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Social trust and angel investors' decisions: A multilevel analysis across nations

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A R T I C L E   I N F O

A B S T R A C T

The decisions made by angel investors are embedded in and influenced by their institutional settings. This paper advances a multilevel model of the direct and indirect effects of social trust on individuals' angel-investment decisions. It is postulated that two dimensions of social trust, namely the level and radius, can enhance information transmission, collaboration, and sanctioning mechanisms within a society. Consequently, they facilitate angel investment and moderate the relationship between it and individual factors. A multilevel model of data from 191,907 individuals across 25 countries shows that individuals in countries with a high level of trust are more likely to make angel investments. Whereas both the level of trust and the radius of trust are found to heighten the positive relationship between an individual's perceived entrepreneurial skills and angel investment, it is interesting to note that these factors weaken the relationship between the perception of new business opportunities and angel investment. These direct and moderating effects are robust after controlling for wealth, cultural values, and other factors. This study contributes to the crossover between research on entrepreneurship and social-trust research.

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1. Executive summary

This study examines how angel investment decisions are affected by social trust. Private investors who provide risk capital for new and growing businesses (angel investors) have been recognized as important financial resource providers in the entrepreneurial process. Although scholars have examined the impact of institutions on angel investment, informal institutional factors (e.g., shared values and social norms) have received less attention despite their potential impact on angel investment decisions. Thus, we extend previous research by exploring the role of social trust on the decisions of angel investors across countries.

Compared with other forms of investment, angel investment involves less formal procedures relating to project selection and investment allocation, and relies more on trust and empathy. Social trust is a key informal institutional factor that affects information transmission, cooperation, and the enforcement of sanctions within society. We argue that social trust influences angel investment because such investment activities rely on information exchange and collaboration between individual members of society, as well as effective sanctioning.

Our study focuses on two dimensions of social trust proposed by Fukuyama (2001), namely level of trust (the strength of cooperative norms) and radius of trust (the circle of people among whom cooperative norms are operative). Moreover, we test two sets of effects:

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(1) the direct effects of trust level and radius of trust on an individual's decision to make an angel investment, and (2) the multilevel moderating effects of these two national-level social-trust dimensions on two key individual-level factors that affect decision making.

Building on institutional perspective, we contribute to theory and practice in several respects. First, this study advances our understanding about the effects of informal institutional forces on specific aspects of entrepreneurship. Second, we extend social-trust research by empirically connecting both the level and the radius of trust to social economic behavior. Third, we use multilevel modeling to capture the cross-level influence of social trust on individual decision making in a multiple-country setting, thereby improving on the design of previous studies.

2. Introduction

Securing sufficient funding is crucial to the creation, development, and growth of new ventures. Angel investors, as private investors who provide risk capital for new and growing businesses (Mason and Harrison, 1995; Morrissette, 2007), are thus vital to the entrepreneurial process. In addition, an increasing number of entrepreneurship researchers suggest that the institutional environment affects entrepreneurship (Ahlstrom and Bruton, 2006; Jennings et al., 2013; Knight and Cavusgil, 2004), such as angel-investment decisions (Ding et al., 2014; Kwon and Arenius, 2010). While they are not close friends or family, angels tend to enjoy more informal relationships with entrepreneurs, based on trust and empathy, compared with the more formal relationships that exist between entrepreneurs and venture capitalists (Fairchild, 2011; Mason and Harrison, 1995). Therefore, informal institutional factors such as shared values and social norms affect an individual's angel-investment decisions (Harrison et al., 1997). In this study, we examine the influence of social trust on the decisions of angel investors in a range of countries.

Social trust is a key informal institutional factor that affects information transmission, cooperation, and the enforcement of sanctions within society (Hagen and Choe, 1998; Kwon and Arenius, 2010; Putnam, 1993). Although largely taken for granted, the set of ideas, beliefs, and actions that underpins social trust (Luhmann, 1979) varies between nations (Fukuyama, 1995). Research suggests that cooperation and mutual monitoring are critical to investors' screening and assessment of potential investment opportunities (Harrison et al., 1997). Maxwell et al. (2011) have also shown that effective interactions between entrepreneurs and angels play a key role in angel investment. Therefore, we argue that social trust influences angel investment because such investment activities rely on information exchange and collaboration between individual members of a society, as well as effective sanctioning (Bruton and Ahlstrom, 2003; Zacharakis et al., 2007). Compared with other forms of investment, angel investment involves less formal procedures of project selection and investment allocation, and relies more on trust and empathy (Duxbury et al., 1996; Sudek, 2006). We thus argue that both formal institutions and the informal institution of social trust are important determinants of angel investment. To test this hypothesis, we construct a model of the effects of national social trust on individuals' angel-investment decisions.

The model developed in this study is structured by the two dimensions of social trust proposed by Fukuyama (2001): level of trust, which refers to the strength of cooperative norms, and radius of trust, which is defined as the circle of people among whom cooperative norms are operative. The results of a recent study validate these two dimensions of trust as effective measures across nations (Delhey et al., 2011). We test two sets of effects: (1) the direct effects of trust level and radius of trust on an individual's decision to make an angel investment, and (2) the multilevel moderating effects of these two national-level social-trust dimensions on two key individual-level factors that affect decision making. The individual factors examined are the possession of start-up skills and the ability to perceive start-up opportunities, as these have been shown to influence entrepreneurial start-up and investment behavior (McMullen and Shepherd, 2006; Szerb et al., 2007; Wong and Ho, 2007). The Global Entrepreneurship Monitor (GEM) provides a distinctive set of cross-country and cross-level data for the empirical tests. The findings are obtained by hierarchical linear modeling (HLM), and confirm most of the hypotheses. In particular, individuals in countries with a high level of trust are shown to be more likely to make angel investments. In addition, both level of trust and radius of trust are found to enhance the positive relationship between an individual's perceived entrepreneurial skills and angel investment. Unexpectedly, however, both dimensions of social trust weaken the relationship between the perception of new business opportunities and angel investment. Further analysis shows that the findings are robust against several alternative explanations.

This paper contributes to entrepreneurship studies in three important ways. First, the investigation of the influence of social trust on angel investment opens up a new avenue for comparative research on entrepreneurship, as an increasing number of researchers seek to understand the effects of informal institutional forces on specific aspects of entrepreneurship (Bruton et al., 2010). A study by Meek et al. (2010) of the effects of social norms on environmental action is a case in point. We show how the informal institutional factor of social trust, not just formal institutions such as rules, regulations, and cultural dimensions (Bruton et al., 2010), may shape angel investment across nations. Benefiting from the rich literature on social trust, we detail the institutional mechanisms that underlie angel investment, and unravel institutional complexity using a comparative institutional design (Jennings et al., 2013). Second, we test two dimensions of social trust, whereas previous studies have addressed only trust level. We thus advance social-trust research by empirically connecting both the level and the radius of trust to social economic behavior, based on recent empirical findings (Delhey et al., 2011). We contend that social trust moderates angel-investment decisions, and seek to fill the gap in knowledge regarding whether and how angel investors across countries are influenced by informal institutions. Finally, we use multilevel modeling to capture the cross-level influence of social trust on individual decision making in a multiple-country setting (Hitt et al., 2007). This multilevel cross-country design improves upon the design of previous studies (e.g., Kwon and Arenius, 2010; Tracey et al., 2011; Wong and Ho, 2007) by enabling us to ascertain the validity of past findings and explore cross-level institutional influences (Hitt et al., 2007).

3. Literature review

Like entrepreneurs, angel investors make their decisions under the influence of both individual- and national-level factors (Bowen and De Clercq, 2008; Maxwell et al., 2011). As previous researchers have tended to focus on entrepreneurs, more attention should be

paid to other actors in the entrepreneurial process (Tolbert et al., 2011). Furthermore, studies of business angels tend to focus on individuals' decision processes, and neglect the interaction between angels and the social environment (Maxwell et al., 2011; Mitteness et al., 2012; Wiltbank et al., 2009). Research on institutions chiefly addresses formal institutions and cultural values (Bruton et al., 2010; Li and Zahra, 2012). As detailed in the following review, the current study provides new insights into angel investment and entrepreneurship from the perspective of social trust.

3.1. Social trust across nations

Trust is recognized by researchers in a range of disciplines as possessing many facets and occurring at multiple levels of social interaction (Rousseau et al., 1998; Wang and Gordon, 2011). Researchers identify two forms of trust at the level of society (Freitag and Traunnlüller, 2009; Glanville and Paxton, 2007): particularistic trust and general trust. Whereas particularistic trust involves a narrow circle of familiar others, general trust concerns a wider circle of unfamiliar others, and is pivotal to daily interactions with unknown others, such as entrepreneurs and angel investors, in modern society (Delhey et al., 2011). Therefore, we focus on general trust, which is termed "social trust" in this study. Social trust is defined as the trust extended to unknown others within society (Fukuyama, 1995). It is a society-level construct that arises when "a community shares a set of moral values in such a way as to create expectation of regular and honest behavior" (Banfield, 1958; Hardin, 2006). According to Luhmann's (1979) theory of social systems, social trust provides a mechanism for reducing the internal complexity of social interaction, and enables actors to establish mutual expectations of future behavior (Dyer and Chu, 2003).

The importance of social trust in shaping individuals' economic and investment behavior has been highlighted in research on both institutions and social capital. Social trust, as a kind of institutional force, is described as a socially embedded property of relationships between people or institutions (Granovetter, 1985; Zucker, 1986). Zucker (1986) documents the disruption of social trust caused by increasing labor heterogeneity, and argues that economic order has been gradually restored by the institutionalization of socially created mechanisms for producing trust. Social trust is also believed to be associated with social capital, and is regarded by some researchers as the best or only single indicator of social capital (Deihey and Newton, 2003; Fukuyama, 2001; Putnam, 1993). Whereas scholars from various disciplines have investigated the origins of social trust (Fukuyama, 2001; Granovetter, 1985; Zucker, 1986), the aim of the current study is to provide evidence of its influence.

Specifically, we take a comparative approach to entrepreneurship (Baker et al., 2005), because social trust differs between societies and countries (Fukuyama, 1995). For example, the findings of Yamagishi et al. (1998) suggest that compared with Americans, Japanese individuals extend less trust to strangers. Huff and Kelley (2003) show that managers in collectivistic societies (such as Japan) display lower overall levels of trust than their counterparts in individualistic societies (such as the United States), but tend to extend more trust to managers in the same group. Researchers have also shown that social trust has a positive effect on economic growth across nations. The significance of social trust is well established, and its measurement has been improved in a recent study by Delhey et al. (2011). However, the contribution of this enhanced measurement system to entrepreneurship research has yet to be recognized.

3.2. Level and radius of social trust

Most social-trust research addresses only respondents' level of trust, which is measured using the following standard question: "In general, do you believe that most people can be trusted, or that one can't be too careful when dealing with people?" This measure of trust has the merit of simplicity. However, other scholars are skeptical of the assumption made in cross-national work that there is no systematic variation in the radius of "most people." Individuals in different nations may interpret the concept of "most people" differently when its radius is undefined (Reeskens and Hooghe, 2008).

Fukuyama (2001) recommends that modern society be conceptualized as a series of concentric and overlapping radii of trust. Every group has a certain radius of trust, and the average radius of the trust circle differs between societies. Accordingly, the level and radius of trust are different concepts. Past studies have focused only on the level of trust, although radius is a crucial component of trust (Fukuyama, 1995). The radius of trust has an important influence on information transmission, cooperation, and the enforcement of sanctions, as a wider circle of trust is more inclusive. In functional terms, the radius of trust determines the width of a cooperation circle, while the level of trust determines the intensity of civic cooperation within this circle.

Empirical research shows that the further people move away from their immediate circles, the less likely they are to display trust (Dalen, 2005; Welch et al., 2007). To assess the level of general trust information on both the level and the radius of trust is thus necessary. Delhey et al. (2011) show empirically that the level and radius of social trust are not the same, and that confusing the two measures may lead to ambiguous results. Therefore, both the level and the radius of trust are examined in this study.

3.3. Social trust and angel investment

Trust is especially important under conditions of risk and interdependence (Rousseau et al., 1998). These are exactly the conditions in which investors and entrepreneurs meet, interact, and work together (Maxwell and Levesque, 2011). Angel investment is recognized as a form of risk capital (Haar et al., 1988), and trust is an essential element of the angel-investment process (Harrison et al., 1997). According to Kwon and Arenius (2010), residents in countries with greater social trust are more likely to perceive entrepreneurial opportunities. The authors explain that trust can facilitate the transmission of vital information between socially distinct groups. In addition, trust can reduce inter-group conflict and enhance the cooperation of distinct social groups.

Combining theories of institution and social capital, we suggest that social trust affects the decisions of angel investors through three related and complementary mechanisms: the transference of information, the promotion of cooperation, and the enforcement of sanctions. First, social trust lowers transaction costs, and assists in the transmission and sharing of vital information between socially distinct groups (Brehm and Rahn, 1997; Seligman, 1997). Individuals who regard information from a variety of sources as credible have a greater chance of discovering better opportunities and "making their fortune." Second, due to the confidence and goodwill generated by an exchange relationship (Zaheer et al., 1998), social trust reduces inter-group conflict and enhances the cooperation of distinct social groups (Sarasvathy et al., 2002). Therefore, the spirit of cooperation is promoted and opportunistic behavior is prevented (Hagen and Choe, 1998). Last, social trust strengthens the institutional and societal mechanisms for enforcing sanctions that regulate the behavior of social actors (Hagen and Choe, 1998; Yamagishi, 1986). Yamagishi and Yamagishi (1994) point out that Japanese individuals trust other members of their society because they are aware of the social sanctions that induce its members to behave in a trustworthy manner. Hagen and Choe (1998) assert that sanctioning mechanisms are a crucial determinant of the high degree of trust and cooperation observed in Japanese organizations.

4. Hypotheses

4.1. Effects of social-trust level on angel-investment decisions

Although uncertainty accompanies all new entrepreneurial ventures, trust is recognized as a lubricant and fulcrum of cooperation (Low and Srivatsan, 1993; Nannestad, 2008; Newton, 2007). We argue that individuals in an environment with a higher level of social trust are more likely to make angel investments.

First, angel investment is predicated on investors' recognition of the value of new information to which they are exposed (Shane, 2000). Social trust can facilitate the free flow of information across socially disparate groups (Kwon and Arenius, 2010). The more trust individuals place in an item of information, the more likely they are to invest.

Second, another term for social trust is "moral trust" (Uslaner, 2002), which is vital to the maintenance of cooperation within society (Parsons and Shils, 1951). Inglehart (1997) argues that strong networks are a consequence of people's trust in each other, and that highly connected people cooperate readily with each other. Similarly, Brehm and Rahn (1997) argue that the greater the trust citizens place in each another, the more likely they are to participate.

Last, a high level of social trust leads to effective institutional sanctions and mutual-monitoring systems (Luhmann, 1979; Yamagishi, 1986). Social trust is founded on the laws, regulations, and social norms that discourage untrustworthy behavior. A higher level of social trust thus makes investors more confident that other parties will comply with contracts or agreements. Social trust therefore serves as a mutual-monitoring system that can reduce opportunistic behavior.

Based on the above arguments, we propose the following hypothesis.

H1. In countries with a higher level of trust, individuals are more likely to make angel investments.

4.2. Effects of social-trust radius on angel-investment decisions

The radius of trust defines the circle of people among whom co-operative norms apply (Fukuyama, 2001). We argue that a wider radius of trust promotes angel investment, for three reasons. First, the free flow of information across socially disparate groups is important to angel investment (Kwon and Arenius, 2010). A wide radius of trust allows information to flow freely across group boundaries and within large circles of people. It facilitates the dispersal of information to people who trust each other, and thus encourages angel investment. Conversely, the flow of information is likely to be confined by a narrow radius of trust such as that observed in self-contained, usually traditional social units such as villages or tribes. This type of social group lacks weak ties (Granovetter, 1985), making it difficult to transmit information between groups. The consequent lack of information discourages angel investors from making investments.

Second, the radius of trust influences civic cooperation, as the wider the radius, the more inclusive the circle of cooperation (Delhey et al., 2011). The radius of trust reflects the extent to which people can step out of their narrow personal circles and cooperate with unfamiliar others. A wider radius of trust enables a wider range of people to connect and cooperate with each other.

Third, investors who are embedded within a particular social context may rely on social sanctions to protect their investment interests. Investing in new entrepreneurial ventures is risky and uncertain, largely because investors are usually unable to ascertain the trustworthiness of entrepreneurs, and are thus wary about being cheated. A society with a wide radius of social trust—that is, a larger network—is better able to protect individual interests through social monitoring.

Based on these arguments, we propose the hypothesis below.

H2. In countries with a larger radius of trust, individuals are more likely to make angel investments.

4.3. Moderating effects of level and radius of social trust on decision making

Social trust may influence angel investment not only directly but as a cross-level moderator of the relationship between individual decision factors and angel investment. Individuals differ in their personal characteristics and perceptions of an environment, which

may affect their investment decisions (McMullen and Shepherd, 2006; Szerb et al., 2007). We use past findings to investigate two individual factors widely used to test the influence of social trust: possession of entrepreneurial skills and the ability to perceive entrepreneurial opportunities (Szerb et al., 2007; Wong and Ho, 2007). Although previous studies have investigated these factors at the individual level, little attention has been paid to their interaction with the national-level institutional factor of social trust, or the effects of such an interaction on angel investment. Below, we describe the potential cross-level moderating effects of both the level and the radius of social trust.

4.3.1. Moderating effects of level and radius of trust on the relationship between entrepreneurial skills and angel-investment decisions

The perception of entrepreneurial skill provides an individual with a sense of competence and control over start-up issues (Wong and Ho, 2007). The perceived possession of skills also gives investors the confidence to contribute to new ventures; research shows that angel investors wish to add value and contribute to new ventures by sharing their experience and skills (Mason and Harrison, 1997; Mason and Rogers, 1996; Van Osnabrugge and Robinson, 2001). The more an individual feels that he/she can participate in the venture-building process, the greater his/her cooperation and perceived control, and hence propensity to invest (Wong and Ho, 2007). Additionally, investors with the entrepreneurial skills necessary to start up a venture more competently assess entrepreneurs' performance. Angels have greater confidence in entrepreneurs' business ventures when they feel themselves to be sufficiently involved in the ventures, and to have an adequate level of control. An individual assessment of desirability is conducive to an individual's decision to make an angel investment (McMullen and Shepherd, 2006).

Regarding cross-level moderation, we expect a higher level of social trust to prompt an entrepreneurially skillful individual to make an angel investment, for several reasons. First, conflicts and disputes may occur between investors and founders during the development of a new venture (Sarasvathy et al., 2002). As strong trust facilitates joint problem solving (Dyer and Chu, 2003), a high level of social trust can promote positive conflict resolution when differences emerge between investors and entrepreneurs. Moreover, the confidence and motivation that arises from perceiving oneself as a skilled entrepreneur is elevated in high-trust societies by the smooth transference of investment information, positive cooperation between angels and entrepreneurs, and socially established sanction mechanisms. Therefore, we propose that in a high-trust society, individuals with entrepreneurial skills will find investing easier and exhibit a greater propensity to make angel investments.

H3. In countries with a higher level of trust, individuals with entrepreneurial skills are more likely to make angel investments.

For similar reasons, the radius of social trust may also moderate the relationship between individuals' perceived entrepreneurial skills and their angel investment. A wide radius of social trust implies an extended social network or social grouping. As such networks or groups enhance information-sharing opportunities, encourage joint problem solving, and improve supervision (Fukuyama, 1999), individuals with entrepreneurial skills have greater confidence in angel investments when the radius of trust is wide. In addition, social trust promotes shared moral values and the mutual expectation of honesty by increasing openness, reducing conflict, and facilitating joint problem solving and cooperation when disputes occur (Dyer and Chu, 2003). Therefore, a wider radius of trust encourages capable individuals who possess the skills to deal with start-up issues to make angel investments. A wide radius of trust allows casual acquaintances or even strangers to provide unique information that leads to opportunities, which is in line with previous findings on weak ties and "structural holes" (Burt, 1992; Granovetter, 1973). In countries with a wide trust radius, people engage more positively in relational exchange, thereby reducing the risk and uncertainty of investment. They are also more open to interactions with others, thereby reducing the chance of misunderstanding and conflict. Therefore, individuals in a society with a wide radius of trust who perceive themselves as sufficiently skillful to initiate or assist in a start-up venture are expected to find collaboration easier, and thus to become even more interested in investing in new ventures.

H4. In countries with a wider radius of trust, individuals with entrepreneurial skills are more likely to make angel investments.

4.3.2. Moderating effects of level and radius of trust on the relationship between perception of entrepreneurial opportunities and angel investment

The ability to perceive opportunities reflects an individual's alertness to opportunities that arise in his/her environment (Kirzner, 1973; McMullen and Shepherd, 2006). As explained above, alertness to opportunity is crucial to both entrepreneurs and angel investors (Van Osnabrugge and Robinson, 2001). Angel investors who readily perceive opportunities exhibit "investor alertness," which is a state of heightened awareness of profitable deals that are likely to optimize returns on capital and other resources (Maula et al., 2005). Like entrepreneurs, angel investors must develop the habit of scanning their environment for information that may help them to meet their needs, and find novel ways of combining resources to maximize investment opportunities for new start-ups. Investor alertness makes prospective angel investors more ready to invest in new businesses (Wong and Ho, 2007).

We posit that the level of social trust moderates the relationship between the perception of entrepreneurial opportunities and angel investment. However, we expect a different direction of moderation from that described in Hypotheses 3 and 4. Although the perception of opportunities is positively related to angel investment, a higher level of social trust may dampen this relationship. This prediction may seem paradoxical; an explanation is provided below.

Economies and societies at large benefit from a high level of social trust, creating many new opportunities for investment (Zak and Knack, 2001). The lubricating effects of trust benefit not only new business ventures but also established companies (La Porta et al., 1997). As a result, it is not immediately clear how individuals who are alert to investment opportunities will allocate their resources under such conditions (Baker et al., 2005).

Individuals with investor alertness are astute, and look for the best ways to optimize their returns on investments and minimize risk. Investing in a new business, despite its potentially high returns, is riskier than other, more conventional forms of financial investment. Therefore, these astute individuals may choose to direct their time and resources toward conventional asset classes (e.g., mutual funds), because trust also facilitates the development and supply of investment products that carry a lower risk and—discounting transaction costs—provide higher and more stable returns (Berger and Udell, 2003). Angel investing in new businesses is comparatively less attractive, as start-ups are usually disorganized and uncertain.

As the informal institution of social trust improves business exchange, it is counter-intuitive to suppose that a high level of social trust deters opportunity-alert individuals from investing in new businesses. However, as "institutions influence the relative payoffs society offers for each set of activities" (Baumol, 2010: 152), they may promote certain types of value-adding activities while discouraging or constraining others (Bruton and Ahlstrom, 2003; North, 1990). Therefore, initiatives widely regarded to improve societies, such as deregulation policies, have been found to be ineffective in promoting start-up activities (Van Stel et al., 2007). Similarly, well-developed normative institutions may increase entrepreneurship prevalence but constrain high-impact entrepreneurship (Stenholm et al., 2013). Angel investment is not always perceived as "proper," and various policies have inadvertently discouraged investors from engaging in this activity. As a result, the Organization for Economic Co-operation and Development has advocated their members to constructed policies to promote angel investment (Wilson, 2011).

Although angels may receive higher returns from investing in new businesses than in conventional asset classes, they are also more likely to lose all of their investment. As opportunity-alert individuals exchange information, they may advise prospective angels to avoid investing in start-ups, as such investments pose an excessive risk to money and time (Shane, 2009). Conventional assets are a better choice for hesitant investors. Therefore, when the level of social trust is high, people who are alert to new business opportunities may simply act in the way most astute individuals would do; that is, invest in conventional assets. Consequently, a higher level of social trust may weaken the positive relationship between perceiving start-up opportunities and making angel investments.

H5. In countries with a higher level of trust, individuals who are alert to entrepreneurial opportunities are less likely to make angel investments.

For similar reasons, those who readily perceive entrepreneurial opportunities may also be less likely to make angel investments when the radius of social trust is wide. In such societies, information sharing and a wide circle of collaboration help opportunity-alert individuals to move out of close relationships to discover and seize opportunities (Fukuyama, 1999). Based on the argument above, the trust radius may not only enhance investment in start-up opportunities; its effect on investment in asset classes with more stable returns, such as stocks and bonds, may be even greater. A benign institutional setting makes the former type of payoff less attractive than the latter. Investment-alert individuals are astute, and may prioritize conventional investments over angel investments (Baker et al., 2005), as the latter are usually more uncertain and risky. Therefore, a wider radius of social trust may weaken the positive relationship between recognizing start-up opportunities and making angel investments.

H6. In countries with a wider radius of trust, individuals who readily perceive entrepreneurial opportunities are less likely to make angel investments.

5. Method

5.1. Data

The main dataset was derived from the Adult Population Survey (APS) conducted by the Global Entrepreneurship Monitor, which has provided data for an increasing number of papers (e.g., Bowen and De Clercq, 2008; Estrin et al., 2012; Kwon and Arenius, 2010; Stephan and Uhlaner, 2010). In each country participating in the GEM APS, an academic team conducts a harmonized survey of a representative sample of adults (18–64 years old). To ensure adequate numbers for each country, we combined the GEM adult-population surveys for 2005 and 2007 (Levie and Autio, 2008). After the country-level data were matched and the missing data were deleted, our dataset comprised 191,907 individuals across 25 countries. The sample size ranged from 1672 individuals in India to 47,264 individuals in Spain. We compared the countries included with those excluded, and found there to be no significant difference between the scores for angel-investor propensity in the countries included (M = 1.631, SD = 1.348) and the countries excluded (M = 1.495, SD = 0.984; t (24) = 0.429, p = 0.671). This indicates that there is no material difference between the countries that were and were not selected, although the former group, which is composed of the world's major economic entities, has a slightly higher gross domestic product (GDP) and entrepreneurship level. It is important to note that despite its wide coverage, the GEM sample under-represents African and Middle Eastern countries. The use of secondary data has both strengths and weaknesses (McGrath et al., 1982; Stenholm et al., 2013). We thus used variables with proven validity, and sought to eliminate possible confounding effects by including control variables such as GDP, TEA, and cultural values.

5.2. Dependent variable

The dependent variable was individual angel investment decision. It was measured by identifying respondents whose most recent personal investment was directed to a stranger with a good business idea. The variable was binary, with a score of 1 for yes and 0 for no. As this measure of angel-investment propensity has been used repeatedly in GEM studies, it has also been widely used in previous

studies to identify angel investors (Bygrave and Reynolds, 2004; Maula et al., 2005; Szerb et al., 2007; Wong and Ho, 2007), and in other management research, such as studies of investment strategy (Holburn and Zelner, 2010), entrepreneurship (Davidsson and Honig, 2003), and new-venture financing (Hallen, 2008). The average proportion of angel investors as a percentage of total observations was 1.631%, with the largest percentage (6.859%) in India and the smallest (0.175%) in Brazil.

5.3. National-level (level-2) independent variables

The first national-level independent variable was the level of social trust in a country. The World Values Survey (WVS) measures social trust by determining the percentage of individuals in each country who believe that others can be trusted, using the following question: "In general, do you think that most people can be trusted, or that one can't be too careful when dealing with people?" Measured as such, social trust is not an individual-level variable but a national-level variable that indicates the general level of societal trust toward unknown individuals (Kozlowski and Klein, 2000). It represents society's attitude toward "most people" rather than that toward particular individuals, and takes no account of context, as even the most trusting individual will consider others untrustworthy in certain conditions (Uslaner, 2002). Different versions of this question have been used in the U.S. Census and in academic studies (e.g., Blanchflower and Freeman, 1997; Knack and Keefer, 1995; Miller and Mitamura, 2003). The WVS measure of social trust has been compared with measures of other aggregated behavioral features such as corruption and the prevalence of violent crimes (Lederman et al., 2002; Uslaner, 2002), and has proven to be a robust predictor (Bjørnskov, 2006).[3] To confirm that two waves of the WVS could be combined to provide sufficient national samples for our tests, we selected 21 countries from each wave, and found the trust measure to be strongly correlated between these two waves (r = 0.887, p < 0.001). As shown in Table 1, Turkey exhibited the lowest level of social trust (4.8%), and Sweden the highest (68.0%).

The use of our second national-level independent variable, the radius of trust, has recently been advanced by Delhey et al. (2011). The authors' original approach to measuring trust radius is technically sophisticated. For practical reasons, they suggest using out-group trust as a surrogate for trust radius, because "out-group trust mirrors very closely the radius's strong association with civicness indicators." Indeed, we found the correlation between trust radius and out-group trust to be very high. Out-group trust was measured by asking the respondents to evaluate their trust in three groups ("people you have met for the first time," "people of another religion," and "people of another nationality"), and provide ratings for whether they trusted the groups "completely, somewhat, not very much, or not at all." Specifically, one of the question items was as follows: "Do you trust the people you meet for the first time completely, somewhat, not very much, or not at all?" Three question items were used. Following Delhey et al. (2011), we created additive indices for out-group trust by adding "response values of each type (coded 0, 0.33, 0.66, and 1) and divid[ing] by three, so the resulting scales run from 0 (no trust) to 1.0 (trust)."

Measured as above, level of trust and radius of trust capture different aspects of social trust. According to Delhey et al. (2011), the level of trust and the radius of trust are not mutually additive; a high trust level cannot compensate for a narrow trust radius, or vice versa. Trust level and radius of trust were examined to determine their direct effects and their (cross-level) moderating effects on angel investment. The correlation between the level and radius of trust is high in this study (r = .69; r = .25, Delhey et al. (2011)). Therefore, these two dimensions of social trust are not statistically independent of each other.

5.4. Individual-level (level-1) independent variables

The individual-level independent variables depict the focal individual attributes that lead to angel investment. Previous studies based on the GEM have used single items as proxies for focal variables, rather than full measurement scales. We used only measures validated in the past studies (e.g., Levie and Autio, 2008; Wong and Ho, 2007). Self-perception of entrepreneurial skill was measured by asking the respondents whether they had the knowledge, skill, and experience required to start a new business (1 = yes; 0 = no). The ability to perceive entrepreneurial opportunities was measured by asking the respondents whether they felt that good opportunities were available to start a business in their area of residence in the next 6 months (1 = yes; 0 = no). The use of dichotomous variables and single items may impose certain constraints. Although secondary data permit less flexibility and precision than primary data, their use is common practice, especially in pooled cross-national studies that investigate many countries and have a large sample size (e.g., Parboteeah et al., 2008; Wanous et al., 1997).

5.5. Control variables

We controlled for several variables at the individual level and the country level. The individual-level control variables were gender, age, household income, education, and GEM wave, as previous research has shown these factors to be related to angel investment (e.g., Bygrave and Reynolds, 2004). We controlled for additional individual characteristics such as fear of failure, professional experience of starting up a new business, and expectation of starting up a firm.

At the country level, we used the logarithm of GDP (Purchasing Power Parity) from the Central Intelligence Agency database and the Total Entrepreneurship Activities (TEA) index from the GEM survey as control variables. GDP can affect an individual's investment decisions, as a country's wealth determines its engagement in investment activities and its general institutional environment. The TEA

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[3] Kwon and Arenius (2010) also show that the trust measure correlates with other criterion measures of generalized trust (r = 0.67) and weakly correlates with particularized trust (r = 0.06). We combined data from two waves of the WVS to provide an adequate number of national samples (see also Kwon and Arenius, 2010), specifically 25 countries from the fifth wave and 3 from the fourth.

Table 1
List of the 25 countries [a].

	Investor %	Level of trust	Radius of trust	TEA%	GDP PPPinternational $ billion	Total number of respondents
Argentina	1.564	0.172	0.614	9.5	183.193	4026
Australia	0.933	0.489	0.663	10.9	692.301	2465
Brazil	0.175	0.092	0.491	11.3	882.186	4000
Canada	1.201	0.426	0.665	9.3	1133.759	6412
Chile	2.067	0.138	0.497	11.1	124.404	6000
China	2.228	0.515	0.471	13.7	2256.902	2109
Colombia	2.664	0.139	0.487	22.7	207.520	2102
Finland	1.544	0.597	0.674	5.0	195.778	4015
France	2.045	0.188	0.693	5.4	2136.555	4010
Germany	1.109	0.350	0.547	5.4	2766.254	6577
India	6.859	0.240	0.550	8.5	1238.700	1662
Italy	0.702	0.304	0.547	4.9	1786.275	3984
Mexico	1.443	0.155	0.461	5.9	848.947	2009
Netherlands	0.828	0.470	0.567	4.4	638.471	7121
Norway	2.147	0.742	0.714	9.2	204.060	4051
Peru	3.550	0.065	0.422	25.9	107.513	2000
Russia	0.722	0.273	0.509	2.7	1299.706	1939
Slovenia	1.159	0.188	0.497	4.4	35.718	6036
South Africa	0.247	0.176	0.595	5.1	247.051	3237
Spain	0.939	0.220	0.578	5.7	1130.799	47,264
Sweden	0.999	0.683	0.733	4.0	370.579	4003
Switzerland	2.288	0.520	0.661	6.1	384.754	7604
Turkey	1.125	0.047	0.483	5.6	647.155	2400
United Kingdom	0.447	0.325	0.675	6.2	2295.845	52,723
United States	1.803	0.397	0.661	12.4	12,564.300	4158

[a] Countries are in alphabetical order.

index measures the proportion of a nation's adult population that is engaged in entrepreneurial activities, such as starting up a business or running a newly formed business. The population of a country that is active in entrepreneurship should exhibit a strong investment interest (Burke et al., 2010). In the subsequent tests for robustness, we also examined the possible confounding effects of cultural values, with specific attention to dimensions of culture related to social trust and business transactions (Li and Zahra, 2012; Lim et al., 2004).

6. Results

Hierarchical linear modeling (HLM) was used to test the multilevel hypotheses (Hitt et al., 2007; Klein et al., 1994). The use of this approach enabled us to extend the findings of previous research to cross-country and multilevel data, as individual behavior is inseparable from the institutional environment. As our dependent variable was binary, we used logistic regression with the Bernoulli-outcome variable in the HLM.[4] Table 2 presents the summary statistics and correlations.

6.1. Hypothesis testing

We estimated several hierarchical linear models to test the hypotheses. We first analyzed a null model with no predictors specified. Next, we added the variables incrementally, as shown in Tables 3 and 4. Hypothesis 1 predicts that in countries with a high level of trust, individuals are more likely to make angel investments. The results of Model 2, shown in Table 3, suggest that the level of social trust is significantly positively related to angel-investment decisions ($\beta = 1.911$, p < 0.001). Therefore, Hypothesis 1 is supported. Hypothesis 2 predicts a positive relationship between the radius of trust and an individual's angel-investment decisions. The empirical results of Model 2, presented in Table 4, show that there is no significant relationship between radius of trust and angel-investment decision ($\beta = 1.687$, p = 0.130). Therefore, Hypothesis 2 is not supported.[5]

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[4] Model specification. This study uses Bernoulli HLM to test the hypotheses. Bernoulli HLM uses the logit link function $\eta_{ij} = \ln[\mu_{ij}/(1 - \mu_{ij})]$, where μ_{ij} is the likelihood of angel investment by individual i in country j. Level 1 of the structural model can thus be described mathematically as $\eta_{ij} = \beta_{0j} + \beta_{1j}X_{ij} + r_{ij}$, where X_{ij} denotes the individual-level explanatory variables, β_{0j} is the intercept when all X_{ij} is zero, β_{1j} is a vector of the estimated coefficients for X_{ij}, and r_{ij} is the random error (unique effect associated with individual i in country j). Level-2 can be represented mathematically as $\beta_{0j} = \gamma_{00} + \gamma_{01}W_j + u_{0j}$, where W_j denotes the country-level explanatory variables, γ_{00}, γ_{10} are the intercepts, and u_{0j}, u_{1j} denote the random error.

[5] When we stepped in the level and the radius, the R-square value increases substantially when we input the level of trust and radius of trust in separate steps. When the level of trust is added first, followed by the radius of trust, the R-square value increases by 10.34%; when the radius of trust is added first, followed by the level of trust, the R-square increases by 13.77%. It is thus clear that each of the dimensions of trust has good explanatory power with respect to angel-investment behavior. However, due to the intercorrelation, if they were both input to the same model, their coefficients would become insignificant. Therefore, we decided to report separate models.

Table 2
Statistics and correlation matrix.

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10
1.Gender	0.46	0.49										
2.Age	42.41	14.74	−0.024									
3.Income	1.52	1.02	0.073	−0.037								
4.Education	3.07	1.34	0.023	−0.106	0.203							
5.Fear of failure	0.54	1.24	−0.033	0.004	−0.037	−0.011						
6.Job involves start-ups	0.03	0.16	0.057	−0.049	0.033	0.030	−0.013					
7.Expect start-up	0.11	0.31	0.082	−0.154	0.052	0.065	−0.048	−0.027				
8.GEM wave	0.43	0.49	0.011	0.020	0.006	0.024	−0.121	−0.003	−0.027			
9.Perceived skills	0.69	1.27	0.054	−0.018	0.023	0.045	0.118	0.031	0.071	−0.117		
10.Seeing opportunity	0.23	0.42	0.082	−0.070	0.070	0.076	−0.056	0.114	0.263	−0.058	0.048	
11.Angel investment	0.01	0.11	0.055	−0.021	0.037	0.040	−0.015	0.069	0.102	−0.009	0.023	0.073

	Mean	S.D.	1	2	3	4	5	6	7	8	9
1.LnGDP	27.16	1.29									
2.TEA	8.61	5.58	−0.186								
3.PDI	57.42	18.15	−0.017	0.149							
4.IDV	48.95	24.72	0.373	−0.476	−0.651						
5.MAS	45.87	17.69	0.185	0.095	0.136	0.021					
6.UAI	67.95	20.27	−0.068	0.057	0.547	−0.620	0.022				
7. Formal institution	0.74	0.88	0.030	−0.397	−0.561	0.405	−0.286	−0.298			
8. Legal origin	0.24	0.44	0.354	0.012	−0.257	0.244	0.199	−0.445	0.170		
9.Level of Trust	0.32	0.19	0.117	−0.256	−0.409	0.488	−0.345	−0.649	0.635	0.076	
10.Radius of Trust	0.58	0.09	0.184	−0.376	−0.480	0.600	−0.180	−0.477	0.752	0.357	0.688

Hypotheses 3 and 4 predict that the two dimensions of social trust will positively moderate the relationship between an individual's perceived entrepreneurial skills and his/her angel-investment decision. First, the perception of entrepreneurial skills is positively associated with investment decision, as shown in previous studies (Wong and Ho, 2007). The results of Model 3 (Table 3) show that the level of trust and the perception of skills positively interact to influence angel-investment decisions ($\beta = 1.428$, $p < 0.001$). Therefore, this positive interaction supports Hypothesis 3, according to which the level of social trust has a positive moderating effect. Following the same procedure, the radius of trust was found to positively moderate the relationship between an individual's perceived entrepreneurial skills and his/her angel-investment decision ($\beta = 1.436$, $p < 0.001$), as shown in Table 4 (Model 3). As a result, Hypothesis 4 is supported.

Hypotheses 5 and 6 posit that the two dimensions of social trust negatively moderate the relationship between an individual's perception of entrepreneurial opportunities and angel-investment decision. Note that the perception of opportunities is positively related to investment decision. The results of Model 4, shown in Table 4, indicate that in countries with a high level of social trust, individuals who more readily perceive entrepreneurial opportunities are less likely to make angel investments, compared with their counterparts in countries with a low level of social trust ($\beta = -1.145$, $p < 0.001$). This supports Hypothesis 5. Similarly, individuals who more readily perceive entrepreneurial opportunities are less likely to make angel investments in countries with a wider radius of trust, compared with their counterparts in countries with a smaller radius of trust ($\beta = -1.354$, $p < 0.001$). Accordingly, the negative moderating effects of the radius of trust on the perception of entrepreneurial opportunity also received strong support. Therefore, Hypothesis 6 is supported.

6.2. Robustness of the moderating effects of the institutional factors

6.2.1. GDP and TEA

As institutional factors are known to be correlated with several important country-level variables, the observed effects of institutions may be spurious, and caused only by confounding national variables. To rule out this possibility and establish robustness, GDP (Ln) and TEA were added to the model in interaction with the focal variables, to check that they were not responsible for the moderating effects of social trust. After controlling for these variables, the moderating effects of social trust persisted (as shown in Tables 3 and 4). Therefore, these moderating effects are unlikely to arise from wealth or entrepreneurship activities.

6.2.2. Cultural values

To eliminate the possible confounding effects of dimensions of culture, we added four individual cultural characteristics to the model and re-analyzed the data. We used four items on Hofstede's (1991) list of cultural dimensions related to social trust (Lim et al., 2004), namely power distance, individualism–collectivism, uncertainty avoidance, and masculinity. The number of countries was reduced to 24 due to the limited availability of data on culture. The effects of level of trust and radius of trust persisted despite the presence of these cultural dimensions. Therefore, the effects of trust were not caused by cultural effects.

Table 3
HLM results for the level of trust.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Level-1 variables								
Gender	0.565(0.037)***	0.565(0.039)***	0.577(0.040)***	0.553(0.036)***	0.587(0.041)***	0.582(0.042)***	0.574(0.037)***	0.597(0.042)***
Age	−0.002(0.001)	−0.003(0.002)	−0.002(0.001)	−0.002(0.001)	−0.002(0.001)	−0.002(0.001)	−0.002(0.001)	−0.002(0.001)
Income	0.160(0.018)***	0.162(0.020)***	0.165(0.021)***	0.158(0.019)***	0.168(0.021)***	0.167(0.021)***	0.165(0.019)***	0.145(0.021)***
Education	0.170(0.017)***	0.169(0.017)***	0.172(0.018)***	0.165(0.016)***	0.175(0.018)***	0.175(0.018)***	0.170(0.017)***	0.179(0.019)***
Fear of failure	−0.034(0.017)†	−0.031(0.018)†	−0.047(0.016)**	−0.032(0.017)†	−0.048(0.018)**	−0.046(0.018)*	−0.051(0.017)**	−0.033(0.017)†
Job involves start-ups	0.510(0.111)***	0.509(0.118)***	0.516(0.115)***	0.504(0.114)***	0.514(0.119)***	0.507(0.120)***	0.511(0.114)***	0.526(0.128)***
Expect start-up	0.368(0.079)***	0.370(0.085)***	0.373(0.084)***	0.368(0.082)***	0.383(0.087)***	0.381(0.085)***	0.380(0.081)***	0.391(0.086)***
GEM wave	−0.162(0.263)	−0.407(0.240)†	−0.445(0.253)†	−0.449(0.242)†	−0.383(0.241)	−0.226(0.232)	−0.514(0.233)*	0.259(0.283)
Perceived skills	0.373(0.039)***	0.285(0.039)***	0.361(0.031)***	0.233(0.037)***	0.363(0.031)***	0.393(0.030)***	0.311(0.029)***	0.421(0.037)***
Seeing opportunity	0.091(0.038)*	0.178(0.039)***	0.115(0.042)*	0.136(0.032)***	0.151(0.035)***	0.146(0.031)***	0.141(0.031)***	0.158(0.030)***
Level-2 variables								
LnGDP	0.053(0.065)	0.093(0.057)	0.079(0.056)	0.094(0.058)	0.083(0.054)	0.022(0.056)	0.096(0.055)†	0.001(0.070)
TEA	0.039(0.011)**	0.041(0.009)***	0.043(0.009)***	0.041(0.009)***	0.041(0.009)***	0.058(0.012)***	0.044(0.009)***	0.034(0.013)*
Level of trust		1.911(0.571)**	0.824(0.591)	2.931(0.492)***	2.042(0.449)***	2.034(0.668)**	1.796(0.539)**	1.746(0.527)***
PDI						0.014(0.003)**		
IDV						0.012(0.004)**		
MAS						−0.001(0.004)		
UAI						0.002(0.005)		
Formal institution							0.106(0.112)	
Legal origin								−0.047(0.227)
Cross-level interaction								
Skills × level of trust			1.428(0.220)***		1.329(0.197)***	1.326(0.191)***	1.265(0.184)***	1.171(0.216)***
Oppo × level of trust				−1.145(0.191)***	−1.207(0.210)***	−1.237(0.208)***	−1.180(0.197)***	−1.189(0.200)***
Intercept	−3.933(0.072)***	−3.986(0.070)***	−4.001(0.069)***	−3.933(0.068)***	−4.030(0.073)***	−4.019(0.065)***	−3.993(0.069)***	−4.037(0.016)***
R-squared	16.35%	26.68%	22.20%	16.11%	27.91%	23.25%	19.22%	19.22%

† $p < 0.10$.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.

Table 4
HLM results for the radius of trust.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Level-1 variables								
Gender	0.565(0.037)***	0.568(0.039)***	0.573(0.038)***	0.559(0.036)***	0.576(0.038)***	0.573(0.039)***	0.566(0.033)***	0.591(0.040)***
Age	−0.002(0.001)	−0.002(0.001)	−0.002(0.001)	−0.002(0.001)	−0.002(0.001)	−0002(0.001)	−0.002(0.001)	−0.002(0.001)
Income	0.160(0.018)***	0.163(0.021)***	0.165(0.020)***	0.160(0.019)***	0.166(0.020)***	0.165(0.020)***	0.163(0.018)***	0.143(0.020)***
Education	0.170(0.017)***	0.170(0.017)***	0.171(0.016)***	0.167(0.019)***	0.171(0.017)***	0.172(0.018)***	0.166(0.016)***	0.177(0.018)***
Fear of failure	−0.034(0.017)†	−0.034(0.018)†	−0.044(0.016)**	−0.034(0.018)†	−0.046(0.016)**	−0.049(0.017)**	−0.053(0.015)***	−0.032(0.017)†
Job involves start-ups	0.510(0.111)***	0.511(0.115)***	0.514(0.112)***	0.510(0.113)***	0.516(0.113)***	0.502(0.115)***	0.516(0.107)***	0.529(0.123)***
Expect start-up	0.368(0.079)***	0.372(0.081)***	0.371(0.081)***	0.368(0.080)***	0.374(0.082)***	0.376(0.080)***	0.374(0.076)***	0.384(0.083)***
GEM wave	−0.162(0.263)	−0.271(0.265)	−0.324(0.262)	−0.283(0.268)	−0.352(0.304)	−0.148(0.210)	−0.477(0.283)†	0.271(0.306)
Perceived skills	0.373(0.039)***	0.372(0.039)***	0.381(0.035)***	0.315(0.036)***	0.389(0.035)***	0.387(0.030)***	0.271(0.032)***	0.446(0.040)***
Seeing opportunity	0.091(0.038)*	0.112(0.040)*	0.096(0.040)*	0.097(0.035)*	0.111(0.032)**	0.128(0.030)***	0.105(0.032)**	0.120(0.034)**
Level-2 variables								
LnGDP	0.053(0.065)	0.056(0.058)	0.055(0.058)	0.061(0.059)	0.060(0.058)	0.009(0.061)	0.088(0.059)	−0.007(0.071)
TEA	0.039(0.011)**	0.047(0.011)***	0.048(0.011)***	0.045(0.012)***	0.045(0.011)***	0.061(0.012)***	0.046(0.011)***	0.036(0.016)*
Radius of trust		1.687(1.070)	1.029(1.017)	3.183(0.888)**	2.567(0.812)**	1.475(0.809)†	1.364(0.838)	2.315(0.874)*
PDI						0.015(0.003)***		
IDV						0.011(0.003)**		
MAS						−0.005(0.004)		
UAI						−0.001(0.003)		
Formal institution							0.207(0.122)	
Legal origin								−0.078(0.260)
Cross-level interaction								
Skills × radius of trust			1.436(0.337)***		1.412(0.324)***	1.451(0.209)***	1.259(0.374)**	1.152(0.354)**
Oppo × radius of trust				−1.354(0.340)***	−1.479(0.344)***	−0.909(0.220)***	−1.467(0.312)***	−1.336(0.353)***
Intercept	−3.933(0.072)***	−3.972(0.068)***	−3.974(0.068)***	−3.929(0.065)***	−3.972(0.067)***	3.973(0.063)***	−3.929(0.070)***	−4.008(0.074)***
R-squared	16.35%	22.15%	18.10%	15.71%	18.65%	15.84%	18.38%	18.38%

† p < 0.10.
* p < 0.05.
** p < 0.01.
*** p < 0.001.

6.2.3. Legal structure

To eliminate the confounding effect of legal structure, we introduced a measure of legal origin to the model, following La Porta et al. (1998). This measure indicates whether a country's legal structure is based on common law or civil law. In general, commercial law comes from common law, which is English in origin, and civil law, which originates from three legal families: French, German, and Scandinavian. Laws vary greatly across countries, partly due to differences in legal origins. For example, compared with common law, civil law gives investors weaker legal rights, independent of per-capita income. Compared with civil-law countries, common-law countries give both shareholders and creditors stronger protection. Therefore, we controlled for legal traditions by setting common law as 1 and other legal origins as 0. The results shown in Tables 3 and 4 indicate that our hypotheses still hold when legal origin is introduced to the equations.

6.2.4. Single-country effect

We checked whether a single country with extreme conditions may have affected the results. Angel investors occupied a high percentage of the observations for India (6.86%), compared with the average percentage of angel investors (1.63%). After excluding India, the results held. Indeed, we confirmed that the overall findings are robust to the elimination of any one or two countries from our tests.

6.2.5. Love money vs. angel investment

Angel investment does not include investments in businesses run by family and friends (Morrissette, 2007), which are argued to be influenced by interpersonal relationships between investors and entrepreneurs (Shane, 2009). Non-angel investors may lend money to their family members or friends, or invest in their businesses. Indeed, investments made by family and friends have earned the nickname of "love money," because a lack of expertise and diminished percipience due to love may lead family and friends to pick inferior ventures in which to invest. Love money is not a formal investment, because marriage, blood ties, and friendship are inborn or prescribed. Therefore, to supplement the main results of our analysis, we categorized non-angel investors into two groups: love-money investors, who have invested in their family members or friends, and non-investors.

We used multinomial models to analyze the effects of trust level and radius of trust on this new multinomial dependent variable (1 = love-money investment, 2 = angel investment, and 3 = no investment). The results show that a higher level of social trust prompts individuals to make angel investments ($\beta = 2.278$, $p < 0.05$) rather than to invest in family and friend. An increase in social trust does not affect the propensity for love-money investment or non-investment ($\beta = 0.346$, $p < 0.416$). These findings confirm that stronger social trust prompts individuals to invest in ventures run by strangers rather than by family and friends (Kwon and Arenius, 2010). The findings also provide further support for the hypothesis that trust may influence individuals' investment decisions.

Overall, the findings indicate that the informal institution of social trust influences angel-investment decisions, confirming most of the hypotheses. These findings hold up after controlling for other frequently studied institutional factors and known individual factors in the robustness tests.

7. Discussion

Entrepreneurship research has shown that in addition to efficiency, social causes help to determine entrepreneurial endeavors and venture investment (Bowen and De Clercq, 2008; Cumming et al., 2010). In response to these findings, entrepreneurship scholars have called for further comparison of entrepreneurship and informal institutional factors, as well as national cultural dimensions (Bruton et al., 2010; Jennings et al., 2013). The aim of the current study was to determine whether social trust, an important informal institution, influences the decisions of angel investors, whose informal relationships with entrepreneurs underscore the significance of trust to investment decisions (Harrison et al., 1997).

The findings provide several theoretical insights. First, compared with previous studies (e.g., Kwon and Arenius, 2010), this study investigates the influence of social trust on angel decisions in two new dimensions. Multilevel models are used to examine data across countries, and both the radius and the level of social trust are tested (Delhey et al., 2011). The findings indicate that social trust exerts a direct effect at a national level, as well as cross-level moderating effects, on angel investment. Therefore, this study extends our understanding of how the informal institution of social trust may influence entrepreneurship across multiple levels and countries.

Second, the existing research on entrepreneurship, including comparative literature, has investigated many characteristics of entrepreneurs and venture capitalists (e.g., Li and Zahra, 2012). However, researchers have paid insufficient attention to other stakeholders, such as angel investors (Tolbert et al., 2011). This study sheds light on the role of social trust, an informal institution, in influencing angel investors. We integrated important theories of social trust and entrepreneurship to propose several mechanisms for the operation of social trust, namely information-sharing, collaboration, and enforcement (Fukuyama, 2001; Putnam, 1993; Seligman, 1997). Our explanation of these mechanisms fills a gap in the existing research by providing insight into the interaction between angel investors and the institutional environment, as many existing studies of business angels have focused solely on individuals' decision-making processes (Maxwell et al., 2011; Mitteness et al., 2012; Wiltbank et al., 2009).

Third, our findings on cross-level moderating effects cast light on the interaction between social trust, individuals' entrepreneurship skills, and their ability to perceive opportunities as a determinant of angel investment. As social trust lubricates social and business exchange (e.g., Hagen and Choe, 1998; North, 1990), it is interesting although unsurprising to find that social trust increases the investment propensity of individuals with entrepreneurial skills. However, less obviously and somewhat counter-intuitively, increased trust reduces the likelihood that investment-alert individuals—those who regularly perceive opportunities—will invest in new business ventures (Maula et al., 2005). We argue that although a trusting environment encourages individuals to invest, this favorable context may also discourage investors—especially opportunity-alert individuals—from investing in new start-ups. In an environment

with a high level of social trust, more and better investment channels (Bruton et al., 2009; Meyer et al., 2008) and opportunities (Knack and Keefer, 1995; La Porta et al., 1998; Zak and Knack, 2001) are available. For instance, conventional asset classes boast a higher level of development and thus greater legitimacy than new ventures (Cumming et al., 2010; Shane, 2009), which are associated with greater risk and uncertainty. Indeed, people in general are socialized (Meyer and Rowan, 1977) or "structured" (North, 1990) to see angel investments as more risky and less profitable than investments in conventional asset classes (Wilson, 2011). Normative expectations and socially shared assumptions often drive organizational decision making and practices (Tolbert et al., 2011), and they may also determine individuals' investment decisions. Therefore, investment-alert individuals may astutely direct their investments to asset classes that appear to be more reliable and profitable, and which are endorsed by their peers and social norms (Baker et al., 2005). The results of this study corroborate the existing claim that social trust, like other institutions, may promote certain types of value-adding activity while constraining other activities (North, 1990; Stenholm et al., 2013). Researchers investigating such institutions should note that their effects may have both positive and negative dimensions (Baumol, 2010).

8. Implications

The findings of this study have implications for both future research and industry practice. First, they demonstrate that the propensity of investment-alert and competent individuals to make angel investments is heightened not only by formal institutional factors such as laws and regulations, or by frequently studied informal institutional factors such as culture, but also by social trust. Future researchers could also examine the two dimensions of social trust, the level and radius, in relation to other kinds of economic and entrepreneurial activities. To add to the commonly studied national trust level—that is, how much the individuals in a given country trust others—future researchers should ask how wide each respondent considers his/her circle of trust to be (Delhey et al., 2011). Future studies can further ascertain that two dimensions can add independent value. Additionally, whereas this study focuses on social trust, future studies could be conducted to determine whether other informal institutions, such as family-interdependency norms and conformity norms (Meek et al., 2010), also exert cross-level effects. It would be particularly useful to differentiate between the mechanisms by which these institutions exert their effects (Jennings et al., 2013).

In practical terms, enhancing both formal and informal institutions is a crucial means of economic improvement in almost every developing nation. However, academics and policy makers must pay attention to the overall consequences of institutional change. Certain well-regarded policy initiatives, such as deregulation (Djankov et al., 2008), have been shown to be irrelevant if not detrimental to nascent entrepreneurship (van Stel et al., 2007). During the recent financial crisis, the advanced institutions of many developed nations also failed to channel capital to entrepreneurs or small and medium-sized enterprises. Financial institutions are more skilled than other institutions in using their resources to develop investment tools—whether effective or ineffective—and selling these tools to others (Davis, 2009).Therefore, if angel investment helps to boost innovation and entrepreneurship (Wilson, 2011), our findings indicate that policy makers should work to improve the entrepreneurial skills of potential investors to compensate for reduced angel investment due to the availability of better investment alternatives. In addition, the findings of this study suggest that policy makers should encourage investment-alert individuals to channel their funds into angel investment. Such encouragement could take the form of investment opportunities, the use of incentives to signal benefits (e.g., tax incentives), and support for the construction of angel business networks (Wilson, 2011). In addition, future researchers should seek to determine how policy makers can shape the emergence of new practices and new angel organizations (Sine et al., 2005), and how entrepreneurs can shape their institutions to support angel investment (Tolbert et al., 2011).

Although this study offers several interesting findings, a number of limitations should be noted. First, the dichotomous variables used to measure angel investment reveal only the propensity to invest or not invest. Future analysis of more sophisticated measures would help to confirm the findings. The same improvement could be made to the independent variables, and may help to extend the study to cover other relevant constructs, such as networks of entrepreneurs (e.g., Aldrich and Zimmer, 1986) and family trust (Miller and Mitamura, 2003).

Second, our use of the GEM project to capture global entrepreneurial activity sacrificed a certain breadth and depth of measurement. Many of the predictors used in the study were single-item predictors and were designed for practical reasons. We used proven items (e.g., Kwon and Arenius, 2010), and argue that we were justified in using single-item measures, because resource and situational constraints limited the use of scales (Maula et al., 2005; Wanous et al., 1997). However, the hypotheses could also be tested using more finely tuned surveys and case studies. Lastly, the cross-sectional data do not allow causality to be clearly determined. This would be a fruitful direction for future research, especially as we provide sound theoretical reasoning for the relationships identified, and control for several possible alternative explanations. Future researchers could use a longitudinal or experimental design and a different institutional context to verify the results.

To conclude, the institutional factor of social trust has an important influence on angel-investment decisions. Therefore, this study extends previous investigation of the effects of institutions on entrepreneurship behavior to angel investment. The cross-national findings obtained in this study show that angel investment, as a type of entrepreneurship behavior, is influenced by the informal institution of social trust (Baker et al., 2005; Jennings et al., 2013).

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