

A study on organizational entrepreneurship on economic growth

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ABSTRACT

Today, the positive impact of entrepreneurship in the economy has been globally accepted. Entrepreneurs could provide efficient techniques to face with upcoming economic challenges. In this paper, we first investigate the effect of entrepreneurship on growth of economy over the period 2005- 2011. Then we study the impact of four factors including Gross domestic product per worker, Growth in capital per worker, New firm creation and Technological innovation intensity on economic growth. The proposed model of this paper uses ordinary least square technique to investigate the relationship between four independent variables and economic growth. The results show that gross domestic product per worker is the only variable, which is statistically meaningful when the level of significance is five percent and the impact of other three variables including growth in capital per worker, new firm creation and technological innovation intensity are not statistically meaningful. In other word, as we see a 1% increase in gross domestic product per worker we could expect 8.712% increase in economic growth.

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1. Introduction

Today, the positive impact of entrepreneurship in the economy has been globally accepted. Entrepreneurs could provide efficient techniques to face with upcoming economic challenges (Lee & Williams, 2007; Stam, 2009; Hung, & Whittington, 2011; Foster & Metcalfe, 2012). Audretsch and Keilbach (2008) explained why knowledge investments were inherently unbalanced, so that the competitiveness and growth ensuing from knowledge were not equally spread across individuals, firms, and spatial units of observation, such as regions and countries. They showed that entrepreneurship could serve a conduit of knowledge spillovers. Kelley et al. (2009) studied intra-organizational networking for innovation-based corporate entrepreneurship and recognized the managerial facilitating influencing of cultivator and broker. They also developed propositions aimed at providing insights about the relationships among these constructs, and identified implications for managerial and ICE program responsibilities.

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According to Pintea and Thompson (2007), for over a half a century, there have been large increases in educational attainment and R&D intensity. The fact that these trends have not stimulated more rapid income growth has been a concern for growth theorists. Pintea and Thompson (2007) built a framework of endogenous economic growth in which income growth, R&D intensity, and educational attainment were associated with the complexity of new technologies. An increase in complexity, which makes passive learning more difficult induces increases in R&D and education, alongside a decline in income growth (Williams, 1983). These days, we see significant amount of uncertainty, dynamism and volatility of the new competitive landscape, which are altering the fundamental nature of competition (Hitt et al., 2000). As a result, many firms attempt to build competitive advantages, which can be sustained for some time and being able to develop, maintain and exploit competitive advantages plays essential role for the creation of firm value.

Yu (1998) investigated the impact of entrepreneurship in the economic development of Hong Kong and explained that the dynamics of Hong Kong's economy were associated largely with adaptive entrepreneurs who kept a high degree of flexibility in their production and respond rapidly to change. In the manufacturing sector, adaptive entrepreneurship was manifested in the forms of product imitation, subcontracting, small-scale enterprise and spatial arbitrage. According to Yu (1998) Hong Kong manufacturers could learn from foreign firms and imitated their products and managed to sell improved commodities at lower prices. Besides, to exploit new profit opportunities, Hong Kong's entrepreneurs had shifted their production activities in various industries, products and services.

Minniti (2011) discussed that the number of patents per R&D dollar declines with firm size and presented a Schumpeterian growth model to account for this evidence. The study analyzed an economy with firms, which engage in cost-reducing innovation resulting from the accumulation of both codified and tacit knowledge: the codified happens through the purchase of patents, while the tacit knowledge is the result of R&D conducted in-house by business firms. Minniti (2011) studied the relationship between knowledge suitability and market structure, and demonstrated that a shift from patents to in-house research happens as firm size gets bigger.

Training and human capital accumulation play important role as a source of innovation and growth within an evolutionary microsimulation framework. Many business units within the model learn more on technology through radical/incremental innovation and imitation. Human capital accumulation through investment in education and training can be considered as a primary source of economic growth even though firms are under-invest in these activities. Ballot and Taymaz (2001) studied the impacts of different training policies on macro-performance. They reported that some subsidy policies are effective in improving the long-run macro-performance while a minimum requirement to train set upon firms was not.

Antunes et al. (2008) investigated the impact of financial repression and enforcement on entrepreneurship and economic development. Jiang et al. (2010) developed an endogenous growth framework of occupational choice with overlapping generations heterogeneous in entrepreneurial capability. According to their survey, while an increase in the number of entrepreneurs generates a growth-enhancing variety impact, the reduced overall quality of entrepreneurial capability retards growth. According to Naudé (2011) many economists have claimed that entrepreneurship play an essential role on determinant of economic growth and development. Entrepreneurship is largely absent from explanations of growth and development, which could be because arguments and evidence marshaled by other economists studying entrepreneurship fail to convincingly demonstrated that entrepreneurship is a binding limit on development in the poorest countries.

Baptista and Thurik (2007) examined the relationship between entrepreneurship, as measured by the variation in business ownership rates, and unemployment in Portugal over the period 1972-2002.

They reported that Portugal had been a relative outlier in regard to the impacts of entrepreneurship on unemployment when compared with the OECD average.

Bojica and del Mar Fuentes Fuentes (2012) analyzed how knowledge acquisition (KA) from alliances impacts the corporate entrepreneurship–performance relations in some Spanish SMEs from the Information and Communication Technology sector (ICT). They reported that both corporate entrepreneurship and KA had a positive impacts on performance but that the moderating effect of KA on the relationship between corporate entrepreneurship and performance was negative and it varied depending on the level of knowledge-based resources of the business unit.

Gries and Naudé (2011) presented a formal model of entrepreneurship in human development provided by the capabilities approach (CA) and extended the conceptualisation of entrepreneurship in development. They showed that entrepreneurship was not automatically a functioning and explained that even when entrepreneurship was valued, entrepreneurs could often not match their ideas with suitable opportunities.

Hall et al. (2010) performed an investigation on sustainable development and entrepreneurship and explained entrepreneurship is a major conduit for sustainable products and processes. They reviewed sustainable development and the role of entrepreneurship and outlined recent contributions on this effect. Jones et al. (2011) investigated the domain of international entrepreneurship (IE) and explained that the body of IE knowledge was growing and concluded that IE had several coherent thematic areas and is rich in potential for future investigation.

Hung and Whittington (2011) investigated agency in national innovation systems in an empirical investigation on institutional entrepreneurship and the professionalization of Taiwanese IT. They showed the emergence of the new professional form in Taiwanese IT over the period 1980–2007 and explained how institutional entrepreneurs could change national innovation systems by developing three strategies for change including framing, aggregating and networking. They also proposed policies for institutional entrepreneurship with system-wide benefits.

In this paper, we study the impact of four factors including Gross domestic product per worker, Growth in capital per worker, New firm creation and Technological innovation intensity on economic growth.

2. Problem Statement

There are four hypotheses associated with the proposed study of this paper, which are summarized as follows,

1. There is a meaningful relationship between Gross domestic product per worker and economic growth.
2. There is a meaningful relationship between Growth in capital per worker and economic growth.
3. There is a meaningful relationship between new firm creation and economic growth.
4. There is a meaningful relationship between Technological innovation intensity and economic growth.

The proposed model of this paper uses econometrics method as follows,

$$\hat{Y}_i = \hat{\beta}_0 + \hat{\beta}_1 GPDW_i + \hat{\beta}_2 GCW_i + \hat{\beta}_3 NFC_i + \hat{\beta}_4 TII_i + \varepsilon_i, \quad (1)$$

where \hat{Y}_i represents economic growth as dependent variable and $GPDW_i$, GCW_i , NFC_i and TII_i are independent variables and they represent Gross domestic product per worker, Growth in capital per

worker, New firm creation and Technological innovation intensity, respectively. In addition, $\hat{\beta}_0$, $\hat{\beta}_1$, $\hat{\beta}_2$, $\hat{\beta}_3$ and $\hat{\beta}_4$ are coefficients associated with all four variables, respectively. Finally, ε_i is the residual, which represents the impacts of other unknown variables.

3. The results

In this study, we have used historical data from Iranian economy over the period of 2005-2011, the model (1) has been estimated using ordinary least square (OLS) technique and the results are summarized as follows,

$$\hat{Y}_i = 0.209 + 8.712GPDW_i - 2.561GCW_i + 0.432NFC_i - 2.092TII_i + \varepsilon_i$$

standard dev.	0.868	3.279	3.043	0.393	1.749	
t-student	0.241	2.657	-0.842	1.101	-1.189	$R^2 = 0.99$
Sig.	0.849	0.229	0.555	0.470	0.445	$\bar{R}^2 = 0.902$ F=12.461 (2)

As we can observe from the results of regression model, Gross domestic product per worker (GPDW) is the only variable, which is statistically meaningful when the level of significance is five percent and the impact of other three variables including Growth in capital per worker (GCW), New firm creation (NFC) and Technological innovation intensity (TII) are not statistically meaningful. In other word, as we see a 1% increase in gross domestic product per worker we could expect 8.712% increase in economic growth. Table 1 shows details of ANOVA test on regression model.

Table 1

The results of ANOVA test

	Sum of Squares	df	Mean Square	F	Sig
Regression	1.128	4	0.282	12.461	0.209
Residual	0.023	1	0.023		
Total	1.151	5			

Table 2 shows details of our findings on four hypotheses. As we can confirmed there is a meaningful relationship between Gross domestic product per worker and economic growth but the results do not show any meaningful relationship between growth in capital per worker, new firm creation and technological innovation intensity and economic growth.

Table 2

The results of testing four hypotheses

Hypothesis	t-student	Result
There is a meaningful relationship between Gross domestic product per worker and economic growth.	2.657	Confirmed
There is a meaningful relationship between Growth in capital per worker and economic growth.	-0.842	Not confirmed
There is a meaningful relationship between new firm creation and economic growth.	1.101	Not confirmed
There is a meaningful relationship between Technological innovation intensity and economic growth.	-1.189	Not confirmed

4. Conclusion

In this paper, we have studied the impact of four factors including Gross domestic product per worker, Growth in capital per worker, New firm creation and Technological innovation intensity on

economic growth. The proposed model of this paper uses ordinary least square technique to investigate the relationship between four independent variables and economic growth. The results show that gross domestic product per worker is the only variable, which is statistically meaningful when the level of significance is five percent and the impact of other three variables including growth in capital per worker, new firm creation and technological innovation intensity are not statistically meaningful. In other word, as we see a 1% increase in gross domestic product per worker we could expect 8.712% increase in economic growth.

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