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|  | **ERASMUS UNIVERSITY ROTTERDAM**  **Erasmus School of Economics**  **Master Thesis**  **Name: Vikash Ramsoedh**  **Student number: 321684**  **Supervised by: Pourya Darnihamedani**  **Rotterdam, 01-08-2013**  **REPRINT PROHIBITED** | |



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| **Determinants and propensity of entrepreneurship in developing countries** |
| Can we distinguish entrepreneurial traits among the very poor? |

Abstract

In this study we conduct a survey among the poor in the rural state of Bihar in India, to answer the question: *Can we find the entrepreneurial traits, more commonly found in entrepreneurs in developed countries, among prospected entrepreneurs in developing countries?* The survey includes the entrepreneurial traits locus of control, perception of innovativeness, tolerance of risk, tolerance of ambiguity, need for success and a family history of entrepreneurship. In addition of the entrepreneurial traits, also the traits of the Big Five personality scale were included as control variables: extraversion, conscientiousness, imagination, agreeableness and emotional stability.

The survey has sixty-one respondents, of which forty-five were selected to become an entrepreneur. The remaining sixteen were used as a control group. The results of the survey showed that only need for success and a family history of entrepreneurs have a significant result in the logit regression of all entrepreneurial traits. The effect of need for success is positive on the probability of becoming an entrepreneur and this is in line with earlier research, yet the effect of a family history is negative on the probability of becoming an entrepreneur and this contradicts earlier research. Also we see that both age and household size have a negative relation with the probability of becoming an entrepreneur. Of the Big Five personality traits in this research and only agreeableness has a significant effect in the logit regression.

We conclude this research by recommending further research on the entrepreneurial traits model among rural entrepreneurs, on the entrepreneurial traits model among the poor and on the entrepreneurial traits model among the rural poor in a developing country. This will increase our understanding of entrepreneurship in these settings and the current relevance of the entrepreneurial traits model. Also policy implications for field workers and policy makers are discussed.

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1. Introduction

Lingelbach et al. (2005) point out: ‘Entrepreneurship in developing countries is arguably the least studied significant economic and social phenomenon in the world today’. Naudé (2008; 2010) claims that entrepreneurship economics and development economics are two fields that have developed a lot over the last decades yet did so isolated from one another. Nevertheless, nowadays entrepreneurship economists claim more often that entrepreneurship is important for economic development (Naudé 2010).

Even outside the academic literature we can find examples of increasing importance of entrepreneurs in developing countries, as we see more companies emerging with a focus on fair trade with local artisans and small businesses in developing countries. Even the development policy of the Dutch government, which came back into the news recently, refocuses on trade with entrepreneurs in developing countries. Both examples focus on small businesses and local entrepreneurs in developing countries as new trade partners.

Yet between recognizing entrepreneurs and recognizing the determinants of small business emergence in developing countries, there is still a gap of recognizing entrepreneurs in developing countries. There is already an extensive existing literature on certain traits that are found more common among entrepreneurs and individuals with entrepreneurial intentions, also known as the entrepreneurial trait model. Some of these traits are: a higher internal locus of control, higher innovativeness, a higher tolerance of risk, a higher tolerance of ambiguity, a higher need for success and a family history of entrepreneurship (Altinay et al. 2012; Gurel et al. 2010; Gürol & Atsan 2006; Mueller & Thomas 2000a, 2000b). And there is also existing literature on entrepreneurship and small businesses in developing countries, in which many barriers and determinants are mentioned (Mead & Liedholm 1998; Nichter & Goldmark 2009). Other literature focuses on the added value of entrepreneurship to the development process of a country (Leibenstein 1968; Leff 1972). However, there is no current literature that combines the entrepreneurial trait model and actual entrepreneurs in developing countries.

This research tries to cover the existing gap by looking for traits from the entrepreneurial trait model among the very poor in developing countries. The researcher went to the rural state of Bihar in India to conduct a survey among the very poor on the known entrepreneurial traits. In addition to this, also the personality traits from the Big Five personality scale were included as control variables in the survey. The results of this survey will answer the following research question:

*Can we find the entrepreneurial traits, more commonly found in entrepreneurs in developed countries, among prospected entrepreneurs in developing countries?*

By answering this research question we can get a better understanding of entrepreneurship in developing countries, of entrepreneurial traits among the poor and on the use of the entrepreneurial traits model in general in the scientific world. Also by using the Big Five personality traits as control variables, this research also takes a broader look at exactly what distinguishes entrepreneurs from the general population.

This study is one of the few studies that have data on an individual level among the poor in a developing country on entrepreneurial traits. Because due to a lack of data on an individual level in developing countries and/or among the very poor, the before mentioned gap still exists in the literature. The current data we do have of developing countries comes from broad researches that compare different countries or the mean individuals per country (Acs et al. 2008), or are small case studies (Banerjee et al. 2004, 2010). And with this data policy makers can get a better understanding of entrepreneurship among the very poor, encourage entrepreneurship in a more targeted way and make better international aid programs. For international trade this study even could help companies trade with small businesses and artisans among the poor, as they can identify local entrepreneurship better.

First we will walk through entrepreneurship in developing countries: the challenges it faces, how entrepreneurship can add to the development process of developing countries and how the level of entrepreneurship corresponds with the development stage of countries. Then this study will turn to the traits in entrepreneurship economics and personality traits of the Big Five personality scale. To continue with the methodology of the survey itself, the respondents and the results. Then there is a conclusion and discussion, followed by the limitations.

1. Literature review: developing countries and the effects of entrepreneurship

Banerjee & Duflo (2011) explain that developing countries and the people living in them are completely different from the developed world and its inhabitants. Besides all differences in day-to-day life (Banerjee et al. 2004; Banerjee & Duflo 2005; Banerjee et al. 2010; Jayachandran 2006; Moyo 2009; Nguyen 2008; Sachs 2005), this also holds for entrepreneurship. Banerjee & Duflo (2011) explain that even the entrepreneurial nature is different in the developing world. For example most entrepreneurs in developing countries only work to reach a certain living standard, usually enough to survive on a day to day basis, and do not want to grow further. These entrepreneurs also do not take all labor costs into account; which means that if all unpaid labor would be paid for, this would result in losses. Blanchflower & Oswald (1998), Hamilton (2000) and Bennet (2010) on the other hand argue that entrepreneurship has more than pecuniary gains, such as information externalities. Lingelbach et al (2005) explain another difference between entrepreneurs in developing countries and in developed countries. Due to a lack of stability entrepreneurs in developing countries stick to the core market instead of looking for niches, as entrepreneurs in developed countries do.

Not the developing countries taken together are different from the developed countries, as a market for companies they differ as well. Prahalad (Prahalad & Hart 2008; Prahalad 2004) poses that the absolute poor living in the developing countries still have a lot of purchasing power left and when this purchasing power is met with products, these products will increase the utility of the poor. Karnani (2006) on the contrary poses that there is almost no purchasing power left among the poor in developing countries, because lack of purchasing power is what makes them poor in the first place. Seelos & Mair (2005) confirm this argumentation of Karnani by giving examples of successful companies focusing on the poor, yet these have no for-profit principle.

Karnani (2006) also mentions that the market of the poor in developing countries is scattered in large and remote areas. Entrepreneurship in developing countries has actually more barriers than just the lack of infrastructure alone, as El-Namaki (1988) lists. Entry barriers he mentions are a possible lack of industry knowledge and market information, lack of technology needed to start the business, lack of infrastructure to access the right areas, lack of the propensity to start a business, cultural barriers like a hostile environment and the governments’ cooperation. Survival barriers he then mentions are behavior of the entrepreneur like a lack of learning, behavior of the capital market and adapting to changing technologies. At lasts he mentions exit barriers like sunk costs and again behavior of the entrepreneur. Bianchi (2010) adds to this list of constraints corruption, lack of information, distorted incentives and failures in financial markets. El-Namaki brings some solutions to the problems he had mentioned, however the general problems cannot be solved with general answers alone. General problems will become different in each situation, so the solutions for them should also be tailored. Rodrick (1991) highlights the entry barriers of the governments’ cooperation and claims that uncertainty among policy changes in developing countries can work as a tax on investment, making policy changes a barrier to growth even when the policy changes were meant for the best.

Yet given the barriers of entrepreneurship in developing countries from even the government, entrepreneurship is of big importance to the development of the country (Leibenstein 1968; Leff 1979; Anderson 1982; Naudé 2008). However, Leff (1979) includes the notion that entrepreneurship isn’t necessary from individuals, it could also come from groups of people like an American conglomerate. This makes entrepreneurs less of a constraint for developing countries. Anderson (1982) also gives a reason why small business and entrepreneurship is needed in developing countries: he states that small businesses and local entrepreneurship have benefits, as there is a lack of infrastructure to transport goods from bigger companies. Also subcontracting and new innovative activities favor small businesses and entrepreneurship.

1. Theoretical background: predicting entrepreneurial behavior

Predicting entrepreneurial success based on certain factors is almost impossible to do, because there are a lot of factors influencing the choice to become and entrepreneur and the later success of an entrepreneur. However, there are different models to predict entrepreneurial intention and models to see who is more entrepreneurial than another. To predict entrepreneurial intention we can look at for example Ajzen’s theory of planned behavior (1991) and Shapero’s model of the entrepreneurial event (1982), and we have the trait model which contains certain traits that are found more common among entrepreneurs. Nowadays the discussion is more focused on the models of Azjen and Shapero than on the traits of entrepreneurs, yet these mentioned models have limitations in the environment of the poor in developing countries.

Banerjee and Duflo (2011) explain that intentions and planning do not have the same influence on future decisions among the poor as we hold for granted in the models of Azjen and Shapero. Both models include perceptions which could be more biased among the poor, because entrepreneurship offers a needed extra source of income. A part of Azjen’s theory which is at risk for biases among the poor is the attitude towards performing the behavior, meaning the perception of the desirability of performing the behavior, and a part of Shapero’s model which is at risk for biases among the poor is perceived desirability, meaning the personal attractiveness of starting a business. Also part of Shapero’s model is the propensity to act, meaning that the individual will do the task. Because there are not many, if not none, alternatives to generate an income, this propensity will be easily satisfied.

Another disadvantage of these models is the direction of causality. Krueger Jr. and Day (2010) point at different researches where perceived desirability, perceived feasibility and intentions all could predict each other. Thus since these models have flaws that could have serious consequences in this research, we will stick with the known characteristics. Although Krueger Jr. et al. (2000) claim that this has less predictive power than the models of Azjen and Shapero, this will hold better in this environment that has hardly been researched in this way.

Yet research on entrepreneurial traits is also questioned, well known for this is Gartner (1988). He states that traits are formed at birth or at an early age and hardly changed by experiences or circumstances. This could hold, yet there is enough research on entrepreneurial traits since his article got published to prove him at least wrong enough to justify further research. Another point of discussion is research proving that entrepreneurial traits do not set entrepreneurs apart from a control group (Brockhaus 1982). In line with argumentation of Mueller & Thomas (2000a), this research assumes that having entrepreneurial traits does not instantly make one an entrepreneur. Becoming an entrepreneur still depends on more factors, as are covered by Azjen’s theory of planned behavior and Shapero’s model of the entrepreneurial event.

1. Entrepreneurial traits in developing countries

So far there is quite some existing research on the characteristics of entrepreneurs in developing countries, yet not with the same perspective as this study. Nichter & Goldmark (2009) discuss with examples of different studies that entrepreneurs in developing countries have relative low levels of education, have less work experience, are more commonly female and rely heavily on their own social networks. They also point out that entrepreneurs with more work experience can make their businesses grow faster and that relying heavily on social networks can be very expensive, exclude certain groups and can be instable. And there is a push-and-pull dynamic for entrepreneurship: in good economic times people tend to become wageworkers and turn to entrepreneurship in bad economic times, as small businesses survive bad economic times better than bigger firms. The study of Mead & Liedholm (1998), based on surveys from the GEMINI project, confirms that most entrepreneurs in developing countries are female and add to this list of characteristics that most entrepreneurs start in rural areas. Yet the study of Rijkers & Costa (2012) shows that rural non-farm entrepreneurs in Bangladesh, Indonesia and Sri Lanka are less likely to be female, Ethiopia is an exception to this result and here females are more likely to be non-farm entrepreneurs.

Naudé et al. (2008) prove that education and the number of bank branches in the region has a positive relation with the start-up rate in South Africa. This conflicts with the findings of Nichter & Goldmark (2009), because a positive relation between education and start-up rate is not in line with entrepreneurs in developing countries having a relative low level of education. Van der Sluis et al. (2005) on another notion show that the returns for every year of education is lower for entrepreneurs than for wageworkers in developing countries, yet this is similar to the returns of every year of education for entrepreneurs and wageworkers in developed countries.

Jamali (2009) interviewed a small number of Lebanese female entrepreneurs and came to a small list of three barriers for each female entrepreneur which they personally had to deal with when starting their business. Most of the mentioned barriers were family related. This also is not in line with the findings of Nichter & Goldmark (2009) and Mead & Liedholm (1998), because it does not make sense that most entrepreneurs in developing countries are female when these female entrepreneurs have a hard time balancing family and work.

1. The entrepreneurial traits model

The entrepreneurial traits that we use in this research come from earlier research, yet the majority of the current literature focuses on students and to some extent on results in developed countries. Shapero (1975) for example tests the differences between entrepreneurs and non-entrepreneurs in the USA, given the same education and opportunities. Of the known entrepreneurial traits, he only finds that an internal locus of control helps entrepreneurs, while an external locus of control is more common among the non-entrepreneurs. An internal locus of control means that an individual finds himself capable of changing his future, while an external locus of control leaves the individual vulnerable for the twists of fate. Begley & Boyd (1987) compare business founders, the entrepreneurs, to business managers, the non-entrepreneurs, in the north-east of the USA. Here they find that both groups have a high internal locus of control, yet there is no significant difference between both groups. Babb & Babb (1992) replicate the study of Begley & Boyd with rural entrepreneurs and business managers in the south of the USA, and also find no significant difference between the two groups. Koh (1996) finds in his study on entrepreneurial intentions among MBA students in Hong Kong that there is no significant difference in the locus of control among students with entrepreneurial intentions compared to students without entrepreneurial intentions. Mueller & Thomas (2000a; 2000b) link a higher internal locus of control to entrepreneurial capabilities and use it in two studies in multiple countries to distinguish the more entrepreneurial cultures from the lesser entrepreneurial cultures. Lüthje & Franke (2003) prove with a sample of students at MIT, the famous American university, that students with a high internal locus of control are more positive towards entrepreneurship, and thus more likely to become an entrepreneur, than the average student. Gürol & Atsan (2006) test the differences between the entrepreneurial inclined students and the not entrepreneurial inclined students, both groups were composed of Turkish business administration students, and locus of control proves to have a positive link with entrepreneurial intention. Gurel et al. (2010) do not find a significant link between locus of control and entrepreneurial intention with a sample of both British and Turkish students. Altinay et al. (2012) want to find a link between entrepreneurial traits and entrepreneurial intention with British tourism students, also all British nationals, yet the link between locus of control and entrepreneurial intention is not significant. Ferreira et al. (2012) also cannot prove a link between entrepreneurial intention and a higher internal locus of control with a sample of Portuguese secondary students. Although not in all mentioned studies a relation between a higher internal locus of control and entrepreneurial intention has been proven, we will stick to the notion of a higher internal locus of control for entrepreneurs and a lower internal locus of control for non-entrepreneurs, only for entrepreneurs in developing countries in this study. This leads to the following hypothesis:

*H1: There is a positive relation between locus of control and the probability of becoming an entrepreneur in developing countries.*

Schumpeter (1911) and Leibenstein (1968) argued that entrepreneurs should add value by using innovation in a broader sense. Fernald & Solomon (1987) then conclude in their study of differences in profile between male and female entrepreneurs in the USA that male entrepreneurs rank self-control as a trait very low among the given list of traits, as this is a limit to innovativeness. Koh (1996) finds in his study on entrepreneurial intentions among MBA students in Hong Kong that students with higher innovativeness also have a higher entrepreneurial intention. Mueller & Thomas (2000a; 2000b) link a higher innovativeness to entrepreneurial capabilities and use it in two studies in multiple countries to distinguish the more entrepreneurial cultures from the lesser entrepreneurial cultures. Gürol & Atsan (2006) test the differences between the entrepreneurial inclined students and the not entrepreneurial inclined students, both groups were composed of Turkish business administration students, and innovativeness proves to have a positive link with entrepreneurial intention. Gurel et al. (2010) also find a positive link between innovativeness and entrepreneurial intention with a sample of both British and Turkish students. Altinay et al. (2012) want to reproduce a similar result with British tourism students, also all British nationals, and also finds a significant link. Ferreira et al. (2012) however cannot prove a link between entrepreneurial intention and higher innovativeness with a sample of Portuguese secondary students. Although not in all mentioned studies a relation between innovativeness and entrepreneurial intention has been proven, we will stick to the notion of higher innovativeness for entrepreneurs, only for entrepreneurs in developing countries in this study. This leads to the following hypothesis:

*H2: There is a positive relation between perception of innovativeness and the probability of becoming an entrepreneur in developing countries.*

Begley & Boyd (1987) compare business founders, the entrepreneurs, to business managers, the non-entrepreneurs, in the north-east of the USA. Here they find that entrepreneurs score higher on tolerance of risk, compared to non-entrepreneurs. Babb & Babb (1992) replicate the study of Begley & Boyd with rural entrepreneurs and business managers in the south of the USA, yet find no significant difference in tolerance of risk between the entrepreneurs and non-entrepreneurs. Koh (1996) finds in his study on entrepreneurial intentions among MBA students in Hong Kong that students with higher tolerance of risk also have a higher entrepreneurial intention. Mueller & Thomas (2000b) link a higher tolerance of risk to entrepreneurial capabilities and use it in two studies in multiple countries to distinguish the more entrepreneurial cultures from the lesser entrepreneurial cultures. Lüthje & Franke (2003) prove with a sample of students at MIT, the famous American university, that students with a high tolerance of risk are more positive towards entrepreneurship, and thus more likely to become an entrepreneur, than the average student. Gürol & Atsan (2006) test the differences between the entrepreneurial inclined students and the not entrepreneurial inclined students, both groups were composed of Turkish business administration students, and tolerance of risk proves to have a positive link with entrepreneurial intention. Gurel et al. (2010) also find a positive link between tolerance of risk and entrepreneurial intention with a sample of both British and Turkish students. Altinay et al. (2012) want to reproduce a similar result with British tourism students, also all British nationals, yet the link between tolerance of risk and entrepreneurial intention is not significant. Ferreira et al. (2012) also cannot prove a link between entrepreneurial intention and a higher tolerance of risk with a sample of Portuguese secondary students. Although not in all mentioned studies a relation between tolerance of risk and entrepreneurial intention has been proven, we will stick to the notion of higher a higher tolerance of risk for entrepreneurs, only for entrepreneurs in developing countries in this study. This leads to the following hypothesis:

*H3: There is a positive relation between tolerance of risk and the probability of becoming an entrepreneur in developing countries.*

Begley & Boyd (1987) compare business founders, the entrepreneurs, to business managers, the non-entrepreneurs, in the north-east of the USA. Here they find that entrepreneurs score higher on tolerance of ambiguity, compared to non-entrepreneurs. Babb & Babb (1992) replicate the study of Begley & Boyd with rural entrepreneurs and business managers in the south of the USA, yet find no significant difference between both groups. Koh (1996) finds in his study on entrepreneurial intentions among MBA students in Hong Kong that students with a higher tolerance of ambiguity also have a higher entrepreneurial intention. Gürol & Atsan (2006) test the differences between the entrepreneurial inclined students and the not entrepreneurial inclined students, both groups were composed of Turkish business administration students, and tolerance of ambiguity proves to have no significant link with entrepreneurial intention. Gurel et al. (2010) also do not find a significant link between tolerance of ambiguity and entrepreneurial intention with a sample of both British and Turkish students. Altinay et al. (2012) want to replicate the results of Gürol & Atsan (2006) and get a similar insignificant result with British tourism students, also all British nationals. Ferreira et al. (2012) also cannot prove a link between entrepreneurial intention and a higher tolerance of ambiguity with a sample of Portuguese secondary students. Although not in all mentioned studies a relation between tolerance of ambiguity and entrepreneurial intention has been proven, we will stick to the notion of higher tolerance of ambiguity for entrepreneurs, only for entrepreneurs in developing countries in this study. This leads to the following hypothesis:

*H4: There is a positive relation between tolerance of ambiguity and the probability of becoming an entrepreneur in developing countries.*

McClelland’s need for achievement theory (1961) poses that the need for achievement is one of the three major needs that influence motivation. This motivation separates individuals who will set targets and strive for the best, and so this theory suggests that individuals with a high need for success find their way to entrepreneurship with more success (Littunen 2000; Stewart et al. 2003). Begley & Boyd (1987) compare business founders, the entrepreneurs, to business managers, the non-entrepreneurs, in the north-east of the USA. Here they find that entrepreneurs score higher on need for success, compared to non-entrepreneurs. Babb & Babb (1992) replicate the study of Begley & Boyd with rural entrepreneurs and business managers in the south of the USA, yet find no significant difference between both groups. Koh (1996) finds in his study on entrepreneurial intentions among MBA students in Hong Kong that there is no significant difference in the need for success among students with entrepreneurial intentions compared to students without entrepreneurial intentions. Gürol & Atsan (2006) test the differences between the entrepreneurial inclined students and the not entrepreneurial inclined students, both groups were composed of Turkish business administration students, and need for success proves to have a positive link with entrepreneurial intention. Altinay et al. (2012) want to reproduce a similar result with British tourism students, also all British nationals, yet the link between need for success and entrepreneurial intention is not significant. Ferreira et al. (2012) prove a positive link between entrepreneurial intention and a higher need for success with a sample of Portuguese secondary students. Although not in all mentioned studies a relation between a higher need for success and entrepreneurial intention has been proven, we will stick to the notion of higher need for success for entrepreneurs, only for entrepreneurs in developing countries in this study. This leads to the following hypothesis:

*H5: There is a positive relation between need for success and the probability of becoming an entrepreneur in developing countries.*

Davidsson & Honig (2003) find that a parent with an entrepreneurial career or even a close friend with an entrepreneurial career is a good indicator for nascent entrepreneurship, when they compare nascent entrepreneurs to a control sample, both from the adult population in Sweden. Pruett et al. (2009) suggest that family members could work as role models and therefore stimulate entrepreneurship. Their study among students in the USA, Spain and China proves that exposure to an entrepreneurial role model has a significant positive effect on entrepreneurial intentions. Linan et al. (2005) use a sample of 354 Spanish Economics and Business Administration undergraduate students and find a positive relation between entrepreneurs in the family and entrepreneurial intentions. Basu & Virick (2008) use a sample of students of multiple ethnicities and multiple majors in the USA and find that there is a positive link between entrepreneurial fathers and entrepreneurial intentions. Gurel et al. (2010) also find a positive link between a family history of entrepreneurship and entrepreneurial intention with a sample of both British and Turkish students. Altinay et al. (2012) find a positive significant relation between a family history of entrepreneurs and entrepreneurial intention with British tourism students, also all British nationals. Laspita et al. (2012) use data from the 2008 Global University Entrepreneurial Spirit Students Survey (GUESSS)[[1]](#footnote-1) to find a link between a family history of entrepreneurs and entrepreneurial intentions. They find a clear positive and significant relation between the entrepreneurial status of the parents and entrepreneurial intentions and even a weak positive and significant relation between the entrepreneurial status of the grandparents and entrepreneurial intentions. Since all mentioned studies find a relation between a family history of entrepreneurship and entrepreneurial intention has been proven, we will stick to the notion of a family history of entrepreneurs for entrepreneurs, only for entrepreneurs in developing countries in this study. This leads to the following hypothesis:

*H6: There is a positive relation between a family history of self-employment and the probability of becoming an entrepreneur in developing countries.*

1. Methodology

This survey is constructed of parts of multiple known questionnaires, some on entrepreneurship and some more specific on personal traits. A researcher then went to Bihar, India, to personally hold the survey and collect all the data. He stayed for three weeks in the state capital Patna and the local villages to ensure the survey was understood correctly by the local partner and translated so as well.

The total of sixty-one respondents was divided between two groups: the first selected to be more entrepreneurial than the general population, and a control group to represent the general population. The selection process was done by Basix (from now on called our local partner), a local NGO. The local women’s federation of Bankey Bazar helped them in this process, as this federation was started to empower women both financially and socially. This selection process leads to the variable ‘entrepreneur’, which controls for the group the respondent is in.

The rationale behind leaving the selection process to a third party is that most projects in foreign countries depend on help from local NGO’s or individuals. Other methods to divide the local population into the two groups would not do justice to reality.

Our local partner also helped us around the villages, helped us gather respondents for the survey and co-supervised the group sessions, by explaining the rules of the survey and sometimes the questions when there was some kind of misunderstanding.

* 1. Survey

This survey is based on the questionnaires of GEM and Flash Eurobarometer; meaning that most questions find their origin in these two questionnaires. GEM is probably the most famous survey on entrepreneurship and is annually conducted in about 100 countries over the world. GEM results are used in multiple researches, as Sternberg & Wennekers (2005) and Levie & Autio (2008) summarize. Flash Eurobarometer is a survey of the EU on entrepreneurship and covers 25 EU member states and some additional other countries. It is used for example by van der Zwan et al. (2010). Together these questionnaires give very good insight in entrepreneurial intentions and a bit of insight in entrepreneurial characteristics. The Flash Eurobarometer has some very good questions on innovativeness, yet the other characteristics are hardly covered. Therefore some questions of Rotter’s I-E scale[[2]](#footnote-2) are added to have more in-depth questions on locus of control and questions from the Jackson Personality Index[[3]](#footnote-3) are added to capture the risk taking behavior of the respondents, which is in line with the study of Mueller & Thomas (2000a; 2000b). And the questions from the Big Five personality test[[4]](#footnote-4) are added as control variables in this survey.

The dependent variable of this research is a dummy variable ‘entrepreneur’, which tells us in which group the respondent is selected. This dummy has a value of 1 when the individual is selected to become an entrepreneur and this dummy has a value of 0 when the individual is not selected to become an entrepreneur, thus this variable is a binary variable. The other variables should therefore be able to explain the difference between the two groups and by that a base for the selection process.

The survey is added in the appendix. In line with Heady (2013) the original thought was to only include yes/no-questions in this survey, to minimalize translation errors and to keep the survey as understandable as possible. Yet ‘maybe’ is added as a possible answer to capture the responses in a better way. However, the nature of some questions asked for a different approach, so there are some open questions and double statements included as well. In hindsight it might have been better not to include the double statements, since the majority of the respondents either chose to be indifferent at all double statements, or they didn’t understand the question.

The survey was translated from English to Hindi by our local partner. In the translation process unfortunately two statements of the emotional stability set of the Big Five personality scale were lost. This was found out later and could not be corrected afterwards.

Instead of visiting each village after one other to interview each respondent alone, our local partner organized group sessions. This helped the research by gathering all interested respondents within a few days. Yet the group sessions encouraged respondents to discuss among each other when they didn’t understand a question. And since this turned out to be the case for a lot of questions, this could have been a cause for some individuals not to give their true personal preferences in the answers, due to social preferred answers or common misunderstandings. Nevertheless, this should not give the impression of an uncontrolled environment, as far as the supervisor and the local partner could hear all discussions were about understanding the questions.

One example of a question that was apparently too difficult was the question on the employment of the father of the respondent. Some female respondents understood this as a question on the employment of their husband. Also, the abstract questions turned out to be too difficult for the respondents. We don’t know whether this is due to a lack of education, or that research among the very poor in rural areas need other questions to show their preferences.

* 1. Respondents

The survey was held in the Bankey Bazar block[[5]](#footnote-5), which is part of the Gaya district in the state of Bihar, India. Figure one shows the exact location. The households in Bankey Bazar earn on average one hundred rupee per day, but the earnings per months are usually between one thousand and three thousand rupee per month. This would be around 1,73 US dollar[[6]](#footnote-6) per day or 17,30 US dollar to 52 US dollar per month. Karnani (2006) discusses some measures of poverty and according to the measures mentioned, this does not fit the definition of extremely poor in all cases as defined by the World Bank in 1990, living below one dollar per day. Yet this does fit in general the definition of moderate poverty as is set at two US dollar per day.

Bankey Bazar houses the office of the local women’s federation, which was used as field office for this research, and the respondents came from the surrounding villages. Most of the respondents were also involved in this women’s federation, but this was not a requirement for participation.

The mean of the age of the respondents is 29.8 and the gender distribution in the entrepreneurial group and the control group was close to equal. Figure two shows a graph of the age distribution and table one shows the gender distribution per group. The participation of men in the survey however was very low, in total about thirteen percent. This is in line with the findings of Mead & Liedhom (1998) and Nichter & Goldmark (2009), who claim that most micro and small enterprises in developing countries are owned and operated by women. The low participation of men was also explained by our local partner, who claimed that men in the region are not interested in participating in projects with small revenues. This however does not say anything about the rewards of their regular work, which would be working in the fields for the majority of men in the area.



**Figure 1**: Map of the state of Bihar and surroundings. The red arrow shows the location of the Bankey Bazar block. Source: Google Maps.



**Figure 2**: Graph of the age distribution of the respondents in this study.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Female | Male | Total |
| Control | 14 | 2 | 16 |
|  | 87,5% | 12,5% | 100% |
| Entrepreneurial | 39 | 6 | 45 |
|  | 86,7% | 13,3% | 100% |
| Total | 53 | 8 | 61 |
|  | 86,9% | 13,1% | 100% |

**Table 1**: Gender distribution of the respondents per group with percentages.

Table two shows the descriptive values of the age, years of education and the household size of the respondents, and table three shows the frequency of answers to the question whether the household income was enough to feed either the family of the respondent or a general family of four. Even without exact numbers on the household income, when combining this data with the information on household size from table two, we can see that the range of income is very broad.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Mean | Min | Max |
| Age | 29.8 | 18 | 57 |
| Years of education | 8.1 | 0 | 16 |
| Household size | 7.5 | 2 | 18 |

**Table 2**: Descriptive values of the age, years of education and household size of the respondents.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Yes | To some extent | No |
| Enough for respondents family | 28 | 16 | 17 |
| Enough for family of four | 35 | 19 | 7 |

**Table 3**: Frequency of the answer to the question whether the total household income was enough to feed the family of the respondent or a general family of four.

1. Results
   1. Variables

In table four all variables are listed with a short description. In some cases two variables cover the same characteristic, this is because there were multiple sources of the questions used in the survey. The numbering however is random, so this does not correspond with a specific source of questions as mentioned before in this paragraph.

The dependent variable of this research is a dummy variable ‘entrepreneur’, which tells us in which group the respondent is selected. This dummy has a value of 1 when the individual is selected to become an entrepreneur and this dummy has a value of 0 when the individual is not selected to become an entrepreneur, thus this variable is a binary variable and therefore this research should use logit regression models. In logit regression models however, coefficients do not tell much about the effect of the variable on the dependent variable, thus we use average marginal effects and their significance. Also, in a logit regression model the R2, the goodness-of-fit of the model, is replaced by McFadden’s pseudo R2. During this study we will use a minimal significance level of 10%.

|  |  |
| --- | --- |
| Variable | Description |
| Entrepreneur | Dependent dummy variable; value is 1 if the respondent is selected to become an entrepreneur and value is 0 if not |
| Age | Independent control variable; age of the respondent |
| Gender | Independent control variable; gender of the respondent |
| Years of education | Independent control variable; years of education of the respondent |
| Household size | Independent control variable; household size of the respondent |
| Hhinc\_fam | Independent dummy variable; value is 1 if the household income of the respondent is enough to feed his/her family and value is 0 if not |
| Hhinc\_fam4 | Independent dummy variable; value is 1 if the household income of the respondent is enough to feed a normal family of four and value is 0 if not |
| Tolerance of ambiguity 1 | Independent variable; value is the composed score of answers to the first set of questions on tolerance of ambiguity |
| Tolerance of ambiguity 2 | Independent variable; value is the composed score of answers to the second set of questions on tolerance of ambiguity |
| Tolerance of risk 1 | Independent variable; value is the composed score of answers to the first set of questions on tolerance of risk |
| Tolerance of risk 2 | Independent variable; value is the composed score of answers to the second set of questions on tolerance of risk |
| Innovativeness | Independent variable; value is the composed score of answers to the set of questions on innovativeness |
| Need for success | Independent variable; value is the composed score of answers to the set of questions on need for success |
| Locus of control 1 | Independent variable; value is the composed score of answers to the first set of questions on locus of control |
| Locus of control 2 | Independent variable; value is the composed score of answers to the second set of questions on locus of control |
| Father's employment | Independent variable; value is 2 if entrepreneur and value is 0 if not |
| Mother's employment | Independent variable; value is 2 if entrepreneur and value is 0 if not |
| Preferred employment | Independent variable; value is 2 if entrepreneur and value is 0 if not |
| Extraversion | Independent control variable; value is the composed score of answers to the set of questions on the extraversion trait of the Big Five personality traits |
| Agreeableness | Independent control variable; value is the composed score of answers to the set of questions on the agreeableness trait of the Big Five personality traits |
| Conscientiousness | Independent control variable; value is the composed score of answers to the set of questions on the conscientiousness trait of the Big Five personality traits |
| Emotional stability | Independent control variable; value is the composed score of answers to the set of questions on the emotional stability trait of the Big Five personality traits |
| Imagination | Independent control variable; value is the composed score of answers to the set of questions on the imagination trait of the Big Five personality traits |

**Table 3**: All variables used in this study listed with a short description.

* 1. Results

The first five hypotheses look at the known characteristics in entrepreneurship economics: locus of control, perception of innovativeness, tolerance of risk, tolerance of ambiguity and a need for success. Table five shows the correlation matrix of the variables corresponding with sets of questions on the known characteristics and table five shows the marginal effects of the variables in the logit regression.

We can see in the correlation matrix of table five that some trait variables correlate with each other with strong significant effects. Leaving them out of the logit regression of table six does not alter the significance of the remaining variables, therefore these variables remained in the logit regression. Also in the logit regression of table five the variable corresponding with the second set of questions on the locus of control of the respondent was omitted due to perfect collinearity. Together with this variable sixteen observations were not used in these models. Since both sets of questions on locus of control do not correlate with each other, see the correlation table in table five, it is excluded that these two variables are together the source of the perfect collinearity. We have tried to leave this variable out of the model, yet this does not give us different results and thus we continued with both sets of questions on the locus of control.

In the correlation matrix of table five we can see that both sets of questions on locus of control correlate significantly with the probability of becoming an entrepreneur. However, based on the correlation matrix we cannot conclude any effect. Both sets of questions on locus of control do not correlate significantly with each other and there is no significant effect in the logit regression of table six, which makes it impossible to give a conclusive answer to the first hypothesis.

The set of questions on innovativeness correlates significantly with the probability of becoming an entrepreneur in table five, yet this only hints for a relation. The marginal effect of innovativeness on the probability of being an entrepreneur in table six is however insignificant, making the second hypothesis inconclusive.

The third hypothesis is on the relation of tolerance of risk and the probability of becoming an entrepreneur and could not be proven, since the marginal effect in the logit regression of table six is insignificant. The correlation of the same variables in table five is also insignificant, yet the correlation is not enough to support or reject the hypothesis.

In the correlation matrix of table five we can see that only the second set of questions on tolerance of ambiguity correlates significantly with the probability of becoming an entrepreneur, however this is not enough on its own to support the fourth hypothesis. Both sets of questions on locus of control do not correlate significantly with each other and there is no significant effect of both variables in the logit regression of table six, of which the latter makes it impossible to give a conclusive answer to the fourth hypothesis.

The fifth hypothesis is on the relation of need for success and the probability of becoming an entrepreneur. Here the correlation of table five is insignificant, which would not be enough to state something on the hypothesis, yet the coefficient and the marginal effect of need for success are significant. The coefficient in table six is significant at the 10% level and the marginal effect is significant at the 5% level in the logit regression. This latter effect is positive and has a magnitude of 17.1 percentage points. Thus need for success has a positive effect on the probability of becoming an entrepreneur, which proves the fifth hypothesis.

In table six we also can see that of the control variables only age has a significant coefficient and marginal effect on the probability of becoming an entrepreneur. This marginal effect is negative, has a magnitude of 0.029 and is significant at the 5% level. The constant is quite large and positive, yet insignificant. The pseudo R2 is 0.477, which explains that this model fits almost half of the data in this dataset.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Entrepreneur | Tolerance of ambiguity 1 | Tolerance of risk 1 | Need for success | Locus of control 1 | Tolerance of ambiguity 2 | Innovativeness | Locus of control 2 | Tolerance of risk 2 |
|  |  |  |  |  |  |  |  |  |  |
| Tolerance of ambiguity 1 | -0.117 | XX |  |  |  |  |  |  |  |
|  |  | XX |  |  |  |  |  |  |  |
| Tolerance of risk 1 | 0.042 | 0.093 | XX |  |  |  |  |  |  |
|  |  |  | XX |  |  |  |  |  |  |
| Need for success | 0.244 | -0.301 | 0.106 | XX |  |  |  |  |  |
|  |  | \*\* |  | XX |  |  |  |  |  |
| Locus of control 1 | 0.407 | 0.051 | 0.295 | 0.303 | XX |  |  |  |  |
|  | \*\* |  | \*\* | \*\* | XX |  |  |  |  |
| Tolerance of ambiguity 2 | 0.408 | 0.093 | 0.250 | 0.359 | 0.623 | XX |  |  |  |
|  | \*\* |  | \* | \*\* | \*\* | XX |  |  |  |
| Innovativeness | 0.470 | -0.108 | 0.150 | 0.457 | 0.640 | 0.609 | XX |  |  |
|  | \*\* |  |  | \*\* | \*\* | \*\* | XX |  |  |
| Locus of control 2 | -0.296 | 0.093 | 0.067 | 0.156 | -0.209 | -0.020 | -0.249 | XX |  |
|  | \*\* |  |  |  |  |  | \* | XX |  |
| Tolerance of risk 2 | -0.196 | 0.350 | -0.065 | -0.250 | -0.135 | 0.084 | -0.228 | 0.646 | XX |
|  |  | \*\* |  | \* |  |  | \* | \*\* | XX |

**Table 5**: The correlation matrix of entrepreneurial traits and the dependent variable ‘entrepreneur’. Significance is highlighted at the 10% level with \* and at the 5% level with \*\*.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Av. marginal effect | Sig. | Coef. | Sig. |
| Locus of control - 1 | 0.007 | 0.931 | 0.069 | 0.931 |
| Locus of control - 2 | Omitted | | Omitted | |
| Innovativeness | -0.029 | 0.295 | -0.270 | 0.313 |
| Tolerance of risk - 1 | -0.048 | 0.642 | -0.449 | 0.645 |
| Tolerance of risk - 2 | -0.161 | 0.300 | -1.502 | 0.323 |
| Tolerance of ambiguity - 1 | -0.010 | 0.901 | -0.094 | 0.901 |
| Tolerance of ambiguity - 2 | 0.085 | 0.161 | 0.795 | 0.192 |
| Need for success | 0.171 | 0.049\*\* | 1.591 | 0.081\* |
| Age | -0.029 | 0.006\*\* | -0.267 | 0.025\*\* |
| Gender | 0.233 | 0.168 | 2.163 | 0.198 |
| Years of education | 0.005 | 0.739 | 0.048 | 0.741 |
| Household size | -0.011 | 0.384 | -0.104 | 0.395 |
| Constant |  |  | 9.941 | 0.185 |
|  |  |  |  |  |
| Predicted probability of entrepreneur | 0.644 | 0.000\*\* |  |  |
| Pseudo R2 | 0.477 | | | |

**Table 6**: The average marginal effects and significance of the variables corresponding with the questions and statements on the known characteristics in entrepreneurship economics and control variables in the logit regression with ‘entrepreneur’ as dependent variable. Significance is highlighted at the 10% level with \* and at the 5% level with \*\*.

The sixth hypothesis looks at the relation between a family history of self-employment and the probability of being selected as an entrepreneur. For this hypothesis we only asked for the employment status of the parents, because the employment status of all grandparents could be forgotten in time. The preferred employment is included here as an indicator variable. In the correlation matrix of table seven there is no significant correlation with the probability of becoming an entrepreneur, although this could only hint for a relation. However, we can see that the employment status of the father correlates significantly at the 5% level with the employment status of the mother. The correlation is 0.377 and thus there could be a relation between the mother at work when the father is working, or vice versa.

Table eight shows a different picture: in the logit regression only the coefficient and the marginal effect of the mother’s employment status is significant at the 5% level. The marginal effect is negative with a magnitude of 15.3 percentage points. This contradicts the sixth hypothesis, thus we can reject the sixth hypothesis.

In table eight we can also see that of the control variables age and household size have a significant coefficient and marginal effect on the probability of becoming an entrepreneur. The marginal effect of age is significant at the 5% level, is negative and has a magnitude of 1.6 percentage points. The effect of household size is significant at the 5% level, is negative and has a magnitude of 2.7 percentage points. The constant is quite large, positive and significant at the 5% level. The pseudo R2 is 0.276, thus this model explains only just over one quarter of the data in the dataset.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Entrepeneur | Empl father | Empl mother | Preferred empl |
| Empl father | -0.073 | XX |  |  |
|  |  | XX |  |  |
| Empl mother | -0.231 | 0.377 | XX |  |
|  | \* | \*\* | XX |  |
| Preferred empl | -0.187 | 0.051 | 0.227 | XX |
|  |  |  | \* | XX |

**Table 7**: The correlation matrix of the variables on family history of self-employment and the dependent variable ‘entrepreneur’. Significance is highlighted at the 10% level with \* and at the 5% level with \*\*.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Av. Marginal effect | Sig. | Coef. | Sig. |
| Father’s employment | 0.066 | 0.338 | 0.496 | 0.350 |
| Mother’s employment | -0.153 | 0.019\*\* | -1.151 | 0.040\*\* |
| Preferred employment | -0.056 | 0.457 | -0.420 | 0.463 |
| Age | -0.016 | 0.002\*\* | -0.122 | 0.014\*\* |
| Gender | 0.218 | 0.210 | 1.637 | 0.229 |
| Years of education | 0.015 | 0.275 | 0.114 | 0.290 |
| Household size | -0.027 | 0.015\*\* | -0.203 | 0.035\*\* |
| Constant |  |  | 5.655 | 0.007\*\* |
|  |  |  |  |  |
| Predicted probabilty of entrepreneur | 0.738 | 0.000\*\* |  |  |
| Pseudo R2 | 0.276 | | | |

**Table 8**: The average marginal effects and significance of the variables corresponding with the employment statuses of the parents, the preferred employment status and control variables in the logit regression with ‘entrepreneur’ as dependent variable. Significance is highlighted at the 10% level with \* and at the 5% level with \*\*.

The Big Five personality traits were initially included to be used as control variables. Yet due to prefect collinearity problems this full logit regression could not be computed. Therefore these variables are shown in the following tables, as the significance and sign of the shown effects are similar to the effects when each variable was included as a control variable.

The correlations of the Big Five personality traits and the probability of becoming an entrepreneur are shown in table nine. Here we see positive correlations of 0.343 for agreeableness and of 0.361 for conscientiousness, which are both significant at the 5% level. However the correlations on their own can only hint for a relation. Agreeableness on the other hand even has a positive marginal effect of 7.6 percentage points on the probability of becoming an entrepreneur in the logit regression in table ten, which is significant at the 10% level.

In table ten we can also see that age has a significant marginal effect on the probability of becoming an entrepreneur. This effect is significant at the 5% level, is negative and has a magnitude of 0.02 percentage points. The constant is quite large, negative and is significant at the 10% level. The pseudo R2 of this model is 0.371, thus this model explains a bit more than 37% of the data.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Entrepreneur | Extraversion | Agreeableness | Conscientiousness | Emotional stability | Imagination |
| Extraversion | 0.195 | XX |  |  |  |  |
|  |  | XX |  |  |  |  |
| Agreeableness | 0.343 | 0.035 | XX |  |  |  |
|  | \*\* |  | XX |  |  |  |
| Conscientiousness | 0.361 | 0.130 | 0.495 | XX |  |  |
|  | \*\* |  | \*\* | XX |  |  |
| Emotional stability | 0.002 | 0.150 | 0.098 | 0.024 | XX |  |
|  |  |  |  |  | XX |  |
| Imagination | 0.205 | 0.103 | 0.204 | 0.047 | -0.293 | XX |
|  |  |  |  |  | \* | XX |

**Table 9**: The correlation matrix of the Big Five personality domains and the dependent variable ‘entrepreneur’. Significance is highlighted at the 10% level with \* and at the 5% level with \*\*.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Av. Marginal effect | Sig. | Coef. | Sig. |
| Extraversion | 0.050 | 0.181 | 0.428 | 0.198 |
| Agreeableness | 0.076 | 0.051\* | 0.656 | 0.077\* |
| Conscientiousness | 0.028 | 0.191 | 0.238 | 0.212 |
| Emotional stability | 0.047 | 0.159 | 0.405 | 0.182 |
| Imagination | 0.045 | 0.179 | 0.388 | 0.206 |
| Age | -0.020 | 0.001\*\* | -0.171 | 0.011\*\* |
| Gender | -0.007 | 0.965 | -0.059 | 0.965 |
| Years of education | -0.007 | 0.664 | -0.056 | 0.666 |
| Household size | -0.016 | 0.193 | -0.135 | 0.218 |
| Constant |  |  | -13.806 | 0.060\* |
|  |  |  |  |  |
| Predicted probability of entrepreneur | 0.738 | 0.000\*\* |  |  |
| Pseudo R2 | 0.371 | | | |

**Table 10**: The average marginal effects and significance of the variables corresponding with the statements on the Big Five personality domains and control variables in the logit regression with ‘entrepreneur’ as dependent variable. Significance is highlighted at the 10% level with \* and at the 5% level with \*\*.

1. Conclusion & discussion

We can conclude that there is no significant result to support the relation between a higher internal locus of control and the probability of becoming an entrepreneur. Thus we cannot confirm the first hypothesis, which corresponds to the lack of significant results of some previous studies (Altinay et al. 2012; Babb & Babb 1992; Fereirra et al. 2012; Gurel et al. 2010; Koh 1996). However, there are also studies with significant results that separate entrepreneurs or entrepreneurial inclined individuals with a higher internal locus of control from the general population (Gürol & Atsan 2012; Lüthje & Franke 2003; Shapero 1975). Unfortunately we cannot differentiate between the studies and put a claim on the source of the mixed results. There are studies with a significant result that focus on actual entrepreneurs (Shapero 1975) and there are also studies that focus on actual rural entrepreneurs without a result (Babb & Babb 1992). On the other hand, because the world of the poor is so much different from ours and there are less events in life that can be influenced by the poor that have more severe consequences for them (Banerjee & Duflo 2011), it could also be that there is a higher external locus of control in general among the poor. More research is necessary on locus of control in general, to better understand this trait and how we can get so much mixed results.

There is also no significant relation between innovativeness and the probability of becoming an entrepreneur, thus the second hypothesis cannot be confirmed as well. The lack of a significant result has been reported in existing literature as well (Ferreira et al. 2012), yet most studies report a significant relation between innovativeness and entrepreneurial intentions (Altinay et al. 2012; Gurel et al. 2010; Gürol & Atsan 2006; Koh 1996). The difference between this study and the existing literature is that we did not look for entrepreneurial intentions, we looked at the probability of becoming an entrepreneur by being selected into a specially designed program. Another source of possible differences between this study and the mentioned studies is that this study focuses on actual entrepreneurs, instead of students. It could also be that ‘being innovative’ is placed in a different context among the poor or in developing countries as we would place it. This would be in line with Lingelbach et al (2005), because they claim that entrepreneurs in developing countries stick more often to the core market than on the niches. This means that there should also be a focus on understanding innovation among the poor and/or in developing countries. More research is needed on innovativeness in developing countries and especially among entrepreneurs there.

The third hypothesis is on the relation between tolerance of risk and the probability of becoming an entrepreneur, this hypothesis also has no significant result and cannot be confirmed. Again, existing literature gives mixed results as there are studies that have no significant results as this study does (Altinay et al. 2012; Babb & Babb 1992; Fereirra et al. 2012), yet there are also studies that find a significant relation between tolerance of risk and entrepreneurial intentions (Begley & Boyd; Gurel et al. 2010; Gürol & Atsan 2006; Koh 1996; Lüthje & Franke 2003). The differences between the studies with a significant result and the studies without a significant result are hard to pinpoint, yet there is one difference that stands out: both this research and the research of Babb & Babb (1992) focus on rural entrepreneurs and cannot find a significant result. Thus this could be a decisive factor in this research and therefore there should be more research on the tolerance of risk among rural entrepreneurs. On the other hand, because the poor have to deal with much more risk in their day-to-day life while this risk includes far bigger consequences (Banerjee & Duflo 2011), it could also be that there is in general a lower tolerance of risk among the poor in developing countries.

The fourth hypothesis is on the relation between tolerance of ambiguity and the probability of becoming an entrepreneur and also has no significant result, thus cannot be confirmed. This insignificant result has been found in earlier studies (Altinay et al 2012; Babb & Babb 1992; Fereirra et al. 2012; Gurel et al. 2010; Gürol & Atsan 2006), yet there are studies that find a significant positive relation between tolerance of ambiguity and entrepreneurship or entrepreneurial intentions (Begley & Boyd 1987; Koh 1996). There is need for more research on the relation between tolerance of ambiguity and entrepreneurship, because not all studies can find this relation within different datasets. On the other hand, because the poor have to deal with much more ambiguity in their day-to-day life while this ambiguity includes far bigger consequences (Banerjee & Duflo 2011), it could also be that there is in general a lower tolerance of ambiguity among the poor in developing countries.

Need for success has a significant positive relation with the probability of becoming an entrepreneur in the logit regression, which confirms the fifth hypothesis. This result is in line with the reasoning of Littunen (2000) and Stewart et al. (2003) on McClelland’s need for achievement theory (1961) and earlier studies (Begley & Boyd 1987; Ferreira et al. 2012; Gürol & Atsan 2006). However, more research is welcome to confirm this result in different settings.

There is also a significant relation between a family history of entrepreneurship and the probability of becoming an entrepreneur, yet this relation is negative and thus rejects the sixth hypothesis. While previous studies only find positive relations between a family history of entrepreneurship and entrepreneurs and entrepreneurial intentions (Altinay et al. 2012; Basu & Virick 2008; Davidsson & Honig 2003; Gurel et al. 2010; Laspita et al. 2012; Linan et al. 2005; Pruett et al. 2009), this study is apparently a first to find a negative relation. Previous literature focuses on students in general or on entrepreneurs in developed countries, while this study focuses on the rural poor in a developing country. And of the studies that included students from developing countries, they mention students coming from larger cities. This could be a source for the difference in result and thus invites for more research on the influence of a family history of entrepreneurs and entrepreneurship in rural districts of developing countries.

In addition to the effects we intended to find through the hypotheses, we have found in all logit regression models a significant negative effect for age. Thus younger individuals apparently have a higher probability of becoming an entrepreneur in developing countries. Out of the relations between the Big Five personality traits and the probability of becoming an entrepreneur only agreeableness had a significant positive result. This means that scoring high on agreeableness increases the probability of becoming an entrepreneur. Also, in the logit regression model of the family history of entrepreneurs household size has a significant effect as well. This effect is negative, thus apparently individuals from smaller households have a higher probability of becoming an entrepreneur in developing countries. However, Minniti (2006) claims that entrepreneurs could come from any background, thus the effects of age and household size could also be just random. She mentions as well that age could influence the choice between working for pay and becoming an entrepreneur, yet this is not part of this study as both age and household size were control variables. Thus we do not recommend any further research here.

It must be said that since this is the first research of the entrepreneurial traits model tested among the rural poor of a developing country, much more further research is specifically needed on this group. This would be a first implication for researchers and scholars. Because there is existing research on the entrepreneurial traits model among students in developing countries (Altinay et al 2012; Gurel et al. 2010; Gürol & Atsan 2006) and there is some existing research on the entrepreneurial traits model among rural entrepreneurs (Babb & Babb 1992), yet there is no existing research on the entrepreneurial traits model and the poor and on a combination of all these factors. Further research on the entrepreneurial traits model among rural entrepreneurs, further research on the entrepreneurial traits model and the poor and further research like this study on the entrepreneurial traits model among the rural poor of a developing country will give us better understanding of entrepreneurship in a different context and the current relevance of the entrepreneurial traits model.

For workers in the field and policy makers there are also some policy implications coming from this study. The results show that there are similarities between entrepreneurs in developing countries with entrepreneurs in developed countries. Although this study couldn’t identify many yet, this should encourage workers in the field of development to incorporate these findings in their quest for local entrepreneurial talent and even update this information on specifics in their regional programs. Policy makers can use this same information to make better plans to encourage entrepreneurship in developing countries, target promising individuals more specifically and even base a selection process for entrepreneurial training on the entrepreneurial traits model. New to develop policies on encouraging entrepreneurship could also include bringing successful entrepreneurs from developed countries to developing countries, as they can help the individuals with similar traits. Yet it must also be said that the rule of law in the rural areas of developing countries is rather weak, thus these policy implications are more targeted at policy makers on international aid.

This study can also have implication on international trade with local artisans and small businesses in developing countries, as this study could be a guide to understand entrepreneurship among the poor in developing countries and could help in finding the right individuals to help become an entrepreneur. Which could become very helpful because there is a tendency in developing countries to turn to entrepreneurship when there is less job security, as Nichter & Goldmark (2009) showed.

1. Limitations

This research links the fields of development economics with the field of entrepreneurship economics with a field survey. Since it is one of the first to do so, there were a lot of hurdles to take. Even before the researcher went to India, we had to cover a, apparently big, gap between our understanding and the understanding of the respondents. We chose questions from known questionnaires and surveys that are tested multiple times, yet these questions were very difficult for the respondents. This could be due to cultural differences, yet the GEM consortium uses the same questionnaire in different questionnaires all over the world. Even the Flash Eurobarometer is used in multiple countries, so beforehand it seemed that cultural differences were controlled for.

Every respondent could read and write, however understanding the questions or choosing an answer turned out to be difficult. For some questions this could be due to some words they don’t use in day to day conversations, however there was one person from our local partner there to explain every question and answers. Thus in general there should’ve been no problem for the respondents to understand the questions and give the answers they thought were the right ones.

One question that was understood wrong in at least some cases was the question on the employment status of the father. Some respondents understood this as the employment status of their husband, making this question invalid. The question was not excluded from further research because there was no evidence for this happening structurally. Yet the question remains if this didn’t happen with other questions, like mixing the parents-in-law with the biological parents.

Linked to the survey is the translation by our local partner. The translation was done by the same individual who regularly worked in the Bankey Bazar district and co-supervised the sessions. This man understood English, yet could have made mistakes since he wasn’t a professional translator. The researcher understood enough Hindi to make out that the research was explained correctly, yet his understanding of Hindi is limited. These language barriers taken together, this could leave room for possible translation errors.

Since the questions apparently were hard for the respondents, they started to talk among themselves. This is the biggest disadvantage of group sessions, because it is impossible to control what they are discussing. The researcher did not ask for silence in response to the discussions, because that could prevent respondents form understanding the questions. However, since it was impossible to control the discussions, there might have been a slight group pressure to give specific answers instead of the personal preferred answers. Also socially preferred answering could have happened, because of the group sessions. Nevertheless, this should not give the impression of an uncontrolled environment, as far as the supervisor and the local partner could hear all discussions were about understanding the questions.

In the three group sessions we had a total of sixty-one participants. Up to twenty others were present during these group sessions, but were not able to read or write to the level of the questionnaire. This limited the number of respondents and could be a source for a selection bias. Table two of the methodology paragraph shows that there was at least one respondent without any formal education as his/her years of education was zero. This proves, at least partially, that there was no selection bias based on years of education. Also there were a lot more individuals who had heard of the survey, but did not want to participate. The local men for example do not wish to put effort if the revenue is low. Since there was no revenue in participating in this survey, this led to the low number of male participants. For women there also could have been reasons why they did not want to participate, or there was a lack of interest for both genders.

Staying longer to gather more respondents would have been possible, but expensive for a researcher without funding. Since the group sessions were planned at least four days in advance and the response dropped during this set of planned sessions, it seemed highly unlikely to plan more group sessions to increase the response. The question remains if it would not have been better to go to each village and talk to some respondents per village, although this would cost a lot.

The low number of respondents harms the results because they are now less robust. Also since some observations drop out together with some omitted variables, this becomes a bigger problem. Since the effects do not change by including or excluding those missing observations, only the complete models are listed in the results paragraph. Another statistical problem is that the joint significance test of none of the models, except the restricted model of the control variables, gave a significant positive result. This means that in all but one models the combined significance of the variables is equal to zero. This result of the joint significance test combined with a lack of large correlations in the models leaves the source of the perfect collinearity problems unknown. Yet a more common solution to collinearity problems is to get a larger sample, which we could not achieve in this study.

In the end, neither the survey nor the statistical problems can cover the dependency of this research on the selection by Basix and the local women’s federation. This research left the selection to Basix and the local women’s federation, because this is more true to real-life situations for foreign companies and organizations. However we can’t say much on how well Basix is selecting. Neither does this mean that they are worse than any other NGO, yet it is important to keep in mind that the results from this research only stand on this selection process.

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1. Appendix: survey in English

**General questions**

Village name: …

Participants’ name: …

Gender: male/female

Age: … [exact, otherwise blank]

Years of education: …

Size of household: ...

**Employment of respondent and parents**

Employment status of respondent: self-employed/employed in private sector/civil servant/ not employed

Employment of father: self-employed/employed in private sector/civil servant/no occupation

Employment of mother: self-employed/employed in private sector/civil servant/no occupation

Would you prefer being employed or being self-employed: employment in private sector/employment as a civil servant/self-employment

Is your household income enough to feed all the family members: yes/to some extent/no

Is your household income enough to feed a family of four: yes/to some extent/no

How is earning the household income divided among you and your spouse: …

Are there any other sources of income for your family, except you and your spouse: yes/ to some extent/no

If so, how big is their share of the household income: …

**View on entrepreneurship of surrounding**

Does your spouse like the idea of the respondent becoming an entrepreneur? yes/to some extent/no

Do your parents like the idea of the respondent becoming an entrepreneur? yes/to some extent/no

Do other family members (relevant in the immediate surrounding) like the idea of the respondent becoming an entrepreneur? yes/to some extent/no

Does the village council like the idea of the respondent becoming an entrepreneur? yes/to some extent/no

Do the other villagers like the idea of the respondent becoming an entrepreneur? yes/to some extent/no

**Self-employment versus wage worker**

*Tolerance of ambiguity*

Regular, fixed income or irregular, variable income?

Stability of employment or employment based on demand?

Fixed working hours or working to finish all workload?

Is the decision to change employment to self-employment hard to make and irreversible or easy to make and easy to switch back?

**Personal characteristics**

*Tolerance of risk*

In general, I am willing to take risks. yes/to some extent/no

*Need for success*

Generally, when facing difficult tasks, I am certain that I will accomplish them. yes/to some extent/no

I like situations in which I compete with others. yes/to some extent/no

*Locus of control*

My life is determined by my own actions, not by others or by chance. yes/to some extent/no

If I see something I do not like, I change it. yes/to some extent/no

*Tolerance of ambiguity*

The possibility of being rejected by others for standing up for my decisions would not stop me. yes/to some extent/no

I am optimistic about my future. yes/to some extent/no

When confronted with difficult tasks I can count on luck and the help of others. yes/to some extent/no

*Innovativeness*

I am an inventive person who has ideas. yes/to some extent/no

**Have you ever started a business or are you taking steps to start one? Yes/no**

*If no, because:*

It never came to your mind to start up a business. yes/to some extent/no

You are thinking about starting up a business. yes/to some extent/no

You thought of it or you had already taken steps to start a business but gave up. yes/to some extent/no

*If yes, because:*

You are currently taking steps to start a new business. yes/to some extent/no

Once started a business, but currently you are no longer an entrepreneur since business has failed. yes/to some extent/no

Once started a business, but currently you are no longer an entrepreneur since business was sold, transferred or closed. yes/to some extent/no

**Locus of control**

*Internal is listed first, external is second – indifferent is also a valid option*

What happened to me is my own doing – sometimes I feel that I don’t have enough control over the direction my life is taking

People are lonely because they don’t try to be friendly – there’s not much use in trying too hard to please people, if they like you, they like you

There really is no such thing as luck – most people don’t realize the extent to which their lives are controlled by accidental happenings

When I make plans, I am almost certain that I can make them work – it is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyway

In my case, getting what I want has little or nothing to do with luck – many times we might just as well decide what to do by flipping a coin

**Innovation**

In the next 6 months you are likely to buy products or services that are new to the market. yes/to some extent/no

In the next 6 months you are likely to try products or services that use new technologies for the first time. yes/to some extent/no

In the next 6 months, new products and services will improve your life. yes/to some extent/no

In the next 6 months the organization that you work in is likely to buy products or services that are new to the organization. yes/to some extent/no

In the next 6 months you are likely to try products or services that use new technologies in your daily work for the first time. yes/to some extent/no

In the next 6 months, new products and services will improve your working life. yes/to some extent/no

**Risk taking**

*High scorer is listed first, low scorer is second – indifferent is also a valid option*

Enjoys gambling and taking a chance – unlikely to bet.

Willingly exposes self to situations with uncertain outcomes – cautious about unpredictable situations.

Unconcerned with danger – avoids situations of personal risk, even those with great rewards.

Takes chances – doesn’t take chances regardless whether the risks are physical, social monetary or ethical.

**Big Five personality scale**

*Extraversion +*

Am the life of the party. yes/to some extent/no

Feel comfortable around people. yes/to some extent/no

Start conversations. yes/to some extent/no

Talk to a lot of different people at parties. yes/to some extent/no

Don’t mind being the center of attention. yes/to some extent/no

*Extraversion –*

Don’t talk a lot. y yes/to some extent/no

Keep in the background. yes/to some extent/no

Have little to say. yes/to some extent/no

Don’t like to draw attention to myself. yes/to some extent/no

Am quiet around strangers. yes/to some extent/no

*Agreeableness +*

Am interested in people. yes/to some extent/no

Sympathize with others’ feelings. yes/to some extent/no

Have a soft heart. yes/to some extent/no

Take time out for others. yes/to some extent/no

Feel others’ emotions. yes/to some extent/no

Make people feel at ease. yes/to some extent/no

*Agreeableness –*

Am not interested in others. yes/to some extent/no

Insult people. yes/to some extent/no

Am not interested in other people’s problems. yes/to some extent/no

Feel little concern for others. yes/to some extent/no

*Conscientiousness +*

Am always prepared. yes/to some extent/no

Pay attention to details. yes/to some extent/no

Get chores done right away. yes/to some extent/no

Like order. yes/to some extent/no

Follow a schedule. yes/to some extent/no

Am exacting in my work. yes/to some extent/no

*Conscientiousness –*

Leave my belongings around. yes/to some extent/no

Make a mess of things. yes/to some extent/no

Often forget to put things back in their proper place. yes/to some extent/no

Shirk my duties. yes/to some extent/no

*Emotional stability +*

Am relaxed most of the time. yes/to some extent/no

Seldom feel blue. (= unhappy, depressed) yes/to some extent/no

*Emotional stability –*

Get stressed out easily. yes/to some extent/no

Worry about things. yes/to some extent/no

Am easily disturbed. yes/to some extent/no

Get upset easily. yes/to some extent/no

Change my mood a lot. yes/to some extent/no

Have frequent mood swings. yes/to some extent/no

Get irritated easily. yes/to some extent/no

Often feel blue. yes/to some extent/no

*Imagination +*

Have a rich vocabulary. yes/to some extent/no

Have a vivid imagination. yes/to some extent/no

Have excellent ideas. yes/to some extent/no

Am quick to understand things. yes/to some extent/no

Use difficult words. yes/to some extent/no

Spend time reflecting on things. yes/to some extent/no

Am full of ideas. yes/to some extent/no

*Imagination –*

Have difficulty understanding abstract ideas. yes/to some extent/no

Am not interested in abstract ideas. yes/to some extent/no

Do not have a good imagination. yes/to some extent/no

**Control questions to identify prior knowledge**

Do you have any entrepreneurial experience? yes/to some extent/no

Did you have entrepreneurial training before? yes/to some extent/no

Did your school make you aware you could become an entrepreneur? yes/to some extent/no

Do you know Basix is selecting people to become entrepreneurs? yes/to some extent/no

Have you heard of Rural Spark? yes/to some extent/no

Do you know about the project of Basix and Rural Spark – do you know why and how you will become an entrepreneur? yes/to some extent/no

Do you want to participate in this project? yes/to some extent/no

1. The final dataset in the study of Laspita et al. (2012) contained students from the following countries: Switzerland, Germany, Austria, France, Ireland, Finland, Hungary, New Zealand, Australia, Republic of South Africa, Singapore, Mexico, Greece, Portugal, and Indonesia. [↑](#footnote-ref-1)
2. Source of the questions: A constructivist analysis of the Rotter I-E scale (Tyler & Gatz 1979) [↑](#footnote-ref-2)
3. Source of the questions: Jackson Personality Inventory manual (Jackson 1976). [↑](#footnote-ref-3)
4. Source of the questions: <http://ipip.ori.org/> [↑](#footnote-ref-4)
5. Each district is divided in different blocks. As each district has a headquarter, so does each block have a headquarter. Usually the name of the block is derived from its headquarter. [↑](#footnote-ref-5)
6. Source of exchange rate: <http://www.bloomberg.com/quote/USDINR:CUR> (accessed on 12-06-2013) [↑](#footnote-ref-6)