

## The Influence of Demographical Factors on the Interaction between Entrepreneurship and Unemployment

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Lithuania has made a significant progress on institution-building and policymaking in support of entrepreneurship over the last ten years (Grundey et al., 2008); however, the constantly changing business environment, information-flow growth, processes of integration into the global market increase business risk, and this complicates the people's determination to start their own business (Remeikiene, Startiene, 2007; Voronova, 2008), because business itself cannot provide the projected free cash flow (Kazlauskienė, Christauskas, 2007); a business establishment is limited by the lack of financial support measures for the start ups and developments of small and medium-sized businesses (Tamosiūnas, Lukosius, 2009); in order to survive in the market, firms are not only forced to recognize business risks, but must learn to manage them (Savcuk, 2007). A person determined to become an entrepreneur must evaluate not only the external, but also personal circumstances.

The article deals with an actual problem – the influence of demographical factors on the interaction between entrepreneurship and unemployment. The interaction between the entrepreneurship and unemployment is mainly analyzed through the two-way relationship between entrepreneurship and unemployment. The authors of studies (Thurik, 2003; Thurik, Verheul, 2002; Stel, Stunberg, 2004; Audretsch, Carey, Thurik, 2002; Care, Stella, Thurik, Audretsch, 2007) found that this relationship exists in the countries such as Japan, OECD countries. While studying the interaction between entrepreneurship and unemployment in other countries (Portugal, Spain, United Kingdom), the conclusion was made that economic analysis is insufficient in order to determine the bonds between them, it is necessary to analyze and evaluate all the chain of factors (cultural, demographic, political, psychological, technological) which determine the mutual relations between entrepreneurship and unemployment

By the purpose of the article – the evaluation of the influence of demographical factors on the interaction between entrepreneurship and unemployment – the authors seek to show how demographic factors affect the development of entrepreneurship and reduce unemployment.

Lithuanian and foreign scientists, examining the influence demographic factors on the entrepreneurship and unemployment, pays the highest attention to such demographic characteristics as gender, age, education, emigration, ethnic minorities, race, marital status, as they may determine the success of the business creation/survival or reduce the duration unemployment period. The research provides interesting facts: individual demographic factors do not

always positively influence entrepreneurship/unemployment. It appears that the same factors may hinder the establishment of a business, or liberation from unemployment. The question is: why do the demographic factors explored have a twofold influence? Literature does not issue unambiguous answer, but the dual impact of demographic factors is based on the cultures of different countries, their political decisions, traditions, climate difference or diversity of business fields.

Deeper analysis of the interaction between entrepreneurship and unemployment through the prism of the demographical factors was encouraged by the fact that scientists tend to analyze only the effects of demographic factors on entrepreneurship, i.e. the significance of age, education, gender, ethnic minorities and others to business creation. There is the lack of studies which examine demographic factors with interpretation of the mutual bonds of entrepreneurship and unemployment.

A systematic analysis of the literature leads to the conclusion that such demographic factors as one of parents'/spouse's being an entrepreneur, emigration, ethnic minorities, race and work experience encourage business creation, while the gender differences – hampers business. Moreover, the demographic factors (education, age, unemployment duration) were determined to affect the start ups of businesses differently.

In practical part of the article Pearson's correlation and regression methods were used to examine the reliability presumptions raised. The conclusion was made that education of unemployed men as well as women significantly correlates with the indicator of the relation between the number of established companies with a ratio of the number of operating companies ( $R^2_{men} = 0.74$ ;  $R^2_{women} = 0.77$ ), education of unemployed women – with the number of newly registered enterprises ( $R^2_{women} = 0.71$ ), experience of unemployment – with the indicator of relation between the number of established companies and the number of operating companies ( $R^2_{1-2\ months} = 0.81$ ;  $R^2_{3-5\ months} = 0.76$ ) and experience of unemployment with the number of newly registered companies ( $R^2_{1-2\ months} = 0.75$ ). This shows that these factors are significant in incorporation of new companies as well as in existing business.

Keywords: the interaction between entrepreneurship and unemployment, demographic factors.

### Introduction

**The novelty of the problem.** Scientists' empirical studies of the interaction between entrepreneurship

unemployment showed that the analysis of economic factors only cannot accurately describe the phenomena of interaction because each country has original, specific culture, which, without doubt, is largely determined by the mutual bond between entrepreneurship and unemployment (Remeikiene, Startiene, 2009). Lately the interaction between entrepreneurship and unemployment in various countries is based not only on the key macroeconomic indicators such as unemployment trend, the economic situation in the country, GDP, inflation, and etc., state of employment, promotion and business promotion policy, but constantly changing demographic characteristics of the factors (e.g., aging, growing interest of population in acquiring higher education, life-long learning, the declining activity of youth and women in labour market, the growing migration). The study found that the individual's decision to start a business largely depends on demographic, scientifically also referred to as personal, factors. The analyzed literature provides an interesting fact: the demographic characteristics of indicators as age, education, unemployment/employment duration, marital status may be twofold (positive and negative) in act of business creation. On one hand, education, age, unemployment/employment duration, marital status increase the opportunity to become entrepreneurs, on the other hand – it reduces due to more perspective wage labour. There are no answers to the questions: "Why does a certain age group of persons having relevant family status and employment/unemployment experience are more likely to create jobs?" Or "Why do immigrants or ethnic minorities successfully realize themselves in business creation?" The literature lacks more detailed demographic analysis, covering a wider range of demographic factors, as most authors tend to analyze the individual/several factors determining business creation.

**The object** of the article is demographic factors influencing the interaction between entrepreneurship and unemployment.

**The aim of the article** is to assess the influence of demographic factors to the interaction between entrepreneurship and unemployment.

To achieve the object, the following **tasks** were raised:

1. To analyse mutual relations between entrepreneurship and unemployment.
2. To determine the demographic factors that influence the interaction between entrepreneurship and unemployment.
3. To calculate the impact of demographic factors on the interaction between entrepreneurship unemployment in Lithuania.

**The study methodology** includes a systematic literature analysis, mathematical statistical methods (Pearson's correlation coefficient, linear regression).

In the first part of the article, the interaction between entrepreneurship and unemployment is theoretically and empirically grounded. The conclusion is made that the "push" (unemployment encourages to start a business) and "pull" (business reduces unemployment) effects exist both in practice and theory, and their operation is based on economic and cultural factors.

The influence of demographic factors on the interaction between entrepreneurship and is analyzed in the second part of the article. A systematic literature analysis has

shown that the impact of demographic factors on the business establishment varies. In order to identify the most problematic factors, a table covering several studies was prepared.

In the third part of the article, by the use of Pearson's correlation and regression techniques the reliability of the presumptions raised are verified in the case of Lithuania. The conclusion was made the interaction between entrepreneurship and unemployment is largely determined by the education of unemployed people, age of the unemployed of the most marketable age group (25-54 yrs) in the market and short duration of unemployment.

### **Theoretical and empirical substantiation of interaction between entrepreneurship and unemployment**

While analyzing the interaction between entrepreneurship and unemployment (Remeikiene, Startiene, 2008), it was determined that interdependence between entrepreneurship and unemployment in foreign literature is analysed through a two-way communication, i.e. "Schumpeter's" ("*Entrepreneurial*") effect – entrepreneurship reduces unemployment and "Refugee" effect, while unemployment encourages entrepreneurship (Verheul, Stel and Thurik, 2006; Thurik, Carree, Stel, Audretsch, 2007). In the analysed literature, other concepts to describe unemployment/entrepreneurship relationships can be found: "recession-push or unemployment-push" and "prosperity-pull" effects (Parker, 2004; Johansson, 2000; Muehlberger, 2007). Other authors' (Cowling, Bygrave, 2003) person's decision to start own business in order to get rid of unemployment status bases on the microeconomic theory of labour supply and of consumer choice theory, implying that individuals actively participate in the labour market, if: 1) more benefit will be gained from the work (such as income, employment status), compared with the benefits obtained from leisure, 2) lower income will be got from the sources of unemployment; 3) the lower the income from their employment.

According to the recession/unemployment push effect, unemployment reduces the opportunities to obtain gainful occupation and the expected income from employment, thus the person is "pushed" into the business. According to foreign authors (Ritsilä, Tervo, 2002) "Entrepreneurship is not their dream, but rather the lesser of two "evil", the other "evil" being the present unsatisfactory situation." On the other hand, companies go bankrupt in the economic downturn, however, at the same time increase the availability of used second-hand capital equipment, reducing the number of entry barriers. Unemployment consequences for entrepreneurship are proved by scientific researches, which found that unemployment is positively associated with business start-up activities, i.e. increased unemployment promote starting own business (Blau, 1987, Evans and Leighton, 1990, Evans and Jovanovic, 1989 and Blanchflower and Meyer, 1994).

Under the "prosperity pull" assumption individuals will own the business, if the country's economic and business conditions will allow, thus reducing the unemployment rate. Assumption emphasizes that individuals tend to become self-employed when unemployment is low since a chance to return to wage labour is higher

(Muehlberger, 2007). However, it is worthwhile to mention that the "prosperity pull" effect dominates at the national level (Ritsilä, Tervo, 2002). If in the country there prevails high unemployment rate, entrepreneurs face reduced demand of products or services. This reduces the revenue accruing from entrepreneurship, and capital availability, which leads to increasing the risk of bankruptcy. In this way, individuals are "pulled out" of business because the company's bankruptcy case becomes a higher risk than the gainful employment. Studies (Lucas, 1978; Javanovic, 1982) found that there is an inverse relationship between entrepreneurship and unemployment (high level of unemployment is associated with a low level of entrepreneurship), i.e. unemployed people do not have the necessary expertise to start-ups and do not have intrinsic properties of the entrepreneur. Article authors claim, the prevailing controversial opinions of scientists about entrepreneurship/unemployment interaction issues are still in debate.

In recent years, empirical studies carried out in order to answer the question "Can the enterprise reduce the level of unemployment and could unemployment boost the business?" present ambiguous results.

In order to answer the question, two-equation model or VAR was used to carry out empirical studies in 23 OECD countries, Japan, show the apparent results: "Schumpeter's" effect exists, i.e. entrepreneurship reduces unemployment (Thurik, 2003; Thurik, Verheul, 2002; stel, Stunberg, 2004; Audretsch, Carey, Thurik, 2002; Care, Stella, Thurik, Audretsch, 2007). However, in the countries such as Portugal (Baptista, Thurik, 2007; Baptista, Preto, 2006), Spain (Golpe, Stella, 2007; Thurik, Verheul, 2002) and the United Kingdom (Thurik, 2003) the chosen mathematical models could not clearly assess the interaction between entrepreneurship and unemployment due to prevalence of the different types of entrepreneurship, and the exclusion of economic and cultural factors from the calculations.

According to empirical studies carried out in various countries, determining the links between entrepreneurship and unemployment, it was found that the economic and cultural factors affect the accuracy of the results. Factors such as differences in gender, religion, cultural differences, the economic situation in the country, regarded as one of the most important, and their exclusion from determination of interdependence between entrepreneurship and

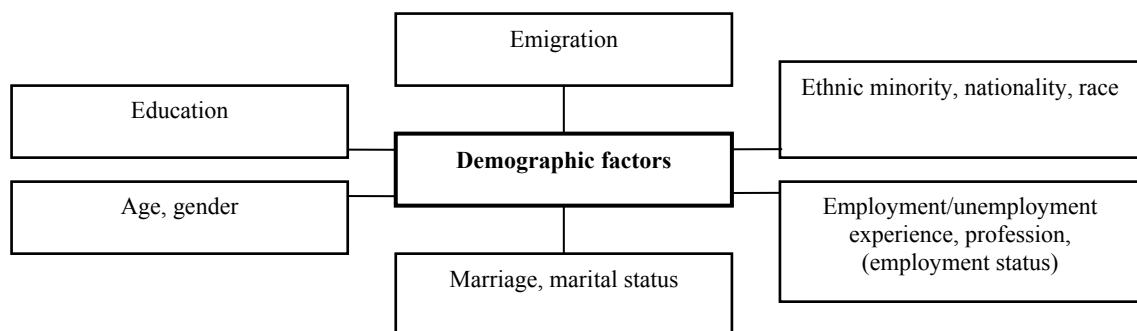
unemployment can be a reason for the failure of the study. Remeikiene, Startiene (2009) by cross-correlation method and the regression coefficient of reliability evaluated the interdependence between entrepreneurship and unemployment in Lithuania. It was found that this relationship exists, although the level of entrepreneurship is more influenced by other factors such as inflation, GDP, exports and wages. The author argues that weak interdependence between entrepreneurship and unemployment is determined by such factors as gender differences, the regional characteristics (the tourism infrastructure the population of the area, the kind of business engaged in, the unemployment rate in rural and urban areas, etc.), and religion.

The importance of demographic business is also emphasised in the studies of foreign scientists (Georgellis, Sessions, Tsitsianis, 2005; Leoni, Falk, 2008; Parker, 2004 and others.).

### **The importance of demographic factors for the interdependence between entrepreneurship and unemployment**

While analysing the choice of the unemployed or employed to set up a business, often a question that is faced is why some people decide and to successfully become an entrepreneur with their own ideas and experience, while the others are forced to withdraw from the labour market because of the business failure. To answer the question, various studies and researches found that demographic factors play an important role in explaining the interaction between entrepreneurship and unemployment. In general sense, demographic factors are considered as factors related to the individual's personal characteristics: age, sex, social class, educational level, occupation, marital status, race/ethnic minority.

In the group of demographic factors, the authors (Georgellis, Sessions, Tsitsianis, 2005; Leoni, Falk, 2008; Meager, 1991; Ritsilä, Tervo, 2002; Colombier, Masclet, 2008; Lin, Picot, Compton, 2000; Carrasco, 1999 and others) identify unemployment/employment duration, occupation, age, gender, education, marital status/marriage, minorities, emigration, and race as one of the most important and most frequently used in research (see Figure 1).



**Figure 1.** The most important demographic factors and the most often used in empirical business/unemployment studies

In addition to the above factors, the authors also attributed less analysed factors to the demographic factor group: religion, personality, the origin of personal skills (Mazzarol and etc., 1999), social capital (Georgellis and etc. (2005); flexible work arrangement (Verheul and etc., 2004); personality motivations (Beugelsdij, Noordehaven, 2005). The diversity of demographical factors is determined by the fact that the literature provides different classification of demographic factors. For example, some authors (Gaddam, 2007) attributed the person's determination to become an entrepreneur to psychological factors. In the literature contradictory opinions can be found on the influence of demographic factors to the relations between entrepreneurship and unemployment.

The decision (not) to start a business is influenced by employment status (Georgellis, Sessions, Tsitsianis, 2005). Scientists analyzed the impact of the unemployment duration of start-ups, that provides twofold results. Ritsilä, Tervo (2002) study carried out in Finland shows that the probability of establishment of the company is greater when the unemployment duration is shorter, i.e. the early stage of unemployment. Long period of unemployment deprives the desire to engage in any activity (including own business) because of the offset of professional opportunities, financial capital liquidity. Martinez-Granados (2002) research showed that the overall UK unemployment rate had a positive influence on the opening of business, but the longer the duration of unemployment drastically reduced this possibility. Great importance and influence are dedicated to the psychological factors, reflecting the negative side of unemployment (depression, mistrust of self-confidence, apathy). Meanwhile, other studies (Alba-Ramirez, 1994) obtained opposite results: longer duration of unemployment has increased opportunities to become a self-employed person in Spain and the United States. A contradictory empirical result obtained in the evaluation of the duration of unemployment rate is an experience in the labour market. Georgellis, Sessions, Tsitsianis (2005) maintain that, the social security of wage labour, financial and non-financial benefits reduce the possibilities of becoming an entrepreneur, but the short-term work experience/frequent job change increases (Ritsilä, Tervo, 2002).

Scientists, examining the characteristics of demographic indicators such as education and age, affecting entrepreneurship and unemployment, also provide mixed results. Although the majority of previous studies (Henley, 2005; Ritsilä, Tervo, 2002; Bergmann, Sternberg, 2007, Evans and Leighton, 1989; Cowling, Taylor, 2001; Wagner, Sternberg, 2004) showed a positive correlation between education and the establishment of new businesses, and persons having acquired higher education were regarded as more successful businessmen than other market participants; other studies (Georgellis, Sessions and Tsitsianis, 2005) obtained the opposite conclusion, stating that education does not correlate with the business start up, because not all business areas (such as, agriculture and certain services, wholesale trade, manufacturing) require education. On the other hand, the third conclusion was made claiming that the least educated have the highest probability of being self-employed, however, evidence is found that the most highly educated

also have relatively high probabilities in the OECD countries (Blanchflower, 1998). In literature two opposing views can be found on the age and the impact of the establishment of the company. The probability of being self-employed rises with age (Blanchflower, 1998; Bergmann, Sternberg, 2007). The age of 26 to 40 can be considered as a period of freedom with regard to the choice of occupation (Ritsilä, Tervo, 2002), the average age (between 25 and 45 years of age) is most likely to get engaged in entrepreneurship, and these persons often become successful business builders (Henley, 2005; Lin, Picot, Compton, 2000). Professional experience, self-reliance, availability of capital increase with age, which provides business with more probability (Parker, 2004). On the other hand, people of the average age already have family, have reached the heights of occupation, which may reduce the opportunities to start business from "zero" and seek recognition again.

Venerable old age persons are less likely to take risks and start-ups, but the self-employment can be a perfect alternative in retirement, because of the more efficient use of accumulated experience and expertise, supported by the skills and financial stability. Young people, although willing to take greater risks in business, unfortunately, do not have financial resources and business-specific experience.

While analysing gender differences, researchers' (Remeikiene, Startiene, 2008; Rakauskiene, 2002; Grundey & Sarvutyte, 2007, Rost, Chelli, 2005; Ritsilä, Tervo, 2002; Leoni, Falk, 2008; Williams, 2004; Henley, 2005; Lin, Picot, Compton, 2000; Wagner, Sternberg, 2004 and others) opinion is the same: women are less likely to be entrepreneurs than men. Remeikiene, Startiene (2008) found that changes in demographic variables and varying scales of values are the main reasons that determine gender differences in business. The lower status of women still tends to be based on feminism and theories of discrimination by scientists, that explain the existence of the phenomenon within the historically formed stereotypes and the differences of male and female nature.

Marriage is a significant boost in business, but it affects both genders in different ways. For a woman marriage acts positively, if she intends to start business, while for the men it acts negatively (Leoni, Falk, 2008). This phenomenon can be interpreted in the following way: business provides women more flexible working hours, thus facilitating children and home care, while men associate business with higher risk, and a man, as the main family breadwinner, rather chooses a wage labour as a less risky occupation. The presence of parent- or spouse-entrepreneur in the family also has positive influence on business development (Lin, Picot, Compton, 2000; Andersson, Hammarstedt, 2008).

Researchers (Dawson, Henley, Latreille, 2009; Masurel and etc. 2002; Clark, Drinkwater, 2008; Blanchflower, 2008) who concerned ethnic minority in entrepreneurship maintain that the discrimination in the labour market reveal itself in lower wages; and relatively higher unemployment rate compared with the general employment trends determine the motivation of ethnic minorities, persons of another race and people with disabilities to get engaged in their own business. Self-

employment offers independence and, moreover, success in self-employment depends largely upon one's abilities and efforts rather than upon the stereotypical attitudes of others towards minorities (Borooah, Hart, 1999). Emigration not only reduces the level of unemployment (Cekanavicius, Kasnauskiene, 2009) in the country, but also creates paces of work in their home country for persons unable to find work (Bergmann and Sternberg, 2007; Goey, 2004, Lunn and Steen, 2000).

However, globalization processes slightly amended the priorities of this group of demographic factors in respect of business. Clark, Drinkwater (2008) conducted a study in UK and found that higher education acquired by minorities and immigrants and younger age persons is associated with attenuated willingness to set up businesses, although the majority of parents/grandparents have long been developing business in the host country.

Summarising a conclusion can be made, that education, age, unemployment/employment duration, marital status whether positive or negative, may affect the start up of business. Evaluating the start up of business from gender positions, women more and more often decide to become entrepreneurs, while the men are still the leaders in this field. Marital status (marriage, children) influences men's and women's determination to establish a business differently: the family encourages women to become entrepreneurs, contrary to men – to suspend them from venturing into business. Business-friendly factors are the presence of entrepreneur as the spouse/parent, race, ethnic minorities, emigration, which both promote genders and people of various age to engage in their own business.

In order to systemise the impact of demographic factors on the start up of business, Table 1 presents the results of the demographic factors research.

Table 1

**Demographic factors influencing start up of business**

Factors	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Age:									+							+	+		
- young people						+													
- older persons			+		+			+					+		+				+
Gender differences			-				-	-			-		-				+		-
Unemployment duration										+		+							
Employment experience						+			+								+		
Education			+		+	()		+	()		/	+			+	+	+		+
Race					+				x										
Emigration				+									+					+	
Ethnic minorities	+	+						()	/							+			+
Disabled persons																			+
Marital status						+			x	/					+				()
Presence of parent (spouse) as entrepreneur				+		+		+						+					

**Studies:**

1. Bogan and Darity (2008)
2. Masurel and others (2002)
3. Bergmann and Sternberg (2007)
4. Andersson and Hammarstedt (2008)
5. Blanchflower (1998), (2008)
6. Lin and etc. (2000)
7. Rosti and Chelli (2005); Rakauskiene (2002); Williams (2004); Startiene, Remeikiene (2008)
8. Henley (2005)
9. Georgellis and others (2005)
10. Martinez-Granado (2002); Alba-Ramirez (1994); Evans and Leighton (1989)
11. Leoni and Falk (2008)
12. Ritsilä, Tervo (2002)
13. Goey (2004)
14. Colombier, Masclet (2008)
15. Sarri, Trihopoulou (2005)
16. Levent and etc. (2003)
17. Masuda (2006), only women's participation in business
18. Lunn and Steen (2000)
19. Dawson, Henley, Latreille (2009)

**Key:**

- +: positive relationship
- : negative relationship
- x: weak relationship
- /: positive and negative relationship
- (): irrelevant relationship

As seen in Table 1, the authors' studies addressing the impact of demographic factor on business development, provide different results. A conclusion can be made from the results presented in Table 1 that the most problematic are the following fields: education (for the opposite results ("+", "/", "()")); age (studied only in the general age of the individual or age groups, one of which – youth or older people, had a positive impact on entrepreneurship), the

unemployment experience (a positive relationship, but the authors refer to different durations of unemployment).

Discovered problematic areas allow the formulation of hypotheses, which, using data of Department of Statistics to the Government of the Republic of Lithuania, will be empirically verified in the third part of the article:

*Presumption 1:* Education encourages the unemployed to take their own business.

*Presumption 2:* Unemployed persons, who have less experience of unemployment, have greater opportunities to develop business.

*Presumption 3:* The potential business founders are older unemployed persons.

### The evaluation of the influence of demographic factors on interaction between entrepreneurship and unemployment

To identify the strength of the linear relationship between variables, the most common and most often used in practice is Pearson's correlation coefficient (Čekanavičius, Murauskas, 2004; Kruopis 1993; Moore, 2000), which is contrary to the other correlation coefficients (Spearman's, Kendall's tau-a, Kendall's tau-b, Kendall's tau-c, etc.) is able to assess the most information. To ensure the expedience of the calculation of the demographic indicators impact on the entrepreneurship and unemployment, firstly the existence of correlation relationship between the number of unemployed and the employers and the self-employed persons in 1998-2008 Lithuania was verified. The results obtained showed that the relationship is statistically

significant (Pearson's significant correlation coefficient of the unemployed and the employers and the self-employed is 0.0051), and the correlation is of the average strength (Pearson's correlation coefficient is  $r = 0.77535$ ). The number of enterprises, the number of newly registered/cancelled enterprises, the number of enterprises established minus the number of cancelled firms, established firms with a ratio of the number of firms – are the factors chosen by the authors of the article to characterise the business and verify the raised presumptions. Having verified the normality hypotheses determining demographic and business factors, a normality condition was met ( $p$  value  $< 0.05$ ), therefore Pearson's correlation coefficient is calculated. Checking the third presumption, the choice of the four age groups (15-24 years, 25-54 years, 55-64 years, 65+ years) was determined by the data classification of Lithuanian Statistics Department. In the calculations there are not included demographic factors such as ethnic minorities, race, marital status, disability, emigration due to the lack of data for the period analysed.

Table 2 shows only statistically significant unemployment, demographic and business indicators:

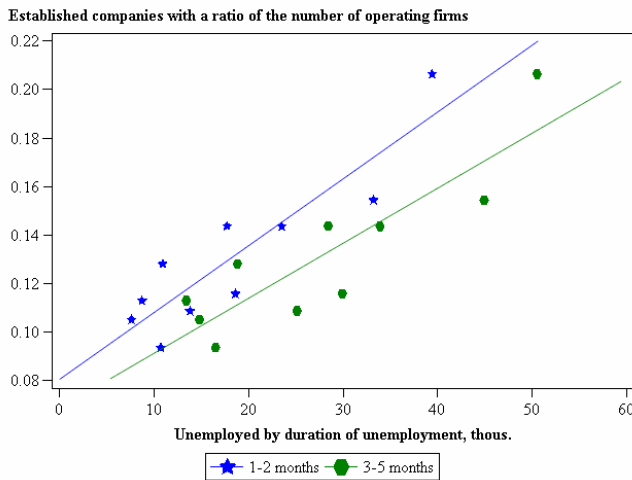
Table 2

Correlation of demographic factors determining entrepreneurship

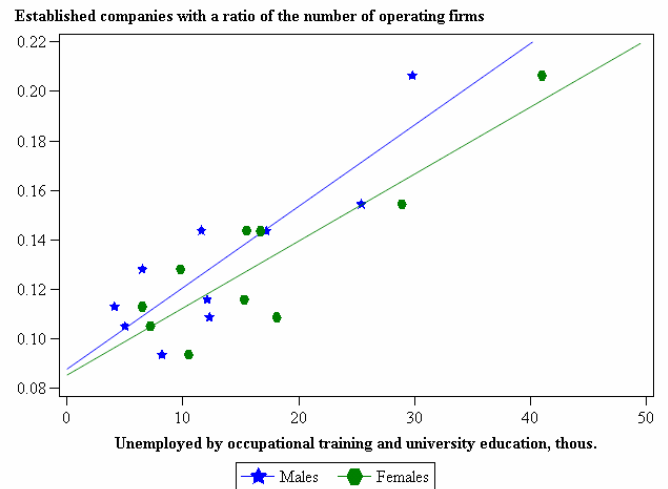
Response Variable Name (endogenous variable, y)	Input Variable Name (exogenous variable, x)	Correlations
Number of operating small and medium-sized enterprises	The unemployed, whose term of unemployment is less than 1 month, in thousands	0.66190
Established companies with a ratio of the number of operating firms	The unemployed, whose term of unemployment is 1-2 months, in thousands	<b>0.90039</b>
Established companies with a ratio of the number of operating firms	The unemployed, whose term of unemployment is 3-5 months, in thousands	<b>0.87523</b>
Established companies with a ratio of the number of operating firms	The unemployed, whose term of unemployment is 6-11 months, in thousands	0.77534
Established companies with a ratio of the number of operating firms	Unemployed men with occupational training and university education, number, in thousands	<b>0.86182</b>
Established companies with a ratio of the number of operating firms	Unemployed men with school education with further professional qualification, number, in thousands	0.60816
Established companies with a ratio of the number of operating firms	Unemployed men with special secondary education including school education with professional qualification, number, in thousands	0.75938
Established companies with a ratio of the number of operating firms	Unemployed women with occupational training and university education, number, in thousands	<b>0.88059</b>
Established companies with a ratio of the number of operating firms	The unemployment rate among 24-54 year old unemployed persons, %	0.63424
Established companies with a ratio of the number of operating firms	The unemployment rate among 15-24 year old unemployed men, %	0.63348
Established companies with a ratio of the number of operating firms	The unemployment rate among 24-54 year old unemployed men, %	0.66714
Number of newly registered enterprises	The unemployed, whose term of unemployment is 1-2 months, in thousands	<b>0.86831</b>
Number of newly registered enterprises	The unemployed, whose term of unemployment is 3-5 months, in thousands	0.83394
Number of newly registered enterprises	The unemployed, whose term of unemployment is 6-11 months, in thousands	0.66759
Number of newly registered enterprises	Unemployed men with occupational training and university education, number, in thousands	<b>0.82435</b>
Number of newly registered enterprises	Unemployed men with special secondary education including school education with professional qualification, number, in thousands	0.68295
Number of newly registered enterprises	Unemployed women with occupational training and university education, number, in thousands	<b>0.84646</b>

In order to get better results, each value was calculated by regression of reliability  $R^2$  (Kvalseth, 1985). The results obtained showed that the regression line can be explained

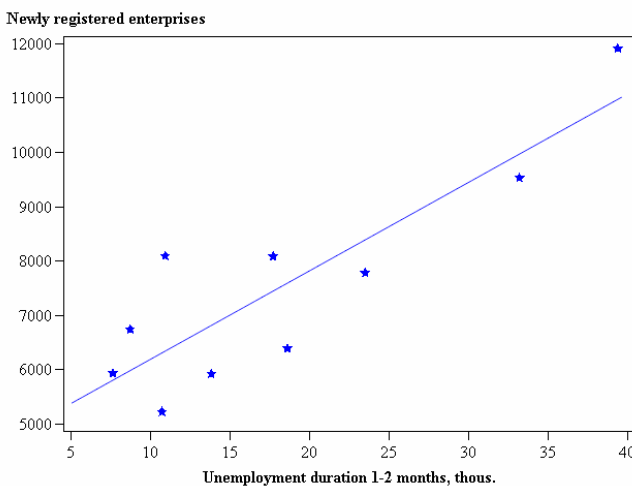
only by seven of the seventeen statistically significant deviations. In Figures 1-4 only those values are available in which the  $R^2$  is more than 0.7.



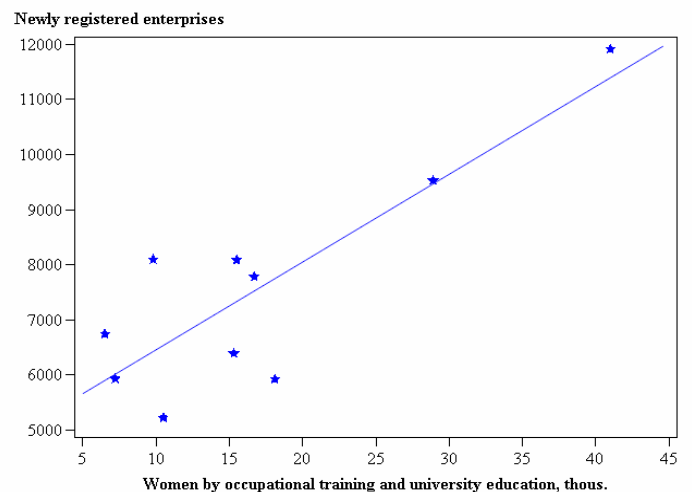
**Figure 1.** Established companies with a ratio of the number of operating firms in connection with the unemployment duration ( $R^2_{1-2\text{ months}} = 0.810702$ , and  $R^2_{3-5\text{ months}} = 0.766028$ )



**Figure 2.** Established companies with a ratio of the number of operating firms in relationship to the unemployed education ( $R^2_{\text{men}} = 0.742734$  and  $R^2_{\text{women}} = 0.775439$ )



**Figure 3.** Newly registered enterprises in relation to the unemployment duration ( $R^2_{1-2\text{ months}} = 0.753962$ )



**Figure 4.** Newly registered enterprises relation to women's education ( $R^2 = 0.716495$ )

As seen from the data, the strongest relationship was found between these variables: the ratio between the number of established companies with a number of operating firms and the unemployment duration of 1-2 and 3-5 months; established companies with a ratio of the number of operating firms and occupational training and university education of both unemployed genders; the number of newly registered companies and the unemployment duration of 1-2 months; the number of newly registered firms and occupational training and university education of both unemployed genders.

Summarizing the results obtained, it can be concluded that the investigation of the interaction between entrepreneurship and unemployment in Lithuania identify significant demographic factors, such as the occupational training and university education of the unemployed men and women and the short duration of unemployment, i.e.

higher education and the short duration of unemployment encourages entrepreneurship of unemployed. The high correlation coefficients calculated by Pearson's correlation method between education and unemployment duration have shown that unemployed men and women who have higher/vocational education are usually unemployed from 1 to 2 months. ( $r_{\text{men}} = 0.99031$  and  $r_{\text{women}} = 0.96619$ ). The longer is the duration of unemployment when it lasts 1 year and more, the greater number of unemployed both men and women is with the secondary to professional qualifications, secondary, primary with the professional and the school with the professional qualifications education. An interesting result was obtained examining the unemployment duration of persons with the lowest (school) education: the duration of unemployment is the same as in the higher education of the unemployed. According to the Lithuanian Labour Exchange information,

the unemployed persons with the lowest education are in a particular demand for seasonal works and works not demanding special skills, knowledge or experience, thus their duration of unemployment is usually short.

Averagely significant correlation relationship was noticed comparing the business indicators with the unemployed age range from 25 to 54 years. Although the said age range is very large, this suggests that new firms in Lithuania tend to be established by the persons of young and average age. Propensity of young and average age people to develop their business is justified by reasons expressed in the theory: a 25 year old person usually already has higher education, 30-40 year old persons have better possibilities for capital acquisition, and 40 year old persons already have enough knowledge and work experience. It is important to note that statistically significant relationships were identified only in the groups of the unemployed men between 15-24 and 25-54 years of age, while there was no significant connection in the woman age groups identified.

The results of the analysis lead to the following conclusions:

1. A strong correlation between business and the education of unemployed persons showed that the tertiary/higher education positively affects the willingness of unemployed people to start business, so it can be argued that the Presumption 1 is confirmed. Calculations showed that the education is more significant among women, while men with lower education start up their business because those business areas (for example, construction or industry) which are dominated by men require professional education.

2. Stronger correlation relationship was identified between the indicators of the short-term unemployment and business (the newly registered, the number of firms, established firms with a ratio of the number of operating firms) than among the indicators of long-term unemployment with the same business indicators which showed that the short-term unemployment (from 1 to 2 months) stimulated to start own business, while the unemployment rate decreased entrepreneurial opportunities. The reasons may be various: mental status, lack of resources, loss of skills and qualifications, etc. The presumption 2 was confirmed.

3. Correlation of average importance between the number of established companies with a ratio of the number of operating firms and the unemployment rate in the group of persons 25-54 years of age showed that the young and average age unemployed people prefer to set up their own businesses more than other age groups of the unemployed, therefore the presumption 3 was not confirmed. This could be determined not only by personal reasons (the desire to be a master for himself, freedom, flexible working hours, higher income, more possibilities to take risk, etc.), but also by involving more favourable external circumstances for the specific age group, i.e. banks are more flexible in granting loans to the persons of average age because they already have their own equity, more experience/knowledge capital, a wider circle of acquaintances, etc.

## Conclusions

Summarising the following conclusions can be made:

1. The interaction between entrepreneurship and unemployment essentially determines a person's status in the labour market. An examination of the mutual relations of entrepreneurship and unemployment showed that in both theory and practice, there are a "push" (unemployment encourages to start up business) and "pull" (business reduces unemployment) effects.

2. Demographic factors most often used in empirical studies were determined: education, age, gender, marital status, marriage, unemployment/employment experience, ethnic minorities, immigration, race – have different impact on business development. There are three factors – the unemployment experience, education, age – which can positively and negatively affect the business. Positive impact on business is made by a parent/spouse's presence as entrepreneur, emigration, work experience, ethnic minorities; a negative impact on business is exerted by the existence of gender differences. Marital status affects men's and women's willingness to start up a business.

3. Pearson's correlation and regression reliability calculations of demographic and business characteristics showed that a strong relationship exists between the indicator of the relation between the number of established companies with a ratio of the number of operating firms with the unemployment duration (1-2 months, 3-5 months) and the number of unemployed men and women in higher education/occupational training. This proves that the short-term unemployment and higher education of both genders have positive effects on business creation, which may cause a reduced unemployment. A strong correlation between the number of newly established enterprises and the unemployment duration (1-2 months) and the education of unemployed persons of both genders showed that the demographic factors largely contribute to the "push" effect.

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**Demografinių veiksnių įtaka verslininkystės ir nedarbo tarpusavio sąveikai**

Santrauka

Šia straipsnyje nagrinėjama aktuali problema – demografinių veiksnių įtaka verslininkystės ir nedarbo tarpusavio sąveikai. Verslininkystės ir nedarbo tarpusavio sąveika daugiausia analizuota remiantis verslininkystės ir nedarbo dvipusiu ryšiu. Tyrimų metu autoriai (Thurik, 2003; Thurik, Verheul, 2002; Stel, Stunnenberg, 2004; Audretsch, Caree, Thurik, 2002; Caree, Stel, Thurik, Audretsch, 2007) nustatė, kad šis ryšys egzistuoja tokiose šalyse, kaip Japonija, OECD šalys. Tirtant verslininkystės ir nedarbo tarpusavio sąveiką kitose šalyse (Portugalijoje, Ispanijoje, Jungtinėje Karalystėje) gauta išvada, kad nagrinėjamiems ryšiams nustatyti nepakanka vien tik ekonominių veiksnių analizės. Būtina išanalizuoti ir įvertinti visą veiksnių (kultūrinių, demografinių, politinių, psichologinių, technologinių) grandinę, sąlygojančią verslininkystės ir nedarbo tarpusavio ryšius.

Pastaruoju laikotarpiu verslininkystės ir nedarbo tarpusavio sąveika įvairiose šalyse grindžiama ne tik tokiais pagrindiniais makroekonominiais rodikliais: nedarbo lygio kitimo tendencijomis, ekonomine situacija šalyje, BVP, infliacijos lygiu ir kt., valstybės vykdoma užimtumo rėmimo ir verslo skatinimo politika, atskirų šalių savita kultūra, bet ir nuolat besikeičiančiomis demografinių veiksnių charakteristikomis (pavyzdžiui, visuomenės senėjimu, didėjančiu gyventojų susidomėjimu įgyti aukštąjį išsilavinimą, visą gyvenimą trunkančiu mokymusi, mažėjančiu jaunimo ir moterų aktyvumu darbo rinkoje, didėjančia migracija). Atlikus tyrimus nustatyta, kad individo apsisprendimas pradėti savo verslą labiausiai priklauso nuo demografinių, mokslinėje literatūroje dar kitaip vadinamų asmeninių, veiksnių.

Analizuota literatūra pateikia įdomų faktą: tokios demografinių rodiklių charakteristikos: amžius, išsilavinimas, nedarbo ar darbo trukmė, šeimyninė padėtis, gali dvejopai (teigiamai ir neigiamai) veikti verslo kūrimą. Viena vertus, išsilavinimas, amžius, nedarbo ar darbo trukmė, šeimyninė padėtis padidina galimybę tapti verslininku, kita vertus – ją sumažina dėl perspektyvesnio samdomojo darbo. Pasigendama atsakymų į klausimus: „Kodėl tam tikros amžiaus grupės asmenys, turintys atitinkamą šeimyninį statusą, išsilavinimą ir darbo ar nedarbo patirtį, labiau linkę kurti darbo vietas?“ ar „Kodėl emigrantai ar tautinių mažumų atstovai save sėkmingai realizuoja kuriant verslą?“. Nagrinėtoje literatūroje pasigendama išsamesnės demografinių veiksnių analizės, apimančios platesnį demografinių veiksnių spektrą, nes dauguma autorių linkę analizuoti pavienius ar kelis verslo formavimą lemiančius demografinius veiksnius.

Užsienio ir Lietuvos mokslininkai, nagrinėję demografinių veiksnių reikšmę tiek verslui, tiek nedarbui didžiausią dėmesį skyrė tokiems demografiniams rodikliams: lyčiai, amžiui, išsilavinimui, emigracijai, tautinėms mažumoms, rasei, šeimyninei padėčiai, nes būtent jie gali nulemti verslo kūrimo ar išlikimo sėkmę ar sutrumpinti nedarbo trukmę. Atlikti moksliniai tyrimai parodė, kad atskiri demografiniai veiksniai ne visuomet daro teigiamą poveikį verslininkystei ar nedarbui. Pasirodo, kad tie patys veiksniai gali kliudyti verslo steigimui ar išsivadavimui nuo nedarbo. Išskyla klausimas, kodėl demografiniai veiksniai dvejopai veikia nagrinėjamus reiškinius? Nagrinėta literatūra nepateikia vienareikšmiško atsakymo, tačiau dvejopą demografinių veiksnių poveikį grindžia įvairių šalių kultūrų, šalių politinių sprendimų, tradicijų, klimato skirtingumu ar verslo sričių požymių įvairove.

Gilinimasis į verslininkystės ir nedarbo tarpusavio sąveiką, taikant demografinius veiksnius, paskatino ir tai, kad mokslininkai linkę analizuoti tik demografinių veiksnių poveikį verslininkystei, t. y. kokią reikšmę amžius, išsilavinimas, lytis, tautinės mažumos ir kt. turi verslo kūrimui. Pasigendama tyrimų, kuriuose būtų nagrinėjami demografiniai veiksniai, aiškinantys verslininkystės ir nedarbo tarpusavio ryšius.

**Straipsnio tikslas** – įvertinti demografinių veiksnių įtaką verslininkystės ir nedarbo tarpusavio sąveikai. Tikslui pasiekti iškelti šie uždaviniai: 1) išnagrinėti verslininkystės ir nedarbo tarpusavio ryšius; 2) nustatyti demografinius veiksnius, darančius poveikį verslininkystės ir nedarbo tarpusavio sąveikai; 3) apskaičiuoti demografinių veiksnių įtaką verslininkystės ir nedarbo tarpusavio sąveikai Lietuvoje.

**Straipsnio objektas** – verslininkystės ir nedarbo sąveikai darantys įtaką demografiniai veiksniai.

**Tyrimo metodika** apima sisteminę literatūros analizę, matematinius statistinius metodus (Pirsono koreliacijos koeficientas, tiesinė regresija).

Pirmoje dalyje teoriškai ir empiriškai grindžiama verslininkystės ir nedarbo tarpusavio sąveika. Atlikus mokslinės literatūros analizę, prieita prie išvados, kad tiek praktikoje, tiek teorijoje egzistuoja „stūmimo“ (nedarbas skatina imtis verslo) ir „traukimo“ (verslas sumažina nedarbą) efektai, o jų veikimas grindžiamas ekonominiais ir kultūriniais veiksniais.

Antroje dalyje aptariama demografinių veiksnių reikšmė verslininkystės ir nedarbo tarpusavio ryšiams. Atlikta sisteminė literatūros analizė parodė, jog demografinių veiksnių poveikis verslo steigimui yra skirtingas: tokie demografiniai veiksniai, pvz., tėvų ar sutuoktinio buvimas verslininku, emigracija, tautinės mažumos, rasė ir darbo patirtis, skatina verslo

kūrimą, o lyčių skirtumai trukdo verslui. Taip pat nustatyti demografiniai veiksniai (išsilavinimas, amžius, nedarbo trukmė) daro dvejopą poveikį įmonių steigimuisi. Problemiškiausiems veiksniams nustatyti sudaryta lentelė, kurioje pateikta keliolika mokslinių tyrimų rezultatų. Remiantis susistemintais tyrimų rezultatais, pateikiamos trys prielaidos (1 – išsilavinimas skatina bedarbius imtis nuosavo verslo; 2 – bedarbiai, turintys trumpesnį nedarbo patirtį, turi didesnę galimybę kurti verslą; 3 – potencialūs verslo steigėjai – vyresnio amžiaus bedarbiai asmenys), leisiančios įvertinti atskirų demografinių veiksnių įtaką nagrinėjamų reiškiniių sąveikai.

Praktinėje straipsnio dalyje Pirsono koreliacijos ir regresijos patikimumo metodais patikrintos Lietuvos prielaidos. Gauta išvada, kad tiek vyrų, tiek moterų bedarbių išsilavinimas reikšmingai koreliuoja su įsteigtų įmonių skaičiaus santykiu su veikiančių įmonių skaičiumi rodikliu ( $R^2_{\text{vyrų}} = 0,74$ ;  $R^2_{\text{moterų}} = 0,77$ ), bedarbių moterų – su naujai įregistruotų įmonių skaičiumi ( $R^2_{\text{moterų}} = 0,71$ ), nedarbo patirtis – su įsteigtų įmonių skaičiaus santykiu su veikiančių įmonių skaičiumi rodikliu ( $R^2_{1-2\text{ mėn.}} = 0,81$ ;  $R^2_{3-5\text{ mėn.}} = 0,76$ ) ir nedarbo patirtis – su naujai įregistruotų įmonių skaičiumi ( $R^2_{1-2\text{ mėn.}} = 0,75$ ). Tai rodo, kad šie veiksniai turi svarbią reikšmę tiek naujų įmonių kūrimuisi, tiek jau egzistuojančiam verslui. Vadinasi, pirmoji ir antroji prielaidos pasitvirtino. Gauta vidutiniškai reikšminga koreliacija tarp įsteigtų įmonių skaičiaus santykiu su veikiančių įmonių skaičiumi ir nedarbo lygio 25 – 54 metų amžiaus asmenų grupėje parodė, kad darbo rinkoje paklausiausia 25 – 54 m. amžiaus grupė, kurią sudaro tiek jaunimas, tiek vidutinio amžiaus asmenys labiau linkę steigti savo įmones nei kitų amžiaus grupių (15 – 24 m., 55 – 64 m., 65 ir daugiau m.) bedarbiai. Trečioji prielaida nepasitvirtino.

Atlikus sisteminę literatūros analizę, gautos šios išvados:

1. Verslininkystės ir nedarbo tarpusavio sąveiką iš esmės lemia užimamas asmens statusas darbo rinkoje. Išnagrinėjus verslininkystės ir nedarbo tarpusavio ryšius, galima teigti, kad tiek teorijoje, tiek praktikoje egzistuoja „stūmimo“ ir „traukimo“ efektai.

2. Nustatyti dažniausiai empiriniuose tyrimuose nagrinėjami demografiniai veiksniai: išsilavinimas, amžius, lytis, šeimyninė padėtis, santuoka, nedarbo ar darbo patirtis, tautinės mažumos, emigracija, rasė, skirtingai veikia verslo kūrimą. Išskirti veiksniai: nedarbo patirtis, išsilavinimas, amžius, kurie gali daryti ir teigiamą, ir neigiamą poveikį verslui. Teigiamu poveikiu verslui pasižymi tėvų ar sutuoktinio buvimas verslininku, emigracija, darbo patirtis, tautinės mažumos, neigiamu poveikiu – lyčių skirtumai. Šeimyninė padėtis skirtingai veikia vyrų ir moterų pasiryžimą imtis nuosavo verslo.

3. Demografinių ir verslo rodiklių Pirsono koreliacijos ir regresijos patikimumo skaičiavimai parodė, kad stiprūs ryšiai egzistuoja tarp įsteigtų įmonių skaičiaus santykiu su veikiančių įmonių skaičiumi rodiklio su bedarbių nedarbo trukme (1 – 2 mėn., 3 – 5 mėn.) ir bedarbių vyrų ir moterų aukštuoju ar aukštesniuju išsilavinimu. Tai įrodo, jog trumpalaikis nedarbas ir abiejų lyčių aukštasis išsilavinimas teigiamai veikia verslo kūrimą, dėl ko ir gali būti mažesnis nedarbas. Stipri koreliacija tarp naujai įsteigtų įmonių skaičiaus ir bedarbių nedarbo trukmės (1 – 2 mėn.) bei abiejų lyčių bedarbių išsilavinimo parodė, kad demografiniai veiksniai labiausiai prisideda prie „stūmimo“ efekto.

Raktažodžiai: *verslininkystės ir nedarbo tarpusavio sąveika, demografiniai veiksniai.*

The article has been reviewed.

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