

## **Do Entrepreneurship and Economic Growth Affect Poverty, Income Inequality and Economic Development?**

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### **ABSTRACT**

The Philippines encountered problems concerning reduction of poverty, filling gaps between income inequalities and achieving economic development. From these ideas, the big question to ask was: “What can be the solution?” Furthermore, entrepreneurship and economic growth had an increasing pattern. Hence, the researchers examined the impact of entrepreneurship and economic growth on poverty, income inequality and economic development. This study used regional data to obtain sufficient number of observations, obtained from official government documents. The regression models followed that of Yanya et al. (2013) which incorporated the theoretical model of Beck et al. (2005) by running regression on cross sectional data and applied a standard Hausman test to choose between Fixed Effects and Random Effects which examined the magnitude and the effects of each explanatory variable to the dependent variables. The results suggested that economic growth plays a vital role on poverty, income inequality and economic development; entrepreneurship has impact on economic development but little or no impact on poverty and income inequality in the Philippines.

Keywords: entrepreneurship, poverty, income inequality, economic development

### **1.1 BACKGROUND/ OBJECTIVES AND GOALS**

The events that occurred in poverty, income inequality and economic development in the Philippines led to a question of “Do entrepreneurship and economic growth affect poverty, income inequality and economic development?” which generated the main objective of the researchers – to examine the impact of entrepreneurship, measured by the number of Micro, Small and Medium Enterprises, and economic growth, measured by regional gross domestic product, on poverty, income inequality and economic development in the Philippines.

### **1.2 METHOD**

To evaluate the relationship of entrepreneurship and economic growth with poverty, income inequality and economic development, the researchers followed the method used by Yanya et al. (2013) which incorporated the theoretical model of Beck et al. (2005) replacing the income quintile of the poor to human development index and instead of using gross provincial product (GPP), the regional gross domestic product (RGDP) was employed.

To measure the dependent variables, the researchers used the headcount ratio, gini coefficient and human development index; the independent variables were represented by the number of establishments comprising of Micro, Small and Medium Enterprises (MSMEs) and regional gross domestic product (RGDP). Due to every three-year release of data for poverty, income inequality and economic development, the researchers used regional data to obtain sufficient number of observations to avoid bias and non-normality distribution of data. Furthermore, the researchers acknowledge that the number of MSMEs does not fully represent the definition of entrepreneurship. However, it could be the nearest approximation for entrepreneurship.

In addition, this paper used regional panel data during the specific points of time from 1997 to 2012 (96 observations) to run a multiple regression. The researchers applied a standard Hausman test to choose between Fixed Effects and Random Effects that would examine the magnitude and the effects of each explanatory variable to the dependent variables.

### 1.3 ECONOMETRIC MODELS

1.3.1 To evaluate the relationship of entrepreneurship and economic growth on poverty, the researchers regressed the following equation:

$$HCR_{i,t} = \beta_0 + \beta_1 \log(RGDP_{i,t}) + \beta_2 \log(MSMES_{i,t}) + c_i + u_{it}$$

where:

$HCR_{i,t}$	=	Headcount Ratio
$RGDP_{i,t}$	=	Regional Gross Domestic Product
$MSMES_{i,t}$	=	Micro, Small and Medium Enterprises
$u_{it}$	=	the idiosyncratic error with mean 0
$c_i$	=	the unobserved time constant characteristics of an individual which is the effect the researchers specifically want to control in the panel data model

1.3.2 To evaluate the relationship of entrepreneurship and economic growth on income inequality, the researchers regressed the following equation:

$$GC_{i,t} = \beta_0 + \beta_1 \log(RGDP_{i,t}) + \beta_2 \log(MSMES_{i,t}) + c_i + u_{it}$$

where:

$GC_{i,t}$	=	Gini Coefficient Ratio
$RGDP_{i,t}$	=	Regional Gross Domestic Product
$MSMES_{i,t}$	=	Micro, Small and Medium Enterprises
$u_{it}$	=	the idiosyncratic error with mean 0

$c_i$  = the unobserved time constant characteristics of an individual which is the effect the researchers specifically want to control in the panel data model

1.3.3 To evaluate the relationship of entrepreneurship and economic growth on economic development, the researchers regressed the following equation:

$$HDI_{i,t} = \beta_0 + \beta_1 \log(RGDP_{i,t}) + \beta_2 \log(MSMES_{i,t}) + c_i + u_{it}$$

where:

$HDI_{i,t}$  = Human Development Index  
 $RGDP_{i,t}$  = Regional Gross Domestic Product  
 $MSMES_{i,t}$  = Micro, Small and Medium Enterprises  
 $u_{it}$  = the idiosyncratic error with mean 0  
 $c_i$  = the unobserved time constant characteristics of an individual which is the effect the researchers specifically want to control in the panel data model

## 1.4 RESULT

### 1.4.1 Poverty Results

The regression results showed that the regional gross domestic product (LOG(RGDP)) (0.0000) was a significant determinant of the poverty at 10% level of significance. While the Micro, Small and Medium Enterprises (LOG(MSMES)) was an insignificant determinant of poverty at 10% level of significance. A zero (0) F-statistic proved that the model is significant at 10% level of significance. The value for R-squared was 0.907378, which meant that 90.74% of the changes in the headcount ratio could be explained by the changes in the regional gross domestic product. This was a clear indication that the RGDP was a significant determinant of poverty. It also showed that the said variable was negatively related to poverty.

### 1.4.2 Income Inequality Results

The regression results showed that one of the independent variables, the regional gross domestic product (LOG(RGDP)) (0.1000) was a significant determinant of the income inequality at 10% level of significance. However, the Micro, Small and Medium Enterprises (LOG(MSMES)) was an insignificant determinant of income inequality at 10% level of significance. A zero (0) F-statistic proved that the model was significant at 10% level of significance. The value for R-squared was 0.931336, which meant that 93.13% of the changes in the gini coefficient could be explained by the changes in the regional gross domestic product. This was a clear indication that the RGDP was a significant determinant of income inequality. It also showed that the said variable was negatively related to income inequality.

### 1.4.3 Economic Development Results

The regression results showed that two of the independent variables, the regional gross domestic product (LOG(RGDP) (0.0005)) and the Micro, Small and Medium Enterprises (LOG(MSMES) (0.0458)) were significant determinants of the economic development at 10% level of significance. A zero (0) F-statistic proved that the model was significant at 10% level of significance. The value for R-squared was 0.702508, which meant that 70.25% of the changes in the human development index could be explained by the changes in the regional gross domestic product and the changes in the Micro, Small and Medium Enterprises. This was a clear indication that the regional gross domestic product and the Micro, Small and Medium Enterprises were significant determinants of the human development index. It also showed that both variables were positively related to each other.

The results from the regression analysis showed that there was a negative relationships between economic growth, and poverty and income inequality. It entailed that a percent (1%) increase of RGDP accounted to poverty could lead to a decrease of 3.3646 and a decrease of 0.0071 to income inequality. Whereas, the analysis revealed that there was a positive relationship between the economic growth and the economic development. It meant that a percent (1%) increase of RGDP accounted to economic development could lead to an increase of 0.0258. Moreover, there was a positive relationship between the entrepreneurship and economic development. Hence, a percent (1%) increase of MSMEs accounted to the human development index could lead to an increase of 0.0906.

The researchers take these results as evidence that economic growth plays a vital role on poverty, income inequality and economic development; entrepreneurship has impact on economic development but little or no impact on poverty and income inequality in the Philippines.

## APPENDIX

Table 1: Hausman Test for Poverty

Correlated Random Effects - Hausman Test			
Equation: Untitled			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	5.65314	2	0.0592

Table 2: Hausman Test for Income Inequality

Correlated Random Effects - Hausman Test			
Equation: Untitled			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	18.009626	6	0.0062

Table 3: Hausman Test for Economic Development

Correlated Random Effects - Hausman Test			
Equation: Untitled			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	18.009626	6	0.0062

Table 4: Regression Result for Poverty

Dependent Variable: HCR				
Method: Panel Least Squares				
Date: 09/27/15 Time: 10:55				
Sample (adjusted): 1997 2012				
Periods included: 6				
Cross-sections included: 18				
Total panel (unbalanced) observations: 96				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	80.88851	47.32678	1.709149	0.0915
LOG(RGDP)	-3.364639	0.725987	-4.634574	0.0000
LOG(MSMES)	-0.892350	4.63857	-0.192376	0.8480
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.907378	Mean dependent var	38.95521	
Adjusted R-squared	0.884223	S.D. dependent var	13.51954	
S.E. of regression	4.600164	Akaike info criterion	6.073113	
Sum squared resid	1608.275	Schwarz criterion	6.607352	
Log likelihood	-271.5094	Hannan-Quinn criter.	6.289061	
F-statistic	39.18644	Durbin-Watson stat	1.762473	
Prob(F-statistic)	0.000000			

Table 5: Regression Result for Income Inequality

Dependent Variable: GC				
Method: Panel Least Squares				
Date: 11/11/15 Time: 22:45				
Sample (adjusted): 2003 2012				
Periods included: 4				
Cross-sections included: 16				
Total panel (unbalanced) observations: 60				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.370907	0.722709	1.896901	0.0655
LOG(RGDP)	-0.007112	0.004219	-1.68573	0.1000
LOG(MSMES)	-0.033467	0.034835	-0.960737	0.3428
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.931336	Mean dependent var	0.431629	
Adjusted R-squared	0.893391	S.D. dependent var	0.042975	
S.E. of regression	0.014032	Akaike info criterion	-5.418398	
Sum squared resid	0.007482	Schwarz criterion	-4.650472	
Log likelihood	184.5519	Hannan-Quinn criter.	-5.118020	
F-statistic	24.54390	Durbin-Watson stat	2.443298	
Prob(F-statistic)	0.000000			

Table 6: Regression Result for Economic Development

Dependent Variable: HDI				
Method: Panel EGLS (Cross-section random effects)				
Date: 11/11/15 Time: 22:55				
Sample (adjusted): 2006 2012				
Periods included: 3				
Cross-sections included: 16				
Total panel (unbalanced) observations: 44				
Swamy and Arora estimator of component variances				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.459571	0.391664	-3.726588	0.0007
LOG(RGDP)	0.025778	0.006676	3.861062	0.0005
LOG(MSMES)	0.090646	0.043765	2.071221	0.0458
Effects Specification				
			S.D.	Rho
Cross-section random			0.088851	0.9617
Idiosyncratic random			0.017743	0.0383
Weighted Statistics				
R-squared	0.702508	Mean dependent var		0.066549
Adjusted R-squared	0.634510	S.D. dependent var		0.030397
S.E. of regression	0.017378	Sum squared resid		0.010570
F-statistic	10.33128	Durbin-Watson stat		1.579044
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.766968	Mean dependent var		0.562683
Sum squared resid	0.254809	Durbin-Watson stat		0.06550

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