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Intrapreneurship or entrepreneurship? Determining the most important driver behind the allocation of entrepreneurial talent

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Abstract

Entrepreneurial talents typically exploit opportunities either individually (entrepreneurship) or inside a corporate (intrapreneurship). This allocation of entrepreneurial talents is influenced by multiple country-level determinants. Consequently, cross-country differences in these determinants seem to matter. Previous literature identifies the individual significance of the determinants 'culture', 'law', 'economic development', 'managerial practices', and 'labour market institutions'. However, the question remains; "*What determinant predicting the allocation of entrepreneurial talent is the most important from a cross-country level?*". This paper performs a Heckman selection model on both individual and national-level data from the GEM,WMS, WB, and Hofstede 6-cultural dimensions datasets. Thereby providing a framework that includes the total effect of each determinant. Following this analysis, this paper identifies 'law' as the most important determinant concerning the allocation of entrepreneurial talent. Subsequently, this paper provides economic policy implications on determining and influencing the allocation of these entrepreneurial talents.

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1. Introduction

The allocation of entrepreneurial talents is important for economic policy decision-making. Entrepreneurial talents – better known as individuals with the ability to discover, select, process, interpret and use the necessary data to make decisions in an uncertain world (Mayer-Haug, 2013) are hugely important to the economy. These talents are directly connected with country-level innovation, opportunity exploration, and firm performance (Félicio, 2012 & Mayer-Haug, 2013). Literature finds evidence that entrepreneurial talents help managers to innovate and improve the existing business (Kurakto, 1990 & Hisrisch, 2001). This positively affects innovation and business performance making the allocation of these talents hugely important. Furthermore, entrepreneurial talents also provide innovation and (technological) development through individual entrepreneurship (Yan, 2016). In short, these talents yield (country-level) economic benefits making them important for society. Existing policies try to influence this allocation by mostly addressing individual institutions/determinants. However, a broader view of the economy, consisting of multiple determinants, is required. This is necessary to help answer an important regulatory question. Namely, how to determine and influence this allocation of entrepreneurial talents? As this may yield supplementary benefits for society regarding innovation and (economic) development. The individual and total insights into these determinants provide a broad framework of the economy and help to optimize economic policy decision-making.

Zooming in on the allocation of these entrepreneurial talents, typically two options arise. First of all, classical entrepreneurship or in short, starting a business (Audtretsch, 2012). Secondly, intrapreneurship (Seelos, 2004) which focuses on people exploiting new business opportunities for the employer (Bosma, 2010). When approaching this allocation of entrepreneurial talents from a cross-country level, many noticeable differences arise. For example, in Scandinavian countries the dominant mode is innovation within companies (intrapreneurship). However, in other western economies such as The US and Canada, the dominant mode is setting up independent enterprises (entrepreneurship). To make it increasingly complex, a country like Japan is lacking in both forms of opportunity exploitation. Determining the cause of these cross-country differences concerning the allocation of entrepreneurial talent can be beneficial from a policy point of view. As understanding the question "what are the determinants influencing this allocation?" may result in more effective policies. For example, promoting intrapreneurship is likely to lead to more incremental innovation (Lumpkin, 2014). This promotes value creation and opportunity

exploration (Bosma, 2010), which in turn positively affects business performance (Kuratko, 1990). On the other hand, a policymaker may want to promote entrepreneurship in a country. This can create both financial and non-financial benefits for a specified area. Examples of this are autonomy, increased market share, improved ROI, and increases in GDP. Furthermore, it likely leads to more radical innovation.

In short, a case can be made for influencing the allocation of entrepreneurial talents from both sides. The more interesting question becomes; how do we influence this allocation? And more importantly; what is the most important and/or effective driver affecting this allocation? The allocation can be addressed from both an organizational level as well as a more national level. Concerning policy making only the latter is relevant. One of these ways to influence the allocation of entrepreneurial talents is through managerial practices (e.g. lean manufacturing and talent management). Cross-country differences are identified in the use of these practices (WMS). These managerial practices (and their quality) can directly stimulate the entrepreneurial spirit, incentivizing an individual to exploit an opportunity through intrapreneurship. To elaborate, managerial practices are identified as drivers for intrapreneurship (Kacperczyk, 2012) as well as economic outcomes and firm performance (Bloom & Reenen, 2010; Karplus, Geissmann, & Zhang, 2021). However, empirical evidence concerning the (individual and total) effect of cross-country differences in managerial practices is lacking. This research aims to identify this cross-country effect, thereby helping integrate them into international comparative research. Analysing the total effects provides policymakers with additional information to tailor these policies that target entrepreneurial talents.

As explained earlier, regarding economic policies many more drivers are influencing the allocation of entrepreneurial talent. From a corporate point of view, research has focussed on individual-level preferences (Parker, 2011). However, when addressing this from a policy point of view many more determinants are identified. Firstly, economic growth seems to matter, especially concerning the level of intrapreneurship. As can be seen in figure 1, there is a clear relationship between GDP per capita and the level of intrapreneurship. Furthermore, other indicators of economic development such as tertiary education and a higher level of corruption are positively related to the level of entrepreneurship (Acs, 2014). Whilst these national indicators may be hard to influence for either corporates or policymakers, they can act as important influences and/or moderators (Autio, 2007) to this allocation.
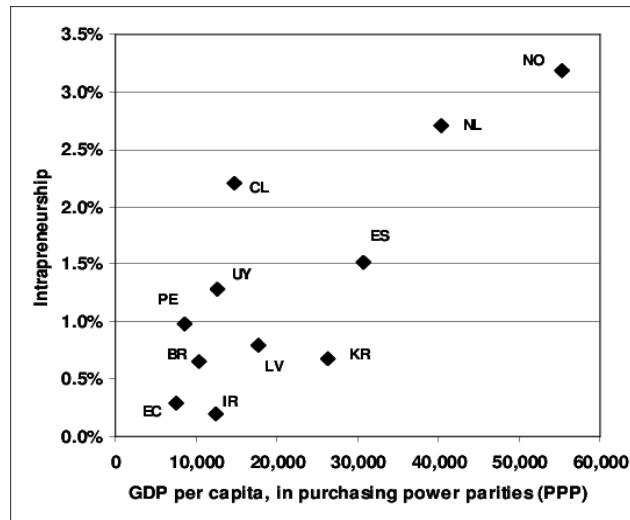
Figure 1. GDP per capita & intrapreneurship (Bosma, 2011)

Additionally, international comparative entrepreneurship identifies the significance of national culture concerning this allocation (Thomas, 2000). Cross-country differences in individualistic and collectivistic orientations towards entrepreneurship are identified (Tiessen, 1997). Whilst individual creativity promotes innovation, collectivism is beneficial for forming efficient relationships. Besides this example, national culture consists of many more elements (e.g. Uncertainty avoidance, masculinity, Hofstede) that seem to affect this allocation of entrepreneurial talent.

Furthermore, international comparative entrepreneurship identifies labour market institutions to matter. These policies can be identified as programs that intervene in the labour market (Scarpetta, 1996). These institutions can enable or constrain individual behaviour (Liebregts, 2019). Therefore, influencing the allocation in both directions. To provide an example; institutions benefitting the employee, such as the legislation on the notice period positively affect intrapreneurial activity, whilst negatively influencing individual entrepreneurship (Liebregts, 2019). This directly affects the allocation of entrepreneurial talents. Thus the cross-country level differences seem to play a role in determining the allocation of entrepreneurial talent. Consequently, policies targeting these labour market institutions can influence this allocation. Lastly, the law in a particular country also seems to matter. Literature identifies the short and long-term effects of law on the allocation of entrepreneurial talent (Armour, 2008 & Mickiewicz, 2021). Short-term changes in law may affect the entry in either of the two. Whilst long-term laws affect the incentives of the individual (Armour,2008). When addressing it more from a policy point of view, law can be used to foster and/or

promote entrepreneurship (Licht, 2006). Law of innovations and Law of competition (Kurpayanidi, 2021) impact overall entrepreneurial activity. Whereas, an argument is made that historic laws explain cross-country differences in culture (Licht,2010).

International entrepreneurship identifies many drivers determining the allocation of entrepreneurial talents. As seen with the law and culture example (Licht, 2010), sometimes literature identifies an overlap between the determinants. As of today, the effect of these determinants has been separately identified. However, the question; which is the most important/influential determinant? Is yet to be answered. This paper develops theoretical arguments and performs a quantitative analysis concerning the allocation of entrepreneurial talent over intrapreneurship and entrepreneurship. Thereby, contributing to policy decision-making and the fields of intrapreneurship and entrepreneurship. The analysis is performed with the use of the Heckman (probit) selection model and is further substantiated by economic theory. By performing this analysis this research tries to answer the following question:

What determinant predicting the allocation of entrepreneurial talent is the most important from a cross-country level?

Due to individuals possibly not being engaged in either entrepreneurship or intrapreneurship, the outcome without the Heckman model is likely to be prone to a selection bias. By using data from the GEM, WB, Hofstede, and WMS this analysis aims to combine individual and national level variables. With the overarching goal to identify the cross-country differences regarding these drivers. To ultimately determine the most important driver concerning the allocation of entrepreneurial talent. For the outcome equation, this paper uses standardized coefficients, allowing for better comparability and interpretability.

This paper identifies a significant (individual) effect for four out of the five total determinants. Additionally, this paper provides insights into the total effects of these determinants. Thereby, identifying the determinant law as the most important determinant concerning the allocation of entrepreneurial talent. Furthermore, these determinants are approached from a comparative perspective, by which their implications on economic policies are discussed. Because of this, this paper contributes to policy decision-making and international comparative entrepreneurship.

In the following section, this paper dives deeper into the five different predictors/determinants of the allocation of entrepreneurial talent. The latter sections provide more elaborate insights into the methodology and the implications of the results.

2. Theoretical framework

Institutional influences affect the allocation of entrepreneurial talents, and thus how they exploit opportunities. To better understand the implications of these influences on the allocation of entrepreneurial talent and policy decision-making, a theoretical understanding of opportunity theory is provided.

Entrepreneurial talents contribute to opportunity discovery (Shane, 2000). This stream of literature suggests that two phenomena should exist for this to take place; the presence of lucrative opportunities and enterprising individuals (Venkataraman, 1997 & Shane, 2000). To add to this, literature mentions that these entrepreneurial opportunities exist independent of the actors (Shane, 2003). However, not all potential opportunities are exploited. On top of that, they can be influenced by (economic) policies. The action to exploit an opportunity depends on weighing the value of the opportunity against the potential costs (Shane, 2000 & Choi, 2008). In this decision making individual-level preferences (and assets) play an important role. Examples of this are; willingness to bear uncertainty (Schere, 1982), need for achievement (McClelland, 1961), and having strong social ties (Reynolds, 1987). Also, other factors like access to financial capital matter (Evans, 1991). These examples all contribute to lowering the opportunity costs to independently exploit an entrepreneurial opportunity. In short, to exploit entrepreneurial opportunities individual preferences and costs matter.

What also matters for exploiting entrepreneurial opportunities are institutional influences (Salimath, 2010). These institutional influences are especially relevant from a policy point of view. A policy can impact these institutions to a certain extent, thereby influencing perceived opportunity costs. Consequently, policies can affect the allocation of entrepreneurial talent. Institutional theory identifies multiple institutional determinants that affect the allocation of entrepreneurial talent. However, before focusing on these institutional influencers and their relevance, we take a closer look at the outcome; namely the allocation. Typically there are two ways to exploit entrepreneurial opportunities. Firstly, the exploitation of opportunities via individual/classical entrepreneurship (Cunningham, 1991). This involves setting up an independent business, thus exploiting the opportunity individually. Secondly, there is opportunity exploitation inside a corporate – intrapreneurship (Wennekers, 2008 & Parker 2011). Intrapreneurship refers to opportunity exploration and exploitation inside a corporate, without being asked to do so (Wennekers, 2008).

Similar to entrepreneurs, intrapreneurs are proactive individuals who pursue entrepreneurial opportunities. They also face opportunity costs, deciding whether and how to exploit these potential opportunities. On the one hand, literature identifies multiple reasons to pursue an opportunity via independent entrepreneurship (Helfat, 2002 & Anton, 1995). Whilst on the other hand, multiple reasons are found favoring intrapreneurial opportunity exploitation (Neessen, 2019 & Douglas, 2013). In short, literature finds reasons favoring both parts of this allocation. This is where institutional theory becomes relevant and policy can start to play a significant role. Institutions either enable or constrain intrapreneurship and/or entrepreneurship (Effah, 2016 & Galanti, 2018). Regulative, normative, and cognitive institutions affect entrepreneurship and allocation of entrepreneurial talent. Effah (Effah, 2016) provides a pertinent case concerning institutional influence in developing countries. To elaborate, (unclear) regulations, bureaucratic processes and cognitive failure all seem to matter (Effah, 2016). Consequently, additional evidence is found for the importance of these different institutions.

Summarizing, institutions show country-level differences that matter for the allocation of entrepreneurial talent. Determining the individual and total effects of these institutions/determinants can improve (economic) policies. To better understand these effects and their implications a more elaborate overview of each determinant is provided.

In this research five institutional determinants are identified:

- Labour market
- Culture
- Law
- Managerial practices
- Economic development

The following section provides a framework of each institutional determinant and its relevance.

2.1 Labour market

Labour market institutions are policy interventions or collective organizations that interfere with employment determination (Holmlund, 2013). These institutions influence the opportunity costs of individuals on a national level. Examples of labour market institutions in place are minimum wages, employment protection, and unemployment insurance. Research

has identified that these institutions have wide-ranging effects on labour market behaviour (Holmlund, 2013 & Liebregts, 2019). Policies influencing the labour market are often used in times of economic crisis in the battle against unemployment (Scarpetta, 1996 & Cazes, 2011), but perhaps more relevant, they also influence the allocation of entrepreneurial talent. Labour market policies either enable or constrain the individual to exploit entrepreneurial opportunities (Liebregts, 2019). They affect the (opportunity) costs and potential benefits of exploiting an entrepreneurial idea. They can for instance propose costs upon self-employment (Baumann, 2012), or lower costs to perform intrapreneurial actions. To make this matter more specific; policies and institutions lowering uncertainty levels lower the barrier to entrepreneurial activity (Bylund, 2017). Furthermore, differences in tax regimes are identified as a driver for self-employment and thus entrepreneurship (Liebregts, 2016). However, it does not solely work in one direction. Regulations benefitting the (corporate) employee such as legislation on notice period positively affect intrapreneurial activity (Liebregts, 2019). Thereby, providing intentions for an entrepreneurial individual to exploit an opportunity through a corporate rather than individually.

Logically speaking, these labour market institutions show differences on a country level. At this country level, the relationship with the allocation of entrepreneurial talent is complex and in both directions. By influencing opportunity costs, labour market institutions are an important determinant of entrepreneurial allocation from an international comparative (and policy) point of view.

2.2   Culture

Culture can be identified as the collective programming of the mind distinguishing a group of people from others (Hofstede, 1980). The term group applies to organizations, associations, and countries. However, from an institutional and policy point of view, we typically look at national culture rather than any of the other. This national culture can be defined in two ways. Culture as values, and culture as norms and practices (Cacciotti, 2017). Even though these two show subtle differences (Cacciotti, 2017) culture as a general term forms a key driver for economic growth (Doepke, 2014) and entrepreneurship. In this framework, the relationship between culture and entrepreneurship is fairly simple. The choice of an individual to pursue entrepreneurship has to do with risk tolerance and patience (Doepke, 2014). These different elements of culture affect an individual's perception of potential costs and/or benefits of exploiting an entrepreneurial opportunity. Due to this effect of culture on individual-level preferences, it also affects the allocation of entrepreneurial talent. An important nuance to

apply to this relationship is that economic development acts as a moderator (Achim, 2021). Being economically developed may provide additional resources. This potentially increases entrepreneurial opportunities present, and therefore should be kept in mind.

From an international comparative view, cross-country differences in culture are identified. These differences are important in determining the allocation of entrepreneurial talent (Autio, 2013). To provide some examples; evidence is found for uncertainty avoiding practices negatively affecting entrepreneurial entry (entrepreneurship). However, they do not affect growth aspirations of the individual (Autio, 2013 & Wennberg 2013). Furthermore, a negative relationship between institutional collectivism and entrepreneurial entry is identified (Autio, 2013, Castillo-Palacio, 2017 & Torres, 2021). Each of these examples differs on a cross-country level. They also seem to significantly affect the allocation of entrepreneurial talent. Therefore, from an international comparative point of view, these cultural determinants matter. Also from an economic policy point of view, the influence of culture is relevant to policy outcomes.

2.3   Law

The system of rules in a particular country, or in short the law is found to affect the allocation of entrepreneurial talents in both the short and long term (Armour, 2008 & Mickiewicz, 2021). Similar to previous determinants, the law shows country-level differences. The legal framework of a specific country can affect the entrepreneurial activity and opportunity exploitation in several ways. For example, short-term changes in institutional law can affect entrepreneurial entry. Whilst long-term laws like bankruptcy laws significantly affect the incentives to engage in individual entrepreneurship (Armour, 2008). Existing laws that punish entrepreneurial failure discourage entrepreneurial activity but are even more evident in individual entrepreneurship (Lee, 2007). Law upholds security and forms restrictions on what entrepreneurs are allowed to do (Parker, 2006). This affects opportunity costs of the individual and thus their decision-making. This again closely relates to previous determinants and thus also affects the allocation of entrepreneurial talent. The nature of laws in place (strict/ lenient or enabling/constraining) affect the allocation of entrepreneurial talent in either direction.

Approaching law from a more policy point of view, literature finds different ways for law to promote and/or foster entrepreneurship (Licht, 2006). First of all, law of Innovations and the Law of Competition impact total entrepreneurial activity (Kurpayanidi, 2021). Secondly,

(historic) law explains cross-country differences in culture and attitude towards risk (Licht, 2010). Licht provides a framework in which law and culture both affect entrepreneurial motivation and thus indirectly allocation (Licht, 2010). The suggested effect of both culture and law on entrepreneurial allocation makes it so that these determinants matter. Consequently, making it even more important to include both of them in a model.

2.4 *Managerial practices*

Managerial practices are methods and innovations managers use to motivate and support employees, and to make the overarching organization more efficient. From an international comparative view, (country-specific) managerial practices matter (Ruzhanskaya, 2018). This is in line with other literature (Bloom & Reenen, 2010; Karplus, Geissmann, & Zhang, 2021) that identifies the effect of country-level differences in managerial practices on performance. It is evident that managerial practices affect firm performance. However, they also seem to affect the allocation of entrepreneurial talent. Their effect on this allocation makes managerial practices also interesting for economic policies. Managerial practices like lean manufacturing and performance management are key antecedents of intrapreneurship (Kacperczyk, 2012). These practices support an employee, thereby lowering potential costs of opportunity exploitation inside a corporate. This similar to other determinants may affect individual preferences and thus indirectly the allocation. Furthermore, evidence is found for managerial practices promoting intrapreneurial behaviour. Despite that, the link with the allocation of entrepreneurial talents is more complex. On the one hand, you can argue that more managerial practices provide better guidance and more incentives for engaging in intrapreneurship. Whilst on the other hand, literature suggests that too many managerial practices hamper the entrepreneurial spirit (Shepherd, 1997). From an international scope, the quality and quantity of managerial practices likely show cross-country differences. Consequently, affecting the opportunity exploitation of entrepreneurial talents. Furthermore, these practices also affect firm outcomes. So again, they seem to matter. But how they affect the allocation of entrepreneurial talent has not yet been investigated on a cross-country level. Consequently, including these practices in a broader framework is important for optimizing (economic) policy decision-making.

2.5 *Economic development*

Economic development is identified as a factor determining the economic well-being and quality of life of a country (Nafziger, 2012). Examples are GDP per capita and the level of

well-being. It is also important for entrepreneurship and its dynamics. Because these vastly differ depending on both institutional context and economic development (Autio, 2017). Literature argues that the environment consisting of institutions and economic development shape entrepreneurship in a country (Acs, 2008). As one notices there is an important relationship between economic development and previously discussed determinants; the institutions. To elaborate on this relationship, literature identifies that cross-country differences in these environments significantly affect the allocation of entrepreneurial talents (Acs, 2014). Furthermore, economic development in the form of GDP per capita is a strong predictor of intrapreneurship (Bosma, 2011). Thus what we see is the significant influence of economic development on the allocation of entrepreneurial talents. Finally, to get the complete picture it is necessary to also approach economic development from a policy standpoint. It is claimed that affecting economic development (often through national factors) directly is very hard. This results in the limited effect of policies specifically regarding these factors (Reynolds, 2015). However, whilst perhaps difficult to influence, the economic development of a country does play a significant role in determining the allocation of entrepreneurial talent, requiring them to be included in this framework.

2.6   The role of informal entrepreneurship

Informal entrepreneurs are entrepreneurs who have not registered their business to the state. The business not being registered results in them not having to pay any taxes. This financial benefit makes it an attractive option, especially in economies with limited control systems in place. Literature identifies the underrepresentation of informal entrepreneurship in data sources (Thai, 2014 &. Williams, 2010). Even though, the effect of informal entrepreneurship may be partially corrected for by variables like law and regulations, an understanding of informal entrepreneurship is necessary. Because the presence of informal entrepreneurship may affect policy implications (Thai, 2014), it should be considered carefully.

So far each determinant used in this research has been discussed. Furthermore, a brief look has been taken at the presence of informal entrepreneurship and the additional implications following from this. By having a theoretical background of these determinants the overarching research question "*What determinant predicting the allocation of entrepreneurial talent is the most important from a cross-country level?"* can be answered more precisely. Additionally, policy implications can be formulated.

This research focuses on country-level entrepreneurship. Country-level entrepreneurship indicators typically consist of aggregates of individual-level activity (Acs, 2014). Even though some researchers have made an argument that country-level entrepreneurial activity should be a systemic phenomenon (Acs, 2007, Autio 2014 & Isenberg, 2010), the individual approach is still mainstream. This paper focuses on these international comparative institutions and analyses them based on country-level differences. By doing this, this paper aims to contribute to entrepreneurial activity as a systemic phenomenon. In addition this research aims to contribute to economic/entrepreneurial policy making. This is done by analyzing the allocation of entrepreneurial talent over entrepreneurship and intrapreneurship based on the above country-level institutions, to ultimately improve policy decision-making.

3. Data and methodology

3.1 Data sources

In order to conduct an extensive cross-country level analysis and answer the research question, this research uses both individual-level and national-level data. Because each of the individuals has an assigned 'country variable' it allows for data joining between the different data sources which is elaborated on below.

The individual-level data is acquired via the *Global Entrepreneurship Monitor (GEM),* GEM contains survey-based archival data that ranges from 1999 to 2021. It contains information from 115 different economies that are more or less equally geographically diversified. Besides the individual-level data, national-level data also is extracted from the GEM. This data, similar to the individual level data, captures results from 115 different economies. Each of the years in which data is collected contains over 200.000 different quantified interviews. Furthermore, additional datasets are added to include the other relevant determinants into the final model. A second dataset used for this analysis is the *World Management Survey (WMS).* WMS contains survey-based data specifically focusing on managerial practices in establishment. The WMS data ranges back to the year 2002, again providing data of many years available to be analyzed. It consists of data from 35 countries. Furthermore, the WMS data makes an additional distinction in cross-industry data on top of the cross-country level. The WMS dataset contains approximately 20.000 quantified interviews, again enabling very specific use of data without the use of too small samples. As the name of this data source

suggests, it focuses on the managerial practices predictor that has been identified for this research.

A third dataset used in this research is the *Hofstede 6 cultural dimensions (Hofstede)*. Hofstede is a dataset consisting of data from over 100 countries. Hofstede focuses on cultural data. It approaches culture by using six different indicators that define the culture of a country. Logically speaking, the observations collected from the Hofstede dataset provide data for the predictor 'culture' in this research. Lastly, to collect the final necessary data, this research makes use of the *World Bank (WB)*. Like all previous data sets, WB is a cross-country dataset where much information concerning the 'predictors' in this research can be found. For example, economic growth in the form of GDP per capita is extracted, also data regarding Law and labour market is taken from the WB. The WB dataset allows for the use of many different variables concerning the identified predictors. In short, the WB dataset allows for the introduction of the law, economic development, and labour market predictors into the model.

Data preparation and manipulation have been applied to the four data sources mentioned above. Following this data preparation, each data source had the overarching variable 'country code'. Because of this, a full outer join could be applied to create a complete dataset. This dataset provides data on both the individual level as well as the national level. Additionally, it includes all the five determinants that are important for conducting the analysis and answering the research question.

3.2 Determining the sample & setting

For determining a feasible sample of the model, observations of two important variables have to be modified. To allow for a feasible cross-country analysis a selection is made regarding the variables 'year' and 'country'. Due to the use of four different datasets, countries present in these datasets logically do not form a perfect match. However, because individual data needs to be combined with national data (for the second stage of the mode) each individual needs to have a consistent 'country' variable corresponding with the other datasets. The WMS is the least elaborate dataset consisting of 35 countries, whilst the others contain 100+ countries. Therefore, for determining the countries to use in the analysis WMS is used as the starting point. Because this paper focuses on policy implications and cross-country differences it is preferred to include as many countries as possible. As this allows for the most

complete (and useful) analysis possible. Regarding this research, this means that the sample consists of data from the following countries:

1. Australia
2. Argentina
3. Brazil
4. Canada
5. Chile
6. China
7. Colombia
8. Germany
9. France
10. Great Britain
11. Ghana
12. Greece
13. India
14. Italy
15. Japan
16. Mexico
17. Nigeria
18. Poland
19. Portugal
20. Sweden
21. Singapore
22. Turkey
23. Tanzania
24. United States
25. Vietnam
26. Zambia

Furthermore, the variable 'year' is equally important, whilst in the perfect world one would like to use data from all years to conduct a very complete research, this conflicts with the feasibility of this research. Therefore this research uses data solely from the year 2014. This is done for feasibility purposes. Following these steps, the total data on which the analysis is performed consists of 201848 observations of 56 different variables. Lastly, to increase usefulness and interpretation of the sample, the data has been standardized. This is done to correct for the different ranges across the four datasets.

3.3 Heckman selection model

In order to obtain precise results, both individual and national data are analyzed. This analysis aims to predict what is the most important determinant concerning the allocation of entrepreneurial talent. Therefore we are only interested in these entrepreneurial talents. The inclusion of non-entrepreneurial people will likely cause a bias due to them choosing neither intrapreneurship nor entrepreneurship. By only focusing on these entrepreneurial talents we get a valid view concerning the allocation over intrapreneurship and entrepreneurship. This focus overcomes a potential selection bias. To achieve this distinction, a 2-stage model has been constructed. This model allows for the second stage to only focus on individuals that are considered an entrepreneurial talent. In order to achieve this, the *Heckman (probit) selection model* is used. This Heckman selection model (Figure 2) provides an effective way of analysis. It makes use of a probit dependent variable in both stages of the model, to accurately answer the research question.
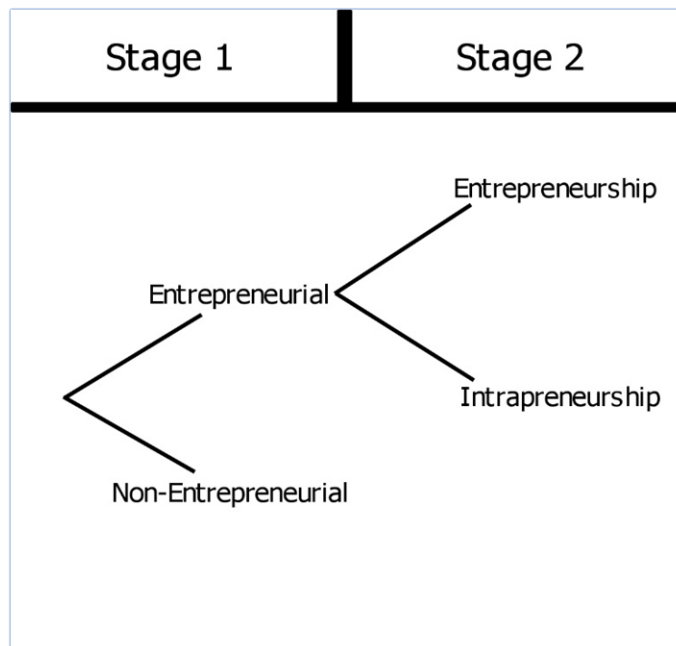
Figure 2, Heckman 2-step selection method

The Heckman model is superior to regular OLS because it bypasses a potential selection bias. As visualized in figure 2, not all people are entrepreneurial. These non-entrepreneurial will not exploit an entrepreneurial opportunity, regardless of the determinants. The inclusion of these non-entrepreneurial people has direct influences on entrepreneurial actions taken in a specific country. Therefore, not accounting for them by using a regular OLS is likely to bias the outcome of the regressions. The unobservable outcomes present in OLS are eliminated with the use of the Heckman model. The goal of this is to lead to a better and less/none biased outcome of the model.

The first stage of the model, better known as the selection equation, performs a probit analysis on the individual level. The trait of being entrepreneurial can only be measured on an individual basis. Therefore this selection equation (elaborated on below) consists of individual-level (GEM) variables. It estimates the relationship between certain activities and traits that are likely to determine whether someone is 1 an entrepreneurial person or 0 a non-entrepreneurial person. The second stage, known as the outcome equation, continues with these entrepreneurial people and brings the national factors into the equation. For the outcome equation data from all different data sources is used. This introduces national-level variables into the analysis. The goal of this is to try to predict the influence of national-level factors (e.g. culture & economic growth) on the individual allocation of entrepreneurial talents over

entrepreneurship and intrapreneurship. By using this empirical setting the analysis aims to be optimized for answering the research question.

3.4 Variables of the model & the regressions used

For this research, there is a distinction between national data and individual data. Multiple regressions are conducted using the previously described Heckman model.

3.4.1 Dependent variable, 1st stage

The first stage has a probit dependent variable with the outcome being that an individual is either entrepreneurial or non-entrepreneurial. The predicted probability that Y=1 or Y=0 leads to the following simplified outcome:

$$Yi = 1 \ (entrepreneurial)$$
$$Yi = 0 \ (non - entrepreneurial)$$

Due to the first stage being on an individual level, GEM data is used for the first stage of the model. The goal is to split the (potential) entrepreneurial people from the non-entrepreneurial people. The most suited *dependent variable* in the GEM dataset for this is *TEAyy.* This variable has a value of 1 if an individual has been involved in any entrepreneurial activities and 0 if not. To elaborate on this definition, entrepreneurial activities are identified as actions out of necessity and opportunity in an individual scope (entrepreneurship) as well as a corporate scope (intrapreneurship). Because of this definition, *TEAyy* provides the most complete indication of whether someone is either an entrepreneurial talent or not.

3.4.2 Independent variables, 1st stage

The goal of the independent variables is to as accurately as possible predict the dependent variable. Thus to split the entrepreneurial people from the non-entrepreneurial. To do this, it is necessary to include independent variables into the selection equation that identify both entrepreneurs and intrapreneurs. For example, a variable like risk avoidance is likely to be higher for an intrapreneur whilst likely to be low for an entrepreneur. This therefore can exclude one of the two, and potentially mess up the selection (and thus the outcomes). *Independent variables* that have been used are *age,* in order to include the influence of the age of the individual, *Fearfail* to investigate the influence of attitude towards failure and proactivity. Furthermore, *gender* investigates the role of the individual's gender. Besides, these more general predictors some more specific predictors are included. *Suskillyy,* determines whether an individual has the experiences required to start or develop a business.

This is identified as a key predictor of entrepreneurial talent and therefore included in the model. As the final independent variable *Opportyy* is used. This variable measures whether an individual thinks somewhere in the next six months is a good time to exploit an entrepreneurial opportunity. Consequently, the following selection equation is formulated:

$$TEAYY [0,1] \sim \text{\ss}0 + \text{\ss}1 \, Age + \text{\ss}2 \, Gender + \text{\ss}3 \, fearfail + \text{\ss}4 \, SuskillYY + \text{\ss}5 \, OpportYY + \varepsilon$$

With the selection equation being determined and thus the 1st stage completed, the entrepreneurial talents proceed to the 2nd stage better known as the outcome equation.

3.4.3 Dependent variable, 2nd stage

The 2nd stage of the model focuses on the allocation of entrepreneurial talents. The purpose of the dependent variable is to distinguish the entrepreneurs from the intrapreneurs. The most complete *dependent variable* for this distinguishment is the *IPACTALL* variable. This variable determines whether an individual currently or in the past three years has engaged in intrapreneurial activities. It takes on a value of 1 if the individual has done so and 0 if not. Therefore this also is a *probit dependent variable*. Whenever an individual has engaged in intrapreneurial activities, they logically speaking are identified as an intrapreneur. This makes it so that individuals who are predicted to be an entrepreneurial talent but have not engaged in intrapreneurial activities, are assumed to be entrepreneurs. This leads to the following outcome:

$$Yi = 0 \; (Entrepreneurship)$$

$$Yi = 1 \; (Intrapreneurship)$$

3.4.4 Independent variables, 2nd stage

The *independent variables* in the second stage of the model aim to predict the allocation of entrepreneurial talents over intrapreneurship and entrepreneurship. This prediction tries to analyse which is the most important determinant for this allocation. In order to answer the research question, the effect of each of the identified predictors/determinants on the allocation between entrepreneurship and intrapreneurship has to be measured. Since the paper takes on a policy perspective, the aim is to include as many explanatory variables as possible. However, for the purpose of understandability, variables have been grouped. Furthermore, the outcome

coefficients have been standardized. This is done to allow for comparability between the determinants (as they originally differed in range), thereby increasing interpretability.

The second stage contains 18 explanatory variables for the five identified determinants. Culture consists of the six cultural dimensions from Hofstede:

- Power distance index
- Individualism versus collectivism
- Masculinity versus femininity
- Uncertainty avoidance
- Long-term orientation vs short term orientation
- Indulgence versus restraint

Labour market institutions consist of grouped variables from the WB that indicate social insurance, social protection, and the safety net of a country. Furthermore, law consist of six WB grouped variables. These include control of corruption, government effectiveness, political stability, regulatory quality, rule of law, and voice & accountability. Managerial practices consist of grouped variables for lean management, talent management, and performance management. Finally, economic development consists of GDP per capita, GDP per capita growth, and urbanization in a country. By grouping these variables this research aims to find the right balance between the inclusion of as many variables as possible and the interpretability of the analysis. This leads to the following (grouped) outcome equation:

$$IPACTALL[0,1] \sim \beta 0 + \beta 1 Gender + \beta 2\ Labour\ market + \beta 3\ Culture + \beta 4\ Law \\ + \beta 5\ Managerial\ practices + \beta 6\ Economic\ development + \varepsilon$$

3.4.5 Control variables 2nd stage

In the second stage, many country-level independent variables get introduced into the model. Whilst the focus thus is largely on the country-level variables there should still be a degree of individual-level control. Because of this, the role of *gender* is controlled for in the second stage of the model. The role of gender may have an unobserved influence on the outcome of the analysis and therefore is controlled for. By controlling for gender the model is assumed to be as good of a fit as possible and the focus can shift towards the results and their interpretation.

4. Results

In the results section, the results are dealt with in two different ways. Firstly, we take a look at the individual effects of each determinant on the allocation of entrepreneurial talents. Secondly, we take a look at the total picture, in other words the total effect of each significant determinant.

4.1. The individual predictors

The first section takes a look at the individual effect of each determinant on the allocation of entrepreneurial talent. This is to check for individual significance and to control whether the computed determinants are in line with existing literature. The coefficients presented below represent the standardized coefficients of the outcome equation.

4.1.1 Labour market

Table 1 gives an overview of the individual effect of labour market institutions. The determinant labour market is split up into three different variables; social insurance, social protection, and safety net. Table 1 shows relatively low significance for the subsets of the labour market determinant. Only the variable social insurance is significant at the 10% level. This variable suggests that the predicted probability of being an intrapreneur increases by approximately 3.56% given that the social insurance goes up by 1 unit. Surprisingly, the other subsets of the labour market show no significant effect on the allocation of entrepreneurial talent. This potentially has to do with the fact that the labour market institutions chosen for this analysis are relatively broad compared to the ones used in existing literature. This may also have to do with some missing data points for a handful of countries. As a final note, the control variable gender shows a significant effect.

Variable	*Coefficient*
Intercept	*0.282 ****
Social insurance	*0.0356 **
Social protection	*-0.022*
Safety net	*-0.0083*
Gender	*-0.033 ****

Table 1, Labour market coefficients. Notes: ***": p-value less than 0.01; **: p-value less than 0.05; *: p-value less than 0.10. Coefficients are standardised.

4.1.2 Culture

Table 2 gives an overview of the individual effect of culture. The determinant culture consists of the six dimensions specified in the national culture model of Geert Hofstede. All coefficients (individually) have a significant effect on the allocation of entrepreneurial talent, except the indulgence coefficient. Due to the significance levels being reasonably high, we can say that (as in line with literature) culture matters in determining the allocation of entrepreneurial talent. When zooming in on each variable the results are relatively intuitive. Higher power distance, individuality, and long-term orientation significantly influence the individuals' probability to become an entrepreneur. Whilst a higher level of masculinity and uncertainty avoidance promote intrapreneurship. These findings are mostly in line with previously conducted analysis concerning the effect of culture on the allocation of entrepreneurial talent.

Variable	Coefficient
Intercept	*0.282 ****
PDI (power distance)	*-0.0059 ****
IDV (individuality)	*-0.015****
MAS (masculinity)	*0.0012 ***
UAI (uncertainty avoidance)	*0.0211 ****
LTOWVS (long term orientation)	*-0.020 ****
IVR (Indulgence)	*-0.0045*
Gender	*-0.0378 ****

Table 2, Culture coefficients. Notes: ***": p-value less than 0.01; **: p-value less than 0.05; *: p-value less than 0.10. Coefficients are standardised.

4.1.3 Law

Table 3 gives an overview of the individual effect of law. Similar to culture, law consists of six different variables. These variables try to predict the degree of law in place and the effectiveness of the government in a certain country. Table 3 shows that all coefficients are significant, with the significance levels differing slightly. When zooming in on the different variables we see that more control of corruption, regulatory quality, and voice & accountability increase the likelihood of an individual becoming an intrapreneur. Whilst a higher level of government effectiveness, political stability, and rule of law increase the likelihood of becoming an entrepreneur. The directions of these coefficients are mostly in line with existing literature. Finally, the surprisingly high coefficient of 'control of corruption' suggests that this variable (to a certain degree) accounts for informal entrepreneurship. This is

for the reason that economies with high corruption and relatively low control typically show a high level of informal entrepreneurship.

Variable	Coefficient
Intercept	*0.294 ****
Control of corruption	*0.223 ****
Government effectiveness	*-0.073 ***
Political stability	*-0.024 ***
Regulatory quality	*0.067 ****
Rule of law	*-0.164 ****
Voice and accountability	*0.016 **
Gender	*-0.031 ****

Table 3, Law coefficients. Notes: ***": p-value less than 0.01; **: p-value less than 0.05; *: p-value less than 0.10. Coefficients are standardised.

4.1.4 Managerial practices

Table 4 gives an overview of the individual effect of managerial practices. The determinant managerial practices consists of +/- 20 variables from the WMS representing different subsets of an overarching managerial practice in existence. For the sake of interpretability, these subsets have been grouped into the three overarching managerial practices; lean management, talent management, and performance management. Table 4 shows that only performance management has a significant effect on the allocation of entrepreneurial talent. A 1 unit increase in performance management is assumed to increase the probability that an individual exploits an opportunity through intrapreneurship by 5.7%. The coefficients of managerial practices show an intuitive direction. Namely, more managerial practices in establishment promote intrapreneurship.

Variable	Coefficient
Intercept	*0.305****
Lean management	*-0.0017*
Talent management	*0.0055*
Performance management	*0.057****
Gender	*-0.038****

Table 4, Managerial practices coefficients. Notes: ***": p-value less than 0.01; **: p-value less than 0.05; *: p-value less than 0.10. Coefficients are standardised.

4.1.5 Economic development

Table 5 gives an overview of the individual effect of the economic development of a country. The determinant economic development consists of three indicators shown in table 5. All of these indicators show significant results. Especially the indicators related to GDP per capita show a significant effect on this allocation. The coefficients in table 5 show results that are in line with the findings of previous literature (Bosma, 2011). Namely that a higher GDP per capita predicts a higher total level of intrapreneurship. Furthermore, the growth in GDP per capita having a positive coefficient also suggests that economic growth can be linked to more intrapreneurial activity. Which in some way makes sense, innovation from big companies creates (local) knowledge, increases (local) jobs, and ultimately causes value creation. These may result in an economy growing faster from a GDP perspective. Furthermore, looking at urbanization, we see a lower level of significance. The coefficient suggests that if the total percentage of people living in an urban area goes up by 1 unit, that the likelihood of an individual becoming intrapreneurial goes up by 1.34%.

Variable	*Coefficient*
Intercept	*0.338 ****
GDP per Capita	*0.042 ****
Urbanization	*0.0134 **
GDP Cap growth	*0.0131 ****
Gender	*-0.0345 ****

Table 5, Economic development coefficients. Notes: ***": p-value less than 0.01; **: p-value less than 0.05; *: p-value less than 0.10. Coefficients are standardised.

Now that we have taken a look at the individual effects and have seen the direction of each of the determinants, we can have a better understanding of the overall effects.

4.2. The total picture

Table 6 gives an overview of the overall (standardized) effects of all significant determinants on the allocation of entrepreneurial talents. In this total picture, the determinant labour market is excluded due to the low levels of significance. Including the labour market predictor would bias the outcomes of the other (significant) predictors and therefore is excluded. Table 6 shows that whilst individual significance was present, the significance in the total picture is much lower. Only the predictors law, culture, and economic development show any form of

significance. Of these three variables, only law shows multiple coefficients with high levels of significance. Furthermore, the managerial practices determinants loses all of its significance. The significant coefficients show more or less no surprising effects. The direction of the variables concerning law remain in the same direction, suggesting a consistent effect. Uncertainty avoidance also shows a similar direction. As mentioned previously this is in line with existing literature. Lastly, the coefficient of urbanization shows a change of direction. This suggests that whenever the other determinants are included, a higher percentage of urbanization contributes to entrepreneurship instead of intrapreneurship.

Variable	Coefficient
Intercept	0.3118 ***
PDI (power distance)	0.121
IDV (individuality)	-0.0521
MAS (masculinity)	0.022
UAI (uncertainty avoidance)	0.064*
LTOWVS (long term orientation)	-0.037
IVR (Indulgence)	-0.0515
Lean management	0.206
Talent management	0.125
Performance management	-0.127
Control of corruption	0.739***
Government effectiveness	-0.574***
Political stability	-0.140
Regulatory quality	0.330*
Rule of law	-0.362***
Voice and accountability	0.082
GDP per Capita	-0.187
Urbanization	-0.062*
GDP Cap growth	-0.0996
Gender	-0.032***

Table 6, Total effects. Notes: ***": p-value less than 0.01; **: p-value less than 0.05; *: p-value less than 0.10. Coefficients are standardised.

Besides the total effects, the analysis has also been performed on each possible (yet significant) combination of determinants. By stepwise changing and adding determinants output coefficients are computed, contributing to the overall use case of this research (Appendix).

Following the results section, the individual and total effects of the determinants in this research are known. With this information we can take a more precise look at the significant variables. This allows us to more thoroughly interpret the outcomes, come up with conclusions and ultimately discuss potential insights that are relevant for policy decision-making.

5. Interpretation & implications

5.1 Conclusion

This research analyzed a sample of individual and national-level data in an attempt to find to most important predictor concerning the allocation of entrepreneurial talent. The analysis checked for the influence of each separate determinant on this allocation, as well as the total (grouped) effect. It turns out that whilst every individual determinant seems to significantly affect this allocation, this is not the case in the total picture. In this total picture, the most important driver determining the allocation of entrepreneurial talent over intrapreneurship and entrepreneurship is law. On top of that, only two other determinants than law remain significant. Consequently, this provides implications for policy decision-making.

Steering entrepreneurial talents towards either intrapreneurship or entrepreneurship can stimulate different types of value creation and/or innovation. Furthermore, it can be beneficial for the national economy through more innovation and economic development. In a complete environment like the real-life economy creating policies targeting law is identified to be the most effective. Regaining or remaining control of corruption is identified as a key promotor of intrapreneurial opportunity exploitation. High levels of corruption negatively affect the perceived status of entrepreneurs, causing individuals to favor intrapreneurship. Policies promoting intrapreneurship in a country and/or region should focus on decreasing the use of public power for private gain. By doing this (perceived) control of corruption is likely to increase. This in turn boosts the probability that an entrepreneurial talent will pursue an opportunity via intrapreneurship. Furthermore, introducing effective and sound policies, therefore boosting regulatory quality also contributes to the promotion of intrapreneurship. Similar to control of corruption, this contributes to less uncertainty and an environment for

(individuals in) firms to exploit opportunities. Potential benefits of promoting intrapreneurship at the country level could be more opportunity exploitation. Which in turn leads to more (incremental) innovation and increased business performance. The outcomes of this opportunity exploitation via intrapreneurship thereby yield (economic) benefits for the society as a whole.

Whilst law can be effectively used to promote intrapreneurship law (and the government) can also be validly used to promote entrepreneurship. Steering entrepreneurial talents towards entrepreneurship can often lead to more radical innovation compared to intrapreneurship. Furthermore, it can engender employment creation and create knowledge spillovers that benefit the country-level economy. This research identifies both more government effectiveness and a stronger perception of the rule of law as key predictors for entrepreneurial talents to exploit opportunities via entrepreneurship. These findings suggest that economic policies promoting entrepreneurship should focus on these two overarching themes. To be more precise, they should focus on increasing the perceived trust in contract enforcement, property rights, and the court as this promotes entrepreneurship. By increasing this perceived trust the individuals' risks and/or opportunity costs of exploiting an opportunity via individual entrepreneurship are decreased. In addition, these policies should focus on increasing the perception of the quality of public services and their independence from political influences and/or pressures. This mainly concerns the credibility and commitment of (government) policy-making and implementation. By focusing on the above two phenomena economic policies can contribute to steering entrepreneurial talents to exploit opportunities via entrepreneurship.

The above section has provided some more specific information about the subsets behind the variable coefficients. However, to bring forth more targeted recommendations that help policy decision-making, the degree of specificity has to be increased. Therefore, the following section discusses more specific recommendations and interprets them in the light of previously conducted research.

5.2 Discussion

The analysis of this research has identified law as the most effective way to determine the allocation of entrepreneurial talent. It has also identified uncertainty avoidance and urbanization to be relevant influencers. The conclusion section has briefly shed a light on the subsets behind these variable coefficients that influence this allocation of entrepreneurial

talent. However, to provide meaningful insights for policy decision making a more precise look needs to be taken at the different elements of law. On top of that, these elements should be placed in an existing perspective to make a meaningful impact. The following section goes in depth about the identified promoters and/or obstructers of either intrapreneurship or entrepreneurship.

5.2.1   Promoting intrapreneurship

Entrepreneurial talents can be steered towards intrapreneurship via increased control of corruption, higher regulatory quality, and the creation of a more 'uncertainty avoiding' attitude. However, what specific policies can target these variables in a meaningful way? The perceived level of corruption affects the status and career choice of entrepreneurs (Acs, 2014). This potentially chips away at the 'status' of being an entrepreneur, thus indirectly promoting intrapreneurship.

Policies trying to gain control over corruption should build capable and transparent institutions. These policies must be aligned with the latest innovations and discourse. Furthermore, policies could also approach this matter in a more 'preventive way'. By providing incentives that prevent corruption from taking place, it likely leads to more credibility and less criminal activity. The desired outcome of policies decreasing criminal activity simultaneously contributes to a stronger perception of 'regulatory quality'. As previously stated, this research has also identified a stronger perceived regulatory quality to be a promotor of intrapreneurship. Therefore, the successful implementation of a policy targeting criminal activity can contribute to both promoters of intrapreneurship (control of corruption & regulatory quality). The implementation of helpful and successful policies positively contributes to the perceived regulatory quality. This can be supported by an example of a specific policy targeting corruption that simultaneously affects the perceived regulatory quality of a country. In Brazil, a policy developing an AI system that identifies possible fraud in procurement processes is launched (World bank). With the successful implementation of this policy, the country/government gains more control over corruption. Consequently, this rollout of a successful policy also increases perceived regulatory quality. As the analysis identified, increasing both of these subsets of law promotes allocation (of entrepreneurial talents) towards intrapreneurship.

Policies promoting intrapreneurship should strengthen control over corruption and increase perceived regulatory quality. This can be done by targeting the individual elements of these

perceptions. In conclusion, adjusting policy decision-making to the above mentioned elements is the most effective way to steer the allocation of entrepreneurial talents towards intrapreneurship.

5.2.2   *Promoting entrepreneurship*

Entrepreneurial talents can be steered towards entrepreneurship via increased government effectiveness and a higher perceived rule of law. Similar to intrapreneurship the same question arises; what specific policies can target these variables in a meaningful way?

First of all, policies trying to increase government effectiveness should focus on the quality of public and civil services. Furthermore, they should stay away from political influences as this demotes the total opportunity exploitation via entrepreneurship. By implementing policies that increase the perceived effectiveness of the government, the element of uncertainty (to a certain degree) gets taken away from entrepreneurial opportunity exploitation. An example of a specific policy targeting this matter could be to start introducing political checks on government officials. Additionally, a policy could focus on improving a specific element of the public services like the healthcare system. Policies influencing these smaller subsets of 'government effectiveness' all can contribute to allocating entrepreneurial talent towards entrepreneurship. Secondly, a variable that also promotes entrepreneurial opportunity exploitation (instead of intrapreneurial) is the perceived rule of law. Elements of this rule of law are transparent property rights, enforcement of individual contracts, and court decision making. All of them positively contribute to a stronger perceived rule of law. A prime example of such a policy is currently performed in Kenya. A project concerning advanced data analytics contributes to transparency and perceived rule of law. This policy measures the performance of the court and its judges to increase quality, thereby increasing perceived rule of law. As the analysis identified, policies increasing the above mentioned subsets of law promote the allocation (of entrepreneurial talents) towards entrepreneurship.

Summarizing, policies promoting entrepreneurship should aim to increase government effectiveness as well as boosting the perceived rule of law. Likewise, this can be done by introducing policies that affect the individual elements of these subsets. By doing this, policies can effectively steer the allocation of entrepreneurial talent toward entrepreneurship

5.2.3 Consequences of 'decreasing' law & flexibility

So far we have taken a look at the promoters of both intrapreneurship (over entrepreneurship) and entrepreneurship (over intrapreneurship). This approach only looked at increasing the relevant promotors of the given form of opportunity exploitation. However, the coefficients can also work in the opposite direction. To optimize policy decision making the 'other directions' of these variables should also be carefully considered.

Decreasing subsets of the law determinant can influence the allocation of entrepreneurial talents. However, this 'decreasing' may also have unintended consequences for society. To provide an example; control of corruption is identified to promote intrapreneurship. Theoretically one can argue that decreasing control over corruption increases entrepreneurship (over intrapreneurship). Whilst this may work in the correct direction concerning the allocation it brings much more costs for society. An increased level of corruption negatively contributes to the living standards and well-being of people in a country. Similar arguments could be made for government effectiveness, rule of law, and regulatory quality. Decreasing the subsets of law therefore seems to be a less/none valid option for economic policies as they likely come with negative consequences.

Even though decreasing subsets of law is not a good option, there is more flexibility than solely increasing the above named subsets. Short-term law can affect total entry into entrepreneurial activities (Mickiewicz, 2021). Furthermore, new laws and/or regulations can specifically target either entrepreneurship or intrapreneurship. A good example of such a law could be bankruptcy law (Armour, 2008). By reducing the consequences of going bankrupt, policies and laws can decrease the risk of exploiting an opportunity via entrepreneurship. This in turn likely leads to more entrepreneurship (over intrapreneurship). In conclusion, policies decreasing government control and quality of law likely bring along negative consequences. Nevertheless, policies can target specific areas of the law. Thereby increasing flexibility and the effectiveness of such economic policies on the allocation of entrepreneurial talent.

5.3 Limitations of the research

This research is limited in several ways. First of all, the identification of the five determinants. The identification has been completed by using four different datasets. Therefore, the definitions to some degree rely on the overarching data sources. In addition, one could argue that the identification of the labour market determinant is fairly general. Only including the safety net, social insurance, and social protection may not highlight the effect of very specific

labour market policies. An example of this can be derived from Liebregts' papers (Liebregts 2016 & 2019). Liebregts finds significant evidence for the effect of legislation on the notice period. In short, due to the labour market determinants being fairly generic, the outcomes are not in line with existing literature. This potentially misses the real effect of a determinant, thus limiting the research.

Furthermore, this research is limited with respect to the year and countries of the sample. The data used in the analysis only includes one year of data. On top of that only 26 countries are used for this analysis. Even though the sample size is sufficiently large this may harm the generalisability of the outcomes.

5.4 Future research opportunities

The limitations of this research provide opportunities for future research. First of all, future research could focus on using more recent data, including a longer period of time, and adding more countries to the sample. Future research could contribute to the existing findings by broadening the framework. This in turn leads to more evidence concerning the determinants, and an updated framework. As a result, policy decision-making concerning the allocation of entrepreneurial talent could be optimized even more.

 Secondly, future research could focus on a different (more broad) identification of the determinants used. For example, labour market institutions could be made more specific. National culture could be identified differently via for example the GLOBE dataset (instead of Hofstede). Lastly, future research could focus even more specifically on the effects of economic policies targeting law. So far this research has identified that law matters the most. However, the consequences of potential laws targeting the allocation of entrepreneurial talent are still largely unknown. Focusing on these specific elements allows future research to help optimize policy decision-making.

The limitations identified above provide many opportunities for future research. By enlarging the analysis future research can add to the development of this 'entrepreneurial framework'. Consequently, this may lead to increased generalizability and better policy decision-making.

6. Relevance of the research

6.1 Societal & policy relevance

This research has identified law as the most important determinant concerning the allocation of entrepreneurial talent. Following these findings, policymakers can more effectively bring these economic policies into practice. This can be done by focusing on the subsets of law (identified by this research) that seem to matter. Better and more to-the-point policies yield benefits for the entire society. A potential benefit of this increased effectiveness is having to bear fewer costs (for mistakes made). Furthermore, the cross-country element in this research allows for more tailored policy decision-making for the included countries. Following the above mentioned reasons, this research yields benefits for society. On top of that, it adds to the international comparative element of economic policy making. Besides these (mostly) policy benefits, this research also provides individual benefits for society. Human capital plays an important role in incentivizing entrepreneurial talent, making it extremely relevant for society as a whole. More effective entrepreneurial policies may lead to additional investment in these elements of human capital. This in turn benefits entrepreneurial and non-entrepreneurial people in developing their skills as well as themselves. Consequently, society can benefit in multiple ways (e.g., innovation, economic growth) from this increased human capital (investment). In conclusion, by helping to optimize economic policy-making concerning entrepreneurial talent, this research supports policymakers and yields benefits for multiple layers of society.

6.2 Scientific relevance

Whilst this research mainly provides policy implications, it also brings forward relevant theoretical insights. Consequently, contributing to existing streams of literature. Existing literature identifies many different determinants to affect the allocation of entrepreneurial talent. However, a framework combining all of these determinants is missing. By running a Heckman-selection model that includes multiple of these determinants, this research helps to fill this gap. Furthermore, this study allows for a cross-country comparison of 26 countries concerning the identified determinants. Regarding this comparative purpose, this research contributes to managerial practices as a cross-country determinant of entrepreneurship. This is done by adding managerial practices to the cross-country framework of this research. By adding to the existing literature and helping to fill the gaps present, this research contributes to the fields of entrepreneurship, intrapreneurship, and the identification of country-level entrepreneurial activity as a systemic phenomenon.

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8. Appendix

Variable	Coefficient
Intercept	0.279***
PDI (power distance)	-0.043***
IDV (individuality)	-0.008
MAS (masculinity)	0.0028
UAI (uncertainty avoidance)	0.0117*
LTOWVS (long term orientation)	-0.0192**
IVR (Indulgence)	0.00024
GDP per Capita	0.030***
Urbanization	0.011
GDP Cap growth	0.0275***
Gender	-0.032***

Table 7, coefficients of culture and economic development . Notes: ***": p-value less than 0.01; **: p-value less than 0.05; *: p-value less than 0.10. Coefficients are standardised.

Variable	Coefficient
Intercept	0.327***
PDI (power distance)	-0.017 *
IDV (individuality)	0.0242 **
MAS (masculinity)	0.005
UAI (uncertainty avoidance)	0.023 **
LTOWVS (long term orientation)	-0.024 ***
IVR (Indulgence)	-0.024 ***
Control of corruption	0.312 ***
Government effectiveness	-0.193 ***
Political stability	-0.024*
Regulatory quality	0.088***
Rule of law	-0.151***
Voice and accountability	-0.058 ***
Gender	-0.0322 ***

Table 8, coefficients of law and culture. Notes: ***": p-value less than 0.01; **: p-value less than 0.05; *: p-value less than 0.10. Coefficients are standardised.

Variable	Coefficient
Intercept	*0.252****
PDI (power distance)	*-0.0307 ****
IDV (individuality)	*-0.050 ****
MAS (masculinity)	*0.027****
UAI (uncertainty avoidance)	*-0.037 ****
LTOWVS (long term orientation)	*-0.048****
IVR (Indulgence)	*-0.028 ****
Lean management	*-0.0037*
Performance management	*0.123****
Talent management	*-0.023***
Gender	*-0.0338****

Table 9, coefficients of culture and managerial practices . Notes: ***": p-value less than 0.01;

**: p-value less than 0.05; *: p-value less than 0.10. Coefficients are standardised.

Variable	Coefficient
Intercept	*-1.697 **
GDP per Capita (0 - 85000)	*-0.330 ****
Urbanization (0 - 100)	*0.394 ****
GDP Cap growth (-5 – 8)	*0.131 ****
Social insurance (0 – 80)	*-1.355 ****
Social protection (0 – 70)	*-1.720 ****
Safety net (0 – 20)	*-0.483 ****
Gender	*-0.026 ****

Table 10, coefficients of economic development and labour market institutions . Notes: ***":

p-value less than 0.01; **: p-value less than 0.05; *: p-value less than 0.10. Coefficients are

standardised.

Variable	Coefficient
Intercept	*0.295 ****
GDP per Capita (0 - 85000)	*0.0142*
Urbanization (0 - 100)	*0.0183 ***
GDP Cap growth (-5 − 8)	*0.0273 ****
Lean management	*0.005*
Talent management	*-0.031 ****
Performance management	*0.088 ****
Gender	*-0.034 ****

Table 11, coefficients of economic development and managerial practices. Notes: ***": p-value less than 0.01; **: p-value less than 0.05; *: p-value less than 0.10. Coefficients are standardised.

Variable	Coefficient
Intercept	*0.287 ****
Control of corruption	*0.227 ****
Government effectiveness	*-0.057*
Political stability	*-0.029*
Regulatory quality	*0.115 ****
Rule of law	*-0.224 ****
Voice and accountability	*0.0260 **
GDP per Capita (0 - 85000)	*0.005*
Urbanization (0 - 100)	*-0.037 ****
GDP Cap growth (-5 − 8)	*-0.014*
Gender	*-0.031 ****

Table 12, coefficients of law and economic development. Notes: ***": p-value less than 0.01; **: p-value less than 0.05; *: p-value less than 0.10. Coefficients are standardised.

Variable	Coefficient
Intercept	0.310 ***
Control of corruption	0.310 ***
Government effectiveness	-0.205 ***
Political stability	-0.023 *
Regulatory quality	0.094 ***
Rule of law	-0.198 ***
Voice and accountability	0.019 *
Lean management	0.021 **
Performance management	-0.034
Talent management	0.033 ***
Gender	-0.032***

Table 13, coefficients of law and managerial practices Notes: ***": p-value less than 0.01; **: p-value less than 0.05; *: p-value less than 0.10. Coefficients are standardised.

Variable	Coefficient
Intercept	0.384 ***
Control of corruption	0.371 ***
Government effectiveness	-0.258 ***
Political stability	0.016
Regulatory quality	0.057 **
Rule of law	-0.206 ***
Voice and accountability	-0.041
PDI (power distance)	-0.002
IDV (individuality)	0.032 **
MAS (masculinity)	0.009
UAI (uncertainty avoidance)	0.047 ***
LTOWVS (long term orientation)	0.0014
IVR (Indulgence)	0.024
GDP per Capita	0.054 ***
Urbanization	-0.032
GDP Cap growth	0.016

Gender	*-0.031 ****

Table 14, coefficients of law, culture and economic development. Notes: ***": p-value less than 0.01; **: p-value less than 0.05; *: p-value less than 0.10. Coefficients are standardised.

Intercept	*0.250 ****
GDP per Capita (0 - 85000)	*0.012*
Urbanization (0 - 100)	*0.028*
GDP Cap growth (-5 − 8)	*0.032 **
Lean management	*-0.003 ****
Talent management	*-0.039*
Performance management	*0.100 ****
PDI (power distance)	*-0.042 ****
IDV (individuality)	*-0.025 ****
MAS (masculinity)	*0.015 ***
UAI (uncertainty avoidance)	*-0.018 **
LTOWVS (long term orientation)	*-0.046 ****
IVR (Indulgence)	*-0.037 ***
Gender	*-0.031 ****

Table 15, coefficients of economic development, managerial practices and culture. Notes: ***: p-value less than 0.01; **: p-value less than 0.05; *: p-value less than 0.10. Coefficients are standardised.

Intercept	*0.304 ****
GDP per Capita (0 - 85000)	*-0.026*
Urbanization (0 - 100)	*-0.041 ****
GDP Cap growth (-5 − 8)	*-0.0285 **
Lean management	*0.025 **
Talent management	*0.044 ****
Performance management	*-0.046*
Control of corruption	*0.311****
Government effectiveness	*-0.175 ****

Political stability	*-0.034 **
Regulatory quality	*0.167 ****
Rule of law	*-0.248 ****
Voice and accountability	*0.014*
Gender	*-0.032 ****

Table 16, coefficients of economic development, managerial practices and law. Notes: ***: p-value less than 0.01; **: p-value less than 0.05; *: p-value less than 0.10. Coefficients are standardised.

Variable	*Coefficient*
Intercept	*0.370 ****
Control of corruption	*0.431 ****
Government effectiveness	*-0.349 ****
Political stability	*-0.042 ***
Regulatory quality	*0.105 ****
Rule of law	*-0.185 ****
Voice and accountability	*-0.055 ****
Lean management	*0.032*
Talent management	*0.008*
Performance management	*0.029*
PDI (power distance)	*0.002*
IDV (individuality)	*0.014*
MAS (masculinity)	*0.008*
UAI (uncertainty avoidance)	*0.018*
LTOWVS (long term orientation)	*-0.030 ****
IVR (Indulgence)	*-0.038 ****
Gender	*-0.032 ****

Table 17, coefficients of law, managerial practices and culture . Notes: ***": p-value less than 0.01; **: p-value less than 0.05; *: p-value less than 0.10. Coefficients are standardised.