The Role of Entrepreneurship in National Income Formation (In Developed Countries and Less Developed Countries)

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Abstract

The aim of this study is to investigate the difference in National Income variances between developed and less developed countries (DC&LDC) according to the level of Total Entrepreneurship Activities (TEA). In addition, it was aimed to explain the relationship between TEA, National Saving (NNS), Taxes Rate and National Income (GNI) among the under study countries. Identifying the most important effective factor on National Income among Entrepreneurship, National Saving and Taxes, beside these aims, total results have been compared quantitatively which are parts of the aim of the present research. The method in this research is co relational quantitative methods, and data has been collected from 21 countries and in two groups of DC& LDC, that are member of Global Entrepreneurship Monitoring (GEM) at time periods from 2001 up to 2009. In order to test the theoretical model of the study and hypothesis, bi variants correlation analysis, Pearson Product-Moment Correlation Coefficient and multiple linear regressions (stepwise method) and the two-way between groups analysis of variance (Two-Way ANOVA) with help of SPSS (11.5) were used in this research. Results of the study showed that 33 percent of the variance in GNI is explained by factors which are included in the empirical model as predictor of the GNI, also results showed that there was no significant difference in GNI between DC and LDC according to the level of TEA. In other words, there is a similar impact of TEA on GNI between both groups of DC and LDC and there is no any difference in their variances, but higher the GNI, higher TEA in DC whereas, higher the GNI, lower the TEA in LDC.The empirical model in this study showed that 16 percent of total variance in GNI is uniquely explained by Tax whereas 13 percent of total variance in GNI is uniquely explained by TEA. This study found that in both DC and LDC, NNS had lower exposure rather than Tax rate and TEA

Keywords: Total Entrepreneurship Activities, National Income, National Saving, Tax Rate, GEM.

1. Introduction

One of the major challenges in every country is improving the per capita national income. The tax rate on work, saving, investment, risk-taking and entrepreneurship, these are the activities that increase national income. Particularly in the concept of "national income" framework, it is believed that investigation of just one of factors in creating national income in a country, make the role and significant of considered variable more highlight. Therefore, in the present research, among different varieties of effective factors on creating and rating national income, only three factors simultaneously have been considered to investigate properly and precisely the role of entrepreneurship beside and simultaneously will be considered in general with other mentioned factors which have role in creating national income in selected countries and total comparison in the field of the role of entrepreneurship in national income between two groups of developed and less developed countries has be shown , and also information which is including a wide scope of developed and less developed countries and this model has a high ability of generalization (to extend the use of it). There are many researches for each of these concepts individually, but investigation of these factors simultaneously in one research is so rare. Therefore, the present research is the first one at this level up to now. Its result could be first used by studied countries and then by other countries policy makers and future researchers, because these countries are selected among different countries with different social and economic levels, so, the result could be as a model for others.

2. Literature Review

Carl shop (1940), in a descriptive research design with the title of" Effect of taxation on national income", refers to the tax system may affect the growth of the national income through its effect on consumption or investment. He also tried to show that "National income" can be produced by either consumption or investment. His investigations show that, it certainly does not follow that there is no change the net effect of which would be to increase the national income. But there does seem to be a substantial conflict between short-term and long- term objectives. The net tendency of the measures designed to increase investment is perhaps more obscure, but an initial effect, lasting perhaps over a year or two, might well be to decrease the national income as the replacement measures checked   consumption.

 André van Stel, Martin Carree & Roy Thurik (2005) in a descriptive research design with the title of "The effect of entrepreneurial activity on national economic growth", they investigated whether total entrepreneurial activity influences GDP growth for a sample of 36 countries. They test whether this influence depends on the level of economic development measured as GDP per capita. Adjustment is made for a range of alternative explanations for achieving economic growth by incorporating the Growth Competitiveness Index. They find that entrepreneurial activity by nascent entrepreneurs and owner/managers of young businesses affects economic growth, but that this effect depends upon the level of per capita income. This suggests that entrepreneurship plays a different role in countries in different

stages of economic development.

Bir Bahadur Karki (Dec. 2007) in a descriptive research design with the title of "Role of Entrepreneurship and Small Business in National Development", he tried to highlight the role of entrepreneurship and small business for national development. He also tried to provide some basic knowledge of the entrepreneurship and small business and has concluded that entrepreneurship and small business play vital role in national development for both types of countries i.e. developed and developing countries like Nepal without having entrepreneurship. Government is not able to develop country itself. His data shows the most of Nepalese people are not economically active still now. Therefore, government should be able to address to that types of issues and should able to arrange in restructure as well as supportive programs to those types of people who have entrepreneurship ideas.

Seyed Mahmud Mashhadi (2008) refers to features of "economy with knowledge – orient" in an article with the title of "The role of entrepreneurship in economic and industrial development" and considers to entrepreneur as a main stimulus. He also refers to the results of a research work on entrepreneurship in Iran and its economic and industrial effects, and concluded that considering to cultural level, social relations, educational system, kind of governmental supports, social substructures, access to risky investments, business skills, and technology level, entrepreneurship level is do different between different countries. Although growth of entrepreneurship activity develops national economy of each country but this relationship is not a linear relationship with equivalent slope. His investigations show that in those countries which have suitable substructures and supports, the law of spiritual ownership is obeyed and a considerable expense is consumed in research section and research and development sections (R&D). Entrepreneurship has an upper level according to opportunities. In those countries which import developed industries (High technology), entrepreneurship level often down and entrepreneurship activities form according to necessities.

Variables and the model which shows the relation between research variables:
In general the research variables according to their identity which accept are all quantitative. Variables also according to the role which play in the research are as follow:
A) **Entrepreneurship**: (Independent variable), total Early-Stage Entrepreneurial Activity (TEA):
 In order to measure this variable there are numbers of indices, but this study employs the TEA index which is based upon the Global Entrepreneurship Monitor's (GEM) data. TEA has been an important contribution to our understanding of what constitutes entrepreneurial activity, first by providing a broad measure of entrepreneurial activity that takes incorporates all parts of the process of starting a business, and second, by providing consistency and a standard for the measure. According to GEM definition, the TEA rate is the proportion of people aged 18-64 who are involved in entrepreneurial activity as a nascent entrepreneur or as an owner-manager of a new business. The TEA includes individuals in the process of starting a business and those running new businesses less than 3 ½years old. These rates are highest for the factor-driven economies, and decline with greater development levels.

B) National saving (Independent variable): Net National Saving (Current US $)
In order to measure this variable we used the Net National Saving (NNS) data provided by World Bank. Net saving that is, saving after subtracting depreciation on existing physical assets. Net national saving can be divided into two components: saving done by the private sector and saving done by the government.

C) Tax rate (Independent variable): Taxes on Income, Profit and Capital gain (percentage of total tax)
In economic terms, tax transfers wealth from households or businesses to the government of a nation that would leads to an improvement in national income. Taxation is almost never a simple transfer of wealth. The most important issue in taxation is how to minimize the loss of economic welfare through taxation and also how a nation can perform redistribution of wealth in the most efficient manner. To measure this variable the Tax Rates data provided by World Bank is used.

D) National income (Dependent variable): GNI per capita (current US$)
J.M.Keynes, a famous economist defined national income as follows. "National Income is the money value of all goods and services produced in a country during a year". In order for measuring this variable Gross National Income Index is used. These data also was based upon World Bank Data.

Table 1: Dependent and independent variables

Dependent variable	Independent variable
National income	Entrepreneurship
	National Saving
	Taxes rate

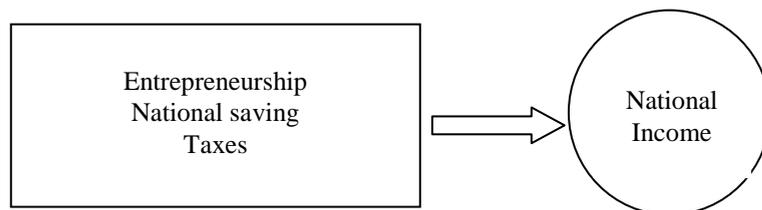Following model also shows the relation between research variables:

Figure 1: model which shows the relation between variables

3. Methodology and Instrument

In the present research, library resources have been used to provide theoretical base and also other resources such as internet, global organizations reports like GEM, World Bank and Bureau of economic

analysis of USA Have been used for investigating the research questions. Collected data are from 30 big and small selected countries that are member of GEM and studies are focused on them at time period from **2001** up to **2009**. After necessary investigations, 21 countries where had completed data regarding entrepreneurial activities, national income, national saving and taxes rate, were selected that all of these countries have given to themselves different levels of national income and entrepreneurship in two groups:.

Group (1), (LDC):

India, Uganda, Russia, Croatia, Hungary, South Africa, Argentina, china, Brazil.

Group (2), (DC):

Italy,Japan,Belgium,Denmark,Germany,Sweden,Greece,Israel,Netherlands,Australia,Norway,USA.

Moreover, the method in this research is co relational quantitative methods, and data has been analyzed with SPSS (11.5). The relationship between independent and dependent variable is studied in detail. And at the end total comparison has done between the results.

Basic Objectives of The Study

The purpose of the current study was to investigate the difference in GNI variances between developed and less developed countries according to the level of TEA. In addition, it was aimed to explain the relationship between TEA, NNS, Taxes Rate and GNI among the under study countries. Identifying the most important effective factor on national income among entrepreneurship, national saving and taxes, beside these aims, total results have been compared quantitatively which are parts of the aim of present research. Therefore, its subject is in the field of macro economy.

Research Hypothesis

Primary Hypothesis: There is no any difference in GNI variances between developed and less developed countries according to the level of entrepreneurship.

Secondary Hypotheses:

First hypothesis: There is no any relationship between TEA and GNI.

Second hypothesis: There is no any relationship between NNS and GNI.

Third hypothesis: There is no any relationship between Tax and GNI.

H0: r = 0 (There is no significant correlation)

H1: r ≠ 0 (There is significant correlation)

Considering to the mentioned points, research questions are as follow:

Research Main Question:

-How is the role of entrepreneurship in the rate of national income in selected countries?

Research Secondary Questions:

1. Is there any significant difference in GNI variances between developed and less developed countries according to the level of TEA?

2. To what extent the factors included in the model as predictors of GNI can determine its variances?
3. To what extent total variance in GNI could be uniquely explained by each predictor among the developed and less developed countries?
4. Among the factors included in the model which one is determined as most important predictor of GNI?

4. Data Analysis Method

In the current study, In order to test the theoretical model, quantitative co relational method is employed to investigate the relationship between TEA, NNS, and Taxes rate and GNI among the developed and less developed countries. In the first step, bi variants correlation analysis describes the strength, direction and assessing the significance level of the linear correlation between two variables. These features will help us to test our hypotheses. There are numbers of different statistics available from SPSS in order to test the hypotheses, but depending on the level of our measurements all of which are in interval level we used Pearson Product-Moment Correlation Coefficient to test secondary hypotheses. In order to test the theoretical model of the study, and to compare the differences in GNI variances between developed and less developed countries according to the level of entrepreneurship, the multiple linear regressions (stepwise method) and the two-way between groups analysis of variance (Two-Way ANOVA) were used in the second step. In the table provided by Pearson product-moment correlation coefficient there are a number of different aspects of the output that should be considered. Herein, the first thing to consider is assessing the significance level to test the hypothesis. If the Sig. value is less than 0.05, then with 95% confidence there is correlation between two variables and consequently the Null hypothesis is rejected and the alternative hypothesis is accepted. If the Sig. value is less than 0.01, then with 99% confidence there is correlation between variables and again Null hypothesis is rejected. Finally, if the Sig. value is greater than 0.05, then we can conclude that there is no relationship between variables and accordingly the Null hypothesis is accepted. In order to determine the direction of the relationships the negative or positive sign in front of the R value will be considered. A negative sign means there is a negative correlation between the two variables (i.e. high scores on one variable is associated with low scores on the other) and a positive sign means there is a positive correlation between the two variables (i.e. high scores on one variable is associated with high scores on the other).

5. Results

The relationship between TEA and GNI was investigated using Pearson product-moment correlation coefficient. Table 2 indicates that there is a significant medium negative correlation between TEA and GNI [$r = -0.402$ and $p < 0.01$], with high scores on TEA associated with low scores on GNI. Additionally, the P value shows that with 99% confidence the Null hypothesis is rejected and the alternative hypothesis is accepted.

The relationship between NNS and GNI was investigated using Pearson product-moment correlation coefficient due to the interval level of measurements in both variables. Table 2 indicates that there is no significant correlation between the two variables [r = -0.136 and p>0.05]. The P value shows that the Null hypothesis is accepted and instead the alternative hypothesis is rejected. In addition the value of correlation indicates that there is small and negative relationship between NNS and GNI, that is high scores on NNS associated with low scores on GNI. The relationship between Tax and GNI was investigated and same as previous hypotheses Pearson product-moment correlation coefficient is used to test the current hypothesis. Table 2 shows that there is a significant medium, positive correlation between Tax and GNI [r = 0.448 and p<0.01], with high scores on tax is associated with high levels of scores on GNI. Additionally, the P value shows that with 99% confidence the Null hypothesis is rejected and consequently the alternative hypothesis is accepted.

Table 2: Correlation between variables

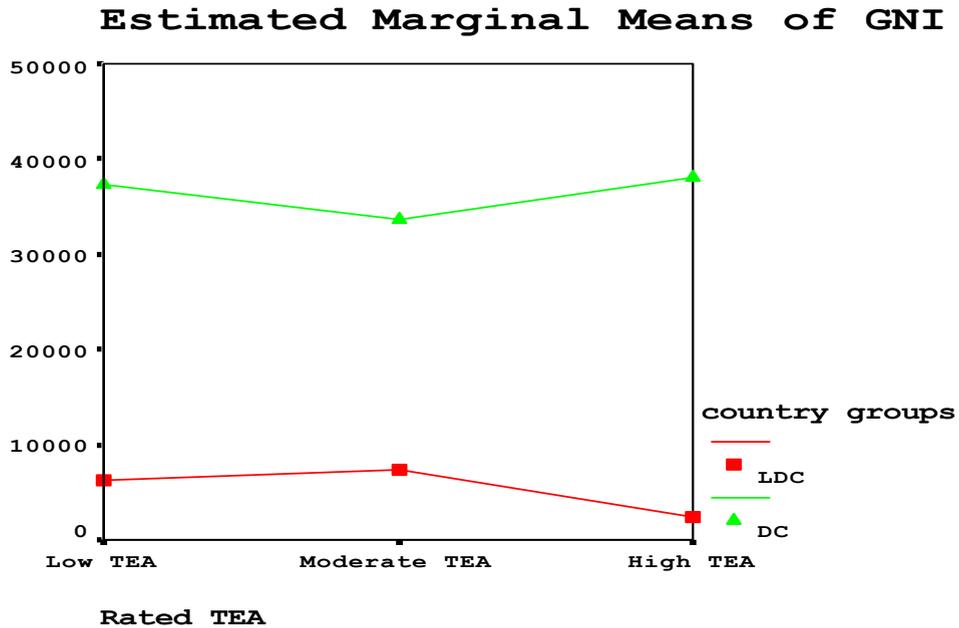| Name of variables	Value of correlation	Significance level
TEA and GNI	-0.402	0.000
NNS and GNI	-0.136	0.071
Tax and GNI	0.448	0.000

Estimated Marginal Means of GNI

Figure 2: Estimated Marginal Means of GNI

In addition, the profile plot in Figure 2 depicts that the higher the GNI, the higher TEA in developed countries. Whereas, higher the GNI, lower the TEA in less developed countries. Furthermore, subjects were divided into three groups according to their level of TEA (Group 1: low TEA; Group 2: moderate TEA; Group 3; high TEA). The same table which is labeled Tests of Between – Subjects Effects in table 3 also shows that there is no statistically significant main effect for ranked TEA [x2.1: $F(2, 174) = 0.280$, $p = 0.756$]. This means that in terms of GNI there is no significant difference in mean scores for low, moderate, and high TEA subjects. In addition, table 3 also indicates that there is a statistically significant main effect for country group [x6: $F (1, 5) = 303.107$, $p = 0.000$] this means that developed and less developed countries do differ in terms of their GNI scores. However, according to the Cohen's (1988) criterion (see appendix B) the effect size for ranked TEA is small and for country group the effect size is large (partial eta squared= 0.003 and 0.635 respectively), additionally, this table also shows that 68% of variance in GNI is predicted by both ranked TEA and country group (R Squared= 0.679). Post-hoc comparisons using the Games-Howell test indicates that the mean score for the low TEA group (M=29843.1, S.D= 15425.4) is not significantly different from the moderate TEA group (M=25339.7, S.D= 19363.1) but it is significantly different from the high level of TEA group (M=15083.1, S.D= 18882.5).contribution that each of the included factors as predictor makes up the model. This model will tell us which factor is the best predictor of GNI in the field of study as well.

Table 3: Tests of Between-Subject Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	43629524984 .603(a)	5	8725904996.9 21	73.759	.000	.679
Intercept	64910466068 .020	1	64910466068. 020	548.684	.000	.759
X2.1	66353063.60 7	2	33176531.804	.280	.756	.003
X6	35858151563 .671	1	35858151563. 671	303.107	.000	.635
X2.1 * X6	594609720.9 96	2	297304860.49 8	2.513	**.084**	**.028**
Error	20584570193 .174	174	118302127.54 7			
Total	16301840540 0.000	180				
Corrected Total	64214095177 .778	179				

a R Squared = .679 (Adjusted R Squared = .670)

Table 6 indicates that the Tax while the TEA is controlled uniquely explain the 16 percent of the total variance of GNI. TEA could be able to uniquely explain the 13 percent of the total variance of GNI while the tax is controlled. Finally, according to table 5 we conclude that accepted variables as predictors of GNI and equation of the empirical model is described as follows.

Y = a + bX1+ bX2

Where,

Y = GNI

a = the intercept (constant)

b = the slope or regression coefficient(X-coefficient)

X1 = Tax

X2 = TEA

GNI = 14986.04+ (403.246)* Tax + (-1067.357) * TEA

(Note: - * refers to multiplication.)

According to the aforementioned equation the optimum combination of the impact factors on GNI is shaped by two indicators of tax and TEA proportionately. The empirical model in this study shows that

16 percent of total variance in GNI is uniquely explained by Tax whereas 13 percent of total variance in GNI is uniquely explained by TEA (see table 6).

Table4: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.573	**0.329**	0.321	15611.65

Table 5: Coefficients

Variables	B	Std. Error	Beta	t	Sig	Part
Constant	14986.045	3533.23		4.241	0.000	
Tax	403.25	62.99	.402	6.402	0.000	0.400
TEA	-1067.36	183.13	-.366	-5.828	0.000	-0.364

Table 6: Squared part values

Independent variables	Part value	Part value squared
Tax	0.400	0.16
TEA	-0.364	0.13

6. Discussion & Conclusion

Here we answer the first question of research to meet the first objective of the study proposed that was to gain insight into the comparison of GNI differences in developed and less developed countries according to level of TEA in both groups of societies. To perform this analysis a Two-Way ANOVA was conducted. Results of the study showed that according to Table 3 there was not a significant difference in GNI in between developed and less developed countries according to the level of TEA [x2.2*x6: $F_{(2, 174)} = 2.513$, p = 0.084]. In other words, there is a similar impact of TEA on GNI between both groups of developed and less developed countries and there is no any difference in their variances. In addition, the profile plot shown in Figure 2 also supports the same result in another way. It depicts that the higher the GNI, the higher TEA in developed countries. Whereas, higher the GNI, lower the TEA in less developed countries.

To answer the second question of research a multiple linear regression was conducted for the selected countries. R square value in Table 4 indicated that 33 percent of the variance in GNI is explained by two factors which are included in the empirical model as predictors of the GNI. However, NNS is excluded from the empirical model.

The Part values are squared for all predictors in order to answer the third question. Table 6 indicated that while the TEA is controlled, the taxes uniquely explained 16 percent of the total variance of GNI. TEA could be able to uniquely explain the 13 percent of the total variance of TEA while the tax is controlled.

To answer the fourth question of research, the Beta column in this table 5 indicates that tax had largest beta value (0.402) that means it as most important factor makes the strongest unique contribution to explain the GNI model. At the same column, the beta value of TEA was lower (-0.366) indicating that it has second unique contribution in explaining the GNI model. In other words, the Standardized Beta values also indicate that if we could increase Tax scores by one standard deviation which is 18.9 according to table labeled descriptive statistics (see Appendix c) then the GNI scores would be likely to increase by 0.402 standard deviation units. At the same time, one unit increase in TEA's standard deviation will lead to 0.366 units decrease in GNI's standard deviation scores. Table (6) also suggesting the same result as well. It indicates that tax could be able to uniquely explain the GNI more than TEA and that is the most important factor which is included in the empirical model.

7. Suggestions

Entrepreneurship plays an important role in creating national income but it should not be imagined that concentrating on entrepreneurship creates national income more. In fact entrepreneurship has interaction with some other factors to make better national income.

Gross National Income, Total Entrepreneurial Activity, Net National Saving, and Tax Rates are the most important global economic phenomena today. This study highlighted the relationship between GNI as dependent variable and TEA, NNS, and Tax rates as independent variables. Amongst the most promising avenues of research, with important policy and research implications are the following:

Implications for policy making

1) This study found that in both Developed and less developed countries, NNS had lower exposure rather than Tax rate and TEA. This means that NNS did not have enough opportunity to contribute in the GNI formation in under studied countries. Thus, it is recommended that the governments as the final arbiter and enforcer of the rule of law and as the ultimate provider of the public goods should facilitate the opportunities for increasing the importance of personal and national saving in every society. It is also recommended that the governments should facilitate the positive developmental outcomes. In addition, policy makers in every society can improve the role of saving in enhancement of national income through focusing on positive sum oriented behaviors in the societies.

2) This study also identified that the most important predictor of GNI is the rate of tax. That is, Tax while the TEA is controlled uniquely explains the 16 percent of the total variance of GNI (see

table 6). Thus, it is recommended that policy makers should consider the rate of tax as most important predictor of economic model. But, policy makers should consider that how to minimize the loss of economic welfare through taxation and also how a nation can perform redistribution of wealth in the most efficient manner.

3) It is also found that after tax rate, TEA was the most important predictor which was included in the GNI model. That is, TEA could be able to uniquely explain the 13 percent of the total variance of GNI while the tax is controlled (see table 6). Herein, entrepreneurship was regarded as an important determinant of national income among the studied countries and it is recommended that policy makers should highly support the entrepreneurial activities during such difficult times that most of the countries affected by the international financial crisis.

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