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Social responsibility across different education levels and countries: exploring their correlation with entrepreneur's motive to make a difference in the world

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Abstract

Objectives: The aim of this study is to examine the relationship different education levels, different country-income levels on social responsibility. **Method:** Data from the Global Entrepreneurship Monitor was used, containing 31,026 individual observations across 50 different countries. Logit and multilevel logit models were implemented to attempt to narrow down the effect of the variables of interest on entrepreneur's motive to make a difference. **Results:** There exist a significant negative correlation between motive to make a difference in the world for entrepreneurs who have Primary and Upper secondary as their highest educational levels. Entrepreneurs with doctorate degrees and higher are more positively inclined to have social responsibility. Low-income countries tend to have lower motive to make a difference in the world. **Conclusion:** More social responsible courses and activities should be introduced into the global education curricula across all different educational levels, particularly for primary and upper secondary education.

Key words: Education level, Social responsibility, CSR, USR, Entrepreneurship

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1. Introduction

Global issues are more pressing than ever. Approximately 9.2% of the world population, 720 million people, still live in extreme poverty (UNDP, 2022). Climate change threatens unavoidable increases in multiple climate hazards, posing multiple risks to ecosystems and humans if global warming reaches 1.5°C in the near future (IPCC, 2022). Weather-related disasters have also increased food insecurity, with moderate and severe food insecurity now affecting 2.4 billion people worldwide (FAO, 2022). Issues such as decolonization, basic human rights violations, gender inequality, and so many more further complicate the global landscape. In the face of these daunting challenges, we need more individuals and changemakers who are willing to step up and unite to devise and implement solutions. This begs the question: has our education system failed to instill a sense of social responsibility in the youth and entrepreneurs, instead leading them to focus solely on capitalistic and profitable business ventures? This thesis explores whether education can redirect this focus, emphasizing the importance of addressing global issues through socially responsible entrepreneurship.

Social responsibility (SR) is essential for addressing pressing societal challenges, from poverty and inequality to climate change and public health. It enables organizations and individuals to contribute meaningfully to the well-being of communities, fostering sustainable development and enhancing overall quality of life. This focus of social responsibility manifests into the well-known Corporate Social Responsibility (CSR), with more ethical business practices and corporate accountability. CSR can significantly improve national living standards, particularly in developing countries with low innovation records (Boulouta & Pitelis, 2014). While CSR is primarily associated with commercial enterprises, SR is equally important for other organizations, including schools and universities. In recent years, the concept of University Social Responsibility (USR) has gained significant traction. This broader application is crucial, as universities play a pivotal role in shaping future entrepreneurs, business leaders, managers, and employees (Wright, 2010). In 2009, UNESCO emphasized in its World Declaration on Higher Education that social responsibility is increasingly seen as an intrinsic aspect of higher education, particularly for universities (Vasilescu et al., 2010). Even in more recent years, it is increasingly recognized as a human responsibility to educate ourselves and younger generations about global challenges and empower them to seek solutions (García-Morales et al., 2020). Universities are pivotal in this effort, not only because they have the capacity to drive change but also due to their moral obligation to impart essential knowledge, values, skills, and awareness necessary for shaping a sustainable and equitable future (Fichter and Tiemann, 2018; Wakkee et al., 2018).

It has been observed that social entrepreneurs tend to possess higher levels of education compared to normal entrepreneurs. However, it remains to be determined whether this trend is consistent across all context and countries. I believe there are two major factors determining whether social impactful

solutions are applied: First is the intrinsic motivation rested on the individual-level, and second is the proper efficient structural government required to realize and scale up these ideas to produce concrete changes. Prior papers have shown that structural problems surrounding development hinder substantial changes and improvements in developing countries (UN, 2020; Losch et al, 2012; Cazap et al, 2016). This dilemma highlights the contrast between underdeveloped countries, which may often face more social problems but have greater structural barriers, and developed countries, which, despite having fewer barriers, are often less personally involved in social responsibility. The ideal scenario is to reduce structural barriers while fostering a strong inclination to do good. A powerful way to achieve the latter goal is through the education system, which can raise awareness and educate citizens about social responsibility from an early age.

Thus, this thesis aims to investigate the extent to which educational systems worldwide foster social impact and responsibility. One significant challenge in estimating causal effects in this context however, is self-selection arising from omitted variable bias. Due to unobservable factors and experiences, individuals may have a predisposition towards certain social responsibility levels. Reverse causality is furthermore a cause of concern, as we cannot exclude the possibility that some individuals may pursue higher education in order to achieve their social objectives. Consequently, this thesis may only explore the correlation between different education levels and social responsibility, rather than establishing causation. If the findings reveal a non-significant or even a significant negative relationship between education level and social responsibility, it suggests room for policy interventions. Introducing mandatory social impact courses across relevant education levels could be a practical solution: By integrating more activities and discussions on ethics and social responsibility into curricula globally, educational systems can foster a heightened moral consciousness among students. This approach could potentially lead to more socially engaged and responsible global citizens, better equipped to tackle contemporary societal challenges.

Thus, the following research question was formulated:

“How do different education levels correlate with entrepreneurs' motivation to make a difference in the world, and how are these influences moderated by gender and country-specific factors?”

In Section 2, I will review past literature on social responsibility and education levels, and develop my hypotheses. In Section 3 and 4, the data and the methods will be presented and explained. Next, the results will be presented and then further discussed along with limitations and further research in Section 5 and 6. In Section 7, we conclude.

2. Theoretical Framework

2.1 Conceptualization of social responsibility

Social responsibility (SR) encompasses the ethical framework and duty that individuals and organizations have to act in the best interests of their environment and society as a whole. This concept extends beyond mere compliance with legal standards, advocating for proactive efforts to contribute positively to societal well-being. It involves the ethical and sustainable practices of individuals, organizations, and governments to ensure that their actions positively impact communities, economies, and ecosystems. Key examples include Service-learning, Altruism, Philanthropy, Social entrepreneurship, University Social Responsibility (USR), and the well-known Corporate Social Responsibility (CSR). CSR is an important lever in the support of social entrepreneurship (Austin et al. 2006, 2007), as accepting CSR implies a commitment to improve society through business practices (Kotler and Lee 2005). The area defined by advocates of CSR increasingly covers a wide range of issues such as plant closures, employee relations, human rights, corporate ethics, community relations and the environment (Moir, 2001). In this thesis we will however focus on USR, or more generally just SR applied to all education levels.

2.2 Indirect relationship between education and social responsibility

Education may influence social responsibility (SR) indirectly by improving quality of life, which in turn increases SR levels. Research into the education effect has shown that the well-educated have higher income with more fulfilling jobs, as well as health and social support (Cutler & Lleras-Muney, 2006; Ross & Wu, 1995). Additionally, there is evidence that individuals with robust social support are more generous in helping others. For instance, Meijer et al. (2023) used logistic regression analysis to demonstrate that people who perceive higher levels of social support are more willing to contribute to others' healthcare costs. However, the direct impact of education on social responsibility remains an area of inquiry. It is essential to examine the current curricula in the global education system to understand its role in fostering social responsibility.

2.3 Potential for specific courses to increase social responsibility

Culture emerges from individual experiences and daily interactions (Latané, 1996). Therefore, schools and universities, where most people spend a significant portion of their early lives, can greatly influence them into cultivating social responsibility, as these institutions are rich environments for communication, learning, and cultural development. There has been evidence from several studies that when service-learning courses were implemented in universities, social responsibility of students were increased (McDougle et. al, 2017). In a 3-to 5-year follow-up survey, Ahmed and Olberding (2007) found that 86% of respondents enrolled in a class with experiential philanthropy component believed the class helped them realize they could make a difference in society, and that their personal

social responsibility increased. Astin and Sax (1998) concluded that participating in service activities of any kind during undergraduate years substantially enhance the student's sense of civic responsibility, alongside academic and life skill development as well. Implementing more CSR focused courses along with Web 2.0 technology to increase student's absorptive capacity, students were indeed more motivated to pursue social entrepreneurship afterwards (García-Morales et al., 2020). Student philanthropy course activities, particularly high engagement and direct contact with nonprofits, significantly increase student confidence in philanthropic skills and abilities, leading to increased engagement in civic activities (Benenson & Moldow, 2017). In addition to positive long-term effects on students, non-profit organizations who participated in the initiatives also experienced positive impacts on organizational capacity (Olbering & Hacker, 2016).

There is a noticeable gap in the literature regarding the incorporation of social responsible education in early childhood and primary education. However, it has been shown in one experimental study by Pandya (2017) that children can also gain higher altruism scale and prosocial personality battery through participation in specific programs. The impact of such education may be particularly potent when introduced early, as it may become ingrained in the subconscious mind more effectively. Therefore, advocating for SR education from an early age holds potential for fostering a generation more attuned to addressing societal and environmental challenges proactively. Ultimately, if we assume that education can foster social responsibility, the effectiveness depends on the quality and approach of SR education within the current education system.

2.4 Quality of social responsibility in current education systems

Only if the quality and prevalence of social responsibility (SR) education is high in the curricula, would individuals with higher education exhibit greater social responsibility. However, evidence on the effectiveness of SR education in the current education system has been mixed. In 1999, Andrzejewski and Alessio argued that SR is inadequately addressed in education due to the conflict between teaching for SR and preparing students for jobs. They noted that issues like global justice, the environment, human rights, and citizenship are largely absent from PK-12 curricula and minimally covered in higher education. This was attributed to educators and policymakers being distanced from these issues, the overwhelming nature of global problems, and teachers avoiding controversy by teaching "pre-packaged" content. Ghoshal (2005) agreed with this, arguing that as business education increasingly adopts an ethics-excluding scientific model, current business theories that are promoting amoral concepts and absolving students of moral responsibility, requires a reemphasis on SR. While society has increasingly recognized the importance of CSR, business schools have shown mixed responses to these pressures (Nicholson & DeMoss, 2009). The authors suggest a continued perceived deficiency in integrating ethics and social responsibility into various disciplines. More recently, Jorge and Peña (2017) reviewed literature and concluded that despite changes in the university sector

emphasizing the social dimension, significant progress is still needed in USR. This highlights difficulties in incorporating social responsibility principles into the four main areas: education, research, management, and community engagement.

Research has also shown that educational level does not always impact social responsibility. A study on community development in 29 African and Latin American countries found that only income levels and housing status significantly influence community participation, while education level, household size, and family type do not (Awortwi, 2012). Similarly, research among university students in the Middle East found that variables such as age, marital status, educational level, and major of student's study had an insignificant relationship with students' social responsibility awareness (Blaique et al., 2023). Another study with Lebanese students also found that educational level does not impact social responsibility practices (Am, 2020). These studies all hint at the notion that their education system do not value nor have quality SR content.

On the other hand, there is some evidence suggesting that higher education is linked to greater social responsibility. In 2004, Matten and Moon's wide-scale research on European business schools rejected the blanket claim that these institutions fail to teach CSR and ethical behavior effectively. Easterbrook et al. (2015) observed that higher education correlates with increased trust, political interest, better health, and reduced cynicism, leading to more social responsibility. Xiao et al. (2021) found that middle-aged, Christian/Catholic, highly educated, and high-income individuals are more likely to act altruistically. Terjesen and Stamm (2015) also showed that social entrepreneurs typically have higher education levels than regular entrepreneurs. However, self-selection may influence these findings, as socially conscious individuals might be more inclined to pursue higher education. Furthermore, education systems vary widely based on the institution themselves, thus it may be difficult to make a blanket claim on whether SR education quality is good or not.

2.5 Differences in social responsibility between countries – developing & non-developed

Differences in social responsibility levels across countries can be attributed to their unique economic, political, and social contexts (Baughn et al., 2007). An analysis of over 8,700 surveys from firms in 104 countries revealed substantial country and regional variations in CSR practices, highlighting the critical role of a nation's institutional capacity in promoting and supporting CSR initiatives.

Furthermore, it may be that not only does the location of the company matters, but also its original host country. A study conducted in China found that CSR of manufacturing companies are conducted differently depending on the host countries (An, 2020). Moreover, they concluded that overseas markets with better union and better stock markets also enhance CSR effect, as corporations that adopt more environmentally friendly operational processes are favored in foreign markets with strict environmental protections.

Developing countries often struggle with weak institutional environments that facilitate illicit financial outflows to wealthier nations, draining essential resources and contributing to state failure (Dobers & Halme, 2009). While legislation is the responsibility of politicians, governments, and international bodies, the ability of businesses to 'legally misuse' the system should also be considered a CSR issue. Enhancing CSR practices is thus crucial for raising business awareness and responsibility, thereby reducing legal misuse. However, it is important to note that not all developing countries exhibit irresponsible behavior. Some socially inclusive enterprises manage to adopt responsible orientations despite challenging contextual realities (Azmat & Samaratunge, 2019). This suggests that with the right support and institutional development, developing nations can foster a robust CSR culture. Cultural factors can also significantly influence social responsibility. Thanetsunthorn (2015) examined the CSR performance of 3,055 corporations across 28 countries in Eastern Europe and Asia, and discovered that Hofstede's cultural dimensions significantly impact CSR performance. The study further revealed that European corporations tend to outperform their counterparts in Eastern Asian countries in every facet of socially responsible practice (Thanetsunthorn, 2015). While many factors beyond income contribute to a country's level of SR, it is interesting to ponder whether a country's income level and thus developmental level alone can predict SR levels. Do more developed countries with higher income exhibit higher levels of social responsibility?

1.2 Research problem and hypotheses

Starting with the main hypothesis of this paper, we aim to investigate the effects of each education level on social responsibility. A 2023 paper by authors DasGupta & Pathak show that CEOs with a post-graduate business degree positively impact firm's corporate social performance, while other educational degrees do not directly influence it. Although this is only considering specifically business degrees, the implication of post-graduate degrees could still be taken. Wingenbach (2023) looked at awareness about international food and agriculture and found that faculty and graduate students are more globally engaged, but most university members lack knowledge. Thus, I formulate Hypothesis 1 as:

H1: Only graduate and post-graduate programs are positively correlated with entrepreneur's motivation to make a difference in the world.

Gender inequality is prevalent in education, manifesting in various forms across different regions and levels of education. Especially in low-income countries, gender gaps in schooling are the largest with girls' enrollment in primary school standing at 78%, compared to the world average of 88%, and only 31% in secondary school, compared to the global average of 66% (Kattan & Khan, 2023). Cultural norms, economic barriers, and safety concerns often prevent girls from attending school. Even where access to education is available, girls are more likely to drop out of school earlier than boys due to factors like early marriage, domestic responsibilities, and gender-based violence. Furthermore, female

students have been shown to score higher than male students in sustainability and social responsibility awareness (Ridwan et al., 2021; Blaique et al., 2023). Thus, in my second hypothesis, I will investigate how gender might interact with education levels to influence entrepreneur's motivation to make a difference. Hypothesis 2 is as follows:

H2: Interaction effects exist between education level and gender, which correlates with entrepreneur's motivation to make a difference.

Certainly, the diversity among countries—shaped by their unique socio-economic backgrounds, histories, cultures, and values—influences the citizen's attitudes and ability to engage in social responsibility initiatives. Factors inherent to each country such as cultural norms, educational systems, exposure to social issues, awareness levels, and social connectedness all contribute to varying levels of commitment to societal betterment. Thus, Hypothesis 3 is formulated as follows:

H3: Different countries exhibit varying correlations with social responsibility.

It may be interesting to further investigate on whether there is a discernible trend in SR among countries at similar developmental stages. Research suggests that exposure to and awareness of societal issues, particularly when they are personally visible and relevant, can enhance social responsibility (Severo et al., 2019). Thus, one may want to assume that SR levels are generally higher in low-development countries. However, as mentioned earlier, structural barriers in lower-developed countries often hinder the implementation of social visions, with governmental policies playing a crucial role. Hypothesis 4 will be explored to determine whether a country's developmental stage, as reflected by income levels, influences the prevalence of entrepreneur's social responsibility initiatives, as reflected by motive to make a difference. Income levels are commonly used indicators of a country's developmental stage, often categorized into classes such as low-income, middle-income, and high-income countries. Therefore, Hypothesis 4 is formulated as:

H4: There are no significant differences in the correlation with social responsibility between countries at different income levels.

Lastly, to investigate whether differences in SR quality in various education levels exist across countries in different developmental stages, represented by income levels, Hypothesis 6 was also developed:

H5: Interaction effects exist between individual's educational level and country's income level, which influences entrepreneur's motivation to make a difference.

3. Data source

3.1 Description and origin of the data

The data used for this research comes from the Global Entrepreneurship Monitor (GEM), one of the largest yearly dataset that conducts face-to-face interviews with over a hundred thousand participants

around the world since 1999. The most recently available full dataset on their website was used, which is the 2019 round as they only publish the full data set around 4 years after their conduction.

GEM collects data on the various aspects of entrepreneurship around the world, such as motivations, prevalence and country-specific factors and frameworks in order to advance knowledge about entrepreneurship, support growth and sustainability of entrepreneurial ventures, and ultimately contribute to economic growth and social well-being worldwide. It was their vast amount of observations and their cross-country outreach that compelled me to use their dataset.

There are two distinct types of data-sets available on the GEM website: The entrepreneurial behaviour and attitudes dataset titled Adult Population Survey (APS), and the Entrepreneurial framework conditions dataset titled National Expert Survey (NES). While APS focuses on the individual-level involving characteristic, motivations, ambitions, and attitudes of the individuals starting businesses, NES looks at the national country-level context in which individuals start businesses.

The full 2019 APS dataset consists of 163,006 observations of individuals from 50 different countries, while 54 countries were present in the NES dataset. However, only 31,586 observations of entrepreneurs were used in my regression models as only those individuals were entrepreneurs who were thus asked the difference motive question that determines my dependent variable. Once the country names were matched up between the two datasets and the excess countries¹ that are not present in the APS dataset were dropped from NES, the two datasets were merged m:1 using the country name in order to transfer the country-specific factors from NES dataset into the master APS dataset.

3.2 Dependent variable

The dependent variable estimating social responsibility that will be used in all of the models is that of *difference_motive*, proxied by the individual's motive of running the business. Asked to the 31,586 entrepreneurs in the GEM 2019 wave, the answer to the question of "Motive: To make a difference in the world" was used to denote the social impact inclination. It has been transformed to a binary variable equal to 1 if the entrepreneur has a motive to make a difference in the world ("Yes"), and zero if otherwise ("No or no opinion", "Don't know", or "Refused."). In the dataset, entrepreneurs were divided into different groups: Nascent entrepreneurs (SU) who are actively trying to start a business, New business owners (BB) who own and manage a business that is less than three and a half years old, and established business owners (EB). This involves the codename SU_yyMOT1yes, BB_yyMOT1yes, and EB_yyMOT1yes, which were all aggregated into the one binary variable *difference_motive*.

¹ Indonesia, Thailand, Bulgaria, Paraguay

3.3 Independent variables

To investigate the education level, the categorical variable “UNEDUC” is used to create the independent variable. It denotes UN harmonized categories of the individual’s highest educational attainment, which has nine answer options ranging from pre-primary education to doctors level². Thus nine dummy variables were created, with *pre-primary education* omitted to be used as a base to compare the other education levels to. The dummy variables take on a value of 1 if the entrepreneur has the highest educational category in that educational level, and 0 if not.

3.4 Control variables

A large range of both individual-level and country-level factors will be used as control variables in every model. Regarding individual-level controls, firstly demographic factors shall be discussed. Gender will be created as a binary control variable which will be 0 if the individual is male and 1 if the individual is female. In 2020, males on average are enrolled more than females in primary education, however females are on average enrol in more higher education than males (World Economic Forum, 2020). Furthermore, females have been shown to engage in more CSR than males (Hatch & Stephen, 2015; Landry & Bosco, 2016). High-income individuals have been shown to have more positive social responsibility levels (Cheah et al., 2011). Income has also been shown to be influenced by education levels (Patrinos & Psacharopoulos, 2018; Wolla & Sullivan, 2017), thus enabling it as a mechanism for education levels to influence SR levels. However in this paper the goal is to examine the direct relationship between education and social responsibility, thus income is still controlled for. There seems to exist an inverse U-shape relationship between age and social responsibility, albeit with very small magnitude of the raw scores differences (Schaie, 1959). Another study concluded that the difference in attitudes towards CSR between older and younger employees is not significant (Rosati et al., 2018), however this may be as both sides experience the same U-end curve. Developmental theories propose that during midlife and older adulthood, individuals often prioritize dedicating their efforts towards contributing to society (Erikson, 1969). There have also been study evidence of an overall trend of reduced social responsibility as individual ages, but with specific patterns depending upon sex and generation membership (Schaie & Parham, 1974). Plotting histograms for age on difference motive shows a U-shaped curve with a slightly right-skewed pattern (see Appendix A). Therefore, both age and age² will be used as control variables to denote the respondents age at the time of completing the survey and its squared value respectively.

Furthermore, individual personality factors are also included for control as these may impact the individual’s social responsibility level. These include factors such as connections to other entrepreneurs, seeing good opportunities, skills and knowledge, fear of failure, ease of starting,

² 0. Pre-primary education, 1. Primary education or first stage of basic education, 2. Lower secondary or second stage of basic education, 3. (Upper) secondary education, 4. Post-secondary non-tertiary education, 5. Short-cycle tertiary education, 6. Bachelor or equivalent, 7. Master or equivalent, 8. Doctor or equivalent.

proactiveness, creativity, and long-term vision. In the dataset, these are ranked in a 5 scale point from strongly disagree to strongly agree, which were each converted into binary dummy variables with the value of 1 if the individual agrees or somewhat agrees to the statement, and 0 otherwise.

Regarding external controls used in the first regression, scores from the NES expert panel were used to judge the entrepreneurial macro-environment for each country. This consists of 12 different scores for factors regarding the country-level environment³. To eliminate unnecessary variables, eight out of the twelve factors were not included in the final regressions, as there are no theoretical background supporting their relationship with social responsibility. Furthermore, when checking the robustness of model by comparing results with-and-without their exclusion, these eight factors had statistically insignificant coefficients in preliminary regressions, and when they were excluded from the regressions, almost identical coefficient results occurred for the rest of our independent and control variables. Thus, only these three factors were included:

1. Entrepreneurial level of education at Primary and Secondary
2. Entrepreneurial level of education at Vocational, Professional, College and University
3. Professional and commercial infrastructure access

3.5 Summary statistics

All the relevant summary statistics can be seen in Table 1 below. As we can see, a lot of our variables are categorical variables which have been transformed into binary dummy variables suitable for regressions. The average of our binary dependent variable *difference motive* leans only a bit more towards participating entrepreneurs not having the motive to make a difference in the world, as its mean score of 0.454 is only a bit closer to 0 than it is to 1. Regarding education levels, Upper Secondary is the most common highest educational attainment with 27% of participants, followed by Bachelors with 24%. Doctorate was the least common educational attainment level, with only 0.52% of participants. Most participants came from high-income countries (71.4%), and most earned high income themselves (69.8%). The average age of participants was 42 years old, and the survey included participants from 18 to 84 years old. The average household size was 3.76 people, and there were only slightly more males than females who participated, as 1.415564 is a bit closer towards 1 (male) than 2 (female). Majority of participants knew other entrepreneurs (71.4%), saw good opportunities (51.1%), believe they have the required knowledge, skills and experience (79.4%), are innovative (64.9%), and have a long-term career plan (74.2%). Regarding country-level scores given by the NES expert panel, the average score for entrepreneurial education level at primary and

³ Financial environment related with entrepreneurship; Government concrete policies, priority and support; Government policies bureaucracy, taxes; Government programs; Entrepreneurial level of education at Primary and Secondary; Entrepreneurial level of education at Vocational, Professional, College and University; Professional and commercial infrastructure access; Internal market dynamics; Internal market burdens; Physical infrastructures and services access; Cultural, social norms and society support

Table 1: Summary statistics for all relevant variables

| Variable | Mean | Std. dev. | Min | Max |
|---|-----------|-----------|---------|--------|
| Have difference motive | 0.453904 | 0.497879 | 0 | 1 |
| Education level dummies | | | | |
| Pre-primary | 0.0199772 | 0.139924 | 0 | 1 |
| Primary | 0.06924 | 0.253865 | 0 | 1 |
| Lower-secondary | 0.137466 | 0.344344 | 0 | 1 |
| Upper-secondary | 0.270626 | 0.44429 | 0 | 1 |
| Post-secondary | 0.136833 | 0.343676 | 0 | 1 |
| Tertiary | 0.034066 | 0.181401 | 0 | 1 |
| Bachelor | 0.23178 | 0.421976 | 0 | 1 |
| Masters | 0.085608 | 0.279788 | 0 | 1 |
| Doctorate | 0.005192 | 0.071871 | 0 | 1 |
| Country-income levels | | | | |
| Low-income country | 0.0273222 | 0.1630232 | 0 | 1 |
| Lower-middle-income country | 0.061768 | 0.240737 | 0 | 1 |
| Upper-middle-income country | 0.197398 | 0.398041 | 0 | 1 |
| High-income country | 0.713512 | 0.452127 | 0 | 1 |
| Individual-level demographic | | | | |
| Gender | 1.415564 | 0.492827 | 1 | 2 |
| Household size | 3.767017 | 1.958647 | 1 | 54 |
| Age | 41.91634 | 13.72679 | 18 | 84 |
| Age squared | 1945.399 | 1262.813 | 324 | 7056 |
| Low-income | 0.027322 | 0.163023 | 0 | 1 |
| Lower-middle-income | 0.0617679 | 0.2407373 | 0 | 1 |
| Upper-middle-income | 0.213259 | 0.409616 | 0 | 1 |
| High-income | 0.697651 | 0.459283 | 0 | 1 |
| Individual-level characteristics | | | | |
| Know entrepreneurs | 0.714146 | 0.451828 | 0 | 1 |
| Good opportunities | 0.510891 | 0.499889 | 0 | 1 |
| Knowledge, skills, experience | 0.793769 | 0.404604 | 0 | 1 |
| Fear of failure | 0.383746 | 0.486305 | 0 | 1 |
| Ease of starting | 0.461534 | 0.498526 | 0 | 1 |
| Business opportunities | 0.43456 | 0.495707 | 0 | 1 |
| Proactive | 0.475907 | 0.499427 | 0 | 1 |
| Innovative | 0.64899 | 0.477294 | 0 | 1 |
| Has long-term career plan | 0.741879 | 0.437608 | 0 | 1 |
| Country-level NES scores | | | | |
| ZNES_D1SUM5 | -0.03264 | 0.453758 | -0.7635 | 1.1469 |
| ZNES_D2SUM5 | 0.080845 | 0.370349 | -0.7443 | 0.7688 |
| ZNES_FSUM5 | 0.021466 | 0.4121 | -1.1336 | 0.686 |

Notes: Table 1 shows the summary statistic for all relevant variables in the regressions. Regarding Gender variable, 1 stands for male and 2 stands for female. Regarding country-level NES scores, ZNES_D1SUM5 stands for Entrepreneurial level of education at Primary and Secondary; ZNES_D2SUM5 stands for Entrepreneurial level of education at Vocational, Professional, College and University; ZNES_FSUM5 stands for Professional and commercial infrastructure access.

secondary school is negative (-0.03), in contrast to the positive score of 0.08 for entrepreneurial education level at Vocational, Professional, College and University.

4. Methodology

The goal of this study is to estimate the correlation of different education levels and country-specific effects that can explain the difference in the motive of making a difference. To do so, I will present five similar models in which the motive to make a difference will be regressed on different independent variables using mixed-effects logarithmic regression and normal logarithmic regression constructed in Stata (version 17, 64 bits).

4.1 Hypothesis 1 and 2 – Multilevel Mixed-Effects Logistic Regression

For hypothesis 1 and 2, a Multilevel Mixed-Effects Logistic Regression Model was implemented in Stata, using the ‘*melogit*’ command to specify a random intercept model for countries. Firstly, the dependent variable is a binary variable (*difference_motive*: 0 or 1), thus a logistic (logit) model was chosen. Secondly, as the dataset is naturally hierarchical with individuals (individual-level) nested within different countries (country-level), I decided to combine the logit model with a multilevel model, as this approach accounts for the hierarchical structure of the data and allows for random intercepts at the country level. Coefficients of the education level variables will reflect their effect on social impact, accounting for both individual-level (fixed effects) and country-level variability (random effects).

As mentioned before, pre-primary was used as a base to compare the other education levels to. For each country, the multilevel mixed-effects logistic regression model can be expressed as:

$$(1) \quad \log\left(\frac{p_{ij}}{1-p_{ij}}\right) = \beta_0 + \beta_1 PE_{ij} + \beta_2 LSE_{ij} + \beta_3 USE_{ij} + \beta_4 PSE_{ij} + \beta_5 TE_{ij} + \beta_6 B_{ij} + \beta_7 M_{ij} + \beta_8 D_{ij} + \beta_k X_k + \varepsilon_i$$

where p_{ij} represents the probability that individual i in country j has a motive to make a difference in the world. It is a binary variable, taking on two possible values: 1 if the individual has the motive and 0 if not. β_1 to β_8 are the coefficients for the education level dummies, such that PE stands for Primary Education, LSE stands for Lower Secondary Education, USE stands for Upper Secondary Education, PSE stands for Post Secondary Education, TE stands for Tertiary Education, B stands for Bachelor, M stands for Masters, and D stands for Doctors. X_k is a vector of individual-level and country-level controls, capturing the effect of all the control variables including demographic, individual-level characteristics, and country-level factors. ε_i is the error term.

The model uses a logistic transformation to link the probability of the outcome (having the motive to make a difference) to the linear predictors, which is expressed as $\log\left(\frac{p_{ij}}{1-p_{ij}}\right)$. For individual i in country j , PE_{ij} is an indicator equal to 1 if the highest educational attainment is primary education, and 0 if not. β_1 is the coefficient of interest, which captures the change in rate of individual i in country j having motive of making a difference if the individual has primary education as their highest education level. A positive coefficient would indicate that an entrepreneur is more likely (compared to pre-primary education level) to have a motive to make a difference in the world, while a negative coefficient would indicate the individual is less likely to have a motive to make a difference in the world.

For hypothesis 2, interaction terms between education levels and female gender were added into the regression model. Thus, the multilevel mixed-effects logistic regression model can be expressed as:

$$(2) \quad \log\left(\frac{p_{ij}}{1-p_{ij}}\right) = \beta_0 + \sum_{k=1}^8 \beta_k \text{educ_level}_{k,ij} + \beta_9 \text{Gender}_{ij} \\ + \sum_{k=10}^{18} \beta_k (\text{educ_level}_{k,ij} \times \text{Gender}_{k,ij}) + \mu_k X_k + \varepsilon_i$$

where $\sum_{k=1}^8 \beta_k \text{educ_level}_{k,ij}$ represents the effects for the 8 different education level dummies (Primary Education, Lower Secondary Education, Upper Secondary Education, Secondary Education, Tertiary Education, Bachelor, Masters, Doctors; Pre-primary education is omitted as base variable). $\sum_{k=10}^{18} \beta_k (\text{educ_level}_{k,ij} \times \text{Gender}_{k,ij})$ represents the interaction terms between each education level dummy variable and female gender variable. X_k is the vector of individual-level and country-level controls, and ε_i is the error term.

4.2 Hypothesis 3, 4, and 5 - Logistic Regression

For hypothesis 3, 4 and 5, the multilevel hierarchical model will be removed, and only the logistic regression (logit) model will be used, as now I aim to investigate the individual country-effect. As mentioned before, the logit model is used to model binary outcome variables, ensuring that the probability that the difference_motive occurs fall between 0 and 1. The coefficients (β) represent the change in the log-odds of the difference_motive being 1 when the education level changes from pre-primary education to the respective education level. The coefficients can be transformed from log-odds into percentage change by first exponentiating the coefficient and then calculating the percentage change in odds.

For Hypothesis 3, individual country dummies will be included in order to produce coefficients for each country. This way, we can use their respective coefficients to compare their correlation to difference_motive across countries. The logistic regression model can be expressed as:

$$(3) \quad \log\left(\frac{p_{ij}}{1-p_{ij}}\right) = \beta_0 + \sum_{k=1}^8 \beta_k \text{educ_level}_{k,ij} + \gamma_{\text{Country}} \text{Country}_{ij} + \mu_k X_k + \varepsilon_i$$

where Country_{ij} are dummy variables for each country and γ_{Country} are their corresponding coefficients. $\sum_{k=1}^8 \beta_k \text{educ_level}_{k,ij}$ represents the effects for the 8 different education level dummies (Primary Education, Lower Secondary Education, Upper Secondary Education, Secondary Education, Tertiary Education, Bachelor, Masters, Doctors; Pre-primary education is omitted as base variable).. μ_k are the coefficients for the vector of individual-level control variables X_k , and ε_i is the error term.

For Hypothesis 4, dummies were created to sort entrepreneurs belonging to different country-level income groups. From the NES dataset, there were four categories of country income-levels: Low

income, Lower middle, Upper middle, High. Thus, four corresponding dummy variables were created: Low-income country, Lower-middle income country, Upper-middle income country, and High-income country. Low-income country was set as the base dummy variable to compare the other country-level income dummies to. The logistic regression model can be expressed as:

$$(4) \quad \log\left(\frac{p_{ij}}{1-p_{ij}}\right) = \beta_0 + \sum_{k=9}^{11} \beta_k \text{countryinc_level}_{k,ij} + \mu_k X_k + \varepsilon_i$$

where $\sum_{k=1}^3 \beta_k \text{countryinc_level}_{k,ij}$ represents the three different country income level dummies (Lower Middle Income Country, Upper Middle Income Country, Higher Income Country). X_k is the vector of individual-level and country-level controls, and ε_i is the error term.

Lastly, for Hypothesis 5, interaction terms between individual's educational level and country's income level were created. The logistic regression model can be expressed as:

$$(5) \quad \log\left(\frac{p_{ij}}{1-p_{ij}}\right) = \beta_0 + \sum_{k=1}^8 \beta_k \text{educ_level}_{k,ij} + \sum_{k=9}^{11} \beta_k \text{countryinc_level}_{k,ij} \\ + \sum_{k=12}^{36} \beta_k (\text{educ_level}_{k,ij} \times \text{countryinc_level}_{k,ij}) + \mu_k X_k + \varepsilon_i$$

where $\sum_{k=1}^8 \beta_k \text{educ_level}_{k,ij}$ represents the effects for the eight different education level dummies (Primary Education, Lower Secondary Education, Upper Secondary Education, Secondary Education, Tertiary Education, Bachelor, Masters, Doctors; Pre-primary education is omitted as base variable). $\sum_{k=9}^{11} \beta_k \text{countryinc_level}_{k,ij}$ represents the three different country income level (Lower Middle Income Country, Upper Middle Income Country, Higher Income Country).

$\sum_{k=12}^{36} \beta_k (\text{educ_level}_{k,ij} \times \text{countryinc_level}_{k,ij})$ represents the interaction terms between each of the eight education level dummy variable and each of the three country income level. X_k is the vector of individual-level and country-level controls, and ε_i is the error term.

4.3 Robustness check - Aggregating education levels

To test external validity, a robustness check will be performed to check the validity of our results and also expand upon it by applying a wider specification on education level. As some of the education levels are quite similar to each other, I wanted to see how the results would change if similar education levels were aggregated together. Out of the nine educational levels, six similar ones were combined to create three aggregated education levels:

1. Aggregate primary education: Pre-primary + Primary education
2. Aggregate secondary education: Lower Secondary + Upper Secondary
3. Aggregate tertiary education: Non-tertiary secondary + Short-cycle tertiary

I decided to keep bachelors, masters, and doctorate education level separate, as they are quite different from each other. Thus, in total there are now five dummy variables for education levels. The two regression models (Model 1 and 3) used for Hypothesis 1 were then rerun with these five newly aggregated education levels, leaving Aggregate Primary Education out as the base dummy variable. Resembling the multilevel logit model 1, model 6 can be mathematically expressed as:

$$(6) \quad \log\left(\frac{p_{ij}}{1-p_{ij}}\right) = \beta_0 + \beta_1 ASE_{ij} + \beta_2 ATE_{ij} + \beta_3 B_{ij} + \beta_4 M_{ij} + \beta_5 D_{ij} + \beta_k X_k + \varepsilon_i$$

where p_{ij} represents the probability that individual i in country j has a motive to make a difference in the world. β_1 to β_5 are the coefficients for the aggregated education level dummies, such that ASE stands for Aggregate Secondary Education, ATE stands for Aggregate tertiary Education, B stands for Bachelor, M stands for Masters, and D stands for Doctors. X_k is a vector of individual-level and country-level controls, capturing the effect of all the control variables including demographic, individual-level characteristics, and country-level factors. ε_i is the error term.

Resembling the logit model 3 with country dummies, model 7 can be expressed as:

$$(7) \quad \log\left(\frac{p_{ij}}{1-p_{ij}}\right) = \beta_0 + \sum_{k=1}^5 \beta_k educ_level_{k,ij} + \gamma_{Country} Country_{ij} + \mu_k X_k + \varepsilon_i$$

where p_{ij} represents the probability that individual i in country j has a motive to make a difference in the world. $\sum_{k=1}^5 \beta_k educ_level_{k,ij}$ represents the effects for the 5 different education level dummies (Aggregate Secondary Education, Aggregate Tertiary Education, Bachelor, Masters, Doctors; Aggregate Primary Education is omitted as base variable). $Country_{ij}$ are dummy variables for each country and $\gamma_{Country}$ are their corresponding coefficients. μ_k are the coefficients for the vector of individual-level control variables X_k , and ε_i is the error term.

5. Results and Discussion

5.1 Hypothesis 1 and 2

The results for the first regression is aimed to answer Hypothesis 1, which investigates the relationship between education level and social responsibility (Column 1 of Table 2 below). These coefficients (β) represent the change in the log-odds of the dependent variable being 1 when the independent variable changes from pre-primary education level to their respective education level. There were statistically significant negative coefficient results for education level of Primary ($p < 0.01$) with -0.2963314 log-odds, and Upper Secondary ($p < 0.1$) with -0.1456338 log-odds. Doctorate educational level on the other hand has a positive significant coefficient ($p < 0.1$) of 0.3202661 log-

odds. While the rest of the coefficients are not significant, their coefficients can still provide insights into the direction and potential magnitude of its relationship with the motive to make a difference. It is interesting to note that the direction of all the coefficients from primary to bachelor are negative. This hints at our hypothesis, that only graduate degrees and above (masters and doctors) contribute to SR.

Holding all other variables at a constant value, this model suggests that compared to Pre-primary education, having Primary education decreases the odds of having the motive of making a difference in the world by $\exp(-0.2963314) \approx 0.7435$. This means that, in terms of percentage change, the odds of having difference motive for entrepreneurs who only finished Primary education is 25.7% ($1 - 0.7435$) lower than the odds for entrepreneurs who only finished Pre-primary education. For Upper Secondary education, the odds were 0.8645, thus a percent decrease of 13.6% ($1 - 0.8645$) in difference motive occurs when comparing Upper Secondary education to Pre-primary education. For Doctorate degrees with 1.3772 odds, we can conclude that compared to Pre-primary education, having a Doctorate degree is associated with increase of 37.7% in the odds of having the motive to make a difference in the world. Thus, based on these results, we can accept Hypothesis 1 and conclude that only post-graduate programs positively impact entrepreneur's motivation to make a difference in the world. However, in this regression only the result for doctors was positively significant; Masters education level was positive, but not significant. Furthermore, it is rather surprising to examine the extent of negative correlation that exists between some education levels, especially Primary, Lower, and Upper secondary.

The coefficient results for the education levels in model 3 can be further used as a robustness check for Hypothesis 1, to see whether changing from a multilevel logit model split by country to a logit model with country dummies would change the education level coefficients estimated before. As we can see in the last column of Table 2, this logit model 3 with country dummies resulted in very similar significance levels and coefficient results as the first regression model; this is expected, as both regressions are using logit models. The slight differences between them exists as the first regression model using multilevel mixed-effects which also accounts for random effects of the countries.

Model 3 yielded a Pseudo R-squared value of 0.1361, indicating that this model explains 13.61% of the variability in entrepreneurial motivation. Although this is on the lower end, it is important to note that Pseudo R-squared values generally tend to be lower compared to R-squared values in linear regression. Additionally, economic models often deal with large datasets and complex relationships, making high explanatory power uncommon. Considering the numerous unquantified and unobserved factors that influence motivation—such as personal experiences, interactions, and connections—it is understandable and acceptable that the Pseudo R-squared value is relatively modest.

Table 2 – Regression results for Hypothesis 1 and 2

| | Multilevel logit | | Logit |
|---|------------------------------|------------------------------|------------------------------|
| | (1) | Interaction terms (2) | Country dummies (3) |
| Education levels | | | |
| Primary education | -0.2963314*** [0.0968665] | -0.3524855*** [0.1336305] | -0.2980062*** [0.0970531] |
| Lower secondary | -0.1468397 [0.0906777] | -.1412719 [0.1235445] | -0.1469795 [.0909029] |
| Upper secondary | -0.1456338* [0.0866129] | -0.1778982 [.1186331] | -0.1462247* [.0868181] |
| Post secondary | -0.0025314 [0.0908852] | -0.0533261 [0.1233683] | -0.0028567 [.0911019] |
| Tertiary | -0.0290654 [0.110333] | -0.1397463 [0.1478991] | -0.020675 [.1105982] |
| Bachelor | -0.0190796 [0.0879253] | -0.0864571 [0.1196349] | -0.0182509 [.0881309] |
| Masters | 0.1235067 [0.0939023] | 0.1287933 [0.1266864] | 0.1232292 [.0940777] |
| Doctor | 0.3202661* [0.1887172] | 0.3556293 [0.2295539] | 0.3226378* [.1887679] |
| Interaction terms with gender | | | |
| Primary x gender | | 0.1134986 [0.1885853] | |
| Lower secondary x gender | | -0.0277031 [0.1756258] | |
| Upper secondary x gender | | 0.0609379 [0.1679768] | |
| Post secondary x gender | | 0.1054699 [0.1739719] | |
| Tertiary x gender | | 0.2455374 [0.2112124] | |
| Bachelor x gender | | 0.1477654 [0.168728] | |
| Masters x gender | | -0.0292166 [0.1811161] | |
| Doctor x gender | | -0.1794323 [0.4018358] | |
| Individual-level control variables | | | |
| Age | -0.031165*** [0.0048054] | -0.0312391*** [0.004807] | -0.0309698*** [.0048096] |
| Age squared | 0.0002325*** [0.0000518] | 0.0002335*** [0.0000519] | 0.0002307*** [.0000519] |
| Female | 0.1020199*** [0.025726] | 0.0260237 [0.1605124] | 0.1014606*** [.0257493] |
| Household size | 0.0052107 [0.0071193] | 0.0051594 [0.0071188] | 0.0049766 [0.0071399] |
| Income – low/mid | -3.290076*** [0.8337687] | -3.283632*** [0.8337126] | omitted |
| Income – up/mid | -0.4572363 [0.3953745] | -0.4563114 [0.3953432] | omitted |
| Income – high | -0.4570759 [0.3653738] | -0.4550225 [0.3653434] | omitted |
| Know entrepreneurs | 0.090292*** [0.0290977] | 0.0902822*** [0.0291084] | 0.0905685*** [.0291349] |
| Good opportunity seen | 0.3185506*** [0.0288763] | 0.3195365*** [0.0288881] | 0.3181174*** [.0289091] |
| Knowledge, skills, experience | 0.1047454*** [0.0343466] | 0.1050408*** [0.0343622] | 0.1027419*** [.0344028] |
| Fear of failure | 0.0846561*** [0.0284267] | 0.0846462*** [0.0284348] | 0.0841467*** [0.0284547] |
| Easy to start | 0.0908197*** [0.0288575] | 0.0901435*** [0.0288666] | 0.0886362*** [0.0288977] |
| Business opportunities | 0.1073127*** [0.0279255] | 0.1077649*** [0.027933] | 0.1076363*** [0.0279559] |
| Proactive | 0.1018441*** [0.0261292] | 0.1023215*** [0.0261357] | 0.0995179*** [0.0261561] |
| Innovative | 0.5310874*** | 0.5312168*** | 0.5294074*** |

| | | | |
|--|---|---|--|
| Long-term career plan | 0.3340432*** [0.0286384] [.0312153] | 0.3347955*** [0.0286445] [0.031227] | 0.3327107*** [0.0286697] [0.0312503] |
| Country-level control variables | | | |
| Entrepreneurial level of education at Primary and Secondary | -0.0836632 [0.3256259] | -0.0849645 [0.3255995] | |
| Entrepreneurial level of education at Vocational, Professional, College and University | 0.8810016** [0.3853029] | 0.8845333** [0.3852741] | |
| Professional and commercial infrastructure access | -0.6746776** [0.3299985] | -0.6745205** [0.3299717] | |
| Constant | -0.0402165 [0.3706802] | -0.0044979 [0.3786132] | 1.401528*** [0.1733617] |
| Country dummies | | | YES |
| Observations | 31,026 | 31,206 | 31,026 |
| Log likelihood | -18572.195 | -18548.212 | -18453.695 |
| Pseudo R-squared | | | 0.1361 |

Notes: Table 3 reports regression results from the first three regression models. The stars show the level of significance with * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. These regressions use the 2019 survey wave of GEM. The dependent variable is the log of the binary variable difference motive, used as an indicator of how socially responsible an individual is. Interaction terms between every education level and gender are included in model 2. The country dummies are included in model 3. The multilevel logit model (column 1) estimates the effect of the eight different education levels on difference motive, using pre-primary as base, and includes the individual-level and country-level control variables. The multilevel logit model (column 2) estimates the effect of the eight different education levels + interaction effects with female gender on difference motive, using pre-primary education level and male gender as base, and includes the individual-level and country-level control variables. The logit model (column 3) estimates the effect of the 5 eight different education levels on difference motive, using pre-primary as base, and includes the individual-level control variables as well as country dummies to account for all country fixed effects. Standard errors in parentheses.

Shown in the second column of Table 2, all of the results for the interaction terms between education and gender were found to be statistically insignificant, thus uninterpretable. Thus we cannot accept the hypothesis that interaction effects exist between education level and gender, which influences entrepreneur's motivation to make a difference. There is no statistically significant result showing that the effect of education on motivation is different for males and females.

5.2 Hypothesis 3

First, we will start with a brief overview of the prevalence of social responsibility across different countries. As shown by Figure 1 below, countries have varying prevalence of social responsibility. The highest was India, followed by South Africa, Guatemala, Panama, India and Pakistan. The lowest was Madagascar, followed by South Korea, Morocco, Armenia, and Italy. The full country ranking and their mean difference motive score can be found in Appendix B.

Regarding Hypothesis 3 of whether different countries have different correlation to social responsibility, the regression results (Appendix B) indicate that holding all other variables constant, when compared to India all countries except for South Africa have a statistically different effect on the entrepreneur's motive of making a difference. Therefore, we can generally accept Hypothesis 3, concluding that different countries do have different correlations to social responsibility. This is completely understandable, as each country is unique with its own socio-economic and cultural factors and experiences. It is however interesting to see how the country rankings for the social

responsibility score drastically changed for some countries, once we controlled for several individual-level and country-level factors. Controlling for these factors allows us to try and further narrow down the effect of the country on the social responsibility of their citizens.

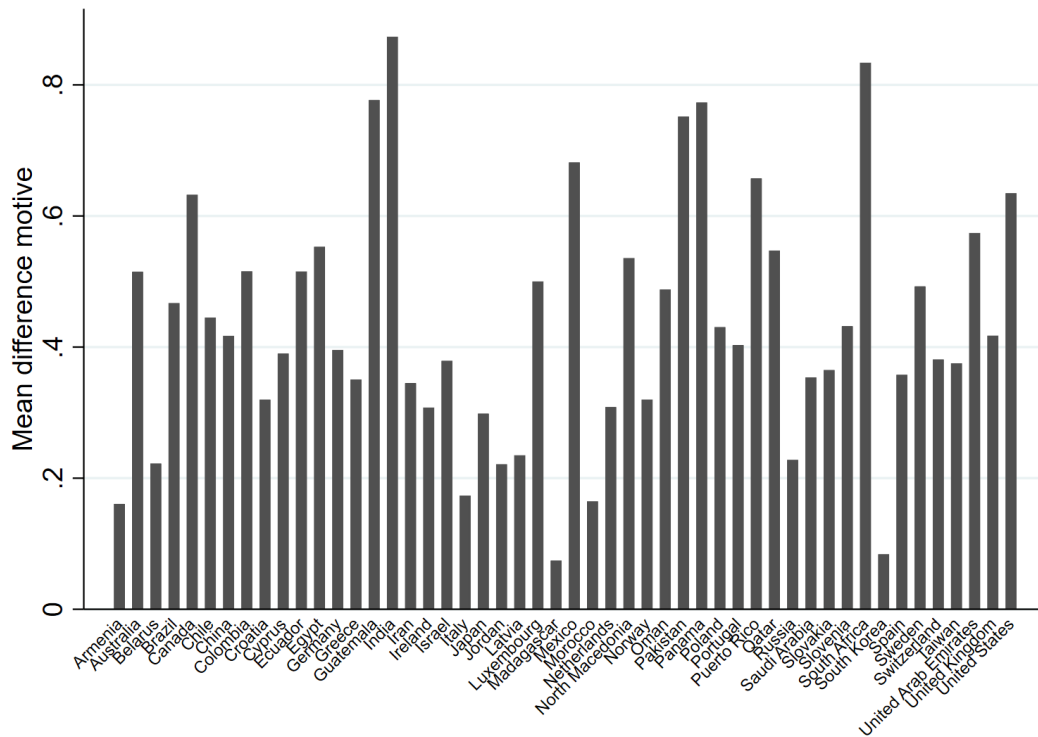


Figure 1 – Motive to make a difference, by country

Notes: Figure 1 displays histogram of the mean motive to make a difference, by country. The dependent variable *mean difference motive* on the vertical axis is a binary variable, with 0 representing no motive to make a difference and 1 representing the motive to make a difference. The country names are displayed on the horizontal axis.

5.3 Hypothesis 4 and 5

Moving onto whether different country-income levels could predict individual’s motivation to make a difference, model 4 and 5 was run. As shown in the first column of Table 3 below, the significant coefficient results can be seen for the different country-income levels. Compared to Low-income countries, all entrepreneurs in Lower-middle-income, Upper-middle-income, and Higher-income countries have a higher probability of having the motive of making a difference in the world. Upper-middle-income countries lead with a 2119% increase (or 22.19 times higher odds) of having difference motive compared to entrepreneurs in Low-income countries, followed by Lower-middle-income countries with a 1838.6% increase (or 19.386 times higher odds), and lastly High-income countries with a 1288.8% increase (or 13.888 times higher odds). Thus, we can reject our fourth hypothesis, as our regression results show that there are indeed significant differences in correlation with social responsibility between countries with different income levels. However, a point of concern

is that the R-squared value of the model is 0.0843, indicating that this model explains 8.43% of the variability in entrepreneurial motivation, which is even lower than our previous model 3.

Regarding the results of Model 5 shown in the last column of Table 4, there were only several significant interacted terms available for interpretation: between Lower-secondary education level and Upper-middle-income countries ($p < 0.1$), between Bachelor education level and Lower-middle-income ($p < 0.01$) and Upper-middle-income ($p < 0.05$) countries, and between the Masters education level interacted with all three country-level income dummies. Only interacted terms with significant coefficients are displayed in Table 4; The full table with all the interacted terms can be found in Appendix C. Holding all other variables at a constant value, this model suggests that compared to only finishing Pre-primary education in Low-income countries, finishing Lower-secondary education in Upper-middle-income countries decreases the odds of entrepreneurs having the motive of making a difference in the world by 0.1768 odds, which can also be expressed as a 82.3% decrease.

For Bachelor education, the odds for entrepreneurs in Lower-middle-income countries were notably and significantly positive. In fact, it is the only positive statistically significant coefficient, with a remarkable 85.8% higher likelihood of having the difference motive compared to entrepreneurs in Low-income countries with Pre-primary education. In contrast, entrepreneurs with Bachelor education in Upper-middle-income countries experience a 35.9% decrease. This could indicate that compared to Lower-middle-income countries, Upper-middle-income countries have worse SR programs for their Bachelor degrees. It is interesting to note that the interacted term between Bachelor education level and High-income country was omitted, which according to Stata was due to collinearity.

Lastly, we will focus on Masters education level across different country income levels and how the motive of making a difference changes accordingly. Holding all other variables constant, compared to entrepreneurs in Lower-income countries who only had Pre-primary education, in Lower-middle-income countries the chances of entrepreneurs with Masters education having the difference motive decreases by 95.26% ($0.0474-1$), while for Upper-middle-income countries it is a 95.44% ($0.0456-1$) decrease, and lastly for High-income countries it is a 95.42% ($0.0458-1$) decrease.

Thus, regarding Hypothesis 5 of interaction effects, we can accept Hypothesis 5 and conclude that interaction effects do exist between individual's educational level and country's income level, which influences entrepreneur's motivation to make a difference. This shows how quality of SR education in different education levels may vary depending on the developmental stages of countries. However, a clear pattern across all education levels is yet to be established. Masters education level had similar consistent results across all country-income levels. Bachelors had dramatically varying result, with the chances of difference motive in Lower-middle-income countries being substantially higher than Upper-middle-income countries. And for Lower secondary education, only one income level was significant, thus comparisons across different country income levels cannot be made.

Table 3 – Regression results of Model 4 and 5

| | Logit | |
|---|------------------------------|------------------------------|
| | Country income levels (4) | Interaction terms (5) |
| Country income level | | |
| Lower middle income country | 2.96454*** [0.1470609] | 3.58736*** [1.031374] |
| Upper middle income country | 3.099662*** [0.1706735] | 4.679936*** [1.032102] |
| High income country | 2.631022*** [0.1388207] | 4.081823*** [1.023069] |
| Education levels | | |
| Primary education | -0.2648448*** [0.0889067] | 0.4841895 [1.067357] |
| Lower secondary | -0.1664235** [0.0818619] | 1.220806 [1.039455] |
| Upper secondary | -0.1169418 [0.0785912] | 1.355609 [1.051419] |
| Post secondary | -0.0274562 [0.0824887] | 1.733472 [1.50381] |
| Tertiary | -0.3650731*** [0.1003748] | 1.083883 [1.144638] |
| Bachelor | -0.0275378 [0.0798817] | -.126749 [0.1091327] |
| Masters | 0.1274438 [0.0865046] | 3.05669*** [1.140793] |
| Doctor | 0.06841 [0.1838734] | 17.862 [842.2738] |
| Interaction terms | | |
| Lower secondary x Low-mid country | | -0.4322204 [1.057327] |
| Lower secondary x Up-mid income country | | -1.732775* [1.051279] |
| Lower secondary x High income country | | -1.57791 [1.045721] |
| Bachelor x Low-mid country | | 0.6196043*** [0.241151] |
| Bachelor x Up-mid income country | | -0.4436638** [0.1920553] |
| Bachelor x High income country | | omitted |
| Masters x Low-mid country | | -3.055483** [1.256239] |
| Masters x Up-mid income country | | -3.106048*** [1.15699] |
| Masters x High income country | | -3.096769*** [1.146432] |
| Individual-level control variables | | |
| Age | -0.0371052*** [0.0045791] | -0.0372194*** [0.0046006] |
| Age squared | 0.0002838*** [0.0000494] | 0.0002854*** [0.0000496] |
| Female | 0.1346164*** [0.0246915] | 0.1345703*** [0.0247568] |
| Household size | 0.0006703*** [0.006431] | 0.0011501 [0.0064522] |
| Income – low/mid | omitted | omitted |
| Income – up/mid | -0.3356292*** [0.0972202] | -0.3023897*** [0.0975048] |
| Income – high | omitted | omitted |
| Know entrepreneurs | 0.0847223*** [0.0276157] | 0.087698*** [0.0276976] |
| Good opportunity seen | 0.3499897*** [0.0274291] | 0.3430251*** [0.0275035] |
| Knowledge, skills, experience | 0.1322586*** [0.0323705] | 0.1361877*** [0.0324289] |
| Fear of failure | 0.108721*** [0.0272404] | 0.1066375*** [0.0272948] |
| Easy to start | 0.2118406*** [0.0270252] | 0.2058021*** [0.0271115] |
| Business opportunities | 0.0551954** | 0.0593385** |

| | | |
|--|------------------------------|------------------------------|
| | [0.0265618] | [0.026613] |
| Proactive | 0.2104841*** [0.024781] | 0.2063657*** [0.0248334] |
| Innovative | 0.5847988*** [0.0272698] | 0.5836462*** [0.0273255] |
| Long-term career plan | 0.3670784*** [0.0296944] | 0.3681507*** [0.0297533] |
| Country-level control variables | | |
| Entrepreneurial level of education at Primary and Secondary | 0.1546484*** [0.0369329] | 0.138096*** [0.0374266] |
| Entrepreneurial level of education at Vocational, Professional, College and University | 0.7377275*** [0.0461154] | 0.69994*** [0.0477582] |
| Professional and commercial infrastructure access | -0.5534383*** [0.0397168] | -0.5252326*** [0.0410994] |
| Constant | -3.107944*** [0.1912109] | -4.408612*** [1.023316] |
| Country dummies | | |
| Observations | 31,026 | 31,026 |
| R-squared | 0.0843 | 0.0868 |

Notes: The stars show the level of significance with * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. These regressions use the 2019 survey wave of GEM. The dependent variable is the log of the binary variable difference motive, used as an indicator of how socially responsible an individual is. Interaction terms between each education level and each country-income level have been included in model 5 (column 2). The logit model (column 1) estimates the effect of the three country-income level dummies on difference motive and includes the individual-level and country-level control variables. The logit model (column 2) estimates the effect of the interaction terms on difference motive, and includes the individual-level and country-level control variables. The full table can be found in Appendix C. Standard errors in parentheses.

5.5 Robustness check - Aggregation of education levels

After aggregating into six instead of nine levels of education, we can see that aggregating the education levels increased the significance of the education level coefficients, allowing for more interpretation. Comparing to Aggregate primary education level now, we can see that except for Aggregate secondary education level, the remaining four education levels are significant.

As shown in the first and second column of Table 4 below, the significant coefficient results can be seen for the different country income levels. Interestingly, we now observe a change in signs of all the coefficients; Compared to our prior results where only masters and doctors level had positive coefficients, these education level coefficients now all exhibit positive values, albeit with varying levels. While Aggregate tertiary and Bachelors range around 0.2, coefficient values for Masters and Doctor were around 0.3 and 0.5 respectively.

For the coming interpretation, coefficient results from the multilevel logit model 6 will be used. Compared to entrepreneurs who finished only Aggregate primary education level now, entrepreneurs who finished only Aggregate tertiary education level had a 23.1% increase of having the motive of making a difference in the world. For Bachelors this was a 21.6% increase. Masters and Doctors were significantly higher, with 39.9% increase and 70.7% increase respectively.

Table 4 – Aggregated education levels regression results for Hypothesis 1

| | Multilevel logit (6) | Logit with country dummies (7) |
|--|------------------------------|-----------------------------------|
| Education levels | | |
| Aggregate Secondary | 0.0696718 [0.0483173] | 0.0707152 [0.0483718] |
| Aggregate tertiary | 0.2081879*** [0.0551971] | 0.2110828*** [0.0552705] |
| Bachelor | 0.195611*** [0.0529178] | 0.1980418*** [0.0529803] |
| Masters | 0.3353205*** [0.0634423] | 0.3365138*** [0.0635087] |
| Doctor | 0.5347578*** [0.175316] | 0.5383815*** [0.1752906] |
| Individual-level control variables | | |
| Age | -0.0313385*** [0.0048012] | -0.0311622*** [0.0048053] |
| Age squared | 0.0002347*** [0.0000518] | 0.0002331*** [0.0000518] |
| Female | 0.1032267*** [0.0257175] | 0.1026649*** [0.0257407] |
| Household size | 0.0052436 [0.0071143] | 0.0050005 [0.0071351] |
| Income – low/mid | -3.316752*** [0.833611] | omitted |
| Income – up/mid | -0.470081 [0.3952766] | omitted |
| Income – high | -0.4653654 [0.3652253] | omitted |
| Know entrepreneurs | 0.0912619*** [0.0290849] | 0.0915555*** [0.029122] |
| Good opportunity seen | 0.3186615*** [0.028872] | 0.3182424*** [0.0289049] |
| Knowledge, skills, experience | 0.1040395*** [0.0343355] | 0.1020305*** [0.0343917] |
| Fear of failure | 0.0839972*** [0.0284214] | 0.0834931*** [0.0284494] |
| Easy to start | 0.0913355*** [0.0288518] | 0.0891541*** [0.0288919] |
| Business opportunities | 0.1075007*** [0.0279201] | 0.1078149*** [0.0279505] |
| Proactive | 0.1021392*** [0.0261156] | 0.0998172*** [0.0261426] |
| Innovative | 0.5313369*** [0.0286292] | 0.5296999*** [0.0286603] |
| Long-term career plan | 0.3322924*** [0.0311995] | 0.330935*** [0.0312344] |
| Country-level control variables | | |
| Entrepreneurial level of education at Primary and Secondary | -0.0825837 [0.3255764] | |
| Entrepreneurial level of education at Vocational, Professional, College and University | 0.8846716** [0.3852282] | |
| Professional and commercial infrastructure access | -0.6791816** [0.329947] | |
| Constant | -0.241915 [0.3648322] | 1.194782*** [0.1597525] |
| Country dummies | | YES |
| Observations | 31,026 | 31,026 |
| Log likelihood | -18576.925 | -18458.431 |
| Pseudo R-squared | | 0.1358 |

Notes: The stars show the level of significance with * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. These regressions use the 2019 survey wave of GEM. The dependent variable is the log of the binary variable difference motive, used as an indicator of how socially responsible an individual is. The country dummies are included only in model 7. The basic multilevel logit model 6 (column 1) estimates the effect of the five aggregated education level dummies on difference motive and includes the individual-level and country-level control variables. The basic logit model 7 (column 2) estimates the effect of the five aggregated education level dummies on difference motive, and includes the individual-level control variables as well as country dummies to account for all country fixed effects. Standard errors in parentheses.

Based on the results of our robustness check, we would conclude that all education levels positively impact entrepreneur's motivation to make a difference in the world. Therefore, Hypothesis 1, that only graduate and post-graduate programs positively impact entrepreneur's motivation, would have been rejected. However, it is important to note that Masters and Doctors have a much greater percentage increase, roughly double and triple respectively, compared to the lower levels. Additionally, it is worth remembering that coefficients for Primary education level were notably significantly negative in our initial regressions (Table 2); Thus, being better than a very poor level does not necessarily indicate that the SR in other education levels are good.

7. Final words and conclusion

This paper investigated the correlation between education level and the social responsibility of entrepreneurs around the world. In this chapter the conclusions on every hypothesis will be summarized to help answer the main research question:

“How do different education levels correlate with entrepreneurs' motivation to make a difference in the world, and how are these influences moderated by gender and country-specific factors?”

Furthermore, the limitations of this research will be discussed, as well as policy implications and further research.

7.1 Summary of results

The initial model results displayed in Table 2 confirmed Hypothesis 1, showing that only graduate and post-graduate programs were positively correlated with entrepreneur's motivation to make a difference in the world. In fact, all the coefficients below graduate programs were negative, albeit not all were statistically significant. It is interesting to highlight how the statistically significant coefficient for primary education level was very large and negative, emphasizing the need for education systems around the world to consider introducing and implementing more social responsibility (SR) courses at an early age. However, the robustness check (Table 4) showed that aggregation of several lower education levels changed the conclusion. When compared to the newly aggregated primary education level, almost all other education levels were now positively correlated with entrepreneur's motivation to make a difference in the world, albeit with significantly varying degrees; Graduate and post-graduate programs still had substantially higher percentage increase in the chances of the entrepreneurs having the motive to make a difference, almost double and triple that of their lower education counterparts. Hypothesis 2 about interaction effects between education and gender was quickly rejected, as none of the coefficients of the interacted terms were significant.

Moving on from a global to a more country-specific view, Hypothesis 3 states that different countries exhibit varying correlations with social responsibility, which we accepted as all country dummies had varying statistically significant coefficients correlating to the motive of making a difference in the world. In Hypothesis 4, we split the countries into different income levels as an attempt to estimate their developmental stage, and found that there actually were significant varying coefficients. Compared to low income countries, all entrepreneurs in lower middle, upper middle, and higher income countries have a much higher probability of having the motive of making a difference in the world. Thus, Hypothesis 4 was rejected. Hypothesis 5 took a closer look at each education level in the context of the different country income levels, and found that interaction effects do exist between some educational level and country's income level, which influences entrepreneur's motivation to make a difference.

7.1 Limitations of the research

This thesis examines the impact of different education levels on social responsibility across various countries using 2019 cross-sectional data. However, relying on a single year's data limits our ability to observe changes over time. Additionally, the datasets country-specific scores determined by expert panels in the NES data set may introduce bias due to potential inaccuracies, as this is a subjective score given, not measured. Furthermore, the dataset does not specify exact degrees studied. While it is reasonable to assume that many entrepreneurs study business or economics-related subjects, the diversity of SR education quality within different educational majors might not be captured by the data. Additionally, even within the same university major, the curriculum can vary significantly between different universities in the same country; Their emphasis on social impact and responsibility may differ greatly, affecting the SR outcomes of graduates. This holds for the different educational levels such as primary and secondary in schools as well. Overarching country-level assumptions about education levels do not account for these variations.

Moreover, the individuals in the dataset span different age groups. The entrepreneur's age differences pose a challenge, as educational experiences can differ dramatically between older and younger individuals due to the evolving nature of education systems. Additionally, the influence of education on social responsibility is complex and not isolated; personal experiences, characteristics, upbringing, and regulatory frameworks play a crucial role. Although this study aims to isolate the effect of education by controlling for certain variables, it is acknowledged that there are other factors which cannot be fully captured for. I used an existing dataset which only contained a limited number of relevant variables, thus I was not able to control for all relevant variables I would have liked to. These omitted variables cause selection bias, hindering the satisfaction of the zero conditional mean assumption needed for causal assumptions. Nonetheless, this study provides valuable insights but

highlights the need for future research with comprehensive data to better capture the relationship between education and social responsibility.

7.2 Policy implications

To effectively integrate social responsibility into education, policies should focus on grounding educational content in the personal experiences of students and their communities. As Andrzejewski and Alessio (1999) suggested, education for global citizenship should be personalized and relevant to the students' local context, making abstract concepts of social responsibility tangible and actionable in their daily lives. Curriculum development should emphasize real-world applications and community engagement projects that allow students to practice social responsibility and see its impact firsthand. Combining these active learning methods with Web 2.0 technology could greatly increase absorptive capacity (García-Morales et al, 2020). Especially for primary education level it should be considered to introduce SR education curriculum there already, as results from the regressions show an alarmingly negative correlation with social responsibility. However, there may not be a one-size-fits all SR curriculum to be introduced. Each education center should implement the strategy that best fits its unique circumstances, by first identifying all the elements that may support or obstruct this process. (Setó-Pamies & Papaoikonomou, 2016). Furthermore, a common and universal tool needs to be developed to ensure accountability when measuring and reporting on social and environmental issues taught. To achieve this, a multi-stakeholder approach must be adopted where all relevant parties are involved (Jorge and Peña, 2017).

Additionally, understanding the sociodemographic profiles of individuals who are more likely to exhibit altruistic behaviors can help in crafting targeted interventions and programs. For instance, promoting altruism among younger generations or within specific communities can be more effective if the programs are tailored to their unique characteristics and needs. These approaches underscore the importance of a holistic and inclusive educational strategy that not only imparts knowledge but also fosters a sense of social responsibility and community involvement among students. By doing so, education systems can play a crucial role in shaping a more socially responsible and engaged citizen. Education may not be the magical cure that would fix all the problems and dilemmas (Setó-Pamies & Papaoikonomou, 2016; Swanson & Fisher, 2008). However, it can be a place for exposure, interaction and experiences that creates a cognitive and affective change in students.

7.3 Further research

Given the limitations identified in this study, future research should consider employing longitudinal data to observe changes in the relationship between education and social responsibility over time. Expanding the dataset to include multiple years or even a broader international scope could provide deeper insights and help validate the findings across different contexts, perhaps even resulting in causal

effect research. Additionally, incorporating detailed information on specific degrees and curricula would enhance the understanding of how different educational content influences social responsibility.

Further studies should also explore the interplay between personal characteristics, upbringing, and regulatory frameworks with education's impact on social responsibility. Conducting qualitative research or mixed-methods studies could reveal deeper insights into the underlying mechanisms and contextual factors that influence social responsibility. Moreover, controlling for age and examining diverse age groups and their educational backgrounds separately could uncover variations in how education shapes social responsibility across different generations. This holistic approach would significantly enrich our understanding and contribute to more robust policy recommendations aimed at enhancing social responsibility through education.

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9. Appendix

Appendix A

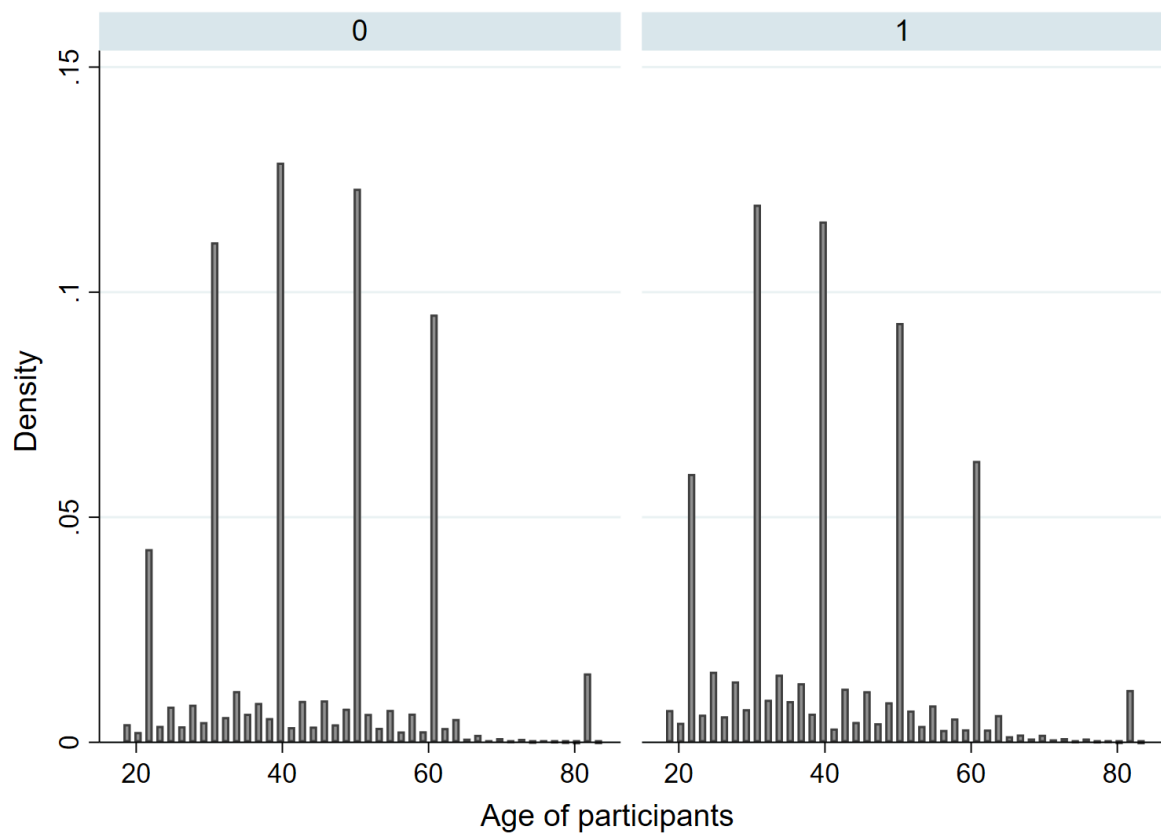


Figure A1 – Density distribution of age for difference motive

Appendix B

Table B1 – Ranking of countries average motive to make a difference (No factors controlled), and country dummies coefficient results from model 3 (Other factors controlled for during regression).

| Ranking | No factors controlled | | Other factors controlled for during regression | |
|---------|-----------------------|-------------------------------------|--|----------------------------------|
| | Countries | Average motive to make a difference | Country dummies | Coefficient results from model 3 |
| 1 | India | 0.873431 | dummy_SouthAfrica | -0.1617325 |
| 2 | South Africa | 0.833766 | dummy_Panama | -0.5250617 |
| 3 | Guatemala | 0.776896 | dummy_Guatemala | -0.529496 |
| 4 | Panama | 0.773063 | dummy_Pakistan | -0.6670903 |
| 5 | Pakistan | 0.751553 | dummy_Mexico | -1.029361 |
| 6 | Mexico | 0.681643 | dummy_Canada | -1.151036 |
| 7 | Puerto Rico | 0.657343 | dummy_PuertoRico | -1.159473 |
| 8 | United States | 0.63459 | dummy_UnitedStates | -1.296101 |
| 9 | Canada | 0.632294 | dummy_NorthMacedonia | -1.483877 |
| 10 | United Arab Emirates | 0.573951 | dummy_Australia | -1.502847 |
| 11 | Egypt | 0.552885 | dummy_Ecuador | -1.517338 |
| 12 | Qatar | 0.547135 | dummy_UnitedArabEmirates | -1.562842 |
| 13 | North Macedonia | 0.535581 | dummy_Luxembourg | -1.566312 |
| 14 | Colombia | 0.515427 | dummy_Egypt | -1.72994 |
| 15 | Ecuador | 0.515091 | dummy_Brazil | -1.741427 |
| 16 | Australia | 0.51495 | dummy_Colombia | -1.744337 |
| 17 | Luxembourg | 0.5 | dummy_Qatar | -1.766407 |
| 18 | Sweden | 0.492537 | dummy_Sweden | -1.784498 |
| 19 | Oman | 0.487805 | dummy_Taiwan | -1.806712 |
| 20 | Brazil | 0.466931 | dummy_Chile | -1.826495 |
| 21 | Chile | 0.444987 | dummy_Ireland | -1.840204 |
| 22 | Slovenia | 0.431818 | dummy_Slovenia | -1.847384 |
| 23 | Poland | 0.430353 | dummy_Oman | -1.882654 |
| 24 | United Kingdom | 0.417293 | dummy_Switzerland | -1.888106 |
| 25 | China | 0.417166 | dummy_Cyprus | -1.900202 |
| 26 | Portugal | 0.403017 | dummy_Germany | -1.90626 |
| 27 | Germany | 0.395402 | dummy_China | -1.929757 |
| 28 | Cyprus | 0.390187 | dummy_UnitedKingdom | -1.930767 |
| 29 | Switzerland | 0.380952 | dummy_Poland | -1.965233 |
| 30 | Israel | 0.378917 | dummy_Portugal | -1.99348 |
| 31 | Taiwan | 0.375267 | dummy_Japan | -2.002798 |
| 32 | Slovakia | 0.364865 | dummy_Slovakia | -2.02728 |
| 33 | Spain | 0.357611 | dummy_Spain | -2.032229 |
| 34 | Saudi Arabia | 0.353642 | dummy_Greece | -2.089468 |
| 35 | Greece | 0.350467 | dummy_Israel | -2.122791 |
| 36 | Iran | 0.344992 | dummy_Norway | -2.286469 |
| 37 | Croatia | 0.319703 | dummy_Netherlands | -2.292023 |
| 38 | Norway | 0.319703 | dummy_SaudiArabia | -2.294395 |

| | | | | |
|----|-------------|----------|------------------|-----------|
| 39 | Netherlands | 0.308483 | dummy_Croatia | -2.382771 |
| 40 | Ireland | 0.307692 | dummy_Iran | -2.3961 |
| 41 | Japan | 0.298387 | dummy_Italy | -2.541485 |
| 42 | Latvia | 0.234801 | dummy_Latvia | -2.681182 |
| 43 | Russia | 0.227758 | dummy_Belarus | -2.770414 |
| 44 | Belarus | 0.222222 | dummy_Russia | -2.781556 |
| 45 | Jordan | 0.221088 | dummy_Jordan | -2.939378 |
| 46 | Italy | 0.173333 | dummy_Morocco | -3.308913 |
| 47 | Morocco | 0.164537 | dummy_Armenia | -3.447256 |
| 48 | Armenia | 0.16065 | dummy_SouthKorea | -3.76467 |
| 49 | South Korea | 0.083789 | dummy_Madagascar | -4.04888 |
| 50 | Madagascar | 0.07416 | | |

Appendix C

Table C1 - Full regression results for Model 4 and 5, including all interaction terms

| | Logit | |
|--|------------------------------|-----------------------------|
| | Country income levels (4) | Interaction terms (5) |
| Country income level | | |
| Lower middle income country | 2.96454*** [0.1470609] | 3.58736*** [1.031374] |
| Upper middle income country | 3.099662*** [0.1706735] | 4.679936*** [1.032102] |
| High income country | 2.631022*** [0.1388207] | 4.081823*** [1.023069] |
| Education levels | | |
| Primary education | -0.2648448*** [0.0889067] | 0.4841895 [1.067357] |
| Lower secondary | -0.1664235** [0.0818619] | 1.220806 [1.039455] |
| Upper secondary | -0.1169418 [0.0785912] | 1.355609 [1.051419] |
| Post secondary | -0.0274562 [0.0824887] | 1.733472 [1.50381] |
| Tertiary | -0.3650731*** [0.1003748] | 1.083883 [1.144638] |
| Bachelor | -0.0275378 [0.0798817] | -1.26749 [0.1091327] |
| Masters | 0.1274438 [0.0865046] | 3.05669*** [1.140793] |
| Doctor | 0.06841 [0.1838734] | 17.862 [842.2738] |
| Interaction terms | | |
| Primary Education x Low-mid income country | | 0.6031508 [1.101594] |
| Primary education x Up-mid income country | | -0.9549678 [1.07994] |
| Primary education x High income country | | -0.9998473 [1.074591] |
| Lower secondary x Low-mid country | | -0.4322204 [1.057327] |
| Lower secondary x Up-mid income country | | -1.732775* [1.051279] |
| Lower secondary x High income country | | -1.57791 [1.045721] |
| Upper secondary x Low-mid country | | -0.7428724 [1.068436] |
| Upper secondary x Up-mid income country | | -1.678546 [1.06218] |
| Upper secondary x High income country | | -1.66608 [1.057056] |
| Post secondary x Low-mid country | | -1.313221 [1.521175] |
| Post secondary x Up-mid income country | | -2.241014 [1.515472] |
| Post secondary x High income country | | -1.884727 [1.507892] |
| Tertiary x Low-mid country | | -0.8485641 [1.170828] |
| Tertiary x Up-mid income country | | -1.904994 [1.159839] |
| Tertiary x High income country | | -1.500496 [1.153076] |
| Bachelor x Low-mid country | | 0.6196043*** [0.241151] |
| Bachelor x Up-mid income country | | -0.4436638** [0.1920553] |
| Bachelor x High income country | | omitted |
| Masters x Low-mid country | | -3.055483** |

| | | |
|--|------------------------------|------------------------------|
| | | [1.256239] |
| Masters x Up-mid income country | | -3.106048*** |
| | | [1.15699] |
| Masters x High income country | | -3.096769*** |
| | | [1.146432] |
| Doctor x Low-mid country | | empty |
| Doctor x Up-mid income country | | -18.26508 |
| | | [842.2739] |
| Doctor x High income country | | -17.89249 |
| | | [842.2739] |
| Individual-level control variables | | |
| Age | -0.0371052*** [0.0045791] | -0.0372194*** [0.0046006] |
| Age squared | 0.0002838*** [0.0000494] | 0.0002854*** [0.0000496] |
| Female | 0.1346164*** [0.0246915] | 0.1345703*** [0.0247568] |
| Household size | 0.0006703*** [0.006431] | 0.0011501 [0.0064522] |
| Income – low/mid | omitted | omitted |
| Income – up/mid | -0.3356292*** [0.0972202] | -0.3023897*** [0.0975048] |
| Income – high | omitted | omitted |
| Know entrepreneurs | 0.0847223*** [0.0276157] | 0.087698*** [0.0276976] |
| Good opportunity seen | 0.3499897*** [0.0274291] | 0.3430251*** [0.0275035] |
| Knowledge, skills, experience | 0.1322586*** [0.0323705] | 0.1361877*** [0.0324289] |
| Fear of failure | 0.108721*** [0.0272404] | 0.1066375*** [0.0272948] |
| Easy to start | 0.2118406*** [0.0270252] | 0.2058021*** [0.0271115] |
| Business opportunities | 0.0551954** [0.0265618] | 0.0593385** [0.026613] |
| Proactive | 0.2104841*** [0.024781] | 0.2063657*** [0.0248334] |
| Innovative | 0.5847988*** [0.0272698] | 0.5836462*** [0.0273255] |
| Long-term career plan | 0.3670784*** [0.0296944] | 0.3681507*** [0.0297533] |
| Country-level control variables | | |
| Entrepreneurial level of education at Primary and Secondary | 0.1546484*** [0.0369329] | 0.138096*** [0.0374266] |
| Entrepreneurial level of education at Vocational, Professional, College and University | 0.7377275*** [0.0461154] | 0.69994*** [0.0477582] |
| Professional and commercial infrastructure access | -0.5534383*** [0.0397168] | -0.5252326*** [0.0410994] |
| Constant | -3.107944*** [0.1912109] | -4.408612*** [1.023316] |
| Country dummies | | |
| Observations | 31,026 | 31,026 |
| R-squared | 0.0843 | 0.0868 |

Notes: The stars show the level of significance with * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. These regressions use the 2019 survey wave of GEM. The dependent variable is the log of the binary variable difference motive, used as an indicator of how socially responsible an individual is. Interaction terms between each education level and each country-income level have been included in model 5 (column 2). The logit model (column 1) estimates the effect of the three country-income level dummies on difference motive and includes the individual-level and country-level control variables. The logit model (column 2) estimates the effect of the interaction terms on difference motive, and includes the individual-level and country-level control variables. Standard errors in parentheses.