The role of motivations and altruism in micro-angel investments

Abstract

This article investigates the motivations of a large global sample of micro angels – small investors who provide financial support and advice to early-stage businesses, often with close ties to the entrepreneurs. It is explored how four distinct motivations—contributing to society, accumulating wealth, keeping a family tradition, or fulfilling an economic need—influence micro angels' investment decisions. Statistical analysis reveals that for potential investors, contributing to society and keeping a family tradition are frequently more important drivers than simply accumulating wealth. Furthermore, impact-oriented micro angels tend to prefer funding unfamiliar entrepreneurs with good business ideas over family members. This preference is even more pronounced in altruistic countries, where micro angels are more open to investing in unrelated entrepreneurs with novel concepts. These findings generally hold true across various model specifications and sample periods.

Keywords: micro-angel investor; family tradition; society; altruism; COVID-19 pandemic
JEL: D22; L26

1 Introduction

Informal investors are typically individuals who invest capital in a business or startup without the formal structure and processes associated with traditional investment institutions. They may also be referred to as private investors, individual investors, or business angel investors (e.g., Edelman, Manolova, & Brush, 2017; Tenca, Croce, & Ughetto, 2018; Lerner, Schoar, Sokolinski, & Wilson, 2018; Croce, Ughetto, Bonini, & Capizzi, 2020; Cumming & Zhang, 2023; Botelho, Harrison, & Mason, 2023; Croce, Schwienbacher, & Ughetto, 2023; Di Pietro & Tenca, 2023; Maus, Greven, Kurth, & Brettel, 2024; Lange, Rezepa, & Zatrochová, 2024; Siefkes, 2024; Arroyo-Revilla et al, 2025).

Studies on motivations of angel investors have highlighted that these not only involve economic considerations, such as seizing an opportunity for high capital appreciation, participating in a growing business, or exploiting technologies that promise capital growth, but also behavioral and holistic dimensions, such as learning from more experienced angels, giving back to society, supporting a socially beneficial product, or passing on professional experience to young entrepreneurs (e.g., Morrisette, 2007; Edelman et al., 2017; Croce, Ughetto, & Cowling, 2020; Bonnet, Capizzi, Cohen, Petit, & Wirtz, 2022; Falcão, Carneiro, & Moreira, 2023; Siefkes, Bjørgum, & Sørheim, 2023;

Siefkes, 2024). Indeed, advances in behavioral finance have provided insights into investment choice theory that go beyond the risk/return framework of traditional finance (e.g., Barberis & Thaler, 2003; Tinkler, Bunker Whittington, Ku, & Davies, 2015; Murnieks, Klotz, & Shepherd, 2020; Falcão et al., 2023). Under this behavioral perspective, investors are not always inspired by rationality, but their behavior depends on emotional and cognitive aspects, personal traits, motivations, and preferences (Puaschunder, 2017; Cardon, Mitteness, & Sudek, 2017; Croce et al., 2020).

This study focuses on motivations of a specific subset of informal investors denominated as micro-angel investors. Such investors are usually a source of financing for entrepreneurs with whom they maintain close ties and to whom they contribute usually modest amounts of money, ranging from a few thousand to hundreds of thousands of dollars.[1] While they may offer some advice and guidance, their involvement tends to be less hands-on than traditional angels. They might take a more passive role or be involved in a minor, active capacity. Micro-angels' motivations can be diverse. Some may be interested in supporting small, local, or socially/environmentally friendly projects, sometimes with a focus on community development. They might be less driven by pure financial returns and more by personal interest or a desire to contribute (e.g., Bygrave, Hay, Ng, & Reynolds, 2003; Maula, Autio, & Arenius, 2005; Szerb, Rappai, Makra & Terjesen, 2007; De Clercq, Meuleman, & Wright, 2012; Kotha & George, 2012; Ding, Au, & Chiang, 2015; Estapé-Dubreuil, Ashta, & Hédou, 2016; Honjo & Nakamura, 2020; Fernandez, 2024, 2025).

This study makes significant contributions to the literature on micro-angel investors by addressing two critical gaps. First, unlike previous research that primarily concentrated on conventional business angels (e.g., Falcão et al., 2023; Arroyo-Revilla et al, 2025), this study uniquely investigates the specific personal goals of micro-angel investors. It delves into: (i) Identification of goals: it identifies four key motivations—contributing to society, accumulating wealth, keeping a family tradition, and

[1] In this respect, the Adult Population Survey conducted by the Global Entrepreneurship Monitor in 2019 showed that micro angels, of which 61% were men, invested about US$152 million in a three-year period. The mean investment reached about US$18,000 while the median investment was much lower, amounting to about US$3,500.

fulfilling economic necessity. (ii) Interrelationships and relative importance: it models and quantifies how these personal goals relate to each other and their relative importance. (iii) Impact across investment stages: it examines the impact of these motivations on the likelihood of becoming a micro-angel investor, the choice of venture to finance, and the size of the investment made. This provides a nuanced understanding of the individual drivers behind micro-angel investment decisions, a dimension largely unexplored in existing literature.

Second, recognizing the influence of institutional factors on informal investments (e.g., Cumming & Zhang, 2023; Fernandez, 2025), this study is the first to quantify the impact of national altruism on micro-angel investment behavior. Altruism is defined as an act that seems mainly motivated by a consideration of the needs of others rather than our own (e.g., Piliavin & Charng, 1990; Manzur & Olavarrieta, 2021)[2]. In this respect, studies in neuroscience have reported that altruistic behavior, such as volunteering, is positively correlated with self-reported happiness, health, and well-being (Filkowski, Cochran, Haas, 2016). In the context of informal investments, altruism can be understood as a form of benevolence (e.g., Sullivan & Miller, 1996; Ramadani, 2009; Falcão et al., 2023). In this respect, this is the first study that quantifies the impact of altruism on the different stages faced by a potential micro-angel investor, that is, investment decision, investee, and amount invested.

This article is structured as follows. Section 2 outlines research hypotheses grounded in a conceptual framework that synthesizes theories across various disciplines. Section 3 details the data and methodology. A discussion on estimation results is presented in Section 4, followed by robustness checks—including additional institutional factors and data covering the early COVID-19 pandemic—in Section 5. Finally, Section 6 concludes with a discussion of main findings, policy implications, and study limitations.

2 Research hypotheses

Mason & Harrison (2019) point out that the entrepreneurial finance market has changed dramatically over time due to the emergence of new structures/configurations

[2]Altruism towards family members can be understood as intergenerational altruism, that is, considerations of descendants' well-being (e.g., Galperti & Strulovici, 2017).

(e.g., formation of angel groups, a changing geography of venture capital) and new actors (e.g., corporate venture capital, mutual funds, sovereign wealth funds and family offices, government backed finance). These changes have made it necessary to reconsider the motivations of business angels to have a more holistic and current vision of the informal venture capital market. In this sense, investors evaluate opportunities based on the investment experience, personal values and affect, which go beyond utilitarian and rational perspectives (Falcão et al., 2023).

Why do people become micro-angel investors? This section hypothesizes that individuals may become micro-angel investors not solely for financial gain, but also due to non-monetary motivations. These can include upholding family traditions or acting on altruistic desires, such as wanting to create positive societal change. Similarly, it is hypothesized that a nation's collective altruism acts as an informal societal norm that can encourage the prevalence and scale of informal investments. Furthermore, it is suggested that the underlying reasons for micro-angel investments are likely to be tied to how long the investor expects to see a return. For example, investors driven by a wish to contribute to society might be inclined to finance highly innovative startups, which typically require a longer investment horizon.

2.1 Non-monetary motivations

2.1.1 Family tradition

When the recipients of investment are close family members, the key objective of the new venture often shifts beyond mere financial returns to focus on preserving family capital. That is, a family's entire collective resources, both tangible and intangible. Tangible family capital might include shared assets, such as a family home and a long-standing family business. However, intangible family capital is arguably even more crucial. This includes the shared values, beliefs, and cultural norms that define a family's identity and guide its decisions (e.g., Zhang et al., 2025). For example, a family's commitment to education, its work ethic, or its tradition of community involvement all contribute to its intangible capital.

This shared foundation fosters trust, open communication, and effective collaboration among family members. When everyone is aligned around long-term goals and priorities, it strengthens the family's overall well-being, success, and cohesion. Investing in a venture with a close family member, then, becomes a way to safeguard these invaluable resources, ensuring they are sustained and potentially grown across generations. This perspective is supported by research highlighting the importance of shared family values and governance in family enterprises (e.g., Sorenson & Bierman, 2009; Gómez-Mejía & Herrero, 2022; Fernandez, 2023; Miller & Le Betron-Miller, 2025).

2.1.2 Sense of purpose

Informal investments may also involve social well-being considerations. Indeed, existent literature shows that business angels may engage in impact investing, where they intentionally invest in ventures that aim to generate measurable social or environmental benefits alongside financial returns. These investments often target issues such as poverty alleviation, environmental sustainability, or social justice. Some angel investors actively participate in building and nurturing communities of like-minded investors, entrepreneurs, and organizations focused on social impact. To these ends, they collaborate with others to share knowledge, resources, and best practices for maximizing both financial and social returns on investment (e.g., Edelman et al., 2017; Puaschunder, 2017; Falcão et al., 2023; Viglialoro et al., 2025).

Just like larger business angels, micro-angel investors can be driven by a desire to achieve social well-being alongside financial returns. They might intentionally choose to invest in ventures that aim to address issues like local community development, sustainable practices in small businesses, or providing essential services in underserved areas. The scale of the investment might be smaller, but the intent to create measurable social or environmental benefits is the same (e.g., Estapé-Dubreuil et al., 2016).

Concepts of community building and knowledge sharing might even be more prevalent at the micro-level, where investors are often more personally connected to the ventures and the entrepreneurs (Ding et al., 2015). Micro angels might share advice,

connections, and best practices within their smaller networks, fostering a local ecosystem of social impact-driven ventures.

Therefore, the first research hypothesis is:

H_1: Social impact and family values motivate individuals to engage in micro-angel investing.

In essence, this hypothesis proposes that micro-angel investing is not solely a financial decision but often a reflection of deeper personal and familial values, driven by a desire to make a tangible difference in the world and to uphold cherished family traditions and resources.

2.2 Altruism

Informal social factors like shared values, beliefs, traditions, and norms significantly influence investment choices (Voss, 2001). For example, a high level of social trust within a society can improve how information is shared, boost collaboration, and strengthen mechanisms for accountability through moral obligations (Ding et al., 2015; Xiao & Anderson, 2022). In environments with political uncertainty, weak legal or financial support, and inefficient government aid for small and medium-sized businesses, co-investing and networking with family members and government officials can help overcome these challenges (Scheela & Jittrapanun, 2012).

Moreover, individuals who report being altruistic tend to be more socially responsible, empathetic, and sensitive, with pro-social values. Evolutionary theories suggest that such altruistic behavior may have offered survival advantages for groups, leading to its natural selection over time (e.g., Rushton, Chrisjohn, & Fekken, 1981; Puaschunder, 2017; Manzur & Olavarrieta, 2021). Behavioral finance further supports this by showing that even in wealthy societies, investment decisions often include altruism, moving beyond simple profit maximization. Economic psychology views altruism as a fundamental motivation for investment, as investors frequently demonstrate pro-social concerns. Finally, altruistic investors may see themselves as socially responsible or ethical,

which can boost their self-esteem and reinforce their desire to do good, making this alignment a powerful motivator for their investment choices (Puaschunder, 2017).

Micro-angel investment decisions are usually embedded in informal institutional contexts, with social trust, community norms, and especially altruistic motivations playing a far more significant role than in larger, more formal investment arenas (e.g., Ding et al., 2015). These non-monetary factors help explain why individuals might choose to invest small amounts in ventures that often carry high risks or offer limited financial upside but promise significant social or relational returns. Therefore, it is hypothesized that:

H_{2a}: National altruism positively influences the prevalence of micro-angel investing.
H_{2b}: The altruistic nature of a nation impacts the types of ventures micro-angels choose to support and their approach to these investments.

In essence, in highly altruistic societies, there might be stronger cultural norms around supporting community members, helping those in need, or contributing to collective well-being. Micro-angel investing can be seen as a modern manifestation of these traditional acts of generosity and community support. Furthermore, while financial returns are generally still desired, the altruistic national context might make investors more amenable to investments where the return on investment is measured in both financial and social terms. In highly altruistic countries, for example, micro angels may prefer to help strangers rather than family members or acquaintances.

2.3 Motivations and investment horizon

The investment horizon of informal investors can vary depending on individual preferences, financial objectives, and the nature of the investments. Indeed, some of them may have a relatively short-term investment horizon, seeking quick returns. They may target startups that have a clear path to profitability or potential for rapid growth within a few years. These investors are often looking for opportunities to exit through strategies like acquisition or an initial public offering. In contrast, many business angels adopt a medium-term investment horizon, so that they are willing to wait longer for their

investments to mature and generate returns. These investors often support startups in early to mid-stages of development, anticipating that it may take some years for the business to reach a significant milestone (Harrison, Botelho, & Mason, 2016).

Other informal investors take a long-term view of their investments, so that they are willing to support startups through various stages of growth and development, understanding that significant returns may take a decade or more to materialize. These investors often focus on sectors with longer development cycles, such as biotechnology or deep technology (Harrison et al., 2016). Interestingly, the motivations behind these investment horizons also differ. Research by Falcão et al. (2023) indicates that short-term investors are primarily driven by self-development, supporting innovation, and making money. However, for long-term investors, the core motivations shift towards feeling fulfilled, being happy, and expressing benevolence.

This understanding of varied investment horizons among informal investors is highly relevant to micro-angel investors. It helps us categorize their diverse motivations and strategies, especially considering how often their investments are less formal and more personal. Specifically, it is hypothesized that micro angels aiming to make a long-term difference in society are more likely to invest in startups showing significant promise. Meanwhile, micro-angels prioritizing short-term profits may place larger financial bets to ensure a startup's fast growth:

H_3: Impact-driven micro angels will preferentially back high-potential startups.
H_4: Wealth-driven micro angels will commit more capital to foster rapid growth.

2.4 Summarizing the influences on micro-angel investing

Figure 1 presents a conceptual framework for the hypotheses previously outlined. As illustrated, non-monetary motivations impact the likelihood of becoming a micro angel (H_1) and the investment made in new ventures of strangers with good business ideas (H_3). In turn, entrepreneurial framework conditions (e.g., resources, incentives, markets, and supporting institutions) and informal institutions, such as national altruism, impact the

likelihood of becoming a micro angel (H_{2a}) and investments made in new ventures of all types (H_{2b}). Meanwhile, wealth-driven micro angels may invest larger amounts to accelerate venture growth (H_4).

Figure 1 visually outlines the relationships between various factors and micro-angel investing, providing a roadmap for testing the hypotheses.

i) Non-monetary motivations (H_1 & H_3)

The framework first highlights that non-monetary motivations play a crucial role. These intrinsic drivers influence:

- The likelihood of someone becoming a micro-angel investor (H_1). This suggests that factors beyond financial profit, such as a desire for personal fulfillment, community engagement, or social impact, push individuals into this informal investment space.
- Investment decisions regarding new ventures by strangers with promising business ideas (H_3)**.** Here, non-monetary goals, particularly a long-term vision and a desire to make a difference in society, lead micro angels to support startups that show significant potential, even if they do not have a pre-existing personal connection.

ii) Environmental and informal institutional factors (H_{2a} & H_{2b})

The framework then incorporates broader contextual elements:

- Entrepreneurial framework conditions, which encompass a country's resources, incentives, market dynamics, and supporting institutions, are shown to impact the emergence of micro-angels.
- Informal institutions, specifically national altruism, also influence the likelihood of becoming a micro-angel (H_{2a}). This means that a country's collective inclination towards selfless concern for others can foster an environment where more individuals are willing to act as micro angels.
- Furthermore, these entrepreneurial conditions and national altruism also affect investment decisions across all types of new ventures (H_{2b}). This suggests that the broader societal context, especially a nation's altruistic tendencies, shapes what micro angels choose to invest in and how they approach these investments.

iii) Wealth-driven investments (H_4)

Finally, the framework addresses a specific type of micro-angel behavior:

- Wealth-driven micro-angels, whose primary motivation is accumulating money, are hypothesized to invest larger amounts in startups to accelerate venture growth (H_4). This contrasts with other motivations, suggesting that a strong financial incentive can lead to more substantial individual bets aimed at rapid scaling.

In essence, Figure 1 proposes a multifaceted model where both individual motivations (monetary and non-monetary) and broader national and informal institutional factors interact to explain who becomes a micro-angel and how they make their investment choices.

This conceptual framework draws upon several established theories from economics, finance, sociology, and psychology to explain micro-angel investing. For example, behavioral finance explains why non-monetary motivations (H_1, H_3) and altruism (H_{2a}, H_{2b}) play a role alongside financial objectives (e.g.,#Altmeier & Fisch, 2024; Kaiser & Kuckertz, 2025). It accounts for why micro angels might invest based on values, community ties, or a desire for self-esteem/fulfillment, rather than just maximizing profit. It also helps explain the differing motivations of short-term vs. long-term investors (H_3, H_4).

Institutional theory in turn provides theoretical lens for understanding how national altruism, as an informal institution, fosters a supportive environment for micro-angel investing (H_{2a}, H_{2b}). Indeed, this theory emphasizes that a nation's prevailing values, beliefs, and traditions are not just background noise but active forces that impact investment decisions and the likelihood of becoming a micro angel (e.g., Ding et al., 2015; Fernandez, 2024).

On the other hand, the influence of non-monetary motivations and informal institutions might mitigate agency problems differently than in traditional finance (e.g., Xiao & Anderson, 2022; Huang & Shang, 2024). For example, shared family values or altruism can reduce opportunistic behavior, as the agent (family member) might feel a moral obligation beyond contractual terms. The long-term, relationship-driven nature of some micro-angel investments (H_3) might also reduce agency costs through trust and shared vision rather than strict formal controls. Likewise, signaling theory (e.g., Shahid,

Liouka, & Deligianni, 2024; Arroyo-Revilla et al, 2025) suggests that long-term, impact-driven micro angels (H_3) might interpret different signals (e.g., commitment to social mission, ethical leadership, long-term vision) as indicators of potential compared to short-term, wealth-driven angels (H_4) who might prioritize signals of rapid scalability and market traction.

3 Resources and methods

3.1 Data

Statistical analysis in sections 4.1-4.3 and 5.1 is based on the Global Entrepreneurship Monitor (GEM) Adult Population Survey (APS) 2019, which covers 163,005 individuals from 50 countries. Robustness checks in section 5.2 are based in turn on the APS 2019-2020, for a total of 304,409 individuals from 58 countries (https://www.gemconsortium.org/data). In particular, the APS 2020 covered the early months of the Covid-19 pandemic up to August 2020 (Bosma et al., 2021). Details on countries and sample sizes are provided in Table A1 of the Appendix.

The APS is a comprehensive questionnaire, administered to a minimum of 2,000 adults in each GEM country, designed to collect detailed information on respondents' business activity, attitudes and aspirations. The APS contains the following questions on micro-business angels: (i) *Have you, in the past three years, personally provided funds for a new business started by someone else, excluding any purchases of stocks or mutual funds?* (ii) *What was your relationship with the person that received your most recent personal investment? (iii) Informal funds invested in the last 3 years in US dollars.*

The survey also gathers information on demographics (e.g., gender, age, and household income), entrepreneurial culture (e.g., self-efficacy, risk aversion, and personal networks), and country income group following the World Economic Forum (WEF) definitions. Starting 2019, the APS included four questions on entrepreneurial motivations: (i) to make a difference in the world, (ii) to build great wealth or a very high income, (iii) to continue a family tradition; and (iv) to earn a living because jobs are scarce. Each of these motivations was recorded as a binary variable. Most individuals expressed one or two motivations. That is, for the latter case, someone could be in business because

of a family tradition and the ambition to build wealth, for example. Valid answers were provided by around 30,000 individuals, who were considering starting a business or were new or established entrepreneurs. For example, for motivation (iii), the question asked to a future entrepreneur was: *Please tell me the extent to which the following statement reflects the reasons you are trying to start a business: To continue a family tradition.* In what follows, these four motivations are referred to as purpose, wealth, family, and necessity, respectively.

To measure national altruism, the World Giving Index (WGI) 2018 is used. Specifically, the WGI is an annual report published by the Charities Aid Foundation, using data gathered by Gallup, and ranks over 140 countries in the world according to how charitable they are (https://www.cafonline.org/). The WGI considers three aspects of giving behavior: helping a stranger, donating money to a charity, and volunteering time to an organization. These three aspects are in line with the simplified Self-Report Altruism (SRA) scale designed by Manzur & Olavarrieta (2021), which primarily focuses on charity and helping strangers. Based on the WGI 2018 and the sampled countries, three categories are created: highly charitable (3), moderately charitable (2), and slightly charitable (1). Specifically, a country is classified at level 3 if it is among the 39 most charitable countries; classified at level 2 if it is between the 40 and 90 most charitable countries; and classified at level 1 otherwise. In the sample, levels 1 and 2 have 17 countries each, while level 3 has 16 countries. It should be noted that this approximation to national altruism refers exclusively to the current country of residence of a survey participant.

Entrepreneurial framework conditions (EFCs) are one of the essential components of a business ecosystem by providing resources, incentives, markets, and supporting institutions for the creation and growth of new businesses. To capture EFCs, information from the GEM National Expert Surveys (NES) 2019 is used. The NES records expert judgments to evaluate specific national conditions. This study focuses on entrepreneurial finance and government policy. Entrepreneurial finance refers to the availability of equity and debt for small and medium enterprises (SMEs), including grants and subsidies.

Government policy measures two components: (a) entrepreneurship as a relevant economic issue and (b) taxes or regulations are either size-neutral or encourage new ventures and SMEs. Answers to these questions are measured on a Likert scale of 1-9, where 1 is “Completely false”, 5 is “Neither true nor false”, and 9 is “Completely true”.

Study variables are defined and listed in Table A2 of the appendix, with their corresponding sample average, standard deviation, minimum, and maximum, when applicable.

Related literature that has used information from the GEM APS/NES includes Maula et al. (2005); Szerb et al. (2007); De Clercq et al. (2012); Ding et al. (2015); Honjo & Nakamura (2020); Pinho & de Lurdes Martins (2020); Rietveld & Patel, (2022); Uriarte, Espinoza-Benavides, & Ribeiro-Soriano (2023); and Fernandez (2023, 2024, 2025) among others. In turn, recent studies using WGI include Cai et al. (2022), Knowles, Peeters, Smith, & Wesselbaum (2024), and Murray-Svidronova, Kaščáková, & Krátky (2024).

3.2 Descriptive statistics

As shown in Table 1(a), 10,754 individuals (6.6%) made informal investments over the three-year period prior to the APS 2019. Of them, about 61% were men. In this respect, three geographic regions had an above-average micro-angel rate: Latin America & Caribbean (10.7%), North America (8.2%), and Asia & Oceania (8.1%). Fund recipients were mostly close family members or other relatives (56%), followed by acquaintances—work colleague, friend or neighbor (35.5%), and strangers with a good business idea (6.4%). Male micro angels invested a median of US$4,312 while female micro angels invested a median of US$2,875. Average investments, however, were much higher: US$21,220 for men and US$13,617 for women.

Detailed information by country is provided in Table A3 of the Appendix. For example, Chile stood out as the sampled country with the highest rate of micro angels (20.5%). In terms of investments, means were highest in Italy (US$84,183), Luxembourg (US$56,314), and Switzerland (US$54,236), while medians peaked in South Korea (US$20,176), Switzerland (US$20,176), and Cyprus (US$19,050). In most countries, women invested less than men, either in terms of mean or median amounts. However, there were

some exceptions, such as Cyprus, where women's mean and median investments (US$44,508 and US$22,142, respectively) exceeded those of men (US$41,662 and US$11,206, respectively). The last column of Table A3 shows the total micro-angel investments recorded by the APS 2019. The countries where micro angels invested the most were Canada (US$17.5 million), Qatar (US$14.9 million), and Chile (US$11.1 million). In total, micro-angel investments reached US$152.3 million across the 50 sampled countries.

Table 1(b) shows that micro angels exhibited significantly higher rates in some motivations than non-investors. For example, in Asia & Oceania among people who made informal investments, about 56% said they were purpose-driven, while among those who did not make investments, only 41% did. A similar pattern is observed for the family motivation in this region: 49% of micro angels said they were motivated by it, versus 38% of those who did not invest. Detailed statistics of motivation are displayed in Table A4 of the Appendix. As shown, motivations may vary considerably between investors and non-investors in each country. For example, in Portugal micro angels seemed less motivated by family tradition or economic necessity (18% and 39%, respectively) than non-investors (31% and 64%, respectively),

As mentioned earlier, most survey participants reported one or two motivations in 2019. In this regard, Table 1(c), which reports bivariate correlations between main study variables, shows that the highest correlations were between family and purpose (0.21) and between wealth and purpose (0.23). These are the pairs of motivations that will be considered later.

3.3 Methodological aspects

For simplicity, dichotomous dependent variables, such as becoming a micro angel or investing in a startup of a stranger with good business ideas, are modeled through a linear probability model. This is a regression model where the outcome variable is a binary variable, and one or more explanatory variables are used to predict the outcome.

In turn, continuous dependent variables, such as micro-angel investments, are modeled through regressions methods robust to the presence of outlying observations.

Specifically, this study uses a robust regression model with Huber weights/bi-weights. This statistical technique is a combination of a least-squares objective function and a least-absolute value objective function, so that observations are down-weighted as they get farther out on the tails (Andersen, 2008, pages 18-19).

More specifically, for $y_i = \mathbf{x}_i'\boldsymbol{\beta} + \varepsilon_i$, such that the error tem $\varepsilon_i(\boldsymbol{\beta}) = y_i - \mathbf{x}_i'\boldsymbol{\beta}$, a robust estimator of $\boldsymbol{\beta}$ solves:

$$\boldsymbol{\beta}_{\mathbf{r}} = \arg\min_{\beta} \sum_{i=1}^{n} \rho(\varepsilon_i(\boldsymbol{\beta})) \quad (1)$$

where $\rho(z) = \begin{cases} z^2, & \text{if } |z| < c \\ |2z|c - c^2, & \text{if } |z| \geq c \end{cases}$ and $c \approx 1.345$.

4 Results and discussion

4.1 Likelihood of becoming a micro-business angel

As mentioned in Section 3.1, the APS asks survey participants whether they personally provided funds for a new business started by someone else in the three years prior to the survey. This binary decision is fitted through a lineal probability model under alternative specifications, which are reported in Table 2. Parameter estimates are interpreted as marginal impacts on the likelihood of becoming a micro angel. Specifically, column (1) includes only control variables: demographics —age, gender, household income, employment status, and education; entrepreneurial culture/framework conditions—risk aversion, personal network, entrepreneurial experience, long-term vision, financing for SMEs, and government support; country income group (high and middle, where low is the baseline) and regional fixed effects (where Africa is the baseline). The choice of these controls follows existing literature that has used APS data to analyze micro-angel investments (e.g., Maula et al., 2005; Szerb et al., 2007; De Clercq et al., 2012; Ding et al., 2015; Honjo & Nakamura, 2020; Fernandez, 2024, 2025).

Columns (2) through (4) in turn subsequently add independent variables of interest. Specifically, Column (2) includes altruism (intermediate and high levels, where low level is the baseline). Column (3) includes altruism, and the four motivations

previously described, while column (4) adds to the latter the simultaneous motivations of wealth & purpose and family & purpose.

As shown in column (1), controls that impact the likelihood of becoming a micro angel the most are starting her/his own business (6.7 percentage points), having personal networks (5.2 percentage points), and belonging to the upper 33-percentile income level (3.3 percentage points). Column (2) in turn suggests that altruism impacts positively the likelihood of investing in others' startups. This is particularly so for a moderately altruistic country (1.8 percentage points). In column (3) this marginal impact more than doubles (3.9 percentage points) when including entrepreneurial motivations. Specifically, the impact of purpose or family tradition on the chances of becoming a micro angel are 3.1 and 3.0 percentage points, respectively, which do not differ statistically. In turn, pursuing wealth accumulation has a lower incidence on such a decision, with a marginal impact of 2.0 percentage points. The marginal impact of necessity in turn is relatively small (0.9 percentage points) and statistically significant only at the 10% level. Consequently, contributing to society and preserving family capital appear to be the most important motivations to support other people's ventures. Hence H_1 is supported.

When considering two motivations simultaneously, column (4) shows that wealth & purpose and family & purpose have statistically comparable marginal impacts of 2.7 and 2.4 percentage points, respectively. Purpose and wealth in turn are not individually significant. Therefore, wealth accumulation matters slightly more, relative to column (3), when it is associated with another business motivation, such as social impact. The individual marginal impact of family in turn is 1.8 percentage points. This implies that the overall impact of family for a purpose-driven individual is 4.2 percentage points (=1.8 + 2.4). Necessity, in contrast, is no longer significant.

On the other hand, intermediate-level altruism has once again a positive and significant marginal impact (3.7 percentage points), which is numerically like that of column (3). However, there is no evidence from columns (2)-(4) that individuals from highly altruistic countries are more likely to become micro-business angels. Hence, H_{2a} is partially supported.

4.2 Likelihood of financing different types of investees

This section focuses on those people who made angel investments during the three years prior to the survey. As mentioned in Section 3.2, investees are broadly classified by the APS as family members, acquaintances, and strangers. Table 3 presents linear probability models for the likelihood of investing in each of these three groups. Like Table 2, columns (1)-(3) of Table 3 include the four single motivations, while columns (4)-(6) add the wealth & purpose and family & purpose motivations. The control variables are analogous to those in Table 2.

As shown in columns (1) through (3), micro angels who want to make a difference are likely to fund acquaintances and strangers with good business ideas, as opposed to family members. Indeed, purpose-driven micro angels are 4.4 and 2.9 percentage points more likely to fund acquaintances and strangers, respectively. In contrast, such micro-angel investors are about 8.7 percentage points less likely to fund family members. This evidence lends support to H_3. Additionally, there is weak evidence that those micro angels who pursue wealth accumulation would be 3.4 percentage points more likely to invest in family members' startups. However, wealth accumulation does not seem relevant to the decision to finance acquaintances or strangers. On the other hand, it is not surprising that micro angels seeking to keep a family tradition are 10.5 percentage points more likely to fund family members, while are 7.3 and 1.6 percentage points less likely to fund acquaintances and strangers, respectively. In turn, necessity-driven micro angels preferentially invest in family members as opposed to acquaintances (marginal impacts of 5.6 and -4.5 percentage points, respectively).

Columns (4) through (6) show that wealth & purpose or family & purpose generally do not have a significant impact on the probability of financing new ventures of any of the three groups considered. The exception is the positive impact of family & purpose on the probability of financing strangers (marginal impact of 3.1 percentage points). However, this effect is statistically significant only at the 10% level. In short, the simultaneous motivations of wealth & purpose or family & purpose seem more important in deciding whether to become a micro-angel investor than in whom to invest.

With respect to national altruism, the evidence from columns (1)-(6) shows that micro angels from a highly altruistic country are likely to fund strangers with good business ideas rather than family members (marginal impact of 10 versus −14 percentage points). That is, such investors would be more open to helping people with whom they have no blood ties, and who come up with good business prospects.

4.3 US dollar investments

Micro-angel investments are considerably right skewed due to the presence of some very large amounts. Hence, a robust regression model with Huber weights/bi-weights is used (see equation (1)). Estimation results are reported in Tables 4 and 5. Control variables are analogous to those of Tables 2 and 3 but also include dummies for the investee groups of family members and strangers, where acquaintances are the baseline. The first column of Table 4, which excludes altruism and motivation, suggests that micro angels would provide additional financing of US$444 to family members relative to the baseline. This finding, however, no longer holds when accounting for motivations (columns (3)-(4)). What is consistent from columns (1)-(4) of Table 4 is that strangers with good business ideas would get US$826-US$886 less than the baseline.

Regarding motivations, there is evidence from columns (3) and (4) at the 10% and 5% significance level, respectively, that wealth-driven micro angels would provide additional financing of around US$269-US$566. Hence H_4 gets some support. Columns (3)-(4) in turn suggest that necessity-driven micro angels invest US$414-US$425 less than other investors. Regarding paired motivations, column (4) suggests that only wealth & purpose would have some statistical impact on investments decisions. For example, the overall impact of wealth accumulation for a purpose-driven angel would be around US$36.9 (=565.8−528.9). However, this figure is statistically insignificant.

Regarding altruism, column (2) suggests that in moderately generous societies, micro angels invest an additional amount of around US$446, relative to micro angels of barely generous societies (baseline). However, this finding no longer holds in columns (3) and (4). Therefore, taking the evidence from Tables 3 and 4 together, it follows that, once

the motivations of micro angels are considered, altruism can affect decisions about who to invest in, but not about how much to invest. Therefore, H_{2b} is partially supported.

Table 5 is a variant of Table 4 with interactions between motivation and investee type. As shown in column (1), strangers are less monetarily penalized by purpose-driven micro angels (−US$838) than by micro angels driven by other motivations (−US$1,300). In turn, column (2) shows that there is no statistical evidence that family-driven micro angels would invest more in family members. In fact, the evidence shows that micro angels driven by motivations other than a family tradition would invest more in family members (US$741).

5 Robustness checks

5.1 Cultural and institutional aspects

In this section, the regression models reported in Tables 2-5 are re-estimated by including additional country-level controls that have been used in previous studies (e.g., Uriarte et al., 2023; Rietveld & Patel, 2022; Cumming & Zhang, 2019): cultural dimensions (power distance, individualism, uncertainty avoidance, and long-term orientation) from Hofstede, Hofstede, & Minkov (2010), https://geerthofstede.com/research-and-vsm/dimension-data-matrix/; a 2019 gender inequality in economic participation and opportunity index from the Global Gender Gap Index of the WEF, https://datafinder.qog.gu.se/dataset/gggi; a 2019 human well-being index from the Sustainable Society Indices (SSI), https://ssi.wi.th-koeln.de/. The latter index considers aspects related to basic needs (e.g., sufficient food, safe sanitation), personal development & health (e.g., education, healthy life), and a well-balanced society (e.g., income distribution, good governance); legal origin (common law English origin, civil law French origin, civil law German origin, and civil law Scandinavian origin) from https://faculty.tuck.dartmouth.edu/rafael-laporta/research-publications. The latter is meant to capture the impact of different legal traditions on economic performance (e.g.; La Porta, Lopez-de-Silanes, & Schleifer, 2008; Brouwer, 2016); a 2019 financial development index from the International Monetary Fund, https://data.imf.org/?sk=F8032E80-B36C-43B1-AC26-493C5B1CD33B. The latter is a

relative ranking of countries on the depth, access, and efficiency of their financial institutions and financial markets; and, a 2018 corruption perceptions index from https://ourworldindata.org/grapher/ti-corruption-perception-index. The latter, which is calculated by Transparency International, ranks 180 countries and territories around the world by their perceived levels of public sector corruption. More details on these controls, including descriptive statistics, are provided in Table OA1 of the online appendix.

Results are reported in Tables OA2-OA5. As shown, when excluding altruism and motivation, column (1) of Table OA2 suggests that in a country with below-median gender equality, an individual is 4.7 percentage points more likely to become a micro angel. Below-median values of uncertainty avoidance, long-term orientation, financial development, and human well-being also incentivize micro-angel activity (2.6, 2.3, 1.4, and 8.1 percentage points, respectively). That is, societies that are more risk tolerant, short-term oriented, less financially developed, and have lower human well-being encourage micro-angel activity. The opposite occurs with below median values of power distance, individualism, indulgence, and corruption perceptions (−4.3, −2.0, −4.5, and −6.4 percentage points, respectively). In other words, societies that are less tolerant of power imbalances, more interdependent, less indulgent, and whose public sector is perceived as more corrupt discourage micro-angel activity.

Regarding legal origin, English common law and French civil law discourage micro-angel activity (−3.4 and −1.5, percentage points, respectively) relative to the baseline of civil law Scandinavian origin. In this sense, the APS 2019 shows that average rates of micro-angel activity were higher in Scandinavian legal origin countries (Norway and Sweden). In particular, Scandinavian laws are less derivative from Roman law than the French and German families, and are considered distinct from others (Laporta et al., 2008). In this respect, Scandinavian countries are known for their generally favorable business environments, strong social safety nets, and high levels of innovation (https://www.investopedia.com/articles/investing/100714/nordic-model-pros-and-cons.asp#toc-what-is-the-nordic-model).

When comparing columns (2)-(4) of Tables OA2 and 2, one change worth highlighting is that the inclusion of additional controls allows identifying a positive and statistically significant impact of high-level altruism on the likelihood of becoming a micro angel. This ranges from 1.4 percentage points in column (2) to 2.7 percentage points in column (4) of Table OA2. Regarding the impact of motivations, there are no marked differences between Tables OA2 and 2, except that economic necessity can moderately increase the chances of becoming a micro angel by about 1 percentage point (columns (3) and (4) of Table OA2).

As to the likelihood of investing in family, acquaintances, and strangers, when comparing columns (1)-(6) of Tables OA3 and 3, one can see that, except for economic necessity, there are no substantial changes in the impact of motivations. Specifically, in Table OA3, necessity loses statistical relevance in column (2) and (5)—i.e., acquaintances startups. With respect to high-level altruism, its marginal impact on investing in family startups is less negative and significant in Table OA3 than in Table 3. Other aspects worth highlighting are that below-median values of uncertainty avoidance and financial development can increase the likelihood of investing in family members by 8 and 18 percentage points, respectively (columns (1) and (4) of Table OA3). The opposite holds true for acquaintances, with analogous marginal impacts of about -12 and -16 percentage points, respectively.

Legal origin in turn does not seem to matter much, except that civil law German origin discourages investing in family members by about 16 percentage points while encourages investing in acquaintances by about 13 percentage points. In this respect, German legal tradition shares many procedural characteristics with the French system but allows greater judicial law making. The latter can address gaps in legislation, ensure fairness, and uphold the rule of law in complex and evolving legal environments (Laporta et al., 2008). This could facilitate investment in new companies whose owners are not related to the micro-angel investor.

Table OA4 reports the re-estimated dollar investments equations. When excluding altruism and motivation, column (1) shows that below-median values of long-term

orientation and human well-being lead to higher investments by US$2,000 and US$863, respectively. The same holds true under French and German legal origins (relative to Scandinavian legal origin): US$1,468 and US$2,518, respectively. In turn, below-median indulgence and financial development decrease investments by US$2,384 and US$1,357, respectively. Again, the inclusion of additional country-level controls appears to have a more visible impact on parameter estimates of altruism than on those of motivations. Indeed, columns (2)-(4) of Table OA4 show that high-level altruism now has a positive and statistically significant impact on dollar investments, ranging from US$923 to US$969. In contrast, intermediate-level altruism is no longer significant.

Like Table OA4, the inclusion of additional controls makes high-level altruism statistically significant in Table OA5. When comparing the interactions between investees and motivations of Tables 5 and OA5, one can see that some interactions become insignificant in Table OA5. For example, it can no longer be argued that strangers with good business ideas are less monetarily penalized by purpose-driven micro angels.

5.2 Expanded sample: 2019-2020

This section considers individuals interviewed in 2019 and 2020. In this expanded sample, 20,250 individuals made micro-angel investments, of which 39.7% were women and 60.4% were men. Beneficiary shares were like those of the 2019 APS in isolation: family members (56.7%), acquaintances (34.7%) and strangers (6.5%). Furthermore, most individuals also expressed one or two entrepreneurial motivations in 2019-2020. The statistical models of Tables 2-4 are fitted to this expanded sample and reported in Tables OA6-OA8. For the APS 2020 sample, the WGI 2021 is used because the index was not measured in 2020. The focus of interest is whether the research hypotheses are still supported and whether the early months of the Covid-19 pandemic had an impact on angel activity.

As shown in Table OA6 columns (2)-(4), the impact of intermediate-level altruism does not change noticeably compared to Table 2. Interestingly, high-level altruism now has a positive impact on the likelihood of becoming a micro angel of 1.7 percentage points in the columns that include motivations. This re-enforces H_{2a}. In turn, H_1 is supported in

that purpose or family (column 3) or both jointly (column 4) are most relevant. Regarding the pandemic, columns (1)-(4) suggest that it had a slightly negative impact on micro-angel activity of about one percentage point, when conditioning on several factors. In this respect, Bosma et al. (2021) point out that the greatest falls in informal investment rates were in Oman (from 16.2% to 9.9%), United Arab Emirates (from 9.6% to 3.7%), and Switzerland (from 10.6% to 5.5%).

When comparing Tables 3 and OA7, one sees that the statistical significance of intermediate-level altruism increases. In particular, the latter would benefit strangers with good business ideas as opposed to acquaintances (H_{2b}). In turn, the direction in which motivations impact the different investees does not change (H_3) relative to Table 2. However, statistical significance increases in some cases for this extended sample. Regarding the pandemic, it did not have an impact on the likelihood of each investee type.

As for monetary investments, Table OA8 shows that the pandemic reduced per capita investment by between US$461 and US$545. In turn, columns (3) and (4) suggest that family tradition had a greater positive impact on investments than wealth accumulation. Therefore, H_4 receives less support than in Table 4. On the other hand, in this expanded sample it is less evident that altruism would have a positive impact on investments (H_{2b}). In fact, column (2) of Table OA8, which excludes motivation, suggests that investments would be lower in highly altruistic countries. However, by including motivation, altruism does not matter, as in Table 4.

In sum, Section 5.1 shows that the inclusion of additional country-level controls seems to have a larger impact on the statistical significance of intermediate- and high-level altruism than on that of investor motivations. This may not be so surprising because altruism is also a country-level predictor, while motivations are individual-level predictors. In turn, Section 5.2 shows that the conclusions drawn from Sections 4.1-4.3 are generally robust under the extended period of 2019-2020. Table 6 summarizes the statistical support of the research hypotheses under the model specifications in Tables 2-5 (basic controls), Tables OA2-OA5 (basic + additional controls), and Tables OA6-OA8 (basic controls + time fixed effect). As shown, the hypotheses tend to be supported by the data

under the different specifications, although in the case of altruism the empirical evidence seems stronger for H_{2a} and H_3 under the model specification with additional controls, and for H_{2a} and H_{2b} under the expanded sample.

6 Contributions and implications of this study

The success of a new business hinges not only on its initial setup but also on the entrepreneur's interactions with potential mentors (Robinson, 2022). Informal investors are key in this regard, offering crucial financial backing and entrepreneurial insights to new business owners. Existing research highlights diverse reasons why informal investors get involved. These include the pursuit of financial return, a genuine passion for entrepreneurship, investment diversification, personal fulfillment, opportunities for networking and learning, a desire to make a difference, and the potential for early access to innovative products or services. In essence, these investors are motivated by a varied combination of financial, personal, and strategic considerations (e.g., Bonnet et al., 2022; Falcão et al., 2023; Arroyo-Revilla et al., 2025).

6.1 Contributions

Drawing on a large global sample of micro-angels, this study offered new insights into what drives individuals to become informal investors. It presented compelling evidence that motivation significantly influences investment decisions, including the choice to invest in, the selection of ventures, and the capital allocated.

Interestingly, the pursuit of wealth accumulation alone does not appear to be a primary driver for these decisions. Instead, factors like contributing to society or upholding a family tradition may play a more substantial role. The research also highlights that national altruism can boost micro-angel activity, especially when considering financing unfamiliar individuals with promising business ideas.

These findings are robust, holding generally true across various model specifications that account for cultural aspects, gender inequality, human well-being, legal origin, financial development, and corruption perceptions. The results also remain consistent even when extending the period to include the early months of the COVID-19 pandemic. Ultimately, these conclusions align with Falcão et al.'s (2023) qualitative study

of business angels, which suggested that making money is often seen as an intermediate objective rather than a long-term goal.

6.2 Policy implications

This analysis yields two key policy implications for fostering new businesses. First, micro-angel investors, driven by their unique motivations, can be a powerful force for financing new companies that either benefit society or preserve the social capital of family businesses. Recognizing and understanding these motivations can help direct investment towards ventures with broader societal value. Second, micro-angel investments are significantly influenced by a country's characteristics. More generous societies may create a more fertile environment for innovative ventures. Interestingly, lower levels of human well-being, uncertainty avoidance, or financial development might encourage micro-angel investments. Conversely, higher perceptions of corruption and less indulgence could have a negative impact. Furthermore, a country's legal origin can affect both the existence and scope of these investments.

Therefore, governments and policymakers should: (i) promote awareness of the crucial role micro-angel investors play in supporting family traditions and novel business ideas. (ii) Encourage the growth of micro-angel investor networks by highlighting their potential impact beyond just financial returns. (iii) Foster cultural values like altruism, tolerance for uncertainty, and indulgence, as these can significantly boost informal financing for new entrepreneurs.

6.3 Limitations

There are a couple of limitations with the APS data. First, it lacks details about the entrepreneur and the businesses that receive funding. Second, we do not know what percentage of their companies, if any, founders offer to micro-angels in exchange for capital. It is quite possible that the financial support provided to these new entrepreneurs is in the form of a microloan. This type of loan can be a crucial way for startups to secure working capital when traditional funding sources like formal financial institutions or credit cards are not an option (Watkins, 2018).

Appendix

Table A1 Countries sampled by the GEM APS 2019 and 2020

			Observations		
No.	Code	Name	2019	2020	Total
1	1	United States	3,000	2,000	5,000
2	7	Russia	2,006	2,000	4,006
3	20	Egypt	2,540	2,786	5,326
4	27	South Africa	2,991		2,991
5	30	Greece	2,000	2,000	4,000
6	31	Netherlands	2,252	2,266	4,518
7	34	Spain	23,300	26,075	49,375
8	39	Italy	2,000	2,000	4,000
9	41	Switzerland	2,015	2,008	4,023
10	43	Austria		4,529	4,529
11	44	United Kingdom	2,032	2,000	4,032
12	46	Sweden	5,067	5,043	10,110
13	47	Norway	2,000	2,000	4,000
14	48	Poland	8,000	8,000	16,000
15	49	Germany	3,004	3,003	6,007
16	52	Mexico	5,361		5,361
17	55	Brazil	2,000	2,000	4,000
18	56	Chile	9,110	9,196	18,306
19	57	Colombia	2,109	2,107	4,216
20	61	Australia	2,000		2,000
21	62	Indonesia		2,500	2,500
22	81	Japan	2,027		2,027
23	82	South Korea	2,000	2,000	4,000
24	86	China	3,841		3,841
25	91	India	3,398	3,317	6,715
26	92	Pakistan	2,000		2,000
27	98	Iran	3,122	3,144	6,266
28	101	Canada	9,304	2,910	12,214
29	212	Morocco	3,510	3,527	7,037
30	226	Burkina Faso		2,325	2,325
31	228	Togo		2,248	2,248
32	244	Angola		2,000	2,000
33	261	Madagascar	2,395		2,395
34	351	Portugal	2,013		2,013
35	352	Luxembourg	2,100	2,011	4,111
36	353	Ireland	2,000		2,000
37	357	Cyprus	2,014	2,006	4,020
38	371	Latvia	2,000	2,000	4,000

Table A1 Continued

No.	Code	Name	Observations 2019	2020	Total
39	374	Armenia	2,000		2,000
40	375	Belarus	2,001		2,001
41	385	Croatia	2,000	2,000	4,000
42	386	Slovenia	2,001	2,000	4,001
43	389	Macedonia	2,000		2,000
44	421	Slovakia	2,001	2,000	4,001
45	502	Guatemala	2,958	2,905	5,863
46	507	Panama	2,024	2,000	4,024
47	593	Ecuador	2,063		2,063
48	598	Uruguay		2,002	2,002
49	701	Kazakhstan		2,100	2,100
50	787	Puerto Rico	2,000		2,000
51	886	Taiwan	2,343	2,229	4,572
52	962	Jordan	2,000		2,000
53	965	Kuwait		2,092	2,092
54	966	Saudi Arabia	4,003	4,027	8,030
55	968	Oman	2,000	2,000	4,000
56	971	United Arab Emirates	2,002	2,004	4,006
57	972	Israel	2,036	2,000	4,036
58	974	Qatar	3,063	3,043	6,106
		Total	163,006	141,403	304,409

Notes: (1) Countries are sorted by country code. (2) Blank spaces in either 2019 or 2020 indicate that a country is not present in that survey. (3) 50 countries were surveyed in 2019 and 43 in 2020, while 35 countries were surveyed in both years.

Table A2 List of variables in alphabetical order

Variable	Description	Type	Mean	S.D	Min	Max	Source
Age bracket	= 1 if under 35, =2 if 35-54, =3 if 55+	Categorical	1.85	0.75	1	3	GEM *age*
Micro angel (MA)	= 1 if in last 3 years personally provided funds for a new business started by someone else, excluding purchases of stocks/mutual funds.	Binary	0.07	0.25	0	1	GEM *busang*
MA funds	Funds in US$ provided to startups in past 3 years, excluding publicly traded stocks/mutual funds.	Continuous	18,303	56,578	1.8	500k	GEM *BAFUNDUS*
MA relationship	Relationship with the person that received most recent personal investment: Family (close family members or other relatives); acquaintance (work colleague, friend or neighbor); or stranger (with a good business idea).	Categorical					GEM *barel*
Country income	1=Low, 2= middle, or 3= high, following WEF.	Categorical	2.63	0.63	1	3	GEM *WEFIncREV*
Employed	= 1 if has a part- or full-time job.	Binary	0.45	0.50	0	1	GEM *GEMWORK3*
Entrepreneurial exp.	=1 if quit a business in past 12 mos.	Binary	0.05	0.21	0	1	GEM *discent*
Financing support	Existence of financial resources for SMEs, including grants and subsidies, on a Likert scale of 1 ("Completely false") to 9 ("Completely true").	Categorical	4.57	0.69	3.2	6.1	NES
Government support	Existence of public policies that support entrepreneurship on a Likert scale of 1 ("Completely false") to 9 ("Completely true").	Categorical	4.69	0.79	3.1	6.2	NES
Income	Household income recoded into 3rd. (33; 3,467; 68,100)	Categorical	23,685	31,271	33	68k	GEM *GEMHHINC*
Male	= 1 if male	Binary	0.50	0.50	0	1	GEM *gender*
Motivations	1: make a difference in the world; 2: build wealth; 3: family tradition; 4: earn a living due to scarce jobs.	Binary					GEM *TEAyyMOT1-TEAyyMOT4 EB_yyMOT1-EB_yyMOT4*
Own business	=1 if alone or with others, currently trying to start a new business, including any self-employment or selling any goods or services to others.	Binary	0.17	0.37	0	1	GEM *bstart*
Personal network	= 1 if knows at least 2 entrepreneurs.	Binary	0.34	0.47	0	1	GEM *knowentR*
Risk aversion	= 1 if would not start a business for fear it might fail.	Binary	0.46	0.49	0	1	GEM *FRFAILyy*
Tertiary education	= 1 if at least has tertiary education	Binary	0.33	0.47	0	1	GEM *UNEDUCC*
Vision	=1 if decisions are part of long-term plan	Binary	0.62	0.49	0	1	GEM *VISIONyy*
World Giving Index (WGI) class	=1 if low, =2 if intermediate, or =3 if high. An upper category indicates a more charitable country.	Categorical	1.97	0.75	1	3	Annual index published by the Charities Aid Foundation that ranks countries by charitableness

Table A3 Micro-angel activity by country: APS 2019

Investments in US dollars

Country	MA rate	All investors Mean	All investors Median	Women Mean	Men Mean	Women Median	Men Median	Country total investment
Armenia	7.8%	4,398	2,093	2,450	5,673	1,046	2,093	400,223
Australia	5.2%	46,727	6,913	31,200	55,829	5,185	6,913	4,298,909
Belarus	2.1%	3,976	2,182	4,229	3,768	2,424	1,454	79,512
Brazil	3.6%	2,030	1,278	1,068	2,535	639	1,278	123,827
Canada	8.2%	38,340	7,533	22,319	46,752	6,779	7,533	17,482,950
Chile	20.5%	6,358	2,156	4,779	7,405	1,437	2,156	11,120,708
China	8.0%	29,997	7,225	31,473	28,871	7,225	7,225	6,659,239
Colombia	8.5%	2,492	910	2,126	2,814	607	910	383,785
Croatia	5.2%	512	454	490	546	348	530	24,586
Cyprus	4.8%	42,997	19,050	44,508	41,662	22,412	11,206	3,482,754
Ecuador	5.6%	3,101	1,500	2,438	3,450	1,500	1,000	350,390
Egypt	3.2%	3,955	598	2,647	4,935	478	896	276,825
Germany	6.4%	35,196	7,284	33,594	36,221	5,603	10,085	5,772,083
Greece	5.0%	25,657	11,206	24,177	26,562	11,206	8,404	2,232,195
Guatemala	14.7%	1,031	521	746	1,227	391	651	430,045
India	7.6%	2,077	574	917	2,735	358	717	218,071
Iran	6.9%	2,038	720	1,856	2,162	600	1,200	352,563
Ireland	5.6%	32,758	5,603	11,879	39,302	5,603	5,603	2,882,683
Israel	3.9%	25,317	5,618	30,461	22,377	4,354	7,725	1,113,945
Italy	0.9%	84,183	16,809	7,844	109,630	7,844	39,220	673,466
Japan	2.4%	28,356	4,625	51,525	19,775	4,625	4,625	1,049,178
Jordan	6.9%	9,629	2,116	3,417	16,186	1,410	3,526	1,068,808
Latvia	6.7%	17,154	3,362	3,746	21,926	2,241	5,603	1,372,315
Luxembourg	7.9%	56,314	11,206	72,369	47,331	5,603	11,206	7,377,173
Macedonia	5.5%	8,215	1,822	4,517	10,940	729	1,822	271,088
Madagascar	2.4%	410	104	173	695	104	96	18,054
Mexico	2.2%	1,796	1,038	1,614	1,902	1,038	934	141,899
Morocco	3.1%	7,963	2,600	2,538	10,192	2,340	2,704	820,166
Netherlands	5.2%	24,001	5,603	22,924	24,539	5,603	6,163	2,376,073
Norway	5.8%	22,781	5,726	18,485	24,555	5,726	6,871	2,027,542
Oman	16.2%	16,025	5,195	8,414	18,759	1,429	7,792	3,637,568
Pakistan	2.2%	1,436	453	1,395	1,458	648	389	53,137
Panama	6.6%	6,585	1,000	2,049	9,937	1,000	1,500	790,145
Poland	3.6%	11,673	5,224	10,950	12,628	5,224	6,791	2,789,858
Portugal	2.8%	47,837	8,404	18,525	56,856	6,723	8,965	1,626,463
Puerto Rico	1.9%	8,499	1,750	13,678	6,046	2,000	1,500	237,970
Qatar	14.0%	50,519	13,733	41,996	53,171	8,926	16,479	14,903,233

Table A3 continued

Investments in US dollars

Country	MA rate	All investors Mean	All investors Median	Women Mean	Men Mean	Women Median	Men Median	Country total investment
Russia	5.6%	4,921	1,860	2,716	6,503	1,550	2,325	447,842
Saudi Arabia	15.0%	11,588	7,999	11,998	11,301	7,999	7,999	6,616,721
Slovakia	7.1%	16,854	6,723	12,314	19,490	5,603	11,206	1,651,676
Slovenia	4.8%	24,131	8,965	13,177	28,642	5,603	11,206	1,737,459
South Africa	2.6%	1,198	344	756	1,392	275	378	55,120
South Korea	2.5%	39,210	21,081	20,391	46,110	16,865	23,189	1,607,609
Spain	3.3%	16,197	6,723	14,800	17,455	6,723	6,723	8,373,704
Sweden	9.0%	28,769	4,205	18,051	33,079	2,102	5,256	7,623,748
Switzerland	10.6%	54,236	20,176	48,921	57,079	10,088	20,176	9,491,229
Taiwan	4.5%	37,660	16,006	36,889	38,100	6,402	16,006	3,314,042
United Arab Emirates	9.6%	53,381	9,529	41,588	58,002	9,529	10,209	5,498,207
United Kingdom	2.9%	28,302	6,272	6,291	38,928	4,704	12,543	1,216,990
United States	8.2%	31,347	5,000	15,580	41,393	3,750	7,500	5,799,194
Total								152,352,966

Note: MA rate indicates the percentage of individuals in a country that made micro-angel investments in a three-year period before the survey.

Table A4 Frequencies of motivations by country: APS 2019

	Micro-angel							
	Yes				No			
	Mean				Mean			
Country	Purpose	Wealth	Family	Necessity	Purpose	Wealth	Family	Necessity
Armenia	22.1%	45.5%	43.8%	82.0%	14.7%	47.1%	39.1%	91.3%
Australia	50.0%	65.6%	28.1%	34.4%	51.7%	54.1%	26.7%	47.0%
Belarus	26.7%	46.7%	53.3%	26.7%	21.5%	78.3%	15.3%	53.0%
Brazil	72.7%	63.6%	42.4%	90.9%	45.2%	30.8%	27.2%	88.9%
Canada	75.0%	73.5%	56.6%	70.3%	60.2%	54.2%	32.6%	54.6%
Chile	47.4%	41.4%	28.3%	68.0%	43.4%	35.6%	30.5%	73.6%
China	36.8%	67.5%	45.6%	73.3%	42.4%	59.4%	43.1%	67.1%
Colombia	51.0%	57.4%	47.0%	91.1%	51.7%	48.4%	32.4%	89.8%
Croatia	55.2%	39.3%	58.6%	75.9%	28.3%	45.6%	35.4%	74.7%
Cyprus	62.5%	75.0%	50.0%	53.1%	37.1%	74.4%	34.2%	64.9%
Ecuador	54.7%	42.2%	45.3%	87.5%	50.6%	34.4%	40.6%	83.8%
Egypt	50.0%	72.2%	61.1%	55.6%	55.8%	71.6%	53.9%	66.0%
Germany	45.5%	36.4%	58.2%	50.9%	38.8%	36.8%	49.1%	45.1%
Greece	26.1%	43.5%	50.0%	54.2%	35.6%	46.0%	45.7%	54.1%
Guatemala	79.9%	63.6%	43.0%	87.3%	76.7%	60.3%	53.6%	91.1%
India	94.6%	95.2%	82.1%	76.6%	85.6%	85.2%	81.6%	85.9%
Iran	46.0%	73.9%	31.8%	73.9%	32.5%	85.3%	23.9%	72.8%
Ireland	22.4%	26.5%	63.3%	42.9%	31.8%	33.1%	65.1%	35.6%
Israel	51.5%	66.7%	33.3%	48.5%	35.7%	71.1%	17.9%	56.1%
Italy	20.0%	80.0%	0.0%	20.0%	17.2%	94.5%	34.2%	84.9%
Japan	66.7%	66.7%	44.4%	38.9%	27.7%	35.3%	35.9%	29.0%
Jordan	27.9%	60.5%	44.2%	95.3%	20.8%	54.5%	29.4%	94.1%
Latvia	38.3%	43.5%	37.0%	76.6%	21.9%	29.4%	29.7%	74.4%
Luxembourg	59.3%	62.7%	46.6%	52.5%	45.5%	35.9%	20.9%	35.7%
Macedonia	69.4%	61.2%	68.0%	82.0%	49.5%	48.2%	70.4%	90.2%
Madagascar	21.4%	31.3%	37.1%	82.9%	6.8%	19.5%	35.0%	81.7%
Mexico	80.6%	66.7%	56.2%	75.3%	66.8%	53.4%	49.4%	81.9%
Morocco	31.6%	94.1%	46.7%	93.9%	16.0%	59.8%	35.6%	94.4%
Netherlands	37.5%	18.2%	23.5%	31.3%	30.3%	15.4%	17.1%	27.5%
Norway	37.5%	28.1%	21.9%	25.0%	31.2%	14.8%	23.2%	21.5%
Oman	48.6%	58.8%	28.9%	54.5%	48.8%	49.6%	29.9%	52.9%
Pakistan	88.9%	80.0%	80.0%	100.0%	74.3%	93.0%	68.8%	94.9%
Panama	83.3%	72.6%	60.7%	86.9%	76.0%	61.7%	54.1%	86.7%
Poland	30.1%	59.1%	46.2%	34.4%	43.9%	40.7%	62.1%	30.1%

Table A4 continued

	Micro angel							
	Yes				No			
	Mean				Mean			
Country	Purpose	Wealth	Family	Necessity	Purpose	Wealth	Family	Necessity
Portugal	44.4%	35.7%	17.9%	39.3%	40.1%	44.2%	30.8%	63.6%
Puerto Rico	56.3%	52.9%	33.3%	77.8%	66.3%	42.6%	43.9%	85.9%
Qatar	63.5%	89.6%	63.2%	67.0%	52.2%	83.6%	48.1%	61.9%
Russia	31.8%	70.5%	25.0%	74.4%	20.8%	69.9%	22.2%	80.4%
Saudi Arabia	51.2%	70.6%	40.8%	82.8%	30.7%	57.8%	33.0%	74.1%
Slovakia	39.7%	34.5%	24.1%	66.7%	36.0%	30.0%	30.5%	68.2%
Slovenia	50.0%	54.5%	22.7%	50.0%	42.6%	36.4%	32.2%	69.7%
South Africa	82.9%	75.6%	41.5%	85.4%	83.5%	78.6%	52.4%	89.1%
South Korea	9.1%	90.9%	4.5%	22.7%	8.2%	64.9%	7.0%	35.2%
Spain	43.6%	39.3%	31.3%	60.7%	35.4%	42.9%	23.2%	60.0%
Sweden	76.2%	77.2%	63.9%	63.9%	38.6%	41.8%	25.8%	27.3%
Switzerland	36.5%	39.7%	28.6%	50.8%	38.4%	31.2%	28.1%	52.0%
Taiwan	51.0%	63.3%	20.8%	18.8%	36.0%	46.9%	27.8%	34.4%
United Arab Emirates	63.6%	68.7%	52.5%	59.8%	54.3%	73.3%	35.2%	64.4%
United Kingdom	35.0%	60.0%	30.0%	47.4%	42.3%	42.6%	21.5%	55.1%
United States	72.3%	72.0%	39.6%	32.0%	61.7%	61.7%	34.1%	45.0%
Overall mean	50.4%	62.2%	33.7%	56.2%	42.9%	53.0%	31.0%	60.4%

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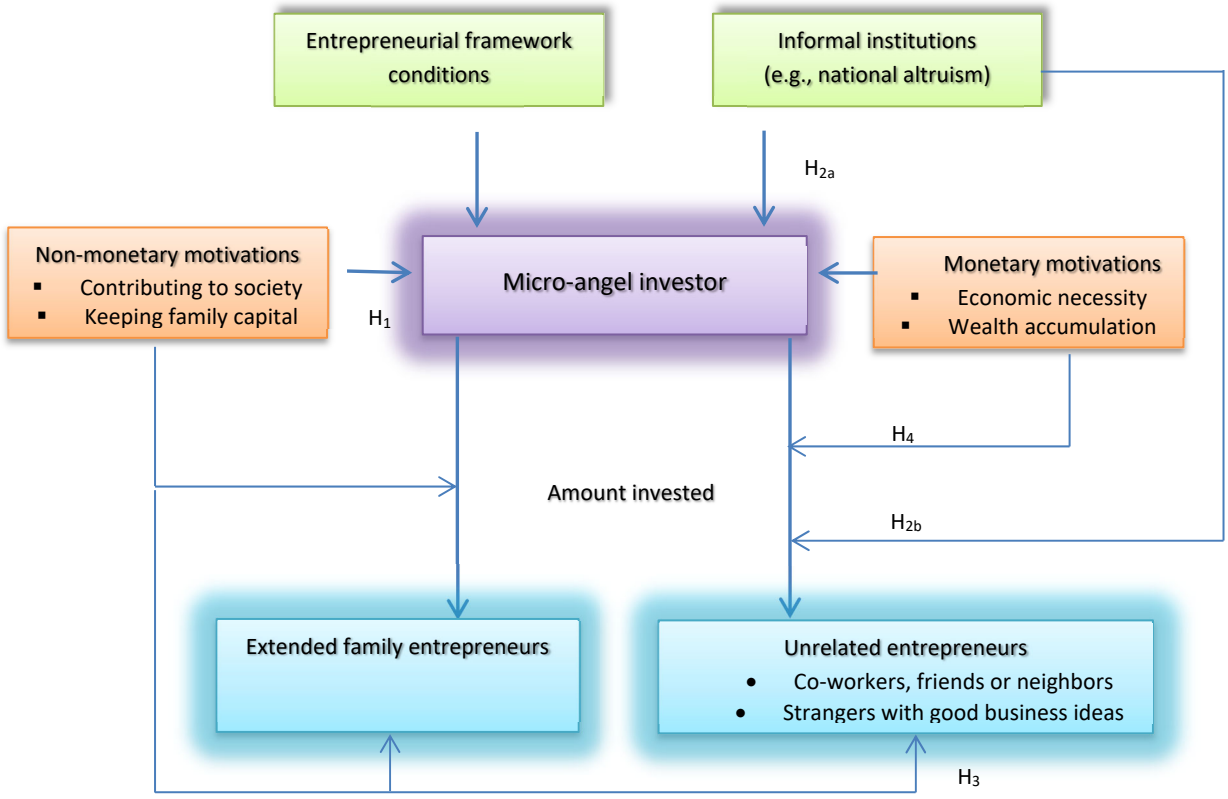
Figure 1 Motivations and micro-angel investment decisions



Notes: (1) Non-monetary motivations impact the likelihood of becoming a micro angel (H_1) and the investment made in new ventures of strangers with good business ideas (H_3). In turn, informal institutions impact the likelihood of becoming a micro angel (H_{2a}) and investments made in new ventures of all types (H_{2b}). Meanwhile, monetary motivation may lead to higher investments (H_4). (2) Entrepreneurial framework conditions involve resources, incentives, markets, and supporting institutions for the creation and growth of new businesses.

Table 1 Descriptive statistics of micro-angel activity: APS 2019

(a) Rates of micro-angel investors by gender and geographic region

	No	Yes			
Region		Men	Women	Total	Total
Africa	10,969	200	120	320	11,289
%	97.17	1.77	1.06	2.83	100
Asia & Oceania	34,466	1,935	1,090	3,025	37,491
%	91.93	5.16	2.91	8.07	100
Latin America & Caribbean	24,649	1,755	1,202	2,957	27,606
%	89.29	6.36	4.35	10.71	100
Europe	69,965	2,073	1,388	3,461	73,426
%	95.29	2.82	1.89	4.71	100
North America	11,106	625	366	991	12,097
%	91.81	5.17	3.03	8.19	100
Total	151,155	6,588	4,166	10,754	161,909
%	93.36	4.07	2.57	6.64	100

Note: P-value of chi-squared test of independence between rows (Region) and columns (Yes/No) = 0.000

(b) Motivations

Micro angel	Motivation	Africa	Asia & Oceania	LAC	Europe	North America
No	Purpose	27.4%	41.3%	53.8%	36.1%	60.7%
	Wealth	46.6%	66.1%	42.1%	42.2%	56.4%
	Family	39.7%	38.2%	38.0%	35.0%	33.1%
	Need	85.3%	65.7%	81.3%	53.2%	51.7%
Yes	Purpose	51.9%	55.6%	57.1%	46.5%	74.4%
	Wealth	68.8%	73.4%	49.4%	50.2%	73.2%
	Family	44.4%	48.7%	35.9%	42.9%	53.1%
	Need	82.7%	68.6%	75.3%	55.4%	62.4%

Note: LAC stands for Latin America & Caribbean.

(c) Bivariate correlations between main study variables

	MA	Purpose	Family	Wealth	Necessity	Age	Male	Risk av.	Educ	Vision	Network	Experience	Income	Financing	Gov support	Country Inc.	WGI
MA	1.00																
Purpose	0.09	1.00															
Family	0.05	0.21	1.00														
Wealth	0.07	0.23	0.11	1.00													
Necessity	0.01	0.04	0.13	0.07	1.00												
Age	–0.06	–0.10	–0.02	–0.12	–0.03	1.00											
Male	0.07	–0.02	0.02	0.07	–0.04	0.01	1.00										
Risk av.	0.03	0.03	0.06	0.03	0.09	0.00	–0.04	1.00									
Educ	0.04	0.02	–0.11	0.03	–0.18	–0.01	0.02	–0.04	1.00								
Vision	0.04	0.14	0.08	0.10	0.11	–0.07	–0.01	0.02	–0.05	1.00							
Network	0.11	0.07	0.00	0.03	0.00	–0.07	0.05	–0.01	0.08	0.04	1.00						
Experience	0.10	0.13	0.03	0.08	0.07	–0.22	–0.01	0.03	0.04	0.07	0.13	1.00					
Income	0.07	–0.01	–0.04	0.08	–0.15	0.00	0.10	–0.06	0.22	0.01	0.08	–0.05	1.00				
Financing	0.05	–0.06	–0.17	–0.06	0.00	0.10	0.00	0.01	0.07	0.01	0.08	0.06	–0.05	1.00			
Gov support	0.03	–0.05	–0.07	0.03	–0.15	0.12	0.02	0.01	0.08	–0.05	–0.02	–0.09	0.00	0.06	1.00		
Country Inc.	0.05	–0.03	–0.13	–0.08	–0.24	0.16	0.01	–0.01	0.20	–0.12	0.05	–0.03	0.05	0.38	0.30	1.00	
WGI	0.07	0.07	–0.10	0.03	–0.14	0.07	0.04	–0.04	0.21	–0.08	0.12	0.01	0.00	0.34	0.24	0.56	1.00

Notes: (1) MA stands for a micro angel. (2) Calculations are based on 25,440 observations.

Table 2 Lineal probability models for the decision to become a micro angel: APS 2019

	(1)	(2)	(3)	(4)
Independent variables	Micro angel	Micro angel	Micro angel	Micro angel
Intermediate-level altruism		0.018***	0.039***	0.037***
		(0.002)	(0.007)	(0.007)
High-level altruism		0.005*	0.008	0.008
		(0.003)	(0.008)	(0.008)
Motive: Purpose			0.031***	0.008
			(0.005)	(0.007)
Motive: Wealth			0.020***	0.007
			(0.004)	(0.006)
Motive: Wealth &Purpose				0.027***
				(0.009)
Motive: Family			0.030***	0.018***
			(0.005)	(0.006)
Motive: Family &Purpose				0.024***
				(0.009)
Motive: Necessity			0.009*	0.008
			(0.005)	(0.005)
Controls				
35-54 years old	–0.007***	–0.007***	–0.030***	–0.030***
	(0.002)	(0.002)	(0.005)	(0.005)
Over 54 years old	0.006***	0.006***	–0.032***	–0.032***
	(0.002)	(0.002)	(0.006)	(0.006)
Male	0.018***	0.018***	0.035***	0.035***
	(0.001)	(0.001)	(0.004)	(0.004)
Risk aversion	–0.004***	–0.004***	0.013***	0.013***
	(0.001)	(0.001)	(0.005)	(0.005)
Employed	0.007***	0.008***	0.040***	0.039***
	(0.002)	(0.002)	(0.005)	(0.005)
Tertiary education	0.011***	0.012***	0.006	0.007
	(0.002)	(0.002)	(0.005)	(0.005)
Own business	0.067***	0.068***	0.036***	0.036***
	(0.003)	(0.003)	(0.005)	(0.005)
Vision	0.008***	0.007***	0.006	0.006
	(0.001)	(0.001)	(0.005)	(0.005)
Personal network	0.052***	0.052***	0.049***	0.049***
	(0.002)	(0.002)	(0.004)	(0.004)
Middle 33%tile income	0.012***	0.012***	0.009*	0.010*
	(0.002)	(0.002)	(0.005)	(0.005)
Upper 33%tile income	0.033***	0.033***	0.052***	0.052***
	(0.002)	(0.002)	(0.005)	(0.005)
Financing	0.011***	0.007***	0.012***	0.012***
	(0.001)	(0.001)	(0.004)	(0.004)
Government support	0.009***	0.007***	0.006	0.005
	(0.001)	(0.001)	(0.004)	(0.004)
Country income group fixed effects	Yes	Yes	Yes	Yes
Regional fixed effects	Yes	Yes	Yes	Yes
Observations	120,331	120,331	25,193	25,193
Adjusted R^2	0.046	0.046	0.050	0.051

Notes. (1) Dependent and independent variables and controls are defined as in Table A2. (2) Robust standard errors in parentheses. (3) *** p<0.01, ** p<0.05, * p<0.1.

Table 3 Linear probability models for Investment recipients: APS 2019

	(1)	(2)	(3)	(4)	(5)	(6)
Independent variables	Family	Acquaintance	Stranger	Family	Acquaintance	Stranger
Intermediate-level altruism	–0.025	0.005	0.019	–0.025	0.005	0.019
	(0.033)	(0.033)	(0.016)	(0.033)	(0.033)	(0.016)
High-level altruism	–0.139***	0.011	0.102***	–0.140***	0.012	0.103***
	(0.036)	(0.036)	(0.022)	(0.036)	(0.036)	(0.022)
Motive: Purpose	–0.087***	0.044**	0.029***	–0.084***	0.043	0.024
	(0.018)	(0.018)	(0.009)	(0.030)	(0.030)	(0.015)
Motive: Wealth	0.034*	–0.029	–0.005	0.021	–0.018	–0.000
	(0.019)	(0.018)	(0.009)	(0.026)	(0.026)	(0.012)
Motive: Wealth &Purpose				0.030	–0.023	–0.011
				(0.036)	(0.036)	(0.018)
Motive: Family	0.105***	–0.073***	–0.016*	0.135***	–0.096***	–0.033***
	(0.019)	(0.018)	(0.009)	(0.028)	(0.027)	(0.012)
Motive: Family &Purpose				–0.053	0.040	0.031*
				(0.036)	(0.036)	(0.017)
Motive: Necessity	0.056***	–0.045**	–0.009	0.056***	–0.045**	–0.009
	(0.020)	(0.020)	(0.010)	(0.020)	(0.020)	(0.010)
Controls						
35-54 years old	–0.034*	–0.010	0.023**	–0.033*	–0.010	0.023**
	(0.019)	(0.019)	(0.009)	(0.019)	(0.019)	(0.009)
Over 54 years old	0.017	–0.033	0.009	0.018	–0.034	0.008
	(0.026)	(0.026)	(0.013)	(0.026)	(0.026)	(0.013)
Male	–0.157***	0.155***	–0.000	–0.157***	0.156***	–0.000
	(0.018)	(0.018)	(0.009)	(0.018)	(0.018)	(0.009)
Risk aversion	0.034*	–0.006	–0.028***	0.035**	–0.007	–0.028***
	(0.018)	(0.017)	(0.008)	(0.018)	(0.018)	(0.008)
Employed	0.008	0.019	–0.025***	0.009	0.019	–0.025***
	(0.018)	(0.018)	(0.009)	(0.018)	(0.018)	(0.009)
Tertiary education	0.002	–0.028	0.021**	0.002	–0.028	0.021**
	(0.019)	(0.018)	(0.009)	(0.019)	(0.018)	(0.009)
Own business	–0.026	0.028	0.002	–0.026	0.027	0.001
	(0.019)	(0.019)	(0.010)	(0.019)	(0.019)	(0.010)
Vision	0.034	–0.008	–0.006	0.033	–0.008	–0.006
	(0.022)	(0.021)	(0.011)	(0.021)	(0.021)	(0.011)
Personal network	–0.067***	0.071***	–0.000	–0.067***	0.071***	–0.000
	(0.019)	(0.019)	(0.009)	(0.019)	(0.019)	(0.009)
Middle 33%tile income	–0.007	0.019	–0.012	–0.006	0.018	–0.012
	(0.026)	(0.026)	(0.012)	(0.026)	(0.026)	(0.012)
Upper 33%tile income	0.048*	–0.044*	–0.002	0.048*	–0.045*	–0.002
	(0.025)	(0.024)	(0.012)	(0.025)	(0.025)	(0.012)
Financing	–0.006	–0.001	0.003	–0.007	–0.000	0.003
	(0.015)	(0.015)	(0.008)	(0.015)	(0.015)	(0.008)
Government support	–0.018	0.017	0.003	–0.018	0.016	0.002
	(0.016)	(0.016)	(0.010)	(0.016)	(0.016)	(0.010)
Country income group fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Regional fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,260	3,260	3,260	3,260	3,260	3,260
Adjusted R^2	0.058	0.041	0.051	0.058	0.040	0.051

Notes. (1) Investees are family: close family members or other relatives; acquaintance: work colleague, friend or neighbor; or stranger: a stranger with a good business idea. Independent variables and controls are defined as in Table A2. (2) Robust standard errors in parentheses. (3) *** p<0.01, ** p<0.05, * p<0.1.

Table 4 Robust regressions for micro-angel investments in US dollars: APS 2019

	(1)	(2)	(3)	(4)
Independent variables	US$ invest.	US$ invest.	US$ invest.	US$ invest.
Intermediate-level altruism		445.7***	445.5	474.0
		(166.8)	(289.2)	(289.3)
High-level altruism		–266.4	–27.6	–19.4
		(179.5)	(323.5)	(323.5)
Motive: Purpose			–264.9	148.7
			(161.0)	(253.5)
Motive: Wealth			269.2*	565.8**
			(162.2)	(225.9)
Motive: Wealth &Purpose				–528.9*
				(312.2)
Motive: Family			150.9	429.9*
			(163.0)	(246.2)
Motive: Family &Purpose				–435.1
				(319.1)
Motive: Necessity			–425.0**	–413.8**
			(171.4)	(171.5)
Controls				
35-54 years old	1,033.6***	1,013.3***	899.8***	920.3***
	(100.8)	(100.5)	(165.3)	(165.3)
Over 54 years old	1,105.4***	1,092.8***	995.6***	1,013.2***
	(129.8)	(129.5)	(227.7)	(227.6)
Male	477.3***	485.7***	412.0**	407.4**
	(93.9)	(93.6)	(160.5)	(160.4)
Risk aversion	–421.3***	–432.5***	–459.4***	–454.9***
	(90.6)	(90.4)	(153.9)	(154.0)
Employed	–67.9	–69.8	–290.8*	–266.8*
	(93.9)	(93.6)	(158.1)	(158.4)
Tertiary education	263.7***	319.7***	291.9*	291.7*
	(95.8)	(96.2)	(161.2)	(161.1)
Entrepreneurial experience	213.9	217.5	155.2	166.5
	(136.9)	(136.3)	(202.2)	(202.1)
Vision	46.9	34.7	91.0	93.7
	(101.4)	(101.0)	(190.7)	(190.7)
Personal network	149.9	144.0	–28.8	–46.2
	(92.7)	(92.5)	(167.3)	(167.3)
Middle 33%tile income	438.5***	417.4***	418.4*	403.8*
	(127.4)	(126.8)	(225.2)	(225.3)
Upper 33%tile income	1,030.4***	1,018.0***	1,085.6***	1,061.9***
	(124.7)	(124.2)	(215.2)	(215.4)
investee: Family	443.7***	416.6***	113.0	105.3
	(95.3)	(95.3)	(157.0)	(157.0)
Investee: Stranger	–852.9***	–886.1***	–840.8**	–826.2**
	(197.8)	(197.2)	(330.7)	(330.6)
Financing	–839.2***	–887.7***	–1,105.4***	–1,099.2***
	(78.1)	(81.5)	(139.0)	(139.1)
Government support	962.3***	934.3***	1,013.8***	1,029.3***
	(80.4)	(80.3)	(142.1)	(142.0)
Country income group fixed effects	Yes	Yes	Yes	Yes
Regional fixed effects	Yes	Yes	Yes	Yes
Observations	6,968	6,968	2,862	2,862
Adjusted R^2	0.231	0.231	0.255	0.256

Notes. (1) Dependent and independent variables and controls are defined as in Table A2. (2) Investees are family (close family members or other relatives), strangers (with a good business idea), and the baseline of acquaintances (work colleague, friend or neighbor). (3) Robust standard errors in parentheses. (4) *** p<0.01, ** p<0.05, * p<0.1.

Table 5 Robust regressions for micro-angel investments in US dollars
Interaction between investee and motive: APS 2019

Independent variables		(1) US$ invest.	(2) US$ invest.
Intermediate-level altruism		440.6	440.7
		(288.7)	(288.1)
High-level altruism		–31.6	–31.8
		(323.0)	(322.2)
Stranger × purpose motive:	No × Yes	–299.8*	
		(165.2)	
	Yes × No	–1,300.0**	
		(510.7)	
	Yes × Yes	–837.6**	
		(417.2)	
Family × family motive:	No × Yes		741.2***
			(228.4)
	Yes × No		495.8**
			(196.1)
	Yes × Yes		199.6
			(217.6)
Motive: Wealth		266.3	272.9*
		(161.9)	(161.5)
Motive: Family		145.0	
		(162.7)	
Motive: Necessity		–417.7**	–420.5**
		(171.1)	(170.7)
Motive: Purpose			–279.5*
			(160.4)
Controls as in Table 4		Yes	Yes
Observations		2,862	2,862
Adjusted R^2		0.255	0.257

Notes. (1) Dependent and independent variables and controls are defined as in Table A2. (2) Family: close family members or other relatives. Stranger: stranger with a good business idea. (3) Robust standard errors in parentheses. (4) *** p<0.01, ** p<0.05, * p<0.1.

Table 6 Empirical support of research hypotheses

Hypothesis	Basic controls: Demographics, entrepreneurial culture, SMEs financing, government support, country income group, and geographic region	Basic controls + additional controls: cultural dimensions, gender inequality, human well-being, legal origin, financial development, and corruption perceptions	Expanded sample: basic controls + time fixed effects
H_1: Social impact and family values motivate individuals to engage in micro-angel investing.	Supported	Supported	Supported
H_{2a}: National altruism positively influences the prevalence of micro-angel investing.	Supported for intermediate-level altruism only	Supported for intermediate- and high-level altruism	Supported for intermediate- and high-level altruism (when including motivations).
H_{2b}: The altruistic nature of a nation impacts the types of ventures micro-angels choose to support and their approach to these investments.	Supported for high-level altruism and some investees only	Supported for high-level altruism and some investees only. Although statistical significance is weaker than with basic controls only	Supported for intermediate and high-level altruism and some investees only
H_3: Impact-driven micro-angels will preferentially back high-potential startups.	Supported for models with individual motivations only	Supported for models with individual motivations and individual + paired motivations. Although weakly in the latter case.	Supported for models with individual motivations only
H_4: Wealth-driven micro-angels will commit more capital to foster rapid growth	Mildly supported	Mildly supported	Mildly supported

Online appendix

Table OA1 Additional country-level controls

Cultural dimensions

Variable	Description	Type	Mean	SD	Min	Max	Source
Individualism	Extent to which people feel independent, as opposed to being interdependent as members of larger wholes. (Scale of 0-110).	Discrete	47.34	20.8	6	91	https://geerthofstede.com/research-and-vsm/dimension-data-matrix/
Indulgence	About the good things in life. (Scale of 0-110).	Discrete	49.88	20.5	4	97	
Long-term orientation	Fostering perseverance and thrift. (Scale of 0-110).	Discrete	42.37	21.8	0	100	
Power distance	Extent to which the less powerful members of organizations and institutions (like the family) accept and expect that power is distributed unequally. (Scale of 0-110).	Discrete	59.53	17.3	13	104	
Uncertainty avoidance	A society's tolerance for uncertainty and ambiguity. (Scale of 0-110).	Discrete	70.56	20.0	29	112	

Gender disparity

Variable	Description	Type	Mean	SD	Min	Max	Source
Gender inequality	Gender inequality in economic participation and opportunity 2019. (Scale of 0-1; 0 is more unequal).	Continuous	0.64	0.12	0.33	0.84	Global Gender Gap Index of the World Economic Forum 2019, https://datafinder.qog.gu.se/dataset/gggi

Financial and legal aspects

Variable	Description	Type	Mean	SD	Min	Max	Source
Financial development	Relative ranking of countries on the depth, access, and efficiency of their financial institutions and financial markets 2019. (Scale 0-1; 1 is highest).	Continuous	0.58	0.23	0.10	0.93	International Monetary Fund (IMF) https://data.imf.org/?sk=F8032E80-B36C-43B1-AC26-493C5B1CD33B
Legal origins	Common law English origin, civil law French origin, civil law German origin, and civil law Scandinavian origin.	Binary	0.23 (E); 0.53 (F), 0.20 (G); 0.04 (S)	0.42 (E); 0.50 (F), 0.40 (G); 0.20 (S)	0	1	La Porta, Lopez-de-Silanes, & Schleifer (2008). https://faculty.tuck.dartmouth.edu/rafael-laporta/research-publications

Corruption and human-well-being aspects

Variable	Description	Type	Mean	SD	Min	Max	Source
Corruption perception	Transparency International's Corruption Perception Index 2018. Scale of 0-100; 0 if public sector is perceived as highly corrupt.	Discrete	56.3	17.2	25	85	https://ourworldindata.org/grapher/ti-corruption-perception-index
Human well-being	Basic needs (e.g., food, sanitation), personal development & health (e.g., education, healthy life), and a well-balanced society (e.g., income distribution, good governance); Scale 1-10, where 10 is highest.	Continuous	7.7	1.1	3.5	9	Sustainable Society Indices (SSI) 2019. The SSI is currently available for 213 countries/territories. https://ssi.wi.th-koeln.de/

Table OA2 Lineal probability models for the decision to become a micro angel: APS 2019

Independent variables	(1) Micro angel	(2) Micro angel	(3) Micro angel	(4) Micro angel
Intermediate-level altruism		0.016***	0.042***	0.041***
		(0.003)	(0.007)	(0.007)
High-level altruism		0.014***	0.025**	0.027**
		(0.004)	(0.011)	(0.011)
Motive: Purpose			0.030***	0.010
			(0.005)	(0.007)
Motive: Wealth			0.020***	0.008
			(0.005)	(0.006)
Motive: Wealth &Purpose				0.027***
				(0.009)
Motive: Family			0.025***	0.016***
			(0.005)	(0.006)
Motive: Family &Purpose				0.017*
				(0.009)
Motive: Necessity			0.011**	0.010*
			(0.005)	(0.005)
Controls				
Below median gender equality	0.047***	0.046***	0.062***	0.061***
	(0.002)	(0.002)	(0.007)	(0.007)
Below median power distance	–0.043***	–0.046***	–0.036***	–0.038***
	(0.003)	(0.003)	(0.012)	(0.012)
Below median individualism	–0.020***	–0.018***	–0.011	–0.012
	(0.003)	(0.003)	(0.010)	(0.010)
Below median uncertainty avoidance	0.026***	0.025***	0.047***	0.045***
	(0.002)	(0.002)	(0.007)	(0.007)
Below median indulgence	–0.045***	–0.040***	–0.018*	–0.019*
	(0.003)	(0.004)	(0.011)	(0.011)
Below median long-term orientation	0.023***	0.023***	–0.002	–0.002
	(0.003)	(0.003)	(0.009)	(0.009)
Below median financial development	0.014***	0.015***	0.060***	0.059***
	(0.003)	(0.003)	(0.010)	(0.010)
Below median corruption perception	–0.064***	–0.065***	–0.068***	–0.067***
	(0.004)	(0.004)	(0.011)	(0.011)
Below median human well-being	0.081***	0.079***	0.085***	0.085***
	(0.004)	(0.004)	(0.012)	(0.012)
English legal origin	–0.034***	–0.034***	–0.105***	–0.107***
	(0.004)	(0.005)	(0.018)	(0.018)
French legal origin	–0.015***	–0.015***	–0.116***	–0.116***
	(0.005)	(0.005)	(0.018)	(0.018)
German legal origin	0.004	0.006	–0.098***	–0.097***
	(0.006)	(0.006)	(0.020)	(0.020)
Additional controls as in Table 2	Yes	Yes	Yes	Yes
Observations	120,331	120,331	25,193	25,193
Adjusted R^2	0.058	0.058	0.062	0.062

Notes: (1) Civil law Scandinavian origin is the baseline category. (2) Robust standard errors in parentheses. (3) *** p<0.01, ** p<0.05, * p<0.1. (4) For variable definitions, see Tables A2 and A5.

.

Table OA3 Linear probability models for Investment recipients: APS 2019

Independent variables	(1) Family	(2) Acquaintance	(3) Stranger	(4) Family	(5) Acquaintance	(6) Stranger
Intermediate-level altruism	0.018	–0.040	0.020	0.020	–0.041	0.020
	(0.043)	(0.042)	(0.022)	(0.043)	(0.043)	(0.022)
High-level altruism	–0.095*	–0.033	0.114***	–0.094*	–0.034	0.113***
	(0.055)	(0.055)	(0.034)	(0.055)	(0.055)	(0.034)
Motive: Purpose	–0.086***	0.042**	0.030***	–0.084***	0.040	0.025*
	(0.018)	(0.018)	(0.009)	(0.029)	(0.029)	(0.015)
Motive: Wealth	0.031*	–0.026	–0.005	0.018	–0.016	0.000
	(0.019)	(0.018)	(0.009)	(0.026)	(0.025)	(0.012)
Motive: Wealth &Purpose				0.029	–0.021	–0.012
				(0.036)	(0.036)	(0.018)
Motive: Family	0.102***	–0.070***	–0.016*	0.131***	–0.091***	–0.032***
	(0.018)	(0.018)	(0.009)	(0.027)	(0.027)	(0.012)
Motive: Family &Purpose				–0.051	0.038	0.029*
				(0.036)	(0.036)	(0.017)
Motive: Necessity	0.043**	–0.032	–0.007	0.044**	–0.033*	–0.008
	(0.020)	(0.020)	(0.010)	(0.020)	(0.020)	(0.010)
Controls						
Below median gender equality	–0.069**	0.074**	0.004	–0.069**	0.074**	0.004
	(0.031)	(0.032)	(0.018)	(0.032)	(0.032)	(0.018)
Below median power distance	–0.181***	0.128*	0.025	–0.182***	0.129*	0.025
	(0.067)	(0.067)	(0.041)	(0.067)	(0.067)	(0.041)
Below median individualism	–0.067	0.049	0.016	–0.067	0.048	0.015
	(0.057)	(0.058)	(0.035)	(0.057)	(0.058)	(0.035)
Below median uncertainty avoidance	0.080**	–0.115***	0.022	0.079**	–0.115***	0.022
	(0.040)	(0.040)	(0.023)	(0.040)	(0.040)	(0.024)
Below median indulgence	0.015	–0.030	0.000	0.018	–0.032	–0.001
	(0.059)	(0.059)	(0.039)	(0.059)	(0.059)	(0.039)
Below median long-term orientation	–0.007	0.046	–0.026	–0.010	0.047	–0.024
	(0.044)	(0.045)	(0.028)	(0.044)	(0.045)	(0.028)
Below median financial development	0.183***	–0.159***	–0.019	0.183***	–0.159***	–0.019
	(0.047)	(0.047)	(0.027)	(0.047)	(0.047)	(0.027)
Below median corruption perception	–0.135***	0.082*	0.025	–0.137***	0.084*	0.026
	(0.050)	(0.049)	(0.029)	(0.050)	(0.049)	(0.029)
Below median human well-being	0.030	–0.085*	0.040	0.030	–0.085*	0.040
	(0.049)	(0.050)	(0.027)	(0.049)	(0.050)	(0.027)
English legal origin	–0.019	0.044	–0.037	–0.022	0.046	–0.036
	(0.069)	(0.072)	(0.050)	(0.069)	(0.072)	(0.050)
French legal origin	–0.098	0.104	–0.022	–0.102	0.107	–0.020
	(0.066)	(0.069)	(0.048)	(0.066)	(0.069)	(0.048)
German legal origin	–0.157**	0.129*	0.015	–0.160**	0.132**	0.017
	(0.065)	(0.066)	(0.045)	(0.065)	(0.066)	(0.045)
Additional controls as in Table 3	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,260	3,260	3,260	3,260	3,260	3,260
Adjusted R^2	0.072	0.053	0.054	0.072	0.053	0.054

Notes: (1) Investees are family: close family members or other relatives; acquaintance: work colleague, friend or neighbor; or stranger: a stranger with a good business idea. Independent variables and controls are defined as in Tables A2 and A5. (2) Civil law Scandinavian origin is the baseline category. (3) Robust standard errors in parentheses. (4) *** p<0.01, ** p<0.05, * p<0.1.

Table OA4 Robust regressions for micro-angel investments in US dollars: APS 2019

Independent variables	(1) US$ invest.	(2) US$ invest	(3) US$ invest	(4) US$ invest
Intermediate-level altruism		302.7	539.4	519.7
		(203.9)	(344.3)	(346.1)
High-level altruism		922.7***	968.7**	934.6**
		(265.5)	(458.2)	(461.0)
Motive: Purpose			–64.7	242.4
			(153.2)	(240.5)
Motive: Wealth			288.4*	535.0**
			(153.3)	(215.5)
Motive: Wealth &Purpose				–433.7
				(297.5)
Motive: Family			238.5	422.7*
			(154.2)	(233.8)
Motive: Family &Purpose				–282.0
				(302.9)
Motive: Necessity			–381.7**	–373.2**
			(163.7)	(164.6)
Controls				
Below median gender equality	–310.5*	–390.8**	–592.3**	–567.0**
	(162.6)	(165.9)	(279.8)	(281.6)
Below median power distance	–2,444.9***	–2,870.3***	–2,821.2***	–2,775.6***
	(266.0)	(297.2)	(563.3)	(566.6)
Below median individualism	–1,309.6***	–1,411.5***	–1,170.4**	–1,154.0**
	(255.7)	(262.0)	(488.5)	(491.0)
Below median uncertainty avoidance	–579.0***	–832.7***	–583.2*	–567.9*
	(169.7)	(197.4)	(336.8)	(339.0)
Below median indulgence	–2,384.1***	–2,448.3***	–2,519.5***	–2,532.3***
	(238.9)	(262.0)	(477.1)	(479.7)
Below median long-term orientation	2,005.8***	1,884.8***	1,778.7***	1,774.0***
	(214.6)	(216.8)	(374.7)	(376.9)
Below median financial development	–1,357.0***	–1,378.4***	–773.0**	–795.1**
	(211.1)	(211.8)	(388.5)	(390.6)
Below median corruption perception	389.5*	453.0**	–321.5	–252.5
	(227.1)	(230.8)	(419.1)	(421.6)
Below median human well-being	863.4***	923.8***	–2.8	–57.1
	(262.4)	(263.3)	(426.7)	(428.9)
English legal origin	–218.1	–616.6*	712.0	756.6
	(293.1)	(321.9)	(602.8)	(606.0)
French legal origin	1,467.8***	1,107.4***	2,703.4***	2,733.9***
	(294.0)	(313.6)	(590.9)	(594.2)
German legal origin	2,517.6***	2,334.1***	4,023.2***	4,018.2***
	(316.9)	(323.2)	(579.9)	(583.5)
Additional controls as in Table 4	Yes	Yes	Yes	Yes
Observations	6,968	6,968	2,862	2,862
Adjusted R^2	0.255	0.259	0.288	0.288

Notes: (1) Civil law Scandinavian origin is the baseline category. (2) Robust standard errors in parentheses. (3) *** p<0.01, ** p<0.05, * p<0.1. (4) For variable definitions, see Tables A2 and A5.

Table OA5 Robust regressions for micro-angel investments in US dollars
Interaction between investee and motive: APS 2019

Independent variables		(1) US$ invest.	(2) US$ invest.
Intermediate-level altruism		501.9	475.1
		(345.8)	(345.5)
High-level altruism		986.9**	983.7**
		(460.4)	(459.9)
Stranger × purpose motive:	No × Yes	–110.5	
		(158.2)	
	Yes × No	–1,263.7***	
		(484.7)	
	Yes × Yes	–461.2	
		(397.0)	
Family × family motive:	No × Yes		775.3***
			(217.5)
	Yes × No		460.0**
			(187.2)
	Yes × Yes		299.1
			(207.9)
Motive: Wealth		289.1*	295.8*
		(154.0)	(153.9)
Motive: Family		235.8	
		(154.9)	
Motive: Necessity		–370.0**	–374.5**
		(164.4)	(164.3)
Motive: Purpose			–86.0
			(153.8)
Controls			
Below median gender equality		–604.6**	–588.8**
		(281.0)	(280.9)
Below median power distance		–2,849.3***	–2,899.6***
		(565.8)	(565.3)
Below median individualism		–1,222.7**	–1,262.8**
		(490.6)	(490.2)
Below median uncertainty avoidance		–628.1*	–592.2*
		(338.4)	(338.1)
Below median indulgence		–2,617.7***	–2,648.5***
		(479.1)	(478.8)
Below median long-term orientation		1,788.4***	1,763.3***
		(376.4)	(376.3)
Below median financial development		–818.4**	–830.0**
		(390.2)	(390.0)
Below median corruption perception		–276.1	–225.3
		(420.9)	(420.6)
Below median human well-being		–6.0	–29.2
		(428.5)	(428.2)
English legal origin		712.7	646.6
		(605.7)	(605.6)
French legal origin		2,743.0***	2,727.0***
		(593.7)	(593.2)
German legal origin		4,098.4***	4,019.9***
		(582.7)	(582.6)
Additional controls as in Table 5		Yes	Yes
Observations		2,862	2,862
Adjusted R^2		0.288	0.290

Notes: (1) Civil law Scandinavian origin is the baseline. (2) Family: close family members/other relatives. Stranger: stranger with a good business idea. (3) Robust standard errors in parentheses. (4) *** p<0.01, ** p<0.05, * p<0.1. (5) For variable definitions, see Tables A2 and A5.

Table OA6 Lineal probability models for the decision to become a micro angel: APS 2019-2020

	(1)	(2)	(3)	(4)
Independent variables	Micro angel	Micro angel	Micro angel	Micro angel
Intermediate-level altruism		0.016***	0.040***	0.039***
		(0.002)	(0.004)	(0.004)
High-level altruism		0.003	0.017***	0.017***
		(0.002)	(0.005)	(0.005)
Motive: Purpose			0.028***	0.010*
			(0.004)	(0.006)
Motive: Wealth			0.021***	0.014***
			(0.004)	(0.004)
Motive: Wealth &Purpose				0.016**
				(0.007)
Motive: Family			0.029***	0.016***
			(0.004)	(0.005)
Motive: Family &Purpose				0.027***
				(0.007)
Motive: Necessity			0.006	0.005
			(0.004)	(0.004)
Controls				
Year 2020	−0.010***	−0.007***	−0.010***	−0.010***
	(0.001)	(0.001)	(0.004)	(0.004)
Additional controls as in Table 2	Yes	Yes	Yes	Yes
Observations	185,944	185,944	38,595	38,595
Adjusted R^2	0.041	0.042	0.046	0.046

Notes: (1) Robust standard errors in parentheses. (2) *** p<0.01, ** p<0.05, * p<0.1. (3) For variable definitions, see Tables A2.

Table OA7 Linear probability models for Investment recipients: APS 2019-2020

	(1) Family	(2) Acquaintance	(3) Stranger	(4) Family	(5) Acquaintance	(6) Stranger
Intermediate-level altruism	0.008	–0.048**	0.033***	0.008	–0.048**	0.033***
	(0.024)	(0.024)	(0.012)	(0.024)	(0.024)	(0.012)
High-level altruism	–0.044*	–0.035	0.063***	–0.044*	–0.034	0.063***
	(0.026)	(0.026)	(0.015)	(0.026)	(0.026)	(0.015)
Motive: Purpose	–0.094***	0.054***	0.029***	–0.089***	0.058**	0.017
	(0.015)	(0.015)	(0.007)	(0.025)	(0.025)	(0.013)
Motive: Wealth	0.040**	–0.037**	–0.005	0.035*	–0.028	–0.010
	(0.016)	(0.015)	(0.007)	(0.021)	(0.021)	(0.010)
Motive: Wealth &Purpose				0.011	–0.020	0.009
				(0.030)	(0.030)	(0.015)
Motive: Family	0.100***	–0.076***	–0.010	0.117***	–0.086***	–0.021**
	(0.015)	(0.015)	(0.007)	(0.023)	(0.022)	(0.010)
Motive: Family &Purpose				–0.029	0.019	0.018
				(0.030)	(0.030)	(0.014)
Motive: Necessity	0.047***	–0.035**	–0.008	0.048***	–0.035**	–0.008
	(0.017)	(0.016)	(0.008)	(0.017)	(0.016)	(0.008)
Controls						
Year 2020	0.005	0.014	–0.012	0.005	0.014	–0.012
	(0.017)	(0.017)	(0.009)	(0.017)	(0.017)	(0.009)
Additional controls as in Table 3	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,717	4,717	4,717	4,717	4,717	4,717
Adjusted R^2	0.059	0.046	0.046	0.060	0.047	0.046

Notes: (1) Robust standard errors in parentheses. (2) *** p<0.01, ** p<0.05, * p<0.1. (3) Investees are family: close family members or other relatives; acquaintance: work colleague, friend or neighbor; or stranger: a stranger with a good business idea. Independent variables and controls are defined as in Table A2.

Table OA8 Robust regressions for micro-angel investments in US dollars: APS 2019-2020

Independent variables	(1) US$ invest.	(2) US$ invest	(3) US$ invest	(4) US$ invest
Intermediate-level altruism		–169.4	23.4	31.5
		(112.8)	(188.0)	(188.9)
High-level altruism		–466.5***	–164.5	–146.9
		(120.0)	(209.4)	(210.3)
Motive: Purpose			–192.4	161.2
			(120.0)	(194.7)
Motive: Wealth			146.9	394.1**
			(121.4)	(168.4)
Motive: Wealth &Purpose				–441.2*
				(234.7)
Motive: Family			209.7*	424.7**
			(120.4)	(183.4)
Motive: Family &Purpose				–330.8
				(238.7)
Motive: Necessity			–359.7***	–342.2***
			(129.5)	(130.3)
Controls				
Year 2020	–544.7***	–460.9***	–518.4***	–525.8***
	(80.5)	(81.8)	(132.3)	(133.0)
Additional controls as in Table 4	Yes	Yes	Yes	Yes
Observations	9,939	9,939	4,105	4,105
Adjusted R^2	0.247	0.245	0.288	0.289

Notes: (1) Robust standard errors in parentheses. (2) *** p<0.01, ** p<0.05, * p<0.1. (3) Independent variables and controls are defined as in Table A2. (3) Investments are measured in 2019 USD.