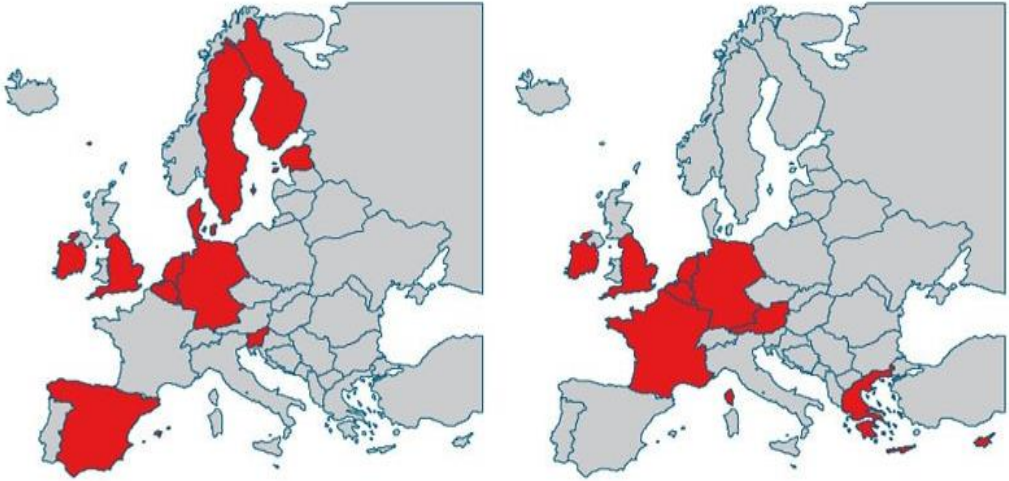
THEMATIC MAP 13: COUNTRIES THAT PRESENT HIGH CONCENTRATION IN THE SECTORS OF REAL ESTATE ACTIVITIES AND PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES, ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES (2013)

THEMATIC MAP 14: COUNTRIES THAT PRESENT HIGH CONCENTRATION IN THE SECTORS OF PUBLIC ADMINISTRATION AND DEFENSE, COMPULSORY SOCIAL SECURITY, EDUCATION, HUMAN HEALTH AND SOCIAL WORK ACTIVITIES AND ARTS, ENTERTAINMENT AND RECREATION, OTHER SERVICE ACTIVITIES, ACTIVITIES OF HOUSEHOLDS AS EMPLOYERS, UNDIFFERENTIATED GOODS AND SERVICES, PRODUCING ACTIVITIES FOR OWN USE, ACTIVITIES OF EXTRATERRITORIAL ORGANIZATIONS AND BODIES (2013)
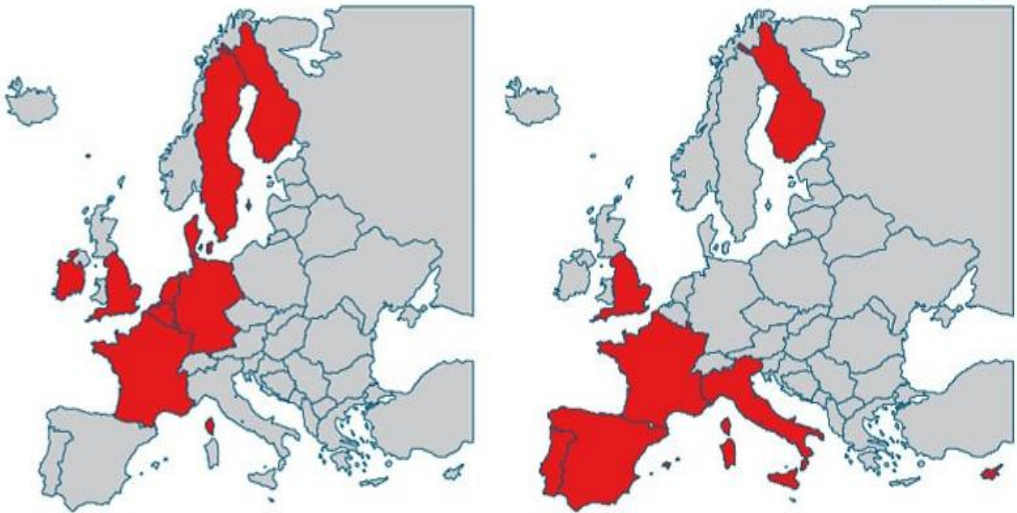
The major characteristics concerning the discrimination mainly in the axis of East-West instead of North-South for the year 2008 were maintained in the year 2013 as well. An extensive analysis concerning the diversification between the years of 2008 and 2013 is presented in the following section.

4.2. *Disparities in the economic activity of European countries hit the hardest by the economic crisis and the case of Greece*

In the sector of Construction, the associated activity is reduced in countries that are affected by the crisis, which namely are Greece, Spain, Portugal and Ireland. Moreover, it should be pointed out that while Spain for the year 2008 gets the second highest score in the indicator (1.451) expressing specialization in the sector of Construction, there is a significant alteration for the year 2013, where it scores lower than a unit (0.867). It should be noted that in Spain this sector has been seriously hit

by the financial crisis. In general, it seems that the sector of Construction is more sensitive in the volatility of economic activity.

The sector of Construction does not constitute a principal sector of economic activity for the case of Greece during the period of crisis, as it is prevalent by the comparative analysis of the associated indicator. Therefore, while Greece in the sector of Construction for the year 2008 scores higher than a unit (1.038), the value of the associated indicator for the year 2013 is less than a unit (0.667). As far as Greece is concerned, the sector of construction has been seriously affected by the financial crisis and the increase in taxation as a means to fight the debt crisis. On the contrary, in the sector of Agriculture further increase in the indicator during the crisis is observed in Greece.

In the wholesale and retail trade, transportation and storage, accommodation and food service activities there is a considerable stability in the period examined. It is argued that (World Economic Forum, 2015) in the sector of tourism (accommodation and food service activities) Greece and Spain have further fortified their position in the period of crisis despite the serious fiscal problems. Furthermore, Spain, Italy and Cyprus find a way out of the crisis by strengthening their position in the field of Arts, entertainment and recreation, as it is prevalent by the increase in the associated indicator.

Based on the analysis above, it could be argued that the importance of sectoral structure is not independent, but on the contrary, is associated with the general socioeconomic environment, the contextual conditions, and the structural characteristics of the countries and regions examined. There are sectors that are seriously affected by the crisis, while its effective treatment depends on the ability of the countries to revolve into new dynamic activities.

4.3 Sectoral activity at the regional level

In many countries, a specific activity is accumulated in certain areas due to their natural wealth, their geographic position and characteristics or even to successful developmental policies exercised. For the purposes of the current study, the analysis is restricted to specific areas (North etc.) of each country.

THEMATIC MAP 15: REGIONS OF ROMANIA THAT ARE SPECIALIZED IN AGRICULTURE (2013)

Concerning the case of Romania in the Agricultural sector, it is illustrated that the concentration of the associated activity is located in specific geographic regions in the South and North-East part of the country (Thematic map 15). The climate is continental along with intense rainfall in the Carpathian Mountains (North-East Romania). Moreover, the morphology of the ground favors the development of the Agricultural sector as in the South the fertile plains are traversed by rivers (Danube region). The presence of the port in a branch of the Danube River at the South-East part of the country is a distinguishing characteristic.

THEMATIC MAP 16: REGIONS OF SLOVAKIA THAT ARE SPECIALIZED IN MANUFACTURING (2013)
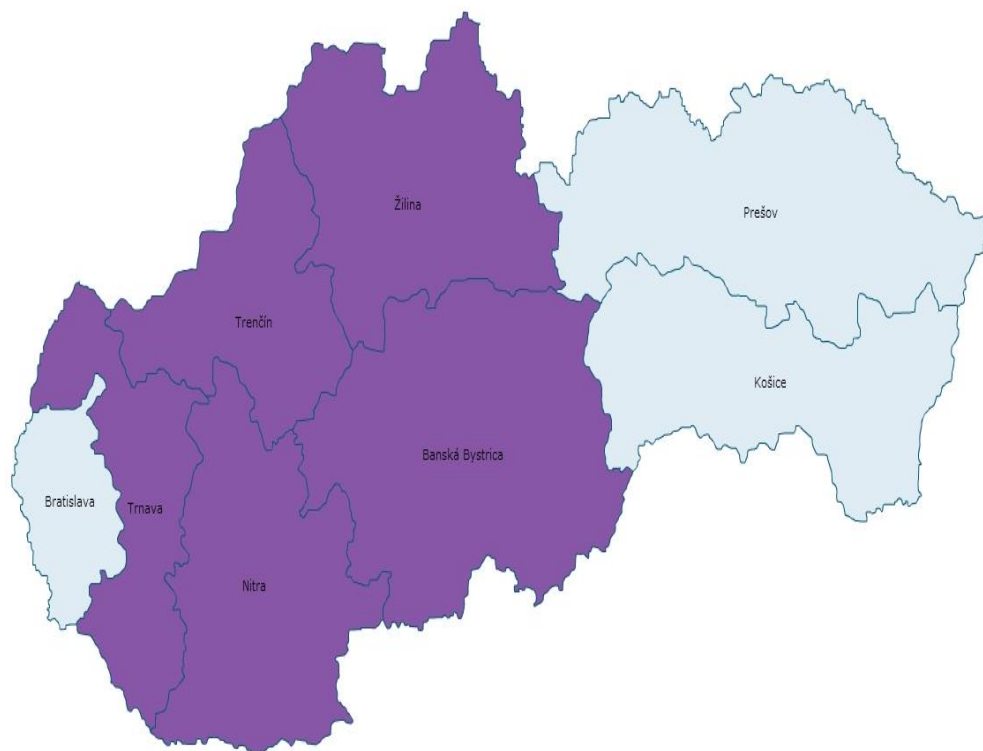
Moreover, in Slovakia the Industry is accumulated in the West part of the country around the capital Bratislava (Thematic map 16). Distinct characteristics of this area are the many rivers, from which electricity is produced, as well as the enriched mineral underground.

THEMATIC MAP 17: REGIONS OF SPAIN THAT ARE SPECIALIZED IN CONSTRUCTION (2013)


In Spain (Thematic Map 17) accumulation of activity is observed in the North-West part of the country, as far as the Construction sector is concerned, due to the morphology of the ground (plateaus, valleys, rivers) as well as the road axis that interlinks Portugal with the rest of Europe. It should be pointed out that in this area flight companies of low cost exist.

THEMATIC MAP 18: REGIONS OF GREECE THAT ARE SPECIALIZED IN WHOLESALE AND RETAIL TRADE, TRANSPORTATION AND STORAGE, ACCOMMODATION AND FOOD SERVICE ACTIVITIES (2013)


In the sector of Wholesale and Retail trade, Transportation and Storage, Accommodation and Food service activities, Greece serves as a typical example. The associated activity is dominant in the islands and the two metropolitan regions of Attica and West Macedonia (Thessaloniki) due to their increased commercial character (Thematic map 18).

THEMATIC MAP 19: REGIONS OF ENGLAND THAT ARE SPECIALIZED IN INFORMATION AND COMMUNICATION (2013)
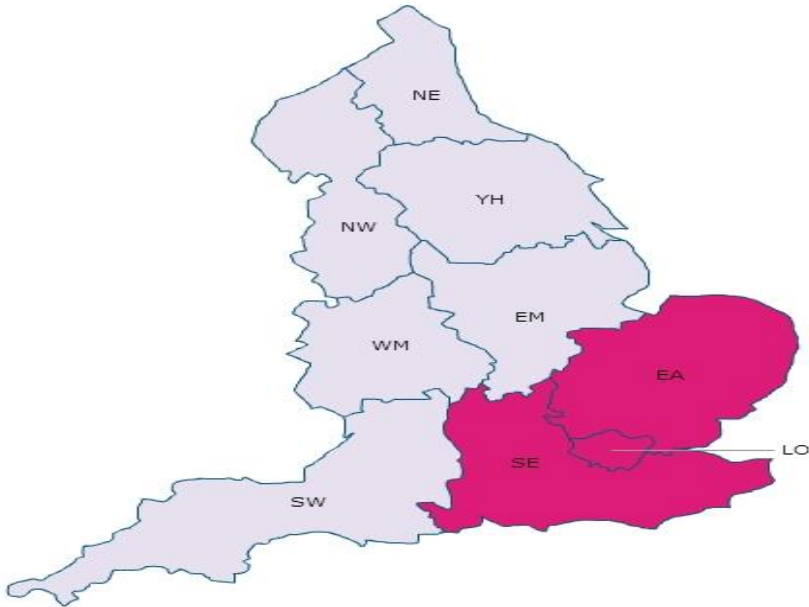
In the sector of Information and Communication, England is a typical case. The associated activity is mostly developed in the area of London and the two surrounded regions in the South-East part of the country (Thematic map 19). In these areas, that constitute the core of the United Kingdom, financial services (stock market etc) are developed along with the mass media (British Broadcasting Corporation-BBC, an abundance of television and radio networks and newspapers). Also, it should be pointed out that the English language is internationally dominant in mass communication, science, industry, policy etc.

THEMATIC MAP 20: REGIONS OF BELGIUM THAT ARE SPECIALIZED IN FINANCIAL AND INSURANCE ACTIVITIES (2013)
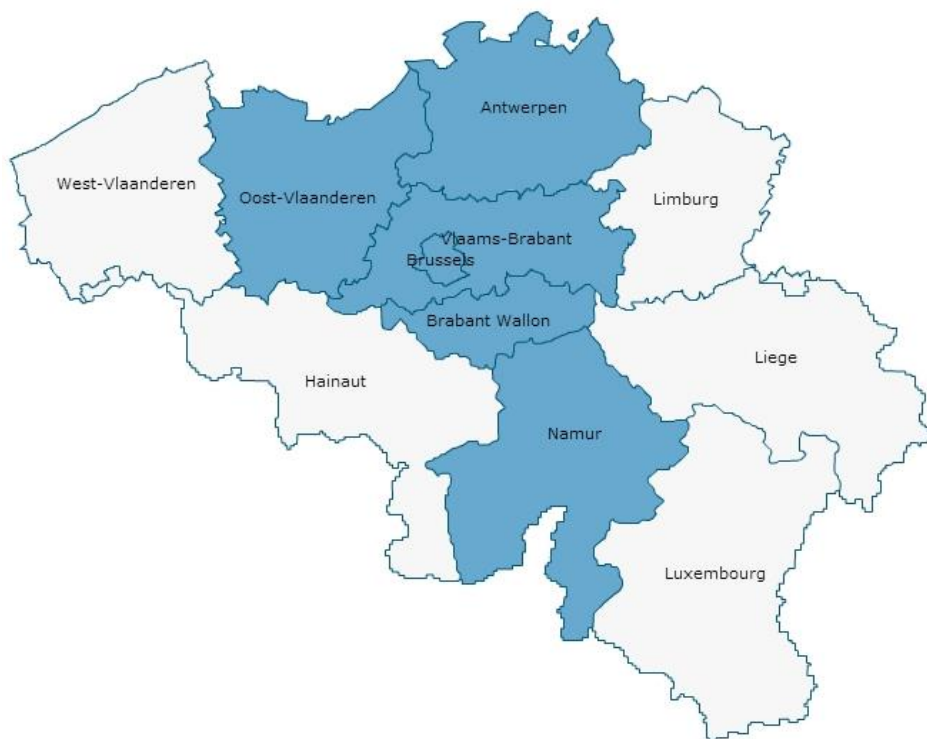
Financial and Insurance activities in Belgium (Thematic map 20) are located in the central regions that surround the capital, which is Brussels (Thematic map 20). The headquarters of most European institutions (European Commission, Council of the European Union) are located in Brussels, as well as the headquarters of NATO, and other international organizations and diplomatic services.

THEMATIC MAP 21: REGIONS OF GERMANY THAT ARE SPECIALIZED IN PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES, ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES (2013)

Professional, scientific and technical activities, administrative and support service activities (Thematic map 21) are accumulated in the North-East and Central-West regions of Hesse and North Rhine-Westphalia. The North-East regions are characterized by intense cultural and economic activity with a large number of research institutions, theaters, architectural monuments and universities. A reference case could be the capital of Brandenburg region, Potsdam, which is one of the most significant film production centers in Europe. Central-West regions and especially the

region of Hesse constitute one of the most affluent states of Germany with numerous firms located in it, such as Deutsche Bank, Commerzbank, Fraport, Merck, B.Braun, Buderus and Deutsche Börs.

THEMATIC MAP 22: REGIONS OF CROATIA THAT ARE SPECIALIZED IN PUBLIC ADMINISTRATION AND DEFENSE, COMPULSORY SOCIAL SECURITY, EDUCATION, HUMAN HEALTH AND SOCIAL WORK ACTIVITIES (2013)

In Croatia the development of the public sector in the West part of the country (Thematic map 22) is a typical case. This area is located in the Adriatic Sea and is constituted by national parks while it constitutes popular tourist attraction all the year.

THEMATIC MAP 23: REGIONS OF ITALY THAT ARE SPECIALIZED IN ARTS, ENTERTAINMENT AND RECREATION, OTHER SERVICE ACTIVITIES, ACTIVITIES OF HOUSEHOLDS AS EMPLOYERS, UNDIFFERENTIATED GOODS AND SERVICES, PRODUCING ACTIVITIES FOR OWN USE, ACTIVITIES OF EXTRATERRITORIAL ORGANIZATIONS AND BODIES (2013)

The sector of Arts, entertainment and recreation, other service activities, activities of households as employers, undifferentiated goods and services, producing activities for own use, activities of extraterritorial organizations and bodies (Thematic map 23) presents concentration in Central Italy (Rome, Tuscany, Umbria and Sardinia). In the region of Central Italy there are historical cities that have been characterized by UNESCO as Monuments of World Cultural Heritage. Sardinia, which was under the influence of diversified cultural archetypes, has shaped a distinct cultural identity.

4.4 Specialization of countries on the basis of sectoral production

Based on the preceding results concerning the years 2008 and 2013, areas of Europe that demonstrate accumulated activity in specific sectors could be located.

The thematic maps illustrate that the classification according to the productive activity of countries conforms to the axis of East-West instead of North-South. If Europe is segregated for each of the productive sectors as developed and non-developed (based on the Location Quotient), this would approach the vertical instead

of the horizontal layout, or in some cases the diagonal from downwards and left to upwards and right. It should be mentioned that Spain is regarded as a country of West Europe instead of South, due to the consideration of individual characteristics. However, this classification of countries regarding homogeneity on the basis of the structure of their production mostly at the level of East-West instead of North-South is only roughly approximated.

Therefore, it emerges that countries of East Europe are specialized in the sensitive sectors of Agriculture, Manufacturing and Construction, while Services are mainly developed in West Europe.

As for the sector of Wholesale and Retail trade, Transportation and storage, Accommodation and Food service activities, it could be argued that it does not follow the above described pattern but it is mainly developed in the European South due to the extensive presence of tourism, which is included in the aforementioned sector.

Moreover, in the sector of Manufacture the greatest concentration is located in countries of the East Europe (Czech Republic, Slovenia, Slovakia, Poland) as well as in Germany, which according to more confined geographic criteria is considered as a country of Central Europe.

5. POLICY IMPLICATIONS AND CONCLUSIONS

The current study aims to investigate in a quantitative manner the countries and regions of Europe that display high or low concentration of sectoral activity, and in this sense if the respective sector is considered as developed or not in relation to the European Union as a whole. Therefore, areas of Europe are located that the sector examined is primarily "exporting". Moreover, the study for the years 2008 and 2013 permit locating possible shifts in economic activity due to the financial crisis that may contribute to the strengthening or weakening of productive sectors, and as a result to the change of the economic map of Europe.

Therefore, it emerges that financial crises may function as mechanisms of redistributing economic activities between countries and as a result income and wealth. Consequently, appropriate state policies should be shaped, particularly in those countries that due to the financial crisis have limited competitive advantages in other sectors. This ascertainment applies especially in the case of Greece. A consistent policy package on European level, taking into account country-specific reform priorities, would yield large gains and facilitate rebalancing within the euro area (Barkbu, Rahman and Valdés, 2012). Overall, the key to improving economic conditions even to stagnated economies is increasing their productivity (Lewis, 2005).

In this way, countries and regions of Europe that are specialized in dynamic sectors of economic activity are analyzed and, as a result, have a comparative advantage over the others. In this way, the terms of (fair) trade may be designated. More analytically, in major sectors of economic activity, such as Industry, the greatest

concentration is observed in countries of East Europe and Central Europe at a lesser extent. In the sector of Agriculture, the greatest concentration is observed in countries of East Europe. Tourism activity is mostly located in the South of Europe (Mediterranean countries). In Financial and Insurance activities and Professional, scientific and technical activities, Administrative and support service activities the greatest accumulation is observed in West Europe. Therefore, it should be pointed out that in addition to the established developmental archetype of European space, which is based on the axis of (favored) North – (less favored) South, there is a thorough analysis conducted on the axis of (favored) West – (less favored) East.

More extensively, the comparative study of the indicators between the years 2008 and 2013 has appointed differentiations in the sectoral structure of European economies as an outcome of the economic crisis. For example, in countries that great concentration of tourism is observed and that at the same time face fiscal difficulties, a greater accumulation of tourism activity is recorded in the period of crisis. Therefore, the importance of tourism in terms of employment has increased. This observation could be construed as follows. The policies of fiscal discipline that have been put into effect, and especially the policies of internal devaluation, have improved the competitiveness of tourism product. At the same time, the shift into the product of tourism could be interpreted as an effort to react to the shrinking of income from other sources because of the crisis, or even as a means to face the extensive unemployment due to financial recession. Moreover, it is proved that the comparative advantage in the sector of tourism is not static, but evolves dynamically, which is a fact that should not be ignored by policy makers and the private sector. Therefore, it is proved that the importance of sectoral structure is related to the general socioeconomic conditions.

In conclusion, the specialization of countries/regions in dynamic sectors of economic activity that have a comparative advantage over the others is a multidimensional and dynamic process. This fact should not be neglected especially by those countries that because of their deficient convergence towards the core economies of Europe, which is further expanded due to the financial crisis, have a limited number of productive sectors in which they dispose a competitive advantage. These countries, which are affected by the crisis, such is the case for Greece, should shape an appropriate policy framework in order to strengthen the competitiveness of their dynamic productive sectors after taking into account the composite character of the issues examined.

<div align="center">REFERENCES</div>

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THE FUTURE OF THE IT DEPARTMENT: IS THERE A THREAT BY END USER APPLICATION?

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ABSTRACT

Traditional challenges in the relationships between IT departments and business units are no longer accepted by users. IT departments need to actively adopt entrepreneurial mindsets to meet the new market requirements. Some researchers argue that the responsibility for application software is shifting from IT professionals to the users of the software. It also seems that the IT professionals lack commercial skills to deliver and maintain IT solutions for customer satisfaction and added business value. This paper summarizes the debate on the relationship of IT departments and users engaged in application development. A survey, including open-ended questions, investigated opinions and current practices. The study showed that end-users need appropriate user interfaces for their business needs. Software applications need seamless paths for delivering results to the next step in the business workflow. When the IT department is not able to satisfy user requirements regarding speed, responsiveness, flexibility and adaptability it is likely that today's users may start creating their own applications. Following the analysis of findings, the paper discusses potential solutions regarding how IT-departments can become more business focused by aligning business activities to organizational strategy and by defining and measuring specified value objectives. It also emphasizes that IT professionals must become more aware of user needs and costs. The proposed solution of this paper is to increase a controlled collaboration between the IT department (technical experts) and innovative pioneering end users (application domain experts) for overall added value co-creation.

Keywords: IT Department; End User; End User Computing; End User Programming; End User Application; Development (EUAD); Situational Application Development; Strategic Alignment.

1. INTRODUCTION

Information and knowledge have played a primary role in the success of knowledge intensive companies. The focus of managerial actions has over recent years shifted towards human resources and knowledge management. Companies have adopted new management styles and organizational structures have become more flat (Rishipal, 2014).

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In addition, new technologies along with the virtual organization have stressed the importance of individual commitment to the goals of the organization (Siakas and Balstrup, 2000). Working practices, including both the content and the tools used, are increasingly based on innovation and the adoption of new technologies. The technology adoption process is mainly based on diffusion through the organization (Ghobakhloo et al., 2012).

By empowering users in the business units with poor or no programming skills to create collaboratively their own operational environment, Information Technology (IT) departments are under pressure to justify their existence on the one hand and to increase the efficiency and effectiveness of the IT service infrastructure on the other.

End User Application Development (EUAD) is increasing due to continuously lower prices of hardware, more powerful and easy to use software, and user demand for control of information resources. End-users are also increasingly more skilled in dealing with IT. At the same time IT solutions are easier to specify, purchase and maintain than ever before. All these developments pose a threat for the IT department that now needs to change its role to become more flexible, business and customer oriented in order to gain customer trust and added value for the organization. EUAD must not be seen as a threat but as an added resource that IT departments with adequate organizational structure and management control can exploit in order to gain competitive advantage.

Traditional challenges in the relationships between IT departments and business units include features of the persistent software crisis which is defined as inability to develop software on time, on budget, within requirements (Boehm, 1981; Standish Group International, 2015), low governance transparency (McCarthy, 2015), low response time, lack of customer orientation, and poor quality of IT support (Feld, 1990). As a result of the crisis a tendency to create independent IT resources including own business units has emerged (Zarnekow et al., 2006). Technical professionals tend to lack commercial skills, which also can turn to conflict at leadership level (McCarthy, 2015). IT cost optimization effort often stops when the target is reached, instead of continuing to reduce costs while providing additional innovative business solutions. It is obvious that something has to be done in order to satisfy stakeholders and to increase added business value.

Over the last decade the need for a change in IT departments to actively adopt entrepreneurial mindsets, in order to meet the new market requirements, has become apparent (Hoyer et al., 2008). Feld (1990) argues that the responsibility for application software development is shifting from IT professional development to the users of the software. It also seems that IT professionals lack commercial skills to deliver and maintain IT solutions for customer satisfaction and for added business value. Increased focus, visibility and accountability are needed.

In this paper we look at the challenges from two viewpoints; namely continuous improvement of the IT function described in section 2, or alternatively end-user

development described in section 3. After the extensive literature review, we performed a survey aiming to capture opinions from the industry regarding EUAD. The statistical results of the survey are discussed in section 4 and general feedback in section 5. Finally, in section 6 we propose guidelines for effective integration of IT activities with EUAD.

2. LITERATURE REVIEW

The challenges relating to attempts to improve business focus in IT departments include the following:

- Role of the IT department: the IT team needs to re-evaluate and redefine its role in partnership with the business (Pavitt, 2015; Runciman, 2015).
- Business centric IT: the IT team needs to change its culture to be more entrepreneurial and innovative regarding all aspects of the business. Management of third parties, such as vendors, partners in joint ventures and outsourcing relationships need to be redesigned (Siakas and Balstrup, 2006). Value for money needs to be defined through the creation of measurable Key Process Indicators (KPIs) (Sheriff et a;. 2013, Kaplan and Norton, 1992; 1996; 2001)
- User-centric IT: User-centric design should be an IT vision statement and all IT solutions need to be carried out through the eyes of the ultimate user (Berki et al., 1997). Response time to failures need to be minimized to maximize reliability and availability. Quality in Use, Modification and Re-use are of interest to the user (Dromey, 1995).
- Value for money: The cost of IT is still a mystery in most companies. IT professionals need to change focus to cost optimization and innovation (McCarthy, 2015).

An emerging challenge is tapping collective, explicit, and tacit knowledge and intelligence of users (customers and consumers) by social media networks thus reaching beyond the conventional boundaries of the organization (Siakas et al., 2012). Leveraging disparate assets of people from different cultures, different disciplines and different organizations satisfies the need for multiple views driven by the complexity of IT itself. Crowdsourcing online tools should be used for open innovation at the ideation stage (McCarthy, 2015; Siakas et al., 2014; Dromey, 1995). A suitable measurement system including KPIs should be used to evaluate and prioritize all ideas. In order to ensure sustainability there is also need for early planned valorization (Georgiadou et al., 2014) that should be applied throughout the projects lifetime. The creation of an innovative culture involves a learning process that builds on evaluation, reflection and development of the organization toward response maturity for emerging challenges (Siakas et al., 2012).

The IT department culture needs to become more cost conscious and senior IT professionals need to concentrate on providing service for customers whilst delivering value for money (McCarthy, 2015).

"*Technology and innovation go hand in hand with value addition and growth, with the resultant wealth accumulation allowing for reinvestment in research and development and further innovation-led productivity*" (Georgiadou et al., 2014).

A culture of continuous improvement (McCarthy, 2015), entrepreneurial mindset (Dromey, 1995) and personal excellence (Elliott, 2014) are effective means by which productivity and value for money can improve significantly.

2.1 Aligning business activities to organizational strategy

Frequent and often devastating project failures in organizations have been mainly attributed to misalignment of strategic aims and project management (Kaplan, 1994; Becker and Bostelman, 1999). Projects seem to fail when the organization fails to translate vision and mission statements into tangible plans and actions applied at institutional, departmental and project levels (Sheriff et al., 2013). Researchers have proposed a number of frameworks for addressing this misalignment, such as Balanced Scorecard (BSC) developed by Kaplan and Norton (2001; 1996; 1992) and Goal-Question Metric (GQM) developed by Basili (1992; 1995;). BSC translates vision, mission and strategy through objectives and measures to feasible goals and action plans. Thus it provides a framework for describing the key elements in the achievement of the strategy; it improves internal and external communications and monitors organizational performance against strategic goals. However, while BSC defines the scope and perspectives of the information needs of an organization by using Key Performance Indicators (KPIs) for measuring the success of the agreed goals, it does not provide a means of quantifying and interpreting the acquired information (Sheriff et al., 2013). Hence, the need to combine BSC with Goal Question Metric (GQM). The application of a BSC system presupposes a thorough analysis of the processes and procedures used by the organization. Each organization, according to BSC can be viewed from four perspectives, namely Financial, Customer, Internal processes, and Learning & Growth. These perspectives are transferred by the BSC into KPIs. The organization, sets targets for each of the perspectives and collects the evidence of interest in order to verify the performance and quality level.

2.2 Defining and measuring specified value objectives

Project 'success' is not necessarily the same as business value. To address this shortage Sheriff et al. (Sheriff et al., 2013) created the Value-Based BSC-GQM framework that focuses the attention of organizational actors on three types of value suggested by Boztepe (2007) i.e. Conceived (believe that../anticipate…., Operative (like/dislike), or Object (physical features)), and based on (Morris, 1956) and the

ontology of value (Sheriff and Georgiadou, 2011) that analyses value from four perspectives, namely Sources of Value, Types of Value, Nature of Value and Manifestations of Value. The Value-Based BSC-GQM framework incorporates explicit value measures from all four BSC perspectives as well from the focus provided by GQM and visualizes the results by using Kiviat diagrams. The framework aims to:

a) Promote among key organizational stakeholders an awareness of the complex and varied nature of value and value perspectives in the organization;

b) Align strategic level objectives with operational goals and metrics through explicit value definitions;

c) Enable the definition and examination of stated performance indicators and their specified metrics in terms of specified value objectives rather than just 'success' or 'failure'.

2.3. End-User Application Development (EUAD)

Pavit (2015) argues that "*Technology is ubiquitous, it is cheap and it can be understood, bought and maintained by non-technical savvy business teams….IT solutions are easier to specify, purchase and maintain than ever before and yet the traditional IT team hang on trying to play a brokering role. It* (the IT team) *needs to change its role dramatically and become the technology subject matter expert that business teams see can deliver as fast as them so they can trust their IT partner and concentrate on their core function*".

End-user programming enables end users to create their own programs. End User Application Development (EUAD) has been a field of study for more than 30 years already (McGill and Klisc, 2006) and dominates organizational use of IT worldwide (Chudnovskyy and Gaedke, 2011). Ko et al. (2011) define end-user software engineering as "*end-user programming involving systematic and disciplined activities that address software quality issues (such as reliability, efficiency, usability, etc.). In essence, end-user programming focuses mainly on how to allow end users to create their own programs, and end-user software engineering considers how to support the entire software lifecycle and its attendant issues*". EUAD is also called End User Computing (Brancheau and Wetherbe, 1990), End User Programming (Hague, 2005), End User Software Engineering (Brancheau and Wetherbe, 1990) and Situational Application Development (Kraiem et al., 2010) or Situational Software Engineering (Myburgh, 2014). The term '*situational*' refers to situations that demand faster solutions than IT departments can provide and therefore different user ad-hoc solutions are employed with various results. In this paper, the term that will be used is End User Application Development (EUAD).

EUAD does not involve any distinct activities (Burnett, 2009). It forms part of the daily work of the end user, who has no or only limited programming skills. The

application development environments used by end users include spreadsheet systems, web authoring tools, and graphical languages for creating educational simulations (Burnett, 2009). Some ways in which end users develop these applications include writing and editing formulas, dragging and dropping objects onto a logical workspace, connecting objects in a diagram, or demonstrating intended logic to the system. They have become active creators of Web applications, they develop new tools to meet their situational needs, share them with colleagues and combine them into more complex solutions. End-users are much more skilled in dealing with IT nowadays. Motivated by ubiquitous internet access and pervasiveness of mobile devices providing rich user experience, users have become active shapers of the Web (O'Reilly, 2007).

End users often use tailorable information systems (Eriksson and Dittrich, 2007) fourth generation development tools (Sayles, 1990) or Web 2.0 tools (Costabile et al., 2006; Cappiello et al., 2013) to frame the problem and search for solutions. The development pattern that end users use for application development is iterative and hardly ever controlled, as promoted in systems development methods.

Recent trends, such as cloud computing, mass customization and changing demographics have resulted in higher demand for flexible, feature rich and extensible platforms for end-user development (Eriksson and Dittrich, 2007). A clear need for new systematic methods and opportunities for new technological innovations have emerged with the potential of involving end-users into developing tasks. However, the risks resulting from non-professional application development need to be taken into account. Such risks can be idiosyncrasies, lack of documentation, lack of cohesion, possible ripple effect of coupling modifications, and poor testing.

EUAD, facilitated by Web 2.0 applications, gains intrinsic advantages by delivering software as a continually updated service that gets better when more people use it. WEB 2.0 users consume and remix data from multiple sources, while they simultaneously provide their own data and services in a form that allows remixing by others, and thus they create network effects through an architecture of participation, and delivery of rich user experiences (Cappiello et al, 2013).

Runciman (2015) advises on the effect of the talents, interests, passions, connections, innovations and attitudes of its people on the organization's maturity*: 'Organizations and enterprises understand that technology is enabling new models and methodologies to come to fruition and tear down previously considered truths to make way for a new normal in many markets...the capability of an organization sits solely within the talents, interests, passions, connections, innovations and attitudes of its people'.* The aims of organizations are to capture tacit knowledge of employees and transfer it to explicit knowledge, so that more people in the organizations have access to the knowledge, otherwise danger occurs in terms of productivity losses and of instability when employees move away.

End-user applications take place increasingly in Enterprise Mashups, which are Web-based resources that combine existing resources, regarding content, data, or

application functionality, from more than one resource in enterprise environments by empowering the actual end users to create and adapt individual information centric and situational applications (Hoyer et al., 2008). Thereby, Enterprise Mashups focus on the User Interface (UI) integration (Daniel et al., 2007) by combining the philosophy of Service-Oriented Architecture (SOA) and approaches of EUAD (Hoyer et al., 2008).

The application area is often so specialized that it is much more reasonable to let the end-users create their own applications, since they are better domain experts and know exactly how software should support their tasks. However, this method of working tends to operate beyond managerial control (Rantapuska et al., 1999). Another problem is the inadequate application life cycle and process management, resulting in many almost identical applications creating many security vulnerabilities and performance drawbacks.

The solution seems to be collaboration between the IT department and innovative pioneering end users, who are experts in the application domain and are enthusiastic enough to carry out part of the IT application development.

Thilthorpe (2015) asserts that '*to understand capability, particularly IT, technology and digital talent, within an organization we need to know what we have at our disposal now and what we will need in the future'*. In other words, organizations need entrepreneurial mindsets to disrupt the market by new different ways of thinking and problem solving.

2.4. EUAD instead of IT departments

Earlier research (Brancheau and Wetherbe, 1990) shows that people who create new knowledge and innovations usually are pioneers who often belong to the users of the innovation. These pioneers act as change agents. Considering the opinions of such change agents may be of added value for organizations that want to innovate and be disruptive.

Conflicts appearing between EUAD and IT department in a big organization are reported in (Rantapuska et al., 1999). The end users were dissatisfied with software flexibility and delivery time, so they started EUAD, in parallel with the development of central applications by the IT department, mainly due to some pioneering end-users. The professionals in the IT department were concerned with software quality and process improvement, mainly because EUADers did not have access to central databases and data was duplicated. There was no central control of EUAD. To solve the conflict and improve software quality, productivity and employee satisfaction, EUAD was included in the organizational structure and some pioneering end-users were appointed as a buffer between end-users and the IT department. Management control was expanded to include EUAD, and cross-functional teams including IT professionals and end users were created. The results showed a better understanding

by end-users about Software Quality Assurance, Configuration Management, reuse philosophy, software life cycle, documentation and the whole development process. The central IT professionals increased their understanding of user requirements and end-users needs for training. Both parts increased their understanding of Human Resource Management (HRM) and the importance of creation of a common vision to empower people to function effectively. The ultimate outcome was satisfied end-users and satisfied IT professionals due to products that met the Verification & Validation (V&V) criteria.

2.5. *EUAD as a requirements engineering technique*

Karlsson and Hedström (2013) analysed six EUAD projects that were used as a requirements engineering technique for communicating across social worlds (groups of actors with shared knowledge, interests and tasks). For the purpose of their study, they employed the theoretical lens of design boundary object described by Bergman et al. (2007). Design boundary objects are artefacts, such as storyboards, use cases and prototypes, generic enough to facilitate design cooperation across social worlds, and specific enough to allow diversity in interpretation (Gartner Report, 2011). They showed that design boundary objects have an impact on two ecologies in an organization, namely the functional (how technologies can support and extend an organization's work processes) and the political (the power structures within an organization, determining who can make design decisions and when these decisions can be made). They concluded that EUAD means "*a high degree of end user involvement and takes advantage of end users' know-how. It has the ability to capture requirements and transfer them into the final information system without the need to make an explicit design rationale available to the systems developers. However, systems developers have little or no influence on business requirements. Their role is mainly as technical experts rather than business developers. The systems developers took control and power of technical requirements, while requirements that relate to business logic remained with the end users. Consequently, the systems developers did not act as catalysts in the systems development process*". EUAD as a requirements engineering technique seems to have the ability to capture requirements and transfer them into the final information system without the systems developers having to completely understand the design rationale. This may be an advantage when IT professionals are highly technically oriented and lack understanding the business context.

3. RESEACH METHODOLOGY

After the extensive literature review, a postal survey was prepared to collect evidences from the industry. The target group was two-fold including professional

software engineers on one side and end-users on the other. The aim of the survey was to understand the extent to which EUAD is used, the type of EUAD that is practiced and reasons of EUAD. The questionnaire consisted of demographic data including data of the organization, type of EUAD practiced and data about the person answering the questionnaire. The main part of the questionnaire consisted of a 20 item statement with potential responses on a Likert scale regarding the degree of agreement with the statement. In addition, the respondents were asked to provide personal opinions and experiences regarding EUAD in free text.

Two hundred questionnaires were distributed. In total 58 responses were collected within a time period of 3 months in the beginning of 2016. The sample comprised of 72,4% male and 27,65 female respondents. The biggest percentage of the sample were between 31 and 40 years old (38,6%), followed by 41-50 years old (17,5%), 21-30 and 51-60 years old (15,8%) and finally over 60 years old (12,3%). In total 53,4% were IT professionals and 46,6% were end users. The mean working experience of all respondents was 16,7 years. The analysis of the results was carried out using the statistical package SPSS and the free comments were interpreted by comparing the comments to existing literature.

3.1 Analysis of the results

The mean values, rated on a scale from 1-5 (never, rarely, moderately, frequently, always), show the rate to which different EUAD software tools are used.

TABLE 1: MEAN VALUES OF EUAD TOOLS USED

EUAD tools used	Mean Value
Web Applications	3.72
MS Excel	3.65
Web authoring tools	3.26
Graphical tools	3.25
Social Media	3.06
Logical Workspace	2.85

As we can see from the table the respondents use Web applications mostly in EUAD followed by MS Excel. When performing Pearson's Chi-Square tests on the 20 items statement we found that there are no significant differences (on significance level less than 0.05.) between IT professionals and end-users, the two gender, age

groups and working experience up to 10 years or higher than 10 years. The mean values of the 20 item statements are shown in table 2.

TABLE 2: MEAN VALUES OF STATEMENTS IN DESCENDING ORDER
(SCALE: 1-5 NEVER, RARELY, MODERATELY, FREQUENTLY, ALWAYS)

Statement	Mean
End-Users are encouraged to collaborate with the team that creates/buys IT application for the organization/company	4.04
Improvements in software applications / information systems are achieved from continuous feedback among project team members	3.54
Measures are kept	3.51
Targets are developed	3.49
End-users are consulted regarding problems in existing applications	3.41
Are there difficulties in explaining/understanding user requirements of information systems?	3.40
Processes are managed and measured	3.39
Knowledge is shared between employees	3.39
End-users are consulted regarding needs of new applications	3.36
Are there conflicts/ issues between the end users and those who work with IT?	3.31
Improvements in software applications / information systems are achieved from continuous feedback across organization as a whole	3.28
Are there meetings regarding collaborative work between those who develop/buy software and end-users?	3.23
Innovative ideas from employees find fertile ground	3.21
Lessons learned are disseminated spread across the organization	3.14
Have any of the user developed applications been adopted/ incorporated in the company IT/IS systems	3.05
Do you think there is duplication of work if EUAD is used?	3.04
All employees understand the philosophy of knowledge sharing	2.96
All employees practice knowledge sharing	2.77
End-Users are encouraged to create own applications in your organization	2.67
End-Users are not allowed to create own applications in your organization	2.44

3.1.1. IT professionals

IT Teachers:

'We use a web-based tool, which aims at managing course registration and grading etc. Most of our employees complain about its flaws but this is too often met with the comment from the IT department that "We cannot do anything about this". A more efficient program would be appreciated by all users…. I see end users as

students and teachers. Teachers are more involved in EUAD to solve certain needs. They are not so much involved in development or improvement of central software applications/information systems'.

Software Engineers:

'EUAD is acceptable but depends on the quality and integrity requirements of the output end product – a spreadsheet for own use may not need to be accurate but for a customer product must have high quality. Repeatability of the development process also has an impact'.

'Since software engineers usually have limited knowledge of the context they can save much time, effort and money by cooperating closely with end users for fulfilling their needs and requests'.

'EUAD will be a great new era for the web increasing the user experience of a user. New type of applications will rise that will enter in the daily life of users in a bigger percentage'.

'EUAD is cheap, easily available from the simplest computer machine. Today there is a lot of user support i.e. books, user guides, online help and discussion forums on the Internet that end users can get advice from'.

'*I believe that an employee who supports and adopts EUAD and life-long learning can provide knowledge, innovation and experiences to a company, especially when he/she is supported by the management'.*

'I believe EUAD is really important because end users can create or modify existing programs and add more features'.

'Local spreadsheets are created by 'gurus' and may be incorporated into the Quality Management System (QMS) and not just into IT/IS systems'.

'There is no local control of other spreadsheet and word docs (which use Visual Basic Application (VBA))'.

'Any IT application that fails to take user's needs into consideration is bound to fail. End Users are always resistant to change or new applications that they know nothing about so you need to get them involved or take their views on board during the development of any new application within your organization'.

'Most often, end users are catalysts for continuous process improvements and automation. Their user experience drives new software development. For example, the incorporation of social media technologies in corporations is driven by the end users who use such mechanisms outside of work. I believe that the applications themselves are not developed by end users. Instead they may have strawman proposal which in turn leads to prioritization and subsequent development by the IT team'.

'You can raise end users' productivity'.

'IT department maintains equipment, on behalf of the company's IT department'.

End Users:

'EUAD becomes safety critical depending on the data used which emphasize further the importance of the involvement of the IT team'.

'In order for EUAD to happen, the users should be somewhat IT familiar although the concept says that they do not have to. If the developed software is not shared this can lead to not only duplication of software but also duplication of data and information storage. For EUAD to succeed there should be a good IT policy. More than that, the IT team should be flexible enough to give the required support, and need to be aware of such developments so that they can guide and coordinate the activities. This way even if the developer does not share the application, s/he can be persuaded to do so when it is needed by someone else. The culture change can be led by the IT team. In other words, the role of the IT team should not just be to provide IT support'.

'EUAD in Virtual Reality (VR) applications has high complexity, but can be essential in specific contexts. In the case of people with disabilities for example, careers, therapists or family members who know the special needs they want to address, but the use of the current EUAD facilities is rather prohibitive for them when adapting different virtual reality (VR) applications to the particular individual users'.

'I once developed a three dimensional virtual reality application in order to demonstrate to our customers how the product we produce works. I have no particular IT education, but the tool I used was easy to use and there were a lot of examples on the internet. The results were amazingly good and we still use the application in exhibitions and to train users in using the product.

'Our IT systems work relatively well today. I believe there is a good balance in our organization. A user is only involved in what s/he should be doing and nothing else. As a user I am not interested in knowing how the development is managed, measured, etc. I can find that information somewhere if I become interested. I am happy to have appropriate applications for my work'.

4. FINDINGS

EUAD is a balance between benefits and user costs, such as selecting appropriate technology, installing and learning it, programming, debugging and testing. The requirements of users for new technologies, including fast evolving platforms, and location-independent use of applications and cloud services, are showing the limits of the traditional way of delivering and managing the workspace.

Ian Finley, Managing Vice President (VP) at Gartner stated in 2011 that EUAD will account for one quarter of all business software in 2014 (Gartner Report, 2011). He considers that traditional enterprises usually use conventional application development groups treated as cost centers that need to be optimized. He states that "*system integrators and consulting firms threaten the existence of the development*

organization because they can often deliver better applications, more quickly and more inexpensively".

Application development needs to be, transitioned from a cost center emphasizing technology, skills and budget to a business catalyst emphasizing innovation, differentiation and efficiency. In order to succeed with this task EUAD cannot be ignored, instead it needs to be seen as a source of innovation. The advent of cloud-based application-development and deployment platforms make it easier to build end user applications. Such services are e.g. high-productivity Platforms as a Service (PaaS), a category of cloud computing services that allow customers to develop, run, and manage web applications without the complexity of building and maintaining the infrastructure typically associated with developing and launching an application. End-user developers tend to develop insecure applications, despite the fact that many of these platforms provide strong security capabilities.

After interviewing several industry representatives, both end-users and IT experts we wrapped up the findings regarding motivations for EUAD, advantages of EUAD and risks of EUAD in the following conclusions:

Motivations for EUAD:
- Software solutions developed by IT departments are inadequate.
    - o Bureaucracy considering development of new applications (conflicting viewpoints regarding application needs, management approvals, funding, decision making, project driving and miscommunication between end-user and IT professional);
    - o Speed of development, hence IT delivery time considered too slow by end-users;
    - o IT professionals lack commercial skills to deliver and maintain IT solutions to the satisfaction of business needs;
    - o Frustration with perceived poor IT service (e.g. different viewpoints on problems and needed solutions);
    - o End users dissatisfied with software flexibility and fulfilment of requirements, lack of local end-user control;
    - o Limited adaptability of applications;
    - o Low governance (e.g. lack of end-user participation in decision-making and development of new application. Poor introduction of new system)
    - o Lack of service transparency (e.g. end-users expecting that IT department is aware of occurring problems, while IT department expects end-user feedback in order to pinpoint problems).

- Factors promoting EUAD:
  - End-users are increasingly more skilled in dealing with IT solutions.
  - End-users need to complete their job more effectively;
  - End-users are domain experts and envision more tailor made solutions for their needs;
  - Software tools are more powerful and easier to use;
  - Contemporary lightweight web development tools and Web-2 platforms are increasingly available; stiff and rigid decision-making process facilitate end-users to take matters into their own hands.

Advantages of EUAD:
- Increased user productivity;
- Increased user satisfaction; Empowerment of users so that they can take initiative and make decisions to solve problems and improve service and performance;
- Virtual teams that use WEB-2 tools increase their communication and effectiveness.

Potential risks of EUAD:
- Waste of resources through duplication of data;
- Lack of end-user resources and support to complete started EUAD;
- Unstructured ad hoc development and performance draw backs including limited re-use;
- Lack of discipline, including lack of Verification and Validation (V&V), lack of documentation, poor quality of IT support and lack of formal testing, informal projects and informal software engineering;
- No obvious managerial or enterprise control;
- Security risks:
  - Sensitive information more widely exposed; Vulnerability for exploitation by hackers and crackers;
  - Lack of knowledge of security threats (e.g. enterprise computers are usually locked for unauthorized instalments of applications, while cloud and web-based applications are accessible from anywhere);
  - Organizational conflicts and conflict between IT developers and users.

5. GUIDELINES FOR EFFECTIVE INTEGRATION OF THE IT DEPARTMENT ACTIVIES AND EUAD

The continuous technological evolution poses new challenges and opportunities to organizations. IT organizations and organizations with internal IT development need

to adapt to the new realities of EUAD and build support program for end-users. EUAD governance policies need to be developed in order to harmonize the integration of EUAD and traditional IT in order to control impact on quality and security of EUAD. This means that the collaboration between EUAD and IT needs to be planned and monitored. The organization needs to ensure that EUAD are included in the IT strategy and subsequently assessed and tested at each stage of their development. User motivation should be encouraged during the early stages of adoption by management support, training, and task forces to spread best practice and expertise (Fischer et al, 2004). Success stories support successful EUAD in anticipation of actual benefits in the form of working applications. As a result of integration of the IT department activities with EUAD, IT gains visibility into end-user activity and simultaneously empowers end users to harness and evolve their capabilities to serve specific requirements of their business needs.

An effective EUAD strategy needs to be aligned with business and IT strategies. It will involve the following steps:

- The identification of effective end-user applications that meet business needs.
- The optimization of IT investment for reliable and high performing end-user infrastructure and architecture to support business processes and decision-making.
- The development and adoption of a formal and regular process for exchange of ideas between the IT department and end users practicing EUAD
- Support and training of end-users to ensure efficiency in EUAD.
- Empowerment and recognition of end-users for requirements elicitation and capturing of innovation through effective management and coordination of EUAD.

While creating policies and regulations to control EUADs is important, it is equally important to keep in mind that the decision making process needs to be relatively lean and collaborative not to suffocate innovation. Instead of adversarial attitudes, *IT versus EUAD* it is necessary to move to a collaborative, co-creation style i.e. *IT and EUAD.*

5.1 A possible integration solution is proposed

End-users need appropriate user interfaces for their business needs. Software applications need seamless paths for delivering results to the next step in the business workflow. When the IT department is not able to satisfy user requirements regarding speed, responsiveness, flexibility and adaptability it is likely that today's users may start creating their own applications. If there is no integration with the IT department, there is a waste of resources, a growth of high security risks and lack of discipline. On the other hand, end-users are domain experts, holding the business experience that IT

experts lack. An integration of the IT department activities and EUAD is a feasible solution in order to avoid conflicts, and capitalize on end-user knowledge and expertise regarding innovative business solutions.

6. CONCLUSIONS

End User Application Development (EUAD) is an increasingly growing phenomenon of use of IT worldwide in organizations. Its growth has been driven by continuously lower prices of hardware, more powerful and easy to use software, and user demand for control of information resources. End-users are also increasingly more skilled in dealing with IT. Together with advances in IT providing more user-friendly platforms users have become active creators of Web applications and developers of new tools and applications to meet their situational needs, share them with colleagues and combine them into solutions that are more tailored to their needs.

Applications developed by end users support a wide range of information provision, business processing in a wide range of tasks and decision-making activities in the organization. Web development tools and Web-2 platforms are enabling a new kind of end-user development. Increasingly, the skills to develop small applications form part of the job requirements for many positions. The new generation of workforce is both willing and able to create solutions for their everyday needs, avoiding long-lasting and often bureaucratic feature requests to IT departments. End-users are also better domain experts and know exactly how software should support their tasks. Giving end-users, an opportunity to develop their own solutions can save significant costs to the company and unburden the IT department with numerous feature requests. The success of EUAD rests on respecting end users' goals and work habits. At the same time open and trusting communication between the IT department and EUAD is paramount in order to enable integration of new developments into a coherent and tested whole.

There are both benefits and risks associated with EUAD. End users, as specialists in the application context, can be catalysts for continuous process improvements. Risks associated with EUAD could be the creation of tensions and even conflicts between the IT department and the end users, who choose to develop their own applications. These issues can be addressed with openness, trust and a flexible yet formal communication channel, which can be used for sharing knowledge and experience. In fact, some situational development could help clarify requirements and could even be incorporated in the overall IT systems. The proposed solution in this paper is to increase a controlled collaboration between the IT department (technical experts) and innovative pioneering end users (application domain experts) for overall added value co-creation.

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IDENTIFYING THE LEVEL OF AWARENESS OF E-MARKETING AMONG HIGH-STANDARD HOTELS IN CYPRUS

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ABSTRACT

The application of traditional marketing techniques has been widespread within the Cyprus hospitality industry. The purpose of this descriptive study was to determine the level of awareness of the latest performances of the Internet usage among Cyprus four-star hotels and suggest some additional online marketing multimedia techniques for more exploitation of this lucrative tool between the customers and the hotels. This was determined through the collection of questionnaires and the examination of each of the Cyprus four-star hotels websites. Overall, the study has revealed that the level of awareness for both online marketing and Internet usage among the four-star hotels was a moderate one with expanded room for improvements. Thus, based on the survey results the study has recommended a list of proven Internet tools through an extended utilization of the online distribution systems that when implemented accurately would meticulously identify the visitors and potential customers, enhance online marketing relationships and allow a more intimate and direct communication between the hotels and their current and potential customers.

Keywords: Internet; Online Marketing; Hospitality Industry; Cyprus.

1. INTRODUCTION

The Chartered Institute of Marketing has defined Marketing as: "The management process responsible for identifying, anticipating and satisfying customer awareness profitably" (2013).

The rising Internet use reveals that marketing campaigns should encompass such a powerful tool and thus exploit the effectiveness of Information technology as a whole. E-marketing is another wave of the future but one that requires cautious, studied steps to ensure one is sending the right message to the right audience at the right cost (Ravi and Kotler, 2012).

Unlike durable goods, intangible tourism services cannot be physically displayed or inspected at the point of sale before purchasing. Like no other industry the Hospitality and Tourism Industry is information-rich with fares, timetables, destinations and hotel availability. The Internet has received significant attention from entrepreneurs, executives, investors, and business observers and many have assumed

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that the Internet changes everything about companies and competition (Mihalic and Buhalis, 2013).

Overall the Internet success is also based on a variety of other paramount elements. The immediate one-to-one or peer-to-peer communication allowed marketing and offering products more precisely to the customers' changing wants and needs. At the same time, the online establishment of reservation systems gave the opportunity for the feedback thus assisting the companies in adjusting products and testing new markets and techniques. The one click hyperlink capability tool, which was created within pages, has increased the speed for searching immediate information. Then customers and companies that operate computers and systems that were different did not prevent them from establishing an Internet communication connection (Mishra, 2011).

The escalating development and effectiveness of the E-marketing dictate a one-to-one communication. To generate loyalty and positive financial outcomes and users need to focus on flexibility, credibility security, and technology. This escalating fact already prevails with those who give the customer a variety of usable, easy to reach information in search engines' websites with information that compare features and prices, that load quickly and are free to all users a chance to name a price, an offer, or even the chance to see a website he personally desires.

E-marketing can include a variety of tools such as a constant communication with email messages, exchange to current or potential customers, relevant information, and eye-catching e-newsletters that would keep them coming back to the website. But, content that is created by users is cindered more trustworthy than main travel and tourism websites (Gheorghe and Sebea, 2013).

Various leading hotel and tourism companies commonly use the method of posting relevant information regarding their products and services within various discussion groups. Interactive information can be identified and indirectly provide the chatters the information that would be of interest to them since the groups and messages are treated by everybody in an ordinary equal way. The construction of a well-designed website eventually reflects the current image and development-pursuing strategy the hotel company aims for. Furthermore, and as an overall method, several short and long-term push and pull E-marketing techniques have initially been utilized by various companies to maximize their exposure on the Web (Crawford, Deale, and Merritt, 2013; Petrevska and Koceski, 2013; Yang and Chen, 2012).

1.1 Statement of the Problem

It is apparent that the Internet development in the last 5 years has been enormous with large budgets being spent and innovative techniques implemented to capture more markets. The purpose of this descriptive study was to determine the level of awareness of the latest performances of the Internet usage among Cyprus four-star

hotels and suggest some additional marketing multimedia techniques for more exploitation of this lucrative tool between the customers and the hotels. Sometimes several companies may have specialized goals with no pre-set marketing campaigns and may not be aware of what marketing options are available for them.

1.2 Purpose of the Study

The study did not aim to identify any level of awareness among the general public. The subjects were owners or managers of 26 four-star hotels located all over Cyprus. The beginning period for the data collection was from the month of December 2013 when due to the holidays all of the owners and managers could easier be located on the premises. More particular, the purpose of the study was to collect primary and secondary data regarding the E-marketing use in the registered four-star hotels in Cyprus to acknowledge whether the level and awareness of their customers and most importantly sales figures have gone up due to the frequent and careful use of this powerful medium.

1.3 Objectives

The specific objectives of the research were to:
a. Define and emphasize the benefits of the Internet.
b. Determine the level of awareness, impact, and usage of the E-marketing including an interactive website design part of a well-organized promotion among the total population.
c. Identify main techniques of enhancing E-marketing in the Cyprus hospitality industry.

Therefore, the precise time needed for the research method was based on the gaps observed and identified in Cyprus four-star hotel websites, mail, or email receiving and interviews completion. Although data received from the Internet soon always becomes outdated, the Internet with the everlasting traditional, still everlasting powerful marketing with its numerous related strategies can become fruitful for the hospitality industry.

2. LITERATURE REVIEW

2.1 Research Literature Review in related areas

E-marketing encompasses many invaluable tools that can be proven lucrative for a hotel company once they are used effectively. Several of the main ones include the

personalized, customized email relevant messages sent to actual or potential customers while providing the marketers with the option of knowing through certain instruments a number of customers that have actually seen the email sent to them (Petrevska and Koceski 2013).

Various leading hotel and tourism companies now commonly post information relevant to their products and services in an informative, educational purpose that can draw the attention, and be more accepted from various groups. The creation of a well-crafted website presents the opportunity for a hotel company to effortlessly and with low cost, to reach any customer without any restrictions on a 24hour basis, seven times a week once a connection to the Internet is feasible. A hotel company's website should replicate the kind of business, the purpose of existence of the site either as an informative, customers' service-orientated or purely as an opportunity to fully use the site as an E-commerce function (Petrevska and Koceski 2013).

The traditional methods based on short and long design basis should accommodate diverse push and pull marketing techniques. These can equally be utilized through the Internet and bring some positive noticeable financial results. Push marketing techniques may include the maximum effective use of search engines, the use of banner ads, pop-ups or interstitials, the hyperlink with special ads called e-promotions, associating to a brand through the e-sponsorship and last by not least the use of the same page remained rich media with streaming media communication directly in the ad provided space by installing software on their system that receives contents from the Webcaster. In this way, they may receive latest offers and discounts form a hotel operator (Petrevska and Koceski 2013).

Consumers can also participate in an event of their choice and then a hotel company can effectively present their messages to pull them in. Webcasting becomes increasingly enticing since the customers need not download any preferred data, but rather immediately transfer data and have them displayed on their screen with the use of pre-recorded information or streaming media (Petrevska and Koceski, 2013).

2.2 Search Engines and Directories

It becomes necessary for a hotel's site to be registered with a number of main possible search engines and directories, thus receiving a maximum exposure and eliminating the possibility of any of the potential customers not to locate the main website of the place. According to the search engines spiders called bots, a hotel site can be found either at the top of a page or even at the end of the other(s) pages. To be positioned high enough on the initial 20 or so a number of initial searches a hotel needs to submit its site together with a small description of fewer than 250 words right under the site's name as found on the search engines pages. If the hotels were not found on the first pages of major search engines, they were promoted from travel portals and thus documented significant sales (Atay, Dilek, Gayler, and Hall, 2011).

2.3 E-commerce

All the activities that pertain to financial transactions, business data exchange and communications with the customers and the suppliers defined today's existence of the E-commerce. This can be separated from one business and a customer (B2C) which is the most popular one. In this scenario, an E-commerce process can become beneficial when a hotel at the outset establishes a clear web presence and gives all the information and sources related to its products and services. It is also within this parameter that a hotel company should strive to excel by bringing the customer through a variety of tactics closer to its offerings. One of the most efficient ways is by the institution of a prompt completion of a requested order and a quick shipping and handling process (Zhao, Truell, Alexander, Sharma, and Smith, 2013).

E-commerce is also an ongoing method between one business and another business (B2B). From a customer's perspective, a transaction with a business (C2B) or with another customer (C2C) can be feasible since companies like those that Priceline.com and eBay.com respectively operate productively within this nature. One of the foremost purposes of a hotel company is to provide the customers the opportunity to collect sought information and complete a reservation. A further classification of E-commerce includes a division to the online-only businesses and the ones that have a web presence and a physical existing space called the bricks and clicks businesses (Zhao et al., 2013). One of the issues that become too important to neglect is the secure and accurate online payments. It mainly depends on the objectives of a hotel company whether to purchase a software solution with pre-established templates or to develop a website with the help of a web designer. Establishing an E-commerce system that would generate fast solutions would require an enduring high-cost staff training program before and after and securing an unremitting maintenance and development program on behalf of the suppliers (Zhao et al., 2013).

Furthermore, an escalating increase of smartphones, laptops, are equipped with Wi-Fi network adapters. Whenever customers or attendees participate in meetings taking place at hotels, they may frequently need to exchange information. The market of the Internet has led to the deployment and production of an assortment of several wireless and the novelty of related services. (Divgi, and Chlebus, 2013)

For a successful implementation of an E-commerce system, whenever information is requested from the customers to seek a purchase or provide an ad; a hotel should seriously be concerned with providing a privacy statement explicitly with an explanation along with an incentive. In addition, the elements of trust and credibility in online reviews are noticeable and considered trustworthy by customers, and may significantly affect their purchasing intention to travel. The issue of trust is of great concern to businesses that wish to engage in E-commerce activities. The lack of providing adequate security of personal or monetary information can prove to be a

major drawback for a business. At the same time, the measurement of quality of the company, or product offerings cannot be measured easily in the same manner as in a traditional marketplace. Moreover, several policy issues of items to be delivered are of immediate concern, since the items can be illegal or prescription that is required in an offline store for a drug, is several times automatically omitted in an online store (Jalilvand and Samiei, 2012).

Several large companies such as those carrying the Secure Socket Layer (SSL) carry encryption or coded programs systems that can prevent anyone from seeing the information once the customer provides credit-card number information. Several of the sites equipped with the SSL such as the VeriSign are well known, provide guaranteed online payments, which have clear privacy policies related to collecting and disclosing information, have established and enlarged their reputation with their customers such as hotels towards influencing the image towards their customers. At the same time, it becomes the task of a hotel to encrypt the information by including an additional firewall protection. (Che-Hui, Wen, Wu, 2011)

2.4 E-Newsletters

It becomes a common practice for the customers to accept a much more personalized, short in description, and more product-orientated information, rather than company-orientated informative e-newsletters send by a company's representative instead of other forms of advertising such as banner ads, interstitials or pop-ups. On the other hand, the other E-marketing techniques which are part of a company's internal marketing programs to promote the brand internally, marketing employee benefits and encouraging employees use blogs and the use of e-newsletters as well (Hamed, 2012).

2.5 Webcasting

On several occasions, there is the need of providing live, pre-recorded audio or video clips to customers and other visitors. These can be done in a variety of ways that can engender profound attention that can bring about more click-through rates such as with the use of rich media, which, as opposed to static banner ads, are equipped with streaming video tours that include audio as well that do not require downloading the files or clips of the hotel company. The non-streaming software may include power presentations of the hotel establishment. Several main examples include the RealPlayer and the Media Player software companies. The drawbacks can include higher costs of establishing and maintaining such programs and may require higher speed Internet connection capabilities, higher bandwidth, and plug-ins, but these can be overcome if the click-through can provide faster return of investment. Additionally, several registered hotel sites like the hotel view.com, which is an interactive video

library of hotels, allow a choice of slower modem connections to faster bandwidth connections. Other ways include clickable banner ads that require information from the users so they could, later on, be contacted by the hotel's representative. (Safko, 2012)

2.6 Email Marketing

One of the strongest ways to achieve product and service awareness through existing or potential customers is with the effective use of the email marketing. In several occasions, marketers need to be aware of the prevailing mailing lists that they purchase or rent since some may be outdated and some may not function at all. Emails sent to them provide the option of opting in (officially registering themselves to the site) and opting out (to be removed); in case they choose to be removed from the mailing lists. In this way, the customers can have the preference to commit or not, to several offers, discount deadlines, complete online survey forms newsletters, receive a hotel restaurants' menu recipe among other examples whenever they may feel or not comfortable with. If emails are sent on a permission basis, then they would be acceptable. Otherwise, they would be considered as junk emails, in the same way, that regular mail is sent to a home or to an office address without being requested. This would become detrimental since the customers will most probably block or automatically delete it the next time they receive it in their email box (Gilfoil & Jobs, 2012).

3. METHODOLOGY

3.1 Description of Methodology

Methodology becomes an integral part of research. In this study, Methodology makes use of several tracking methods. Initially, 26 questionnaires were given as surveys to the owners/managers each representing a Cyprus four-star hotel from all the main tourist areas of Nicosia, Limassol, Pafos, Larnaca, Ayia Napa, Protaras and Paralimni (See Figure 1). This was done regardless if some of the hotels belonged to the same group of hotels or chain of hotels. Each of the questionnaires was accompanied by the cover letter explaining the details, purpose and time deadline limit of the survey. It was necessary for the questionnaire to include a human subjects' description, explaining the confidentiality and the right of participating or not in the survey. To collect primary data each of the questionnaires, along with the cover letter were directly handed in either to the managers/owners or sent as an email attachment to their provided hotel email account(s). In certain cases, where managers were not available and had to attend job's related-key meetings, the questionnaires were left in envelopes with an accompanying notice at the main reception offices of the Hotels.

Thereafter, the completed questionnaires were sent back to the researcher's address as requested in the cover letter or were picked up by the researcher from the reception offices whenever the cost and the distance to an operation were trivial and when the time was available. Follow-up phone calls were made to re-establish connections, remind the deadline time limit, and emphasize the optional upon request benefit of an email attachment of the study's results to the manager's personal P.O. Box hotel addresses. That could be accomplished after the finalization of the results of the survey, data analysis and blending of the questionnaires into the research study. In particular cases, the operation and marketing use of some hotels are managed by the largest operator in Cyprus that owns hotels, travel agencies, and cruise ships. Therefore, some of the replies on the questionnaires on these particular hotels were similar, although other differences were later on observed as well. Furthermore, a thorough examination of all registered four-star hotels websites was used as a main point of reference to identify contemporary trends, draw some conclusions, ideas and make suggestions. Other data were also extracted from various websites of the investigated hotels and from imperative supplementary data from the latest issues of Journals and first and latest books editions all directly interrelated to the hospitality online marketing topic. The budget was based on the amount of money spent for the stationery needed to prepare all the questionnaires, the follow-up phone calls and the amount needed for the transportation from the point of origin to the point of destination to each of the investigated hotels in the different cities around the island.

3.2 Research Design

This was a survey with a series of issues and questions to be covered when the questionnaires were created. The research results did not include any manipulation of the variables. The related variables for the intended research were firstly the E-marketing (Independent variable) and the level of effectiveness to the selected four-star hotels in Cyprus (dependent variable). Other secondary variables or factors such as the affiliation of each hotel (Individual, Independent management company, regional chain, global chain, and management company), the location of each, the size of the groups and the volume of revenue were taken into consideration as well. In addition, the location (seaside, inland) of each of the surveyed hotels and whether that had affected their level of online presence. Another secondary variable is the identification of the size of the groups in each of the specified regional or global hotel chain and the connection with their E-marketing activities. Lastly, the design included the intention of whether E-marketing has had a direct or indirect liaison with an approximate volume of recent profit projections for each of the surveyed hotel companies.

3.3 Subjects

A total population of an accessible population of 26 four-star hotels' executives all over the 7 main Cyprus cities and regions was chosen to identify the importance of investigating their separate characteristics, acknowledge any Internet infrastructure gaps and make any necessary recommendations. In some cases, the questionnaires were further re-directed to other marketing executives as decided by their hotel directors. The majority of the hotels were also identified both through the online directories and through the CTO's directories as well. Lots of valuable time was put aside, and more accurate information was initially received once the head executives of the hotels were tracked down.

3.4 Instrumentation

The first method that was used to assist in completing the study was the use of the 26 Questionnaires to the four-star hotels' owners/managers. The questionnaires were attached along with a separate cover letter. The online questionnaires were created in the form of structured, multiple choice and Likert-scale questions. The content validity was based on the fact that a lot of respondents had shown interest in answering the questionnaire, which made it imperative to consider. In order to receive bigger samples, prolonged questionnaires with extended responses were not sought or avoided. Instead, questions that were more focused on the topic were addressed. Among other, the questionnaires' main aims were to identify the use of certain web features, the extent of which the Cyprus four-star hotels are connected with the Internet, invest in e-advertising, E-commerce activities, produce online publications, skilfully take advantage of the newsgroups and chatroom marketing discovering and repeatedly receiving business with customers through portal arrangements with online companies. Moreover, to identify whether the employees utilize properly the daily Internet activities of fast reservations and follow-up with customers' requests.

Furthermore, extra notices at the bottom indicated a specific deadline notification as a response format. An email reminder had followed up for each of the hotels to ascertain that a reply was to be to be obtained. Specific information such as demographics and data for the employees' level of awareness of the Internet use was requested from all the hotels' subjects (Managers/owners). The data was used to analyze the results, abstract more targeted data and embed the market research questions within the entry form.

3.5 Data Collection Procedures

A 29 question survey was administered to compile the questionnaires. It did not carry any different subheadings to avoid confusion since the E-marketing topic by

itself was somewhat novice to some hotels' executives. All the 26 Questionnaires were sent to all four-star hotels and were distributed in the seven cities and areas of Cyprus in the following order: Nicosia, Limassol, Pafos, Larnaca, Ayia Napa, Protaras, and Paralimni. The dates that the questionnaires were distributed initialized from Monday, December 22nd after 09.30am and until before 1.30pm. Due to the higher influx of domestic tourists coming to the hotels during the Christmas and New Year Eve ceremonies, most of the managers were located at the premises of the hotel around the specified time range. In several cases, the questionnaires/cover letters were given to the reception whenever the managers were in the hotels but had other important meetings to attend. In few cases, when the time was available, and the managers made their daily walk (check-up) around the hotel just before they would come back to their office, were willing to pass from the reception and receive themselves the questionnaires from the researcher.

3.6 Data Analysis

The primary data-questionnaires were collected through mail, in whichever order they were coming to the address provided in the cover letter. In other cases, the results were picked up on a later date at the hotel's reception whenever time and transportation were accessible. The recording of data was extremely imperative since as more questionnaires results came in, the more transformation of data was occurring within the number of Tables and Figures. The Statistical Program for Social Sciences, version 15.0, (SPSS, 2013) was used to analyze the data**.** Under the descriptive statistics adequately two important areas were used for this reason.

Initially, frequencies were used in along with some of the variables in order to extract a number of occurrences. In addition, crosstabs tabulation method was used as well, to make comparisons among certain variables where appropriate results were conducted. Secondary data, from the investigated hotels' various websites, were extracted and from the latest issues of academic Journals. In addition, first and latest books editions were immensely used all associated with the hospitality online marketing topic.

3.7 Limitations

The main limitations that existed in the distributed survey were as such:
1. Not all the surveys that were promptly sent, either as an email attachment or given at the Front desk, were received by the deadline.
2. The immediate reaching of the hotel managers or owners was not always possible.
3. Not all hotel owners or managers were familiar with all the new terms on the Internet.

4. RESULTS

4.1 Evidence

The purpose of this descriptive study was to determine the level of awareness and use of the latest performances of the Internet usage among Cyprus four-star hotels and at the same time to suggest additional marketing multimedia techniques for more exploitation of this lucrative tool between the customers and the hotels. A survey was divided into 29 diverse questions (multiple choice, short filling the blank and some based on the Likert scale. All surveys were distributed to 26 hotels in which a high response of 22 responded positively in completing all or most of the part of the survey. At the same time, a thorough investigation of each and every registered four-star hotel has presented some necessary evidence to extract results from. It was not the purpose of the study to analyze the data from a web, graphic designer or copywriter's point of view solely, but as a holistic, more useful approach for the participated in the study hotels.

4.2. Unanticipated Results: Surveyed Hotel websites

According to the thorough examination of the surveyed four-star hotels websites, important and useful information was initially revealed from certain areas such as the online marketing performance of each that can be utilized and calibrate. Important information is the fact that not all the four hotels that belonged to the same group of hotels identified themselves as such. Interesting enough was the piece of information that from the total number of surveyed 26 hotels, 11 identified themselves as Independent hotels whereas, from the rest 15, only 3 of them identified themselves as belonging to a regional or global chain. This probably reflects either the lack of standardized objectives applied to the chain of Hotels or to the amount of necessary flexibility that is provided by the hotels. An additional thorough discussion follows in the next session as well.

Favorable Data that were extracted presented the following:

- The majority of websites were registered with largest reservation universal sites (i.e. Orbitz, Travelocity, Expedia). Although some hotels did not present any photo, it is encouraging for the loyal customers to know the Hotel they have last visited could easily be found on these sites as well. Using reputable online reservation companies is definitely an additional effective tool for further building the brand positioning and image and ascertains a vested interest.
- Some present comments and reviews in other online reservation directories.

This is one additional tool that can build credibility since a comment made by a customer who actually visited the hotel makes it more acceptable from another user than a detailed description given by the hotel for their facilities which may more presumably end up as less factual and more favorable to the hotel. Few hotels offered Internet reservation offers and the online option of printing out the hotels' brochure.

- Several of the surveyed hotel companies depended on the expertise profile of other companies.
- Several of the surveyed hotels depended on the reputation of an Internet design and advertising company or other multimedia marketing companies to achieve an enhanced balance of an attractive website design and a consistent E-marketing approach.
- Several of the Hotels made use of plug-ins and the features of a camera. In many occasions where the online attempt to a hotel's side was successful, several internationally well-known plug-ins from a top floor wide angle online cameras were commonly provided after the user installs them in order to obtain visual virtual tours benefits of the hotel's facilities.
- A majority of the surveyed Hotels' online directory use presented less number of inconsistencies. Due to the overdependence to online hotel directories, the minority of the Hotels that did not create their website had presented a number of other inconsistencies. While investigating the reservations availability one can identify that many of the hotels present over bookings (some present the exact dates they are fully booked, and to some other hotels travelers had to try a variety of dates until customers may realize that many of these are overbooked for months after the present day). Nonetheless, this element is minimized by the fact that the hotels also projected their own websites either as individual hotels or under the umbrella of a regional or global chain of hotels.
- Not all Websites had achieved the highest rank in the listed search engines. Here it was revealed that the hotels' websites did not receive the highest rank on the following Search Engines: Google, AllTheWeb, AltaVista, AOL, MSN, and Hotbot. The same reasoning applies to the overdependence on the various hotels' online directory. Thus, the rest of the hotels which have had an online presence were still not found in higher rankings.
- Some online Cyprus Hotel directories did not reassure for secure online payments. Although they reassured to be in a 'secure online environment' or that 'no charge is made on credit cards unless penalties are imposed i.e. late cancellations, they did not carry any kind of encryption or coded programs systems before any payment was made that could reassure the customer and prevent anyone seeing the information before the customer could provide any credit-card number information.
- Online hotel directories website follows a steady but mass production approach. Even in the cases where an online Cyprus or foreign (Mostly, UK,

Germany, Dutch) hotel directory followed the mass production approach that would probably prove to be more lucrative for their operation. The present results for each of the hotel, particularly the Cyprus four-star Hotels, are detrimental to the wishful image and positioning that each may long for to project. Same structure, shapes, types of few low-resolution photos on incompatible backgrounds (a restaurant, a swimming an exterior and an air photo), few descriptions together with room availability and rates are common.

- Hotels who kept their website presented less number of inconsistencies. The main hotels which either belonged to a bigger chain or operator or presented a more professional approach seemed to have presented a better alternative for their current and potential customers. The inconsistencies and a variety and accuracy of information are obvious, and the approach is better than the previous mass approach followed by the majority of hotels. An individualistic online presence with an unswerving marketing support can guarantee more positive, long-term results.

4.3 Anticipated Results: Responded questionnaires

As previously mentioned in the research design, several factors or secondary variables were related to the nature of the study. The affiliation of the 26 hotels, which belonged to one of the categories of individual hotel, independent management company, regional hotel chain, global hotel chain or franchisor has shown that the ones who belonged to the larger categories projected some expected results in connection to the E-marketing activity and interest.

As a general note the information that was extracted from the questionnaires as the directors presented, and the found hotel websites were to identify the current status of the online marketing as part of its individual or chain of hotels exclusive campaigns. The recommendations were based on both the websites and the responded questionnaires. The anticipated amount of the hotels belonged to the first two categories of Individual hotels and regional chains. In addition, the location of hotels presented the majority found by the seaside since all of the cities except Nicosia, the capital, is found by the seaside areas.

The purpose of the study demanded that apart from identifying the location of each of the hotels, it was important to spot the website and the number of rooms of each of the Independent or chain of hotels. The notification of the Individual or Chain does not necessarily represent the whole picture. The reason is based on the fact that 7 out of the 11 reported themselves as Independent although they are found in the regional chain category. The assumption that is given here is based either on the amount of flexibility that each of the hotels has had within the chain to adjust to the kind of

customers it dealt with, or to the lack of standardized methods for all the hotels found in the same category.

4.4 Unanticipated Results: Responded Questionnaires

The benefits that the E-marketing presents do not only come from the mere use of it, but also by the use of the Intranet, a web style network that it is for internal use only within the hotel organization, can be spanned and be accessed in more than one location. Several of the respondents projected orally to the researcher that they were not aware of either its use or its immediate benefits. That also justifies the results of not using any type of this system. This becomes a point for immediate consideration for independent or chain of hotels.

As the websites revealed, the main concern is towards raising higher booking amounts, and Intranet does not yet project immediate financial benefit, of which system functionality is anyway not seen by the consumers except the suppliers. An additional Cross tabulation technique was used to categorize the two variables of the type of organization and whether any web traffic system was present. 63% or (12/19) of the Individual hotels admitted that they make a systematic use of a system whereas a 70% or else 7 out of the 10 respondents from the chain of hotels reported the same current use.

An assumption was made here on whether the results were based on the manager's rough estimation since the results wholly projected dispersed numbers for the customers and visitors given separately during a typical week and mostly in rounded up percentage numbers. An online presence of a complete 100% (26/26) of all the websites carried reservation transactions. Before both the Guide to the hotel and other tourist establishments by the CTO and each of the hotel's managers provided the relevant website marketing and other information, only several online hotel directories were the only ways to extract initial data from, thus a Website Support Transactions of a total amount could not have been predicted.

The main reward revealed is the comparisons between the years of 2012 and 2013 in terms of the reservation percentages and whether any website support reservations are apparent. The results showed that there is a slight positive shift upwards with two additional 6% and 7% projected in the year of 2013. It is assumed that a further upward tendency in the last part of the last month of December when the survey was conducted was not included in the study.

Aiming for higher rates of exposure through a variety of planning efforts is the responsibility of every hotel sales and marketing department. This can be achieved with a variety of ways as mentioned in the research study. One way is through direct or indirect, individual or joined efforts of an online publication probably in the form of regular newsletters with other hoteliers or tourist establishments of a projection of the existence of the operations, facilities. The benefit of such online publications is

initially the connection of chain of hotels or related organizations to publicize information common interest to their customers and other information relevant to its operations and at the same time analyze some trends in the market.

In addition, several educational institutions that provide a number of seasonal workers during the summer periods can become the main source jointly publishing some of the online publications. Currently, due to the lack of immediate examples of hotels which have recurrently produced such publications probably made a variety of hotels to be still hesitant towards that direction. Consequently, the results have shown that 39.45% of the respondents responded unenthusiastically to its execution.

The assumption made is based on the close environment that Cyprus Hoteliers operate with fierce competition that still prevents hoteliers establishing immediate strategic alliance partnership with other hotels. It is reported that a 53.8% or 14/26 deal with this kind of partnerships with skepticism. With the Cyprus eminent entry to the European Union, and due to heavier competition this will become more an essential survival tool than a mere alternative. Information was requested from all the hoteliers regarding their own view or rating the status of the hotel's web-presence against a variety of attributes. In the case of rating of Customization, a 33.3% of an above Average level was presented. This is justified by the fact that the websites are still found in the 3rd generation but lean towards the 4th generation where the customers will determine what they wish to see on websites. Nonetheless, a 27.3% of rating their customization as Very Strong cannot be overlooked.

The rating based on the represented against the community is just of 45.5% Above Average. This is a point of later consideration for all the four-star hotels. It becomes the liability of the director to spell out targeted goals towards the needs for a stronger realistic community care. A joint amount of 84% reported an above average (57.6%) and a very strong (27.3%) level of service, customers receive from the web page. This justifies the hard efforts of each the marketing departments they exert.

Although a 42.4% projected their customer's rating of web-presence for the online provided discounts as satisfactory, a 27.3% of the directors gave a non-positive, nonnegative answer of not knowing what their customers' views were. This is one supplementary point for contemplation by establishing a proactive level of acknowledging the customers' wants and needs in advance.

It is finally substantially significant for the survey to contain a question related to the 2012-year that was preceded and the current last December where the survey has taken place. As such, a comparison has shown that there has been no change from the two years 2012 to 2013 on an estimated number of 10 out of 13 Independent hotels, whereas inversely there have been 4 chains of hotels out of the 9 that responded a 4% change. The enhancement is not tremendous, but the shift is optimistically upwards.

5. DISCUSSION

5.1 Summary

The majority of the 26 hotels which responded and used online hotels directories belonged to the web building 3rd generation. Out of the 26 hotels, which presented their own web presence, 7 based their reservations and presence through their main national chain operator and on the international franchise brand name. These 7 hotels significantly projected a higher image for their brand name, although there is no indication whether this would necessarily justify a higher reservation record. All the other favorable attributes mentioned have a direct impact on the main users of 25-34 as presented in the study mainly coming from the western European destinations including Australia and the United States.

The final non-favorable results were based on direct communication and the use of third parties like several online national and international mainly based directories and even with the main Hotel guide produced by the CTO. In the last case, few negligible errors were noticed either on one hotel's name or on three website names. This becomes a major issue whenever the customers depended fully on the guide for both information listed above. This does imply the discontinuation of services of both the online directories and the CTO, but rather the betterment of the image projection for both sides.

5.2 Implications

Within the area of the new field of E-marketing, there is always room for improvement for all the businesses with an aim for higher more lucrative business. The Hospitality online marketing that the study aimed to reach becomes an even more intense field with a lot of variables that need further analysis and research in the near periods.

Within the last few years, there has been a shift in hotel room reservations from the traditional use of travel agencies and hotel chains to an additional use of having customers contacting either the online intermediaries or immediately the hotels or chains. The online intermediaries seek to distribute rooms and generate their own profit through their own websites. It is important to acknowledge that in the US several hotel chain executives acknowledge that the customers who end up calling the chain's reservation center, first look to the chain's website (Carroll & Siguaw, 2013). It is also important to notice that on a worldwide basis by 2015, a large portion of corporate travelers will be spending an average estimate of more than $300 billion. Several online companies like the Expedia.com that belongs to the Microsoft Company has sprung up and dominates a large portion of online bookings.

It is not a paradox to refer to Cyprus online booking activities and emphasize that some of the investigated in the research hotels depend on the foreign tour operators mainly from the UK, Germany, and Russia. According to the results shown in the study, several will still continue to do so for the following year. Nonetheless, several of the hotels and hotel chains started using the online distribution to bring down the costs by partially switching the system of their own websites to a more interactive one that can accept bookings, instead of fully depending on the intermediaries, as they were used to operating. This means a lot of time since customers who visited the Internet can make quick calls directly posting their information and requesting a booking data. Additionally, the benefits can be enlarged by encouraging the customers, who traditionally made bookings only through other sources, to take advantage of it by using the Internet to make their online bookings, In addition, to receive the lowest available rates than making a booking with other intermediaries, collect relevant information for the hotel, and become informed of any upcoming events at the hotel or in the area. As an initial step, several Cyprus Hotels initiated and provide certain online directories to serve the purpose of promotion and bookings. The wholesaling main purpose is to differentiate a hotel form another and manage but only "as a short-term tactic" to convince the customers to switch to them as a more appropriate alternative.

5.3 Further Recommendations

It is important, thus, for the Cyprus hoteliers to observe and acknowledge the benefit that can be gained for their hotels through the advancement that was made with the extended utilization of the online distribution systems that request the users' permission, and are more intimate in communication, transactions and information gathering that has formerly been the case. The consumers are the ones who now decide which topic/s should be included and through which medium. The hoteliers in Cyprus also need to accommodate the needs of mainly the international and domestic customers through a relationship-marketing program.

It is not necessary to overemphasize for an inclusion of various elements for higher customer retention rates. An absence or presence of certain features can determine a further success of a hotel operation. In the current survey conducted in December 2013, several of these features were not asked since the list is a long one to encompass. Several elements cannot be restrained to one list that continually updates itself due to the advancement of technology, but should at least have the following: More animated pictures and use of multimedia, (audio, video, webcams) online brochure request, online cancellation options, providing the option of downloading print documents, use of different languages, virtual tour. In addition, using cookies to capture important customer's personal profile information, enhancing room-availability check and online guest booking, offering the option of press releases and

news, recurrent use of special online promotions, sign-in option, numerous hyperlinks that can redirect to various pages of the main website, and more proper exploitation of online service features (i.e. currency converters, weather reports, maps). Furthermore, hoteliers need to make sure to keep receiving higher targeted email lists and personal information directly from the customers such as email addresses through online registration cards while they browse the hotel company's website through inquiries which may prove to be other alternatives.

Another recommendation is based on improving the ranking and optimizing the position in the registered Search engine optimization and ranking. This is due to the observation that several hotels were not found either in the first or second page of major search engines search results. This presents a lot of obscurity on whether the hotel was registered or existed with the CTO, especially when no printed hotel guide was readily available. Thus, several techniques can be used towards a higher positioning on several channels the customers may come in contact with (Williams, 2012).

Moreover, it should not be every hotel's main dependability to relay their hotels into all existing engines, but as four-star hotels, the main distress could be registering and exposing themselves to other engines as an additional expansion tool. The results showed that few or none of the hotels have not made clear presence either on the first two search pages or even none, of most of the following search engines: AllTheWeb, AltaVista, Excite, Looksmart, Overture, Teoma, or the Open Directory. Checking the competition for the keywords and phrases as presented in the various search engines and other referrals is a step forward. Every page of the website can be regarded as a potential entry point, and results can be extracted from the search engines. Several tracking methods through specified software programs can show where visitors may come from either on hit per page or click through real-time statistics, thus using this as steering traffic and visitors back to your main page even though that search modify their ranking systems quite often (Birch & Karma, 2011).

Tracking visitors would definitely present some valuable results since not only the number of hits a customer made is shown but also whether these customers came from the hotel's campaigns and promotions. It becomes a necessity to identify these customers, the segment they belong into and their changing preferences. Several of these customers will simply pick up information regarding the provided services, and some other customers may take more time until they make a final reservation with the hotel online, or through another source, or even which of the visitors made no response at all (Smutkupt, Krairit & Khang, 2012).

Good analysis tool programs are abundant, promise amazing results such as translating the visits into conversion rates and final revenues, and then reflect them in various reports that can be exported into Excel and Word formats. One of the most successful companies in the US is currently the WebTrends.com that can assist a site to achieve high placements, identify which websites sales came from and eventually

higher revenues (Chaffey and Patron, 2012). As a result, there are several ongoing elements that the four-star hotels should incorporate in their frequently updated websites. It is substantial that the site should present clearly their hotel obtainable services and products along with a tagline. In this way, hotels' sites can skilfully communicate their positioning either with the logo, the content, or the graphics or a combination of these.

In order to accommodate the particular needs of the specific customers in each of the four-star hotel establishments in Cyprus, it is imperative for a website to be translated into an informative, educating, and accompanied with a balance of few reciprocal links. Additionally, a website can become a problem solving, or an entertaining one, or reservation-oriented providing the customers with the necessary tools and guarantee for a smooth financial online payment. Personalized email replies are providing ways for the customer to reach the hotel and are excellent additional channels.

Other elements to bear in consideration is the testimonials; a section that was neglected by the majority of the surveyed hotels. It becomes as reinforcement for a consumer to be able to read opinions and probably see photos of customers who visited the place and remained satisfied. The section will gain more credibility once it includes some non-positive opinions too. A powerful tool is the inclusion of higher resolution photos of the site. The future of the Internet Marketing within the four-star hotel is at least escalating. The future of technology and E-commerce need to be closely watched and observed so that various adjustments can be made for every hotel. Several eminent technological advancements are bound to become a big part of the hospitality industry as well. These are not secluded to just a few, but some next steps include the higher speed connections, wireless and satellite communications that would minimize the mobility of the travelers, provide instant live chat and email service for customized last minute cancellations and travel changing. Establishing and adopting the new technologies correctly could provide an edge, diminish costs and increase productivity. Above all, the current customization and personalization are the main key points of joining together the technology with the people factor. That is the main reason that several companies introduced the electronic customer relationship management (e-CRM) together with social media as a powerful additional tool to build communication, trust, and brand loyalty for an organization's products and services, (Rishi & Gaur, 2012).

5.4 Conclusions

The purpose of this descriptive study was to determine the level of awareness of the latest performances of the Internet usage among Cyprus four-star hotels. E-marketing is not only a search engine optimization and the best utilization of banner creation and placement, or email. It is an effective blend of all of these and more other

elements not included in this study along with the use of an adjusted marketing planning campaign and a long-term program. The suggestion for additional marketing multimedia techniques for more exploitation of this lucrative tool between the customers and the hotels has been accomplished in a large part. Further research should be addressed to the current individual elements of the online marketing and the continuous efforts to join this with the traditional offline marketing.

In addition, a future research should focus to each of the hotels and chains to pinpoint further, whether the various establishments enforced the minimized gaps that were neglected as observed in this study and whether objectives that are more systematic were addressed towards the betterment of this powerful E-marketing tool.

The objectives of the research were to define and emphasize these benefits coming out of the effective use of the Internet and identify the level of awareness, impact, and usage of the E-marketing including an interactive website design part of a well-organized promotion. Finally, the identification of main techniques can unquestionably become the step stone point of enhancing E-marketing in the Cyprus Hospitality Industry once implemented properly.

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THE DEMOGRAPHIC TRENDS OF THE NEW GENERATION IN RELATION TO THE CLUB AND BAR SERVICES: THE CASE OF CYPRUS

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ABSTRACT

It is widely known that consumers' trends in relation to hospitality services are constantly changing, as the sector's operation is changing in terms of the services offered. It is rational for the hospitality sector to be constantly changing, thus people of all ages and especially the new generation seeks to engage in new and diversified services and experiences, as well as to be provided with updated services, based on their personal needs and demands.

Taking this into consideration, the current survey research focuses on examining the demographic trends of the New Generation in relation to the club and bar services, as part of the hospitality service. In more depth, the survey applies these in the case of Cyprus. More particularly, the research attempts to investigate which are the trends and most importantly, what are the demands and needs of the New Generation in relation to the services provided by clubs and bars in Cyprus. It should be noted in this case that the research aims to investigate the topic focusing on people at the age of 18-25 years old. More intensively, it obtains and exemplifies data regarding the topic through a primary survey, specifically with the use of the quantitative research method. Through integration, the research highlights that eventually there are not any specific requirements by young people at the age of 18-25 years old concerning club and bar services. The young generation does not seem to have any unusual requirements regarding the services available at a club/bar operation, as their main consideration is to have fun and be entertained. In this case operations do no need to cope with any changes, although they need to operate in a way that will help them survive competition. Finally, the research concludes that, in Cyprus, club and bar operations have no changes to face in an attempt to meet the demands of the New Generation, still it is mostly required by them with the huge competition.

Keywords: Demographic Trends; New Generation; Club and Bar Services; Cyprus.

1. INTRODUCTION

Within the hospitality industry, the food and beverage sectors play a significant role in the economic development of many businesses. Cyprus, a small island in the Mediterranean Sea, is one of those countries, which is highly depended, generally on the hospitality and tourism sectors in terms of its development, and more specifically on the food and beverage sectors, for its economic growth. Unfortunately, nowadays

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the island suffers from the 'economic crisis' effect, where more and more businesses, because of the lack of clientele, are strained to close down or at least they have to find ways to keep their operations running.

For this reason, the current survey research attempts to investigate through a primary survey the demographic trends of the new generation at the age of 18-25 years old, in relation to their preferences when choosing to visit club and bar operations, as this applies in the case of Cyprus. Through the research, club and bar operations would be able to acknowledge the demands and needs of this group segment, which is eventually the one that can change the nature of their operation services.

2. METHODOLOGY

The survey research conducts a primary data collection method that includes mostly questionnaires. The purpose of choosing this technique is to fulfill the objective of the research in terms of examining the new trends of young people in the age of 18-25 years old in relation to the club/bar operation services, as these apply in the case of Cyprus. Consequently, the study addresses questionnaires at a representative sample of young people in the age of 18-25 years old. The potential participants have been chosen based on their age. Finally, where necessary, the research compares the primary research results with some literature. At first, the survey research illustrates the demographic characteristics of the chosen group to be researched, and then it shifts to the main point of survey, which is to investigate their preferences for club/bar operation services, as these apply in the case of Cyprus.

3. GENERAL INFORMATION OF YOUNG CYPRIOTS

The current section aims to consider the most basic demographic characteristics of respondents in relation to their age, gender, marital status, education, occupation, hobbies and more. It is known, in marketing, that investigating consumers' demographic characteristics helps businesses target their customers in the most effective way, thus helping their businesses survive and in the best case thrive.

Beginning with the main demographic characteristics (Figure 1), the majority of young respondents are in the age of 20 years old (22%), and at the same extent those in the age of 21 years old and 25 years old (16%). The rest of the percentages count for the age of 22 years old (14%), 18-19 years old (8%), 24 years old (6%) and 23 years old (4%).

The importance of investigating the age of respondents in reference to their preferences when visiting club/bar operations, lies to the fact that their personal characteristics, behavior, way of thinking and way of living vary from the age of 18th to the age of 25th. As Eurostat reports, "as people get older, leisure time decreases as the gradual shift to working life leaves less time for leisure" (2011). In addition, as

youngsters become older, they gain more knowledge, experiences, become more mature; hence, they have elevated needs. All in all, there is a 6% of respondents who did not give any response regarding their age, a factor which is incomprehensive.

FIGURE 1: AGE
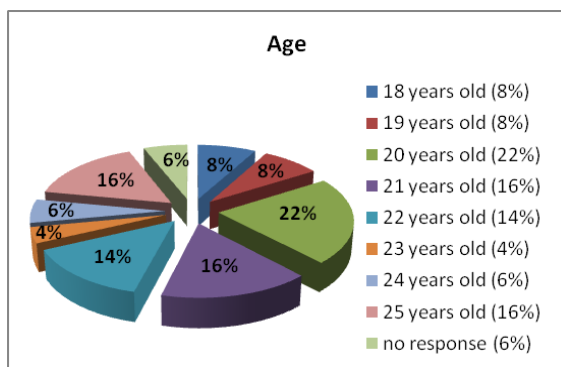
As far as the gender is concerned (Figure 2), more than half of respondents are female (53%) and (41%) counts for male. Yet again, this share of gender, as a demographic characteristic, probably influences the research results, as young women's preferences, would supposedly be different from those of young men. Finally, there is also a (6%) of those who did not give any response.

FIGURE 2: GENDER
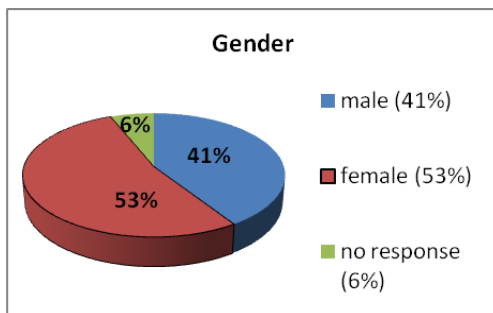
Regarding marital status, (Figure 3) illustrates that the majority of respondents are single (72%) and just (20%) are engaged. Further, it is perceptible the fact that these people in their young age decided to get married (8%). Based on this fact, it can be assumed that the trends of those married youngsters may be different from those who are single in relation to their demands for club/bar operations, a factor that deserves

further investigation. The current research is limited in investigating such a factor, as it is not of its major considerations, but at the same time, it gives motivation for further investigation. Finally, it is needless to mention that none of respondents are considered to be divorced.

FIGURE 3: MARITAL STATUS
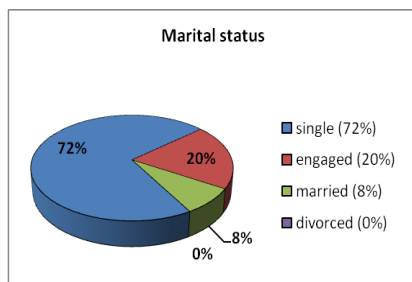
Going further and regarding the educational level of respondents, (42%) has obtained an Undergraduate degree or at least they are still following their Undergraduate studies and (20%) have completed a Diploma degree (Figure 4). It can be said that the effects of these data will possibly depend on the gender of the respondents, as young women have the ability to pursue their studies from High school, whereas young boys have to attend the army for an average of two years. In addition, it is remarkable that (24%) of respondents obtained only a high school degree, a fact showing that a large proportion of the new generation does not attend further studies. On one hand, this allows young people to have more free time, but on the other hand, they miss the prospect to enhance their knowledge and create a career for the future. In addition, there is another aspect: those who choose not to continue their studies, perhaps choose to be employed in terms of bringing in some income. Finally, it is well-reasoned that none of the respondents acquired a Doctorate degree due to the young of their age.

FIGURE 4: EDUCATIONAL LEVEL

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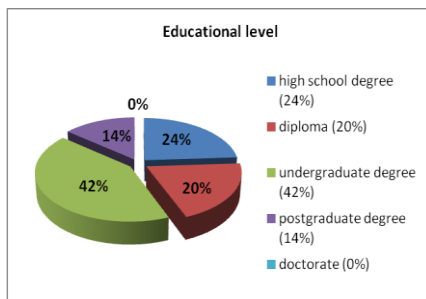
In reference to the question "who do you live with?", more than half of the respondents (58%) in the age of 18-25 years old, live with their parents and a relatively high percentage (30%) are independent (Figure 5). This detail gives the impression that independent young people may have more time and flexibility, thus it is more likely to visit club/bar operations habitually. Finally, a decent percentage (12%) refers to those who live with their own family, as the pre-mentioned data show that some of the participants are married in their young age.

FIGURE 5: LIVE WITH
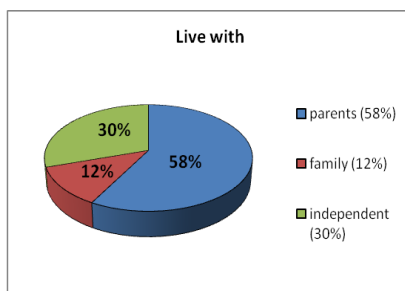
Looking further at the demographic characteristics of the population of Cyprus at the age of 18-25 years old and in relation to their occupation, the majority of them (68%) are Undergraduate students and the rest are being employed (32%) (Figure 6). This is the case where the data prove that an enormous number of young people prefer to work, rather than continuing with their studies. At this point, it is worth to refer to a research supporting that, "the rate of employment of youth Cypriots is one of the lowest in Europe" (Daniel Gros, 2010). Finally, it is remarkable that none of the respondents is a High School student or a soldier.

FIGURE 6: OCCUPATION
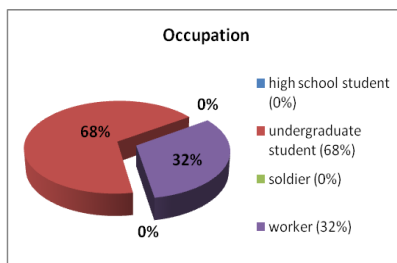
In terms of the expenses that young people have (Figure 7), even in the age of the 18-25 years old, mostly are concerned with personal expenses (55%). A lower percentage counts for those who have bill expenses (30%) and this is logical since there is a high percent of young people who live independently. Further, only (4%) of respondents note that they do not have any expenses. Such factor comes to validate the notion that "young Cypriots continue to depend on their parents' financial or other assistance" (Daniel Gros, 2010). Finally, the remaining (11%) refers to other expenses, which eventually are regarded as personal expenses. Some mentioned expenses are for cigarettes, gas, loans, rent and medical expenses.

Generally, it is outstanding that despite the huge expenses that young people have, still they decide to be independent. Based on this, the research can justify the fact that young people prefer to be employed rather than to continue further their studies. Another arising point is the fact that there is nothing mentioned about expenses for travelling and visiting restaurants, clubs, bars (in general hospitality) operations.

FIGURE 7: EXPENSES
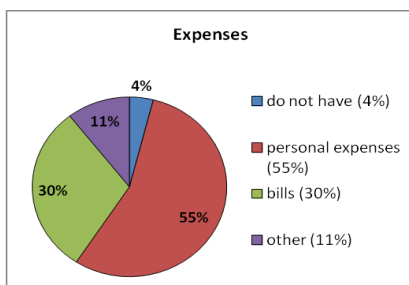
Moreover, in the question whether they have free time to visit club/bar operations, a huge percentage answers positively (91%) and the remaining share (9%) counts for those who do not have free time to visit clubs/bars (Figure 8). Based on the above data, it can be assumed that the research will collect a range of information regarding the personal preferences of young people in relation to the club/bar operation services.

FIGURE 8: FREE TIME TO VISIT CLUBS/BARS
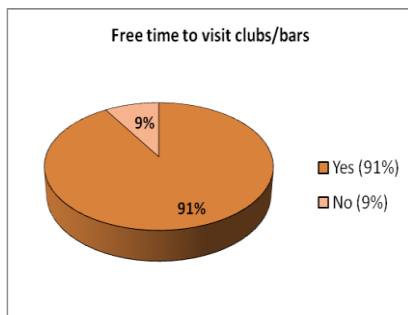
4. TYPES OF CLUB AND BAR OPERATION SERVICES

The current section aims at investigating the actual preferences of the new generation in the age of 18-25 years old regarding the services provided by club and bar operations.

At first, the research refers to participants' personal preferences on the type of operations they choose or wish to visit. Based on (Figure 9), (40%) prefer to visit night clubs mostly, and a lower percentage chooses to visit bar operations (34%). The remaining percentages count for those who have more specific choices; (10%) for rock bars and pubs and a share of (6%) have no explicit preference in terms of the type of club/bar to visit.

Further to the above subject, the research raises the question of which specific Clubs/bars participants have visited so far. Some of them mention that they have visited almost every club/bar in Cyprus, justifying that they like experiencing as many and different operations as possible. This is rational for young people as they are at the stage of exploration based on their age. Afterwards, in general the responses refer to either types of clubs/bars, such as clubs, pubs and rock bars (as revealed and before from data of (Figure 9), or specific names of clubs/bars in Cyprus, to mention few, Scarabeo, Dracula, Zoo, Castle, Diaxroniki, Red, Ammos beach bar. Knowing these specific types of clubs/bars, each one of these has a different concept, a factor that once more confirms that young people are at a stage of exploration. Finally, it is of great significance that some respondents support that they choose to visit any type of club/bar, which has a theme or a concept. This is a factor that creates limitation to the whole research, as it does not present any specific examples and reference to such clubs/bars and at the same time there is the limitation in terms of the motivation for visiting such specific operations, but still such a factor creates prospects for further investigation.

FIGURE 9: TYPES OF CLUB/BARS VISITED
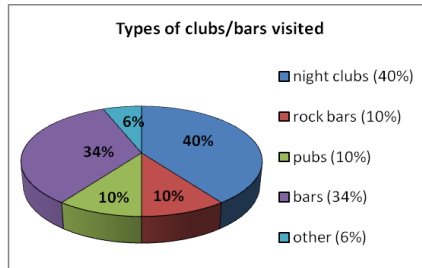
5. GENERAL DEMANDS AND NEEDS FOR CLUB/BAR OPERATIONS

5.1. Frequency

Continuing with the main point of the research, young people are asked how often they visit club and bar operations on a weekly basis (Figure 10). The majority of them (63%), visit clubs/bars more than three times per week, a factor that comes to agree to the previous revealing that young people have as priority their amusement. On a lesser extent, young people visit club/bar operations once every week (17%) or even three times per week (11%), and an even lower percentage (7%) visits clubs/bars twice per week. Finally, there is a remaining percentage of those who just do not visit any club/bar operations (2%). These people may consist of individuals who just do not like going out, or those who have work or household obligations, since a proportion of participants are married and may also have children. Even if the percentage of those who are married is relatively low, there has to be a further study regarding options available for them in order to explore whether there are alternative choices for this segment in terms of visiting club and bar operations.

FIGURE 10: FREQUENCY PER WEEK
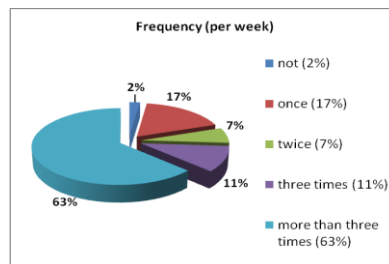
5.2. Occasion

Regarding the occasion that motivates young people to visit any club/bar operation (Figure 11), the highest percentage represents parties (41%). The lowest percentage (24%) counts for special occasions and unfortunately there are not any further details regarding any specific special occasions. The remaining percentage (35%) refers to the segment of respondents who just visit clubs and bars without being motivated by any occasion. The research keeps referring vividly that young people have no specific requirements in regards to where and when to visit clubs and bars, as their main priority is to have fun.

FIGURE 11: MOTIVATION
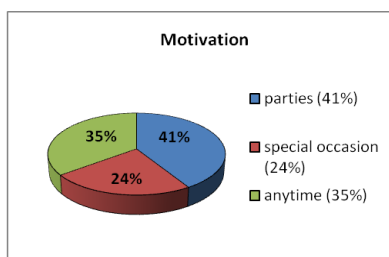
5.3. Length of stay

Looking at how much time young people stay at a club/bar operation (Figure 12), an enormous percentage (90%) stays for 3 hours and the remaining counts for 2 hours (8%) and 1 hour (2%).

FIGURE 12: LENGTH OF STAY
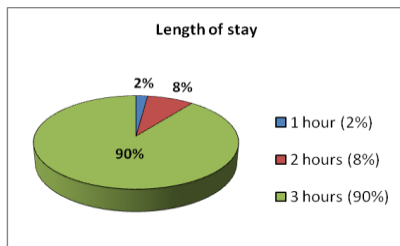
5.4. Season

Regarding the season that young people choose to visit any club/bar operation, (Figure 13) shows that (31%) visit clubs/bars during summer. This is reasonable as summer period is a peak season when young people want to enjoy themselves, be entertained, have fun, interact with other people, and gain experiences. On the other hand, the research supports that the share of the summer season could be higher, but yet again there is not any specific requirement in terms of the season, as the remaining percentage goes for those who visit clubs/bars during winter (25%), autumn (23%) and spring (21%). The results are more or less alike, thus it is obvious that there is not any extraordinary consideration on when young people visit clubs/bars; it seems that season is not their priority in visiting clubs/bars.

FIGURE 83: SEASON
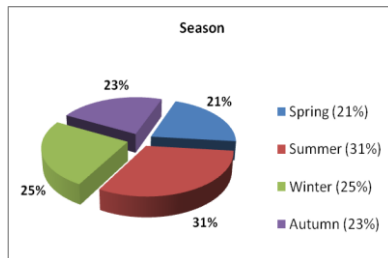
5.5. Accompaniment

In regard to with whom young people visit club and bar operations (Figure 14), the majority (66%) states that they prefer to go with their friends. At a minimum share, respondents visit clubs and bars with their spouse (24%) and a minimum extend with their parents/relatives (9%). It is remarkable that young married people, still choose to go out with their partners rather than with friends. Such a factor points out that young people are mature enough, not only because they have made the decision to get married at a young age, but also because they are willing to keep the family ties and spend their free time with their partner. However, even if it is low (1%), still is unexplainable the share of those who visit clubs/bars alone.

FIGURE 14: ACCOMPANIMENT
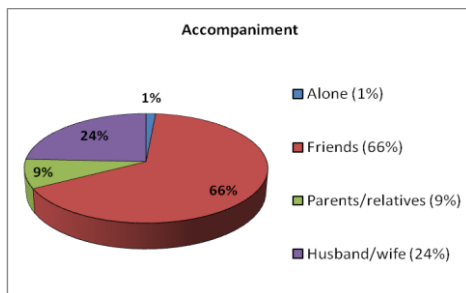
5.6. Source of payment

In search of the source of payment for visiting club and bar operations (Figure 15), young people mostly use their salary (61%) and this is clear as there is a high percentage of those who are being employed (32%, Figure 6). Another (27%) states that their parents pay for their entertainment and the remaining (12%) refers to those who use pocket money as a source of payment. At any rate, the current research comes to the point that young people, even if they are employed, or students, staying with their parents, or alone, or with their own family, they find the ways and the money to be entertained. As Vasos Tsiakkiros (2004) comes to agree, one thing that Cypriots like to do is to spend their money for fun, such as going out in nightclubs, for holidays and for relaxation.

FIGURE 15: SOURCE OF PAYMENT
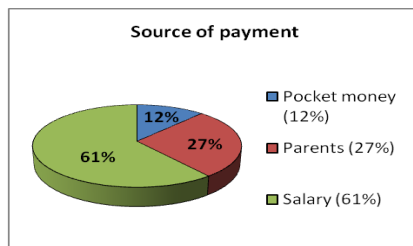
5.7. Source of information

In an attempt to research what source of information young people use to decide which club/bar operation to visit (Figure 16), more than half of the respondents (61%),

rely on word of mouth, meaning on their friends' viewpoint based on their personal experiences. 'Word of mouth' is the most effective method of collecting information and becoming familiar with the services that a business is offering in general. Not only this, but also any kind of hospitality operation in general, relies to this effect in terms of increasing their clientele.

Furthermore, a relatively minimum rate refers to those who are using the internet (25%) in terms of getting information about an operation. Regarding clubs/bars this is not considered to be a common method of collecting information about services, though it can be assumed that social media play an important role in this case, based on which young people seek to look at locations and designs.

Lastly, (11%) of the total represents those who rely on advertising for making the decision to visit a club/bar operation. Yet again in the case of clubs/bars advertising cannot be considered as a principal mean of collecting information, however, the research can assume that young people may use this method in terms of getting familiar with any events organized by clubs/bars, and this is achieved through posters, as in terms of advertising. The remaining percentage counts for the option of offers, as a source of information (3%) a really minimum share, which eventually proves that young people are not pursuing low prices. It is lucid that that none of the respondents uses travel agents or direct mail as a source of information for visiting clubs/bars (0%).

FIGURE 96: SOURCE OF INFORMATION
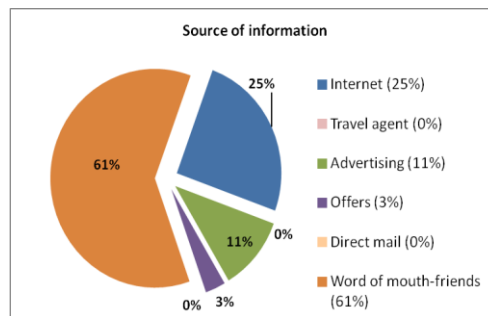
6. PERSONAL DEMANDS AND NEEDS FOR CLUB/BAR SERVICES

6.1. Technology

In the attempt to investigate the trends of young people in the age of 18-25 years old, the current section explores their demands and needs in relation to the services offered by the club and bar operations which they visit (Figure 17). In this section the research mostly presents the data as they have been collected and gives some further

explanation only where it is necessary. In the meantime, the results presented give mostly recommendations for further investigation rather than help to improve operations, based on the needs of young clientele.

At first, the research examines the need for technology as a service provided at a club/bar operation. Most of the respondents answer that they seek the operation to offer TV facilities (31%). The notion behind this need is clearly for entertainment purposes. It is a trend nowadays for bars to broadcast all sorts of shows, football matches and in general sports, as well as all sorts of documentaries and fashion shows, for the entertainment of their customers. On the same level clubs have available music video clips again to keep customers entertained by having them listening to a specific song and at the same time watching the video clip.

The next most preferable service required by young people in the case of clubs/bars is Wi-Fi access (28%), a very limited share considering that technology is emerging and becoming part of people's life, especially for young people. The remaining percentage goes for computer access (15%), magazines/newspapers (13%), books and table games (5%), video games (2%) and play station facilities (1%).

FIGURE 17: DEMANDS/NEEDS FOR TECHNOLOGY
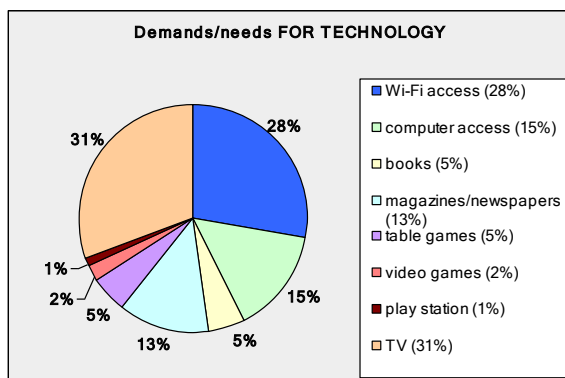
6.2. Entertainment

Further to the specific demands and needs of the young generation, when visiting club/bar operations, (Figure 18) presents several records regarding entertainment and décor. Based on this, (22%) of the respondents have as personal preference the concept of modern lighting. Moving forward, the second most demanded aspect is cleanliness (21%) and at a similar level the modern concept (20%). The remaining

shares count for shows in general and dancing shows in more specific (10%), minimal décor (8%), and the smallest amount counts for classic concept and space (4%).

FIGURE 108: GENERAL DEMANDS/NEEDS (ENTERTAINMENT/DÉCOR)
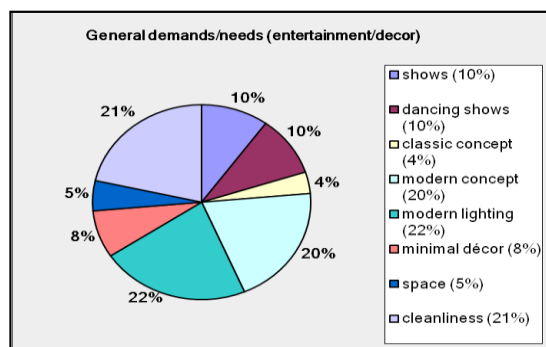
6.3. Services

In relation to the services offered at a club/bar operation (Figure 19), young people prioritize comfort (20%), then quality (18%) and on a lower extent quick service (16%). Furthermore, it is shown that young people inquire staff attitude (12%), accessibility (11%) and communication with other customers (10%). Less of their concern appears to be the interaction with other customers (5%), the formal service (4%), and fewer ask for informal service and staff uniform (2%). As shown, the current data imply diverse perspectives regarding these specific services mentioned by respondents and thus the research limits to give a clear description of what they actually seek to be provided with in terms of services.

FIGURE 19: DEMANDS/NEEDS FOR SERVICES
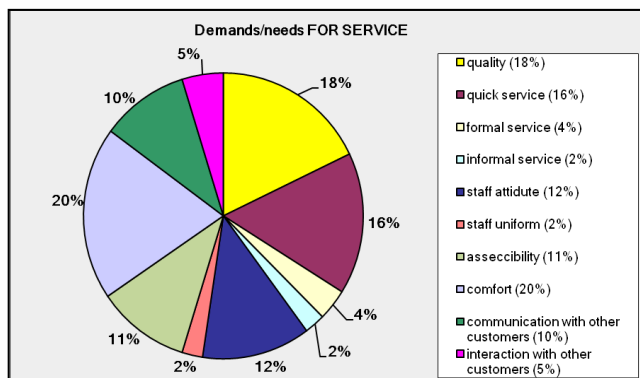
6.4. Transportation

Moving further, there is reference to the transportation means that young people use in terms of reaching club/bar operations (Figure 20). Most of them use a car (87%), fewer use taxi services (11%) and just few use the bus services (2%). The use of car is rational for Cyprus as the majority of young people in the age of 18-25 years old have their own car. However, since the data of the research reveal the use of other means of transportation as well, this is a factor which gives the opportunity for further investigation, regarding a possible need of improving the transportation system in Cyprus, in general. It is well known that transportation in Cyprus is limited, even for domestic movement and this is an alert for apposite organizations. Of course regarding clubs/bars, the use of public transportation is not of great importance.

FIGURE 20: TRANSPORTATION
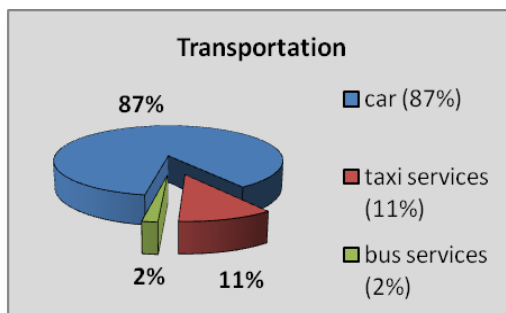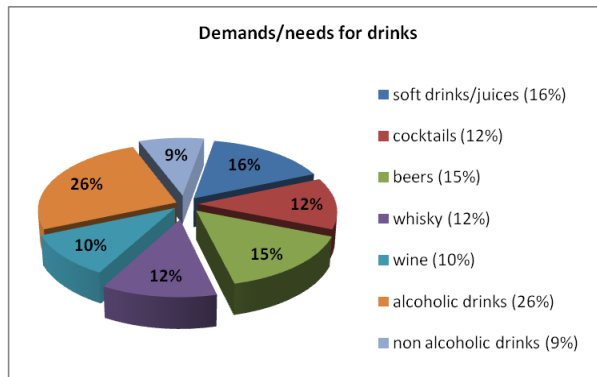

6.5. Food/Drinks in restaurant operations

Another important issue that the research aims to investigate, in terms of the demands of young people when visiting club/bar operations, is that of the provision of food items and drink options. As it appears (Figure 21), most of the respondents have as a personal demand the offering of food, and more specifically finger food (71%), snacks (20%) and cheese (9%).

FIGURE 21: DEMANDS/NEEDS FOR FOOD

Demand/needs for food

- finger food (71%)
- snack (20%)
- cheese (9%)
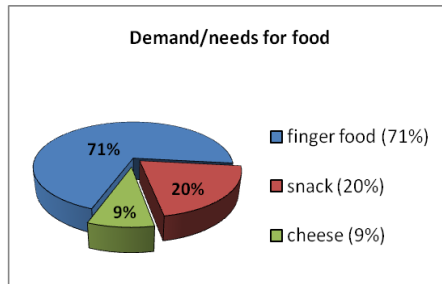
Additional to the food items, the majority place alcoholic drinks in general (26%) as the highest of their demands in terms of drinks (Figure 22). The second most preferable drink choice is soft drinks together with juices (16%). Further to the respondents' desire, comes the choice of beers (15%), at the same extent comes whisky and cocktails (12%), followed by the choice of wine (10%) and lastly by the choice of non-alcoholic drinks (9%). All in all, in both cases of food items and drink options demanded by the young respondents, there are not any unusual requirements. Once again it should be considered that young people choose to visit club/bar operations as a mean of being entertained and having fun.

FIGURE 22: DEMANDS/NEEDS FOR DRINKS

Demands/needs for drinks

- soft drinks/juices (16%)
- cocktails (12%)
- beers (15%)
- whisky (12%)
- wine (10%)
- alcoholic drinks (26%)
- non alcoholic drinks (9%)

6.6. Personal Demands

In the section of investigating the personal demands of young people in the age of 18-25 years old when visiting a club/bar operation (Figure 23), the highest support goes on their demand for low prices (offers) (35%) and then for the choice of experiences (34%). On a less extent, when visiting any club/bar operation, they have

the need to be socialized (27%) and on a minimum extent they seek to be educated and enrich their knowledge in terms of club/bar operations and their services (4%).

The above results come to agree with the entire outcome, as the research sustainably concludes that young people go out to clubs and bars without having any specific requirements on the services offered by these operations. Unlike restaurants, the research suggests club/bar operators to keep their services as they are, since there are no rising demands on the services demanded by young people. However, the concept of the operation of clubs/bars is as such as to keep people, and especially young people away from their routine. The greatest issue with their operation and survival is that of competition.
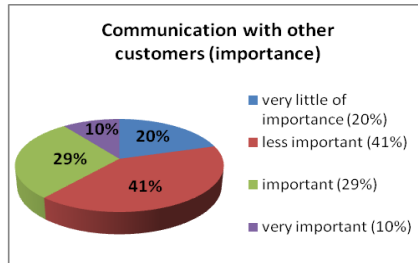
FIGURE 23: PERSONAL NEEDS
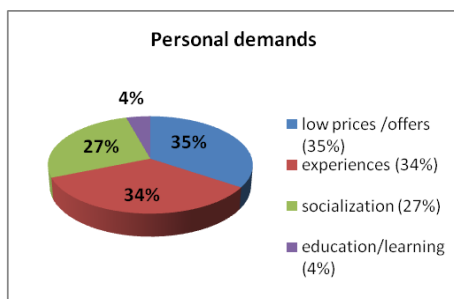
6.7. Communication with other customers

While the previous results (Figure 23), show that young people have as a personal demand to be socialized when visiting a club/bar operation, and this is sometimes their motivation, the current section attempts to demonstrate to which extend this is important for young people. As shown from (Figure 24), less than half of them (41%) support that this is of less importance, while the minority (10%) believes that communication with other customers is of the greatest importance. Between these two extremes, there are those assuming that this factor is of very little importance (20%) and those who find it just important (29%). The conclusion to the above is that, even if young people find it important to communicate and interact with other customers while visiting a club/bar operation, this is not of their greatest concern.

FIGURE 24: COMMUNICATION WITH OTHER CUSTOMERS (IMPORTANCE)

6.8. Staff uniform

A further part to the personal demands and needs of young people is that of the staff uniform (Figure 25). In the question of whether they prefer the staff at a club/bar to wear a uniform, the majority respond that it is not important as they do not mind (57%) and (39%) prefer the staff to wear a uniform, because as mentioned, this is part of the service. Finally, (4%) choose the option of other, without giving any specifications.

FIGURE 25: STAFF UNIFORM
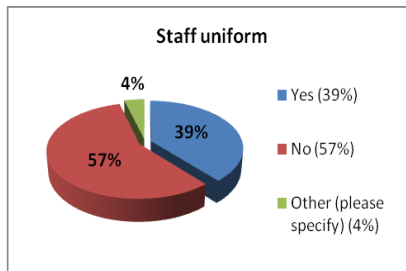
6.9. Importance of services

In concluding to the whole research, young people are asked to notice which they consider the most important services when visiting a club/bar operation (Figure 26). As shown, most of them place quality, service and products/services at the same level (21%). On a similar rate they consider price as important (20%) and last but not least comes time (17%). From these results we can tell that young people care almost equally about all the aspects of clubs and bars.

FIGURE 26: RANK OF SERVICES
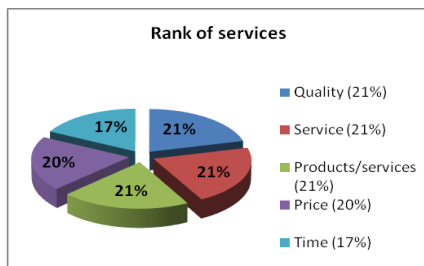
7.   CLUB/BAR OPERATIONS OF THE FUTURE

As a final point to the whole survey research, respondents are asked to give their opinion in terms of how they imagine club/bar operations in the future.

In this field, there are limited options given, but still they can help operations in Cyprus to improve their services, not particularly against the demands of young people, but against competition. The majority of responses state that in the future club/bar will operate under a concept and theme, and this was the common recommendation given most of the respondents. Other perceptions refer that operations will be more pleasant, upgraded and more of quality in terms of the products offered, providing alternative choices and better prices. On the other hand, some others imagine that club/bar operations will not change in the future or they will remain at a medium range, without any improvements. It should be noted that just one of the young respondents mentions that club/bar operations will have refrigerating services nearby the sitting table, and this is a change to the services of the club/bar operations. Beyond the above, it should be noted that the majority of respondents did not give any answer.

8.   CONCLUSIONS AND RECCOMMENDATIONS

In reference to the whole survey research, the general conclusion is that young people, when visiting club and bar operations, have lessened their expectations. The main consideration when choosing to visit a club/bar operation is that of socialization and entertainment. It is pointed out that they do not have any extraordinary demands and needs when visiting clubs/bars in terms of the services available, neither in terms of accessibility, design, and concept, nor in terms of food/drinks and equivalent services. The motivation and choice lies exclusively to the personal lifestyle, personality and preference of each young individual. The new generation's demands in terms of club/bar operations are ordinary as they just need to have fun. However,

the most significant factor based on the whole research is that, regardless young respondents' demographic characteristics especially in terms of gender, marital status and economic wealth, still they choose to visit club/bar operations. Nevertheless, there is evidence showing that in some ways they ask for offers to be available for them, but still this is not of their greatest concern. The overall research comes across a significant variation of information regarding the demands and needs of the new generation in Cyprus, in relation to club and bar services, but without generating any explicit and detailed justifications and descriptions.

All in all, the research concludes that there are various limitations and this is evident as the concept of the operation of a club/bar does not involve any extraordinary changes, especially in the case when the customers are young people in the age of 18-25 years old; the concept is just to give the choice of going out and having fun.

Concerning the viewpoint of youngsters in terms of the future of club/bar operations, responses reveal that they will either be operating under a specific concept or they will remain at a medium range. Nevertheless, and despite the above, the major concern of the club/bar operations is their survival as the major problem they face is that of competition. As a conclusion, club/bar operations, which attract or attempt to attract young Cypriots, can just retain their services at the required, for young people, levels.

As far as further recommendations are concerned, there is a number arising on the whole research, which refers to further investigation on:

- The demands of young married couples, with children on not, in terms of available club/bar options for this subgroup of customers.
- A possible need for the improvement of the transportation system in Cyprus.
- More specific descriptions in regards to the types or even names of club and bar operations that young people visit or wish to visit and more importantly the motivation of their choice.

It should be noted that further research exists, where other sectors of the Hospitality, as well as the Tourism sector, are concerned. These are as follow:

1. The Demographic Trends of the New Generation in Relation to *the Accommodation Operation Services*: the case of Cyprus. (The Cyprus Journal of Science, 2011, Vol.11, pp.117-147).
2. The Demographic Trends of the New Generation in Relation to *Restaurants*: the case of Cyprus. (The Cyprus Journal of Science, 2013, Vol.11, pp.83-107).
3. The Demographic Trends of the New Generation in Relation to *the Travel Services:* the case of Cyprus. (The Cyprus Journal of Science, 2015, Vol.13, pp.53-83).

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