

Does cultural diversity help or hinder entrepreneurs? Evidence from Eastern Europe and Central Asia

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Abstract

This paper studies the effect of religious and linguistic diversity in a locality on individual entrepreneurial behavior, and finds that cultural diversity and entrepreneurship follow an inverted U-shaped pattern. We make three theoretical contributions. Unlike previous research, we are able to analyze both the trial and success of entrepreneurs. Moreover, we argue that the two types of diversity matter at different stages of entrepreneurship: religious diversity is tightly linked to entrepreneurial trial, while linguistic heterogeneity affects entrepreneurial success. In addition, by identifying a non-linear relationship between diversity and entrepreneurship, we put into perspective previous research that is divided on whether cultural heterogeneity affects positively or negatively firm, regional and country performance. We use a new survey data set that covers over 30,000 households in Eastern Europe and Central Asia (the Life in Transition Survey 2010) located at the cross-roads of West and East. We also identify two variables that positively modify the impact of diversity on entrepreneurship: the prevalence of historical trade within a locality and whether the respondent is female. Our results survive a battery of validity checks, including a Heckprobit specification in which we account for selection bias arising from the two-stage process of entrepreneurship.

INTRODUCTION

The success of transition and developing economies, both in the East and elsewhere, is tightly linked to entrepreneurship (Bruton, Ahlstrom & Obloj, 2008; McMullen 2011).¹ Entrepreneurial activity is an important ingredient of growth, particularly in the early years of transition, since small business owners established businesses in industries that did not exist, or were stagnant, under socialism (Berkowitz & DeJong, 2011). Likewise, sales and employment grow faster in entrepreneurial ventures than in state or privatized firms, and new businesses are more efficient (McMillan & Woodruff, 2002). Entrepreneurial ventures may also be an effective way of mitigating income shocks by providing households with an alternative source of employment. In this way, entrepreneurship may also drive innovation that benefits the disenfranchised, also known as inclusive innovation (George, McGahan & Prabhu, 2012).

Despite the importance of understanding entrepreneurship in transition and developing countries, lack of data has prompted most studies to center exclusively on the West (Bruton et al., 2008).² To the best of our knowledge, there has been no work on entrepreneurship using a detailed survey data set from all transition countries.³ The geographic, cultural and institutional specificities of resource constrained environments mean that entrepreneurship theories that are

¹The transition region includes the following countries covered in our primary data source, the 2010 round of the Life in Transition Survey: Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Estonia, Georgia, Hungary, Kazakhstan, Kosovo, Kyrgyzstan, Latvia, Lithuania, FYR Macedonia, Moldova, Mongolia, Montenegro, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Tajikistan, Ukraine and Uzbekistan. Since 1989, these countries have been undergoing a process of transition from a planned to a market economy. We also include Turkey, due to data availability and its geographic and cultural proximity. Excluding Turkey does not change our results.

² Economics and management research has focused on individual countries (see, for example, Djankov, Miguel, Qian, Roland & Zhuravskaya, 2005 on Russia; Djankov, Qian, Roland & Zhuravskaya, 2006 on China; Djankov, Qian, Roland & Zhuravskaya, 2008 on Brazil; George, Kotha, Parikh, Alnuaimi & Bahaj, 2011 on Kenya; and Khayesi & George, 2011 on Uganda).

³ The Global Entrepreneurship Module (GEM) also collects comparable cross-country data on entrepreneurship and has been used in other research (see Estrin, Korosteleva & Mickiewicz, 2012). However, the GEM covers only half of the transition countries included in the LiTS and does not include questions in individual attitudes, values and cultural identity.

relevant in the richer countries may not be appropriate for the world's poorer countries (George et al., 2012). Similarly, adopting a 'Western' definition of entrepreneurship – as an outcome related to the growth of high technology or the availability of venture financing – is not appropriate in poor countries, where new technological developments are rare and financial markets are underdeveloped.

Data scarcity has also led to the understudy of the beginning stages of entrepreneurship – in both the West and the East. In this paper, we take a dynamic view of the entrepreneurship process. Following Carter, Gartner and Reynolds (1996), we define nascent entrepreneurs as those individuals who have taken steps towards founding a business, but who have not yet become business owners. In turn, successful entrepreneurs have completed the process of founding an enterprise. Based on the data, in this study entrepreneurial businesses only include small-scale ventures with at most 1-2 employees, in either the formal or the informal sector. Accounting for businesses in the informal sector is important, since in transition countries a large percentage of economic activity takes place in the underground economy.

Building on a social network approach and on insights from game theoretic models of group cooperation, we argue that there is an inverted U-shaped relationship between community-level cultural heterogeneity and the individual probability of business trial and success. Following Harrison and Klein (2007), we define diversity to mean variety diversity, and use all references to diversity or any of its synonyms to imply the same. More precisely, we proxy variety by the distribution of language and religious attributes of survey respondents within a locality.

At low levels of cultural heterogeneity, entrepreneurship is increasing in diversity. The variety in abilities, cultures and experiences benefits entrepreneurs, as they can draw on a large

pool of network contacts. Game theoretic models of group interactions predict that the costs of enforcing inter-group cooperation in this case are low. However, as cultural differences within a community reach a threshold, the diversity loses its strong positive effect on entrepreneurship. For entrepreneurs, the costs of sustaining collaboration outweigh the benefits when the number of groups is large. Moreover, we posit that exclusive social networks, as captured by religious diversity, will have a strong effect on entrepreneurial trial, as they encourage intra-group cooperation. In contrast, when it comes to business success, language diversity is more relevant. Not only are language networks easier for entrepreneurs to access, but they also emphasize communication, which is a primary skill for business success.

We enrich the analysis with two variables that moderate the positive relationship between diversity and entrepreneurship. First, we posit that diverse communities that were also historical trading hubs are more likely to foster entrepreneurship. Historical trade facilitated group exchange through the formation of formal and informal institutions which exploit the positive aspects of diversity and persisted until today. Second, we argue that female respondents are more likely to become entrepreneurs in more heterogeneous communities, as women have more diverse social networks, relative to men, and may be better equipped to exploit religious and language diversity.

We test our hypotheses using data from the 2010 round of the Life in Transition Survey (LiTS), a nationally representative cross-sectional household survey of 28 countries from the transition region and Turkey (involving approximately 1,000 households in each country). The unique geographical and cultural heritage of the transition region embodies the definition of “West meets East” (Chen & Miller, 2010), as our countries of analysis are located at the cross-road between Europe and Asia. In addition to a detailed entrepreneurship module that probes

respondents about *both* entrepreneurial trial and success, the survey combines a wide variety of questions on individual, household and attitudinal characteristics. The data support our theoretical predictions about the inverted U-shaped relationship between diversity and entrepreneurship, and about the differential impacts of religious and linguistic diversity on entrepreneurial trial and success. However, we find only partial support for the hypotheses involving the moderators. While a community's exposure to trade interacts with cultural heterogeneity to affect entrepreneurial success, the gender-diversity interaction affects only entrepreneurial trial. The quality of female networks may be sufficient to encourage more women to try in more diverse places, but durable diversity-friendly institutions are needed for entrepreneurs to succeed.

This paper contributes to the theoretical understanding of entrepreneurial practices in the East in at least three important ways. First, we take a dynamic view of entrepreneurship and explore its two stages: trying to set up a business, and success in founding it. While the majority of empirical studies focus only on established businesses (Davidsson & Wiklund, 2001), many individuals who embark on the process of starting a business never reach the point of actually founding it. Overlooking the entire group of nascent entrepreneurs leads not only to sample selection, but also to poor understanding of an important part of entrepreneurship – its emergence. Second, although previous work has identified cultural heterogeneity as one of the main contemporary management challenges (Barkema, Baum & Mannix, 2002), the diversity-entrepreneurship nexus in the transition region has not been studied before.⁴ We shed light on how the relationship between diversity and entrepreneurship depends not only on the *type* of diversity considered, but also on the particular *stage* of entrepreneurship. More precisely, we

⁴ See work by Florida, Mellander and Stollarick (2010) on the positive relationship between diversity in sexual orientation, and regional development and entrepreneurship in Canada. Audretsch, Dohse and Niebuhr (2010) argue that cultural diversity has a positive impact on new firm foundation in Germany.

demonstrate that religious diversity is closely aligned with business trial, while linguistic diversity affects entrepreneurial success. In this way, we are able to examine in detail the role of environmental factors in entrepreneurship, which are crucial for local small-scale firms in resource constrained environments (Banerjee & Duflo, 2011; Bruton et al., 2008, Khayesi & George, 2011).

Finally, by specifying a non-linear relationship between diversity and entrepreneurship which depends on the *level* of diversity, the theory reconciles the contradictory findings in previous research on diversity and performance. On the one hand, earlier work found that diversity positively affects firm outcomes by encouraging innovation and productivity (Erhardt, Werbel & Shrader, 2003; Jehn, Northcraft & Neale, 1999; and Lau & Murnighan, 2005.). On the other hand, a different strand of the literature demonstrates that cultural heterogeneity affects negatively firm performance, as well as economic and political outcomes at the regional and country level (Adams & Ferreira, 2009; Alesina, Baqir, & Easterly, 1999; Montalvo & Reynal-Querol, 2005).

While we are aware that researchers cannot claim strong causal attributions in cross-sectional data due to endogeneity and omitted variable bias (Bono & McNamara, 2011), the correlations that we find persist across multiple specifications, and point to a robust association between diversity and entrepreneurship. Reverse causality is minimized, since diversity at the community level is a slow changing structural variable, while individual entrepreneurship decisions shift more often. By adopting several econometric strategies, we also minimize the effect of confounding variables. First, in all specifications we account for factors that change slowly (as institutional quality, geography or culture) by including country fixed effects. Next, we also control for a rich set of individual and local variables, such as demographic

characteristics and local corruption. Third, unlike other studies, we explicitly account for the two-step nature of the entrepreneurial process (trial and success), and the possible sample selection bias associated with this structure (using the Heckprobit specification). Therefore, despite the issues inherent in a cross-sectional data set, we are convinced that the link between diversity and entrepreneurial trial and success that we uncover is not spurious.

This paper is structured as follows. The next section outlines the theoretical argument. Section 3 elaborates on the data and econometric method, while Section 4 discusses the results. Section 5 presents the various robustness checks we conducted, and Section 6 discusses and concludes.

THEORY DEVELOPMENT

Entrepreneurship as a Process

In emphasizing the multi-step nature of the entrepreneurial process, we build on recent theoretical advances in the literature. For example, Shane and Venkataraman (2000) argue that entrepreneurship consists of the discovery of a business opportunity, and its exploitation. Similarly, Eckhardt and Ciuchta (2008) construct a model of entrepreneurship as a multi-stage selection process. Entrepreneurs draw from an initial pool of opportunities with varying characteristics, following which further selection, either internal (by the entrepreneur) or external (by other market participants), takes place.

Despite these theoretical developments, empirical studies have been slow to follow, mainly due to lack of adequate data (Reynolds, 2007). Although the Panel Study of Entrepreneurial Dynamics (for the US) and the Global Entrepreneurship Monitor (for 85 countries) have started filling this gap, unfortunately they do not cover all countries in the transition region. In addition, while most of the work on entrepreneurship has focused predominantly on established

businesses, some recent research has started analyzing the initial trial of entrepreneurs to pursue opportunities (for example Corbett, 2007; Davidsson & Honig, 2003). However, only looking at entrepreneurial trial is problematic as well. Within the process of venture emergence, nascent entrepreneurs continuously evaluate their opportunity and learn about its success chances, and in many cases decide to terminate the process (Dimov 2010). To this end, we focus on the two stages of entrepreneurship – trial and success – in both the theoretical and empirical development of our argument.

Diversity and Entrepreneurship

We build our theoretical argument by combining a social network approach with insights from game theoretic models of group interactions. The social network approach emphasizes the value of exchanges between entrepreneurs and other actors, such as friends, business partners or family. These interactions are a valuable source of information, credit and labor for business starters, regardless of whether their businesses are nascent or already established (see e.g, Greve & Salaff, 2003).⁵ Research on network creation has shown that individuals form relationships more easily with those that have similar demographic affiliations (caste, race or language), and that this is particularly true in uncertain environments (Ibarra, 1993; Vissa, 2011). Networks based on cultural similarity will be a source of knowledge sharing, which may be particularly important in non-Western countries, where official institutions and markets are weak (Fafchamps, 2004).

Moreover, modeling inter-group interactions in political economy distinguishes between *intra-group* and *inter-group* exchanges. *Intra-network* interactions are efficient and lower transaction costs because groups can sanction members who may want to cheat (for examples of

⁵ For a discussion about the potential negative effects of social capital on resource accumulation, see Khayesi and George (2011).

such models, see Fearon & Laitin, 1996 and Kandori, 1992). When the number of *inter-group* interactions is small, reputation may be sufficient to sustain a socially desirable outcome in which all parties are honest. However, as the number and complexity of out-of-network exchanges rises, individuals have more incentives to shirk, and specific institutional mechanisms, such as courts, are needed to sustain inter-group cooperation. More importantly, as the number of groups rises, the costs of enforcing cooperation increase as well.

We apply these insights to an analysis of the benefits *and* costs of religious and linguistic groups in entrepreneurship, and argue that the relationship between diversity and entrepreneurship will follow an inverted U-shaped pattern. While diversity is useful for the birth and success of new business ideas because it provides entrepreneurs with a wide range of networks which they can exploit, inter-group interactions also involve enforcement costs. When the level of cultural heterogeneity is low to medium, its benefits will outweigh the costs, since enforcing inter-group collaboration is easy. However, as the number of religious and linguistic groups increases, the costs of establishing complex institutions guaranteeing cooperation outweigh the advantages involving social networks. Our first hypothesis is as follows.

Hypothesis 1: Diversity and entrepreneurial trial and success follow an inverted U-shaped relationship.

Religion, Language and Entrepreneurship

We also examine the differential effects of religious versus linguistic diversity on entrepreneurship. We argue that religious diversity, through its emphasis on highly exclusive networks, is more relevant for entrepreneurial trial. Conversely, since linguistic diversity builds on networks that are broader and emphasize communication skills, this type of heterogeneity is

more strongly related to business success. Consistent with the discussion in the previous subsection, we expect an inverted U-shaped relationship between religious diversity and entrepreneurial trial, and between language diversity and entrepreneurial success.

Religion's function, according to evolutionary theorists, is to offer selective advantage at the group level by promoting cooperative behavior within the group (Norenzayan & Shariff, 2008; Wilson, 2002). Adhering to a religion often requires members to alter their behavior, by following a particular diet, dress code or ritual. Such a "participation price" screens out individuals that may be only marginally committed to the group and creates tight religious communities (Iannacone, 1992). Additionally, religious priming promotes an individual's pro-social behavior (Shariff & Norenzayan, 2007). However, it is less effective at enforcing group sanctions (McKay, Efferson, Whitehouse & Fehr, 2011). Exclusive religious networks can thus provide potential entrepreneurs with valuable support that can encourage discovery of business opportunities. Yet the effects of religion could fail to materialize for entrepreneurial success due to a weaker good-behavior enforcement mechanism and high time and commitment demands placed on members.

Linguistic identity is much broader than religious identity. While a person can be multilingual, one can rarely be a member of multiple religious groups (Reynal-Querol, 2002). Linguistic networks are thus weaker and easier for entrepreneurs to tap into. Weak ties are important, since they are less likely to carry redundant information and can be used to access dissimilar ideas and influences (Ibarra, 1993). In addition, linguistic networks emphasize communication, which is essential for entrepreneurial success, as the interaction between individuals who do not speak the same language is very limited. Sharing a language with a new contact makes it also easier to establish similar norms and values (Vissa, 2011). Moreover,

linguistic networks can promote sanctions by effectively spreading information about cheaters, and may enforce cooperative behavior through reputational effects. Thus, linguistic networks are more closely aligned with business success, but due to their weaker ties, less important for entrepreneurial trial. In sum, our second set of hypotheses is as follows:

Hypothesis 2a: Religious diversity affects entrepreneurial trial. This effect works through the exclusivity of religious networks.

Hypothesis 2b: Linguistic diversity affects entrepreneurial success. This effect works through the broad nature of linguistic networks.

Variables Moderating the Relationship between Diversity and Entrepreneurship

We specify two variables that moderate the positive relationship between cultural heterogeneity and entrepreneurship: historical trade and whether the respondent is female.⁶ We choose to explore the interaction between diversity and the two moderators for the positive part of the diversity-entrepreneurship nexus only, because we believe that this is the most interesting part of the relationship. We also want to keep a simpler specification, since interpreting the coefficients on interaction variables that also involve quadratic terms is difficult in a binary response model (Ai & Norton, 2003).

Trade and diversity. We argue that the positive link between diversity and entrepreneurship will be even stronger in areas that were important trading hubs throughout history. Because trade involves continuous exchanges among diverse groups, it teaches heterogeneous societies to work together and to co-exist peacefully. Consistent with the game theoretic discussion above, communities in which trade is prevalent may also develop formal and informal institutions to sustain inter-group tolerance. For example, Jha (2012) shows that medieval Hindu-Muslim trade

⁶ Previous research has identified additional factors moderating the effect of diversity on performance, such as interpersonal congruence (Polzer, Milton & Swann, 2002), and entrepreneurial orientation and business strategy (Richard, Barnett, Dwyer & Chadwick, 2004; Richard, 2000).

networks in India were supported by a system of cooperation arrangements ranging from merchant guilds to inter-religious organizations (see also Greif, 2006). Similarly, countries that are more open to trade are also more likely to have proportional systems, which represent well minority views (Rogowski, 1987). These attitudes and institutions persisted until today and account for the positive effect of the diversity-trade interaction on entrepreneurship. Therefore, our third hypothesis is:

Hypothesis 3: Individuals will be more likely to try and succeed in setting up a business in areas that are characterized jointly by diversity and participation in historical trade.

Gender and diversity. Women may be better equipped to exploit diverse religious and language networks both when trying to start a business and while running the enterprise. Research suggests that the social networks of females tend to be more diverse than those of men, since women need to rely on multiple contacts in order to advance professionally or socially (Ibarra, 1993). In addition, the heterogeneity of female networks implies that women maintain weaker ties, which are more likely to channel novel ideas and information (Miller and Triana, 2009). Likewise, it may be easier for women to reap the benefits of diversity since they tend to be more concerned about the consequences of their behavior on others. For example, in group-lending arrangements, women are more sensitive to the threat of social sanctions, and are therefore less prone to renegeing on their loans (Armendariz & Morduch, 2005: 218-219). Similarly, Chattopadhyay and Duflo (2004) find that female politicians in Indian local councils are more likely to address a public complaint, relative to male leaders. Our fourth hypothesis is:

Hypothesis 4: Women are more likely to try and succeed in setting up a business in more diverse areas.

The two moderators may have independent effects on entrepreneurial trial and success. We elaborate only briefly on these effects below because we wish to focus on how trade and gender condition the positive relationship between diversity and entrepreneurship. We are uncertain about the overall impact of historical trade on entrepreneurial trial, but expect a positive link between trade and business success. Localities that were also historical trading hubs are likely more developed economically. This may discourage entrepreneurial trial, since individuals have alternative employment opportunities. Conversely, exposure to historical trade may encourage nascent entrepreneurship in sectors requiring a lot of human capital, such as information technology. However, historical trade likely led to the emergence of institutions and attitudes that promote cooperation among individuals (both across diverse groups and in general), and this will positively influence business success. Women might be less willing to try entrepreneurial activities, although the effect on success is less clear-cut. They may have different preferences for paid work - due to, for instance, the demands of child care; or they may anticipate discrimination when it comes to access to finance, such as taking out a business loan.

DATA AND METHOD

Data Description

Our main data source is the Life in Transition Survey (LiTS) conducted by the European Bank for Reconstruction and Development and the World Bank in 2010. The survey covers 28 post-transition countries and Turkey, and is nationally representative. It includes between 1,000 and 1,500 observations per country. Respondents to the survey were drawn randomly, using a two-stage sampling method, with electoral districts, polling station territories, census enumeration districts or geo-administrative divisions as Primary Sampling Units (PSUs), and

households as secondary sampling units.⁷ Each country had a minimum of 50 PSUs. We make extensive use of the entrepreneurship module, which probes respondents on whether they tried to start a business; when the last time they did so was; whether they were successful; whether they had borrowed any money to start the business; and what the greatest obstacles for the enterprise were in case of failure.⁸ The rest of the survey provides information on various factors ranging from respondents' wealth and education levels to their perceptions of corruption and trust in others and in their country's institutions.⁹ We supplement the survey data with external data on PSU size and geographic characteristics. Appendix A lists the definitions and sources for all variables used in the regressions.

Econometric Method and Dependent Variables

We estimate two separate probit regressions for each stage of entrepreneurship. In each regression we include country fixed effects to eliminate the effect of slowly changing country-level variables that could confound the results. Since the responses of individuals within a country will likely be correlated, we also cluster the errors at the country level. All regressions also include sample weights which ensure that the data are representative at the country level.

The two binary dependent variables used in this study are (i) (Trial) - whether the respondent ever tried to set up a business; and (ii) (Success) - whether the respondent was successful in setting up a business, conditional on outcome (i). The first variable captures entrepreneurial trial, and the second variable the success of materializing this trial.¹⁰ In the

⁷ PSUs were selected randomly, with probability proportional to size. Households were selected based on either pre-selected samples or a random walk procedure. For the questions used in this analysis, respondents were randomly selected within the household.

⁸ An earlier round of the LiTS was administered in 2006, but it did not contain any questions on entrepreneurship.

⁹ See <http://www.ebrd.com/pages/research/economics/data/lits.shtml> for more details on the survey and the questionnaire.

¹⁰ While the survey records information on the last time the respondent tried to start a business, unfortunately it does not ask for how long the business was in existence. In addition, the data does not distinguish between serial entrepreneurs and those that only tried to start a single business.

survey, “success” in setting up a business refers to those respondents who have already successfully founded an enterprise. While subjective, such a definition enables respondents to gauge business success against their own standard, which could be only business founding or achieving a certain amount of turnover as well. Moreover, such an approach captures business success in the informal sector, where formal records of business operations are usually scarce. We do not distinguish between formal and informal firms, partly because we are unable to do so in the data, but also because excluding the latter type of enterprises would lead to ignoring a large percentage of entrepreneurial activity in the former communist bloc. The two dependent variables thus allow us to focus on *nascent* and *successful* entrepreneurship.

Explanatory Variables

Diversity. The main explanatory variable is the level of diversity in an individual’s community, which is proxied by the PSU in which each respondent lives.¹¹ Following Harrison and Klein (2007), we define diversity to mean variety diversity, which captures the distribution of qualitative differences of within-unit members. In particular, we use data on each respondent’s self-identified religion and mother tongue to calculate indices of religious and linguistic fractionalization and polarization.¹² Fractionalization or Blau’s index (Blau, 1977; Easterly & Levine, 1997) measures the probability that two randomly selected individuals in a given community belong to different (religious or linguistic) groups. Polarization additionally puts more weight on large groups, which may have more resources and incentives to engage in conflict with each other (Alesina & La Ferrara 2005; Montalvo & Reynal-Querol 2005; Reynal-

¹¹ The level of data aggregation in the LiTS is as follows (ordered from smallest to largest): household – primary sampling unit (PSU) – region – country. We prefer not to calculate diversity at the regional level, which is too broad to capture the community-level dynamics that are likely to matter for small-scale entrepreneurship.

¹² While the survey also asks about each individual’s ethnicity, no pre-coded list of categories was used for this question. Unfortunately, an examination of the ethnicity data showed that the responses are not reliable, either because individuals misunderstood the question or because ethnicity is a more sensitive category than language or religion. Results with ethnic diversity are similar to those with religious and linguistic diversity, albeit much less precisely estimated (likely due to measurement error). These results are available upon request.

Querol, 2002). It measures how far the distribution of religious or linguistic groups is from the bipolar distribution (0.5, 0, 0, ..., 0.5). The formulas for the two indexes are:

$$\text{Fractionalization} = 1 - \sum_{i=1}^N \pi_i^2 \quad (1), \text{ and}$$

$$\text{Polarization} = 1 - \sum_{i=1}^N \left[\frac{0.5 - \pi_i}{0.5} \right]^2 \pi_i \quad (2),$$

where π_i is the proportion of respondents within a community that belong to a religious or linguistic group i , and N is the number of groups in the community.

Fractionalization and polarization are positively correlated at low levels of diversity, not correlated at medium levels of diversity and negatively correlated at high levels of diversity. As an example clarifying the difference between the two measures, consider a PSU consisting of three religious groups, with relative sizes of 0.5, 0.49 and 0.01. Since the probability that two individuals belong to the same group is always high, fractionalization is low. However, polarization is high, as the size of the two biggest groups is very close to 0.5. We do not take a stance on the debate in the literature as to which of these measures is better suited for measuring cultural heterogeneity, but show in the empirical analysis that using either index produces similar results.

Historical Trade. We use two variables to measure the prevalence of historical trade within a community. First, from an analysis of secondary historical sources and maps, we collect information on the number of cities in a region that were on an international trade route, and match this information to the respective PSU.¹³ Since the number of trade cities may be measured with error, we also experiment with an alternative trade measure. We create a dummy variable that is 1 if the PSU is located in a region with at least one city that was on a historical

¹³ Our sample consists of the following trade routes: the Middle, Southern and Silk road routes in the 7th and 8th centuries (from Kashgal to the Aral Sea), Volga, Dnieper and Oka trade routes in the 11th century, Russian trade cities in the 12th and 13th century, and the late 17th century Bukharan trade route. These routes lasted from 152 years (the Bukharan trade route) to approximately 1800 years (the Silk Road route).

trade route and 0 otherwise. We focus on historical trading patterns rather than contemporary trade because the former factor is more likely to capture slow-changing attitudes and institutions that encourage tolerance among different linguistic and religious groups. In addition, long-term factors, such as the extensiveness of historical trade, are less likely to be determined by contemporary individual and sub-national variables in the model (for instance, local perceptions of institutional quality or personal income).

Gender. We measure gender with a dummy variable which is 1 if the respondent is male.

Control Variables

Since our analysis relies on a cross-sectional data set, it is essential to incorporate a wide range of control variables in the model in order to avoid omitted variable bias. Guided by previous research, we include variables measured at both the individual and at the PSU level (Dobrev & Barnett, 2005; Giannetti & Simonov, 2009). In addition, since diversity is calculated at the PSU level, it is essential to account for other local variables in order to avoid spurious results.

Individual variables – Demographics. In the regressions, we include a respondent's gender, age, risk-taking attitude and urban residence (Kunt, Klapper & Panos, 2008). We also account for a respondent's educational attainment and health, since these two variables are positively associated with entrepreneurship (Ardagna and Lusardi, 2008; George et al., 2011). Unlike other studies, we also control for whether a respondent voted in any of the previous elections (local, parliamentary, or presidential). We expect the likelihood of voting to capture unobserved individual characteristics relevant for entrepreneurship, such as satisfaction with the economy or party affiliation, and to have a positive effect on trial and success (see Hobolt, Spoon & Tilley, 2008).

Individual Variables – Access to finance, income and social networks. Research argues that respondents who have more access to capital, income and connections will be more likely to both try to start a business and succeed in running it, so we control for all three factors (Khayesi & George, 2011, Kotha & George, 2011). The survey provides information on whether the entrepreneur tried to borrow and was successful or unsuccessful in doing so when trying to found the business (with the omitted category those respondents that did not try to borrow). Instead of controlling directly for individual income and exposure to social networks, we capture both of these variables by including each respondent’s father’s education level and whether the respondent or any member of her family were members of the communist party (see Djankov et al., 2005, 2006 and 2008). We do this for two reasons. Not only are households reluctant to respond to direct questions about income or wealth, but there may also be reverse causality from past entrepreneurial experiences (which are part of our dependent variables) to current income levels.

PSU Variables – Wealth, trust, institutional quality. We calculate these variables by aggregating individual responses to various questions in LiTS at the PSU level. For community wealth, we aggregate each respondent’s perceived place on a 10-step income ladder.¹⁴ To measure the quality of informal institutions, we use a respondent’s score of trust in other people. To measure the degree of local corruption, we use information on the number of respondents who believe that people like them have to make unofficial payments or gifts when requesting official documents or when going to courts for a civil matter. Previous work has explored extensively the link between these three variables and entrepreneurship (see Aidis, Estrin & Mickiewicz, 2008; George et al., 2012).

¹⁴We do not use information on household expenditures, as such data is more prone to measurement error. We obtain very similar results if instead of the relative wealth measure we use an asset index that sums indicator variables of whether respondents possess a list of durable goods, such as a car, computer, or a credit card.

PSU Variables – Geography. Geographic characteristics which enable easy transportation access, such as low altitude or being located close to a river or sea, may encourage both the formation of diverse societies and entrepreneurship (Michalopoulos & Papaioannou, 2012). We therefore include the altitude, latitude and longitude of a PSU, as well as the distance to the border, distance to the capital and dummy if the PSU is located on a waterway. In addition, we capture the importance of natural resources by also including the distance from the PSU to the nearest mine. We also control for the adult population of each PSU, since larger PSUs may be more diverse (Harrison & Klein, 2007). These variables are collected from additional sources, as described in Appendix A.

RESULTS

Table 1 displays the descriptive statistics and pairwise correlations. On average, 14% of respondents in the transition region have at some point tried to set up a business, and 65% of those who tried succeeded. At the same time, respondents live in fairly fractionalized and polarized societies. Religious and linguistic diversity are not highly correlated with each other, indicating that these variables measure different cleavages. Geographical characteristics, such as PSU population and latitude, are positively correlated with the diversity measures. Contrary to previous studies which find that cultural heterogeneity negatively affects economic outcomes, the correlation between PSU wealth and the diversity measures is very small. While the two trade variables are highly correlated with each other (with a coefficient close to 0.5), they are uncorrelated with the diversity measures, but, unsurprisingly, correlated with some of the geographic proxies, such as the distance of the PSU to the nearest border. Based on the correlation coefficients, we conclude that multicollinearity is not a problem in the model.

[insert Table 1 about here]

Main Effects of Diversity on Entrepreneurship

In Table 2, we present regressions investigating the effect of diversity on entrepreneurial trial. For each model, we present the raw probit coefficients along with the average partial effects calculated using the margins command in Stata.¹⁵

Hypotheses 1 and 2a suggest that religious diversity and entrepreneurial trial follow an inverted U-shaped relationship. Models 1 and 2 in Table 2 confirm this hypothesis. The results using religious polarization are stronger than those using religious fractionalization, which have the same sign but are imprecisely estimated. Since the interpretation of the economic effects of quadratic variables is not straightforward in probit models, we follow the recommendations of Williams (2012) and present graphically the effect of religious diversity on the predicted probability of entrepreneurial trial in Figure 1 using the marginsplot command in Stata.¹⁶ Table 2 and Figure 1 show that a 0.1 incremental increase in religious polarization *increases on average* the likelihood that an individual will try to start a business by around 0.4 percentage points, and that religious polarization has a small *negative* effect on entrepreneurial trial after it reaches a value of 0.6. The effect of the same increase of religious fractionalization is a rise in the average predicted trial probability by around 0.6 percentage points, with religious fractionalization decreasing the individual probability of trial after it reaches a value of 0.5. However, the confidence intervals in Figure 1 show that the negative part of the relationship is not precisely estimated, possibly because we have too few PSUs with very high values of religious diversity.

¹⁵ The average partial effects (APEs) are generated by calculating marginal effects for each value of the independent variable, after which all the computed effects are averaged. Wooldridge (2010) recommends using APEs instead of partial effects at the mean, as their magnitudes can be directly compared across models.

¹⁶ Unfortunately, the `inteff` command by Ai and Norton (2003) does not support models with quadratic variables, or models with interaction terms whose components also involve quadratic terms. We therefore use the `marginsplot` command to graphically present the effects of all interaction terms in the model.

In contrast, Models 3 and 4 in Table 2 show that linguistic diversity has no effect on entrepreneurial trial. We therefore conclude that Hypothesis 2a is supported.

[insert Table 2 and Figure 1 about here]

Next, Models 1-4 in Table 3 test the validity of Hypothesis 2b, which argues that linguistic diversity has an inverted U-shaped effect on business success. Consistent with our theoretical argument, Models 1 and 2 demonstrate that religious diversity has no impact on entrepreneurial success. In contrast, models 3 and 4 show that linguistic polarization and fractionalization are strongly related to business success. Figure 2 also displays the results graphically. The average positive effect of a 0.1 incremental rise in linguistic diversity ranges from 0.8 to 1.5 percentage points. Interestingly, the effect of linguistic diversity on success switches from positive to negative much more quickly at values of 0.4 for polarization and 0.2 for fractionalization, as compared to the religious diversity effect on trial we examined in Figure 1. This result is consistent with our argument that language networks are broader than religious networks and that the costs of group cooperation will be higher in more heterogeneous groups. Again, the confidence intervals in Figure 2 show that the negative effect of religious diversity on entrepreneurial success is less precisely estimated than the positive one.

[insert Table 3 and Figure 2 about here]

The control variables show several interesting patterns. Not all of the control variables matter for both entrepreneurial trial and success, pointing to the importance of different selection criteria at the two stages of entrepreneurship as emphasized in our theory section. While on average women are approximately 6 percentage points less likely to try to become entrepreneurs, they are no less successful than men once they try. Age has an inverted U-shaped relationship with entrepreneurial trial, but no relationship with success. More risk loving individuals are about

2 percentage points more likely to both try to start a business and to succeed. More education is positively associated with both entrepreneurial trial and success, and being healthy is closely related to enterprise success, but not to business trial. Individuals that are wealthier and better connected (as proxied by the respondent's father's education and family membership in the communist party) are more likely to try to start a business, but no more likely to succeed. However, as expected, the businesses of respondents who were able to borrow are more likely to succeed.

When it comes to the effect of local-level controls, individuals in PSUs that are wealthier and with better informal institutions are less likely to try to start a business. It could be that in these locations respondents have other more profitable sources of employment. Neither of these two variables is significant in the success equation, and the quality of local institutions – captured through the extent of corruption at the PSU level – is irrelevant for both potential and actual entrepreneurs. None of the included PSU variables affect entrepreneurial success, possibly because they are overshadowed by the strongest determinant of successful business founding – access to finance.

Interaction Effects of Gender and Trade on Entrepreneurship

The next set of tables report the results of probit analyses examining the interaction effects of historical trade exposure and the respondent's gender on entrepreneurial trial (Table 4) and success (Table 5). Hypotheses 3 and 4 suggest that these two moderators will interact with diversity to positively affect entrepreneurship. The coefficients on the controls remain largely the same, and to conserve space we omit them from the tables. Since it is not possible to compute marginal effects for interaction terms, we only present the raw probit coefficients in the tables and instead graph the interaction effects. Still, the significance of the raw coefficients on the

interaction terms indicates that these variables improve the goodness of fit of the econometric model (Williams, 2012).

The results show that respondents residing in diverse communities that were also historical trading hubs were more likely to be successful entrepreneurs (Table 5). While the diversity interaction with the binary trade variable is important when diversity is proxied by religious polarization and fractionalization (Models 1 and 2 in Table 5; in model 2 the z-statistic has a value of 1.56 and is marginally significant), the interaction with the number of trade cities matters in the regressions exploring the effect of linguistic heterogeneity (Models 3 and 4). This result is not surprising, since both trade variables are likely measured with error, and we unfortunately cannot determine *a priori* which one of them is a better trade proxy. Figure 3 displays the results graphically using the marginsplot Stata command and shows that the diversity-trade interaction is significantly different from 0 across a wide range of diversity values when all other variables are held constant. We therefore conclude that Hypothesis 3 is partially supported.

[insert Tables 4 and 5 and Figure 3 about here]

Hypothesis 4 suggests that gender positively moderates the relationship between diversity and entrepreneurial trial and success. Comparing Models 1-4 in Table 4 and Models 1-4 in Table 5, we find that the gender-diversity interaction is only significant for the case of entrepreneurial trial, and we therefore conclude that this hypothesis is only partially supported. Figure 4 confirms that the effect of gender as a moderator on trial is significant for all values of the diversity variables.

[insert Figure 4 about here]

ROBUSTNESS CHECKS

Selection Bias

Since entrepreneurial success is conditional on trial, an independent estimation of the success equation could suffer from selection bias. In order to account for this we run a Heckprobit specification.¹⁷ Two individual-level variables function as exclusion restrictions, which we argue affect entrepreneurial trial, but not success: (1) a dummy for whether the respondent's house was received as a gift or inherited, and (2) a dummy for whether the respondent believes that success in life depends on merit. Both of these variables capture a respondent's optimism and preference for entrepreneurship. Consistent with our argument, previous work finds that optimism and having an "entrepreneurial spirit" are positively associated with entrepreneurial trial (Liechti, Loderer & Peyer, 2012), without having a strong or any effect on business success (Gompers, Kovner, Lerner & Scharfstein, 2010; Liechti et al., 2012).¹⁸

The results from the Heckprobit estimates of entrepreneurial success are presented in Tables A1-A2 in Appendix A. The selection coefficient (or the inverse Mill's ratio) is marginally significant, indicating that there may be some selection bias in the simple probit estimations. Nevertheless, the results are largely consistent with those from Tables 2-5, although some parameters are less precisely estimated.

Endogeneity of Diversity

Although diversity changes more slowly than entrepreneurship, it is possible that our results capture reverse causality to some extent. As the number of entrepreneurs in an area grows, exchange linkages become more complex, and cultural heterogeneity is more easily tolerated, which in turn increases migration and diversity. Since such a mechanism works over the long-

¹⁷ We use Stata's heckprob command.

¹⁸ The exclusion restrictions are not significant predictors of entrepreneurial success in a separate probit regression (Results available upon request).

term, we experimented with limiting the sample only to respondents that tried to start a business recently (after 2005), and the results, available in Tables A3-A6 in Appendix A, are unchanged. In table A7, we also show that there is no evidence that nascent and successful entrepreneurs chose to move to more diverse areas, relative to non-entrepreneurs. Since the interaction coefficients of entrepreneurial trial and success and the two diversity measures are significant, we conclude that our results are not driven by the differential sorting of entrepreneurs.

Additional Robustness Checks

Our results survive when we aggregate all dependent and independent variables at the PSU level (Tables A8-A11), and when we cluster the standard errors by PSU to account for possible correlation between the individual and PSU-level variables (Tables A12-A15), but some of the interaction variables are less precisely estimated.¹⁹ The results are also robust to sequentially dropping countries from the regressions as well as to using a logit specification (results available upon request).

DISCUSSION AND CONCLUSION

In this paper, we investigate whether diversity helps or hinders nascent and successful entrepreneurs. Building on a social network approach and insights from game theoretic models of group interaction, we posit that diversity and entrepreneurship follow an inverted U-shaped pattern. We also argue that religious diversity is more relevant for entrepreneurial trial, while linguistic diversity is closely aligned with entrepreneurial success. We also explore the role of two variables that moderate the positive relationship between diversity and entrepreneurship: the prevalence of historical trade and the respondent's gender. We argue that entrepreneurship is

¹⁹ We choose the clustering approach instead of implementing a multi-level model because clustering is a simpler way to resolve the issue of inter-level correlation when the dependent variable is binary.

positively affected by a locality's exposure to historic international trade, since commercial exchange encouraged the formation of persistent diversity-friendly institutions. In addition, we posit that women are better positioned to exploit the positive aspects of cultural heterogeneity, which is consistent with previous research that argues that the social networks of females are more diverse than those of men.

We test our hypotheses on a new survey data set from the transition region (the Life in Transition Survey) and find strong support for our diversity-entrepreneurship hypothesis, but only partial support for the hypotheses about the moderating effect of trade and gender on entrepreneurship. Although the extent and quality of female networks are important for encouraging more women to try starting a business in more diverse places, our findings indicate that such networks are not sufficient for entrepreneurial success. In the latter case, diversity may be conditioned by a wider range of individual variables, among which could be ability or experience with serial entrepreneurship. Unfortunately, we do not have measures of such variables in the model, and leave such exploration for future research. In contrast, exposure to historical trade interacts positively with diversity when it comes to business success. Long-term commerce encouraged the formation of durable diversity-friendly institutions which are more important than gender-specific networks in explaining business success in diverse societies.

Our paper makes at least three theoretical contributions toward the study of entrepreneurship. Unlike previous studies, we explore the dynamics of the entrepreneurial process, and focus on both entrepreneurial trial and success. Moreover, we build a theory that specifies how different types of cultural heterogeneity affect the two stages of entrepreneurship. While the exclusivity of religious networks is beneficial for nascent entrepreneurs, linguistic networks are easily accessible and focused on communication, which are essential for business

success. Most importantly, by demonstrating that diversity and entrepreneurship follow an inverted U-shaped pattern, we warn that ignoring non-linearities in the relationship may be responsible for the inconsistent estimates of the effect of cultural heterogeneity on performance in the previous literature.

In addition, our findings are highly relevant for managers, students of organization and policy makers. As a result of globalization and the financial crisis, more and more companies are choosing to move part or all of their production and operating facilities from the West to the East. However, there are large differences in the quality of the business environment both *across* and *within* transition countries, and cultural heterogeneity is one such component that has proven to be challenging for managers (Barkema et al., 2002). Entrepreneurial regions are usually highly attractive for companies, as such communities are more dynamic. Our results suggest that managers who wish to locate their enterprises in more entrepreneurial areas should consider localities with medium levels of diversity. Moreover, if our findings about the impact of diversity on entrepreneurship translate to *intrapreneurship* as well, managers may also want to foster an intermediate level of cultural heterogeneity among their personnel.

Although scholars have identified a link between entrepreneurship and growth, they have been less successful at pinpointing specific policies that encourage entrepreneurial activity, particularly in resource constrained environments such as Eastern Europe and Central Asia. On the one hand, we point out that there are slow-changing variables such as diversity and historical trade patterns that may be less susceptible to policy interventions but that should still be taken into account when designing entrepreneurial policies and choosing which regions to support. On the other hand, our analysis also uncovers relationships that could be helpful in designing effective policy levers, such as the interactive effect of female gender and diversity on

entrepreneurial trial. Although we find that on average women are less likely to try to start a business, they are more inclined to attempt entrepreneurship in more culturally heterogeneous areas. Governments could reap high returns from encouraging potential female entrepreneurs that also reside in diverse communities.

In conclusion, our work makes theoretical and empirical contributions to the study of entrepreneurial dynamics. We develop a theory about why and how cultural diversity matters for small-scale entrepreneurs, and how exposure to historical trade as well as the gender of business starters moderates this relationship. We exploit a new household level data set from the transition region, which is uniquely located at the cross-roads of West and East.

We invite future research to examine the diversity-entrepreneurship link in the context of larger firms, and to compare those effects to the ones in the small-scale business sample with which we worked in this project. In addition, researchers could also investigate if and how diversity affects entrepreneurship in the West. Since increasing globalization will make cultural heterogeneity even more salient, it is essential for management scholarship to understand better the effect of diversity on the development of organizations in multiple settings.

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TABLES AND FIGURES

TABLE 1 – Descriptive Statistics and Correlations^a

Variable	Mean	Standard deviation	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Trial	0.14	0.35	1												
2. Success	0.65	0.48		1											
3. Religious Polarization	0.31	0.33	0.06*	0.05*	1										
4. Religious Fractionalization	0.18	0.21	0.06*	0.05*	0.97*	1									
5. Linguistic Polarization	0.24	0.33	0.01	-0.1*	0.32*	0.35*	1								
6. Linguistic Fractionalization	0.13	0.19	0.01	0.01	0.32*	0.35*	0.98*	1							
7. Trade Dummy	0.21	0.41	0	-0.1*	-0.07*	-0.08*	0.09*	0.08*	1						
8. Trade Cities	0.79	3.19	-0.01*	-0.06*	-0.01*	-0.02*	0.01	0	0.49*	1					
9. Male	0.40	0.49	0.11*	0.02	-0.01	-0.01	-0.03*	-0.04*	-0.03*	-0.03*	1				
10. Age	25.70	16.62	-0.05*	0.07*	0.04*	0.04*	0.01	0.01*	-0.09*	-0.01	-0.05*	1			
11. Age squared	936.49	1,010.33	-0.08*	0.06*	0.04*	0.04*	0.01*	0.02*	-0.08*	0	-0.04*	0.96*	1		
12. Risk Score	4.79	2.62	0.18*	0.1*	-0.03*	-0.02*	-0.01*	-0.02*	-0.05*	-0.03*	0.14*	-0.27*	-0.26*	1	
13. Urban	0.60	0.49	0.02*	0.02	0.15*	0.15*	0.12*	0.13*	0.06*	0.07*	-0.03*	-0.02*	-0.02*	0.06*	1
14. Secondary Education	0.67	0.47	0	-0.03*	-0.03*	-0.03*	-0.01	0	0.01*	0	0.05*	-0.1*	-0.12*	0.01*	-0.03*
15. Bachelor/Master Education	0.21	0.41	0.08*	0.03*	0.09*	0.09*	0.09*	0.08*	0.07*	0.06*	-0.01*	-0.08*	-0.09*	0.1*	0.12*
16. Good Health	0.88	0.32	0.05*	0.09*	0.01*	0.01	-0.02*	-0.02*	0.04*	0.01*	0.07*	-0.35*	-0.37*	0.16*	0.04*
17. Vote	0.81	0.39	0.03*	0.05*	0	0.01*	-0.01*	-0.02*	-0.04*	-0.05*	0	0.16*	0.12*	-0.05*	-0.02*
18. Father's Education	9.15	4.18	0.06*	0.01	0.04*	0.04*	0.04*	0.03*	0.05*	0.04*	0.01*	-0.43*	-0.41*	0.19*	0.13*
19. Member of the Communist Party	0.24	0.43	0.05*	-0.01	0.06*	0.05*	0.05*	0.04*	0	0.05*	0.01	0.16*	0.14*	-0.02*	0.05*
20. Borrow Successfully	0.26	0.44	0.49*	0.16*	0.04*	0.03*	0	0	0.01*	-0.01	0.05*	-0.04*	-0.05*	0.11*	0.01
21. Borrow Unsuccessfully	0.09	0.29	0.28*	-0.28*	0.01*	0.01*	0.01*	0.01*	0.03*	0	0.03*	-0.03*	-0.04*	0.05*	-0.01
22. Psu Avg. Wealth	4.32	0.93	-0.01*	0.1*	-0.04*	-0.06*	-0.08*	-0.08*	-0.04*	-0.04*	0.04*	-0.14*	-0.14*	0.16*	0.04*
23. Psu Avg. Trust	3.09	0.68	-0.02*	0.01	0.04*	0.02*	0.08*	0.08*	0.04*	0.08*	0.01*	0	0	0.01	-0.04*
24. Psu Avg. Corruption	1.82	0.79	0.02*	-0.1*	-0.12*	-0.13*	0.02*	0.03*	0.14*	-0.02*	-0.01	-0.11*	-0.11*	0.05*	-0.02*
25. Psu Population	85,331.39	309,965.70	0.01	-0.07*	0.19*	0.18*	0.18*	0.19*	0.33*	0.27*	-0.03*	-0.03*	-0.04*	-0.03*	0.09*
26. Psu Latitude	45.45	4.95	-0.01	0.02	0.38*	0.4*	0.2*	0.2*	-0.1*	0.2*	-0.03*	0.12*	0.13*	-0.04*	0.09*
27. Psu Longitude	35.06	22.41	0.04*	-0.13*	0.06*	0.06*	0.1*	0.1*	0.52*	0.19*	-0.02*	-0.13*	-0.12*	-0.07*	-0.11*
28. Psu Altitude	387.14	428.99	0.03*	-0.05*	-0.06*	-0.07*	-0.11*	-0.1*	0.15*	-0.05*	0.02*	-0.11*	-0.11*	-0.01*	-0.12*
29. Psu Dist to Mine	64.15	69.90	-0.02*	-0.05*	0.17*	0.21*	0.21*	0.21*	-0.01*	0.19*	-0.03*	0.08*	0.09*	-0.04*	0.06*
30. Psu Dist to Capital	143.02	272.71	0.01*	-0.06*	0.1*	0.09*	0.06*	0.05*	0.27*	0.29*	-0.04*	-0.01*	-0.01*	-0.05*	-0.03*
31. Psu Dist to Border	36.01	54.04	0.02*	-0.06*	0.1*	0.08*	0.05*	0.03*	0.34*	0.57*	-0.02*	0	0	-0.03*	0.05*
32. Psu on Water	0.41	0.49	0.01*	0.04*	0.11*	0.12*	0.02*	0.01*	-0.01	0.05*	-0.01	0.05*	0.05*	0.01*	0.18*

^a* significant at the 90% level or above.

TABLE 1 – Continued

	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
1.																				
2.																				
3.																				
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
13.																				
14.	1																			
15.	-0.69*	1																		
16.	0.05*	0.1*	1																	
17.	-0.03*	0.03*	-0.02*	1																
18.	0.01	0.24*	0.21*	-0.1*	1															
19.	-0.03*	0.1*	-0.05*	0.05*	0.03*	1														
20.	-0.01*	0.05*	0.03*	0.01*	0.03*	0.03*	1													
21.	0.01*	0.01*	0.01	0	0.02*	0.02*	-0.02*	1												
22.	0	0.04*	0.15*	-0.04*	0.15*	-0.06*	-0.01	-0.02*	1											
23.	0.01	0.03*	0.04*	-0.01	0.03*	0.02*	-0.02*	0	0.21*	1										
24.	0.02*	0.03*	0.01*	-0.05*	0.03*	0	0.03*	0.02*	0.02*	-0.11*	1									
25.	0.01*	0.06*	0.02*	-0.09*	0.07*	0.01	-0.01	0.02*	0	0.08*	0.02*	1								
26.	-0.02*	0.08*	-0.04*	0.02*	0.02*	0.02*	-0.02*	-0.02*	-0.04*	0.07*	-0.31*	0.06*	1							
27.	0.06*	0.07*	0.03*	-0.03*	0.01*	0	0.05*	0.05*	-0.12*	0	0.24*	0.31*	-0.17*	1						
28.	0.03*	-0.02*	0.03*	0	0	-0.02*	0.04*	0.03*	-0.04*	-0.1*	0.11*	0.05*	-0.38*	0.47*	1					
29.	-0.03*	0.07*	-0.04*	0.02*	-0.01	0	-0.02*	-0.03*	-0.04*	-0.03*	-0.13*	0.03*	0.71*	-0.11*	-0.35*	1				
30.	0.01*	0.04*	0	-0.02*	0	0.01*	0.01*	0.01	-0.1*	0.07*	-0.01*	0.23*	0.14*	0.41*	-0.01*	0.01	1			
31.	0	0.06*	0	-0.04*	-0.02*	0.03*	0.02*	0.01*	-0.12*	0.09*	-0.08*	0.21*	0.29*	0.3*	0.05*	0.14*	0.32*	1		
32.	-0.05*	0.06*	0	-0.01	0.03*	0.03*	0	0	0.01	-0.04*	-0.03*	-0.02*	0.17*	-0.14*	-0.33*	0.17*	-0.01*	-0.08*	1	

TABLE 2 – Probit Analysis Results: Main Effects of Diversity on Entrepreneurial Trial^a

Variables	Panel A: Religious Diversity				Panel B: Linguistic Diversity			
	Model 1: Polarization		Model 2: Fractionalization		Model 3: Polarization		Model 4: Fractionalization	
	coefficient	margin	coefficient	margin	coefficient	margin	coefficient	margin
Main Explanatory Variables								
Diversity	0.45** (0.19)	0.04** (0.02)	0.52* (0.30)	0.06* (0.03)	0.17 (0.16)	0.02 (0.02)	-0.13 (0.26)	0.01 (0.03)
Diversity squared	-0.37* (0.21)	n.a. n.a.	-0.50 (0.50)	n.a. n.a.	-0.14 (0.21)	n.a. n.a.	0.58 (0.39)	n.a. n.a.
Individual Level Controls								
Male	0.32*** (0.04)	0.06*** (0.01)	0.32*** (0.04)	0.06*** (0.01)	0.32*** (0.04)	0.06*** (0.01)	0.32*** (0.04)	0.06*** (0.01)
Age	0.05*** (0.01)	0.00*** (0.00)	0.05*** (0.01)	0.00*** (0.00)	0.05*** (0.01)	0.00*** (0.00)	0.05*** (0.01)	0.00*** (0.00)
Age squared	-0.00*** (0.00)	n.a. n.a.	-0.00*** (0.00)	n.a. n.a.	-0.00*** (0.00)	n.a. n.a.	-0.00*** (0.00)	n.a. n.a.
Risk Score	0.10*** (0.01)	0.02*** (0.00)	0.10*** (0.01)	0.02*** (0.00)	0.10*** (0.01)	0.02*** (0.00)	0.10*** (0.01)	0.02*** (0.00)
Urban	0.02 (0.03)	0.00 (0.01)	0.02 (0.03)	0.00 (0.01)	0.03 (0.03)	0.01 (0.01)	0.02 (0.03)	0.00 (0.01)
Secondary Education	0.29*** (0.06)	0.06*** (0.01)	0.29*** (0.06)	0.06*** (0.01)	0.29*** (0.06)	0.06*** (0.01)	0.29*** (0.06)	0.06*** (0.01)
Bachelor/Master's Education	0.40*** (0.07)	0.08*** (0.01)	0.40*** (0.07)	0.08*** (0.01)	0.41*** (0.07)	0.08*** (0.01)	0.41*** (0.07)	0.08*** (0.01)
Good Health	-0.01 (0.04)	-0.00 (0.01)	-0.01 (0.04)	-0.00 (0.01)	-0.01 (0.04)	-0.00 (0.01)	-0.02 (0.04)	-0.00 (0.01)
Vote	0.09* (0.05)	0.02* (0.01)	0.09* (0.05)	0.02* (0.01)	0.08* (0.05)	0.02* (0.01)	0.08* (0.05)	0.02* (0.01)
Father's Education	0.01*** (0.00)	0.00*** (0.00)	0.01*** (0.00)	0.00*** (0.00)	0.01*** (0.00)	0.00*** (0.00)	0.01*** (0.00)	0.00*** (0.00)
Member Communist Party	0.16*** (0.03)	0.03*** (0.01)	0.16*** (0.03)	0.03*** (0.01)	0.16*** (0.04)	0.03*** (0.01)	0.16*** (0.03)	0.03*** (0.01)
PSU Level Controls								
Wealth	-0.08*** (0.03)	-0.01*** (0.01)	-0.08*** (0.03)	-0.01*** (0.01)	-0.08*** (0.03)	-0.02*** (0.01)	-0.07*** (0.03)	-0.01*** (0.01)
Trust	-0.08*** (0.02)	-0.02*** (0.00)	-0.08*** (0.02)	-0.02*** (0.00)	-0.08*** (0.02)	-0.02*** (0.00)	-0.08*** (0.02)	-0.02*** (0.00)
Corruption	0.02 (0.04)	0.00 (0.01)	0.03 (0.04)	0.01 (0.01)	0.02 (0.04)	0.00 (0.01)	0.02 (0.04)	0.00 (0.01)
Country Fixed Effects	Included		Included		Included		Included	
Observations	22,048		22,048		22,048		22,048	
Pseudo R ²	0.11		0.11		0.11		0.11	
Log Likelihood	-7.20		-7.20		-7.21		-7.20	

^a Robust standard errors clustered at the country level are in parentheses. The dependent variable is a dummy set to unity if an individual has ever tried to set up a business. All regressions include country fixed effects, as well as controls for altitude, latitude, longitude, distance to the nearest country border, distance to the country's capital, a dummy for whether the PSU is within 20 kilometres of a sea or navigable river, distance to the nearest mine, and PSU population aged 18 and above. Coefficients are raw probit coefficients, and margins are calculated as Average Partial Effects.

* p < 0.10

** p < 0.05

*** p < 0.01

n.a = not applicable.

TABLE 3 – Probit Analysis Results: Main Effects of Diversity on Entrepreneurial Success^a

Variables	Panel A: Religious Diversity				Panel B: Linguistic Diversity			
	Model 1: Polarization		Model 2: Fractionalization		Model 3: Polarization		Model 4: Fractionalization	
	coefficient	margin	coefficient	margin	coefficient	margin	coefficient	margin
Main explanatory variables								
Diversity	-0.12 (0.33)	0.01 (0.04)	-0.30 (0.53)	0.01 (0.08)	0.82*** (0.29)	0.08*** (0.05)	1.40*** (0.47)	0.15*** (0.08)
Diversity squared	0.20 (0.32)	n.a. n.a.	0.79 (0.80)	n.a. n.a.	-1.05*** (0.34)	n.a. n.a.	-2.96*** (0.83)	n.a. n.a.
Individual Level Controls								
Male	-0.03 (0.05)	-0.01 (0.01)	-0.02 (0.05)	-0.01 (0.01)	-0.02 (0.05)	-0.01 (0.01)	-0.02 (0.05)	-0.01 (0.01)
Age	0.01 (0.01)	0.00 (0.00)	0.01 (0.01)	0.00 (0.00)	0.01 (0.01)	0.00 (0.00)	0.01 (0.01)	0.00 (0.00)
Age squared	-0.00 (0.00)	n.a. n.a.	-0.00 (0.00)	n.a. n.a.	-0.00 (0.00)	n.a. n.a.	-0.00 (0.00)	n.a. n.a.
Risk Score	0.06*** (0.02)	0.02*** (0.01)	0.06*** (0.02)	0.02*** (0.01)	0.06*** (0.02)	0.02*** (0.01)	0.06*** (0.02)	0.02*** (0.00)
Urban	-0.03 (0.06)	-0.01 (0.02)	-0.03 (0.06)	-0.01 (0.02)	-0.04 (0.06)	-0.01 (0.02)	-0.01 (0.07)	-0.00 (0.02)
Secondary Education	0.20* (0.11)	0.06* (0.03)	0.20* (0.11)	0.06* (0.03)	0.19* (0.11)	0.06* (0.03)	0.19* (0.11)	0.06* (0.03)
Bachelor/Master's Education	0.26* (0.14)	0.08* (0.04)	0.26* (0.14)	0.08* (0.04)	0.25* (0.14)	0.08* (0.04)	0.25* (0.14)	0.08* (0.04)
Good Health	0.27** (0.11)	0.08** (0.03)	0.27** (0.11)	0.08** (0.03)	0.27** (0.11)	0.08** (0.03)	0.28** (0.11)	0.09** (0.03)
Vote	0.08 (0.06)	0.02 (0.02)	0.08 (0.06)	0.02 (0.02)	0.07 (0.06)	0.02 (0.02)	0.08 (0.06)	0.03 (0.02)
Father's Education	0.01 (0.01)	0.00 (0.00)	0.01 (0.01)	0.00 (0.00)	0.01 (0.01)	0.00 (0.00)	0.01 (0.01)	0.00 (0.00)
Member Communist Party	-0.06 (0.05)	-0.02 (0.02)	-0.06 (0.05)	-0.02 (0.02)	-0.05 (0.05)	-0.02 (0.02)	-0.05 (0.05)	-0.02 (0.02)
Borrowed Successfully	0.45*** (0.06)	0.14*** (0.02)	0.45*** (0.06)	0.14*** (0.02)	0.44*** (0.06)	0.14*** (0.02)	0.45*** (0.06)	0.14*** (0.02)
Borrowed Unsuccessfully	-1.06*** (0.12)	-0.33*** (0.04)	-1.06*** (0.12)	-0.33*** (0.03)	-1.07*** (0.12)	-0.33*** (0.03)	-1.06*** (0.12)	-0.33*** (0.03)
PSU Level Controls								
Wealth	0.05 (0.04)	0.01 (0.01)	0.05 (0.04)	0.01 (0.01)	0.05 (0.04)	0.01 (0.01)	0.04 (0.04)	0.01 (0.01)
Trust	0.03 (0.05)	0.01 (0.02)	0.03 (0.05)	0.01 (0.02)	0.04 (0.05)	0.01 (0.02)	0.05 (0.05)	0.01 (0.01)
Corruption	-0.03 (0.07)	-0.01 (0.02)	-0.03 (0.07)	-0.01 (0.02)	-0.03 (0.07)	-0.01 (0.02)	-0.03 (0.06)	-0.01 (0.02)
Country Fixed Effects	Included		Included		Included		Included	
Observations	3,079		3,079		3,079		3,079	
Pseudo R ²	0.17		0.17		0.17		0.17	
Log Likelihood	-1.52		-1.52		-1.52		-1.52	

^a Robust standard errors clustered at the country level are in parentheses. The dependent variable is a dummy set to unity if an individual has ever tried and succeeded in setting up a business. All regressions include country fixed effects, as well as controls for altitude, latitude, longitude, distance to the nearest country border, distance to the country's capital, a dummy for whether the PSU is within 20 kilometres of a sea or navigable river, distance to the nearest mine, and PSU population aged 18 and above. Coefficients are raw probit coefficients, and margins are calculated as Average Partial Effects.

* p < 0.10

** p < 0.05

*** p < 0.01

n.a = not applicable.

TABLE 4 – Probit Analysis Results: Interaction Effects of Trade and Gender on Entrepreneurial Trial^a

Variables	Panel A: Religious Diversity				Panel B: Linguistic Diversity			
	Model 1: Polarization		Model 2: Fractionalization		Model 3: Polarization		Model 4: Fractionalization	
	coefficient	margin	coefficient	margin	coefficient	margin	coefficient	margin
Diversity	0.45** (0.18)	0.04** (0.02)	0.51* (0.30)	0.06* (0.03)	0.14 (0.16)	0.02 (0.01)	-0.17 (0.26)	0.00 (0.03)
Diversity squared	-0.37* (0.21)	n.a. n.a.	-0.50 (0.49)	n.a. n.a.	-0.12 (0.21)	n.a. n.a.	0.61 (0.39)	n.a. n.a.
Trade (cities)	-0.02*** (0.01)	-0.00*** (0.00)	-0.02*** (0.01)	-0.00*** (0.00)	-0.02*** (0.00)	-0.00*** (0.00)	-0.02*** (0.00)	-0.00*** (0.00)
Trade (cities) * Diversity	0.01 (0.01)	n.a. n.a.	0.02 (0.02)	n.a. n.a.	0.01 (0.02)	n.a. n.a.	0.01 (0.04)	n.a. n.a.
Panel B: Trade (binary)								
Diversity	0.45** (0.18)	0.04** (0.02)	0.49 (0.30)	0.07 (0.03)	0.16 (0.17)	0.02 (0.02)	-0.13 (0.27)	0.01 (0.03)
Diversity squared	-0.38* (0.21)	n.a. n.a.	-0.51 (0.50)	n.a. n.a.	-0.11 (0.21)	n.a. n.a.	0.59 (0.39)	n.a. n.a.
Trade (binary)	-0.06 (0.04)	-0.00 (0.01)	-0.06 (0.04)	-0.00 (0.01)	-0.01 (0.05)	-0.00 (0.01)	-0.01 (0.05)	-0.00 (0.01)
Trade (binary) * Diversity	0.15 (0.10)	n.a. n.a.	0.30** (0.15)	n.a. n.a.	-0.04 (0.17)	n.a. n.a.	-0.03 (0.28)	n.a. n.a.
Panel C: Male								
Diversity	0.56*** (0.20)	0.04*** (0.02)	0.70** (0.31)	0.06** (0.03)	0.24 (0.17)	0.02 (0.02)	-0.04 (0.26)	0.01 (0.03)
Diversity squared	-0.37* (0.21)	n.a. n.a.	-0.52 (0.50)	n.a. n.a.	-0.15 (0.21)	n.a. n.a.	0.57 (0.39)	n.a. n.a.
Male	0.40*** (0.05)	0.07*** (0.01)	0.40*** (0.05)	0.07*** (0.01)	0.36*** (0.05)	0.07*** (0.01)	0.35*** (0.05)	0.07*** (0.01)
Male * Diversity	-0.24*** (0.09)	n.a. n.a.	-0.37** (0.15)	n.a. n.a.	-0.13* (0.07)	n.a. n.a.	-0.20 (0.13)	n.a. n.a.
Observations	22,048		22,048		22,048		22,048	
Pseudo R ²	0.11		0.11		0.11		0.11	
Log Likelihood	-7.19		-7.20		-7.20		-7.20	

^a Robust standard errors clustered at the country level are in parentheses. The dependent variable is a dummy set to unity if an individual has ever tried to set up a business. All regressions include country fixed effects, the same individual and PSU variables as in Table 2, as well as controls for altitude, latitude, longitude, distance to the nearest country border, distance to the country's capital, a dummy for whether the PSU is within 20 kilometres of a sea or navigable river, distance to the nearest mine, and PSU population aged 18 and above. Coefficients are raw probit coefficients, and margins are calculated as Average Partial Effects.

* p < 0.10

** p < 0.05

*** p < 0.01

n.a = not applicable.

TABLE 5 – Probit Analysis Results: Interaction Effects of Trade and Gender on Entrepreneurial Success^a

Variables	Panel A: Religious Diversity				Panel B: Linguistic Diversity			
	Model 1: Polarization		Model 2: Fractionalization		Model 3: Polarization		Model 4: Fractionalization	
	coefficient	margin	coefficient	margin	coefficient	margin	coefficient	margin
Diversity	-0.26 (0.35)	-0.01 (0.05)	-0.51 (0.54)	-0.01 (0.08)	0.73*** (0.28)	0.07*** (0.04)	1.11** (0.46)	0.12** (0.08)
Diversity squared	0.32 (0.33)	n.a. n.a.	1.07 (0.80)	n.a. n.a.	-0.99*** (0.33)	n.a. n.a.	-2.49*** (0.90)	n.a. n.a.
Trade (cities)	0.01 (0.01)	0.01 (0.00)	0.01 (0.01)	0.01 (0.00)	0.02** (0.01)	0.01** (0.00)	0.02** (0.01)	0.01** (0.00)
Trade (cities) * Diversity	0.02 (0.02)	n.a. n.a.	0.03 (0.04)	n.a. n.a.	0.06** (0.03)	n.a. n.a.	0.09* (0.05)	n.a. n.a.
Panel B: Trade (binary)								
Diversity	-0.28 (0.35)	0.00 (0.05)	-0.53 (0.54)	0.00 (0.08)	0.72*** (0.28)	0.07*** (0.04)	1.12*** (0.43)	0.12*** (0.07)
Diversity squared	0.30 (0.34)	n.a. n.a.	1.02 (0.83)	n.a. n.a.	-1.00*** (0.34)	n.a. n.a.	-2.54*** (0.91)	n.a. n.a.
Trade (binary)	0.00 (0.13)	0.04 (0.03)	0.01 (0.13)	0.04 (0.03)	0.07 (0.12)	0.04 (0.04)	0.09 (0.12)	0.04 (0.03)
Trade (binary) * Diversity	0.34* (0.19)	n.a. n.a.	0.53 (0.34)	n.a. n.a.	0.18 (0.19)	n.a. n.a.	0.21 (0.28)	n.a. n.a.
Panel C: Male								
Diversity	-0.20 (0.36)	0.01 (0.04)	-0.41 (0.61)	0.01 (0.08)	0.80*** (0.29)	0.08*** (0.05)	1.35*** (0.47)	0.15*** (0.08)
Diversity squared	0.20 (0.32)	n.a. n.a.	0.81 (0.82)	n.a. n.a.	-1.05*** (0.34)	n.a. n.a.	-2.96*** (0.83)	n.a. n.a.
Male	-0.08 (0.09)	-0.01 (0.01)	-0.06 (0.09)	-0.01 (0.01)	-0.03 (0.07)	-0.01 (0.01)	-0.03 (0.07)	-0.01 (0.01)
Male * Diversity	0.15 (0.18)	n.a. n.a.	0.19 (0.31)	n.a. n.a.	0.03 (0.11)	n.a. n.a.	0.09 (0.19)	n.a. n.a.
Observations	3,079		3,079		3,079		3,079	
Pseudo R ²	0.17		0.17		0.17		0.17	
Log Likelihood	-1.52		-1.52		-1.52		-1.52	

^a Robust standard errors clustered at the country level are in parentheses. The dependent variable is a dummy set to unity if an individual has tried and succeeded in setting up a business. All regressions include country fixed effects, the same individual and PSU variables as in Table 3, as well as controls for altitude, latitude, longitude, distance to the nearest country border, distance to the country's capital, a dummy for whether the PSU is within 20 kilometres of a sea or navigable river, distance to the nearest mine, and PSU population aged 18 and above. Coefficients are raw probit coefficients, and margins are calculated as Average Partial Effects.

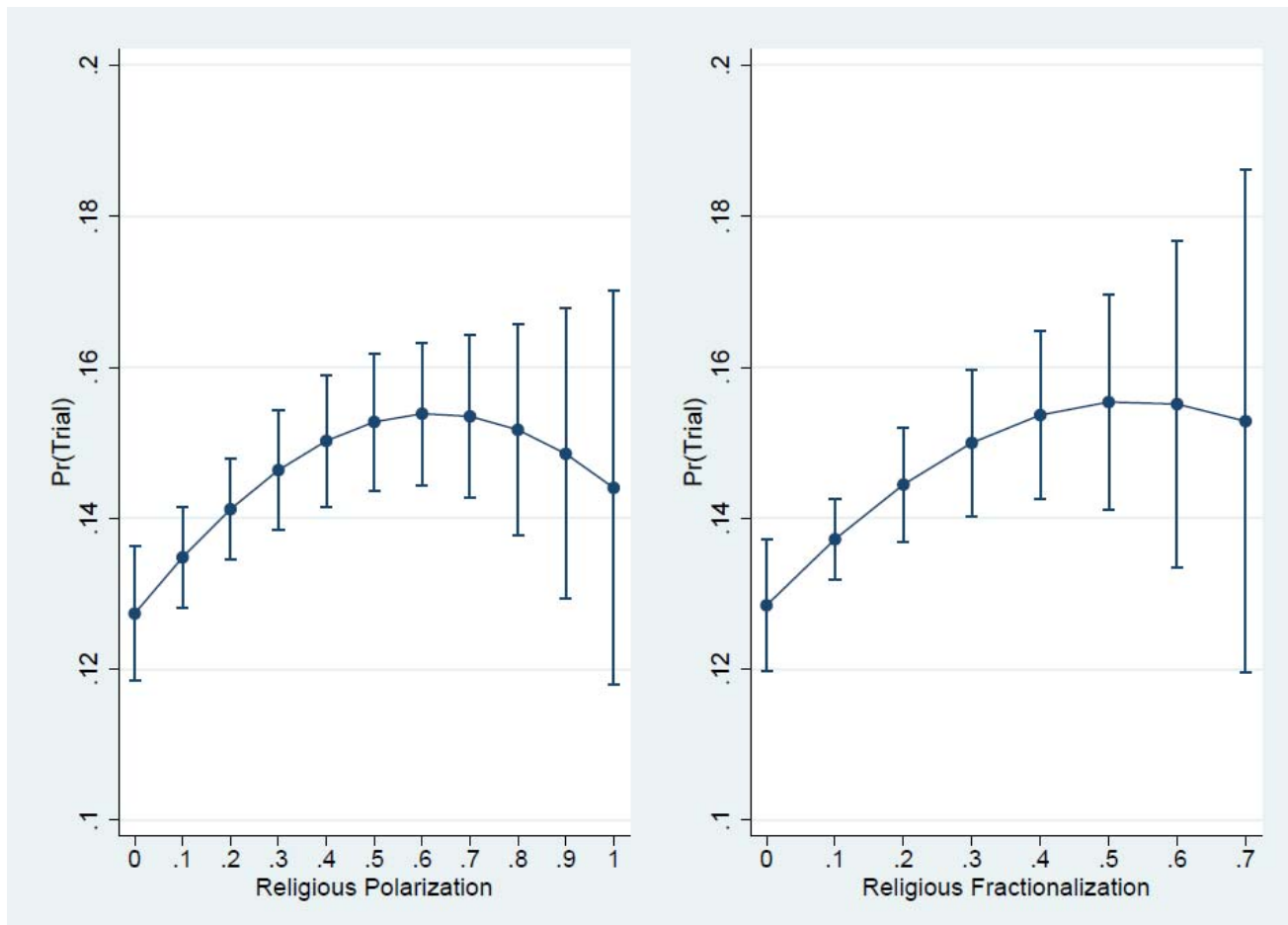
* p < 0.10

** p < 0.05

*** p < 0.01

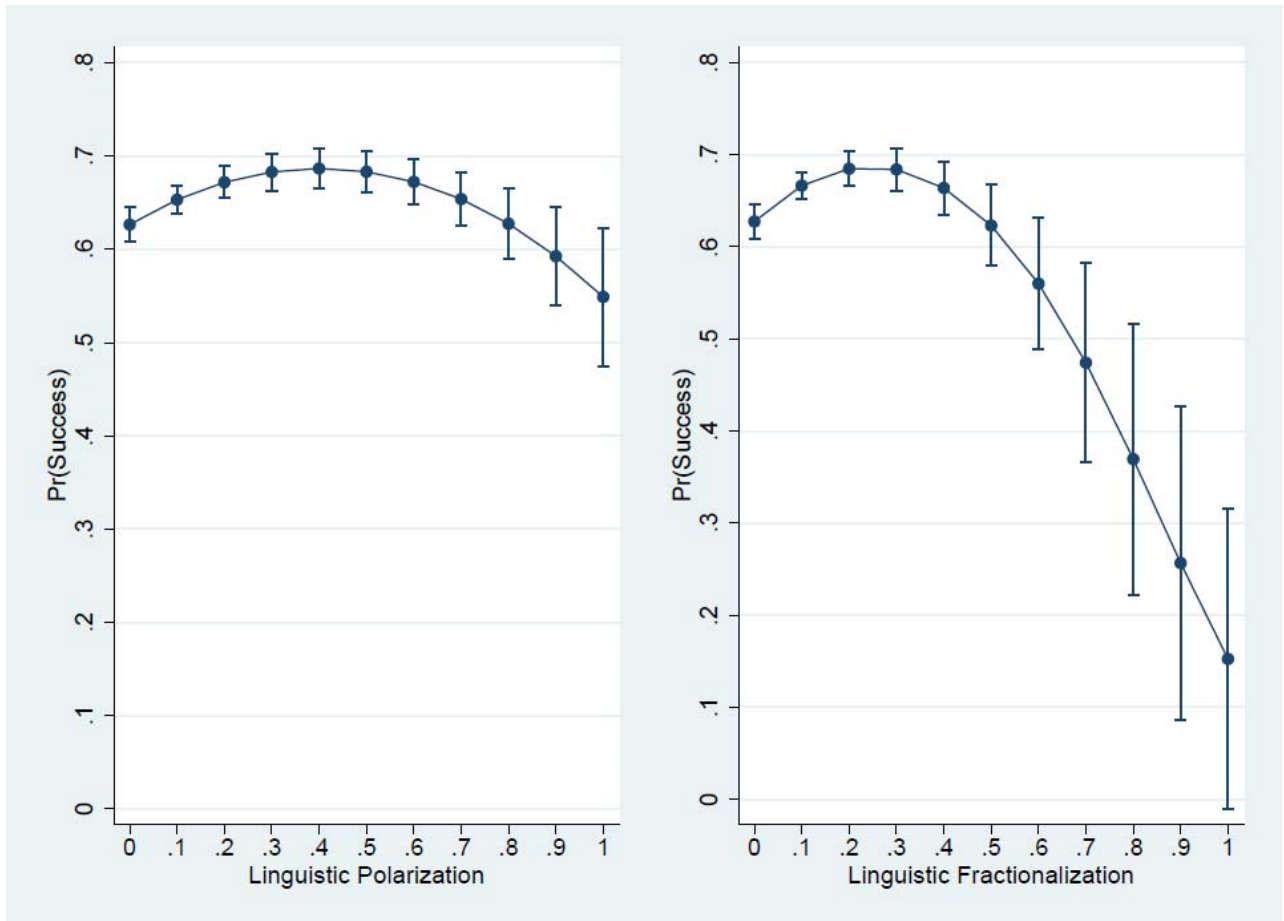
n.a = not applicable.

FIGURE 1 - Main Effects of Religious Diversity and Religious Diversity Squared on the Predicted Probability of Entrepreneurial Trial^a



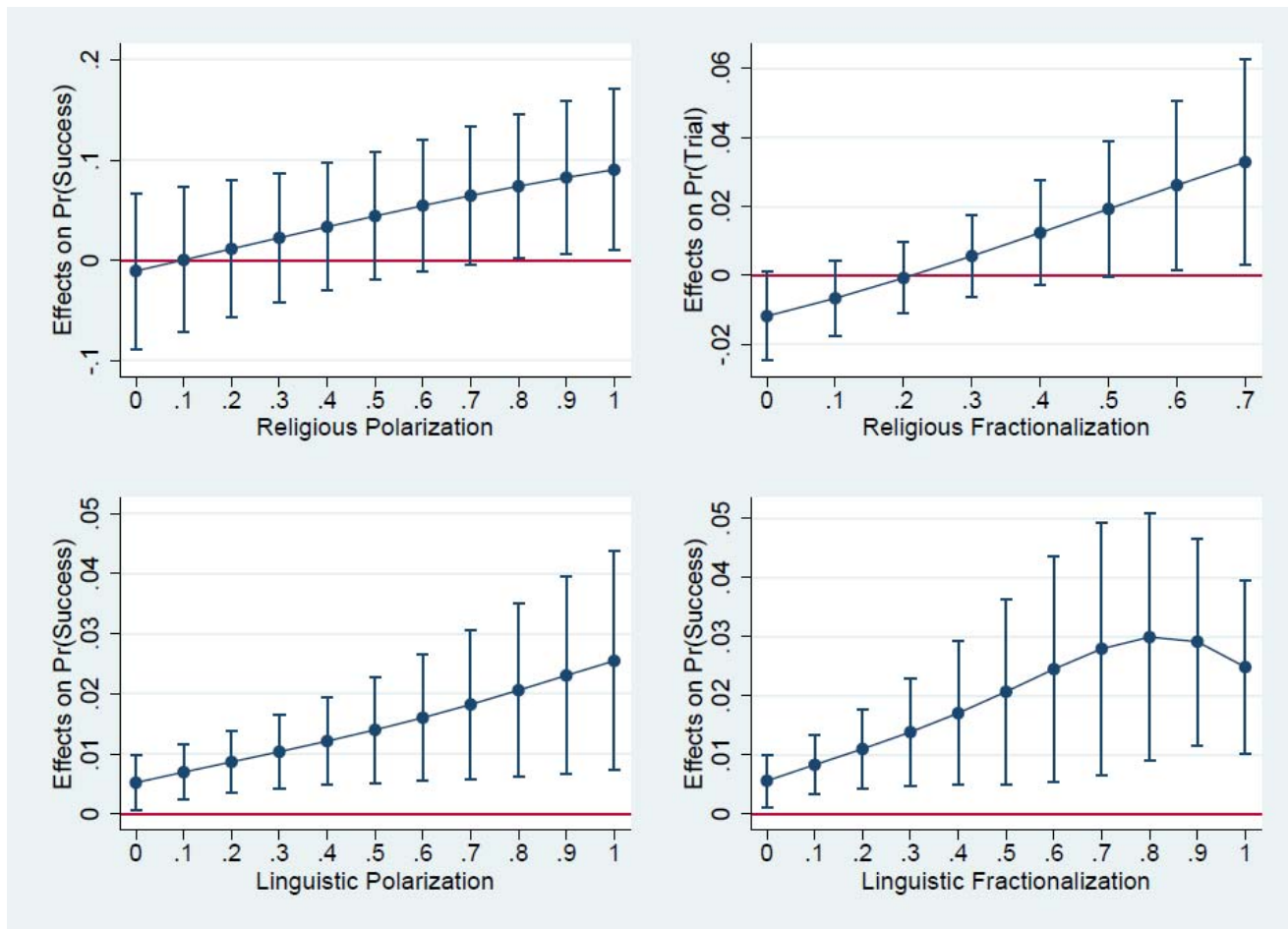
^a Vertical lines are 90% confidence intervals.

FIGURE 2 - Main Effects of Linguistic Diversity and Linguistic Diversity Squared on the Predicted Probability of Entrepreneurial Success^a



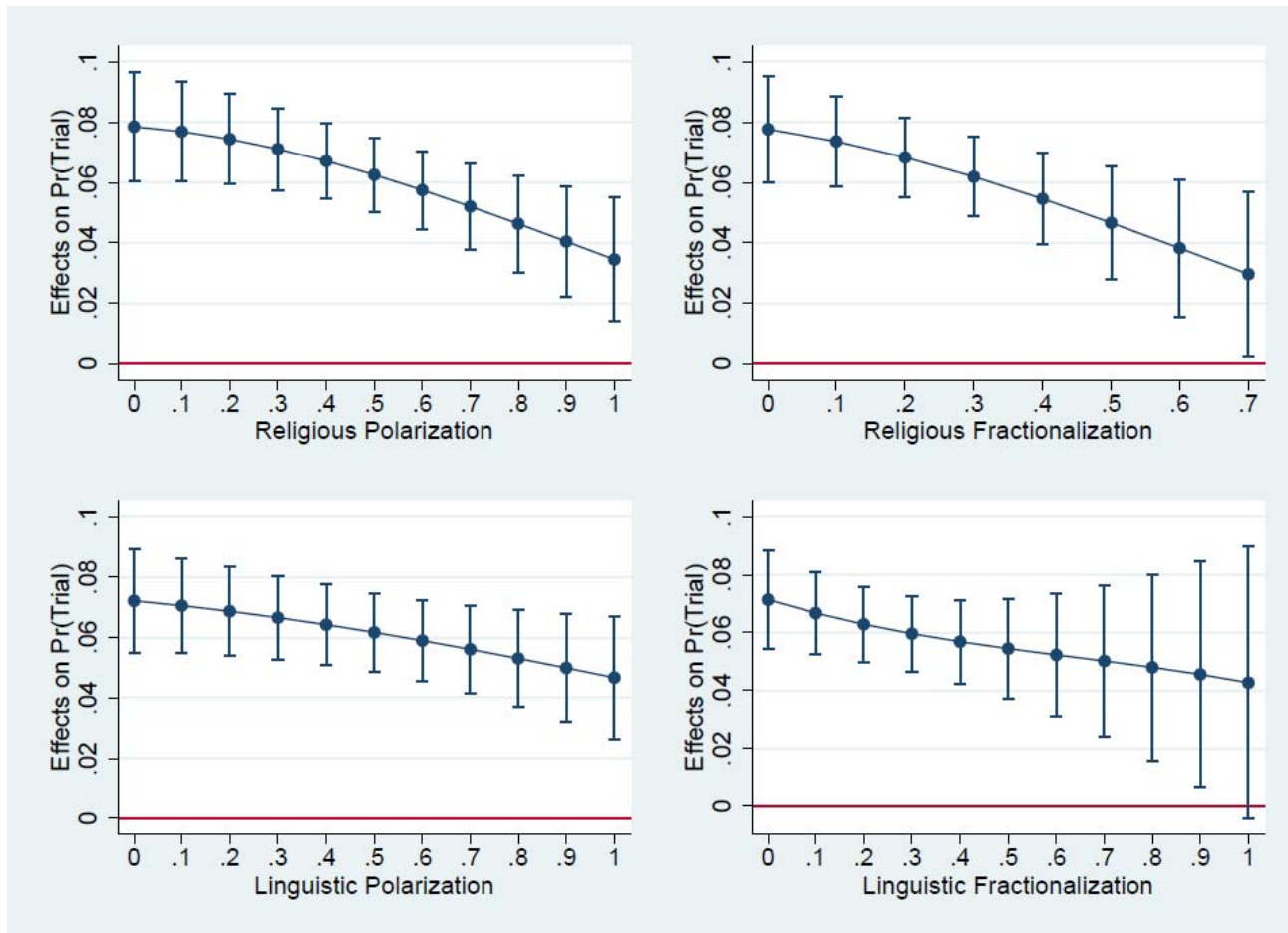
^a Vertical lines are 90% confidence intervals.

FIGURE 3 - Interaction Effects of Trade and Diversity on the Predicted Probability of Entrepreneurial Success^a



^a Vertical lines are 90% confidence intervals.

FIGURE 4 - Interaction Effects of Female Gender and Diversity on the Predicted Probability of Entrepreneurial Trial^a



^a Vertical lines are 90% confidence intervals.