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Determinants of New Firm Formation: Does Location Matter?*

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Abstract

The link between location features and the propensity to start a new firm is a subject that did not get much attention in Iran until recently. This paper is the first attempt on this proposition and is concerned with deliberating the effect of demographical and industrial characteristics of location on start-up rates in Iranian manufacturing industries. To fulfill this aim, regional panel data based on Iranian provinces during 2002-2006 is used. Having employed the GLS method, the results of this paper show that demographical characteristics have a significant effect on new firm formation. Furthermore, we find considerable evidence suggesting that central regions succeeded in increasing the level of start-ups during the period under inspection. In addition, birth rates are greater in regions where GDP growth, security, and urbanization are high and experience abatement in regions with high minimum efficient scale and unemployment. The results of this paper can be considered as the basis of a policy that aims to promote development in borderland provinces. The government could also provide entrepreneurs with incentives to encourage them to create new firms and businesses in these regions.

Keywords: Start-up ratio, Regional characteristics, Manufacturing industries, GLS, Iran.
JEL Classification: M13, O18, R12.

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1. Introduction

Regions differ in terms of firm entrants, innovation and employment. Furthermore, the way that firms develop and grow in a certain region can be attributed to a combination of several factors such as transportation costs, natural advantages and resources, and the demographical and industrial characteristics of a region. In this manner, the linkage between entry and regional features was primarily analyzed at the industry level, although Hoover and Vernon (1962) had already begun to point out the differences in spatial scales. By now, it is generally acknowledged that new firms must take into account the effect of regional dimensions on their businesses (Bosma, Van Stel and Suddle, 2008). The research focus shifted to produce a better understanding of the demographical features affecting firms and the intensity of new firm start-ups in the last twenty years.

The demographical approach to the study of business dynamics differs from non-demographical analysis in several basic aspects. By non-demographical analysis, we mean a plurality of approaches where space is not taken into consideration and entry rates depend on the characteristics of the industry. The demographical analysis of new business formation contains the regional features affecting a new firm (Blasco and Fornielles, 2000), and a large amount of literature on regional factors and the process of new firm entry has been extensively documented since the early 1990s. In recent years, this subject has been regarded increasingly as a desirable and attractive scholarly pursuit. Since then, it is barely disputed that newly founded firms are seen as central to regional economic growth, development and structural change. Therefore, they have been the target of many regional policy measures (Brixy and Grotz, 2007). For example, from a regional point of view, Krugman (1991) asked, "What is the most striking feature of the location on economic activity?" There is a lot of research that tried to identify the factors that made a region especially friendly for entrepreneurs. In addition, the research carried out different indicators to explain regional variations in new firm formation. For instance, Keeble and Walker (1994), Armington and Acs (2002) and Gaygisiz and Koksal (2003), found that highly populated areas are more prosperous and have higher

rates of birth, while Audretsch and Fritsch (1994) and Garofoli (1994) found no such effect on birth rates. This demonstrates that the effect of populated areas on new firm development have not been proven to have a strong positive or negative effect on a region's birth rates. The research on that subject has remained rather ambiguous, because no two sides can agree on its effects. A similar conclusion has been drawn regarding unemployment rates in regions with many new firms. For example, Reynolds, Storey and Westhead (1994), Sutaria (2001) and Sutaria and Hicks (2004) argued that the change in the number of unemployed had a negative impact on the rate at which new firms developed; whereas Highfield and Smiley (1987) demonstrated that the rate of unemployment had a positive impact on the number of new firms that appeared in a particular region. Furthermore, Audretsch and Fritsch (1994) stated that the concentration of new businesses in a particular area is the most important factor that drives the creation of new firms within a region. Krugman (1991) also mentioned that the increase of production within new firms can also boost the success of a new firm. Consequently, these conflicting results have not only created confusion among scholars about the effect of demographical factors on new firms, but they have also made it difficult for policy makers to base their decisions on this emerging literature (Sutaria and Hicks, 2004). For an entrepreneur who wants to start a business, it is important to know where to locate. Therefore, regional factors can change the decision to enter or not. Furthermore, it is important to take into account the effect that a region has on a new firm, because that can shed some light on the reasons behind certain policies. Unfortunately, this aspect of firm development, important as it may be in helping us understand the way politicians operate, has gotten no attention in Iran. This paper intends to give a deeper understanding of what determines regional entry.

The setup of this paper is as follow: In the next section, we will refer briefly to previous works in this field. Section 3 provides an overview of the data set and entry rate measurement, in section 4 the firm birth determinants are introduced; section 5 describes the model and empirical results. The final section concludes.

2. Literature Review

Despite the attention that scholars have paid to the relationship between entry and economic factors, Mansfield (1962) argued: "Because there have been few econometric studies of the birth, growth and death of firms, we lack even crude answers to the following basic question: What are the effects of various factors on the rates of entry?" (p.1023). Despite this critic, some evidence show this subject has been well documented in literature; entry analysis made at three different levels: space, time, and industry. A large body of research about new firm phenomenon oriented to facilitate a deeper understanding of regional entry across developed countries. The most popular remaining studies on the subject have been written by the following scholars: Austria by Todtling and Wanzenbock (2003), Finland by Kangasharju (2000), France by Guesnier (1994), Greece by Fotopoulos and Spence (1999), Italy by Garofoli (1994), Republic of Ireland by Hart and Gudgin (1994), Sweden by Davidsson, Lindmark and Olofsson (1994), United Kingdom by Keeble and Walker (1994) and Johnson and Parker (1996), United States by Reynolds (1994) and Armington and Acs (2002),West Germany by Fritsch (1992) and Audretsch and Fritsch (1994).

The literature in this area shows that the majority of the studies concerning the development of new firms occurred in 1994. For example, Audretsch and Fritsch (1994) investigated the relationship between unemployment rate, population density and birth rates in 75 regions. Two approaches have adopted to compare birth rates across regional markets. Under the ecological approach, regions with higher unemployment rates found to be associated with greater startup activity. Also new firms have a high propensity for locating regions where there is greater population density. However, under the market approach, the opposite result emerges for unemployment rate. Davidsson, Lindmark and Olofsson (1994), argued that the most important determinants of firm entry rates for 80 Swedish regions from 1985 to 1989 were the structural characteristics of the regions such as demand growth of the local market and population rate. In a similar paper published in that year, Reynolds, Storey and Westhead (1994), presented a study in which explanatory characteristics for firm formation were modeled using cross-sectional

data. This study determined that the demand for a certain product was the most important factor that determined the regional formation of new firms in five European countries and the United States of America. Furthermore, the presence of small firms that specialized in certain products, as well as urbanization and agglomeration, appeared to have had a positive effect on the development of new firms. The study also showed that personal household wealth had a weak effect on the development of new firms, while the presence of liberal political ethos and unemployment had a mixed effect on new firm's development and expansion. Local government spending was found to have no statistically significant effect.

After 1994, other studies have been carried out in this area up until now. For example, a similar study like Reynolds, Storey and Westhead (1994) was performed by Kangasharju (2000) to utilize panel and cross-sectional data in order to study the effects of regional factors on firm formation for Finnish industries during 1989-1993. Panel data showed that the average size of firms and establishments in the sub-regions tend to support robust firm formation. Cross-sectional findings demonstrated that demand growth is an important factor explaining firm formation.

Okamuro and Kobayashi (2005) made an important contribution to the promotion of regional factors affecting start-ups in Japan and used two datasets with different levels of regional segmentation. The empirical results obtained using WLS and OLS demonstrated that demand, cost, human resource, financial, industry agglomeration and industrial structure significantly affect the start-up ratio at the municipality level, but they do not significantly affect new firms within a larger economic area. In addition, average wage and average size of establishments were important determinants of the regional start-up ratio in both the samples.

Although there are numerous studies for developed countries, this type of research has not been as thoroughly conducted in developing countries. Among notable studies, we can accentuate Akram (2002) in Bangladesh who just reported the net entry of manufacturing industries at three-digit industry levels for five census years and classified new firms in terms of ownership (e.g. public, private and joint venture). Lay (2003) in Taiwan investigated the interaction between entry and exit rates across

industries, namely replacement and displacement. The results showed that the entry of new plants had a moderate effect to facilitate displacement, but no significant replacement effect was found. Another study in the same year was by Gaygisiz and Koksal (2003) in Turkey, who used cross-section and panel data methods of analysis to explore the determinants of regional characteristics that influence new firm formation. To the best of our knowledge, no empirical study has been carried out to give a complete picture of the regional factors affecting the start-up ratio in Iran, and this paper is the first attempt to introduce this subject.

3. Data and firm birth measurement

Lack of data on the regional distribution of start-ups has frustrated empirical analyses of regional differences in the founding of new firms in many countries. Developing a database that provides comprehensive information on firms would let us calculate this information. We used a regional panel dataset for Iran and identified the provinces in a 5-year period (2002-2006) for firms with at least 10 workers. The data used in this paper is collected by the Statistical Center of Iran (SCI), which is the most valid source for reporting data. This organization provides data for firms and we extract the province information by the flag number that each firm has. Our samples derived from a combination of two different databases. The first database, used for firm entries, counts the number of new firms that appear annually in each province. Second, the database computes the characteristics of incumbent firms in each province each year and used to calculate control variables (such as GDP, unemployment, urbanization, etc).

There are various contentions to compute the number of establishments. One can measure the absolute number of new firms and then compare them across regions. Fritsch (1992) and Audretsch and Fritsch (1994) pointed out that this method is misleading, since regions are not homogenous in terms of size. A proper regional comparison of the number of new firms calls for normalization. Three methods are generally used to standardize the number of new firms: labor-market approach, ecological approach, and population approach. These methods

weight the new comers by their size (e.g. employee or population) and make comparison across regions possible.

The labor-market approach standardizes the number of new firms with respect to the number of workers or the firm's labor force. This method is based on the entrepreneurial choice theory that was recommended by Evans and Jovanovic (1989). That is, each new business is started by someone and implicitly assumes that the entrepreneur starting a new business is in the same labor market within which that new establishment operates. All members of the workforce face the decision to work as dependent employees in someone else's business or to start their own firm. The ecological approach normalizes the number of entrants relative to existing firms. Audretsch and Fritsch (1994) argued some regions may tend to have more employees per establishment than do other regions. Since ultimately people, and not establishments start businesses, such heterogeneity with respect to mean establishment size would result in a measurement bias that overstates birth rates in regions where the mean establishment size is relatively high and understates it in those regions where it is relatively low. The third approach considered the number of new firms with regard to the population, which can be termed population approach. This approach implies that in the overwhelming majority of cases firms in a sub-region are founded by individuals living there. Firm formation is encouraged principally by the prospects of that market area and the potential entrepreneurs living in a sub-region form the indigenous potential of the sub-region (Kangasharju, 2000). The population approach is the most appealing in the literature and this paper prefers to use this method to determine the rate at which new firms are founded. Birth rates based on the population approach calculated for all provinces. Regarding this, some provinces, namely Boushehr, Khorasan and Semnan, were ignored from further analysis due to discrete entry during the period of study. The remaining twenty-five provinces are divided into two parts: the central part and the provinces that are located on the borders of Iran. The central part consists of thirteen provinces which are: Charmahal and Bakhtiari, Esfahan, Fars, Hamedan, Kerman, Kohkiloye and Boyer Ahmad, Lorestan, Markazi, Qazvin, Qom, Tehran, Yazd and Zanjan. The

borderland provinces include Ardebil, East Azarbaijan, Gilan, Golestan, Hormozgan, Ilam, Kermanshah, Khozestan, Kordestan, Mazandaran, Sistan Balouchestan and West Azarbaijan.

4. Regional determinants of start-ups

The conditions governing the generation of new enterprises are subject to a wide range of factors: the personal qualities of the founder of a new firm (Vivarelli, 1991), the expected profits following entry (Geroski, 1991), the barriers to entry (Orr, 1974) and the factors related to the geographical environment in which the new firm operates (Reynolds, Storey and Westhead, 1994). In this paper, we estimate the impact of two groups of explanatory variables on the birth rate. One group is comprised of geographical explanatory variables (e.g. unemployment, GDP per capita, security index, urbanization, population and geographical location) and the other group is formed of industry characteristics of a region (e.g. MES and GDP growth). The basic model is as follow:

$$E_{i,t} = \alpha_i + \beta_1 U_{i,t} + \beta_2 GDP_{i,t} + \beta_3 S_{i,t} + \beta_4 Ur_{i,t} + \beta_5 Pop_{i,t} + \beta_6 Gl_{i,t} + \beta_7 MES_{i,t} + \beta_8 G_{i,t} + \varepsilon_{i,t} \quad (1)$$

The dependent variable $E_{i,t}$, is entry rate and the symbols of explanatory variables are as follows:

$U_{i,t}$ for unemployment, $GDP_{i,t}$ for GDP per capita, $S_{i,t}$ for security index, $Ur_{i,t}$ for urbanization, $Pop_{i,t}$ for population, $Gl_{i,t}$ for geographical location, $MES_{i,t}$ for minimum efficient scale, $G_{i,t}$ for GDP growth. α_i is the fixed effect of each province, β_i displays the coefficient of explanatory variable that should be estimated, $\varepsilon_{i,t}$ is the error term of each province at time *t* which is distributed with zero mean and $\frac{2}{\varepsilon}$ variance, *i* represents province and *t* shows time. The description of the variables is as follows.

Unemployment: While unemployment is the most common factor in affecting firm formation, the literature on this subject shows contradictory results. There are two conflicting perspectives regarding the effect of unemployment on birth rate. The first one assumes that a higher level of unemployment may reduce aggregate disposable income,

effectively reducing local demand for goods and services, thereby putting downward pressure on its rate of new firm formation (Mocnik, 2010). Some evidence found that regional firm formation is negatively related to the level of unemployment, such as Tervo and Niittykangas (1994), Sutaria **(**2001) and Sutaria and Hicks (2004). The second view argues the higher the unemployment ratio, the higher the start-up ratio will be. This is because in the case of a high unemployment ratio, the unemployed tend to start up their own businesses in order to secure employment. Furthermore, it is easy for start-up firms to hire labor, so the incentive to start a new business increases (Okamuro & Kobayashi, 2005). For instance, Storey (1991) discussed that high unemployment rates can cause higher entry rates, since they force unemployed workers to start their own companies as an alternative to unemployment. In this paper, the first view coincides with the author's opinion, and is calculated as the number of unemployed persons over the sum of employed and unemployed persons.

GDP per capita: According to the literature of this area, GDP per capita has both positive and negative effects on entry rate. On the one hand, higher levels of income (GDP) in a region increase demand and provide access to capital that a potential entrant needs in order to start a firm. In addition, bearing this in mind, the income level constitutes labor costs for the firms. A high-income level might therefore deter entry in markets that are sensitive to high labor costs (Nystrom, 2007). However, generally it is expected that income is associated with the propensity of firms to start a business. Gaygisiz and Koksal (2003) and Calá and Arauzo-Carod (2010) affirm that markets with a low level of income reduce the rise in demand and discourage the entry of new firms. Hence, it is expected that income promotes new firm start-ups. It is calculated as the annual GDP per head.

Security index: This index shows how entrants are sensitive to the level of security in a region. It is expected that the higher the security index, the higher the entry rate. A series of different methods are documented to measure security index such as analysis Askalvgram, TOPSIS method, numerical Taxonomy, Factor analysis, Cluster analysis and Maurice method. Among these, the TOPSIS method, due to

weighing the indices, is rich enough for calculating the security index. Using this method, the ninth robbery indices, which consist of official places, houses, shops, industrial and commercial centers, automobile, motorcycle, cattle, places where automobile accessories are composed and other places, are utilized as the security index.

Urbanization: Urbanization, or the percentage of the population in a province living in urban areas, contributes to new firm formation via provision of the labor market opportunity, information flows and a higher variety in goods and services. General benefits of locating in dense areas are indeed important considerations for entrepreneurs when they choose a location in which to establish a new firm. In addition to locating in a large region, firms may experience positive external effects from locating in a dense area. Lower transport costs and closeness to suppliers and customers reduce cost and improve the quality of the goods or service produced (Nystrom, 2005). Urbanization is calculated as the ratio of urban population over the total population (urban plus rural) in a region.

Population: Regions with a high density of population and economic activity will spawn more entrants into a region due to better access to large and differentiated markets for input factors such as capital, labor and services (Fritsch and Mueller, 2006). In most studies, a positive effect of population on entry is observed. Gaygisiz and Koksal (2003) state the results of cross-section and panel data analyses and show that population density is the most significant variable in explaining regional variation in new firm formation in the manufacturing sector in Turkey. Also, Guesnier (1994) noted that in France, higher new firm formation rates are associated with higher population densities, which was also experienced in the study by Audretsch and Fritsch (1994) on spatial variations of firm births in Germany. One exception is Garofoli (1994), who concluded that it has no significant impact in the case of Italy.

Geographical location: Although many categories exist to classify provinces in terms of industrial development, production level, and employment, this paper separates the provinces based on their geographical location, namely, whether they are a borderland region or more centrally located provinces. If we use this means of categorization, the total provinces of Iran are separated into two groups in the form of a

dummy variable. The central part contains thirteen provinces and takes value one in estimation. The other group consists of the borderland provinces that take zero value. It is anticipated that the central provinces attract more entrants.

Rather than the mentioned variables, in order to capture the effect of industrial characteristics across regions, two variables were considered in estimation, namely the minimum efficient scale and the GDP growth.

Minimum efficient scale: With high fixed costs, the scale of operation is required to efficiently increase in order to cover the fixed costs and to keep the long run average cost at the lowest level. Existing firms operating on an efficient scale can erect barriers for entrants because of the cost disadvantages of operating scales below the efficient scale. Firms operating on scales below the efficient scale are at a cost disadvantage compared to those operating on an efficient scale (Basant & Nath Saha, 2005). In addition, if MES is large, firms will start their activities on a greater scale as compared to where the minimum efficient scale is small. Firms operating on a large scale need the ability to raise the amount of capital required to operate a minimally efficient, scaled plant (Mata & Machado, 1996). While Armington and Acs (2002) reported the negative impact of MES on new firm formation, Sutaria and Hicks (2004) found that metro-regions with larger MES experienced relatively faster rates of new firm formation. It is expected that the MES carries a negative coefficient in the entry equation. In this paper, the Comanor (1967) approach is used to calculate the MES.

GDP growth: The growth of production creates new demand for the development and manufacture of new products, which means that there will be more newly established companies if productivity growth rises (Nivin, 1998). Growth rate as an indicator for economic development in a region is undoubtedly an attraction to potential entrants. It is defined in terms of the growth rate of industries' GDP in each region.

5. Model estimation and results

To investigate the relationship between entry rates and regional features we employ a series of respective tests. The process of empirical analysis comprises the following four steps: In first step, we start with Leamer and Hausman tests to understand whether the regression is panel or not

and to choose between fixed or random effect. Secondly, we suggest unit root test to demonstrate the stationary of the data series. In the third step, Likelihood ratio test is implemented to determine the existence of heteroscedasticity and, if so, in step four, the model is estimated via GLS and results are reported.

5.1 Leamer and Hausman Tests

Mixing cross-section dimension (N) and time dimension (T) leads to greater reliable results, which is the advantage of applying panel data and is a confirmation on the view of Breitung and Pesaran (2008). Therefore, it is intended to determine the data type before model estimation. For this purpose, Leamer test should be employed in order to see whether the data are pool or panel. Table (1) shows the results for Leamer test at 5 percent significant level. As can be seen, since the probability of the test statistic is less than 5 percent the null hypothesis of pool data is rejected and panel data method is adequate.

The next step is to choose between fix effect model and random effect model. Baltagi (2001) emphasized that the choice between the fixed and random effect models should be solely based on theoretical consideration. In this study, in order to validate the choice of fixed effect, the Hausman specification test is performed which has an asymptotic chi-square distribution. The statements of hypothesis are as follows:

H_0: existence of random effect model
H_1: existence of fix effect model

Regarding to the Table (1), since the value calculated according to the Hausman test statistics is higher than the critical value the Hausman specification test suggests, we should choose the fixed effect model instead of the random effect model.

Table 1: Results for Leamer and Hausman tests

Test	Distribution	Stat	Prob
Leamer	F	5.59	0.0413
Hausman	Chi2	25.84	0.0005

Source: Authors calculations

5.2 Panel Unit Root Tests

Another important test in this perspective is the panel unit root test, which leads results in efficient testing power and ignoring this test will lead to a spurious regression. Various types of panel unit root tests exist with many details, but we just want to take an overview on this subject. Levin, Lin and Chu (2002) applied panel unit root with heterogeneous dynamics, fixed effects and determinant trend. In addition, Im, Pesaran and Shin (2003) proposed unit root tests for dynamic heterogeneous panel based on the mean of individual unit root statistics. Moreover, Maddala and Wu (1999) and Choi (2001) used Fisher statistic as a type of unit root. Nevertheless, a great deal of research has been devoted to the use of unit root tests, but the most popular is attributed to Levin, Lin and Chu (2002) (denoted hereafter LLC). In this test, the null is based on the existence of unit root in series. Table (2) presents the results on this test. The results provide evidence on the rejection of null hypothesis at 5 percent significant level. Since, all variables follow an I(0) process which confirms the stationary of variables, the necessity of using cointegration test is denied.

Table 2: Results for unit root test

H0: Unit root	LLC	
	Stat	Prob
LE	-8.20	0.000
LU	-12.01	0.000
LGDP	-18.23	0.000
LS	-23.66	0.000
LUr	-32.65	0.000
LPop	-53.49	0.000
LMES	-47.21	0.000
LGl	-15.13	0.000

Source: Authors calculations

5.3 Likelihood Ratio Test

To avoid heteroscedasticity in the model, the Likelihood ratio test was employed. The result that is shown in Table (3) indicates that the hypothesis based on the existence of homoscedasticity in variances is rejected and thus, the model has heteroscedasticity. In this case, the best way to estimate the model is the method of Generalized Least Square (GLS). By doing this, the autocorrelation in error terms will also be removed.

Table 3: Results for Likelihood Ratio test

LRChi2	Prob
93.65	0.000

Source: Authors calculations

5.4 GLS and estimation results

Having specified the process of the model estimation, and in order to overcome the problem of heteroscedasticity, the so-called GLS regression method is employed. The results are shown in Table (4).

Table 4: Results for GLS method

Variables	Coefficient	t-statistics	Prob
Unemployment	-0.071	-2.741	0.010
GDP per capita	0.000	0.070	0.940
Security	0.091	4.914	0.000
Urbanization	0.092	4.769	0.000
Population	0.000	0.772	0.440
Geographical location	-0.497	-1.953	0.070
Minimum efficient scale	-0.0001	-2.470	0.010
GDP growth	0.281	5.600	0.000
F-statistic=8.47	Prob=0.0000		

Source: Authors calculations

As can be seen, the probability of F statistics is significant,

which indicates the model estimation is well organized. Furthermore, the effect of six out of eight variables on entry rate is as expected. The results of this estimation show that unemployment has a negative and significant effect on the rate of entry, which confirms the first view. This indicates that a higher level of unemployment reduces aggregate disposable income, effectively reducing local demand for goods and services, thereby putting downward pressure on its rate of new firm formation. It is not unusual to assume that in Iran, new entrepreneurs seek regions where unemployment is low. Our result on this variable is similar to the results that Tervo and Niittykangas (1994), Sutaria **(**2001) and Sutaria and Hicks (2004) concluded in their papers. In addition, it can be deduced from the results that the security index has a positive impact on entry and is a significant factor in new firm creation. We merged the ninth robbery indices for the sake of computing security. As a result, we found that an increase in security is congruous with a decline in robbery and thus lends itself to more enthusiastic firm development in a particular region. As expected, it seems that urbanization influences entry in a positive and significant way. Firms benefit from locating in urban areas due to reduction in costs and denser areas cause increment in demand. The geographical location of firms that appear in the form of a dummy variable is statistically significant and has the expected sign that shows entry increases in central provinces compared to rural, borderland provinces. Entrants prefer to enter in central part of Iran, which may be due to security and the economy of agglomeration. In line with the findings of Armington and Acs (2002), MES is thought to be a deterrent for entry, which means performing on high scales and access to capital serve as a problem for new entrants. Additionally, potential entrants must enter on a large scale in order to take advantage of large-scale cost savings and to compete in their respective market. Congruent with the findings of Nivin (1998), the GDP growth achieves statistical significance and positive correlation with the entry rate of new firms. Firms enter more frequently in rapidly growing

regions, because these regions create new demand and induce existing firms to diversify their production. Although GDP per capita and population rate have a positive effect on entry rate, both failed to yield statistically significant results.

6. Conclusion

Overall, there have been some research on the effect of demographical factors on the creation of new firms, but much of this has occurred outside of developing countries. To the best of our knowledge, there have been no attempts to investigate empirically this proposition in Iran and this paper is the first detailed effort of its kind. The regional panel data has been collected from the Statistical Center of Iran from 2002-2006. To give depth to our results, we applied a series of respective tests consisting of the Leamer, Hausman, Unit root and Likelihood tests. The last test leads us to the existance of heteroscedasticity. We addressed this problem by using the GLS method. The entry rate is calculated by the population approach for two parts of Iran, which include the central and borderland provinces. Overall, as we expected, urban regions with low MES, high GDP growth, low unemployment, and high security attract new entrepreneurs. Nevertheless, we found that GDP per capita and population could have a positive effect on an entrepreneur's decision to build a new firm. They also had an insignificant signs on an individual's decision to build a new firm. Our analysis showed that central regions succeeded in increasing the level of entrepreneurs during the period under inspection. In borderland provinces, however, start-up rates are fairly low. Thus, the results of this paper can be served as appropriate starting points for a policy that aims to promote development in borderland provinces, so the government can provide entrepreneurs with incentives to build new firms in these borderland regions. In the future, more in-depth researches should be performed to study the regional determinants of new firm formation beyond the manufacturing industry.

As mentioned before, substantial literature has been written about regional economies, in which they tried to identify the geographic characteristics, which induced new firm start-ups. Unfortunately, this literature has produced a number of ambiguous results, which ignore the role that industrial organizations play in the development of new firms. In contrast, this paper tries to give a complete picture of those factors, which play unambiguous roles in explaining the creation of new firms in specific regions. In this paper, the major conclusion to be drawn is that the impact of location-specific factors on new firm start-up activity is not at all neutral and vague.

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