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## **The impact of perception variables on entrepreneurship engagement**

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The views stated in this thesis are those of the author and not necessarily those of the supervisor, second assessor, Erasmus School of Economics or Erasmus University Rotterdam.

## Table of Contents

<b>Abstract .....</b>	<b>2</b>
<b>1 Introduction.....</b>	<b>3</b>
<b>2 Theoretical Framework .....</b>	<b>5</b>
2.1 Definition of Entrepreneurship and Entrepreneurs.....	5
2.2 Entrepreneurship Intentions and the Entrepreneurial Potential Model.....	7
2.3 Perceived Feasibility and Perceived Desirability.....	10
<b>3 Data .....</b>	<b>13</b>
3.1 Data Sources .....	13
3.2 Variables .....	13
3.3 Description of the Used Variables .....	16
<b>4 Empirical Strategy.....</b>	<b>17</b>
<b>5 Results.....</b>	<b>22</b>
<b>6 Discussion and Conclusion.....</b>	<b>25</b>
6.1 Limitations .....	27
6.2 Implications .....	28
<b>Appendix.....</b>	<b>30</b>
<b>Reference .....</b>	<b>32</b>

# Abstract

Despite the increasing interest in the determinants of entrepreneurship engagement, there is not much research on how and to what extent perception factors affect entrepreneurial engagement. Since perception is crucial in peoples' decision-making, this study examined the relationship between perception factors and entrepreneurship engagement. The data used in this study are country-level data from 37 European countries, drawn from the Global Entrepreneurship Monitor for a period from years 2017 to 2022. The study established three OLS models based on the entrepreneurial potential model and classified six perception variables into *perceived feasibility* and *perceived desirability*. The results suggest that perceptual variables are significantly correlated with new business creation across European countries. Perceived capabilities, entrepreneurial intention, and entrepreneurship as a good career choice rate are positively associated with entrepreneurial engagement. The result provides practical insight for both the government and individuals. The impact of perception factors on entrepreneurship engagement has significant implications for understanding and promoting entrepreneurial activities.

# 1 Introduction

Entrepreneurship acts as the wheel of economic growth. It creates more employment and promotes more innovation, and leads to the structural transformation of countries from a primary industry-based society to a service-based tertiary society (Acs & Audretsch, 2005; Praag & Versloot, 2007; Naudé, 2008). In addition, entrepreneurs play an essential role in promoting economic development and exploiting new opportunities (Westhead & Wright, 2013). Researchers find that the impact of entrepreneurship on economic growth in emerging countries is particularly striking, with entrepreneurship showing a positive correlation with both labour productivity and economic development (Zaki & Rashid, 2016). Therefore, encouraging and supporting entrepreneurship would enhance economic development.

To promote new entrepreneurial businesses, European governments engage in public sponsorship activities, and develop their own national entrepreneurship strategies and action plans (Autio, 2016; Crespy & Menz, 2015). Furthermore, more inclusive initiatives and programs within the EU have been implemented to foster entrepreneurship. For instance, “Erasmus for Young Entrepreneurs” and “Start-up Europe” encourage and support entrepreneurs to access resources and engage in networking opportunities (European Business Exchange Programme - Erasmus for Young Entrepreneurs, n.d.-b; Startup Europe, 2022).

Examining the factors that motivate and stimulate entrepreneurial engagement is crucial for fostering entrepreneurship efficiently. Many factors influence entrepreneurship, but perception factors about entrepreneurship are considered vital in individuals' decisions to engage in entrepreneurship. Perceptual variables such as alertness to opportunities, fear of failure, and confidence are correlated with individuals' tendency to become entrepreneurs (Arenius & Minniti, 2005). Grégoire et al. (2011) also argued that personal attitudes and perceptions of individuals are regarded to play a significant role in this choice.

Empirical studies have emphasized that intention is a good predictor of people's behaviour, and attitudes affect an individual's intention to engage in a specific behaviour (Ajzen, 1991). Economic papers found that entrepreneurial intentions are significantly positively related to the likelihood of becoming an entrepreneur (Fayolle & Gailly, 2005; Liñán, 2004). Building upon these findings, researchers established entrepreneurial intention models which offer diverse perspectives on the

drivers of entrepreneurial intentions and provide a foundation for future research. Such as the Theory of Planned Behaviour (TPB), the Entrepreneurial Event model (EEM) and the latest intention-based model – the Entrepreneurial Potential Model (EPM). The EPM model integrates the previous intention models and introduces two predictors - perceived feasibility and perceived desirability that can be used to predict entrepreneurial intentions directly. Perceived feasibility refers to an individual's subjective evaluation of their own capability and skills to run a business. High perceived feasibility means the individual believes they have the necessary means and skills to become an entrepreneur. Perceived desirability refers to an individual's own assessment of the attractiveness of becoming an entrepreneur. It encompasses the perceived benefits associated with starting and operating a business, such as self-fulfillments, financial return and social status. High perceived desirability means the individual perceives entrepreneurship as an appealing career path. If individuals perceive high feasibility and desirability, they are more likely to have a positive intention towards starting a business.

This study intended to navigate the impacts of the perception of individuals on entrepreneurship engagement in European countries. The study is based on the entrepreneurial potential model (EPM) and introduces *perceived feasibility* and *perceived desirability* as two proxies to test the impact of various perceptual factors on entrepreneurship. In exploring perception in relation to entrepreneurship outcomes, the study attempted to answer the following research questions:

- How does Perceived Feasibility influence engagement in entrepreneurship?
- How does Perceived Desirability influence engagement in entrepreneurship?
- How do all perception factors interactively affect entrepreneurship engagement?

The study obtained data from the Adult Population Surveys (APS) in Global Entrepreneurship Monitor (GEM). It is based on national-level data collected from 2017 to 2022 across 37 European countries. The results indicate perception variables from perceived feasibility and perceived desirability that are significantly associated with entrepreneurship engagement. Such as perceived opportunity and perceived capabilities positively impact entrepreneurship engagement. This study provides a deeper understanding of how perceived feasibility and perceived desirability impact entrepreneurship engagement. And bring practical implications for individuals and the government.

The remainder of the study is structured as follows. Section 2 presents the theoretical framework. the data sources and variables from the study are presented in Section 3. Section 4 presents the Empirical Strategy. Section 5 presents results from three OLS models. Finally, section 6 ends with the discussion and conclusion.

## **2 Theoretical Framework**

### **2.1 Definition of Entrepreneurship and Entrepreneurs**

Numerous scholars have put forward ideas on the origin and role of entrepreneurs, as well as the nature of entrepreneurship. These studies focus primarily on defining and identifying significant facets of entrepreneurship relatively broadly. The study of entrepreneurship has a long-established pedigree with the inclusion of economic, psychological and sociological exegeses. Entrepreneurship is a widespread subject of study, starting with Richard Cantillon in the mid-eighteenth century, and has been interpreted and analysed by economists of different schools of thought through to modern times. Economic entrepreneurship theories can be divided into three periods: classical traditions, neo-classical traditions, and Austrian schools. They have different approaches to defining entrepreneurship.

The concept of the entrepreneur was first defined by Richard Cantillon. Cantillon acknowledges the importance of entrepreneurship - entrepreneurship as a competitive profit-seeking spirit of the automated economy. Cantillon proposed that entrepreneurs have an equilibrating function in the economy - they are responsible for the exchange and resource reallocation within the economic system. Moreover, entrepreneurs are speculators and arbitrageurs who bear risk and uncertainty to pursue profit (Van Praag, 1999). The successor to the theory of Richard Cantillon, Jean-Baptiste Say (1767-1832) saw that the role of the entrepreneur is a coordinator who coordinates the distribution of factors of production and turns them into goods and services in the market. Entrepreneurship drives economic development and is necessary for prosperity (Say, 1851).

While Neoclassical economists also given understanding about the function of entrepreneurship. The emergence of neoclassical theory was the result of criticism of classical tradition theory, and they primarily focused on the efficient allocation of resources and market equilibrium but also maintained the influence of diminishing marginal utility from classical works. Alfred Marshall

mainly represents neo-classical. Studying entrepreneurship as a separate academic discipline was not Marshall's primary focus. However, he analytically advanced an adequate entrepreneurial theory and provided a foundation for understanding entrepreneurship within the market economy. Alfred Marshall illuminated entrepreneurs as individuals who are both risk-takers and administrators. Entrepreneurs undertake risks associated with production and take all responsibility within their companies. Entrepreneurs organise their businesses and make the most profitable application of production resources to reduce costs and increase efficiency. Therefore, entrepreneurs establish new production methods and introduce new commodities, boosting economic innovation.

The Austrian School distinguishes its perspective on entrepreneurship from other traditions. They pointed out the importance of subjective perception and decentralised knowledge. Representative figures of the Austrian School include Frank Knight and Friedrich Hayek. Frank Knight's point of view on entrepreneurship was distinct from other economists, where he believed in the assumption of uncertainty. Knight differentiated the concepts between risk and uncertainty. Risk refers to situations where the probabilities of outcomes are known, allowing for logical probabilistic judgments. In comparison, uncertainty refers to situations where probabilities are unknown. According to Knight, those who are risk-averse or cannot bear the burden of uncertainty cannot exploit new opportunities. However, entrepreneurs can tolerate uncertainty and make profits by identifying and capitalising on opportunities in an uncertain environment.

Friedrich Hayek's emphasis was on the role of decentralised information and knowledge. He believed that knowledge is dispersed in society, distributed among individuals in society. This knowledge is difficult to centralise for any individual or authority, and entrepreneurs play a significant role in discovering and exploiting this dispersed knowledge. He saw entrepreneurs as agents with localised knowledge who better understand identifying local conditions, preferences and opportunities and acting on this knowledge. This knowledge allows them to identify profitable opportunities and allocate resources more effectively than others. Hayek believes entrepreneurship is the driving force behind economic coordination and development. Based on religious knowledge and market signals, entrepreneurs create new products and make profits. The entrepreneurial process promotes spontaneous order in the marketplace, fostering innovation, competition and economic growth (Ebner, 2005). Joseph Schumpeter identified the entrepreneur as an innovator who introduces innovation to the economy, such as introducing a new production method,

inventing new products or establishing new markets. Joseph Schumpeter defined entrepreneurs as those motivated by psychological power; entrepreneurs dream of creating a private kingdom to achieve social distinction, believe in their superiority over others and create businesses to succeed in themselves, not just profit driven. Furthermore, the creative innovation of entrepreneurs breaks the equilibrium of the current state of the circular system and creates a higher equilibrium. The process is called "creative destruction", leading to economic development (Schumpeter & Backhaus, 2003). Baumol conceptualises entrepreneurs as "people who are original and creative in finding ways to increase their wealth, power and prestige" (Baumol, 1996). Stemming from Schumpeter's theory of entrepreneurship, Baumol has a similar view that the crucial part of entrepreneurship is the reallocation of resources. However, Baumol argued that entrepreneurial activities might not only be necessarily innovative. He recognised two prototypes of entrepreneurship, 'productive' and 'unproductive', whose counterparts are the innovator and firm organiser. Productive entrepreneurship creates value and economic growth by bringing innovation, technological advances and the development of new industries. Unproductive entrepreneurship refers to activities that do not contribute to economic growth, such as monopolistic behaviour and regulatory capture. The allocation of resources and different paths of productive, unproductive and destructive entrepreneurship determines economic performance.

This study integrates the definitions of entrepreneur based on the thoughts of prior economists as follows. An entrepreneur is an individual who initiates and manages a new business and aims at profits associated with risks. Entrepreneurs have specific abilities compared to non-entrepreneurs, such as identifying opportunities, innovation, and tolerance of risks and uncertainty. Entrepreneurs are often highly motivated by autonomy and ambition and utilise business to make a difference.

## **2.2 Entrepreneurship Intentions and the Entrepreneurial Potential Model**

As Krueger (2017) states, "The construct of intentions appears to be deeply fundamental to human decision-making." Intention-based models have proven to be powerful in predicting individual behaviours, and it appears to apply to the study of entrepreneurship (Liñán, 2004; Locke & Latham, 2002; Netemeyer & Bearden, 1992). Some models have been utilised to demonstrate entrepreneurial intention, including the Theory of Planned Behavior, the Entrepreneurial Event

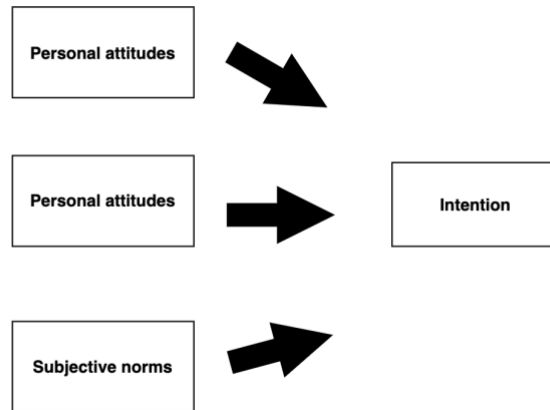


Model, and the entrepreneurial potential model(EPM) (Douglas & Shepherd, 2000; Sivarajah & Achchuthan, 2013).

The theory of planned behaviour (TPB)<sup>1</sup> is the most widely used generic model for explaining and analysing individual intentions (Conner & Armitage, 1998). According to the TPB model, more favourable attitudes, subjective norms, and perceived control lead to stronger intentions to carry out entrepreneurial activities.

**Figure 1**

*The theory of planned behaviour*



The most current process-based model is The Potential Entrepreneurial Model proposed by Krueger and Brazeal, which can predict an individual's behavioural intentions of engaging in entrepreneurial activities. This model integrates the theory of planned behaviour (Ajzen, 1991) and Shapero's (1984) theory of the entrepreneurial event (EEM). This model consists of three critical constructs, which are perceived desirability (attitude and social norms), perceived feasibility (self-efficacy) and Propensity to Act (Krueger & Brazeal, 1994). According to the entrepreneurial potential model, all other factors and events that influence behaviour are predicted by two direct predictors: “perceived feasibility” and “perceived desirability”. Krueger contended that the

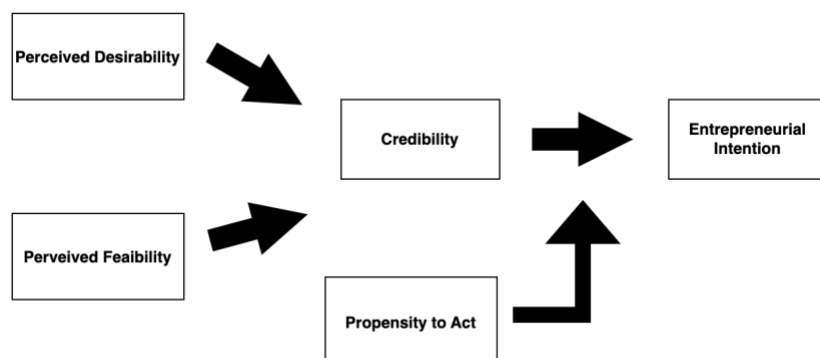
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<sup>1</sup> The theory of planned behaviour model provides a generally applicable theoretical framework for understanding and predicting entrepreneurial intentions using personal and social factors (Krueger, 2003). In the TPB framework, three antecedents explain entrepreneurial intentions: Personal attitudes towards entrepreneurial behaviour and subjective norms refer to individual perceived social pressure to engage in entrepreneurship. The third antecedent is perceived behavioural control, which means an individual's perceptions of their competencies to start a business (Ajzen, 1991).

perceived desirability of specific behaviour drives entrepreneurial intentions. Perceived desirability reflects an individual's perception of desirability and attractiveness for entrepreneurship. In other words, it is a subjective outcome expectation for becoming an entrepreneur. Perceived desirability is affected by various factors such as perceived social status, extrinsic financial rewards, and self-achievement. The term "Perceived feasibility" was first used by Bandura (1986). He stated that not only perceived desirability acts on individual intentions but also perceived feasibility perform a function in engaging in entrepreneurship. Perceived feasibility relates to an individual's appraisal of perceived competencies required to run a business. It considers elements like entrepreneurial knowledge and skills requirements, accessibility to resources, and the risk related to the environment.

**Figure 2**

*The Potential Entrepreneurial Model*



Although the EPM model is robust to predict entrepreneurial intentions, it is notable that intentions precede behaviour formation and cannot represent the full range of external factors influencing individuals' decision-making and behaviour. Additionally, intentions have weak predictive and explanatory power between themselves and behaviour implementation, i.e. intention is a necessary but not sufficient condition for the performance of behaviours (Sniehotta, 2009). Furthermore, perceptions and intentions do not predict behaviours that are outside the control of individuals' will (Sutton & Sheeran, 2003). Thus, EPM can predict intentions, but there is still little evidence in the literature that individual intentions can directly and explicitly predict behaviour (Rhodes & de Bruijn, 2013). This gap between intention and behaviour is called the 'intention-behaviour gap' (Sheeran, 2002). In this paper, the model will be established using the

EPM model and perceived feasibility and desirability as proxies to test the impact of various individual perceptual factors on entrepreneurship.

### **2.3 Perceived Feasibility and Perceived Desirability**

It is important to note that the decision to become an entrepreneur is inherently individual, and it has been acknowledged that personal attitudes and perceptions of individuals dominate this decision (Grégoire et al., 2011; Krueger, 2003; Mitchell et al., 2002). Each individual will likely have various motives for starting their own business and varied expectations of the benefits they would get (Israr & Saleem, 2018; Veciana et al., 2005). Therefore, in forecasting entrepreneurial activity, individual perception and attitude play a crucial role (Anggadwita & Dhewanto, 2016; Fayolle et al., 2014; Robinson et al., 1991). Based on prior empirical and theoretical research, six variables related to individual perceptions and attitudes will be investigated for effect on engagement in entrepreneurial activities. While categorising these variables as "perceived feasibility" and "perceived desirability". Three variables are categorised as perceived feasibility: perceived opportunities, perceived capabilities, and perceived fear of failure. Other three variables are categorised as perceived desirability: perceptions of entrepreneurs' social status, attitude toward entrepreneurship as an occupation, and entrepreneurial intention.

#### Perceived Feasibility

As mentioned earlier definition of the entrepreneur by Knight and Schumpeter, one of the differences between entrepreneurs and non-entrepreneurs is their ability to identify and exploit opportunities. It also coincides with the theory of entrepreneurial alertness, which goes beyond general awareness and involves a specific focus on identifying opportunities that align with the entrepreneur's expertise, interests and goals (Gaglio & Katz, 2001; Tang et al., 2012). This paper assumes that the perception of individually recognised opportunities positively affects individuals' entrepreneurial activity engagement.

Entrepreneurial competencies are defined as the specific knowledge, traits, social roles and skills required in order to run a business, and these characteristics lead to the creation, survival and growth of a business (Man et al., 2008). Some studies have found that entrepreneurial competencies positively affect the different stages of business, such as birth, survival and growth (Bird, 2019; Mitchelmore & Rowley, 2010). Entrepreneurial skills contribute to firm

performance and growth. In addition, there is evidence that developing entrepreneurial skills in entrepreneurs contributes to increased profits and growth (Sánchez, 2013; Man & Lau, 2000). In a nutshell, an entrepreneur's success depends on the entrepreneur's competencies. Therefore, if individuals master sufficient competencies, they will have a greater chance to achieve entrepreneurial goals.

Many investigations have been conducted on how psychological factors, "fear of failure", affect entrepreneurship (Bosma & Levie, 2010; Henderson & Robertson, 2000). Prior studies found that fear of failure significantly negatively impacts entrepreneurial activity (Arenius & Minniti, 2005; Ashton-James & Ashkanasy, 2008). For example, people who suffer from failure stigma are less likely to pursue an entrepreneurial profession (Bosma et al., 2018; Aparicio & Stenholm, 2021). Therefore, fear of failure impedes entrepreneurs' persistence and striving behaviours (Cacciotti et al., 2016; Mitchell & Shepherd, 2011; Morgan & Sisak, 2016).

#### Perceived Desirability

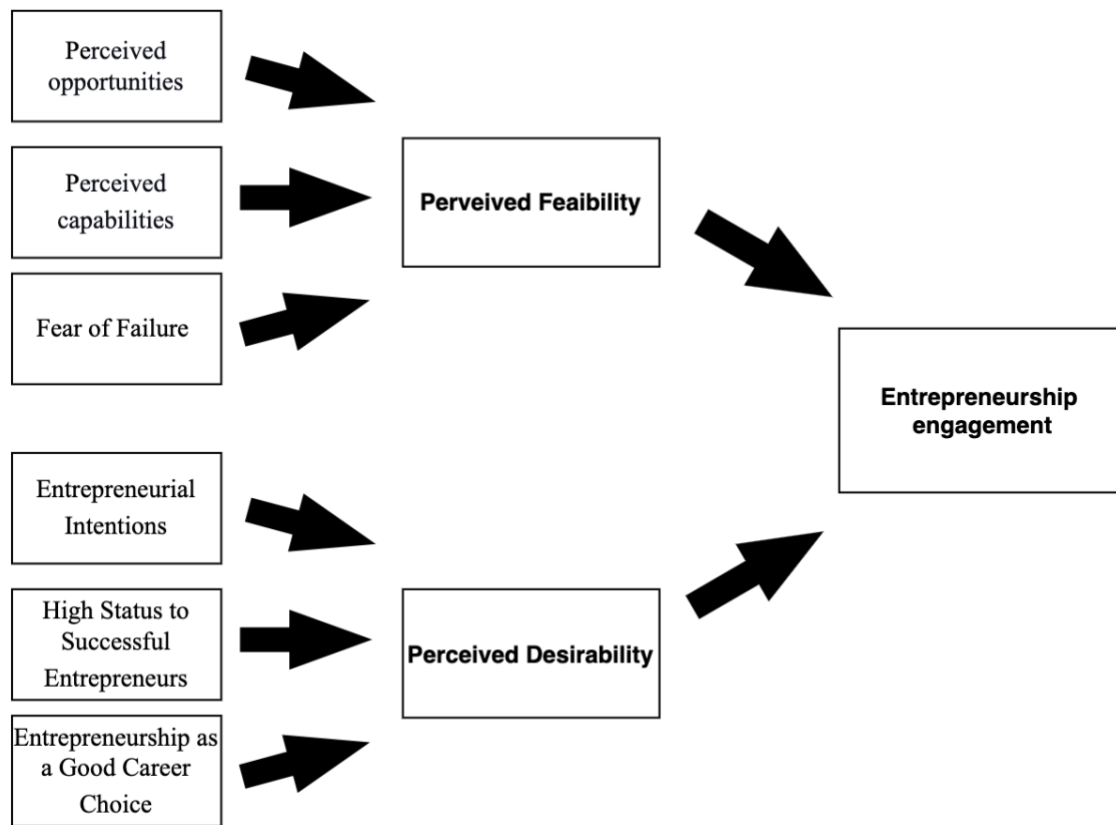
The variable "High Status to Successful Entrepreneur" refers to people who agree that entrepreneurs have high social status. An individual's self-perceived social status is defined as the extent to which a person believes they are valued and respected in society (Anderson et al., 2001; Anderson & Kilduff, 2009; Major and O'Brien, 2005). Research has shown that subjective perceptions of social status are more likely to influence their decision-making than objective indicators (Anderson et al., 2015; Cai et al., 2019). Self-employment provides a good social status for individuals, and some study shows that People will perceive themselves as more entrepreneurial and engage in more entrepreneurial activities in a nation where entrepreneurs have high prestige (Malach-Pines et al., 2005).

Attitude toward entrepreneurship as an occupation and entrepreneurial intention is also classified as perceived desirability. Entrepreneurial intention is the plan and willingness of an individual to consciously engage in starting a business (Davidsson, 1995). Entrepreneurial intention is the precursor and driver of actual entrepreneurial action; individuals do not choose to become entrepreneurs by accident but by intention (Krueger, 2007). TBH theory suggests that intention is the strongest predictor of behaviour. Intention is a direct precursor to real behaviour; the stronger the intention to behave, the greater the success rate of the predicted or actual behaviour.

These specific variables do not necessarily represent a comprehensive or definitional description of entrepreneurs. However, they appear repeatedly in economics, psychology, sociology, and entrepreneurship research and represent the individual necessary to meet their goals and start new venture creation.

**Figure 3**

*Model Structure Visualization*



Here are three research questions for this study:

*(Sub-question 1) How does Perceived Feasibility influence engagement in entrepreneurship?*

*(Sub-question 2) How does Perceived Desirability influence engagement in entrepreneurship?*

*(Sub-question 3) How do all perception factors interactively affect entrepreneurship engagement?*

## 3 Data

A time-series analysis of 37 European countries from 2017 to 2022 will be conducted to figure out the research question and find an answer to this study. Section 3.1 described the data sources of the study. Section 3.2 described the variables included in the models. Section 3.3 showed descriptive statistics of variables.

### 3.1 Data Sources

The national-level data used in the study from Adult Population Surveys (APS) in Global Entrepreneurship Monitor (*GEM Global Entrepreneurship Monitor*, 2023). The Global Entrepreneurship Monitor (GEM) is an assessment of the national level of entrepreneurial activities across countries. The GEM project aims to provide a consolidated understanding of the relationship between entrepreneurship and national economic development over time (Reynolds et al., 1999). GEM report provides comparative data on attitudes toward entrepreneurship, and new entrepreneurial activity from a wide range of countries (Bosma, 2013). The collaborative role of GEM continues to expand, and it becoming a highly reliable resource for governments. And the Adult Population Survey provides the variables that describe the characteristics, motivations and attitudes of individuals starting businesses. The national-level data aggregates that information across the entire population of individuals within 37 European countries. This can provide insights into patterns of entrepreneurship in European countries.

### 3.2 Variables

The following variables were gathered from the GEM website and are relevant to my study:

#### **Dependent Variable**

The GEM reports utilizing Total Early-stage Entrepreneurial Activity (TEA) as their principal measure of the national level of entrepreneurship engagement. Therefore, this study will use TEA to indicate entrepreneurship at the national level. Nascent Social Entrepreneurial Activity (expressed in percentages) from the GEM report's Adult Population Survey (APS) is used as the dependent variable.

### **Independent Variables**

To figure out the perception factors that affect entrepreneurship, six perception variables selected from Adult Population Survey (APS) are classified as perceived feasibility and perceived desirability (*GEM Global Entrepreneurship Monitor, 2023*). And independent variables represent the perception variables measured by the proportion of individuals within a working-age (18-64) range for the sample population.

#### Perceived Feasibility:

- Perceived Opportunities Rate (POR): Percentage of 18-64 population (individuals involved in any stage of entrepreneurial activity excluded) who identify there are good opportunities to start a business
- Perceived Capabilities Rate (PCR): Percentage of 18-64 population (individuals involved in any stage of entrepreneurial activity excluded) who believe they have the required skills and knowledge to start a business
- Fear of Failure Rate (FFR): Percentage of 18-64 population (individuals involved in any stage of entrepreneurial activity excluded) who indicate that fear of failure would prevent them from setting up a business

### Perceived Desirability:

- Entrepreneurial Intentions Rate (EIR): Percentage of 18-64 population (individuals involved in any stage of entrepreneurial activity excluded) who are latent entrepreneurs and who intend to start a business within three years
- High Status to Successful Entrepreneurs Rate (HSSER): Percentage of 18-64 population who agree with the statement that in their country, successful entrepreneurs receive high status
- Entrepreneurship as a Good Career Choice Rate (EGCR): Percentage of 18-64 population who agree with the statement that in their country, most people consider starting a business as a desirable career choice

### Control Variables

- DummyYears: A set of time dummy variables are generated to control for time-fixed effects in multiple linear regression. The time period from 2017 to 2022 in which the data indicates the specific year associated with independent variables. The reference category in the regression models is Year\_2017 and is omitted from the regression equation.
- Female/Male TEA Ratio: Percentage of female 18-64 population who are interested in start a 'new business', divided by the equivalent percentage for their male counterparts.
- Business Services Sector Rate: Percentage of those working in the 'Business Services' sector - Information and Communication, Financial Intermediation and Real Estate, Professional Services or Administrative Services.



To give an overview of the data used for this analysis, table 1 below provides descriptive statistics of variables. The table shows the number of observations, the mean and standard deviation and the minimum and maximum value for each variable. The countries that participated in GEM are listed in Appendix 1.

### 3.3 Description of the Used Variables

**Table 1**  
*Descriptive statistics of variables*

Variable	Obs	Mean	Std.dev.	Min	Max
<i>Total Early-stage Entrepreneurial Activity Rate</i>	122	8.44	3.28	1.56	19.38
<i>Perceived Opportunities Rate</i>	122	45.86	16.04	13.42	87.28
<i>Perceived Capabilities Rate</i>	122	48.56	9.05	27.46	75.00
<i>Fear of Failure Rate</i>	122	41.21	8.20	20.89	57.76
<i>Entrepreneurial Intentions Rate</i>	122	11.33	5.11	2.20	24.30
<i>High Status to Successful Entrepreneurs Rate</i>	109	68.55	12.50	13.06	93.49
<i>Entrepreneurship as a Good Career Choice Rate</i>	109	60.41	11.64	19.04	85.86
<i>Female/Male TEA Ratio</i>	122	0.65	0.15	0.30	1.08
<i>Business Services Sector Rate</i>	122	26.83	8.18	9.10	43.79

In total, there are 122 national-level observations for all variables, across 37 European countries. The outcome variable - Total early-stage entrepreneurial activity (TEA) is 8.44% on average in the sample population. The highest level of TEA is reported at 19.38% in Estonia in 2017. the lowest level of TEA is reported at 1.56% in Poland in 2022. Based on the statistical model used, the estimated coefficient of TEA could vary by approximately 8.44 units on average from the true population coefficient.

For Perceived Feasibility variables, the mean value of the Perceived Opportunities Rate is 45.86%, the Perceived Capabilities Rate is 48.56%, the Fear of Failure Rate is 41.21%. People who think they can identify opportunities and have the ability needed to run a business are high in European countries. But also, the self-reported fear of failure rate over the total population has a similar percentage with perceived opportunities rate and perceived capabilities rate.

For Perceived Desirability, variables with large variance in mean. The entrepreneurial Intentions Rate is 11.33, approximately 12% of individuals express the intention or desire to start their own business within the next three years. Entrepreneurship as a Good Career Choice Rate and High Status to Successful Entrepreneurs Rate have larger mean, 60.41% and 68.55% respectively. It implies that the majority of the sample population considers entrepreneurship as a prestigious and

respected occupation, valuing the accomplishments and achievements of successful entrepreneurs in society. This perception may stem from wealth creation and Innovation.

Regarding the control variables, the mean of the Female/Male TEA Ratio is 0.65, which suggests that the participation of women in entrepreneurial activities is at 65% of the level observed among men. It signifies female entrepreneurs are less than male entrepreneurs considering gender disparity in entrepreneurship across the sample population being studied. The mean of the Business Services Sector Rate is 26.83, with a standard deviation of 8.13. It indicates that on average, 26.83% of entrepreneurs are involved in these specific service-oriented industries. A higher Business Services Sector Rate indicates a strong presence and growth potential of service-based entrepreneurial ventures, which can contribute to economic development and job creation.

## 4 Empirical Strategy

Multiple linear regression analyses (Ordinary Least Squared) will take place to describe relationships between TEA and perception variables. The linear regression could estimate the unknown parameters by fitting a line to the observed data (Pedroni, 2001). Since the study investigates panel data, a series of time dummy variables are included to test the time-fixed effect. Based on the entrepreneurial potential model and considering the time-fixed effect, the following research questions and equations are suggested below:

*(Sub-question 1) How does the Perceived Feasibility of individuals influence engagement in entrepreneurship?*

$$TEA = \alpha + \beta_1 * POR + \beta_2 * PCR + \beta_3 * FFR + \beta_4 * FMT + \beta_5 * BSS + \delta_1 * year_{2018} + \delta_2 * year_{2019} + \delta_3 * year_{2020} + \delta_4 * year_{2021} + \delta_5 * year_{2022} + \varepsilon$$

*(Sub-question 2) How does the Perceived Desirability of individuals influence engagement in entrepreneurship?*

$$TEA = \alpha + \beta_1 * EIR + \beta_2 * HSSER + \beta_3 * EGC + \beta_4 * FMT + \beta_5 * BSS + \delta_1 * year_{2018} + \delta_2 * year_{2019} + \delta_3 * year_{2020} + \delta_4 * year_{2021} + \delta_5 * year_{2022} + \varepsilon$$

*(Sub-question 3) How do all factors interactively affect the prevalence of nascent entrepreneurship?*

$$TEA = \alpha + \beta_1 * POR + \beta_2 * PCR + \beta_3 * FFR + \beta_4 * EIR + \beta_5 * HSSER + \beta_6 * EGC + \beta_7 * FMT + \beta_8 * BSS + \delta_1 * year_{2018} + \delta_2 * year_{2019} + \delta_3 * year_{2020} + \delta_4 * year_{2021} + \delta_5 * year_{2022} + \varepsilon$$

*TEA - (Total early-stage Entrepreneurial Activity Rate)*

*POR - (Perceived Opportunities Rate)*

*PCR - (Perceived Capabilities Rate)*

*FFR - (Fear of Failure Rate)*

*EIR - (Entrepreneurial Intentions Rate)*

*HSSER - (High Status to Successful Entrepreneurs Rate)*

*EGC - (Entrepreneurship as a Good Career Choice Rate)*

*FMT - (Female/Male TEA Ratio)*

*BSS - (Business Services Sector Rate)*

$\alpha$  represents the constant shift in the value of Y, where the value of TEA when all the independent variables in the model are set to zero. The coefficient  $\beta$  represents the estimated effect of each independent variable on the dependent variable – “TEA” while holding other variables constant. The  $\delta$  represents the coefficient of time dummy variables. It indicates the average change in the dependent variable “TEA” for each respective year compared to the reference category year (2017). Where  $\varepsilon$  represents the error term, capturing the unexplained variability in “TEA”.

When independent variables are highly correlated, separating their individual effects on the dependent variable becomes challenging. Multicollinearity inflates the coefficients' standard errors and reduces the variables' statistical significance (Gordon,1968). Before running the regression, testing for correlation between variables and checking VIF scores can check the severity of multicollinearity. The correlation matrix signifies the absolute value of the correlation coefficient between variables. Positive coefficients mean there is a positive relationship, while negative coefficients indicate an inverse relationship. In general, the coefficient values between 0.1 and 0.3 are regarded as a weak correlation relationship, values between 0.3 and 0.5 are moderate, and

values above 0.5 are considered strong. While the correlation coefficients provide initial insights into multicollinearity, the VIF test can further assess the severity of multicollinearity. VIF test measures the variance of the estimated regression coefficient due to correlation with other predictors. A higher VIF value indicates a higher degree of multicollinearity (Lin et al., 2011). The VIF value of 1 indicates no multicollinearity, meaning that the variable is not correlated with other predictors in the model. VIF values above 1 but below 5 indicate a moderate level of multicollinearity and are considered acceptable. However, if VIF values above 5 are considered problematic and suggest high levels of multicollinearity.

**Table 2**  
*Correlation matrix for Model 1*

	POR	PCR	FFR	FMT	BSS
POR	1.00				
PCR	0.17	1.00			
FFR	-0.08	0.29	1.00		
FMT	-0.09	-0.01	0.13	1.00	
BSS	0.23	0.11	-0.05	-0.05	1.00

Table 2 shows the correlation between variables the regression Model 1. Variables in Model 1 are weakly correlated with each other, since the coefficient values are below 0.3. The correlation between Perceived Capabilities Rate and the Perceived Opportunities Rate is 0.17, which indicates a weak positive correlation, and these two variables move together in the same direction. Business Services Sector Rate and Perceived Opportunities Rate has a weak level of correlation, which appears as a value of 0.23. The Perceived Capabilities Rate is also moderately correlated with the Fear of Failure, and the correlation value is 0.29.

**Table 3***Correlation matrix for Model 2*

	EIR	HSSER	EGCR	FMT	BSS
EIR	1.00				
HSSER	-0.15	1.00			
EGCR	0.16	0.36	1.00		
FMT	-0.25	-0.08	-0.02	1.00	
BSS	0.10	0.10	-0.25	0.00	1.00

Table 3 shows the correlation between variables in Model 2. There is a positive correlation of 0.36 between High Status to Successful Entrepreneurs Rate (HSSER) and Entrepreneurship as a Good Career Choice Rate (EGCR). The correlation indicates a moderate positive relationship. As HSSER increases, EGCR also tends to increase in the same direction.

Entrepreneurial Intentions Rate (EIR) and Female/Male TEA ratio have a moderate negative correlation, with a correlation coefficient of -0.25, and the two variables move in opposite directions. It could illuminate that female has less desire to run their own business. Additionally, the correlation coefficient of EIR and HSSER is -0.15, which means a weak negative correlation.

**Table 4***VIF scores for Model 1*

Variable	VIF	1/VIF
PCR	1.15	0.87
FFR	1.13	0.88
POR	1.10	0.91
FMT	1.06	0.94
BSS	1.03	0.97
Mean VIF	1.09	

**Table 5***VIF scores for Model 2*

Variable	VIF	1/VIF
EGCR	1.39	0.72
HSSER	1.32	0.76
EI	1.23	0.82
BSS	1.17	0.85
FMT	1.10	0.91
Mean VIF	1.24	

The VIF values range from 1.03 to 1.15 in Table 4. In Table 5, the VIF values range from 1.10 to 1.39. All VIF values from both tables are below 5, which means the independent and control variables are relatively independent, indicating no severe multicollinearity present in Model 1 and Model 2.

Table A.1 and Table A.2 in the appendix show the correlation matrix and VIF scores of Model 3. The correlation between independent variables is relatively low and no Multicollinearity issue leads to redundant information and overfitting in Model 3.

# 5 Results

The results of the OLS Models are presented in Tables 6,7 and 8.

**Table 6**  
*Regression results of Model 1*

TEA	Coefficient	std.err	t	P-value
POR	0.080**	0.04	2.16	0.038
PCR	0.221***	0.07	3.05	0.005
FFR	-0.01	0.06	-0.19	0.852
FMT	1.43	1.55	0.92	0.363
BSS	0.06	0.04	1.46	0.154
Year				
2018	0.23	0.42	0.53	0.600
2019	0.63	0.83	0.75	0.456
2020	-0.64	0.95	-0.67	0.507
2021	-0.31	1.04	-0.30	0.765
2022	-0.44	1.03	-0.43	0.670
Cons	0.30	3.45	0.09	0.931

*Notes: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .*

Model 1 presents the relationship between the perceived Feasibility of individuals and the Total early-stage Entrepreneurial Activity Rate. Research question 1 states How does the Perceived Feasibility influence engagement in entrepreneurship? Table 6 contains regression results concerning this research question. The results suggest that on country level, the perceived opportunities rate and perceived capabilities rate both significantly positive impact on TEA. The coefficient for Perceived Opportunities Rate is 0.08, which is positive and statistically significant at the 5% level. This indicates that a one-unit increase in Perceived Opportunities Rate is associated with a 0.08-unit increase in the Total early-stage Entrepreneurial Activity Rate. Perceived Capabilities Rate is statistically significant at 1% significance level, The coefficient 0.221 implies that a unitary increase in Perceived Capabilities is associated with an approximately 0.221 unit increase in Total early-stage Entrepreneurial Activity Rate, holding other variables constant.

The coefficient value of the Fear of Failure Rate is -0.01, which is negative and statistically insignificant. There is no strong evidence to suggest that the fear of failure rate significantly impacts the TEA rate. Business Services Sector Rate and Female/Male TEA Ratio and years are all non-significance control variables, which means including these in Model 1 does not contribute significantly to explaining the variation in TEA rate. The time dummy variables for the years 2018 to 2022 do not show statistically significant. This indicates that the changes in TEA in these years are not statistically distinguishable from the Year 2017 (reference category). However, the non-significance coefficient doesn't necessarily mean that there are no differences between these years. The differences observed may be due to random variation in the data rather than meaningful changes in TEA.

**Table 7**

*Regression results of Model 2*

TEA	Coefficient	std.err	t	P-value
EI	0.45***	0.06	7.26	0.000
HSSER	-0.06***	0.02	-3.00	0.006
EGCR	0.09***	0.02	4.08	0.000
FMT	-0.40	1.30	-0.31	0.759
BSS	0.01	0.04	0.19	0.853
Year				
2018	-0.05	0.42	-0.12	0.907
2019	0.73*	0.38	1.93	0.063
2020	0.10	0.50	0.19	0.849
2021	0.52	0.60	0.87	0.392
2022	0.70	0.53	1.31	0.200
Cons	1.80	1.54	1.17	0.251

*Notes: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .*

Model 2 examines the relationship between the perceived Desirability of individuals and the Total early-stage Entrepreneurial Activity Rate. Research question 2 is How does the Perceived Desirability of individuals influence engagement in entrepreneurship? The regression results of research question 2 can be found in Table 7. The coefficient for Entrepreneurial Intentions Rate is



0.45, which is positive and statistically significant at the 1% level. This coefficient indicates a 0.45 increase in the Total early-stage Entrepreneurial Activity Rate for every additional unit of Entrepreneurial Intentions Rate. The high Status to Successful Entrepreneurs Rate has a negative relationship with the TEA rate and is statistically significant at 1%. For each one-unit increase in High Status to Successful Entrepreneurs Rate, TEA declines by an average of units of 0.06. Entrepreneurship as a Good Career Choice Rate is a strong explanatory variable, where it is statistically significant at 1% level. A change of one unit in Entrepreneurship as a Good Career Choice Rate results in a 0.09 unit increase in the dependent variable – TEA rate. It indicates that the people who recognize entrepreneurship as a good career choice rate have a high likelihood of engaging in entrepreneurship. Control variables are not significant to affect the TEA rate, as the P-values are greater than 0.1. From Table 8, we can conclude that all three independent variables identified as perceived disability positively impact individual tendencies to engage in entrepreneurship. In Model 2, the time dummy variables for the years 2018 to 2022 are also not statistically significant. the time dummies are not contributing significantly to explaining the variation in TEA in these time period.

**Table 8**

*Regression results of Model 3*

TEA	Coefficient	std.err	t	P-value
POR	0.02	0.02	1.05	0.30
PCR	0.10***	0.03	3.67	0.00
FFR	0.01	0.03	0.22	0.83
EI	0.43***	0.05	8.67	0.00
HSSER	-0.06***	0.02	-2.94	0.01
EGCR	0.09***	0.02	4.80	0.00
FMT	-0.27	1.54	-0.18	0.86
BSS	0.01	0.03	0.23	0.82
Year				
2018	-0.10	0.40	-0.24	0.81
2019	0.39	0.60	0.65	0.52
2020	-0.07	0.62	-0.11	0.91
2021	0.05	0.82	0.06	0.96
2022	0.31	0.68	0.46	0.65
Cons	-0.34	2.71	-0.13	0.90

Notes: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

In Table 8, the results of Model 3 are shown. Model 3 aims to answer research question 3 - How do perceived feasibility and perceived desirability interactively influence TEA rate? Four explanatory variables are statistically significant at 1% level. Perceived Capabilities Rate, Entrepreneurial Intentions Rate, and Entrepreneurship as a Good Career Choice Rate have positive impacts on the TEA rate. While the High Status to Successful Entrepreneurs Rate has a negative impact on the TEA rate. The coefficient shows a negative relationship between HSSER and TEA rate - an increase in one unit of the High Status to Successful Entrepreneurs Rate corresponds to a 0.06 unit decrease in the TEA rate. The coefficient of the Entrepreneurial Intentions Rate is 0.43, which has the greatest impact on TEA rate among all independent variables in Model 3. This indicates an increase in the Entrepreneurial Intentions Rate leads to a 0.43 unit increase in the TEA rate on average. And the coefficient of in Perceived Capabilities Rate means each additional unit leads to a 0.1 unit increase in the TEA rate. The Entrepreneurship as a Good Career Choice Rate coefficient is 0.09, which indicates the TEA rate experiences a 0.114 unit rise with every one-unit increment in EJCE. The significance of time dummy variables is the same as Model 1 and Model 2, in which P-values are all greater than 0.1, and they cannot explain the variation in TEA from 2017 to 2022. In Model 3, both perceived desirability and feasibility affect entrepreneurship engagement, while perception variables in perceived desirability take bigger responsibilities for it.

## 6 Discussion and Conclusion

This study investigates how perceived feasibility and desirability affect entrepreneurship engagement. Three models are established to study this research. The results suggested perceived feasibility and perceived desirability significantly affect entrepreneurship engagement. The results have coincided with prior research on personal attributes distinguishing entrepreneurs from others.

The notion of perceived desirability, Perceived Opportunities Rate, Perceived Capabilities Rate, and Fear of Failure Rate were analyzed. As shown in Table 6, there is a significantly strong correlation between perceived feasibility and TEA rate. Perceived Opportunities, Perceived Capabilities (Bird, 2019) and Innovation rate positively correlate with TEA rate. Opportunities recognition and exploitation are crucial in establishing a new venture. Individual cognition, prior knowledge and social capital contribute to identifying entrepreneurial opportunities, and

individuals who have a better understanding of the opportunities would be more likely to be entrepreneurs (De Carolis & Saporito, 2006; Chiles et al., 2007; Corbett, 2005). PCR has the most significant effect on the TEA rate among all perceived feasibility variables. This is in line with earlier findings by Chandler and Jansen (1992). Successful entrepreneurs usually believe themselves as competent in entrepreneurial and managerial roles. Also, there is a positive relationship between self-assessed competence and business performance. The result provides solid evidence that self-perceived entrepreneurial competence enhances individuals' tendency to be entrepreneurs. Although Arenius and Minniti (2005) state that the fear of failure has a detrimental effect on entrepreneurship, inhibiting entrepreneurial behaviour. The result for Model 1 does not demonstrate a significantly negative relation between TEA rate and fear of failure.

In Model 2, the Entrepreneurial Intentions rate and Entrepreneurship as a Good Career Choice Rate have significantly favourable effects on TEA rates. Entrepreneurial Intentions show the individuals' desire for entrepreneurial activities and, therefore, can be a predictor of actual entrepreneurship. Individuals with great intentions to establish a new venture are more likely to become entrepreneurs and contribute to the TEA rate. According to Liñán and Fayolle (2015), high levels of early-stage entrepreneurial activity tend to appear in countries with high entrepreneurial intentions. When individuals perceive entrepreneurship as an attractive and viable career path, they are more likely to engage in entrepreneurial activities (Pihie & Akmaliah, 2009). Furthermore, the perception of entrepreneurship as a good career path is associated with the expectation of income, high tolerance for risk and independence considerations (Douglas & Shepherd, 2002). High Status to Successful Entrepreneurs Rate, however, has a negative effect on TEA, which is contract to common sense, where usually entrepreneurial activities are seen to benefit by positive social attitudes toward entrepreneurs, it could also encourage additional people to launch their own enterprises. This may be because an overly rosy view of entrepreneurs creates unrealistic expectations for individuals, and they are overconfident before becoming entrepreneurs and assume that success is the norm. Nevertheless, starting a business is a process full of challenges and needs to bear uncertainties, so many startups will fail quickly and exit the market. Begley and Tan (2001) also stated that a positive recognition of entrepreneurs' social status lead to a higher level of shame from business failure. This could be one reason why there is a negative relationship between the High Status to Successful Entrepreneurs Rate and the TEA rate.

In Model 3, various factors play a role between the perceived feasibility and perceived desirability of the TEA rate. When considering all variables from perceived feasibility and perceived desirability, independent variables: Perceived Capabilities, High Status to Successful Entrepreneurs Rate, entrepreneurial intentions rate, and the Entrepreneurship as a Good Career Choice Rate positively affect the TEA rate.

## **6.1 Limitations**

First of all, the internal validity of this study could be problematic. For instance, endogeneity concerns may not be fully accounted for in the models. The model of this study is based on the abstract concepts in the EPM model, and there are no precise previous research results to explain which variables are classified into "perceived feasibility" or "perceived desirability". Hence, omitted variables could be related to independent and dependent variables, but these variables are not included in the models.

Secondly, the Multiple linear regression analysis assumes there is a linear relationship between the dependent variable and the independent variables. However, if the linearity assumption does not hold, the models would provide inaccurate predictions and unreliable results. Additionally, including time dummy variables in a linear regression model for panel data analysis can control time-specific variation. It may lead to multicollinearity. Multicollinearity can inflate the standard errors of the coefficients, and make some variables appear statistically insignificant when they might be useful.

Then, there are limitations to the external validity. The results may only generalise to some over the world since the study only selects European countries. The country-specific factors like governmental Policies, economic development levels, and cultural norms may also influence Total early-stage entrepreneurial activities. Dorado and Ventresca (2013) argue that certain institutional factors stir up the motivation of individuals to start their businesses. For instance, administrative complexity hinders the enthusiasm of people to participate in entrepreneurship, which has a significant negative impact on the level of entrepreneurship participation (Grilo & Thurik, 2005). Besides, economic development levels play an essential role in determining entrepreneurial engagement levels (Acs & Armington, 2006).

Furthermore, the sample measures national levels of perceived feasibility and desirability. All variables measure rates based on the percentage of the total sample population. National-level data usually take averaging effects across different regions into account. Such averaging effects would disturb the distinctions between sub-groups and individuals with unique characteristics. While the independent variables are very subjective, individuals could be biased in assessing their own perceptions of entrepreneurial activities. The results drawn from the national level may only apply to some individuals within the European countries.

The last limitation is about the time dummy variables that are not statistically significant in all three models. The model might not capture the potential time-specific effects and variations in TEA over the observed periods. And therefore, it cannot provide insights into how the TEA rate change from 2017 to 2022. The non-significance of time dummy variables may be due to the small sample size or short time period under analysis.

## **6.2 Implications**

Even though limitations exist, this study still contributes to understanding how perceived feasibility and perceived desirability impact entrepreneurship engagement. The study points out the importance of the perception of oneself, opportunities recognition and perceived entrepreneurial competencies to entrepreneurship engagement. The study has practical implications for individuals and the government.

On one hand, individuals interested in entrepreneurship should be aware of the cognition bias. Potential for perception biases from perceived feasibility and desirability may trigger them to start a new venture. Overconfidence is a problem that could arise from cognitive bias. Entrepreneurs may have an excessively optimistic view of their skills and knowledge and overestimate the likelihood of business success. In addition, individuals often overvalue the attractiveness of an entrepreneurial opportunity. It leads to unrealistic expectations and underestimates the risks associated with their business ventures. Zacharakis and Shepherd (2001) found that overconfident entrepreneurs are more likely to take excessive risks, leading to suboptimal decision-making and increased failure rates. Individuals should Recognize their own cognitive biases and actively seek diverse perspectives and objective feedback before starting a business.

On the other hand, for the government and policymakers who target higher Total early-stage Entrepreneurial Activity rates and promote entrepreneurship, they can focus on enhancing perceived feasibility and perceived desirability. As perceived competencies positively impact entrepreneurship engagement, the government can introduce entrepreneurship education to universities. For example, they can implement programs that expose students to actual entrepreneurial activities, and students can get practical advice and support for creative ideas and solutions. This mean can instil entrepreneurial mindsets in students and provide students with the knowledge and skills to start and run a business. To enhance perceived desirability, the most important to note is entrepreneurial intention. Entrepreneurial intentions are a crucial factor toward actual entrepreneurial engagement since it is the first inclination to devote to entrepreneurial activities. The government should impose policies to improve the perceived ease of starting a business, and the attractiveness of entrepreneurship can lead to higher individual entrepreneurial intention. Additionally, putting more effort into fostering a supportive entrepreneurial environment is vital. Policies like Implementing tax deductions for startups can alleviate the financial burden and encourage entrepreneurship. Ensuring policies are non-discriminatory and accessible to all entrepreneurs from diverse backgrounds, including age, sex, and race. It can promote equal opportunities in entrepreneurship.

# Appendix

Table A.1 Countries participating in the study (alphabetical)

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1	Austria
2	Belarus
3	Belgium
4	Bosnia and Herzegovina
5	Bulgaria
6	Croatia
7	Cyprus
8	Czech Republic
9	Denmark
10	Estonia
11	Finland
12	France
13	Germany
14	Greece
15	Hungary
16	Iceland
17	Ireland
18	Italy
19	Kosovo
20	Latvia
21	Lithuania
22	Luxembourg
23	Montenegro
24	Netherlands
25	North Macedonia
26	Norway
27	Poland
28	Portugal
29	Romania
30	Russia
31	Serbia
32	Slovakia
33	Slovenia
34	Spain
35	Sweden
36	Switzerland
37	United Kingdom

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Table A.2 VIF scores for Model 3

Variable	VIF	1/VIF
PCR	1.61	0.62
EIR	1.61	0.62
EGCR	1.52	0.66
HSSER	1.36	0.74
FFR	1.24	0.80
BSS	1.23	0.81
POR	1.16	0.86
FMT	1.14	0.88
Mean VIF	1.36	

Table A.3 Correlation matrix for Model 3

	POR	PCR	FFR	EIR	HSSER	EGCR	FMT	BSS
POR	1.00							
PCR	0.20	1.00						
FFR	-0.05	0.30	1.00					
EIR	0.01	0.51	0.17	1.00				
HSSER	0.20	-0.10	0.08	-0.15	1.00			
EGCR	0.11	0.15	0.31	0.16	0.36	1.00		
FMT	-0.03	0.01	0.10	-0.25	-0.08	-0.02	1.00	
BSS	0.17	0.15	-0.03	0.10	0.10	-0.25	0.00	1.00



# Reference:

- Acs, Z. J., & Armington, C. (2006). *Entrepreneurship, geography, and American economic growth*. Cambridge University Press.
- Aeeni, Z., Motavaseli, M., Sakhdari, K., & Dehkordi, A. M. (2019). Baumol's theory of entrepreneurial allocation: A systematic review and research agenda. *European Research on Management and Business Economics*, 25(1), 30-37.
- Ajzen, I. (1991). The theory of planned behaviour. *Organisational behaviour and human decision processes*, 50(2), 179–211.
- Amit, R., MacCrimmon, K. R., Zietsma, C., & Oesch, J. M. (2001). Does money matter?: Wealth attainment as the motive for initiating growth-oriented technology ventures. *Journal of business venturing*, 16(2), 119-143.
- Anderson, C., Hildreth, J. A. D., & Howland, L. (2015). Is the desire for status a fundamental human motive? A review of the empirical literature. *Psychological bulletin*, 141(3), 574.
- Anderson, C., John, O. P., Keltner, D., & Kring, A. M. (2001). Who attains social status? Effects of personality and physical attractiveness in social groups. *Journal of Personality and social psychology*, 81(1), 116.
- Aparicio, S., Urbano, D., & Stenholm, P. (2021). Attracting the entrepreneurial potential: A multilevel institutional approach. *Technological Forecasting and Social Change*, 168, 120748.
- Arenius, P., & Minniti, M. (2005). Perceptual variables and nascent entrepreneurship. *Small business economics*, 24, 233-247.
- Ashton-James, C. E., & Ashkanasy, N. M. (2008). *Affective events theory: A strategic perspective*. In *Emotions, ethics and decision-making*. Emerald Group Publishing Limited.
- Autio, E. (2016). *Entrepreneurship support in Europe: Trends and challenges for EU policy*. Policy Reports. Brussels: European Commission.
- Baumol, W. J. (1996). Entrepreneurship: Productive, unproductive, and destructive. *Journal of business venturing*, 11(1), 3-22.
- Begley, T. M., & Tan, W. L. (2001). The socio-cultural environment for entrepreneurship: A comparison between East Asian and Anglo-Saxon countries. *Journal of international business studies*, 32, 537-553.

- Benzing, C., Chu, H. M., & Kara, O. (2009). Entrepreneurs in Turkey: A factor analysis of motivations, success factors, and problems. *Journal of small business management*, 47(1), 58-91.
- Bird, B. (2019). Toward a theory of entrepreneurial competency. In *Seminal ideas for the next twenty-five years of advances* (Vol. 21, pp. 115-131). Emerald Publishing Limited.
- Bosma, N. (2013). The Global Entrepreneurship Monitor (GEM) and its impact on entrepreneurship research. *Foundations and Trends® in Entrepreneurship*, 9(2), 143-248.
- Bosma, N. S., & Levie, J. (2010). Global Entrepreneurship Monitor (2009). Executive Report.
- Bosma, N., Content, J., Sanders, M., & Stam, E. (2018). Institutions, entrepreneurship, and economic growth in Europe. *Small Business Economics*, 51, 483-499.
- Bosma, N., Content, J., Sanders, M., & Stam, E. (2018). Institutions, entrepreneurship, and economic growth in Europe. *Small Business Economics*, 51, 483-499.
- Cacciotti, G., Hayton, J. C., Mitchell, J. R., & Giazitzoglu, A. (2016). A reconceptualisation of fear of failure in entrepreneurship. *Journal of Business Venturing*, 31(3), 302-325.
- Cai, Z., Parker, S. K., Chen, Z., & Lam, W. (2019). How does the social context fuel the proactive fire? A multilevel review and theoretical synthesis. *Journal of Organizational Behavior*, 40(2), 209-230.
- Chandler, G. N., & Jansen, E. (1992). The founder's self-assessed competence and venture performance. *Journal of Business Venturing*, 7, 223-236.
- Chiles, T. H., Bluedorn, A. C., & Gupta, V. K. (2007). Beyond creative destruction and entrepreneurial discovery: A radical Austrian approach to entrepreneurship. *Organization Studies*, 28(4), 467-493.
- Conner, M., & Armitage, C. J. (1998). Extending the theory of planned behaviour: A review and avenues for further research. *Journal of applied social psychology*, 28(15), 1429-1464.
- Corbett, A. C. (2005). Experiential learning within the process of opportunity identification and exploitation. *Entrepreneurship theory and practice*, 29(4), 473-491.
- Crespy, A., & Menz, G. (2015). Commission entrepreneurship and the debasing of social Europe before and after the Eurocrisis. *JCMS: Journal of Common Market Studies*, 53(4), 753-768.
- Davidsson, P. (1995). Determinants of entrepreneurial intentions. In RENT XI Workshop.
- De Carolis, D. M., & Saporito, P. (2006). Social capital, cognition, and entrepreneurial opportunities: A theoretical framework. *Entrepreneurship theory and practice*, 30(1), 41-56.

- Dorado, S., & Ventresca, M. J. (2013). Crescive entrepreneurship in complex social problems: Institutional conditions for entrepreneurial engagement. *Journal of business Venturing*, 28(1), 69-82.
- Douglas, E. J., & Shepherd, D. A. (2002). Self-Employment as a career choice: attitudes, entrepreneurial intentions, and utility maximization. *Entrepreneurship Theory and Practice*, 26(3), 81–90.
- Ebner, A. (2005). Hayek on entrepreneurship: Competition, market process and cultural evolution. *Entrepreneurship, money and coordination*, pp. 131–49.
- European business exchange programme - Erasmus for Young Entrepreneurs*. (n.d.).  
<https://www.erasmus-entrepreneurs.eu/>
- Fayolle, A., & Gailly, B. (2005). Using the theory of planned behaviour to assess entrepreneurship teaching programmes. Center for Research in Change, Innovation and Strategy of Louvain School of Management, Working Paper, 5, 2005.
- Fayolle, A., Liñán, F., & Moriano, J. A. (2014). Beyond entrepreneurial intentions: values and motivations in entrepreneurship. *International entrepreneurship and management journal*, 10, 679-689.
- Gaglio, C. M., & Katz, J. A. (2001). The psychological basis of opportunity identification: Entrepreneurial alertness. *Small business economics*, 16, 95-111.
- GEM Global Entrepreneurship Monitor*. (2023). GEM Global Entrepreneurship Monitor.  
<https://gemconsortium.org/data/sets?id=aps>
- GEM Global Entrepreneurship Monitor*. (2023). GEM Global Entrepreneurship Monitor.  
<https://gemconsortium.org/wiki/1154>
- Gordon, R. A. (1968). Issues in multiple regression. *American Journal of Sociology*, 73(5), 592-616.
- Grégoire, D. A., Corbett, A. C., & McMullen, J. S. (2011). The cognitive perspective in entrepreneurship: An agenda for future research. *Journal of management studies*, 48(6), 1443-1477.
- Grilo, I., & Thurik, R. (2005). Entrepreneurial engagement levels in the European Union.
- Grimes, M. G., McMullen, J. S., Vogus, T. J., & Miller, T. L. (2013). Studying the origins of social entrepreneurship: Compassion and the role of embedded agency. *Academy of management review*, 38(3), 460–463.

- Haynie, J. M., Shepherd, D., Mosakowski, E., & Earley, P. C. (2010). A situated metacognitive model of the entrepreneurial mindset. *Journal of business venturing*, 25(2), 217–229.
- Henderson, R., & Robertson, M. (2000). Who wants to be an entrepreneur? Young adult attitudes to entrepreneurship as a career. *Career development international*, 5(6), 279–287.
- Hollenbeck, J. R., & Klein, H. J. (1987). Goal commitment and the goal-setting process: Problems, prospects, and proposals for future research. *Journal of applied psychology*, 72(2), 212
- Hossinger, S., Block, J., Chen, X., & Werner, A. (2021). Venture creation patterns in academic entrepreneurship: the role of founder motivations. *The Journal of Technology Transfer*, 1-58.
- Katz, J., & Gartner, W. B. (1988). Properties of emerging organisations. *Academy of management review*, 13(3), 429-441.
- Kerr, S. P., Kerr, W. R., & Xu, T. (2018). Personality traits of entrepreneurs: A review of recent literature. *Foundations and Trends® in Entrepreneurship*, 14(3), 279–356.
- Krueger Jr, N. F. (2003). The cognitive psychology of entrepreneurship. In *Handbook of entrepreneurship research: An interdisciplinary survey and introduction* (pp. 105-140). Boston, MA: Springer US.
- Krueger Jr, N. F., & Brazeal, D. V. (1994). Entrepreneurial potential and potential entrepreneurs. *Entrepreneurship theory and practice*, 18(3), 91–104.
- Krueger Jr, N. F., & Brazeal, D. V. (1994). Entrepreneurial potential and potential entrepreneurs. *Entrepreneurship theory and practice*, 18(3), 91–104.
- Krueger, N. F. (2017). Entrepreneurial intentions are dead: Long live entrepreneurial intentions. *Revisiting the Entrepreneurial Mind: Inside the Black Box: An Expanded Edition*, 13-34.
- Lin, D., Foster, D. P., & Ungar, L. H. (2011). VIF regression: a fast regression algorithm for large data. *Journal of the American Statistical Association*, 106(493), 232-247.
- Liñán, F. (2004). Intention-based models of entrepreneurship education. *Piccola Impresa/Small Business*, 3(1), 11-35.
- Liñán, F. (2004). Intention-based models of entrepreneurship education. *Piccola Impresa/Small Business*, 3(1), 11-35.
- Liñán, F., & Fayolle, A. (2015). A systematic literature review on entrepreneurial intentions: citation, thematic analyses, and research agenda. *International entrepreneurship and management journal*, 11, 907-933.

- Locke, E. A., & Latham, G. P. (2002). Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. *American psychologist*, *57*(9), 705.
- Major, B., & O'Brien, L. T. (2005). The social psychology of stigma. *Annu. Rev. Psychol.*, *56*, 393-421.
- Malach-Pines, A., Levy, H., Utasi, A., & Hill, T. L. (2005). Entrepreneurs as cultural heroes: A cross-cultural, interdisciplinary perspective. *Journal of Managerial Psychology*, *20*(6), 541–555.
- Man, T. W., & Lau, T. (2000). Entrepreneurial competencies of SME owner/managers in the Hong Kong services sector: A qualitative analysis. *Journal of Enterprising Culture*, *8*(03), 235–254.
- Man, T. W., Lau, T., & Snape, E. (2008). Entrepreneurial competencies and the performance of small and medium enterprises: An investigation through a framework of competitiveness. *Journal of Small Business & Entrepreneurship*, *21*(3), 257-276.
- Marshall's ~1842–1924! Seminal work Principles of Economics ~first published in 1890! Shows that the entrepreneur was influential in neo-classical thought. Marshall's theory attached a more prominent role to the entrepreneur than any other early neo-classical theory.
- Mitchell, J. R., & Shepherd, D. A. (2011). Afraid of opportunity: The effects of fear of failure on entrepreneurial action. *Frontiers of Entrepreneurship Research*, *31*(6), 1.
- Mitchell, R. K., Busenitz, L., Lant, T., McDougall, P. P., Morse, E. A., & Smith, J. B. (2002). Toward a theory of entrepreneurial cognition: Rethinking the people side of entrepreneurship research. *Entrepreneurship theory and practice*, *27*(2), 93–104.
- Mitchellmore, S., & Rowley, J. (2010). Entrepreneurial competencies: a literature review and development agenda. *International Journal of Entrepreneurial Behavior & Research*, *16*(2), 92–111.
- Morgan, J., & Sisak, D. (2016). Aspiring to succeed: A model of entrepreneurship and fear of failure. *Journal of Business Venturing*, *31*(1), 1-21.
- Netemeyer, R. G., & Bearden, W. O. (1992). A comparative analysis of two models of behavioural intention. *Journal of the Academy of Marketing Science*, *20*(1), 49-59.
- Pedroni, P. (2001). Fully modified OLS for heterogeneous cointegrated panels. In Nonstationary panels, panel cointegration, and dynamic panels (pp. 93-130). Emerald Group Publishing Limited.
- Pihie, Z. A. L., & Akmaliah, Z. (2009). Entrepreneurship as a career choice: An analysis of entrepreneurial self-efficacy and intention of university students. *European journal of social sciences*, *9*(2), 338-349.

- Reynolds, P. D., Hay, M., & Camp, S. M. (1999). *Global entrepreneurship monitor*. Kansas City, Missouri: Kauffman Center for Entrepreneurial Leadership.
- Rhodes, R. E., & de Bruijn, G. J. (2013). How big is the physical activity intention–behaviour gap? A meta-analysis using the action control framework. *British Journal of health psychology*, *18*(2), 296-309.
- Sánchez, J. C. (2013). The impact of an entrepreneurship education program on entrepreneurial competencies and intention. *Journal of small business management*, *51*(3), 447-465.
- Say, J. B. (1851). *A treatise on political economy*. Lippincott, Grambo & Company.
- Scholz, U., Nagy, G., Göhner, W., Luszczynska, A., & Kliegel, M. (2009). Changes in self-regulatory cognitions as predictors of changes in smoking and nutrition behaviour. *Psychology and Health*, *24*(5), 545-561.
- Schumpeter, J., & Backhaus, U. (2003). *The theory of economic development* (pp. 61-116). Springer US.
- Shapiro, A., & Sokol, L. (1982). *The social dimensions of entrepreneurship*. University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship.
- Shirokova, G., Osiyevskyy, O., & Bogatyreva, K. (2016). Exploring the intention–behaviour link in student entrepreneurship: Moderating effects of individual and environmental characteristics. *European Management Journal*, *34*(4), 386-399.
- Sivarajah, K., & Achchuthan, S. (2013). Entrepreneurial intention among undergraduates: Review of the literature. *European Journal of Business and Management*, *5*(5), 172-186.
- Sniehotta, F. F. (2009). Towards a theory of intentional behaviour change: Plans, planning, and self-regulation. *British Journal of health psychology*, *14*(2), 261-273.
- Stanley, C. A., & Porter, M. (2002). *Engaging large classes: Strategies and techniques for college faculty*. Anker Publishing Company.
- Startup Europe*. (2022b, November 21). Shaping Europe's Digital Future. <https://digital-strategy.ec.europa.eu/en/policies/startup-europe>
- Stevenson, H. H., & Jarillo, J. C. (2007). A paradigm of entrepreneurship: Entrepreneurial management (pp. 155-170). Springer Berlin Heidelberg.
- Tang, J., Kacmar, K. M. M., & Busenitz, L. (2012). Entrepreneurial alertness in the pursuit of new opportunities. *Journal of business venturing*, *27*(1), 77-94.

Thomas, A. S., & Mueller, S. L. (2000). A case for comparative entrepreneurship: Assessing the relevance of culture. *Journal of international business studies*, 31, 287–301.

Van Praag, C. M. (1999). Some classic views on entrepreneurship. *De economist*, 147, 311-335.

Veciana, J. M., Aponte, M., & Urbano, D. (2005). University students' attitudes towards entrepreneurship: A two countries comparison. *The international entrepreneurship and management journal*, 1, 165-182.

Zacharakis, A. L., & Shepherd, D. A. (2001). The nature of information and overconfidence on venture capitalists' decision making. *Journal of business venturing*, 16(4), 311-332.