

# Industry choice by young entrepreneurs in different country settings: the role of human and financial capital

**Dmitri Knatko, Galina Shirokova, Karina Bogatyreva**  
*Research has been conducted with financial support from Russian Science Foundation grant (project No.14-18-01093)*

# Research Motivation

- Entrepreneurial entry logic:
  - Access to resources: e.g. entrepreneurial experience (Carroll, Mosakowski 1987), access to capital (Acs, Audretsch 1989; Evans, Jovanovic 1989), etc;
  - Environmental contingency: industry profit margins (Dunne et al. 1988), technology life cycle (Utterback 1994), economic growth stage (Reynolds et al. 1995), cost of capital (Shane 1996), etc.
- Young entrepreneurs as decision makers:
  - lack of resources, capabilities (Kew et al. 2013);
  - few of them consider starting their own firm after the university (Sieger et al. 2014).

# Research Motivation

- Majority of studies treat entrepreneurial entry as an industry-independent action with only a few pieces taking into account series of industrial effects;
- Specific industry conditions create a unique decision context, thus entrepreneurial entry studies that omit possible industry peculiarities may be biased by inter-industrial differences (Bates 1995, Lofstrom et al, 2014);
- Structural economic characteristics, and cross-country differences explain the dynamics of entrepreneurial entry (Acs, Audretsch 1993; Bergmann, Stephan 2012; Freytag, Thurik 2006).



# Research Questions

- How different types of resources (human and financial capital) used by young resource-constrained entrepreneurs influence their entry decision to launch a venture in a particular industry type (knowledge- and capital-intensive industries)?
- How different country type context (countries with innovation- or efficiency-driven economies) facilitates the link between different types of resources and the choice of particular industry type (knowledge- and capital-intensive industries) made by young entrepreneurs

# Theoretical Model

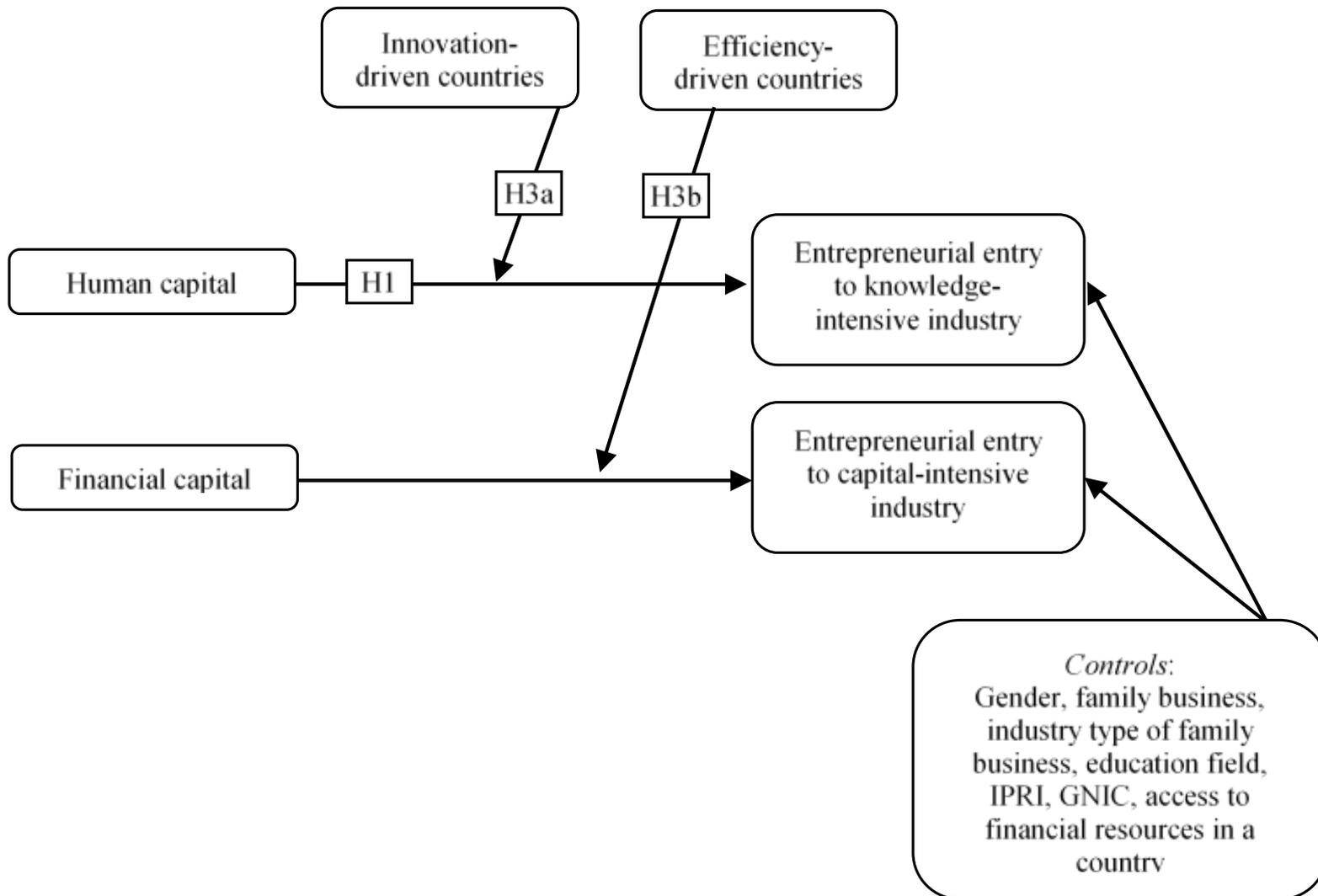
- Resource-based view (RBV) (Barney, 1991)
  - access to a better resource bundle – stronger competitive advantages
- Access to resources is strongly connected to the likelihood of entrepreneurial entry (Alvarez, Buzenitz 2001; Barney 2001; Cetindamar et al. 2012)
- Human and financial capital as crucial resource types for entrepreneurial entry (Davidsson, Honig 2003; Schweinbacher 2007)
- For young entrepreneurs formal education capital (Shane 2000; Shepherd, DeTienene 2005) and family financial support (Bygrave et al. 2003; Colombatto, Melnick, 2008) may serve as a proxy of human and financial capital

# Theoretical Model

- Contingency perspective (Lawrence, Lorsch, 1967)
  - Specific conditions predict different management logic
- Specific industry conditions explain different reasons for entrepreneurial entry, different meaning of resources for entrepreneurs (Bates, 1995; Lofstrom, 2014)
- Objective environment conditions related to country settings may shape entrepreneurial intentions to enter a specific industry (Acs, Audretsch 1993; Bergmann, Stephan 2012; Freytag, Thurik 2006)
- Efficiency-driven and innovation-driven economies context (Porter 1990; Porter et al. 2002)
  - In efficiency-driven countries, firms depend on higher technological efficiencies in production, large markets for operations and economies of scale (Acs et al. 2008).



# Theoretical Model



# Hypotheses

- Hypothesis 1. The level of human capital development is positively associated with the likelihood of knowledge-intensive industry choice by young entrepreneurs.
- Hypothesis 2. A better access to financial capital is positively associated with the likelihood of capital-intensive industry choice by young entrepreneurs.
- Hypothesis 3a. The positive relationship between human capital and the likelihood of knowledge-intensive industry choice by young entrepreneurs will be stronger in innovation-driven countries.
- Hypothesis 3b. The positive relationship between the availability of financial resources and the likelihood of capital-intensive industry choice by young entrepreneurs will be stronger in efficiency-driven countries.

# Methodology

## Dataset

### ➤ *GUESSS 2013-2014*

- 2013-2014 dataset included responses of 109,026 students from 34 countries
- Final research sample size: 12,671 students from 28 countries, average age - 24.47 (SD=5.01) years old, and 41.02% of them were female
- Missing data issue solved with mean substitution approach (Afifi, Elashoff 1966)
- Objective indicators derived from World Bank, Global Entrepreneurship Monitor, and International Property Rights Index datasets

## Method

- Two steps model of logistic regression
- Direct effect of capital on industry choice
- Interaction effect



# Methodology

- **Dependent variables:** knowledge-intensive industry type, capital-intensive industry type (OECD, 2001)
- **Independent variables:**
  - Human capital: current level of formal education - undergraduate, graduate, PhD, and MBA dummy;
  - Financial capital: Likert scale, answer to question: “How much do your parents support you during foundation of your firm in terms of financial resources (loan, equity capital, and other asset).
  - Innovation-driven and efficiency-driven countries: dummies, classification taken from 2014 Global Entrepreneurship Monitor (GEM) report, (Singer *et al.* 2014)
- **Control variables:** gender, family business, the type of industry of family business, business, economic or law education, International Property Rights Index (IPRI), the gross national income per capita, access to finance on a country level

# Results

Variable	Model 1a KTI industries	Model 1b - CTI industries	Model 2a - KTI industries	Model 2b —CTI industries
<i>Human capital</i>				
Undergraduate	0.201	0.575**	0.159	0.602**
Graduate	0.502**	0.445*	0.487**	0.461*
PhD	0.737***	0.249	0.710***	-0.236
MBA	0.662***	0.424	0.627***	0.398
<i>Financial capital</i>				
Family financial assistance	-0.037***	0.053***	-0.057***	0.081***
<i>Moderation effects</i>				
IDC x Undergraduate	-	-	0.224**	0.008
IDC x Graduate	-	-	0.173	0.037
IDC x PhD	-	-	0.197	0.878***
IDC x MBA	-	-	0.217	0.198
EDC x Family financial assistance	-	-	0.034**	0.046**

# Results

Variable	Model 1a KTI industries	Model 1b - CTI industries	Model 2a - KTI industries	Model 2b —CTI industries
<i>Control Variables</i>				
Gender	-0.284***	-0.218***	-0.283***	-0.211***
Family business	-0.406***	-0.117**	-0.407***	-0.122**
KTI industries of parent's firm	0.778***	-0.168*	0.780***	-0.162*
CTI industries of parent's firm	-0.053	0.916***	-0.053	0.921***
Business. Economic and law education	-0.058	0.174***	-0.055	0.186***
IPRI	0.115***	-0.354***	0.092**	-0.382***
Log GNIC	-0.084	-0.099	-0.149	-0.077
Access to finance on a country level (GEM)	-0.014	0.603***	0.038	0.723***
Constant	-0.233	2.094***	0.388	-0.47
Number of observations	12671	12671	12671	12671
Log likelihood	-8252.71	-7256.53	-8250.30	-7247.41
Prob > chi2	0.000	0.000	0.000	0.000
Pseudo R2	0.03	0.04	0.03	0.04

# Results

- Hypothesis 1. Higher level of education, such as Graduate, PhD and MBA education, provides statistically significant positive estimations for choice of knowledge-intensive industries; lower educational level (“Undergraduate education”) provides statistically significant positive estimation for choice of capital-intensive industries
- Hypothesis 2. Results reveal positive significant estimations on financial capital availability coefficient for capital-intensive industries and negative significant estimations for knowledge-intensive industries.

# Results

- Hypothesis 3a: Moderating effects estimation shows that positive estimates on the interaction between innovation-driven country and lower education level associates with knowledge-intensive industry choice (Model 2a), while interaction between innovation-driven country and PhD level of education associates with choice of capital-intensive industry (Model 2b).
- Hypothesis 3b: Results imply that in efficiency-driven countries financial capital leads to a choice of both knowledge- and capital-intensive industries.

# Conclusions

- Higher level of human capital development expressed as a stage on the education ladder there is a better chance of an entry into a knowledge-intensive industry, whereas access to financial capital predicts an entry into a capital-intensive industry.
- Even though there is a direct link between access to resources and industry choice, country profile may significantly alter this relationship.
- In innovation-driven countries, an undergraduate education level increases the probability to enter a knowledge-intensive industry, while a doctoral education level predicts an entry into a capital-intensive one
- In efficiency-driven countries, a better access to financial capital increases the probability of entering both capital- and knowledge-intensive industries

# Theoretical contributions

- While the existing studies in the field mostly focus on triggers of a general decision to become self-employed (McCann, Folta 2012; Nocke 2006; Santarelli, Vivarelli 2007), a complex mechanism is shown for making an entrepreneurial entry decision based on specific attributes of both individual and industrial levels explaining tacit nuances of entrepreneurial entry process
- While the resource-based view is usually being employed to investigate the triggers of a general decision to pursue an entrepreneurial career (e.g., see Alvarez, Buzenitz 2001; Cetindamar et al. 2012; Kim et al. 2006), its application is extended to a specific industry selection process.
- While the role of country settings has well been documented in the literature on general proclivity towards entrepreneurship (Acs, Audretsch 1993; Bergmann, Stephan 2012; Freytag, Thurik 2006), it is shown that country developmental patterns (innovation-driven versus efficiency-driven) play important role.

**Thank you for your attention!**

**dmitri.knatko@gmail.com**