

Dancing with strangers? Initial trust and the formation of initial ties between new ventures and corporate venture capitalists

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ABSTRACT

This study proposes a hybrid model of initial trust formation that highlights the role of social categorization and its interplay with both institutional trust and the individuating information about the party. Using data on 1,474 CVC investments in European ventures and a case-control research design, we find that ventures more likely form initial CVC ties with investors whose parent companies are located in countries considered as more trustworthy. This effect is weaker but does not disappear when social defenses safeguard ventures from misplacing trust, and when there are social ties between CVC investors and ventures' independent VC investors.

Keywords: Corporate venture capital, trust, interorganizational relationships, social categorization

INTRODUCTION

In recent years, trust has taken center stage in management (Rousseau et al., 1998; McEvily et al., 2003; Dirks et al., 2009) and entrepreneurship studies (Welter and Smallbone, 2006; Welter, 2012; Scarbrough et al., 2013; Pollack et al., 2017). Trust involves confident expectations about the intentions and behaviors of another party and the willingness to accept vulnerability (Rousseau et al., 1998: 394).¹ Firms favor collaborating with parties they trust because of the positive consequences of trust on performance for interorganizational collaborations (Granovetter, 1985; Uzzi, 1997; Poppo and Zenger, 2002; Lado et al., 2008; Luo, 2008).

Although evidence abounds on the primacy of trustworthiness as a partner selection criterion, our understanding of the origins of trust remains limited (Poppo et al., 2008; Poppo et al., 2016). According to the social exchange perspective (Cook and Emerson, 1987; Ring and Van de Ven, 1994), experimenting with small-sized collaborations is crucial for generating information on a partner's trustworthiness.² However, the mechanism for generating trust highlighted by this perspective is unfeasible when initial transactions involve committing sizable resources, and a party's opportunistic behavior has detrimental effects on the other party.³ Under these circumstances, which are fraught with great risk, firms must place *initial trust* in unfamiliar partners, as the absence of trust would preclude collaboration materialization. Given the prevalence of the formation of ties with new partners, it is imperative to explore the sources of initial trust in interorganizational relationships because factors unrelated to direct interaction and first-hand experience with the trustee must underlie trust at zero acquaintance (Dunning et al., 2014).

¹ Mayer et al. (1995: 712) defined trust as “the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party”.

² “Social exchange relations evolve in a slow process, starting with minor transactions in which little trust is required because little risk is involved and in which both partners can prove their trustworthiness, enabling them to expand their relation and engage in major transactions. Thus, the process of social exchange leads to the trust required for it in a self-governing fashion” (Blau, 1968:454).

³ An example is offered by new biotechnology ventures. These ventures typically lack necessary experience and resources, and are often forced to ally with incumbent organizations, so as to transform their innovative knowledge into commercially-viable products. In doing so, they need to take a “leap of faith” and make a relatively large lump-sum initial commitment, fraught with fears of misappropriation (Diestre and Rajagoplan, 2012).

Theories of initial trust formation provide two distinct perspectives, namely an *institutional* and a *cognitive* account. Proponents of institutional trust adopt an economic framework and emphasize that the decision to trust an unfamiliar exchange party results from a choice based on controlled information processing and rational, forward-looking calculations. A firm's managers judge an unfamiliar party as trustworthy and are willing to trust it if they anticipate that the penalty costs the other party will incur upon engagement in opportunistic actions outweigh the benefits (Coleman, 1990; Hardin, 1992; Williamson, 1993). This perspective gives precedence to trustworthiness based on legal arrangements and social structures, potentially imposing sanctions on the defecting party (Zucker, 1986; Fukuyama, 1995).

The cognitive perspective is anchored in social psychology thinking, underlining that individuals frequently resort to simple heuristics ("leaps of faith") to quickly and easily decide whether to trust strangers (Lewicky and Brienfield, 2011). According to this perspective, social categorization plays a crucial role in influencing inferences about strangers' trustworthiness (Brewer, 1981; Fiske and Neuberg, 1990; Nee et al., 2018; Pratt et al., 2019). Initial trust originates from individuals' socially informed beliefs regarding the honesty, good faith, and reliability of unfamiliar third parties whose membership in a selected social category confers them trustworthiness. Social categorization may involve placing the exchange party in the same social category to which the focal individual belongs ("unit grouping," Brewer, 1996), or placing it in a general social category toward which the focal individual has positive prejudice ("stereotyping," see Tajfel, 1981; Fiske, 2000).⁴

Although these perspectives can simultaneously contribute to the generation of initial trust, most studies have limited their focus to one or the other, thus neglecting the interplay between different sources of initial trust. Moreover, the extent to which social categorization loses its importance as a source of initial trust when objective individuating information that a party regards as predictive of the trustworthiness of the target exchange party becomes available, is unclear.

⁴ Brewer (1981: 356) made the theoretical claim that group membership "serves as a rule for defining the boundaries of low-risk interpersonal trust that bypasses the need for personal knowledge and the costs of negotiating reciprocity." For empirical support, see the study by Tanis and Postmes (2005).

These are important gaps because of the crucial role initial trust plays in promoting interorganizational collaborations and influencing partner selection. To improve our understanding about the sources of initial trust, we adhere to the view proposed by McEvily (2011) that the decision to trust an unfamiliar exchange party is a hybridization of elements from calculative and heuristic decision-making. We focus on one instance of stereotypes that has important economic implications, as previous studies have shown, that regarding the country of origin (i.e., the degree to which citizens of one country express attitudes of general trustworthiness toward citizens of another country. See e.g., Al-Sulaiti and Baker, 1998; Guiso et al., 2009; Bottazzi et al., 2016). We argue that *country-of-origin stereotypical trust* is an important source of initial trust that favors the formation of collaborative relationships between unfamiliar partners. However, its positive effect is reduced when institutional trust reassures prospective partners of their limited vulnerability to misplaced trust. The same occurs when individuating information about the trustworthiness of a prospective partner becomes available.

To provide context to this issue, we examine the formation of initial ties between new ventures and corporate venture capital (CVC) investors, that is, the minority equity investments of typically large-sized companies in new ventures (Dushnitsky, 2012). Usually, the first collaboration that new ventures have with established companies is with a CVC investor, and the trustworthiness of CVC investors is admittedly a fundamental issue for the entrepreneurs of these ventures. Indeed, CVC ties involve a critical tension for new ventures between value creation and misappropriation, referred to in the literature as the “swimming with sharks” dilemma (Katila et al., 2008). On one hand, new ventures seek access to the complementary resources possessed by established companies for value creation (Park and Steensma, 2012; Alvarez-Garrido and Dushnitsky, 2016). On the other hand, collaborating with these companies puts their knowledge at risk of misappropriation (Alvarez and Barney, 2001; Diestre and Rajagopalan, 2012). For these reasons, the formation of initial CVC ties provides an ideal testbed for investigating the origins of initial trust and its influence on ventures’ selection of unfamiliar partners in interorganizational collaborations. Additionally, it allows us to investigate how this relationship is moderated by factors

that reflect institutional trust, and the individuating information that new venture entrepreneurs can use to assess CVC investors' trustworthiness.⁵

We argue that country-of-origin stereotypical trust is positively associated with the likelihood of tie formation between new ventures and unfamiliar CVC investors (i.e., investors with which the focal venture has no prior ties). Moreover, in line with the view that the influence of stereotypical trust on CVC tie formation depends on both the extent of institutional trust and the individuating information available to new ventures, we posit that the positive effect of stereotypical trust on the likelihood of forming initial ties with a CVC investor is weaker in the following circumstances: (i) when new ventures enjoy the legal defense offered by a strong intellectual property protection (IPP) regime (Dushnitsky and Shaver, 2009; Colombo & Shafi, 2016); (ii) new ventures enjoy the social defense provided by a high-status independent venture capital (IVC) investor that occupies a central position in the network of VC syndicates (Hallen et al., 2014; Pahnke et al., 2015); (iii) the target CVC investor has a high status (Pollock et al., 2015); and (iv) the target CVC investor has direct or indirect social ties with the IVC investors to which the focal venture is affiliated (Meuleman et al., 2017; Kim et al., 2019).

To test our predictions, we use a sample of 1,331 new ventures located in European Union (EU) countries and the United Kingdom (UK), that received VC from one or more CVC investors in the period 1998–2018. In line with our hypotheses, we find that country-of-origin stereotypical trust has a statistically significant positive effect on initial CVC tie formation. This effect weakens, but does not disappear, if ventures are backed by a high-status IVC investor; that is, if new ventures rely on high institutional trust based on social sanctions. The positive effect of country-of-origin

⁵ We are aware that one observes CVC tie formation only when both the focal venture and the focal CVC investor agree to form the tie. However, in this paper, we follow a prominent stream of literature initiated by Katila et al. (2008) and Dushnitsky and Shaver (2009) and focus our theory development on the venture side. The main reason is that country-of-origin stereotypical trust is unlikely to play any major role in CVC investors' decisions. In fact, CVC investors have access to a broad set of information sources on new ventures, including their own previous experience with venture investing in particular countries. They also use contractual and non-contractual mechanisms to deter new ventures' opportunistic behaviors. In particular, they have the resources to pursue legal issues if necessary. Still, other studies have considered the country-level stereotypical trust on the investor side. The theoretical arguments would be similar to those used by Bottazzi et al. (2016) to examine the investments made by IVC investors. In the empirical section, we duly consider the CVC side. Particularly, in the specification of the empirical matching model, we control for several factors that may influence the propensity of CVC investors to invest in a focal venture. In a robustness check, we also include in the model specification the country-of-origin stereotypical trust of CVC investors.

stereotypical trust also weakens when the individuating information about the focal CVC investor conveyed through direct or indirect social ties between this CVC investor and the IVC investors backing the focal venture, reassures the entrepreneurs about CVC investor trustworthiness. Conversely, the strength of the IPP regime and the focal CVC investor's high status do not seem to influence the relationship between country-of-origin stereotypical trust and the likelihood of CVC tie formation.

This study makes several contributions to existing literature. First, we contribute to the literature that considers the role of initial trust in promoting interorganizational collaborations with unfamiliar partners. We propose a hybrid model of trust formation that combines calculative and heuristic sources of trust, focusing on country-of-origin stereotypical trust—a prominent example of initial trust based on social categorization—and point to the boundary conditions related to its interplay with institutional trust and the availability of individuating information on the exchange party. Second, this study contributes to the literature on the role of trust in entrepreneurship. Contrary to most previous studies, we focus on the entrepreneurs' perspective, highlighting how their perceptions of the trustworthiness of unfamiliar CVC investors influence initial CVC tie formation. We also contribute to the literature on CVC. By focusing on country-of-origin stereotypical trust, we extend prior studies that have investigated new ventures' use of legal and social defenses to protect against the misappropriation risks posed by CVC investors (Katila et al., 2008; Dushnitsky and Shaver, 2009; Hallen et al., 2014; Colombo & Shafi, 2016). We also expand the evidence of studies underpinning the role of social ties to CVC investors in providing individuating information about their trustworthiness (or lack thereof) (Kim et al., 2019).

Lastly, this study has important practical implications. It helps entrepreneurs select the "right" CVC investor by carefully evaluating the context surrounding CVC investments and the reliable individuating information available on the prospective CVC investors. Moreover, we highlight the importance for CVC investors interested in forming an initial CVC tie with a focal startup to convince entrepreneurs of their own trustworthiness. Finally, our study raise policy makers' awareness of the crucial role played by an institutional environment favorable to the development of initial trust between entrepreneurs and CVC investors.

BACKGROUND

Ties between new ventures and CVC investors

This study examines initial CVC tie formation from the perspective of new ventures. Although CVC ties present an important opportunity for new ventures, they also present unique challenges. In selecting CVC partners, new ventures face a tension between value creation and value misappropriation, which is also labeled, as aforementioned, the “swimming with sharks” dilemma (Katila et al., 2008; Dushnitsky and Shaver, 2009; Hallen et al., 2014; Colombo & Shafi, 2016. See Jeon and Maula, 2022 for a review). On the one hand, through these interorganizational partnerships, new ventures can access the valuable complementary resources of CVC investors’ parent companies (e.g., manufacturing facilities, distribution channels, and marketing capabilities) and improve their performance (Park and Steensma, 2012; Alvarez-Garrido and Dushnitsky, 2016). On the other hand, by investing in new ventures, established companies aim to accelerate their innovation discovery processes. CVC is a complement to (and sometime even a substitute for) their innovative efforts in domains as diverse as new technologies, products, and business models (Dushnitsky and Lenox, 2005; Wadhwa and Kotha, 2006; Keil et al., 2008; Basu et al., 2011; Maula et al., 2013; Smith and Shah, 2013). However, CVC investors may draw insights from the technologies developed by new ventures in ways that are not aligned with, or that even are detrimental to, the interests of new ventures (Kim et al., 2019). Anticipating the potential high risk in forming ties with CVC investors regarding the misappropriation of their knowledge, new ventures often become worried about approaching CVC investors.

We claim that the initial trust of ventures’ entrepreneurs in a focal unfamiliar CVC investor obviates the “swimming with sharks” dilemma and encourages tie formation with this investor. Without initial interorganizational trust in place, it is unlikely that new ventures engage in any formal commitment to collaborate (Zaheer and Harris, 2005).

Initial trust and its sources

In the organizational context, initial trust refers to trust that may exist when two parties that are potential partners in an interorganizational collaboration are unfamiliar with each other and have no experience of previous collaborations. McKnight et al. (1998) proposed a framework that

distinguishes between personality-, institution-, and cognition-based initial trust (for a review, see McKnight and Chervany, 2006). Personality-based trust is the general tendency to trust others, and is mostly developed during childhood. Because we are interested in interorganizational relationships, we view personality-based trust as an idiosyncratic factor, and thus use the parts of McKnight et al.'s (1998) framework most applicable to initial interorganizational relationships: institutional and cognitive trust.

The institutional perspective assumes that the decision to trust another party is the result of a rational choice based on controlled information processing and forward-looking calculations that attempt to maximize gains or minimize losses (Coleman, 1990; Hardin, 1992; Williamson, 1993). According to this perspective, a firm trusts another party when it anticipates that the latter has incentives to honor and fulfill trust, as it is in its own economic interest to behave in this way. Specifically, an unfamiliar prospective partner is considered trustworthy when the penalty costs from legal or social sanctions (e.g., damage to reputation) of defection exceed the benefits it would reap from behaving opportunistically (Zucker, 1986; Shapiro, 1987; Lane and Bachmann, 1998).

The cognitive perspective brings to the fore the affective, motivational, and social factors that influence initial trust (McAllister, 1995). It emphasizes the reliance on heuristics based on simple and rapid information cues to judge whether an unfamiliar exchange party is trustworthy (Brewer, 1981; Lewicki and Briensfield, 2010; Nee et al., 2018; Pratt et al., 2019). Cognitive trust emerges when an agent's expectations about the trustworthiness of a stranger which lead to the intention to trust, are based on salient information on the trustee's membership in a social, organizational, or professional category. One well known category-based trust is shared membership in a group. Individuals tend to attribute positive characteristics, including trustworthiness, to other members of the same social group since in-group members share similar values and characteristics (Brewer, 1996). As perceived similarity among group members increases, the transfer of trust occurs more readily (Williams, 2001). Therefore, the awareness of category membership confers people with depersonalized trust and influences the socially-informed judgment about the trustworthiness of others (Kramer, 1999). The list of categories connotative of trust-related expectations include for example gender (Orbell et al., 1994) and ethnicity (Bengtsson

and Hsu, 2015). Social categorization based on stereotypes is another prominent example of simple heuristics leading to initial trust (Tajfel, 1981; Fiske, 2000). The term stereotype refers to the placement of an agent in a general category wherein all members have similar attributes.

Stereotypes are social categories that can be used to infer (un)favorable attributes for agents in that category (Foddy et al., 2009). The shared beliefs regarding a stereotype may form the basis of a diffuse trust expectation because the stereotyped target is considered to possess the generic features of all members of that category. The generalized representation of the key characteristics of another organization forms the basis for presumptive trust (Kramer and Lewicki, 2010).

The cognitive perspective may be viewed as a response to concerns regarding the behavioral assumptions that agents resort to rational calculations and their expectations are driven purely by economic interests. March (1994) observed that the rational choice model overstates the cognitive capabilities of decision-makers and the degree to which they would engage in accurate calculations for making decisions. Thus, an inclusive reconciliation of the institutional and cognitive perspectives is a promising way to move the discourse on initial trust forward.

In this study, in accordance with McEvily (2011), we view initial trust as a hybrid concept combining elements of calculative and heuristic decision-making in varying proportions. Accordingly, we examine how social categorization based on country-of-origin stereotypes can lead to initial trust, which, in turn, may favor initial tie formation between new ventures and CVC investors. A party's perception of the adherence of another party to the focal party's core values and norms based on the other party's membership of a social group, triggers the category-based perception of the other party's trustworthiness (Williams, 2001). While social group membership may be based on various characteristics, like gender, ethnicity, education or professional background, previous studies that we will survey in the next section point to the country of an economic actor (in our case, the parent company of a CVC investor) as a prominent characteristic that influences its categorization by other economic actors (in our case, ventures' entrepreneurs) as more or less trustworthy.

We also discuss how institutional trust based on the presence of effective legal and social defenses, and the availability of individuating information on unfamiliar CVC investors substitute for country-of-origin stereotypical trust, thus reducing its positive effect on CVC tie formation.

HYPOTHESES

Country-of-origin stereotypical trust and CVC tie formation

One category of stereotyping that can lead to initial trust between unfamiliar agents is that associated with their nation. Nations have character stereotypes, namely, shared beliefs toward the personality traits of their citizens (Terracciano and McCrae, 2007), which in turn form the basis of stereotypical trust (Kramer and Lewicki, 2010). In other words, country-of-origin stereotypical trust is a social aggregate construct that expresses the trust-related expectations of people from one nation toward those of another. Inglehart (1991) observed that country-of-origin stereotypical trust correlates with common language and absence of historical conflicts (for more factors, see Delhey, 2007; Guiso et al., 2009).

Previous studies have shown that country-of-origin stereotypical trust influences political choices and has political consequences, shaping public opinion about international relations between countries (Brewer et al., 2004), and the integration of, for example, the EU (Genna, 2009). It also influences consumer purchase decisions. Consumers in each country evaluate the quality of products in line with country-of-origin stereotypes and make purchase decisions accordingly (Al-Sulaiti and Baker, 1998), especially when they are novices or have ambiguous information about the attributes of the product (Maheswaran, 1994). More important for the purpose of the present study, country-of-origin stereotypical trust positively impacts economic transactions between firms. Guiso et al. (2009) show that higher bilateral trust leads to more international trade flows between two countries, more portfolio investment, and more foreign direct investment.

Zaheer and Zaheer (2006: 25) were the first to propose that “regardless of the general symmetry or asymmetry in levels of trust deriving from the institutional and cultural environments in which partners are embedded, there could be specific trust asymmetry arising from legitimacy spillovers from the country of origin of partners in an international collaboration, such that firms from countries that are viewed by nationals of the focal country as untrustworthy will be seen as untrustworthy as well.” Inspired by this view, Ang et al. (2014) found that high-tech companies which are wary of misappropriation risks, invest more in Chinese regions where local people are regarded as more trustworthy. MacDuffie (2011) suggested that the historical mistrust between

Japan and China at the national level informs perceptions of trustworthiness between Japanese automakers and Chinese suppliers (for further evidence, see Ertug et al., 2013). More pertinent to the present study, Bottazzi et al. (2016) showed that IVC investors are more inclined to invest in start-ups located in countries whose citizens are judged as more trustworthy by citizens of the countries of the IVC investors.

Therefore, we expect that entrepreneurs' perceptions of trustworthiness rooted in the country of origin spill over to interorganizational relationships, including those between their new ventures and CVC investors. This leads to Hypothesis H1:

H1. A new venture is more likely to form an initial tie with a CVC investor if the parent company of the CVC investor is located in a country whose people are perceived to be trustworthy by people in the country of the new venture.

Moderating role of institutional trust based on legal and social sanctions

Institutions are rules or habits with normative content that enable and constrain action; noncompliance with these rules and habits ensues sanctions that include loss of legitimacy or reputation (Nooteboom, 2007; Bachmann and Inkpen, 2011). Institutional trust arises when social behavior is monitored and sanctioned by legal, political, and social systems (Zucker, 1986; Williamson 1993; Fukuyama, 1995).⁶ Impersonal arrangements in institutional structures reduce the risk of misplaced trust by imposing formal and informal rules, including legal regulations, codes of conduct, corporate reputation, industry standards, and informal norms of behavior set by professional associations (Lane and Bachmann, 1996; Bachmann and Inkpen, 2011). These arrangements are collectively-accepted, valid, explicit or implicit rules of behavior of actors participating in the system. Not only do institutions provide actors with conduct guidelines, but they also restrict and sanction actors' misbehavior.

We argue that institutional trust substitutes for country-of-origin stereotypical trust, thus reducing its positive effect on CVC tie formation. We consider two prominent sources of institutional trust, namely legal and social sanctions. In the presence of these sanctions,

⁶ It should be clear that the object of trust is not an institution (e.g., trust in police), but that institutions serve as the foundation for trusting behavior. We use the term "institutional trust" as Williamson (1993) does.

entrepreneurs are more inclined to rely on calculative rather than heuristic decision-making and give less weight to stereotypical trust. The advantage of stereotypes lies in the reduction of cognitive effort, but their drawback is that they may lead to inaccurate judgment (Bodenhausen and Wyer, 1985). Therefore, entrepreneurs are less likely to use country-of-origin stereotypical trust when the cognitive effort involved in making inferences about the low probability of CVC investor misbehavior is small.

Legal sanctions. Law is a formal institution that defines the appropriate rules of behavior and necessary sanctions that a party incurs if it violates an agreement and breaches trust. Indeed, the regulatory environment, which is an important part of formal institutions, shapes “the rules of the game” (North, 1990). Legal provisions such as contract law or IPP law align the expectations of two parties long before they engage in business transactions, provide structural assurance, and thus deter opportunistic behavior. In particular, the legal protection of IP provides firms with a shield against knowledge misappropriation, arguably encouraging risky investments in the production of innovative knowledge (Levin et al., 1987; Hu and Png, 2013), and expanding markets for innovation, such as licensing markets (Dechenaux et al., 2008; Huang and Murray, 2009).

In the context of ties between new ventures and CVC investors, knowledge misappropriation risk is a major impediment to tie formation. CVC investors, by pursuing open innovation strategies, wish to draw insights from the technologies developed by new ventures. These strategic objectives may be in conflict with and detrimental to the interest of the target venture if the CVC investor manages to “imitate the innovation [developed by the new venture], and leave the entrepreneur empty-handed” (Dushnitsky and Shaver, 2009, p. 1046). Accordingly, Kim et al. (2019) showed that ventures that innovate by building on the technology of incumbent firms, and are thus particularly susceptible to the misappropriation risks posed by these firms, avoid forming CVC ties with them if their entrepreneurs are knowledgeable about the opportunistic tendencies of these incumbent firms. Meanwhile, a strong IPP regime provides new ventures with a shield against misappropriation risks (Katila et al., 2008). Scholars have thus demonstrated that the likelihood of same-industry CVC tie formation, which potentially involves high misappropriation risks, increases substantially when new ventures benefit from the legal protection of a strong IPP

regime (Dushnitsky and Shaver, 2009; Colombo & Shafi, 2016). Based on these arguments, we expect punishment through strong IPP enforcement to be an important source of initial institutional trust in CVC tie formation.

Having highlighted the role of a strong IPP regime, we elaborate on the interplay between stereotypical trust and strong IPP regimes. In accordance with the “default hypothesis” of stereotypes, our hybrid model of initial trust formation indicates that entrepreneurs will use country-of-origin stereotypes as a basis for judgment about the trustworthiness of prospective CVC investors as a last resort—that is, when no other easily accessible and reliable information with more direct relevance is available. Hence, when information about IPP regime strength allows entrepreneurs to easily make reliable calculations about the low probability of CVC investors’ misappropriating their ventures’ technical knowledge, heuristics based on country-of-origin stereotypes will have limited influence on the decision to trust and form an initial tie with unfamiliar CVC investors. This leads to hypothesis H2:

H2. The positive effect of country-of-origin stereotypical trust on initial tie formation between a new venture and a CVC investor is weaker when the IPP regime is strong rather than weak.

Social sanctions. Firms value their reputation for integrity as a form of capital, as it makes them more attractive business partners and facilitates collaboration with other parties (Rindova et al., 2005; Lange et al., 2011; Stern et al., 2014). Accordingly, they are unlikely to engage in opportunistic or unethical behaviors if these behaviors can erode their reputation and cause a loss of future business opportunities (Sullivan et al., 2007). From this perspective, reputation can be relied upon as an informal institutional mechanism because opportunistic behavior erodes the actor’s reputation (Bachmann and Inkpen, 2011). In other words, incentives associated with reputation for integrity maintenance are a form of social structural control.

However, this reasoning is based on the premise that an actor’s misbehavior is observed and sanctioned by other actors in the same social community. In the context of ties between new ventures and CVC investors, it is questionable whether misbehavior by CVC investors damages

their reputation. Accordingly, the reputation-based social sanctioning that new ventures can employ to protect against knowledge misappropriation by CVC investors becomes more effective if the focal venture is affiliated with a high-status IVC investor, that is an IVC investor that is central in the network of VC co-investments (Hallen et al., 2014). Central IVC investors can leverage their central position to effectively broadcast alleged misbehavior by CVC investors and cause serious damage to their reputation, which in turn renders CVC investors less attractive partners in future deals. Like IPP laws that act as arbitrators with binding rules and punishments for defectors, central IVC investors are information-controlling intermediaries that credibly separate libel from legitimate complaint. Thus, these investors can impose social sanctions through reputation loss in the case of opportunistic behavior by CVC investors.

Having highlighted the role of affiliations with high-status IVC investors, we now focus on how the availability of the related social sanctioning mechanism influences the relationship between country-of-origin stereotypical trust and CVC tie formation. Consistent again with the “default hypothesis” of stereotypes, entrepreneurs will be more inclined to use country-of-origin stereotypes as a basis for judgment about prospective CVC investor trustworthiness when their venture is *not* benefiting from affiliations with high-status IVC investors. Meanwhile, when ventures are backed by high-status IVC investors, entrepreneurs are confident that the fear of social sanctioning deters potential misbehavior from CVC investors. Hence, they are more likely to discount their own stereotypical beliefs, as reliable information facilitating calculative decision-making is available. This means that reliance on country-of-origin stereotypical trust declines with the increased accessibility to institutional trust based on social sanctions. Hence, we propose hypothesis H3:

H3. The positive effect of country-of-origin stereotypical trust on initial tie formation between a new venture and a CVC investor is weaker when the new venture is backed by higher-status IVC investors.

Moderating role of individuating information on CVC investors

As mentioned, stereotypes represent information that can be easily identified, recalled, predicted, and reacted to. They serve the function of simplifying information processing and saving cognitive effort, but may generate incorrect expectations about the attributes and behaviors of unfamiliar

exchange parties. Therefore, according to the “default hypothesis,” when individuals make inferences about people’s attributes or about the causes of their behavior, they will typically rely less (or not rely altogether) on stereotypes if they have the motivation and capacity to easily and quickly collect reliable individuating information on the target’s attributes and behavior; this is because such information allows for forming a more accurate judgment about the party’s trustworthiness (Locksley et al., 1980, 1982; Glick et al., 1988; Krueger and Rothbart, 1988; Beckett and Park 1995). There are two main sources of individuation information. Individuals may directly collect information about a focal party’s characteristics that they perceive as rather accurate indications of its trustworthiness; or they may rely on referrals by another party, whose judgment about the trustworthiness of the focal party is perceived as reliable.

Here, we examine individuating information about prospective CVC investors which influences ventures’ entrepreneurs judgement about their trustworthiness. This individuating information may relate to characteristics of CVC investors that are directly observable by entrepreneurs. The “status” of the CVC investor, reflecting its perceived position in the social hierarchy based on its centrality in the network of VC co-investments (Sauder et al., 2012), is a prominent example of this type of individuating information. However, individuating information on prospective CVC investors may also be provided by referrals from third parties, such as the IVC investors to which a focal venture is affiliated, that are considered as reliable information sources by the venture’s entrepreneurs. These IVC investors may have direct first-hand experience of the trustworthiness of prospective CVC investors because of previous co-investments. If they do not, they may rely on the referrals of other trustworthy parties, notably the IVC investors that co-invested with both the IVC investors to which the focal startup is affiliated and the prospective CVC investors. In other words, the direct and indirect social ties between these IVC investors and prospective CVC investors are an important indirect channel allowing entrepreneurs to collect individuation information about prospective CVC investors. This individuating information independent of the channels used to collect it, reassures entrepreneurs of the trustworthiness of the prospective CVC investors. Under these conditions, we expect country-of-origin stereotypical trust to have a more limited effect on CVC tie formation.

CVC investors' status. High-status organizations are categorized as more trustworthy than are low-status organizations. Status is a valuable social asset that can only be built through a slow process of social collaboration (Sauder et al., 2012), making it an investment worthy of protection and accumulation. Because untrustworthy partners are deselected over time and the portfolios of trustworthy collaborations, on average, survive (Vanneste et al., 2014), high-status organizations are viewed as desirable and trustworthy by many other organizations, as they have received or reciprocated many collaborative invitations from other organizations (Sorenson and Stuart, 2001).

The status of an organization not only indicates the past endowment of trustworthiness placed on it by many other organizations through collaboration, but also leads to expectation formation about its future actions. High-status organizations face a higher anticipated opportunity cost of damage to their reputation for integrity than low-status ones do if they were to engage in opportunistic behavior (Brass et al., 1998). This is because high-status organizations are positioned centrally in the network. Hence, information on the activities and behavior of high-status organizations is rapidly and possibly even redundantly disseminated in the network to a large number of actors (Raub and Weesie 1990).⁷ Moreover, the activities of high-status organizations are largely visible (Rhee and Haunschild, 2006), given that they receive wide analyst coverage (Shen et al., 2014), as well as media attention (Castellucci and Ertug, 2010). In such a situation, all else being equal, the perception of monitoring by other organizations (i.e., leading to a greater anticipated likelihood of getting caught) deters high-status organizations from engaging in opportunistic behavior (McCabe and Trevino, 1993; Brass et al., 1998).

The high status of a focal CVC investor provides easily accessible information that entrepreneurs can use to make reliable judgments about its trustworthiness. Therefore, we leverage the “default hypothesis” to postulate that the positive effect of country-of-origin stereotypical trust on initial CVC tie formation is weaker when target CVC investors have a high status. This is

⁷ These ideas are consistent with Podolny's (1993) evidence, who finds that high-status investment banks are subject to less due diligence than their low-status counterparts when they are chosen to lead a syndicate to underwrite corporate securities.

because entrepreneurs are less likely to resort to stereotyping for trust judgments when they are aware of the target CVC investors' high status, as entrepreneurs know that such status reduces the uncertainty about the CVC investors' intentions and future behaviors. This leads to hypothesis H4:

H4. The positive effect of country-of-origin stereotypical trust on initial tie formation between a new venture and a CVC investor is weaker when the target CVC investor's status is higher.

Social direct and indirect ties between CVC investors and IVC investors. Social network scholars have long recognized that participation in social networks provides actors with easy and timely access to reliable referrals to other participants in the network (Burt, 1992). Direct and indirect social ties created through previous collaborations between firms are effective information conduits that convey reliable individuating information about firm attributes and behaviors (Gulati, 1995a; Gulati and Gargiulo, 1999). Prior collaborations between two firms create a channel through which each collaborator learns the competencies and reliability of the other. In this way the repeated collaborations between two firms create and sustain trust (Podolny, 1994; Gulati, 1995b; Baum et al., 2005). Even if a focal firm does not have direct social ties with another firm, it may obtain reliable referrals about this firm through a common partner in previous collaborations. Moreover, when two firms share a common partner, this suggests that they are considered as trustworthy by this common partner (Gulati, 1995a; Gulati and Gargiulo, 1999). Syndicated VC investments create a network of social ties which VC investors rely on for acquiring reliable information about other VC investors. This mechanism builds trust between VC investors that are directly or indirectly connected with each other. Accordingly, VC investors exhibit a marked preference for co-investing with members of their previous syndicates, or with VC investors with whom they share a common co-investor (Sorenson and Stuart, 2001, 2008; Zhelyazkov and Gulati, 2016; Meuleman et al., 2017).

A focal CVC investor may have direct social ties with the IVC investors to which a focal venture is affiliated through their common participation in previous syndicated investments in other ventures. Through their participation in these syndicates, these IVC investors develop professional

relationships with the CVC investor and become familiar with its attributes and behaviors, including its trustworthiness as a collaboration partner. IVC investors have a high stake in the success of their portfolio ventures, and share the same concerns as new ventures about the selection of trustworthy and competent CVC investors during follow-on VC rounds. Therefore, IVC investors will pass their first-hand information on the focal CVC investor to venture entrepreneurs, and advise these entrepreneurs about the wisdom of forming a tie with this investor. The individuating information on the prospective CVC investor that entrepreneurs obtain from the IVC investors that back their ventures, makes entrepreneurs less inclined to rely on simple heuristics based on social categorization to decide whether to trust the CVC investor. Under these circumstances, country-of-origin stereotypical trust becomes less salient in favoring CVC tie formation. This leads to hypothesis H5:

H5. The positive effect of country-of-origin stereotypical trust on initial tie formation between a new venture and a CVC investor is weaker when the target CVC investor has direct social ties with the IVC investors to which the venture is affiliated

Even if a focal CVC investor does not have direct social ties with the IVC investors to which a focal venture is affiliated, it may have participated in syndicated investments with other IVC investors that have direct social ties with the focal venture's IVC investors through previous co-investments. Then, referrals from common syndication partners provide the IVC investors to which the focal venture is affiliated with reliable information on the trustworthiness of the CVC investor; this is expected to occur because the IVC investors connected through past co-investments could jeopardize their valuable direct social ties in case they provided inaccurate information to their co-investors.

For reasons such as those described above, IVC investors tend to share information on CVC investors obtained from their partners of previous syndicated investments with venture entrepreneurs and use it to advise them about CVC tie formation. The availability of this individuating information makes venture entrepreneurs less inclined to rely on social categorization

based on country-of-origin stereotypes when deciding on CVC tie formation. Based on these arguments, we derive hypothesis H6:⁸

H6. The positive effect of stereotypical trust on initial tie formation between a new venture and a CVC investor is weaker when the venture is affiliated with IVC investors that have indirect social ties with the target CVC investor

METHODS

Data

To address our research questions, we use the VICO 5.0⁹ database, which contains longitudinal data on 35,374 VC-backed ventures located in EU countries, the UK, and Israel. This database is unique in that it has a comprehensive and extensive coverage of VC-backed firms' information gathered through combining multiple secondary data sources: Thompson Eikon, Crunchbase, and the Zephyr and Orbis databases managed by Bureau van Dijk. The VICO database includes new ventures that were independent at foundation, were less than ten years old at the first round of VC financing, and received their first VC round between 1998 and 2018. The VICO database excludes leveraged

⁸ The individuating information on the trustworthiness of an unfamiliar CVC investor provided by the IVC investors (based on their referrals from direct and indirect social ties with the CVC investor) to which the new ventures are affiliated may be positive or negative. In both cases, these social ties will have a negative moderating effect of on the relation between country-of-origin stereotypical trust and CVC tie formation. For example, Zhelyazkov and Gulati (2016) argue and document empirically that a focal VC investor's unexpected withdrawal from a VC syndicate can lead to disrupting the relationships with other syndicate members, and reduce these firms' willingness to syndicate future investments with the withdrawing VC investor. If a focal CVC investor withdrew from previous syndicates in which it co-invested with the IVC investors to which a focal venture is affiliated, or with other VC investors that co-invested with these IVC investors, the negative referrals from IVC investors would reduce the willingness of new venture entrepreneurs to form an initial tie with the focal CVC investor. Similarly, Kim et al. (2019) showed that, if a focal venture has a technological link with the parent company of a focal CVC investor, and this parent company revealed tendencies to misappropriate other firms' knowledge, the presence of direct social links between the IVC investors to which the new venture is affiliated and the CVC investor reduces the probability that the venture forms a tie with the CVC investor. In both situations, the effect of country-of-origin stereotypical trust on the formation of CVC ties will be weakened. Importantly, in our sample of CVC investments, the effect of these negative referrals is likely to be negligible. This is because withdrawals from syndicates by the CVC investors under consideration in our study are extremely rare. Indeed, we detected only 88 withdrawals, corresponding to 3.7 percent of the realized CVC ties. Furthermore, we do not have the data necessary to assess the incidence in our sample of the phenomenon highlighted by Kim et al. (2019). However, we expect it to be much smaller than in their sample comprising 29 CVC investors, as CVC investors' parent companies are much smaller on average in our sample (i.e., the average value of total asset in our sample is 3.2 billion Euro, while it is 21.6 billion US\$ in their sample).

⁹ VICO 5.0 (<http://risis.eu/data/vico-dataset/>) is a proprietary database developed at Politecnico di Milano with the support of the RISIS and RISIS2 projects, that were funded by the European Commission under the FP7 and Horizon 2020 programs.

buyouts, real estate, distressed buyouts, and other private equity investments. To alleviate concerns about survivorship bias, the database contains both surviving ventures (i.e., IPOed or remained privately held and independent) and non-surviving ventures (i.e., those that were acquired, went bankrupt, or terminated operations) by the end of the observation period.

The VICO database provides detailed data on these new ventures, including address, industry of operation (at the 3-digit level of the NACE Rev. 2 classification), and longitudinal accounting data. In addition, for each VC round, VICO contains data on the year of the round, identity of the VC investors, and investment amount. Additionally, we collected patenting data from the European Patent Office (EPO) for every venture included in the VICO database (source: Patstat). Moreover, for all CVC investors, we obtained the geographic coordinates of their parent companies from Google Maps API Web Services.

We exclude from our initial sample all ventures located in countries that were not included as respondents in the Eurobarometer survey, from which we obtained our measure of country-of-origin stereotypical trust (more information on this survey below). This results in a sample of 28,785 ventures (based in Austria, Belgium, Denmark, Finland, France, Greece, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the UK) that received 40,457 VC rounds between 1998 and 2018 from 9,913 known investors. Of these, 1,302 were CVC investors. They invested in 4,072 ventures in 5,208 VC rounds. Because we are interested in investigating the initial ties between ventures and CVC investors, we exclude 1,039 investments. Moreover, since the Eurobarometer survey only provides data on the trust perceived by respondents toward people originating from 25 countries (i.e., all the respondent countries previously reported, along with the Czech Republic, Hungary, Japan, Norway, Poland, Russia, Slovakia, Switzerland, Turkey, and the United States of America [U.S.]), we discarded all investments performed by CVC investors for which country-of-origin stereotypical trust was not available, obtaining a sample of 1,129 CVC investors investing in 3,882 ventures in 4,181 VC rounds.

After excluding observations with missing accounting and ownership data of CVC investors and those with missing accounting, industry, and location information on invested ventures, the sample used in this study includes 1,331 ventures that received 1,363 VC rounds from

479 CVC investors from 1998 to 2018. The total number of CVC investments was 1,454 because some ventures received multiple CVC investments (i.e., investments from different CVC investors) in the same round.

Measures

Dependent variable

To investigate which CVC investors the ventures form initial ties with, we perform a dyad analysis of the probability that venture j accepts an investment offer from CVC investor i in a given VC round. We employ a case-control research design to create a dyad-level dataset. The approach is to build case-control groups. Each group includes a single realized CVC tie formed between venture j and CVC investor i , and a set of counterfactual ties between venture j and other CVC investors that could have been realized but were not (non-realized ties). We compare realized CVC investment ties with their counterfactual non-realized ties (for a similar approach, see Sorenson and Stuart 2008; Zhelyazkov and Tatarynowicz, 2021).

For each of the 1,454 CVC-venture realized ties in our sample, we identify counterfactual non-realized ties by matching each invested venture with all prospective CVC investors that could have invested in the focal venture but did not. We define prospective CVC investors as those that invested in another venture in the same industry as the venture of the realized tie (using the 2-digit NACE Rev. 2 primary code) and in the same period (i.e., a three-year period around the investment date).¹⁰ This process results in 53,243 non-realized ties. Given our interest in the first time a new venture forms a tie with a CVC investor (e.g., an initial tie), we remove all dyads between ventures and CVC investors that had formed a tie in a previous VC round. Accordingly, we remove 691 dyads and obtain 52,552 non-realized ties. The dependent variable, $Realized_{ij}$, takes the value of one if venture j received CVC from investor i in a given round, and zero otherwise. To reduce the problem possibly generated by the large number of zeros, for our main estimates we match the

¹⁰ More precisely, we considered 2-digit NACE Rev. 2 primary codes, with two exceptions: biotechnology (72.11) has been combined with pharmaceuticals (21), and software publishing (58.2) has been combined with computer programming activities (63). As a robustness check, we considered as prospective CVC investors only those that invested in another venture in the same industry as the venture of the realized tie and in the same year. Our results do not change.

realized ties with randomly selected unrealized ties (from the pool of all potentially realizable but unrealized ties) with a maximum ratio of 1:5, and resort to bootstrapping (for a similar approach, see Zhelyazkov and Tatarynowicz, 2021)¹¹. With this adjustment, we get a final sample of 8,091 ties (1,454 realized ties and 6,637 unrealized ones).

Explanatory variable

Trust. Consistent with prior research (Guiso et al. 2009, Bottazzi et al. 2016), we obtain our measure of country-of-origin stereotypical trust from a survey conducted by Eurobarometer in 1996 (i.e., the year with the last publicly accessible survey containing the forthcoming trust-related question). The Eurobarometer surveys, promoted by the European Commission, assess public opinion on issues ranging from individual national priorities to integrated European organizations. About a thousand individuals from each European country responded to each survey. The question of interest to our research is how much respondents trust their fellow citizens and the citizens of each of the other countries in the EU (and several other non-EU countries, such as the U.S.). Specifically, respondents were asked the following question: “I would like to ask you a question about how much trust you have in people from various countries. For each, please tell me whether you have a lot of trust, some trust, not very much trust, or no trust at all.” First, we recode the answers to the trust question from 1 (i.e., no trust at all) to 4 (i.e., a lot of trust), and then calculate the mean value of the responses for each pair of countries. *Trust* is the mean level of trust that citizens in the country where the ventures are located have in people from the country where the parent companies of the CVC investors are located.

It is worth mentioning two reassuring points regarding the interpretation and quality of this measure. Given the explicit emphasis on individuals from a specific country as the target of trust, stereotypical trust reflects the trustworthiness of these individuals as perceived by individuals from another specific country, rather than the dispositional trusting behavior of individuals from the latter country toward a generic citizen of a different country (Guiso et al. 2009). Moreover, Peabody

¹¹ As explained in the robustness checks section, we also match the realized ties with randomly selected unrealized ties (from the pool of all potentially realizable but unrealized ties) with a ratio of 1:10, in addition to running our estimates on the full sample as well (thus including all potentially realizable but unrealized ties).

(1985) found that Europeans generally agreed with the national character stereotypes of European nations (as well as of the U.S.).

Moderating variables

IPP regime. The strength of the IPP regime depends on the industry in which the focal new venture operates.¹² According to Dushnitsky and Shaver (2009), industries with effective legal defenses provided by IPP laws include pharmaceuticals, biotechnology, biological products, chemical products, surgical instruments, and other medical equipment. We set *IPP regime* to one in these industries, and zero otherwise.

IVC centrality. To benefit from social sanctioning, new ventures affiliate to a high-status IVC investor that occupies a central position in the network of syndicated VC investments. As is commonly reported in the literature (Podolny 2001; Pollock et al. 2015), to measure the centrality of the VC investor, we use the eigenvector centrality from the syndication network of co-investments among VC investors. We take several steps to operationalize VC centrality, following the methodology discussed in Hallen et al. (2014). First, using the VICO database, we create an adjacency matrix for each year that considers two VC investors as adjacent if they have syndicated a round of VC in a venture in the previous five years. Next, we compute the eigenvector corresponding to the largest eigenvalue of the adjacency matrix for that year. To allow for comparability across years, we normalize the measure by the maximum obtained in each year (our results are robust to this normalization). Finally, we define *IVC centrality* at each round as the maximum normalized eigenvector centrality of all participating IVC investors up to the focal round in the new venture.

CVC centrality. To measure CVC investor status, we use the normalized eigenvector centrality of CVC investors (obtained from the same procedure used to compute *IVC centrality*). Although both *IVC centrality* and *CVC centrality* are based on eigenvector centrality, they differ in that *IVC centrality* is a venture-specific characteristic calculated at the venture-round level, while *CVC*

¹² IPP regime strength also varies by country (e.g. Park, 2008). However, all ventures considered in this study are located in European countries, across which the strength of the IPP regime does not vary greatly.

centrality in a given year takes the same values across all dyads in which a given CVC investor is involved.

Direct social ties. To control for prior collaborations between a focal CVC investor i and the IVC investors to which a focal venture j is affiliated, we count the number of VC investments that CVC investor i and the aforementioned IVC investors have previously syndicated together, using VICO as the data source. Because of the highly skewed distribution of this variable, we generate a dummy equal to one when the number of co-investments is higher than or equal to one (i.e., when the CVC investor has at least one direct social tie with one or more IVC investors backing the focal venture), and zero otherwise.

Indirect social ties. We create a dummy variable equal to one when CVC investor i has no direct ties with the IVC investors backing focal venture j , but there is a co-investment history (i.e., at least one common investment) between (at least one of) these IVC investors and (at least one of) other IVC investors that previously syndicated one or more VC investments with the focal CVC investor i , but did not invest in venture j (e.g., Sorenson and Stuart, 2001, 2008).¹³

Control variables

We insert several controls into the model specification. *Venture age* is the (natural logarithm of the) number of years since the founding of the venture and controls for venture maturity. We also control for venture citation-weighted patent stock (*Citation weighted patent stock*) since CVC investors are keen to open a window on new ventures' technological resources. To create this measure, we first count the number of annual successful (i.e., granted) patent applications for each venture in the EPO, dated at the application year. We then weight each successful patent application by its forward citations five years after filing, and then use a 15 percent knowledge-depreciation rate (Hall et al., 2005) to capture the economic importance of patents. As geographical distance influences the likelihood of tie formation between VC investors and new ventures (Sorenson and

¹³ We also measure the presence of indirect social ties by creating an alternative dummy which is not mutually exclusive with the variable *Direct social ties*; this dummy takes the value of one whenever there are one or more previous syndicated VC investments between (at least one of) the IVC investors backing venture j and (at least one of the) other IVC investors that previously syndicated one or more VC investments with CVC investor i , regardless of the presence of direct ties. Results are fully consistent with the main estimates.

Stuart, 2001), in the set of control variables, we include *Distance*, which measures the (natural logarithm of the) geographical distance in thousands of kilometers between the focal venture and the headquarters of the CVC investor's parent company. *Industry overlap* is set to one if venture *j* and the parent company of CVC investor *i* operate in the same industry, and zero otherwise. CVC investors in the same industry as the focal venture are more valuable but, at the same time, more dangerous partners for the venture (Dushnitsky and Shaver, 2009). We define industries based on the 3-digit NACE Rev. 2 industry classification codes. If there are more industry codes for one venture or parent company of the focal CVC investor, we set *Industry overlap* to one if there is any match in the industry classification codes. In accordance with the spirit of Casciaro & Piskorski (2005), we also capture the interdependence between venture *j* and CVC investor *i* as reflected in CVC transactions. More precisely, *Interdependence* is the sum, in a three year window before each focal tie (either realized or unrealized), of i) the ratio between the number of CVC investments in ventures in sector *j* by CVC investors whose parent companies are in sector *i* and the total number of CVC investments in ventures in sector *j*; and ii) the ratio between the number of CVC investments in ventures in sector *j* by CVC investors whose parent companies are in sector *i* and the total number of CVC investments by CVC investors whose parent companies are in sector *i*. *Round* is the ordinal count of the current financing round and controls for the investment stage. *Prior CVC investors* is a dummy variable with a value set to one if the focal venture received a CVC investment in any prior round, and zero otherwise; backing by CVC investors may influence the focal venture's attractiveness to other CVC investors. Last, we consider the relative availability of CVC and IVC (*CVC to IVC inflow*) by calculating the ratio of the annual number of CVC investments to the annual number of IVC investments in each country year.

RESULTS

Table 1 displays the descriptive statistics and correlation matrix of all variables (at the dyad level). The mean of *Realized* is 0.027, which is equal to the ratio of 1,454 realized initial CVC ties to the 54,006 total (realized and non-realized) ties included in the dataset. In 7.2 percent of the dyads, the ventures and CVC investors' parent companies are in the same industry; in 6.6 percent of the dyads, ventures are in industries with strong IPP regimes; in 2.4 and 3.7 percent of the dyads, there are

direct and indirect social ties between the focal CVC investor and IVC investors backing the focal venture, respectively. The correlations between variables are mostly low, and computations of variance inflation factors and condition indices do not suggest concerns of multicollinearity, as none of these values are close to the cutoffs of 5 and 10 (Belsley et al., 2005).

Insert Table 1 about here

Tables 2a and 2b report the results of the estimates of the conditional logit model with venture fixed effects to control for the non-independence of observations in different rounds of a given venture. To further problems possibly arising from the small number of realized ties compared with non-realized ties in the dataset (King and Zeng, 2001), the estimates reported in Table 2a and 2b are based on a simulation in which we resort to bootstrapping and repetitively ($n=1,000$) and randomly draw out of the set of counterfactual ties 5 non-realized CVC ties (without replacement) for each realized CVC tie, instead of using all potential but non-realized CVC ties. Table 2c reports the average marginal effects (AMEs) of *Trust* on the logarithm of the odds ratios in the models reported in Table 2a and 2b with interaction terms.¹⁴ The AMEs are graphically shown in Figure 1a-1e.

Insert Tables 2a, Table 2b and Table 2c about here

Insert Fig. 1 about here

Model I presents the baseline regression with only control variables. These results are similar to those of previous studies on CVC tie formation (e.g., Dushnitky and Shaver, 2009; Colombo & Shafi, 2016; Kim et al., 2019). The coefficient of *CVC centrality* is positive and significant ($p<0.01$), indicating that high-status CVC investors are more attractive partners. The coefficient of *Industry overlap* is positive and significant ($p<0.05$), suggesting that new ventures seek complementary assets offered by same-industry companies, despite the increased

¹⁴ As with the fixed effects logit estimator, the conditional logit estimator $\hat{\beta}$ gives us the effect of each independent and control variable x_i on the log-odds ratio, $\log\left\{\frac{\Lambda(x_i\beta+c)}{1-\Lambda(x_i\beta+c)}\right\}$. We cannot estimate the partial effects on the response probabilities unless we assume a certain value for c . Because the distribution of c_i is unrestricted—in particular, $E[c_i]$ is not necessarily zero—one would not know what to provide for c . Furthermore, it is also not possible to estimate average partial effects, as doing so implies finding $E[\Lambda(x_i\beta + c)]$, a task that requires specifying a distribution for c_i , that again we do not know. Hence, we can express our results only in terms of effects on the log of odds ratio (Wooldridge, 2010).

misappropriation risks engendered by these ties. In a similar way, we find a positive and significant ($p < 0.01$) coefficient also for the variable *Interdependence*, suggesting that CVC investors are generally more likely to invest in ventures for which the level of interdependence between the CVC investors' parent companies and invested ventures is high. The variable *Direct social ties* has a positive and significant coefficient ($p < 0.01$), confirming that social ties created through previous co-investments between CVC investors and the IVC investors to which ventures are affiliated are effective information conduits for prospective CVC investors' characteristics, and increase the likelihood of CVC tie formation. The coefficient of *Citation weighted patent stock* is positive and significant ($p < 0.01$). The coefficient of *Distance* is negative and significant ($p < 0.01$) but becomes positive and significant ($p < 0.01$) when we introduce *Trust* in the model specification (see Models II-VII). The remaining controls do not show significant coefficients at conventional confidence levels.

Regarding the relationship between country-of-origin stereotypical trust and the likelihood of CVC tie formation, in Model II, *Trust* has a positive and significant coefficient ($p < 0.01$). The AME of *Trust* on the logarithm of the odds ratio is positive, significant ($p < 0.01$), and equal to 3.05. Hence, we can reject the null hypothesis of H1.

In Models III-IV in Table 2a and Models V-VII in Table 2b, we test H2-H6, which predict a negative moderating role of *IPP regime*, *IVC centrality*, *CVC centrality*, *Direct social ties* and *Indirect social ties* on the positive association between *Trust* and the probability of initial CVC tie formation. In Model III, the coefficient of the interaction term between *Trust* and *IPP regime* is negative but not significant ($p = 0.922$). As reported in Table 2c, when *IPP regime* is equal to 0, indicating that ventures are in an industry with weak IPP regime, the AME of *Trust* is equal to 3.104 ($p < 0.001$); when *IPP regime* is equal to 1, indicating that ventures are in an industry with strong IPP regime, the AME of *Trust* is approximately 1.25 times smaller (i.e., it is equal to 2.484, $p < 0.001$). The difference between the two AMEs, however, is not significant ($p = 0.286$). Hence, H2 is not supported, suggesting that effective legal defenses are not enough to weaken the positive association between country-of-origin stereotypical trust and initial CVC tie formation.

To test H3, we interact *Trust* and *IVC centrality* (Model IV, Table 2a). The coefficient of the interaction term is negative and significant ($p < 0.01$). The AME of *Trust* is always positive and significant, but decreases with increasing values of *IVC centrality*, as illustrated in Fig. 1b. For example, as shown in Panel B of Table 2c, when *IVC centrality* increases from its minimum to its mean, the AME of *Trust* diminishes from 3.409 ($p < 0.001$) to 3.071 ($p < 0.001$), and the difference between the two AMEs is significant ($p < 0.01$). When *IVC centrality* increases from its mean to its mean plus one standard deviation, the AME of *Trust* becomes 1.2 times smaller, decreasing to 2.564 ($p < 0.001$), and the difference between the two AMEs is again significant ($p < 0.01$). Thus, these results confirm H3 and indicate that country-of-origin stereotypical trust plays a less important role in initial CVC tie formation when ventures can rely on effective social defenses.

To test H4, we interact *CVC centrality* and *Trust* (Model V, Table 2b). The coefficient of the interaction term is negative but not significant ($p = 0.701$). As shown in Fig. 1c, the AME of *Trust* remains almost constant, independent of the values of *CVC centrality*. As shown in Panel C of Table 2c, with *CVC centrality* set at the minimum value, the AME of *Trust* is equal to 3.077 ($p < 0.01$); with *CVC centrality* set at a value equal to one standard deviation above the mean, the AME of *Trust* is 3.053 ($p < 0.01$). The differences between the AMEs of *Trust* at different values of *CVC centrality* (minimum, mean, and mean plus one standard deviation) are not significant at conventional confidence levels. Overall, these results do not provide empirical support for H4, suggesting that the positive association between *Trust* and the likelihood of initial CVC tie formation is not affected by CVC investors' high status.

To test H5, we interact *Direct social tie* and *Trust* (Model VI, Table 2b). The coefficient of the interaction term is negative and significant ($p < 0.01$). The AME of *Trust* computed at different values of *Direct social tie* is presented in Panel D of Table 2c and in Fig. 1d. When *Direct social tie* goes from 0 to 1, the AME of *Trust* goes from 3.194 ($p < 0.001$) to 1.421 ($p < 0.001$), becoming 2.25 times smaller. The difference between the two values is significant ($p < 0.01$). These findings confirm H5, that is, the influence of country-of-origin stereotypical trust on initial CVC tie formation is reduced when there are direct social ties between CVC investors and the IVC investors to which the ventures are affiliated.

We test H6 in a similar manner, interacting *Indirect social tie* and *Trust* (Model VI, Table 2b). The coefficient of the interaction term is negative and significant ($p=0.051$). As shown in Panel D of Table 2c and in Fig. 1e, when *Indirect social tie* is equal to 0, the AME of *Trust* is equal to 3.095 ($p<0.001$); when *Indirect social tie* is equal to 1, the AME of *Trust* is equal to 1.956 ($p<0.001$), and the difference between the two values is (weakly) significant ($p<0.1$). These results support H6, showing that the presence of indirect social ties between CVC investors and the IVC investors to which ventures are affiliated reduces the influence of country-of-origin stereotypical trust on initial CVC tie formation.

Finally, Model VIII presents the full model including all the interaction terms; the results are similar to those illustrated above.

ROBUSTNESS CHECKS

Insert Tables 3 about here

We perform several robustness checks. These are reported in Tables A1, A2, A3 and A4 in the Appendix. First, we run our estimates on the full sample constituted by 1,454 realized ties and 52,552 unrealized ones (Model I, Table A1), and on a subsample created by matching realized ties with randomly selected unrealized ties (from the pool of all potentially realizable but unrealized ties) with a maximum ratio of 1:10 (Model II, Table A1). Results remain consistent with the ones reported above.¹⁵

Second, we include an additional set of control variables that might impact initial CVC tie formation and be related to initial trust levels (Model I, Table A2). We insert in the model specification *CVC size*, measured as the (natural logarithm of the) ratio of the sales of the parent company of the focal CVC investor to the average sales of all firms in the industry (defined at the 3-digit level of the NACE Rev. 2 classification; Source: Orbis database), and *CVC subsidiary*, a dummy variable that equals one if the CVC program is a wholly owned subsidiary, and zero

¹⁵ Out of the full sample 466 groups (11,318 observations) were dropped because of all positive outcomes, arriving to a final pool of 42,688 observations (out of which 1,361 realized and 41,327 unrealized ties). Due to computational limitations and the substantial machine time required to run the robustness checks on the 1:5 sample with the bootstrapping procedure, we opted for a more computationally efficient approach. For these reasons, we have performed all the additional robustness checks reported below on the full sample constituted by 1,454 realized ties and 52,552 unrealized ones.

otherwise. We expect CVC investors belonging to larger companies to be more attractive to new ventures. We also expect less fear of knowledge misappropriation if the CVC program is run by a legally independent subsidiary. We also insert in the model specification two other controls that were considered by Dushnitsky and Shaver (2009) and the replication study conducted by Colombo & Shafi (2016): the interaction term *IPP x Industry Overlap*, as a strong IPP regime reduces the risk of knowledge misappropriation, making same-industry CVC investors relatively more attractive to new ventures compared to what happens under a weak IPP regime; the squared term *Round2* to account for non-linearity in the association between ventures' financing stage and initial CVC tie formation. The estimates illustrated earlier remain generally unchanged.

Third, we explore the robustness of our findings regarding one of the assumptions of this study: that entrepreneurs of a new venture perceive a CVC investor as more trustworthy if the headquarters of the CVC investor's parent company is located in a country whose people are perceived as more trustworthy by people from the home country of the new venture. For example, a CVC investor belonging to a U.S. parent company is perceived by entrepreneurs of new ventures looking for an initial CVC tie as a U.S. investor, independently of the location of the CVC operations and the home countries of the CVC investment managers. First, in our dataset, a substantial number of CVC investments (19%) were made through an internal organizational unit (typically the unit in charge of corporate development) and not through a legally autonomous subsidiary. In these cases, the CVC investor's location coincides with that of the parent company. Further, out of the 453 CVC investors in our sample that have a legally autonomous VC subsidiary, the VC subsidiary is in a different country from the parent company's home country in only 53 cases. In the remaining 88 percent of cases, the parent company's home country is the same as that of the CVC subsidiary. Therefore, discrepancies between the home country of the parent companies and the one of the CVC subsidiaries are unlikely to generate a serious bias in our estimates.

More importantly, previous studies show that CVC investment managers play a key role in shaping their employers' investment strategies. For example, Dokko and Gaba (2012) show that the CVC investors' goals (strategic vs. financial) and investment practices (early-stage vs. late-stage investments, and industry diversification vs. concentration of investments) depend on the career

experiences of their investment managers. In this study, we assume that while looking for a CVC investor, entrepreneurs of new ventures are poorly informed about the home country of CVC investment managers or, if they are informed, this information has a second-order influence compared to the home country of the parent company of the CVC investor. Although this assumption is plausible, whether the home country of CVC investment managers can bias the detected link between country-of-origin stereotypical trust and initial CVC tie formation remains to be empirically explored. To investigate this issue further, we collected data on CVC investors' investment managers from different sources, including Pitchbook, Crunchbase, CVC investors' websites, and LinkedIn. We then used an algorithm to determine the nationality of these individuals based on their names (using NamSor API, accessible at <https://www.namsor.com>). We calculated a new variable, *Investment manager-level trust*, which captures the average level of stereotypical trust from the new venture's country toward the home countries of all investment managers of a focal CVC investor, and added it to the model specification. As is apparent from the estimates in Model II of Table A2, this variable has a positive and significant coefficient ($p < 0.01$), but our main findings remain qualitatively similar.

Fourth, in additional estimations (see Table A3 in the Appendix), we include into the model specification the investment amount (*Round size*) because ventures with greater financial resource needs might be under pressure to collaborate with CVC investors (Katila et al., 2008). We have data on *Round size* for approximately two-thirds of the observations; missing values were imputed as a time-variant function of the company's age, nation, financing round, and industry. The estimates (reported in Model I, Table A3) remain unchanged, suggesting negligible omitted variable bias associated with the financial needs of new ventures.

Fifth, we insert into the model specification variables regarding ease of communication, such as common native language and common spoken language, as obtained from the study by Melitz and Toubal (2014) (Model II, Table A3). We also include two dummy variables that are equal to one if new ventures and CVC investors' parent companies are in the same country (*Domestic*) or in neighboring countries (*Neighboring countries*), and zero otherwise (Model III, Table A3). These variables exhibit positive and significant coefficients, as expected (with the

exception of *Common spoken language*), but the main estimates regarding the effect of country-of-origin stereotypical trust remain the same even with these checks. We also control for cultural distance, as it has been shown to be negatively associated with interorganizational trust (Luo 2002). We use the six dimensions used in the study by Hofstede (2010) to measure cultural distance (i.e., power distance index, individualism vs. collectivism, uncertainty avoidance index, masculinity vs. femininity, long-term orientation vs. short-term orientation, and indulgence vs. restraint) between the venture's country and the CVC investors' country (Model IV, Table A3). The estimates again remain unchanged.

Sixth, further robustness checks (see Table A4 in the Appendix) control for other institutional variables that may affect partner selection (Roy and Oliver 2009, Cumming et al. 2010). These controls include the difference between the home countries of new ventures and those of CVC investors in the following dimensions: civil vs. common law, rule of law, efficiency of the judicial system, risk of contract repudiation, and risk of expropriation, as in the study by La Porta et al. (1998) (Model I, Table A3). The estimates remain unchanged. We include also the fixed effects of the countries of the parent companies of CVC investors (Model II, Table A4), and the results continue to be similar to the main estimates.

Seventh, regarding our implicit assumption that the home countries of entrepreneurs of new ventures coincide with the countries in which these ventures are located, it relies on the evidence provided by previous studies. Specifically, entrepreneurs are inclined to establish ventures in their home region, and relocation abroad is a rather rare event, at least in Europe.¹⁶ To address this issue, we conduct a series of additional analyses. First, we explore the extent to which the founding teams of the ventures under consideration in this paper comprise a mix of nationalities. Although we do

¹⁶ Previous studies have provided limited but converging evidence showing that entrepreneurs are affected by a local bias. For example, Michelacci and Silva (2007) showed that entrepreneurs are inclined to establish their businesses in their home region. Dahl and Sorenson (2012) found that ventures perform better when they are located in the home region of their founders. Using a sample of Italian companies, Bertoni et al. (2019b) confirmed the local bias of high-tech entrepreneurs and documented that relocation from the home country is very rare. As to this latter aspect, Colombo et al. (2019) used the VICO database (the same database used in the present study) and focused the attention on 332 companies founded in 2003 or 2004, for which they were able to track the location between foundation and 2009 (see the robustness checks section of their paper). During the observation period, only 90 companies relocated (27.1%), and none relocated abroad.

not have data on the composition of the entrepreneurial teams of all ventures included in the VICO database, we have data on the country of origin of all founders of 383 European VC-backed ventures included in this database. Among 270 of these ventures, most founders are from the same country as the one in which the ventures are located. Among the remaining 113 ventures, 63 are located in the UK. Thus, apart from the UK, most founders in our sample are likely to be from the country where their ventures are located, as implicitly assumed in this study. Then, we split the sample and run the estimates separately for ventures located in the UK and the other ventures. Regarding other ventures, all the main estimates hold, except for the interaction term between *Trust* and *IVC centrality*, which becomes non-significant. Conversely, the main estimates cannot be replicated in the sample comprising UK-based ventures (the results are available from the authors upon request). This evidence reassures us that using the country where ventures are located as a proxy for the home country of entrepreneurs is a feasible assumption in our dataset and does not generate any serious bias. The exception is countries such as the UK, where the number of immigrant entrepreneurs looking for VC is very large.

Eight, we insert among the controls the variable *CVC trust*, capturing how trustworthy citizens of the country of the parent companies of CVC investors consider citizens of the country of the new ventures. From a theoretical perspective, we are interested in how new ventures' (admittedly high) concerns about knowledge misappropriation risks are reduced by country-of-origin stereotypical trust. Nevertheless, it may be the case that the likelihood of initial CVC tie formation also depends on CVC investors' country-of-origin stereotypical trust. This variable is available only for investors in Europe in our sample. Our results (Model III, Table A4) show that the coefficient of this variable is positive and significant ($p < 0.01$), and that the country-of-origin stereotypical trust originating from the new ventures remains significant.

DISCUSSION AND CONCLUSION

Inspired by the literature on categorization thinking in social psychology, this study investigates whether stereotypical trust influences individuals' decisions to engage in business collaborations with an unfamiliar partner, and the interplay of such trust with institutional trust and with the availability of individuating information on the prospective partner. We specifically examine the

initial tie formation between new ventures and CVC investors, and how it is influenced by entrepreneurs' country-of-origin stereotypical trust in unfamiliar CVC investors. For this purpose, we consider a sample of 1,454 initial CVC investments, made by 479 CVC investors in the period 1998–2018, in 1,331 ventures located in EU countries and the UK.

We use a case-control methodology and estimate conditional logit models to highlight the (allegedly positive) effect of entrepreneurs' country-of-origin stereotypical trust on CVC initial tie formation and the boundary conditions of this effect. We find that entrepreneurs of new ventures are more likely to establish initial ties with CVC investors if the parent companies of these investors are in countries where citizens are perceived as more trustworthy by people from the countries of the new ventures. This result suggests that entrepreneurs rely on simple and quick heuristics based on social categorization to judge about the trustworthiness of unfamiliar CVC investors. Moreover, the effect of entrepreneurs' country-of-origin stereotypical trust on initial CVC tie formation is weaker in the presence of a high level of institutional trust based on effective social defenses, as these defenses reduce the ventures' vulnerability to misplaced trust. The effect of country-of-origin stereotypical trust is also reduced when new venture entrepreneurs obtain individuating information about prospective CVC investors, reassuring them of the investors' intentions and future behaviors. Accordingly, country-of-origin stereotypical trust plays a less important role in favoring initial CVC tie formation if the IVC investors to which new ventures are affiliated have direct and/or indirect social ties with the prospective CVC investors; this enables these IVC investors to provide entrepreneurs of new ventures with reliable information about the trustworthiness of the CVC investors. Conversely, we find that the strength of the IPP regime and the high status of a focal CVC investor do not influence the association between country-of-origin stereotypical trust and initial CVC tie formation. It is possible that the strength of the IPP regime in the industry in which ventures operate does not reassure entrepreneurs about the limited vulnerability of their ventures to knowledge misappropriation and other forms of opportunistic behavior on the part of CVC investors. It is also possible that collecting and processing information on CVC investors' status requires great cognitive effort from entrepreneurs, and needs knowledge about the organization of the VC industry that they rarely possess. Notably, when institutional trust or individuating

information are present, the positive effect of country-of-origin stereotypical trust on the formation of initial CVC ties is reduced, but does not vanish entirely.

This study makes three main contributions to the literature. First, we contribute to the literature on the underlying origins of initial trust between strangers (McKnight et al., 1998; McKnight and Cervany, 2006), and its role in encouraging initial interorganizational relationships (Zaheer et al., 1998; Poppo et al., 2008, Poppo et al., 2016). We take inspiration from McEvily (2011), and propose a hybrid model of initial trust that combines calculative decision-making (based on deliberate information processing) and heuristic decision-making (based on quick and simple cues) in varying proportions. In many situations, individuals must decide whether to place trust in strangers, but the calculation of the costs and benefits of trust requires great cognitive effort, and may be unreliable because of a lack of relevant individuating information. Under these circumstances, individuals rely on social categorization to form trusting beliefs (Brewer, 1996; Williamson, 2001). Nee et al. (2018) showed that individuals use the experience accrued in relational exchanges as a reference point that influences their judgment of strangers' trustworthiness. Pratt et al. (2019) emphasized that initial trust often requires a "leap of faith" based on the extrapolation of weak and indirect evidence. Our study extends this perspective by investigating the boundary conditions that make individuals (in our case, entrepreneurs) inclined to rely on stereotypes as a source of initial trust, as reflected in their propensity to form initial ties with unfamiliar parties (in our case, CVC investors) belonging to more or less trustworthy social categories (countries of origin). We document that in making judgments about the trustworthiness of an unfamiliar exchange party, individuals rely less on the social category to which this exchange party belongs when they expect to be less vulnerable to the exchange party's misbehavior because of the presence of institutional trust. The same occurs when individuating information makes them more confident about the exchange party's good intentions. Still, it is important to emphasize that albeit the influence of country-of-origin stereotypical trust in favoring initial CVC tie formation weakens through the presence of institutional trust and individuating information, it does not vanish. In other words, stereotypical trust is sticky (for a similar argument in a different context, see Pratt et al., 2019).

Second, we contribute to studies examining how trust lubricates entrepreneurial activity (Welter and Smallbone, 2006; Welter, 2012; Scarbrough et al., 2013; Pollack et al., 2017), especially transactions with financial resource holders, such as VC investors. This line of research has highlighted investors' trust in entrepreneurs as an essential consideration in funding decisions, as trust mitigates the adverse selection and moral hazard problems involved in funding entrepreneurs (e.g., Harrison et al., 1997; Maxwell and Levesque, 2014; Bottazzi et al., 2016; Müller and Wöhler, 2023). Typically, entrepreneurs have an informational advantage vis-à-vis investors, and may exaggerate the prospects of their ventures, or hide negative information to attract investors. Researchers also show that after the investment is done, entrepreneurs can act opportunistically, exacerbating moral hazard problems (Amit et al., 1998). Notwithstanding, while investors' trust in entrepreneurs has been thoroughly shown by academicians to play a crucial role in facilitating investment transactions, fewer scholars have delved into the role of entrepreneurs' trust in investors as an important antecedent of funding (for exceptions, see Busenitz et al., 1997; Strätling et al., 2012). If investors are not judged as trustworthy by entrepreneurs, the likelihood for initial investments to materialize is considerably reduced, independent of investors' positive attitudes. To the best of our knowledge, no previous studies have investigated the origins of entrepreneurs' trust in unfamiliar CVC investors. Specifically, entrepreneurs may be wary of investors' inclination to misappropriate their ventures' technological knowledge (Dushnitsky and Shaver 2009), or to let such knowledge leak to competitors (Pahnke et al. 2015), which may induce entrepreneurs to decline investors' offers. Our study offers insights into the situations wherein entrepreneurs may be more likely to trust and collaborate with unfamiliar, potentially dangerous investors. In highlighting the interplay between the institutional and cognitive accounts of initial trust, we also answer the call made by past studies on trust in entrepreneurship for "greater conceptual clarity with respect to the various forms of trust and the interrelationships between them" (Welter and Smallbone, 2006: 472).

Finally, this study contributes to the literature on the drivers of CVC tie formation. These ties are characterized by "tensions related to corporate investors posing a threat (*to entrepreneurs*) by behaving opportunistically versus providing an opportunity as a valuable partner to startups"

(Jeon and Maula, 2022: 5). Previous studies have highlighted that in the absence of effective legal or social defenses (i.e., a low level of institutional trust), the fear of misappropriation of the ventures' knowledge makes entrepreneurs wary of accepting investment offers made by potentially dangerous CVC investors (Katila et al., 2008; Dushnitsky and Shaver, 2009; Hallen et al., 2014; Colombo & Shafi, 2016), despite the potential to access the valuable resources that CVC ties may provide (Park and Steensma, 2012; Alvarez-Garrido and Dushnitsky, 2016). Accordingly, Kim et al. (2019) showed that entrepreneurs will avoid forming CVC ties if the following two conditions are met: the innovation projects of their ventures build on the technology of the parent company of a focal CVC investor, a situation which entails a great risk of knowledge misappropriation; and entrepreneurs have reliable individuating information on the CVC investor's opportunistic tendencies. Entrepreneurs can obtain individuating information on the CVC investor through direct social ties, if they were previously employed by the investor's parent company. The social ties between CVC investors and the IVC investors to which ventures are affiliated that are generated by previous co-investments are also precious conduits for individuating information. The current study contributes to this discourse by considering the individuating information about a focal CVC investor that IVC investors can collect not only through direct but also indirect social ties with this investor (e.g., when the CVC investor shares common partners with the IVC investors in previous syndicated investments, Meuleman et al., 2017). Our work shows that when entrepreneurs have access to reliable individuating information on prospective CVC investors through these channels, they use it to infer the trustworthiness of CVC investors, and concomitantly give less weight to heuristics based on social categorization (in our case, country-of-origin stereotypes). Heuristics based on social categorization are also less influential when effective social defenses reduce entrepreneurs' concerns about the vulnerability of their ventures to CVC investors' misbehavior. Meanwhile, in the absence of institutional trust and individuating information on CVC investors, social categorization is a fundamental source of initial trust and has a strong influence on initial CVC tie formation.

Despite these contributions, the current study is not without limitations that also offer opportunities for future research. First, we did not measure trust by posing direct questions to new

venture entrepreneurs. We assume that high initial trust facilitates the establishment of interorganizational ties, an assumption commonly employed in prior literature using secondary data (Gulati 1995a). Second, we consider stereotypical trust based on the country-of-origin of the parent companies of CVC investors. Yet, social categorization may be based on other dimensions, such as entrepreneurs' identification with particular social groups (Tajfel, 1981), their previous experience of successful exchanges (Nee et al., 2018), or the extrapolation of evidence from other contexts (Pratt et al., 2019). Moreover, the propensity of entrepreneurs to rely on social categorization to decide on the trustworthiness of CVC investors may vary by personal characteristics (e.g., gender) that may influence their attitude toward taking risks. Third, we focus on individuating information on CVC investors based on their high status and direct and indirect social ties to the IVC investors backing a focal venture. Meanwhile, Kim et al. (2019) considered the information entrepreneurs collect from CVC investors as former employees of their parent companies. Future researchers can extend the analysis to other sources of individuating information, such as venture board members, key employees, and important customers.

Fourth, to measure country-level stereotypical trust, we assume that the entrepreneurs' home countries coincide with those in which their ventures are located. This assumption does not consider immigrant entrepreneurship. The additional analyses performed reassure that our results are robust. However, they also demonstrate that the findings of the current study are not applicable to countries such as the UK, where the number of immigrant entrepreneurs is large. If data on the home country of entrepreneurs were available on an adequate scale, scholars could examine the extent to which the presence of different nationalities in entrepreneurial teams favors or hinders the formation of initial trust toward CVC investors originating from different countries.

Fifth, we assume that entrepreneurs have positive expectations about the benefits of forming ties with CVC investors that they view as trustworthy. Future research could explore the effect of initial trust on the reported positive effects of CVC investments on new venture performance (Chemmanur et al., 2014; Colombo and Murtinu, 2017). For example, high level of initial trust between a new venture and a CVC investor may not only be necessary to establish a collaboration in the first place, but may also facilitate the interaction and coordination between the

new venture and the CVC investor, thereby resulting in a more positive “treatment effect” of CVC investment on new ventures’ performance (see Hegde and Tumlinson, 2004, for a similar argument relating to ethnic similarity between entrepreneurs and VC investment managers).

Finally, we consider the dyadic relationship between new ventures and CVC investors, and assume that IVC investors ensure the social protection of new ventures and provide entrepreneurs with individuating information on prospective CVC investors. However, IVC investors may also play more active roles. If new ventures have already received a round of VC financing, three parties are potentially involved in CVC tie formation: the new venture, the CVC investor, and the IVC investors on board from the previous rounds. To reduce the complexity of the analyses, we scale the situation down to a two-party context. Future research could extend the analysis and investigate whether judgments made by IVC investors about the trustworthiness of CVC investors influence CVC tie formation in IVC-backed ventures. Another potential topic of scrutiny is whether the different moderators delineated in this work still apply to similar scenarios with more players.

This study has important implications for entrepreneurs. Accepting an investment offer from an unfamiliar CVC investor is a crucial strategic decision for entrepreneurs, and it is influenced by their expectations of the intentions and future behavior of the CVC investor. In making this decision, entrepreneurs need to carefully evaluate the context surrounding the CVC investment, as well as the individuating information on the prospective CVC investor provided by reliable sources. If their ventures are not protected by strong legal or social defenses, and the available individuating information on the CVC investor is difficult to interpret and does not allow them to make reliable calculations (i.e., then reassuring them that the probability of CVC investors’ misbehavior is low), entrepreneurs may not have other options but to resort to simple and quick heuristics in their decision-making by placing the focal CVC investor in a social category (e.g., by using country-of-origin stereotypes). However, they must be aware that the drawback is the possibility of misjudging the trustworthiness of CVC investors, which may lead to negative implications for their relationships.

Our study also has important implications for CVC investors and policymakers. While CVC investors are concerned with entrepreneurs’ trustworthiness for obvious reasons, our study suggests

that it is important for these same investors to also convey reliable information about their own trustworthiness to entrepreneurs. In this way, CVC investors can reduce entrepreneurs' cognitive burden in making decisions regarding initial CVC tie formation and limit the probability that, by using simple heuristics based on social categorization, entrepreneurs mistakenly judge the prospective CVC investors as untrustworthy and reject their investment offers. Similarly, policymakers must be aware of the importance of rules and regulations and of their effective enforcement in creating an institutional environment favorable for the development of initial trust between entrepreneurs and CVC (and other) investors. Indeed, this study suggests that the absence of institutional trust exacerbates the funding gap faced by new ventures. Our estimates show that in absence of social defenses and of reassuring individuating information on CVC investors, entrepreneurs become inclined to rely on simple heuristics to decide whether to accept an offer from a CVC investor. This may lead entrepreneurs to misjudge the trustworthiness of the investor, and ultimately reject a potentially value-creating offer, or even accept a potentially detrimental investment.

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Table 1 – Descriptive statistics and correlation matrix

Variables	Mean	SD	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Realized	0.027	0.162	0	1	1.000								
(2) Trust	2.798	0.377	1.685	3.691	0.155*	1.000							
(3) IPP regime	0.066	0.247	0	1	0.023*	-0.024*	1.000						
(4) IVC centrality	0.225	0.341	0	1	0.008	-0.013	0.086*	1.000					
(5) CVC centrality	0.085	0.187	0	0.984	0.074*	0.014*	0.023*	-0.001	1.000				
(6) Direct social ties	0.024	0.153	0	1	0.120*	0.100*	0.048*	0.127*	0.195*	1.000			
(7) Indirect social ties	0.037	0.188	0	1	0.026*	0.051*	0.071*	0.159*	0.260*	0.252*	1.000		
(8) Industry overlap	0.072	0.258	0	1	0.016*	-0.014*	0.181*	0.027*	0.120*	0.048*	0.058*	1.000	
(9) Round	1.274	0.82	1	16	0.004	-0.006	0.097*	0.220*	0.013	0.031*	0.065*	0.019*	1.000
(10) Venture age (years)	3.349	3.413	0	29	0.006	-0.036*	0.026*	0.064*	0.026*	-0.001	0.023*	0.004	0.355*
(11) Citation weighted patent stock	0.062	1.544	0	127.98	0.008	0.004	0.013	0.002	0.007	0.003	-0.002	0.015*	0.119*
(12) Prior CVC investors	0.037	0.19	0	1	0.005	0.026*	0.101*	0.129*	-0.011	0.028*	0.070*	0.007	0.504*
(13) Distance (km)	4353.5	2526.5	291.52	12325	-0.013	-0.178*	0.096*	0.025*	0.092*	0.038*	0.044*	0.180*	0.011
(14) CVC to IVC inflow	0.185	0.077	0.022	0.6	-0.018*	0.154*	-0.068*	-0.053*	-0.048*	0.016*	0.009	-0.008	-0.044*
(15) Domestic	0.156	0.363	0	1	0.228*	0.620*	-0.037*	-0.008	0.022*	0.137*	0.063*	-0.040*	-0.005
(16) Interdependence	0.308	0.274	0	2	0.112*	0.020*	-0.071*	-0.031*	-0.053*	-0.003	-0.023*	-0.317*	-0.035*

Variables	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(10) Venture age	1.000						
(11) Citation weighted patent stock	0.051*	1.000					
(12) Prior CVC investors	0.174*	0.051*	1.000				
(13) Distance	0.005	0.010	0.012	1.000			
(14) CVC to IVC inflow	-0.094*	-0.017*	0.025*	-0.015*	1.000		
(15) Domestic	-0.025*	-0.006	0.004	-0.194*	0.100*	1.000	
(16) Interdependence	-0.037*	0.002	-0.027*	-0.045*	0.010	0.050*	1.000

N = 54,006 (1,454 realized ties and 52,552 unrealized ones)

* $p < 0.01$

Table 2a – Regression results: conditional logit model for the likelihood of initial CVC investor-new venture dyad formation^a – Models I-IV

	Model I	Model II	Model III	Model IV
Trust		3.049*** (0.172)	3.104*** (0.179)	3.409*** (0.215)
Trust × IPP regime			-0.621 (0.581)	
Trust × IVC centrality				-1.407*** (0.376)
CVC centrality	1.013*** (0.172)	1.010*** (0.193)	1.019*** (0.195)	1.029*** (0.195)
IVC centrality	-0.568 (0.535)	-0.541 (0.642)	-0.515 (0.613)	3.723*** (1.268)
Direct social ties	1.606*** (0.161)	1.124*** (0.193)	1.129*** (0.194)	1.134*** (0.189)
Indirect social ties	0.226 (0.202)	0.024 (0.222)	0.032 (0.222)	0.059 (0.217)
Industry overlap	1.178*** (0.122)	1.182*** (0.146)	1.188*** (0.146)	1.186*** (0.146)
Interdependence	2.346*** (0.103)	2.307*** (0.121)	2.298*** (0.122)	2.310*** (0.123)
Round	-0.180 (0.214)	-0.178 (0.303)	-0.183 (0.286)	-0.187 (0.271)
Venture age	0.281 (0.434)	0.177 (0.538)	0.175 (0.526)	0.216 (0.524)
Citation weighted patent stock	1.022*** (0.097)	0.962*** (0.125)	0.965*** (0.124)	0.963*** (0.114)
Prior CVC investors	0.397 (0.434)	0.841 (0.642)	0.835 (0.625)	0.777 (0.612)
Distance	-0.406*** (0.085)	0.280*** (0.107)	0.268** (0.108)	0.268** (0.107)
CVC to IVC inflow	-0.762 (2.583)	-0.221 (2.734)	-0.260 (2.679)	0.122 (2.629)
Log pseudo-likelihood	-1767.333	-1405.209	-1404.112	-1396.280
Wald χ^2 test, H ₀ : coefficients of variables=0 (degrees of freedom)	943.900*** (12)	910.323*** (13)	883.622*** (14)	939.702*** (14)
Pseudo R ²	0.176	0.345	0.345	0.349

No. of observations=6,555. Out of the full sample (1,454 realized ties and 6,637 unrealized ones), 466 groups (1,536 observations) were dropped because of all positive outcomes. *IPP regime* is reported only in the interaction with *Trust* because it is an attribute of the ventures and not of the dyad, thus it is omitted by the conditional logit with ventures' fixed effects.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

^a Robust standard errors appear in parentheses.

Table 2b – Regression results: conditional logit model for the likelihood of initial CVCinvestor-new venture dyad formation^a – Models V-VIII

	Model V	Model VI	Model VII	Model VIII
Trust	3.077*** (0.178)	3.194*** (0.172)	3.095*** (0.173)	3.446*** (0.221)
Trust × IPP regime				-0.475 (0.606)
Trust × IVC centrality				-1.009** (0.413)
Trust × CVC centrality	-0.198 (0.516)			0.663 (0.543)
Trust × Direct social ties		-1.773*** (0.494)		-1.733*** (0.556)
Trust × Indirect social ties			-1.140* (0.583)	-1.233** (0.562)
CVC centrality	1.600 (1.572)	0.979*** (0.195)	1.003*** (0.194)	-0.992 (1.676)
IVC centrality	-0.536 (0.642)	-0.487 (0.653)	-0.586 (0.628)	2.516* (1.346)
Direct social ties	1.125*** (0.193)	6.657*** (1.603)	1.118*** (0.195)	6.525*** (1.795)
Indirect social ties	0.023 (0.222)	0.033 (0.218)	3.503* (1.827)	3.836** (1.758)
Industry overlap	1.184*** (0.145)	1.181*** (0.148)	1.188*** (0.145)	1.190*** (0.147)
Interdependence	2.309*** (0.121)	2.322*** (0.123)	2.311*** (0.122)	2.317*** (0.124)
Round	-0.178 (0.303)	-0.204 (0.298)	-0.194 (0.300)	-0.231 (0.261)
Venture age	0.182 (0.538)	0.281 (0.541)	0.247 (0.531)	0.350 (0.512)
Citation weighted patent stock	0.961*** (0.124)	0.967*** (0.125)	1.089*** (0.126)	1.100*** (0.119)
Prior CVC investors	0.835 (0.643)	0.813 (0.631)	0.814 (0.642)	0.771 (0.596)
Distance	0.278*** (0.107)	0.260** (0.107)	0.275** (0.107)	0.242** (0.109)
CVC to IVC inflow	-0.218 (2.737)	0.031 (2.704)	0.104 (2.716)	0.616 (2.544)
Log pseudo-likelihood	-1.405.109	-1.393.231	-1.402.490	-1.383.776
Wald χ^2 test, H ₀ : coefficients of variables=0 (degrees of freedom)	914.649*** (14)	925.524*** (14)	1068.828*** (14)	961.110*** (18)
Pseudo R ²	0.345	0.350	0.346	0.355

No. of observations=6,555. Out of the full sample (1,454 realized ties and 6,637 unrealized ones), 466 groups (1,536 observations) were dropped because of all positive outcomes. *IPP regime* is reported only in the interaction with *Trust* because it is an attribute of the ventures and not of the dyad, thus it is omitted by the conditional logit with ventures' fixed effects.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

^a Robust standard errors appear in parentheses.

Table 2c – Average Marginal Effect^a of *Trust* on the logarithm of odds ratio in models with interaction terms, at different values of moderator

	Average Marginal Effects	Difference between Average Marginal Effects
Panel (A) Table 2a - Model III		
1. IPP regime=0 (weak IPP regime)	3.104*** (0.179)	2. vs 1. -0.621 (0.581)
2. IPP regime=1 (strong IPP regime)	2.484*** (0.562)	
Panel (B) Table 2a - Model IV		
1. IVC centrality at minimum	3.409*** (0.215)	2. vs 1. -0.34*** (0.090)
2. IVC centrality at mean	3.071*** (0.180)	3. vs 2. -0.50*** (0.135)
3. IVC centrality at mean + one S.D.	2.564*** (0.106)	
Panel (C) Table 2b - Model V		
1. CVC centrality at minimum	3.077*** (0.178)	2. vs 1. -0.024 (0.062)
2. CVC centrality at mean	3.053*** (0.171)	3. vs 2. -0.044 (0.114)
3. CVC centrality at mean + one S.D.	3.009*** (0.121)	
Panel (D) Table 2b - Model VI		
1. Direct social ties=0	3.194*** (0.171)	2. vs 1. -1.773*** (0.494)
2. Direct social ties=1	1.421*** (0.491)	
Panel (E) Table 2b - Model VII		
1. Indirect social ties=0	3.095*** (0.173)	2. vs 1. -1.140* (0.583)
2. Indirect social ties=1	1.956*** (0.594)	

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

^a Robust standard errors appear in parentheses.

Table A1 - Regression results: Robustness checks^a

	Model I	Model II
Trust	3.716*** (0.201)	3.636*** (0.209)
Trust × IPP regime	-0.521 (0.472)	-0.629 (0.534)
Trust × IVC centrality	-1.382*** (0.384)	-1.139*** (0.395)
Trust × CVC centrality	0.628 (0.474)	0.509 (0.497)
Trust × Direct Social Ties	-1.420*** (0.424)	-1.418*** (0.470)
Trust × Indirect Social Ties	-1.164** (0.519)	-1.042* (0.571)
CVC centrality	-0.816 (1.463)	-0.473 (1.544)
IVC centrality	3.512*** (1.286)	2.866** (1.352)
Direct social ties	5.625*** (1.356)	5.590*** (1.503)
Indirect social ties	3.585** (1.624)	3.176* (1.781)
Industry overlap	1.014*** (0.115)	1.104*** (0.132)
Interdependence	2.029*** (0.094)	2.197*** (0.104)
Round	-0.157 (0.125)	-0.115 (0.248)
Venture age	-0.012 (0.433)	-0.184 (0.517)
Citation weighted patent stock	1.053*** (0.091)	1.070*** (0.132)
Prior CVC investors	0.838* (0.467)	1.000* (0.601)
Distance	0.283*** (0.091)	0.286*** (0.102)
CVC to IVC inflow	0.748 (1.688)	-0.247 (2.697)
Log pseudo-likelihood	-2962.937	-1877.089
Pseudo R ²	0.242	0.317
Wald χ^2 test, H ₀ : coefficients of variables=0 (degrees of freedom)	1410.227*** (18)	1050.145*** (18)
Number of observations	42,688	10,675

Table A2 - Regression results: Additional robustness checks^a

	Model I	Model II
Trust	3.504*** (0.256)	3.528*** (0.233)
Trust × IPP regime	-0.009 (0.608)	-0.501 (0.493)
Trust × IVC centrality	-1.334*** (0.492)	-1.472*** (0.422)
Trust × CVC centrality	-0.139 (0.601)	0.895* (0.504)
Trust × Direct Social Ties	-0.602 (0.510)	-1.203*** (0.420)
Trust × Indirect Social Ties	-1.093** (0.545)	-1.154** (0.491)
CVC centrality	1.632 (1.842)	-1.456 (1.550)
IVC centrality	3.984** (1.699)	4.376*** (1.600)
Direct social ties	2.818* (1.624)	4.819*** (1.346)
Indirect social ties	3.140* (1.689)	3.485** (1.529)
IPP Regime X industry overlap	-0.135 (0.376)	
CVC size	-0.021 (0.105)	
CVC Subsidiary	0.013 (0.034)	
Investment manager-level trust		0.250*** (0.092)
Industry overlap	1.242*** (0.170)	0.995*** (0.127)
Interdependence	2.105*** (0.137)	2.024*** (0.110)
Round	6.140** (2.546)	0.204 (0.241)
Round squared	-0.725** (0.314)	
Venture age	-1.530** (0.773)	-1.020* (0.543)
Citation weighted patent stock	1.145*** (0.194)	0.513* (0.294)
Prior CVC investors	-2.182 (1.651)	1.121* (0.627)
Distance	0.311** (0.146)	0.335*** (0.103)
CVC to IVC inflow	2.787 (3.289)	0.456 (1.965)
Log pseudo-likelihood	-1359.449	-2315.772
Pseudo R ²	0.234	0.250
Wald χ^2 test, H ₀ : coefficients of variables=0 (degrees of freedom)	808.22*** (22)	989.243*** (19)
Number of observations	14,841	29,712

^a Robust standard errors appear in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A3 – Regression results: Additional robustness checks^a

	Model I	Model II	Model III	Model IV
Trust	3.727*** (0.201)	0.883*** (0.236)	0.933*** (0.243)	2.870*** (0.257)
Trust × IPP regime	-0.529 (0.473)	-0.393 (0.407)	0.026 (0.396)	-0.442 (0.405)
Trust × IVC centrality	-1.393*** (0.384)	-1.362*** (0.325)	-1.153*** (0.316)	-1.353*** (0.328)
Trust × CVC centrality	0.633 (0.475)	0.626 (0.443)	0.728* (0.411)	0.776* (0.453)
Trust × Direct social ties	-1.415*** (0.424)	-1.413*** (0.392)	-1.338*** (0.375)	-1.372*** (0.382)
Trust × Indirect social ties	-1.171** (0.519)	-0.985** (0.447)	-0.908** (0.442)	-1.118** (0.475)
IVC centrality	3.544*** (1.276)	3.707*** (1.118)	3.060*** (1.111)	3.602*** (1.129)
CVC centrality	-0.827 (1.466)	-0.784 (1.363)	-1.009 (1.263)	-1.290 (1.394)
Direct social ties	5.609*** (1.355)	5.451*** (1.247)	5.243*** (1.198)	5.381*** (1.215)
Indirect social ties	3.606** (1.623)	2.976** (1.408)	2.721** (1.386)	3.436** (1.490)
Industry overlap	1.012*** (0.115)	1.065*** (0.117)	1.137*** (0.118)	0.998*** (0.115)
Interdependence	2.026*** (0.095)	2.098*** (0.097)	2.074*** (0.101)	2.053*** (0.095)
Round	-0.145 (0.125)	-0.072 (0.129)	-0.153 (0.143)	-0.116 (0.126)
Venture age	-0.052 (0.425)	-0.095 (0.446)	0.154 (0.521)	-0.040 (0.436)
Citation weighted patent stock	1.038*** (0.092)	0.962*** (0.092)	0.884*** (0.094)	0.948*** (0.091)
Prior CVC investors	0.786* (0.459)	0.787 (0.490)	0.711 (0.540)	0.791* (0.479)
Distance	0.284*** (0.091)	-0.169* (0.102)	0.672*** (0.109)	0.160* (0.092)
CVC to IVC inflow	0.348 (1.694)	0.960 (1.709)	0.878 (1.970)	0.810 (1.567)
Round size	6.92e-06* (3.6e-06)			
Common native language		2.634*** (0.238)		
Common spoken language		0.287 (0.353)		
Neighboring countries			0.484*** (0.129)	
Domestic			2.133*** (0.142)	
Power distance index				-0.170*** (0.055)
Individualism vs. collectivism				0.008 (0.033)
Masculinity vs. femininity				-0.141*** (0.018)
Uncertainty avoidance index				-0.035 (0.054)
Long-term orientation vs. short-term or.				-0.029 (0.018)
Indulgence versus restraint				0.053 (0.039)
Log pseudo-likelihood	-2958.344	-2814.683	-2773.453	-2886.244
Pseudo R ²	0.242	0.280	0.291	0.262
Wald χ^2 test, H ₀ : coef. of var.=0 (d. of freedom)	1407.69*** (19)	1731.163*** (20)	1727.518*** (20)	1593.302*** (24)
Number of observations	42,675	42,688	42,688	42,688

* p<0.10, ** p<0.05, *** p<0.01. ^a Robust standard errors appear in parentheses.

Table A4 – Regression results: Additional robustness checks ^a

	Model I	Model II	Model III
Trust	3.334*** (0.222)	4.399*** (0.224)	2.874*** (0.445)
Trust × IPP regime	-0.655 (0.455)	-0.253 (0.489)	-1.246* (0.644)
Trust × IVC centrality	-1.315*** (0.377)	-1.591*** (0.381)	-1.170** (0.590)
Trust × CVC centrality	0.652 (0.467)	0.442 (0.499)	0.616 (0.674)
Trust × Direct social ties	-1.382*** (0.412)	-1.502*** (0.448)	-3.290*** (0.532)
Trust × Indirect social ties	-1.019** (0.504)	-1.041** (0.515)	-2.191*** (0.826)
IVC centrality	3.313*** (1.266)	4.254*** (1.287)	2.615 (2.349)
CVC centrality	-0.902 (1.438)	-0.302 (1.544)	-0.583 (2.155)
Direct social ties	5.501*** (1.318)	5.822*** (1.433)	11.971*** (1.751)
Indirect social ties	3.110** (1.578)	3.185** (1.621)	7.111*** (2.686)
Industry overlap	1.023*** (0.116)	1.071*** (0.117)	0.902*** (0.150)
Interdependence	2.050*** (0.096)	2.097*** (0.098)	2.039*** (0.118)
Round	-0.146 (0.127)	-0.142 (0.130)	-0.185 (0.424)
Venture age	0.018 (0.447)	0.005 (0.448)	-0.682 (0.810)
Citation weighted patent stock	0.922*** (0.092)	0.944*** (0.093)	0.533 (0.575)
Prior CVC investors	0.793 (0.491)	0.765 (0.483)	1.477** (0.656)
Distance	0.367*** (0.090)	-0.299* (0.155)	-0.054 (0.130)
CVC to IVC inflow	0.764 (1.731)	0.637 (1.979)	2.680 (2.658)
Civil vs. common law	-0.126 (0.105)		
Rule of law	-0.258*** (0.052)		
Efficiency of judicial system	-0.044 (0.029)		
Risk of contract repudiation	0.025 (0.212)		
Risk of expropriation	0.448 (0.493)		
CVC trust			1.755*** (0.348)
CVC's country fixed effect	No	Yes	No
Log pseudo-likelihood	-2889.224	-2869.548	-1902.794
Pseudo R ²	0.252	0.266	0.316
Wald χ^2 test, H ₀ : coeff. of var.=0 (d. of freedom)	1473.209*** (23)	1423.112*** (37)	798.812*** (19)
Number of observations	42,231	42,688	27,151

* p<0.10, ** p<0.05, *** p<0.01; ^a Robust standard errors appear in parentheses.

FIGURES

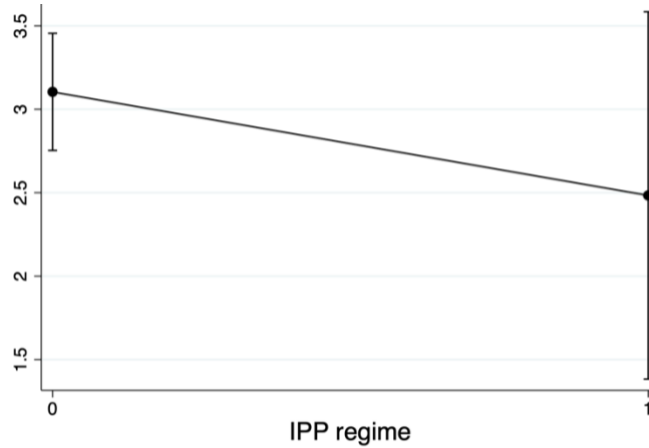


Figure 1a. Average Marginal Effects of *Trust* (with 95% CIs) on the logarithm of odds ratio in Model III, Table 2a, at different values of moderator (effects on linear predictions).

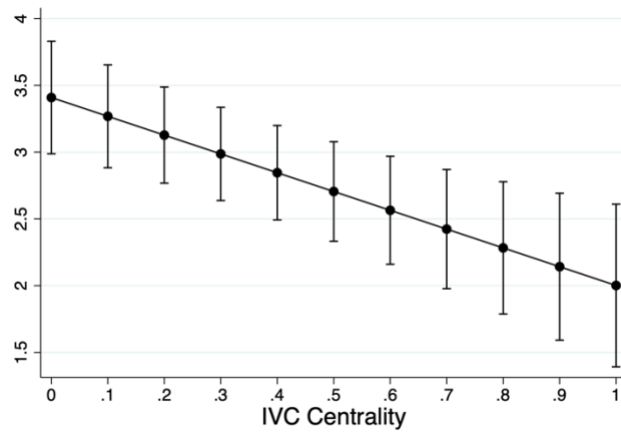


Figure 1b. Average Marginal Effects of *Trust* (with 95% CIs) on the logarithm of odds ratio in Model VI, Table 2a, at different values of moderator (effects on linear predictions).

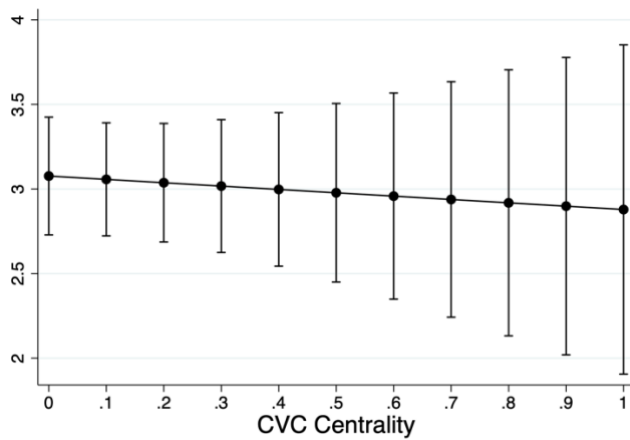


Figure 1c. Average Marginal Effects of *Trust* (with 95% CIs) on the logarithm of odds ratio in Model V, Table 2b, at different values of moderator (effects on linear predictions).

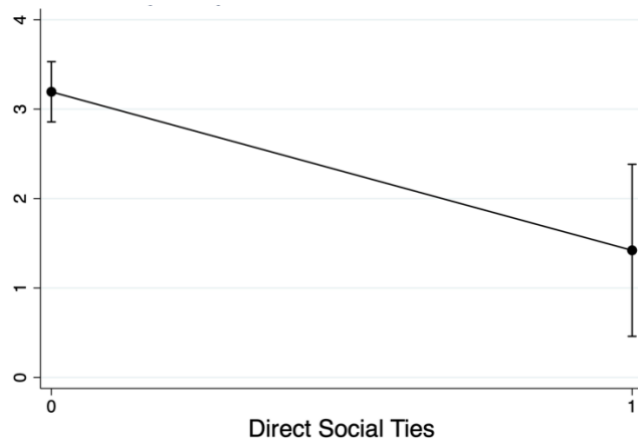


Figure 1d. Average Marginal Effects of *Trust* (with 95% CIs) on the logarithm of odds ratio in Model VI, Table 2b, at different values of moderator (effects on linear predictions).

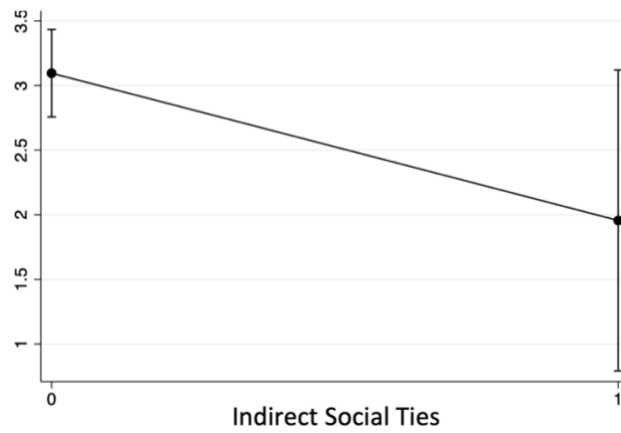


Figure 1e. Average Marginal Effects of *Trust* with 95% CIs on the logarithm of odds ratio in Model VII, Table 2b, at different values of moderator (effects on linear predictions).