

Original Paper

Economic Factors behind Social Entrepreneurship in Bangladesh

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Abstract

Bangladesh has pool of entrepreneurs whereas there are also new establishments; new employment opportunities and so are the income sources. For the better measurement of entrepreneurship characteristics, the growth and different indicators impact on entrepreneurship needs to be identified. Thus this paper tries to find out the key economic indicators of entrepreneurship in the context of Bangladesh. The research is based on secondary research; has used entrepreneurship as a dependent variable proxied by self-employment and seven independent variables—per capita income, unemployment rate, labor force, industrial structure change, capital, human capital and literacy rate. Two regression models have been used encompassing the stated variable data from year 2008 to 2018. In the first regression analysis it has been tried to identify whether the model can be constructed with the overall economic variables with the self employment. At second regression model it has been tried to find out whether there is the explain ability of the variables result in the regression analysis and what is the degree and pattern of the relationship. The research shows that literacy rate and human capital have aligned with the self employment. But all the other variables are not matched with the self employment and could not provide the support for self employment to thrive. And the linear regression analysis shows that per capita income, labor force and literacy rate play the most important role in case of nourishing self employment. Unemployment rate is found as contradictory with the findings in the context of Bangladesh.

Keywords

entrepreneurship, social-entrepreneurship, self-employment, economic indicators, bangladesh

1. Introduction

The study of economic indicators like employment index, gross domestic product, consumer price index, labor force index, etc., has been a crucial factor for the development since the economic revolution of the model countries. Developed countries are having distinctive research on these quantitative factors and different researches on this issue. Till now there are many economic indicators have been identified as crucial but still it is a mystery which indicator plays the most important role in the economy.

Being a developing country in Bangladesh, entrepreneurship has played a major role in the development point table of the world ranking. In different sector entrepreneurship opens a new opportunity to expand the skill and business by which Bangladesh can compete with the other competitor countries. For the overall economic growth of the country entrepreneurship plays a major role, but not individually. Beside entrepreneurship there are different other economic factors which are playing a major role in the economic growth. And these economic factors are also playing a role of controller for entrepreneurship itself. Here, unemployment plays a very deep role in the economic development. Individuals confronted with unemployment and low prospects for wage-employment will turn to Self-employment as a viable alternative (Oxenfeldt, 1943). So, entrepreneurship can make an interrelation with the unemployment. Per capita income can be a booster for the new business establishments. Strong labor force plays a big role for the establishment of business. Government share, infrastructure, policy, rate on inflation capital, etc., also plays a key role to define the nature of the entrepreneurship. Different sector like agricultural, manufacturing and service structure change played an important role for the growth of entrepreneurship. Here in our study we will focus on the both theoretical sides of different authors and the implication or the validity of the theory on the context of Bangladesh.

For a settlement a key indicator that is entrepreneurship is chosen in this study to magnify the growth of the economy because as there are new establishments, new employment opportunities are there and so are the income sources. Hence for the better measurement of entrepreneurship characteristics, the growth and different indicators impact on entrepreneurship is identified. Simultaneously different relevant variables which can make an impact on entrepreneurship will also be focused. An overall relationship between factors and entrepreneurship in the context of Bangladesh will surely focus the true condition of the economy. There are some noticeable facts in the economy of Bangladesh because in recent past there was an economic recession throughout the world. And as the economy pulls out of a recession, output increases by a greater percentage than the rise in employment. And as the economy goes into a recession, output decreases by a greater percentage than the reduction in employment. This is just one example. And with this change in unemployment, it creates a different impact on the entrepreneurship. There are many other different economic variables which are affected by the economy and affect the entrepreneurship. There are many variables which cause the entrepreneurship to

change the rate. But the co-ordination and interdependency of those variables are still vague in Bangladesh. The research paper has tried to attribute some value in this concept.

The fostering reason for this study is based on the fact that there has not been much analysis on the dependency on the economic factors of entrepreneurship. There were different studies on the individual factors but there was not enough research work regarding the one to one effect on entrepreneurship. The variation analysis and interdependency is also undone in Bangladesh. So the entrepreneurship's controller, the key economic variables the interdependency with key variable is still unknown and the pathway of different economic variables throughout the years is not also well constructed and researched. Thus the paper aims to find out the Entrepreneurship dependency on different relevant economic variables.

The paper is basically based on the changing dimensions of entrepreneurship. In the outer countries many people start something on their own whenever they get the chance. This is also applicable for the developing countries. As entrepreneurship has been contributing a lot in their economy that is why the SME sector has been very much under observation of analysts. That is why, with the observation and analysis they have found the exact relevant impact of the key economic variables on entrepreneurship. So this study has tried to emphasize the indicators and the relationship with entrepreneurship. Entrepreneurship is considered as the measurement of the solely individual establishments which is also an important indicator for an economy. Bangladesh is also a country which has pool of entrepreneurs and because of this the microcredit policy was invented. So it will be advancement if the key variables affecting entrepreneurship can be identified. All these theoretical findings are found by different researchers but none of them are studied on the context of Bangladesh. So with the implementation of the data along with the theories side by side will be crucial in addressing the development indicators and their implication, which will redefine the entrepreneurship condition of Bangladesh. Thus the paper intends to depict the exact relationship with different economic variables with the entrepreneurship which can also be helpful to identify the determinants of entrepreneurship.

2. Literature Review

Entrepreneurship and the consideration of risk has always been the subject of study in the recent decade. The associations with the economic indicators have been used as the tool to find out the dimension and the changing diversity of entrepreneurship.

The countries like Bangladesh are deeply depended on the labor force participation and the unemployment problem reduction in case of leveraging up their economic growth (Khuda, 2012). Author mentioned the key findings based on the sector. He focused on the labor force growth and the participation based on the growth, the employment status and the unemployment status of Bangladesh (1999-2000, 2002-03 and 2005-06). The findings indicate the contribution of agriculture in GDP, population increase in the recent years and comparative labor force participation (Male female comparison) and the sector wise growth for unemployment.

Rocha and Ponczek V. identified the effects of adult literacy of individuals and income in Brazil. In Brazil, it was estimated that the return to education for Brazilian youths and adults at several education levels are of particular note (Fernandes & Narita, 2001; Fernandes & Annuatti, 2000). Blunch and Pörtner (2005, pp. 1-10) examined the effect of adult literacy programs on the living standards of households as measured by per capita spending. Basically the study was designed to make a link between literacy and return. Where we find that literate people earn 22.4% more than illiterate people, men are earning more than woman and experience and literacy increase the wage rate. Here they shows a model where they considered the main variable as Income, gender, complexion of children, age, employed, private sector, and working Hours/month.

Nkurunziza (2012) had also analyzed the relationship between income per capita and entrepreneurship. The data gathered in this paper is based on Africa and this paper shows the relationship between income per capita and entrepreneurship as U shaped and the increment of entrepreneurship above the income level of \$7300 (Income per capita). The paper identified the theory of two kinds which are opportunity entrepreneurs and necessity entrepreneurs based on type of income level (Wennekers, Van Stel, Carree, & Thurik, 2010, pp. 167-237). As the income level raises the number of entrepreneurship also increases. In the model the main variable used to find the interrelationship are entrepreneurship (firms per 1000 working-age people), number of full time permanent workers per firm Unskilled workers (in %), firms providing training (in %), and years of experience of top manager in firm's sector.

Clogg and Sullivan (1982) discussed about the underemployment process with the labor constitution. The main theme here to be noted is the construction of LUF (Labor Utilization framework) along with the timeframe. Basically they have shown a model to consider different factors of LUF and constructed a linear model to make them considered along with their weights. It is an objective indicator to measure the underemployment of different time. In the model the author used five variables: Age, sex, color, time and LUF (sub unemployment, unemployment, low hour, low income, mismatch and adequacy).

Meager (2004) constituted two hypotheses where one suggests that the unemployment automatically pushes people to be self employed. And the other hypothesis is about the economic activity which acts as a pull factor for self employment. To make a base point he considered some factors to relate unemployment with self employment like changing environment, sector change, changing aspiration, changing strategy of employing organization, government policy and economic change. The data illustration from OECD from the year 1970-88 and the charts failed to identify any clear relation between these two elements. Later on for the mathematical convenience a simple model is constructed for the inflow of the self employment, the outflow from self employment, the level of self employment at the end and the unemployment at the start of the period. The equation here is also different; two different equations are constructed (for inflow and the outflow). In this simple linear relationship the author found that the stock of self employment is a function of current employment rate, lagged

employment, and a time trend. The conclusion draws that the behavior of self employment research works will not be depended on the unemployment and self employment relationship.

Noseleit (2012) raised the topic of economic growth and structural change relation with entrepreneurship. Kuznets S. S. (1971), Baumol, Blackman and Wolf (1989) raised regarding changes in sectoral structure as an important driver of economic growth. But others raise the points of the technology necessity and cost. For example structural change was not without cost (Zagler, 2009). Costs of structural change entrepreneurship, structural change, and economic growth related to entrepreneurial activity included reallocations of factors that failed because the entrepreneur's vision of the future proved to be incorrect and also involved unemployment and redundant qualifications that aroused due to replacement of incumbent businesses. Here Noseleit showed that the entrepreneurial activity increases when there is any infrastructural development or changes. Here basically he analyzed based on the sector wise structural change and entrepreneurship and based on this the whole economic growth. He also focused on the supporting local entities to alleviate the structural change impact. Conducting a regression analysis he considered the variables Similarity between entries and initial sectoral structure in 1975, Start-up rate (log), highly skilled employment share (log), population density (log), market potential (log), Small business employment share, and Industry concentration.

Baptista, Esca'ria and Madruga (2007) tried to find out whether new business formulation has any positive impact on employment and economic growth. Because of innovation and new technology use make a good stand to grow new businesses. Audretsch and Thurik (2000, 2001) states that the role played by new firms in technological development has been enhanced by an increasing degree of uncertainty in the world economy, creating more room for innovative entry. So to identify the impact the paper specifically focused on the time lag impact of new firm entry and impact on employment from Portuguese point. The theory developed as new firms only directly contribute a very small proportion of the stock of jobs in the economy and most new firms merely displace existing firms, Van, and David (2004), a model has been constructed to show the positive impact of firms on employment and the economic growth. The model designed a basic relationship between regional adjustment and sector wise firm birth rate by regions with different control variables. Later on the author used Huber-White-Sandwich robust estimation which takes into account variations in employment growth within and between regions over time simultaneously, being therefore preferable to fixed effects estimation. After the analysis the paper concluded that the indirect impact is much stronger than the direct impact because of competition, efficiency and innovation. The time lag could be eight years for the supply side effect.

Self employment and unemployment interrelation and effects on each other is still under observation. In most of the cases it proved to be ambiguous to find out the solution. Thurik, Carree, Stel and Audretsch D. B. (2008) tried to find out the unique effect of entrepreneurship, is derived from two basic assumptions: Increasing unemployment leads to increasing start up activity theorized by Blau (1987), Evans and Jovanovic (1989), Evans and Leighton (1990), Blanchflower and Meyer (1994) and

high unemployment rates may correlate with stagnant economic growth leading to fewer entrepreneurial opportunities by Audretsch (1995), Audretsch, Carree, Van and Thurik (2002). The authors built a two equation vector regression model and used the OECD data and reached to a result which is: change in unemployment has positive impact on self employment, and change in the self employment rate had a negative impact on unemployment rate.

Carree (2002) emphasized on the effect of unemployment on the new set ups. The theory of unemployment push is still in a controversy and to test this hypothesis a model is constructed and tested. The data was based on US region and the result showed that it was still ambiguous to decide that increase in the unemployment would have a positive impact on new set ups, because the test showed a positive effect with low entry barrier establishments. So the unemployment push theory is left unconfirmed still.

Petrakis (2004) concentrated on the entrepreneurship's dependency based on the data of OECD countries. The main concentration here was the effect of different economic indicators on self employment. Here self employment was a proxy of entrepreneurship. A model was constructed where different economic indicators like per capita income, unemployment, literacy rate, technology, infrastructure change, labor force, change in the labor force and government share is considered. After regression another simple model was constructed focused on the four economic indicators like capital, technology, human capital, and the labor force. The outcome was to consider risk as the missing link of the neoclassical theory and entrepreneurial theory.

From the above discussion it is clear that there were different sturdy regarding the impact of the different economic factors on the growth of economy. The relationship between the growth of economy and entrepreneurship indicates that these economic variables are also key factors for the flourishing of the entrepreneurship.

3. Method

The research is based on the secondary research as the data used here are all secondary data collected from the reliable websites of the government and international organizations. Per capita income and contribution of service as the percentage of GDP are collected from the web data collection of World Bank. Unemployment and labor force data are collected from indexmundi data collection. The rest of the data are collected from BBS statistical yearbook of different years, ILO official website, trading economics official website and world economic outlook official website.

The variables used in this research are self employment (**proxy variable for entrepreneurship**), per capita income, unemployment, labor force, and change in the labor force, industrial structure change, capital, human capital and literacy.

Determinants	Explanation	Sources
Self employment rate (SE):	Self employment rate refers to the percentage of total employment being employed by own account. Here self employment rate will act as the proxy of entrepreneurship	BBS statistical year book 1998, 1999-2000, 2001-2009, 2010-2018
Per capita income (I):	The real GDP per capita of Bangladesh	World bank database 2018
Unemployment rate (U):	Unemployment as a percentage of total labor force, here underemployment is also considered as the unemployment.	Indxmundi Data collection, BBS 1998-2008, 2009-2018.
Labor force (L):	Total labor force of Bangladesh (15 years or above)	Indxmundi Data collection (2018)
Industrial structure change (IS):	Value added in service as a percentage of GDP	World Bank Database (2018)
Capital (C):	Real total gross fixed capital formation (percentage change from the previous period)	Trading economics database (2018)
Human capital (H):	Participation percentage of human resource (15 years or above)	Indxmundi Data Collection (2018)
Literacy rate (LT) :	Education level of working population. Expressed as the percentage rate	BBSStatistical Yearbook of Bangladesh (1998,1999-2000,2001-2009, 2010-2018),World Bank database (2018)

The research will be based on the historical data of the economic variables and there will be two regression analyses. In the first regression analysis it will be tried to identify whether the model can be constructed with the overall economic variables with the self employment. At second regression model it will be tried to find out whether there is the explain ability of the variables result in the regression analysis and what is the degree and pattern of the relationship. It is like a depiction of the overall process. Thus the research equation will be:

$$\text{Self employment (SE)} = \alpha + \beta I + \beta U + \beta L + \beta IS + \beta C + \beta H + \beta LT$$

The primary regression model above has been constructed based on the overall data so that it was easy to identify what can be the regression value and the impact of independent variables on the dependent variable. Later on a specific regression model will be run so that it will be easy to identify the relatively

more emphasized variables have what kind of impact on self employment. Here for the second simple linear regression the equation is:

Self employment (SE) = $\alpha + \beta I$, Self employment (SE) = $\alpha + \beta U$, Self employment (SE) = $\alpha + \beta L$,
Self employment (SE) = $\alpha + \beta LT$

4. Result & Discussion

4.1 First Regression Model

The primary regression analysis gives the following output:

Variable type	Variables	Impact
Dependent Variable	Self employment	
Independent Variable	Per capita income	Negative
	Unemployment rate	Positive
	Labor force	Positive
	Industrial structure change	Negative
	Capital	Positive
	Literacy rate	Positive
	Human capital	Negative

In this regression analysis, identified regression value is adjusted $R^2 = 0.979$. Identified significance F value is $2.220E-10$. From the analyzed model, the coefficient and the p Value of the related variables are:

Self employment (SE) = $\alpha + \beta I + \beta U + \beta L + \beta IS + \beta C + \beta H + \beta LT$

SE = $0.407 + (-0.0000312)I + 0.01994U + 3.72E-09L + (-0.526)IS + 0.131C + (-0.253)H + 0.0309LT$

From these values it is seen that the value of the constant is 0.3875. The impact of unemployment is positively correlated with the self employment, the impact level is moderate. The impact of per capita income is negatively correlated, but the impact level is low. Labor and Capital are also positively correlated with the self employment. The capital has more influence on self employment than the labor. But industrial structure and human capital are negatively correlated with the self employment.

The P values of the variables are:

Self Employment	= α	+ βI	+ βU	+ βL	+ βIS	+ βC	+ βH	+ βLT
		0.442	0.133	.0035	.032	0.0127	0.247	0.685

From the output of the regression it is visible that the variables Labor, Industry structure and Capital play an important role to determine the level and the prosperity of entrepreneurship. The impacts of these three variables are high on entrepreneurship.

From this analysis the outcome is like Labor, Industry structure and Capital plays an important role to determine the growth of entrepreneurship.

4.2 Second Regression Model

The second regression model is linear regression model. The regression model measures the variability of the parameters which can be identified and explained by R^2 value. This regression model also finds the impact on the self employment and which variables and putting bigger impact on self employment.

Variable type	Variables	Impact
Dependent Variable	Self employment	
Independent Variable	Per capita income	Positive
Table: Regression with per capita income and self employment		

Here it is seen that per capita income has a positive impact on self employment. As the per capita increases, so does the self employment.

$$\text{Self employment (SE)} = \alpha + \beta I$$

$$\text{Self employment (SE)} = 0.0907 + 0.000223 I$$

Here, the constant value is 0.0907. The Positive relation of per capita income with self employment is not that high. The impact is less. With this simple linear regression the calculated R^2 value is 0.62. The significance F value here is 0.0000311 which measures the occurrence of the model by chance. The p value of the variables:

Self employment (SE)	= α	+ βI
		0.0000311

Here P value (0.0000311) suggests that it has a strong influence on self employment.

From the first regression model it can be seen that Per capita income has a positive correlation with the self employment. That is about the practical data with a mathematical analysis. In the theory it can be observed that the increment in the per capita income impact positively, but in a relevant range, that is up to the amount \$7300. Above that level of income the impact can be otherwise (Nkurunziza, 2012), so in the context of Bangladesh the previous findings match with the data analysis.

Variable type	Variables	Impact
Dependent Variable	Self employment	
Independent Variable	Unemployment Bangladesh	Negative
The regression model with self employment and unemployment rate Bangladesh		

Unemployment is negatively correlated with the self employment which means when the unemployment increases (decreases), self employment decreases (increases).

$$\text{Self employment (SE)} = \alpha + \beta U$$

$$\text{Self employment (SE)} = 0.204 + (-0.0963) U$$

Here the value of R^2 is 0.328. This is not an acceptable value as this does not explain the variables all variations with one model. The significance F value is 0.00829. The P value of this model is:

Self employment (SE)	= α	+ βU
		0.00829

The P value (0.00829) suggests that it has strong influence and creates impact on self employment.

The unemployment rate has both positive and negative impact on self employment according to the theory. By the word of the previous experiments and experiences it is seen that the unemployment poses a upward pressure to self employment because unemployment always means there are more people than necessary. So some people who are energetic, high in spirit and capable of taking care of business take an initiative and start something on their own. Another theory supports that unemployment means there is a recession in the economy. So the recession means there is not ample opportunity to start a new business (Petrakis, 2004, pp. 85-98). In reality Bangladesh data set shows that unemployment poses negative impact on self employment. It is also true that self employment has a positive impact on the economy (Baptista et al., 2007, pp. 49-58). It is quite implacable on the context of Bangladesh. Considering the finding contradictory with the majority researchers, it can be told that unemployment is not helpful for fostering self employment.

Variable type	Variables	Impact
Dependent Variable	Self employment	
Independent Variable	Labor force Bangladesh	positive
The regression model with self employment and labor force		

From the analysis it can be seen that the value of R^2 is 0.889, which explains most portion of variation. The significance F value is 4.738E-10, the probability of occurrence of this model by chance. The correlation value is like:

$$\text{Self employment (SE)} = \alpha + \beta L$$

$$\text{Self employment (SE)} = 0.0077 + 2.89 \text{ E-}09 L$$

The correlation is positive but not that strong. The P value is

Self employment (SE)	= α	+ βL
		4.738E-10

The P value is very low here (4.738E-10), suggesting it has strong impact on entrepreneurship.

Availability of the labor force can be explained from another dimension. If Bangladesh has too much labor force then this will be a burden as a lot of people will be unemployed. It will create pressure on the rate of unemployment rate. If the unemployment rate is high then it will be an indication that the country is in recession, which is certainly a pressure on the growth of economy and entrepreneurship. The unemployment and underemployment rate will be high in this case (Clogg & Sullivan, 1982; Petrakis, 2004, pp. 85-98). Unemployment is positively related to the self employment and so does the labor force. So from the theoretical and mathematical context it is well concluded.

Literacy rate in Bangladesh is getting higher every year, so it is necessary to check whether the previous researchers' findings match with Bangladesh context.

Variable type	Variables	Impact
Dependent Variable	Self employment	
Independent Variable	Literacy Rate	positive
Regression model with self employment and literacy rate		

Literacy rate has a positive impact on self employment. As the literacy rate increases the self employment rate also increases. The equation is given below:

$$\text{Self employment (SE)} = \alpha + \beta LT$$

$$\text{Self employment (SE)} = 0.0213 + 0.321LT$$

The value of correlation is .0321. The value of R^2 is 0.863 which means it explains most of the variations in the model. It is a valid mode. The occurrence of this model by chance is 3.361E-09 alternatively it is called significance F. The P value of the regression model is:

Self employment (SE)	= α	+ βLT
		3.361E-09

The P value is 3.361E-09 which shows that it can create quite an impact on self employment.

Literacy rate has also both positive and negative impact on the self employment. Whenever the literacy rate increases it increases the knowledge about a particular subject. So the sector or subject related knowledge helps him or her to start a business on his/her own. It also measures the level of confidence to start a new business. On the other hand the education means adaptation of new technology so that the uncertainty also increases. Besides high level of education increase the wage rate of the employees, so the impact is quite ambiguous (Petraakis, 2004, pp. 85-98). According to the first regression model it can be seen that it impose a positive impact on the self employment. In the second model it is also seen that the literacy rate has a positive impact on the self employment rate. So it matches the previous findings being tried to imply.

5. Conclusion

Entrepreneurship itself is such a term which has a lot of controller variables on which it is very much reliant. Sometimes it is dependent on one variable which is identified as the key variable, sometimes it is a bunch of variables (i.e., Here the key variables appeared as per capita income, unemployment, etc.). The focus should be on the self employment or entrepreneurship's movements along with the variable's movements and interaction with each other. The general idea is, it is a small ranged sector but the spread is huge. Every year almost 25% of the GDP is contributed by the SMEs and create employment opportunities of about 31 million people. The right observation can only help to predict what will result into what. In this paper the variables are taken based on the theory. But there are also many other economic and socio economic variables with which the entrepreneurship movement can be identified and theorized. This is just a model of the big research work. And this analysis can help to get a big

picture of one factor that is self employment and find the way to conduct a thorough research to reveal the secrets of the economy of Bangladesh.

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