

# Entrepreneurship Survey of the EU25

## *Secondary analysis*

Luxembourg

This survey was requested by Directorate-General for Enterprise and Industry E/1: Entrepreneurship, and coordinated by Directorate General Press and Communication

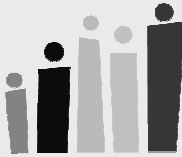
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Flash EB Series #192

# Entrepreneurship Survey of the EU25

*Secondary analysis*

Conducted by  
The Gallup Organization Hungary  
upon the request of the Directorate-  
General for Enterprise and Industry E/1:  
Entrepreneurship



**EUROBAROMETER**

Coordinated by Directorate-General  
Communication

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**THE GALLUP ORGANIZATION**



Luxembourg is below average on the three dimensions of the *entrepreneurial activity index*. Furthermore, Luxembourg is close to the EU25 average on all four indicators of the entrepreneurial climate index – the country has an *entrepreneurial climate score* which is equal to that of the average for the EU25.

### ***Entrepreneurial activity***

#### **A low rate of entrepreneurial activity**

In only four countries – Slovenia, Malta, Luxembourg and Austria – is the entrepreneurial activity less than 10%. Almost equal shares of the entrepreneurs interviewed in Luxembourg are classified as being “pulled” or “pushed” into their activity.

#### **High likelihood for over-55s to be an entrepreneur**

The proportion of older entrepreneurs (i.e. those aged over 55) among the sample group in Luxembourg is among the highest of all countries, and those aged over 55 are as likely as the younger age groups to be engaged in entrepreneurial activities.

#### **Significant proportion of highly-educated entrepreneurs**

The proportion of highly-educated entrepreneurs (i.e. they finished full-time education after the age of 21) is higher in Luxembourg than in most other countries. However, this is probably a consequence of an overall higher level of education in Luxembourg compared to other countries: the influence of the level of education on a respondent’s involvement in entrepreneurial activities does not differ from the EU25 average.

### ***Entrepreneurial climate***

The results for Luxembourg on all of the indicators measuring the entrepreneurial climate are close to the EU25 average.

#### **Choice for self-employment driven by self-fulfillment and personal independence**

Given that Luxembourg is characterised by a low entrepreneurship rate, Luxembourgish respondents are expected to have a high preference for employee status: more than half of them say they prefer to be an employee. It is also worth noting that those who say they prefer to be an employee, more often than individuals in other countries, say it is because of factors such as regular income and stability of employment.



# European Entrepreneurship Survey Scoreboard



Luxembourg

Overview

Life-cycle

Profiles

Demographics

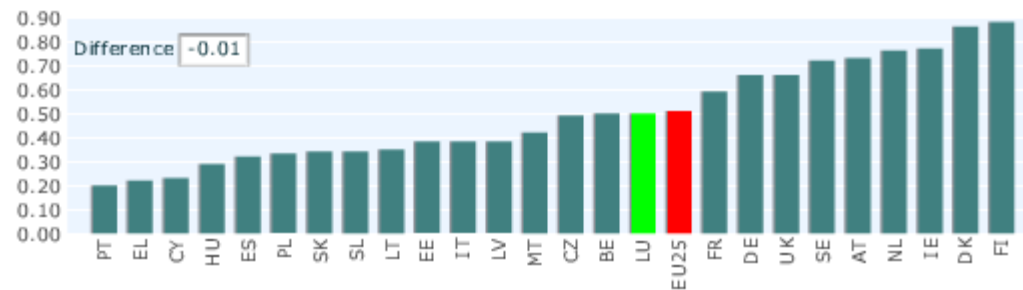
Climate

Benchmark: EU25

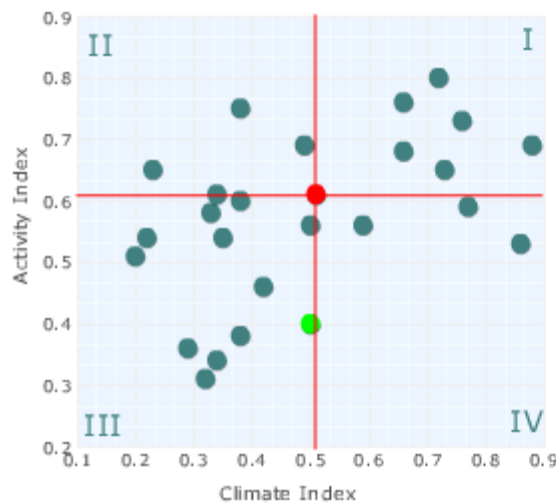
## Entrepreneurial Activity Index



## Entrepreneurial Climate Index



## Country Typology based on Activity and Climate



Explanation	Activity Index	Climate Index
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The two indexes - entrepreneurial activity and entrepreneurial climate - give an 'at a glance' overview of the aggregated entrepreneurial activity and the actual climate for such activity on a national basis.

The scatter plot can be thought of as consisting of four quadrants (I, II, III and IV). The majority of countries belong to Quadrants I or III:

- \* Points in Quadrant I represent countries with higher than the average EU25 scores on both the entrepreneurial climate and activity indexes
- \* Quadrant III shows countries with lower than average scores on the entrepreneurial climate and activity indexes

A small group of countries belong to Quadrant II (higher than average scores on activity but lower than average on climate) and Quadrant IV (higher than average on climate but lower than average on activity).



# European Entrepreneurship Survey Scoreboard



Luxembourg

- Overview
- Life-cycle**
- Profiles
- Demographics
- Climate

Benchmark:

## Life-cycle

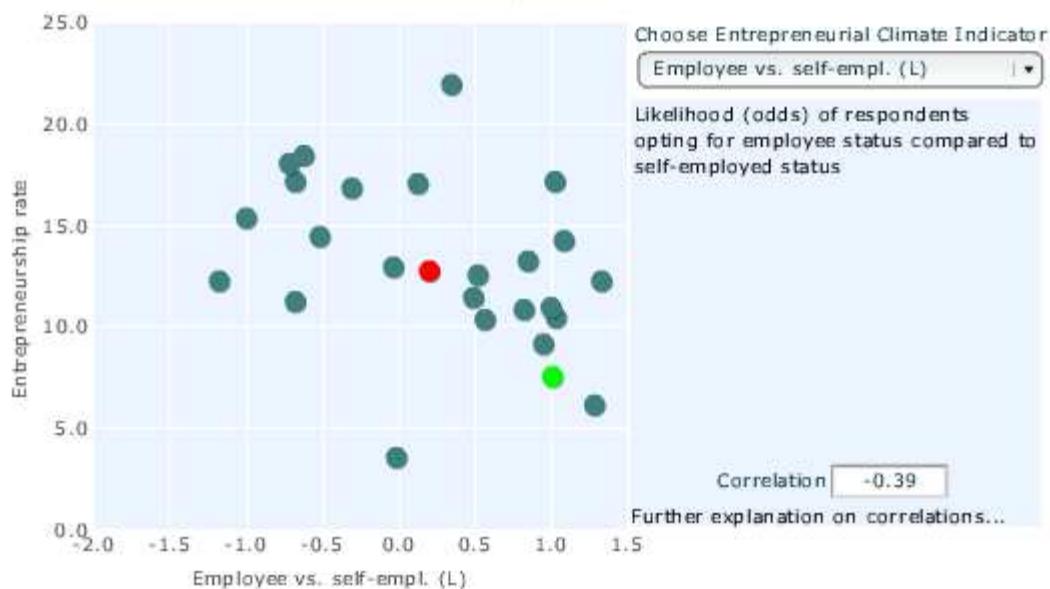
- Entrepreneurship rate**
- Early-stage entrepreneurial activity rate
- Established-business ownership rate
- Business failure rate
- Business transfer rate
- Business discontinuity rate

Percentage of respondents who have ever started a business, which is still active, or who are currently taking steps to start one (base: all respondents)

## Entrepreneurship rate



## Correlation with Entrepreneurial Climate Indicators





# European Entrepreneurship Survey Scoreboard



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Benchmark:

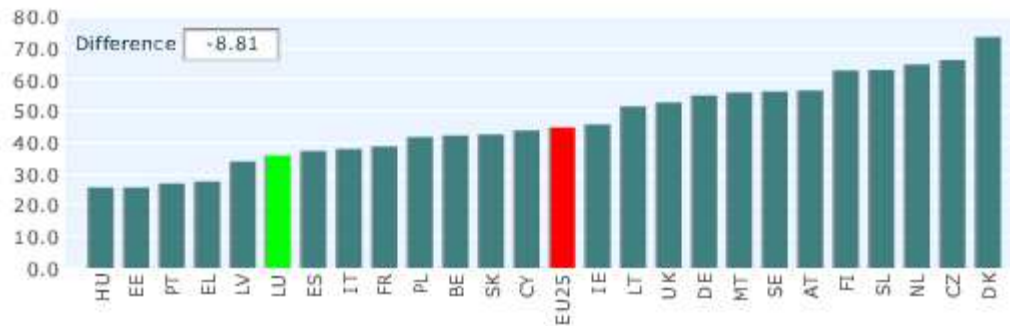
## Profiles

- % "pull" entrepreneurs (opportunity)
- % "push" entrepreneurs (necessity)
- % "junior" entrep. (influence of educ.)
- % "senior" entrep. (second generation)

Respondents with a low perception of the financial difficulties related to a business start-up, high risk tolerance and a high probability that they started their business because of an opportunity

[Further explanation...](#)

## % "pull" entrepreneurs (opportunity)



## Correlation with Entrepreneurial Climate Indicators





# European Entrepreneurship Survey Scoreboard



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Benchmark:

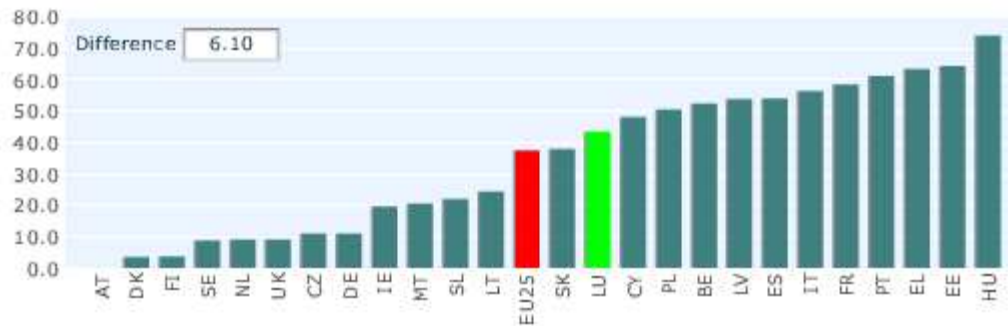
## Profiles

- % "pull" entrepreneurs (opportunity)
- % "push" entrepreneurs (necessity)**
- % "junior" entrep. (influence of educ.)
- % "senior" entrep. (second generation)

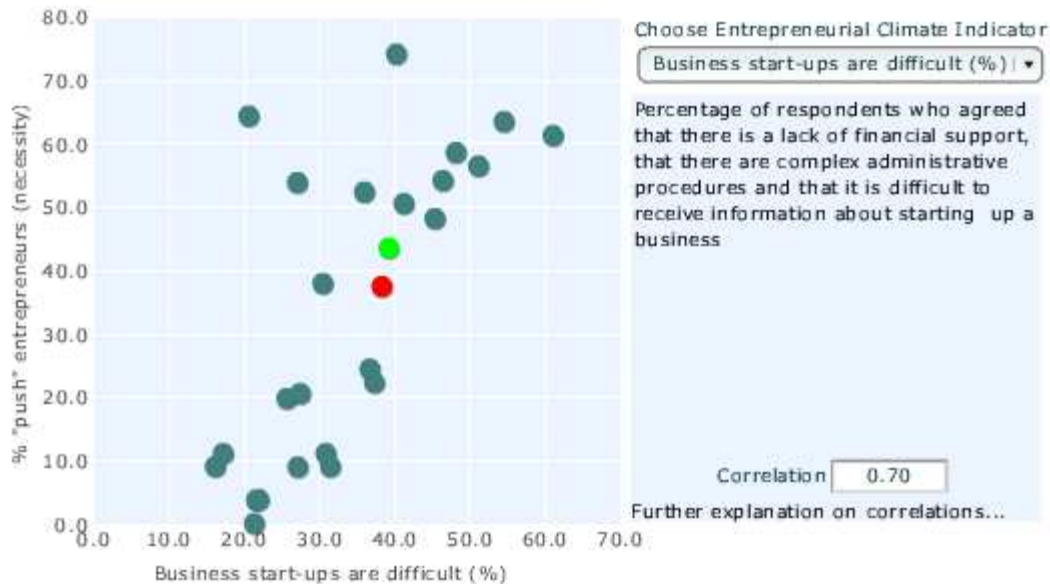
Respondents with a high perception of the financial difficulties related to a business start-up, low risk tolerance and a high probability that they started their business out of necessity

[Further explanation...](#)

## % "push" entrepreneurs (necessity)



## Correlation with Entrepreneurial Climate Indicators





# European Entrepreneurship Survey Scoreboard



Luxembourg

Overview

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Benchmark: EU25

## Demographics

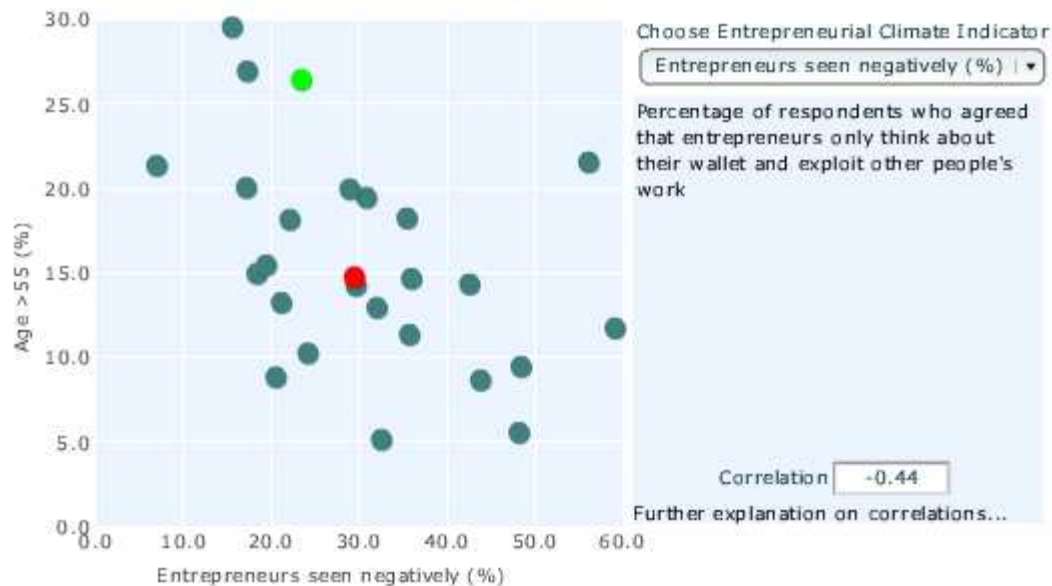
- Second generation (%)
- Second generation (L)
- Age <=30 (%)
- Age <=30 (L)
- Age >55 (%)
- Age >55 (L)
- Highly educated (%)
- Highly educated (L)

Percentage of entrepreneurs older than 55 among all of the entrepreneurs in the country

### Age > 55 (%)



### Correlation with Entrepreneurial Climate Indicators





# European Entrepreneurship Survey Scoreboard



Luxembourg

- Overview
- Life-cycle
- Profiles
- Demographics
- Climate

Benchmark: EU25

## Demographics

- Second generation (%)
- Second generation (L)
- Age <=30 (%)
- Age <=30 (L)
- Age >55 (%)
- Age >55 (L)
- Highly educated (%)
- Highly educated (L)

Likelihood (odds) of being an entrepreneur for respondents older than 55 compared to those aged 55 and under

Further explanation of likelihoods...

### Age >55 (L)



## Correlation with Entrepreneurial Climate Indicators





# European Entrepreneurship Survey Scoreboard



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Benchmark: EU25

## Demographics

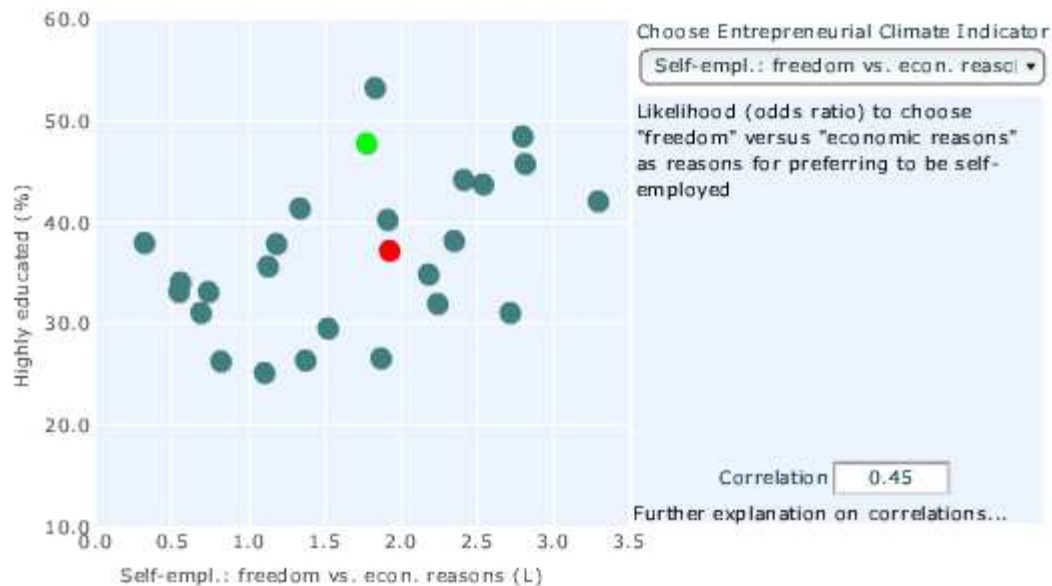
- Second generation (%)
- Second generation (L)
- Age <=30 (%)
- Age <=30 (L)
- Age >55 (%)
- Age >55 (L)
- Highly educated (%)
- Highly educated (L)

Percentage of entrepreneurs with a high level of education (they finished full-time education after the age of 20)

## Highly educated (%)



## Correlation with Entrepreneurial Climate Indicators





# European Entrepreneurship Survey Scoreboard



Luxembourg

- Overview
- Life-cycle
- Profiles
- Demographics**
- Climate

Benchmark: EU25

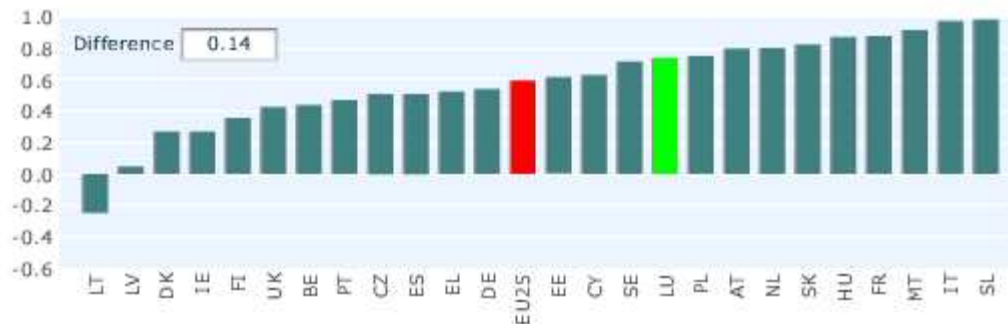
## Demographics

- Second generation (%)
- Second generation (L)
- Age <=30 (%)
- Age <=30 (L)
- Age >55 (%)
- Age >55 (L)
- Highly educated (%)
- Highly educated (L)**

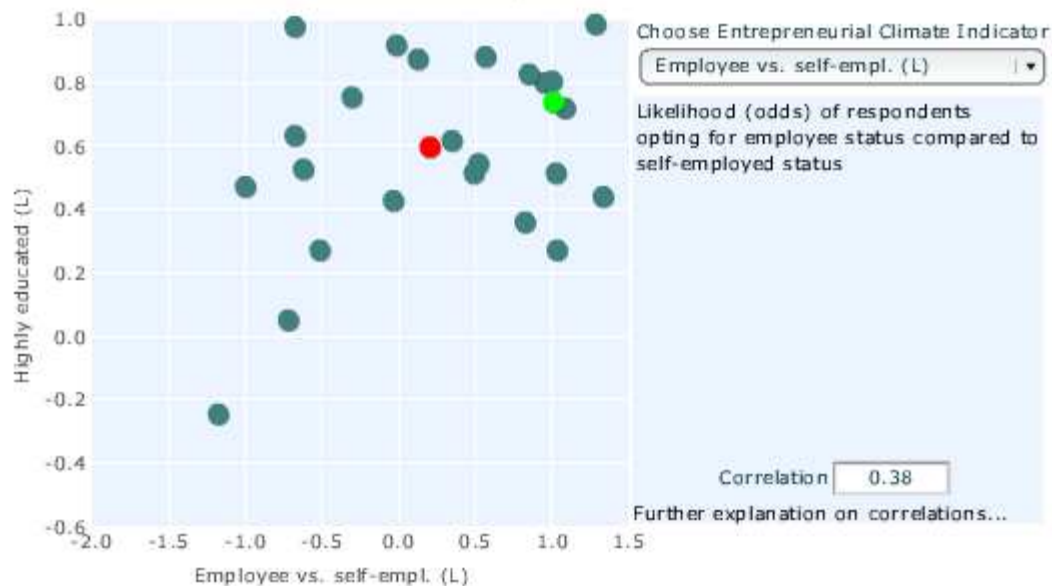
Odds of being an entrepreneur for highly-educated respondents compared to those with a lower level of education (they finished full-time education before the age of 19)

Further explanation of likelihoods...

## Highly educated (L)



## Correlation with Entrepreneurial Climate Indicators





# European Entrepreneurship Survey Scoreboard



Luxembourg

- Overview
- Life-cycle
- Profiles
- Demographics
- Climate

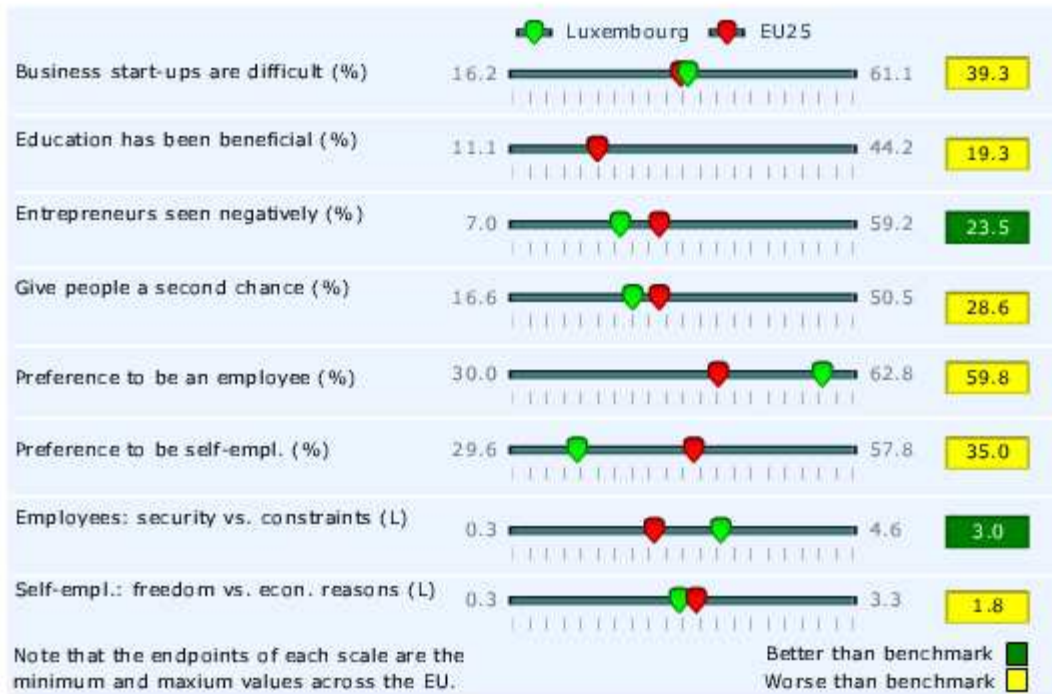
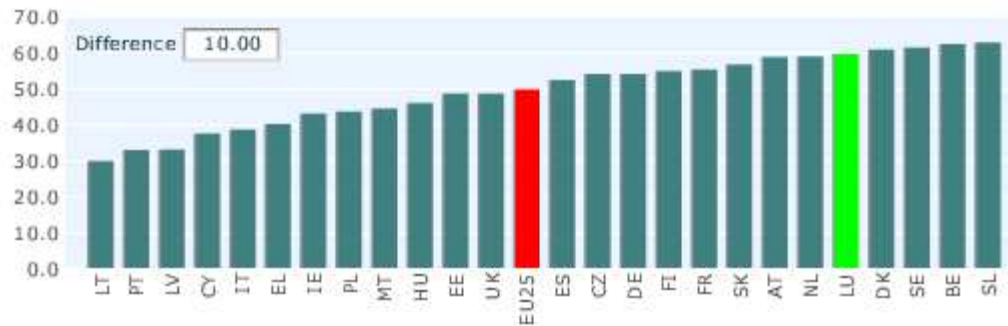
Benchmark: EU25

## Climate

- Business start-ups are difficult (%)
- Education has been beneficial (%)
- Entrepreneurs seen negatively (%)
- Give people a second chance (%)
- Preference to be an employee (%)
- Preference to be self-empl. (%)
- Employee vs. self-empl. (L)
- Employees: security (%)

Percentage of respondents who preferred to be an employee

### Preference to be an employee (%)





# European Entrepreneurship Survey Scoreboard



- Overview
- Life-cycle
- Profiles
- Demographics
- Climate**

Benchmark: EU25

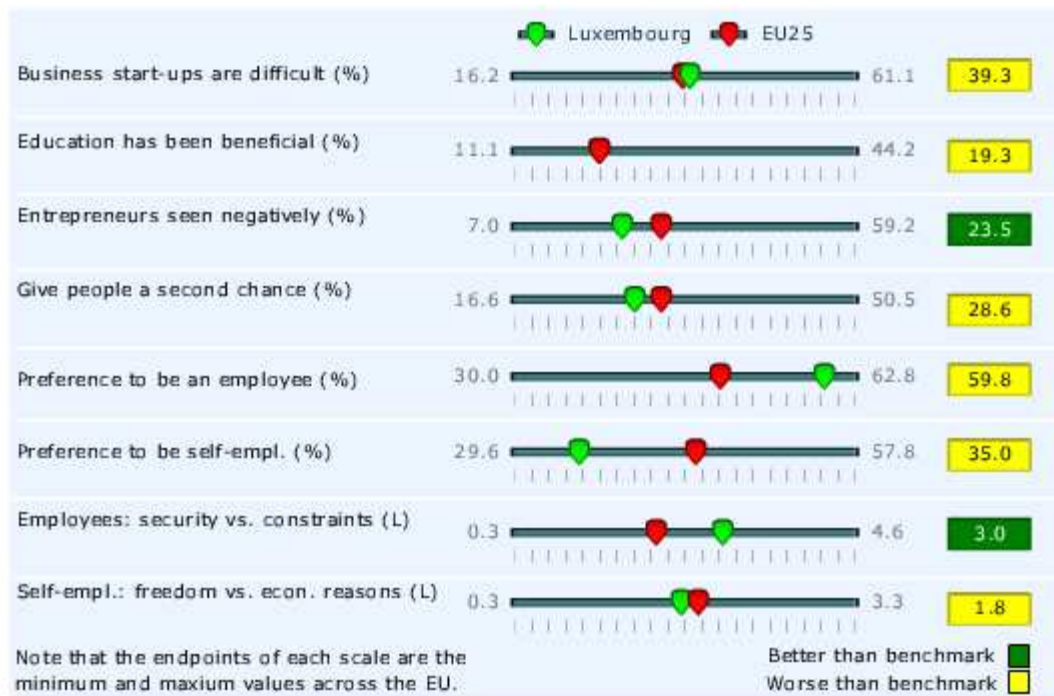
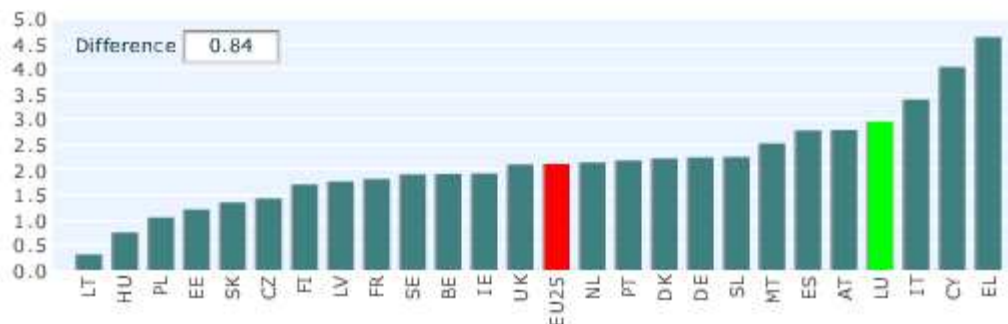
## Climate

- Give people a second chance (%)
- Preference to be an employee (%)
- Preference to be self-empl. (%)
- Employee vs. self-empl. (L)
- Employees: security (%)
- Employees: constraints (%)
- Employees: security vs. constraints (L)**
- Self-empl.: freedom (%)

Likelihood (odds ratio) to choose "security and stability" versus "constraints" as reasons for preferring to be an employee

Further explanation of likelihoods...

### Employees: security vs. constraints (L)



# Technical Note

## 1. Indexes of entrepreneurial activity and entrepreneurial climate

The two indexes - *entrepreneurial activity* and *entrepreneurial climate* - give an 'at a glance' overview of the aggregated entrepreneurial activity and the actual climate for such activity on a national basis.

### 1.1 Entrepreneurial activity

The **entrepreneurial activity index** is calculated as the average score on three dimensions (defined below):

Note: The scores for each dimension are normalised. The score on the index is between 0 and 1 for all countries – with 0 being equal to the lowest level of entrepreneurial activity and 1 being the highest level. This does not mean, of course, that a score of 0 means 'zero' activity.

1. *Overall entrepreneurial activity*: This is measured in terms of the country's entrepreneurship rate  
*1 is the highest rate across the EU; 0 means the lowest rate of activity*
2. *Dynamics of entrepreneurship*: A country's score is calculated as the average value of the normalised scores of the early-stage entrepreneurship and business survival rates  
*1 is the country that is the most dynamic, 0 the least dynamic as defined*
3. *Entrepreneurial profile*: This indicator shows the proportion of "pull" entrepreneurs in comparison to "push" entrepreneurs  
*1 gives prominence to the number of "pull" entrepreneurs, while 0 shows a preponderance of the "push" category.*

### 1.2 Entrepreneurial climate

The **entrepreneurial climate index** is calculated as the average value of the normalised scores of the indicators defined below:

Note: For each of the normalised indicators, there is a maximum score of 1 and a minimum score of 0 for each country. These scores are based on the responses received; meanings vary dependent on the indicators.

1. *Business start-ups are difficult (1 indicates a feeling that start-ups are not difficult in that country)*
2. *Entrepreneurs seen negatively (1 says that entrepreneurs are not seen negatively)*
3. *Give failed entrepreneurs a second chance (1 signifies that failed entrepreneurs should be given a second chance)*
4. *Reason for self-employment: freedom vs. economic reasons (1 shows a preference for freedom as the motivating factor for being an entrepreneur).*

## 2. List of indicators and definitions

### 2.1 Entrepreneurship rate and life-cycle business indicators

- **Entrepreneurship rate**

Percentage of respondents who have ever started a business, which is still active, or who are currently taking steps to start one (base: all respondents)

- **Early-stage entrepreneurial activity rate**

Percentage of respondents who, in the last three years, started-up or took over a business which is still active; or are currently taking steps to start a new business (base: all respondents)

- **Established-business ownership rate**

Percentage of respondents who, more than three years ago, started-up or took over a business which is still active (base: all respondents)

- **Business failure rate**

Percentage of respondents who once started a business, but are no longer entrepreneurs as that business failed (base: respondents who have ever started a business or are currently taking steps to start one)

- **Business transfer rate**

Percentage of respondents who once started a business, but are no longer entrepreneurs as that business was sold (base: respondents who have ever started a business or are currently taking steps to start one)

- **Business discontinuity rate**

Percentage of respondents who once started a business, but are no longer entrepreneurs as that business failed, was sold, transferred or closed (base: respondents who have ever started a business or are currently taking steps to start one).

### 2.2 Entrepreneurial profiles

We also classified all of the entrepreneurs in the sample (i.e. someone who was taking steps to start up a business or who was running a business) in a few relatively homogenous, but mutually exclusive, entrepreneurial segments (i.e. each entrepreneur can belong to only one entrepreneurial segment). We selected five indicators to build the entrepreneurial profiles:

1. Perceived influence of education
2. Parents' occupation (second-generation)
3. Risk tolerance
4. Perceived financial difficulties in starting up a business
5. Reason for starting-up a business: out of necessity or because of an opportunity

To study the similarities and differences in entrepreneurship profiles, based on these five characteristics of entrepreneurship across 2,367 entrepreneurs and 25 countries, we applied the multi-level latent class model as described by Bijmolt, Paas and Vermunt (2004). We incorporated effects of two demographic variables, gender and age, by means of concomitant variables. While obtaining parameter estimates, we weighted the observations to correct for sampling disparities both within and between countries. Model estimates were obtained for alternative numbers of entrepreneur segments ( $S=1, \dots, 10$ ) and country segments ( $T=1, \dots, 8$ ). To account for sub-optimal

solutions, we estimated the model five times for each combination of S and T with different starting values. We retained the best solution for each combination, applying the minimum CAIC rule.

The overall minimum CAIC was obtained at four entrepreneur segments and two country segments, which we identified as the most appropriate solution. The results of this model are presented in the following table. Based on these results, we defined the entrepreneur segments in the following way:

- **Segment 1 "pull" entrepreneurs (opportunity)**

Respondents with a low perception of the financial difficulties related to a business start-up, high risk tolerance and a high probability that they started their business because of an opportunity

- **Segment 2 "push" entrepreneurs (necessity)**

Respondents with a high perception of the financial difficulties related to a business start-up, low risk tolerance and a high probability that they started their business out of necessity

- **Segment 3 "junior" entrepreneurs (influence of education)**

Younger respondents with a good appreciation of the influence of education on the decision to start-up a business, a low risk tolerance and a high probability that they started their business because of an opportunity

- **Segment 4 "senior" entrepreneurs (second-generation)**

Respondents who are mostly second-generation entrepreneurs, older than 54, with a low perception of the financial difficulties related to a business start-up

Table: Multi-level LCA model results

<b>Indicators</b>		<b>Entrepreneur segments</b>			
		1	2	3	4
<b>Influence of education</b>	Low/no influence	.843	.691	.388	.597
	High influence	.157	.309	.612	.404
<b>Parents' occupation</b>	Both parents employed	.630	.625	.767	.373
	At least one self-employed	.370	.375	.233	.628
<b>Risk tolerance</b>	Low	.233	.536	.640	.465
	High	.767	.464	.360	.535
<b>Financial difficulties</b>	No	.847	.406	.687	.842
	Yes	.153	.593	.313	.158
<b>Business start-up</b>	Opportunity	.714	.447	.810	.503
	Necessity	.285	.553	.190	.497
<b>Effects of demographic variables</b>		<i>Relative size of entrepreneur segments</i>			
<b>Sex</b>	Male	.529	.334	.057	.080
	Female	.281	.455	.158	.107
<b>Age group</b>	15-24y	.245	.102	.653	.000
	25-39y	.582	.354	.064	.000
	40-54y	.504	.483	.000	.013
	55+y	.150	.348	.000	.503
<b>Country segments</b>		<i>Relative size of entrepreneur segments</i>			
1: BE,EE,EL,ES,FR,IT,CY,LV,LT,LU,HU,MT PL,PT,SK		.354	.565	.035	.046
2: CZ,DK,DE,IE,NL,AT,SI,FI,SE,UK		.558	.146	.156	.140

### 2.3 Entrepreneurial demographics

An **entrepreneur** was defined as a respondent who had either started a business or who was said to be currently taking steps to start one. The proportions of different social types of entrepreneurs (e.g. female entrepreneurs, highly-educated entrepreneurs) were identified, together with the likelihood (= the odds) of being an entrepreneur in a certain country relative to certain socio-demographic variables (e.g., the odds of being an entrepreneur for women compared to men).

- **Women (%)**  
Percentage of female entrepreneurs among all of the entrepreneurs in the country
- **Women (L)**  
Likelihood (odds) of being an entrepreneur for women compared to men
- **Rural (%)**  
Percentage of rural entrepreneurs among all of the entrepreneurs in the country
- **Rural (L)**  
Likelihood (odds) of being an entrepreneur for respondents from rural areas compared to respondents from non-rural areas
- **Second-generation (%)**  
Percentage of entrepreneurs from a family where at least one parent is/was self-employed (base: all entrepreneurs)
- **Second-generation (L)**  
Likelihood (odds) of being an entrepreneur for respondents from a family where at least one parent is/was self-employed compared to those where both parents were employees
- **Age ≤30 (%)**  
Percentage of young entrepreneurs (under 31 years-of-age) among all of the entrepreneurs in the country
- **Age ≤30 (L)**  
Likelihood (odds) of being an entrepreneur for respondents younger than 31 compared to those aged 31 or over
- **Age >55 (%)**  
Percentage of entrepreneurs older than 55 among all of the entrepreneurs in the country
- **Age >55 (L)**  
Likelihood (odds) of being an entrepreneur for respondents older than 55 compared to those aged 55 and under
- **Highly-educated (%)**  
Percentage of entrepreneurs with a high level of education (they finished full-time education at the age of 20 or older)
- **Highly-educated (L)**  
Odds of being an entrepreneur for highly-educated respondents compared to those with a lower level of education (they finished full-time education before the age of 20)

## 2.4 Entrepreneurial climate

- **Business start-ups are difficult (%)**

Percentage of respondents who agreed that there is a lack of financial support, that there are complex administrative procedures and that it is difficult to receive information about starting up a business

- **Education has been beneficial (%)**

Percentage of respondents who agreed that their education helped them to develop an entrepreneurial attitude, understand the role of an entrepreneur and become interested in being an entrepreneur

- **Entrepreneurs seen negatively (%)**

Percentage of respondents who agreed that entrepreneurs only think about their wallet and exploit other people's work

- **Give people a second chance (%)**

Percentage of respondents who agreed that people who have started their own business and failed should be given a second chance and who disagree that they would never invest in a business managed by someone who has already failed in the past

- **Preference to be an employee (%)**

Percentage of respondents who preferred to be an employee

- **Preference to be self-employed (%)**

Percentage of respondents who preferred to be self-employed

- **Employee vs. self-employed (L)**

Likelihood (odds) of respondents opting for employee status compared to self-employed status

- **Employees: security (%)**

Amount of times that factors such as regular income, stability of employment, social security, legal consequences of failure, fixed working hours, etc. were mentioned as reasons for preferring to be an employee

- **Employees: constraints (%)**

Amount of times that factors such as lack of business opportunity, lack of finances, lack of skills, red tape, etc. were mentioned as reasons for preferring to be an employee

- **Employees: security vs. constraints (L)**

Likelihood (odds ratio) to choose "security and stability" versus "constraints" as reasons for preferring to be an employee

- **Self-employment: freedom (%)**

Amount of times that factors such as personal independence, self-fulfilment, freedom to choose time and place of work, etc. were mentioned as reasons for preferring to be self-employed

- **Self-employment: economic reasons (%)**

Amount of times that factors such as income prospects, a favourable economic climate, business opportunities, etc. were mentioned as reasons for preferring to be self-employed

- **Self-employment: freedom vs. economic reasons (L)**

Likelihood (odds ratio) of choosing "freedom" versus "economic reasons" as the motivation for being self-employed.

### 3. A note on correlations and likelihoods

In the sections "Business life-cycle", "Entrepreneurial profiles" and "Entrepreneurial demographics", on the lower part of the page, the **correlation between the indicators of entrepreneurial activity and the indicators of entrepreneurial climate** can be investigated.

The *correlation coefficient* summarises the strength of the (linear) relationship between the two indicators and the scatter plot visualises the results for the correlation analysis (each dot represents a country), allowing for a quick and easy identification of the outlier countries. A correlation coefficient can range from -1 to 1. While a correlation of -1 or 1 indicates a perfect negative or positive correlation, a coefficient of 0 indicates that there is no correlation between the two indicators. A negative correlation means that as one indicator gets larger the other gets smaller (i.e. the higher the score for variable A, the lower is the score for variable B). A positive correlation, on the other hand, means that as one indicator gets larger, the other gets larger too (i.e. the higher the score on variable A, the higher the score is for variable B). As a rule of thumb, a correlation below (-)0.3 can be considered as 'weak', between (-)0.3 to (-)0.5 as 'moderately strong' and higher than (-)0.5 as 'strong'.

Another type of indicator that needs some explanation is the **likelihood (odds) indicator**, used in the sections on "Entrepreneurial demographics" and "Entrepreneurial climate". A likelihood indicator is a measure of association: for example, in the section "Entrepreneurial demographics", we present the indicator "Female entrepreneurs (L)", this compares the odds (the likelihood) of a woman being an entrepreneur (vs. not being an entrepreneur) with those for a man. Or, in other words, this indicator tells us how much more (or less) likely it is that a woman is an entrepreneur compared to a man.

The odds (of entrepreneurial activity) are a useful measure. However, they are on a ratio scale – their arithmetic is multiplicative, not additive. When entrepreneurship is more likely not to happen than to happen, we represent the odds as a fraction (e.g. 0.25). When entrepreneurship is more likely to happen than not, we represent the odds as a value greater than one. With this convention, odds are bounded below by zero, but have no upper bound. Since it is more convenient to think about numbers that we can add and subtract, i.e. interval measures, we calculated the logarithm of the odds – the log-odds. These log-odds are the numbers presented in the country scoreboards, and these should be interpreted in the following way. Going back to the example of the indicator "Female entrepreneurs (L)":

- A positive bar represents a *higher* likelihood (chance) of being an entrepreneur in country X for the first group compared to the second group
- A negative bar represents a *lower* likelihood (chance) of being an entrepreneur in country X for the first group compared to the second group
- The longer the bar (positive or negative) the larger the difference in the likelihood of being an entrepreneur between the two groups.