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Assessing the influence of institutions on students' entrepreneurial dynamics: evidence from European post-socialist and market-oriented economies

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Research motivation

- Entrepreneurship is a multilevel phenomenon that is embedded in particular places, communities, organizations/universities that have their specific institutional environment (Liao & Welsch, 2005; McKeever et al., 2015).

- The diversity of contexts explains cross-organizational, cross-regional, cross-national differences in levels, forms and impacts of the entrepreneurial activities (Suddle et al., 2010).

- Students' entrepreneurial behaviors could emerge under the influence of the university context by fostering entrepreneurship through values, attitudes, and self-confidence (Bergmann et al., 2016)

- The inherited institutional context of European post-socialist economies on both national and university levels still contrasts with that existing in the developed market-oriented economies with long tradition of free entrepreneurship, market competition and well-developed legislation (Manolova et al., 2008; Guerrero et al 2017).

RQ

How does the interplay of diverse institutional conditions influence students' entrepreneurial dynamics in post-socialist and market-oriented (developed) economies?

Theory & hypotheses #1

Constraints for entrepreneurship in the post-socialist context (Alas and Rees, 2006):

- consideration of entrepreneurship as something extraneous and illegal (Aidis et al., 2008);
- suppression of individualism, risk-taking behaviour;
- lack of sufficient individual stimuli.

Evidences of the gradual change in culture, values and attitudes towards free-market entrepreneurship (Kshetri, 2009; Welter & Smallbone, 2011).

Evidences of negative relationships of entrepreneurial behaviour and some manifestation of the socialist institutions such as strict economic planning (Carbonara et al., 2016) and collectivism (Pinillos and Reyes, 2011; Bogatyreva et al., 2019).

Requirements and sensitivity to the institutional environment is higher in less developed countries due to pre-existed culture, values, corruption and still developing regulations (Aidis et al., 2008; Welter and Smallbone, 2011; Stenholm et al., 2013).

H1. Country institutional conditions a higher impact on the likelihood that a student becomes an entrepreneur in post-socialist economies than in market-oriented economies.

Theory & hypotheses #2

- In post-socialist economies, universities have transformed themselves to meet the demand from the nascent private sector through entrepreneurship and business education (Saginova and Belyansky, 2008).
- Universities have become one of the key transmitters of knowledge and institutions required for entrepreneurship development (Guerrero and Urbano, 2017) from the Western world to post-socialist countries via international projects (e.g. Alfa, Edu-link, Tempus, Erasmus) (Froumin and Smolentseva, 2014; Ellermann, 2017).
- Universities in post-socialist economies could reduce the constraints of national institutions on the configuration of students' entrepreneurial behaviors. This effect could be highest when the university was established post-1991 (Kwiek, 2012; Varblane and Mets, 2010; Marozau et al., 2019).

H2a. Universities' institutional contexts have a higher impact on the likelihood that a student becomes an entrepreneur in post-socialist economies than in market-oriented economies.

Theory & hypotheses #3

- The turbulent transition period of the early 1990s gave rise to many new higher education institutions founded as entrepreneurial organizations by proactive leaders (Varblane and Mets, 2010).
- These post-1991 institutions focused mainly on mass consumption teaching services in fields that were new to the context such as business, management, economics, social sciences etc. (Kwiek, 2012).
- Entrepreneurship education has been better developed in flexible private higher education institutions, branches of Western universities as well as in business-oriented public schools spanned-off from public universities in the 1990s that have managed to create a relatively supportive environment for entrepreneurship (Varblane and Mets, 2010; Marozau et al., 2019).

H2b. Universities' institutional contexts have a higher impact on the likelihood that a student becomes an entrepreneur at universities established in the post-socialist era than those universities established in the socialist era.

Data

Selection criteria:

1. Countries participated in EVS 2017, GUESSS 2016, 2018;
2. Bachelor students, <30 years old;
3. Are not exchange students;
4. A higher education institutions is identified;
5. No missing values in DVs and IVs.

91,105 observations (students) from **18 countries** and **557 universities** including:

63,376 from market-oriented economies

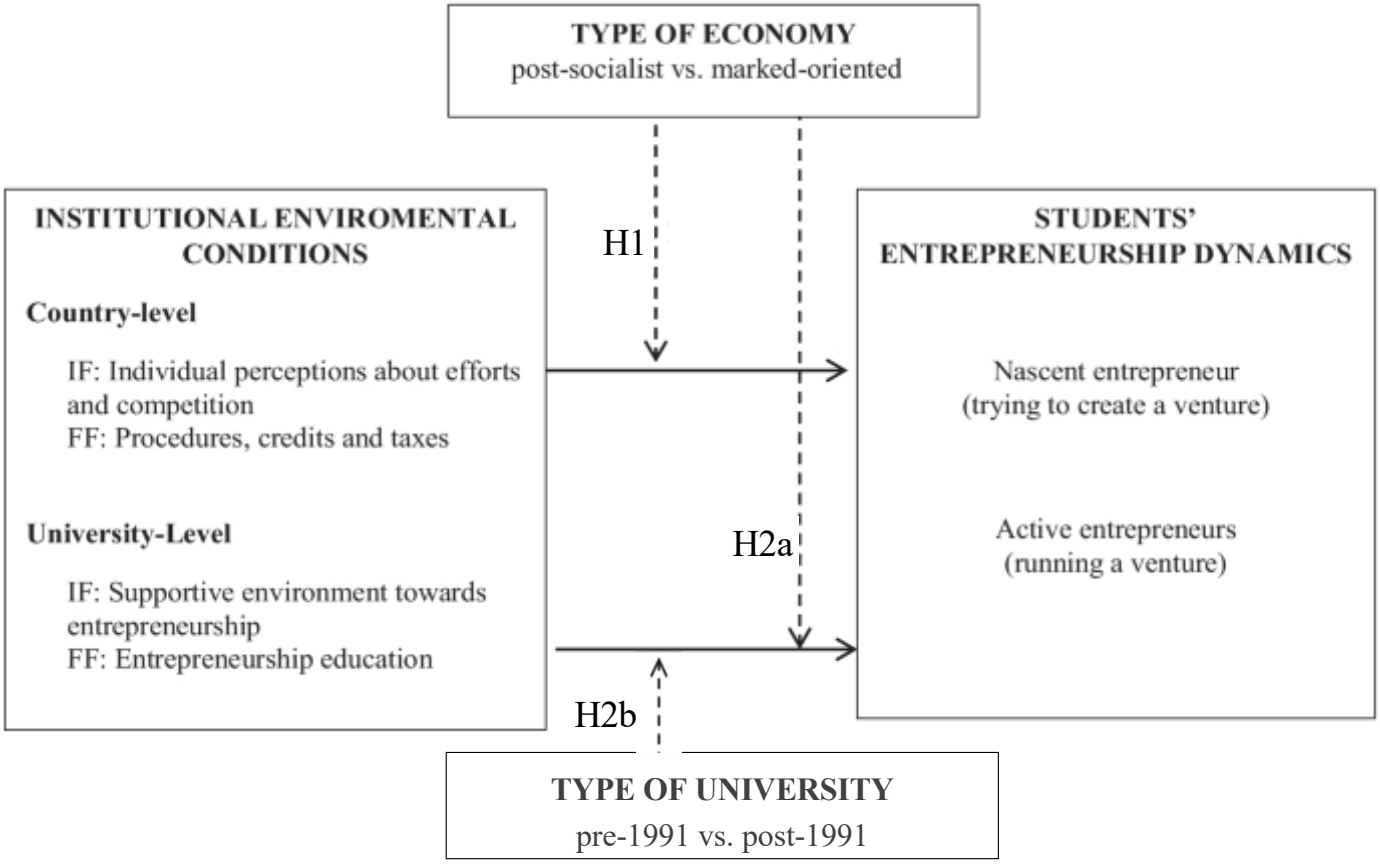
27,729 from post-socialist economies including:

- **20,537** from universities established before 1991 (pre-1991)
- **7,192** from universities established after 1991 (post-1991)

Data & variables

	Data source
Dependent variables	
Are you currently trying to start your own business / to become self-employed? (*Active*)	GUESSS 2016, 2018
Are you already running your own business / are you already self-employed? (*Potential)*	GUESSS 2016, 2018
Independent variables	
Institutional conditions at the country level	
Incentives for individual effort - 1 VS equalize incomes - 10 (*Individual efforts perception*)	European Values Study, 2017
Competition good - 1 VS harmful for people - 10 (*Competition perception*)	European Values Study, 2017
Number of procedures to start a business (*Procedures*)	Doing Business, 2016, 2018
Getting credit score (*Credits*)	Doing Business, 2016, 2018
Paying taxes score (*Taxes*)	Doing Business, 2016, 2018
Institutional conditions at the university level	
Factor for university entrepreneurial environment (*Supportive environment*)	GUESSS 2016, 2018
Attendance of at least one course (Entrepreneurship education)	GUESSS 2016, 2018
Control variables	
Country level	
lnGDP	World Bank
University level	
University score in the QS Ranking (University quality)	QS Ranking
Engineering & IT specialization (IT studies)	GUESSS 2016, 2018
Business & Economics specialization (Business studies)	GUESSS 2016, 2018
Individual level	
Factor for reaction of family/friends/peers on being entrepreneur (Social reaction)	GUESSS 2016, 2018
At least one parent self-employed (Entrepreneurial parents)	
Age in the year of survey (Age)	
Gender (female) (Gender)	
Year of survey	

Proposed conceptual model



Methods

Two sets of multi-level logistic regression models:

1) predicting the probability of being nascent entrepreneur i.e. undertaking activities to start a business in a near future
2) predicting a probability of being entrepreneur.

The models have a hierarchical structure with three levels: *i* individuals are nested in *j* universities that are nested in *k* countries (*c*).

$$\ln \frac{P(Y_{ijk}=1)}{1-P(Y_{ijk}=1)} = (B^{000} + B^{100}S_{ijk} + B^{010}U_{jk} + B^{001}C_k) + (e_{ijk} + u_{jk} + r_k);$$

Where:

$\ln \frac{P(Y_{ijk}=1)}{1-P(Y_{ijk}=1)}$ – a likelihood ratio of being nascent/active entrepreneur

B^{000} – intercept

S_{ijk} – individual-level independent and control variables

U_{jk} – university-level independent and control variables

C_k – country- level independent and control variables

e_{ijk}, u_{jk}, r_k – error terms of the individual-, university-, country-level respectively

Regression results: Nascent entrepreneurs

Nascent entrepreneurs	All economies		Post-socialist economies	Market-oriented economies	Post-socialist economies	
	M1a	M1b	M1c	M1d	M1e Pre-1991	M1d Post-1991
Institutional conditions at the country-level						
Individual efforts perception (IF)		-.528***	-.460**	-.398	-.437***	-.503***
Competition perception (IF)		.141	.162	-.322	-.101	.150
Procedures (FF)		-.007	.015***	-.014	.017**	.017*
Credits (FF)		.064	.071**	-.132***	.087**	-.019
Taxes (FF)		.028**	-.011	.018	-.003	-.037*
Institutional conditions at the university-level						
Supportive environment (IF)		.071***	.117***	.030	.120***	.106***
Entrepreneurship education (FF)		.506***	.339***	.627***	.351***	.302***
Control variables						
Country level						
lnGDP	-1.579***	-1.429***	-.671*	-1.532***	-.907**	-.653
University level						
University quality		.001	-.001	.002	-.000	-.006
IT studies	-.116***	-.169***	-.173***	-.158***	-.226***	-.085
Business studies	.089***	-.036	-.010	-.067	-.086	.235**
Individual level						
Social reaction		.206***	.268***	.157***	.275***	.248***
Entrepreneurial parents		.407***	.469***	.362***	.445***	.540***
Age	.041***	.040***	.027**	.043***	.033**	.009
Gender (female)	-.768***	-.776***	-.732***	-.814***	-.771***	-.643***
Year of survey	.399***	.371***	.180***	.552***	.136***	.344***
Wald chi2	*1458.03*	*2736.64*	*1298.44*	*1834.03*	*921.02*	*410.43*
Prob > chi2	*.000*	*.000*	*.000*	*.000*	*.000*	*.000*
Country-level variance	*.040*	*.025*	*.001*	*.001*	*.001*	*.001*
University-level variance	*.073*	*.048*	*.015*	*.028*	*.016*	*.007*

*** Significant at the .001 level.

** Significant at the .01 level.

* Significant at the .05 level.

IF= Informal factors; FF= Formal factors

Regression results: Active entrepreneurs

Active entrepreneurs	All economies		Post-socialist economies	Market-oriented economies	Post-socialist economies	
	M2a	M2b	M2c	M2d	M2e Pre-1991	M2d Post-1991
Institutional conditions at the country-level						
Individual efforts perception (IF)		.150	.461**	-.387	.523**	.538***
Competition perception (IF)		-.398	-.398	-1.116***	-.300	-.490
Procedures (FF)		-.013	.011	-.021	.010	.032*
Credits (FF)		-.050	-.026	-.165***	-.010	-.173
Taxes (FF)		.018	.058**	-.006	.071**	.044
Institutional conditions at the university-level						
Supportive environment (IF)		-.033	-.095**	-.002	-.123***	-.030
Entrepreneurship education (FF)		.453***	.357***	.506***	.406***	.182
Control variables						
Country-level						
lnGDP	-1.070**	-1.360**	-1.578	-2.270***	-3.093***	-2.429*
University level						
University quality		-.003	-.011*	-.001	-.015**	.009
IT studies	-.161**	-.183***	-.226*	-.155*	-.198	-.312
Business studies	.071	-.014	.147	-.081	.186*	.102
Individual level						
Entrepreneurial parents		.829***	.926***	.775***	.917***	.957***
Age	.145***	.141***	.184***	.126***	.196***	.145***
Gender (female)	0.794***	-.770***	-.944***	-.668***	-.947***	-.934***
Year of survey	.232***	.242***	-.090	.395***	-.065	-.213
Wald chi2	*919.24*	*1563.22*	*725.41*	*1017.59*	*553.25*	*200.95*
Prob > chi2	*.000*	*.000*	*.000*	*.000*	*.000*	*.000*
Country-level variance	*.057*	*.064*	*.025*	*.001*	*.029*	*.001*
University-level variance	*.080*	*.092*	*.048*	*.015*	*.052*	*.022*

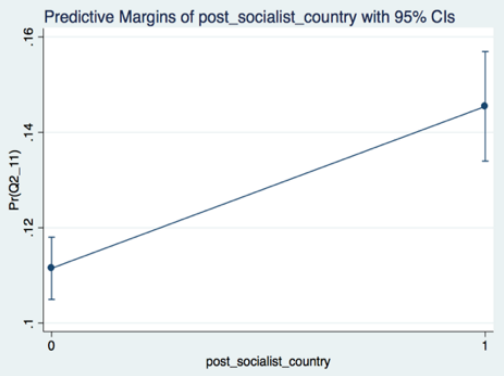
*** Significant at the .001 level.
** Significant at the .01 level.
* Significant at the .05 level.

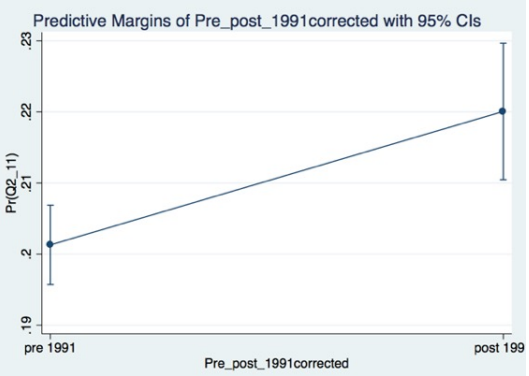
IF= Informal factors; FF= Formal factors

Robustness check

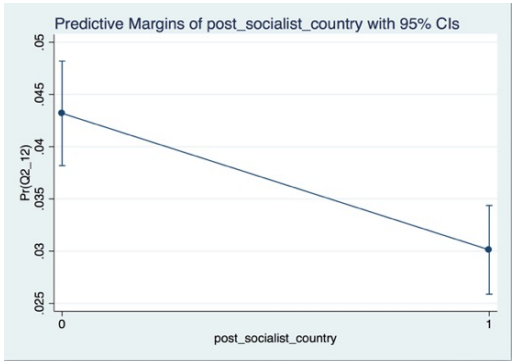
One-level logistic regression models (M1b and M2b) and post-estimated predictive margins with 95% confidence intervals for both dependent and independent variables

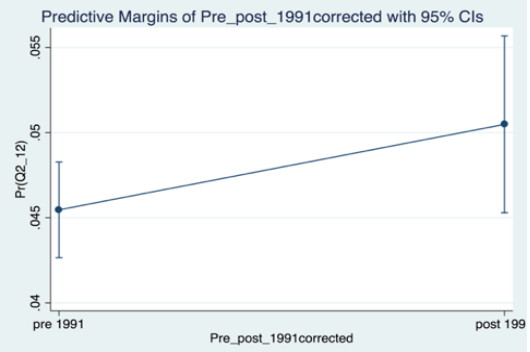
Nascent entrepreneurs





Active entrepreneurs





A higher probability of being a nascent entrepreneur but a lower probability of being an active entrepreneur in post-socialist economies

A higher probability of being a nascent entrepreneur among students at post-1991 universities

Noteworthy findings

The university context appears more important than a country context for both manifestations of the students' entrepreneurial dynamics, while the largest share of variance can be attributed to the individual level

Country level

- Pro-entrepreneurial culture and values in society do drive entrepreneurial dynamics in post-socialist economies, while there is no statistically significant influence in developed countries.
- Post-socialist and developed countries differ in terms of formal factors stimulating student entrepreneurship: paying taxes score – in post-socialist economies, and small number of procedure – in developed countries

University level

- A positive effect of the formal entrepreneurship-related education at universities on the probability of students to be both potential and active entrepreneurs.
- The perceived entrepreneurial environment at the universities has a positive relationship with potential entrepreneurship, while this effect is negative for active entrepreneurs: most university support fosters nascent entrepreneurs and a few supports for active entrepreneurs.
- Students from post-1991 universities are more likely to start a business than their peers from pre-1991 universities.
- A higher quality of a pre-1991 university and a more favourable environment have negative and statistically significant impact.

Individual level

- Parents-entrepreneurs and perceived pressures from family, friends, colleagues to carry out an entrepreneurial activity are positively related with business creation efforts

Contribution & implications

1. We consider the interplay of country/university context (informal and formal conditions) on the students' entrepreneurial behaviors (nascent and active entrepreneurs).

2. We emphasize the crucial role of universities as a catalyst of entrepreneurship in economies where the institutional conditions are still under development (post-socialist economies). Universities have to play a crucial role in fostering entrepreneurship and innovation in transition and emerging economies to respond to institutional voids and societal needs. The new mandate of universities is relevant regardless of their age, profile, reputation and traditions and may increase the attractiveness for new talents (students, faculty members, managers and entrepreneurs).

For policy makers, a sound entrepreneurship development policy should go far beyond formal measures assessed and encompass culture, values and norms endemic to countries and to particular places and organizations.

For university managers, while most university efforts are concentrated on formal measures (educational programs, support infrastructure, incentive system), the crucial role of creating a favorable informal environment (university culture, support for leadership and risk-taking behavior, role models) that foster students' entrepreneurial behaviors should be legitimized.

For entrepreneurship educators, even though students may not start a business during or immediately after completing their studies, entrepreneurial competencies and experiences may lead to start-up creation at a later stage of careers. The context-specific entrepreneurship courses (rather than programs) could stimulate students' interest and perceived self-efficacy to pursue this career path.

Limitations & future research lines

- Factors at the regional level (NUTS-1, NUTS-2)
- Metrics/proxies of institutional conditions (formal/informal)
- Individual-level variables based on self-reported measures by not randomly selected students

FRL

- Different groups of post-socialist economies: transformation speed and path
- Factors influencing students' impactful, research-based, and opportunity-driven entrepreneurial activities