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Formal and informal financing decisions of small businesses

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Abstract This study investigates small businesses' financing decisions. Drawing upon asymmetric information theory, institutional theory and relevant literature on cognitive financial constraints, human capital and social capital, we propose a theoretical framework in which financing determinants come from three dimensions: entrepreneurs' individual factors, organisational (firm-level) factors and contextual (institutional) factors. We employ this model to distinguish four types of firms: (1) firms that use no external finance, (2) firms that use informal finance only, (3) firms that use formal finance only and (4) firms that use both formal and informal finance. An empirical test on Vietnamese small businesses shows that factors from all three dimensions are important in understanding small businesses' financing decisions.

Keywords Informal finance · Small business · Financing strategy · Entrepreneurial finance · Vietnam

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1 Introduction

In the corporate finance literature, there has been a long investigation into the decision-making methods used by corporations in choosing which financing source to use for their investment projects. As a result, a set of theories has been developed that includes the pecking-order theory (Myers 1984) and the static trade-off theory (Scott 1972). These are of great help in understanding corporate financial structure. In contrast, the literature on the financing decisions of small businesses is not as well developed. Small, non-listed firms, especially those in the developing countries, are less likely to have optimal access to bank loans due to the informational asymmetries associated with their smallness and newness, both of which are well known to be small firm-specific financial constraints (see Carreira and Silva (2010) for a review). It is not only formal debt finance that is largely inaccessible to these firms; equity markets such as initial public offering (IPO), venture capital and angel funds are also options that are not open to many small companies. As such, when the external financing decisions of small businesses are being analysed, it is generally done via a strand of research that focuses on the relationship between formal and informal finances, with very little research being published on the trade-offs that are associated with formal versus informal funding of small businesses (Wu et al. 2016). Casey and O'Toole (2014) also point out that the literature on

the relationship between informal credit and bank credit is not well developed and primarily focuses on households in rural areas rather than on small businesses.

In this study, informal finance is defined as small, unsecured and short-in-maturity funding capital sourced from (1) private moneylender(s), (2) the relatives and friends of the business owners and (3) other enterprises. Informal finance is found to be positively associated with firm growth and performance in several developing countries, including China, India, Thailand, Madagascar, Egypt, Nepal and Vietnam (see Kislat (2015) for a summary). Even though the importance of informal finance has been widely confirmed, we know little about the underlying mechanisms that lead to the decisions to use this funding source. Previous studies rarely offer an explanation for the decisions of small business to take out except to state that they are ‘forced’ to do so; banks ration funds to borrowers, and the informal sector serves those borrowers who are excluded by the banks (Hoff and Stiglitz 1990). However, there is a possibility that some businesses self-select informal finance even when their credit scores are unblemished (Fraser 2009). What it is that prompts these firms to make this ‘irrational’ decision is, unfortunately, unclear in the extant literature.

More importantly, recent studies report that some small firms actively decide *against* taking out external finance, whether it be formal or informal. Even in the context of the UK, a well-developed financial hub, 55% of firms made such a funding decision in 2017 (UK Department for Business 2019). Although it has long been recognised that a lack of access to external finance, be it formal or informal, is negatively associated with growth and performance (Cheng and Degryse 2010), we know relatively little about the underlying mechanisms that lead to the decision to eschew external loans. Recently, Fraser et al. (2015) pointed out that cognitive financial constraints, which are a function of entrepreneurs’ personal background, may lead to the establishment of conservative behaviours. However, it is unclear which types of background may lead to cognitive financial constraints and, hence, the decisions of small businesses to shun external finance.

This study aims to fill these two particular gaps in the extant literature by proposing a comprehensive theoretical framework that may provide a better understanding of the mechanisms underlying small business financing decisions. Specifically, our endeavour is to distinguish four groups of firms by their financing decisions: (1)

firms that use no external finance, (2) firms that use informal finance only, (3) firms that use formal finance only and (4) firms that use both formal and informal finance. The key research question that we strive to answer is: how do firms that make different financing decisions differ? In other words, what might be the determinants of firm financing decisions?

Specifically, this study proposes a framework that incorporates a number of potential determinants from a variety of dimensions classified by three levels: entrepreneurs’ individual factors, organisational (firm-level) factors and contextual (institutional) factors. We draw upon asymmetric information theory, institutional theory and a set of relevant literature on cognitive financial constraints and social capital to underpin our theoretical model.

The model is then tested using a panel dataset of more than 15,000 firm-year observations of Vietnamese small businesses from 2005 to 2015. Empirical findings show that, at the individual level, entrepreneurs’ cognitive financial constraints (represented in this study by ethnicity and gender) and their individual social capital (networks) are all important determinants of their ventures’ financing decisions. At the organisational level, entrepreneurial orientation (represented by exporting and innovation) and organisational social capital (represented by membership of local industry associations) may influence firm financing decisions. Finally, at the contextual level, we find that governance quality of local government and the existence of pro-entrepreneurship informal institutions are important determinants of financing decisions.

This study makes two important contributions to the extant literature on small business financing behaviour. First, it expands our understanding of some hitherto overlooked financing decisions of small businesses, namely the decisions to pass up on external finance or to rely on internal finance *only*. While a large body of research aims to investigate issues related to the supply side of the financial market (e.g. small businesses are side-lined by banks), we suggest that issues that originate from the demand side may also play an essential role in firm financing decisions. Rather than following the conventional assumptions that small firms always need external finance and that they fail to obtain adequate loans due to market frictions, we propose some new insights to explain why some firms intentionally decide against using external finance or choose to rely

only on informal finance despite being eligible to apply for bank loans.

The second contribution of this study is that it paints a comprehensive picture of firm financing decisions from several relevant perspectives. Standing in sharp contrast to the conventional studies that focus on firm-level determinants of (corporate) financing strategy, this study incorporates entrepreneurs' individual characteristics and contextual (institutional) factors into the model of firm financing decisions. The inclusion of the individual and contextual dimensions of analysis is particularly relevant to the context of small businesses, given that small firms are dependent on their owner-managed entrepreneurs and are relatively vulnerable to external institutional environments. As such, this study proposes that a firm's financing strategy may depend on (1) who owns the firm, (2) what assets the firm has and (3) where it is located.

This study is helpful to policymakers tasked with designing programs aimed at restructuring financing sectors, given that we now have more precise knowledge about who are likely to be clients of the formal and informal sectors, what types of businesses are likely to use which sources of finance and where informal financing is more popular.

2 Related literature

2.1 The classification of financing sources

Unlike the literature on the financing of established corporations, the literature examining financing sources in the context of small businesses lack a clear and well-developed theoretical framework. In the corporate finance literature, financing sources are typically classified as being internal capital, debts or equity. However, this is not the case when it comes to analysing small businesses, where scholars use formal versus informal classification method of classifying external finance.

In simple terms, formal finance is financing capital that has been sourced from banks and other formal financial intermediaries, whereas informal finance is the capital which has been sourced from friends, family, relatives or private moneylenders (Elston et al. 2016). Formal finance lending is processed based on hard information and arm-length principles while the informal lending decision is made using soft (private) information and relationship-based principles. Given this

difference between the two, entrepreneurs face trade-offs in deciding on the appropriate source of financing for their businesses. Wu et al. (2016) suggest that informal funding and formal funding differ in the provisions of the financing contracts. Specifically, informal debt can be attractive to entrepreneurs because of its relative speed, lower initial transaction fees and freedom from collateral requirements. While the lower interest rates of formal bank lending might make it the preferred route, however, a longer loan processing time might not tally with the required timeframe.

Within this strand of literature, there are also different views about the relationship between the two sources. One view holds that informal finance is the last resort for those entrepreneurs who are quantity-rationed in the more desirable formal sector. This rationing may arise because formal lenders have limited information and thus rely on collaterals to overcome the moral hazard and adverse selection that are intrinsic in credit transactions. Firms that fail to provide sufficient collaterals are automatically screened out and are forced to find informal lenders, who can substitute their informational advantages of information-intensive screening and monitoring for collaterals (Guirkinger 2008). The informational advantages of the informal sector (private moneylenders in particular) can substantially reduce transaction costs, and this may push the effective cost of informal loans below the effective cost of formal loans. However, the price (i.e. the interest rate) offered to borrowers in the informal sector (private moneylenders in this case) is typically much higher than the prices seen in the formal sector. This phenomenon could be explained by the regional monopolism of the informal sector or because informal lenders are likely to engage in strategic cooperation, thus limiting competition (Floro and Ray 1997).

In contrast to the 'last resort' view of informal finance, some scholars posit that the informal sector may actually be preferred to the formal sector. Researchers typically cite funding from family, friends and relatives as their research subjects' finance choices (Lee and Persson 2016). In the initial stage of the venturing process or in urgent situations, these informal funding arrangements may act as seeding capital or quick capital that satisfies entrepreneurs' capital needs at low cost and with flexible repayment schedules. Private moneylenders are also of benefit to entrepreneurs in the sense that they have greater access to private information, enabling them to write contracts that are more state-

contingent than formal contracts and are thus less risky for borrowers (Boucher and Guirking 2007). As such, entrepreneurs that are reluctant to assume the risk of a formal contract and are risk-rationed in the formal sector may also seek informal finance.

Despite the dissimilar viewpoints concerning the relationship between the two sectors, the literature seems to be in consensus that the formal and informal financing sectors serve distinct groups of borrowers. In addition, they apply different sets of behavioural rules and incentive structures to deal with monitoring and enforcement problems. As such, Jain (1999) considers the coexistence of the two sectors as an equilibrium phenomenon in which entrepreneurs may want to borrow from both sectors even in those markets that are unhampered by failures and distortions.

2.2 The financing of small businesses

Even though the importance of non-bank financing for small businesses has long been recognised, the extant research focus is largely steered towards trade credit (Casey and O'Toole 2014) and the emerging equity markets such as venture capital and angel funding (see Cumming and Groh (2018) for the most recent summary). For most small businesses, their inferior positions in the business hierarchy and their lack of long and trackable performance records substantially reduce the chance of obtaining trade credit from suppliers and clients. Further, equity financing is an unpopular (and is probably the least preferred) financing channel for most entrepreneurs in the developing countries (Cumming and Groh 2018). In such a situation, informal loans appear to be one of the most promising sources of external funding.

The impacts of informal funding on firm performance have been well established in the extant literature. Using China as the context of analysis, Beck et al. (2015) and Elston et al. (2016) find that the use of informal finance, especially financing from friends and family, is positively associated with the sales growth of Chinese microenterprises. However, in a research on Brazilian small and medium enterprises (SMEs), Saeed (2009) shows that a shift from informal to formal bank finance is associated with improved economic growth outcomes. To synthesise these contradictory findings, Wu et al. (2016) propose that firm performance is an inverted U-shaped function of the level of informal debts. In other words, a balanced level of formal-

informal loans is indeed beneficial for small businesses, while being too reliant on informal loans is injurious.

While the impacts of informal loans on firm performance are well understood, we know relatively little about the mechanisms leading firms to using this financing source. Specifically, it remains largely unknown that firms with what kinds of characteristics are more likely to use informal finance. In fact, literature provides some hints (unsystematic evidence) about the determinants of entrepreneurs' formal/informal financing decisions. Previous studies have shown that social capital is an important determinant of informal financing decisions (Chua et al. 2011; Menkhoff et al. 2012), and risk attitudes and the extent of personal wealth are also found to have high impact on the process of selecting financing sources (Elston and Audretsch 2010). However, these studies have yet been able to distinguish the effects of individual social capital from the effects of organisational social capital on firm financing decisions. Also, entrepreneurs' characteristics such as risk attitudes are examined in an isolated manner from their backgrounds such as gender and ethnics.

Moreover, studies that examine financing decisions that take into account entrepreneurs' characteristics typically ignore the influences of firm-level characteristics and vice versa. Given that SMEs are small and are usually perceived as sharing the same identity with their entrepreneurs (Barton and Matthews 1989), it is important to investigate both firm-level and individual-level determinants of financing decisions. Additionally, regional studies recently highlight the importance of local institutional settings, including formal and informal institutions on small businesses' behaviours and performance (Nguyen et al. 2018). It has been shown that local governance quality (formal institutions) can shape entrepreneurs' incentives and subsequently their strategic planning and decisions (Su and Bui 2017). Meanwhile, informal institutions such as values and business norms are also found to exert non-trivial impacts on local small businesses' investment and performance (Stephan et al. 2015).

In general, previous studies provide some initial understanding of the role of entrepreneurs' personal characteristics in small businesses' financing decisions. However, there is emerging evidence suggesting that we need to fully incorporate all three levels of analysis: individual level, firm level and contextual level into a theoretical framework to precisely understand the determinants of small businesses' financing decisions,

including (1) which types of firms are more likely to borrow external loans and (2) if firms want to borrow, whether formal or informal finance is more preferred.

3 Theoretical framework and hypotheses

A brief review of the recent literature shows that while the positive impact on firm performance of external finance in general and informal finance in particular has been widely confirmed, less is understood concerning the drivers of a firm's financing decision. We still do not know why some entrepreneurs do not seek to access any external finance or why some entrepreneurs will use informal but not formal finance, or vice versa. In this section, therefore, we strive to build a model that can provide some insight into the question 'how do firms with different financing decisions differ?'

To answer this question, we employ the informational asymmetry theory and the theory of cognitive financial constraints, in combination with a set of relevant literature. We examine the financing decision by first distinguishing between demand-side factors and supply-side factors. Then, we argue that the intertwining of the demand and supply factors is a product of individual characteristics, firm-level characteristics and the surrounding institutional settings. These three levels of analysis point to a theoretical framework in which the financing decision of a small business could be explained by knowing *who* runs the business (i.e. the entrepreneur's characteristics), *what* the business looks like (the firm-level characteristics) and *where* it is located (i.e. the contextual characteristics). Figure 1 illustrates our theoretical framework.

3.1 Entrepreneurs' individual characteristics

3.1.1 Cognitive financial constraints

One of the innovations of this model is that it includes both the demand and supply sides when analysing firm financing decisions. The extant literature focuses largely on the supply side, with common assumptions being that small businesses always need external finance, which they cannot obtain because their smallness and newness create intrinsic informational asymmetries, thus leading to credit rationing. However, it is not, in fact, the case that entrepreneurs always need bank loans (Fraser et al. 2015) and there should therefore be another

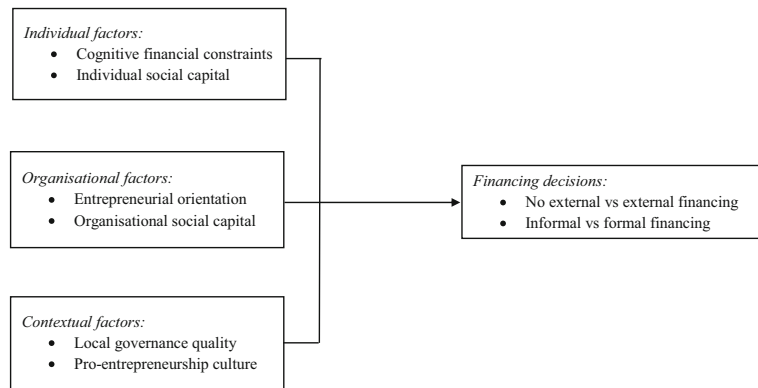
explanation for the generally low usage of bank loans and external finance by small businesses. Hutchinson (1995) suggests that the low use rate of external finance could be due to the demand-side's *cognitive* financial constraints rather than the financial constraints generally accepted to have been imposed by the supply side. Unlike financial constraints, which are a product of informational asymmetries and market failures, cognitive financial constraints are experienced when entrepreneurs maintain a conservative mindset, high-risk-averse attitude and low motivation for development (Barton and Matthews 1989; Fraser et al. 2015).

Following Barton and Gordon (1987) and Matthews et al. (1994), we argue that entrepreneurs' personal background may strongly influence their cognitive resources and ability to support their entrepreneurial efforts. Specifically, we argue that minor ethnics are more likely to suffer from (demand-side) cognitive financial constraints. However, we first summarise some key arguments relating to the well-known issues originating from the supply side (differential treatments from the banking industry).

The extant literature has documented a number of supply-side reasons for ethnic minorities having reduced access to finance compared to the ethnic majority. Chief among these is discrimination. Lenders may discriminate against a certain group of borrowers for various reasons. The taste-based theory (Becker 1971) suggests that economic agents are keen to seek transaction partners who are similar to them, thereby reducing uncertainties and improving perceived trust. When the transaction partners (e.g. borrowers) are from other tribes (e.g. minor ethnicities), the lenders may be exposed to uncertainties, leading to discrimination. Also, information-based theory (Edmund 1972) argues that lenders are inclined to believe, based on the information they collect, that ethnic minorities are less productive, less capable and less well educated and thus threaten lenders' profitability.¹ Bertrand et al. (2005) identify these perceptions as negative implicit attitudes or unconscious mental associations towards ethnic minorities.

Despite these findings, we argue in this study that, from the demand side, entrepreneurs may intentionally decide not to use external finance because they suffer

¹ Fraser (2009) also names this type of discrimination 'statistical discrimination' (where poorer credit outcomes for ethnic minorities are due to the groups' higher average default rate).

Fig. 1 Theoretical framework

from cognitive financial constraints (i.e. they do not want to borrow). By way of example, ethnic minorities are discouraged from seeking external loans because of their perceived inferior ethnic backgrounds. Fraser (2009) documents four channels through which ethnic minorities may suffer from such cognitive financial constraints. First, ethnic-associated factors (e.g. lack of financial skills, small-sized businesses and remote location of the businesses) lead to higher application costs. Second, informational asymmetries can be greater between lenders and ethnic minorities. Language, for example, is identified as the key obstacle that discourages ethnic minorities from applying for bank loans (Nguyen et al. 2017). Third, borrowing is associated with higher risk, leading ethnic minorities who are embedded in their conservative, risk-averse cultures to self-select out of the loan pool (Baulch et al. 2007). Fourth, informed perceptions of actual ethnic discrimination or even misperceptions of ethnic discrimination may depress borrowing intentions. Further, Bayer et al. (2018) show that minor-ethnicity borrowers tend to gravitate towards high-interest lenders (e.g. informal financing sources) even when their own credit scores are relatively unblemished. This self-selected shopping behaviour is a product of the cognitive financial constraints that discourage them from applying for bank loans.

Some empirical studies indicate that the incidences of discouragement (factors related to the need of using external loans) are more prevalent than the loan denials (factors related to the capability of obtaining external loans).² For example, controlling for credit score and other risk factors, Robb (2013) finds that in the USA,

ethnic minority entrepreneurs are less likely than their white counterparts to apply for loans because they fear being turned down. As such, there is a growing literature suggesting that cognitive financial constraints may be a greater issue for ethnic minorities than even the conventional supply-side lending discrimination (see Carter et al. (2015) for a review).

Female entrepreneurs may suffer from similar issues related to cognitive financial constraints. There is a growing body of literature that empirically demonstrates that female-run businesses are no different from male-run businesses in terms of performance, growth and productivity (Kalnins and Williams 2014; Rietz and Henrekson 2000). The fact that males and females are not significantly dissimilar in terms of skills, abilities and brain functions has been well documented in the social feminist literature (see Justo et al. (2015) for a review), as well as in the cognitive neuro-imaging literature (Fine et al. 2013; Rippon 2016). As such, when explaining why female-run businesses are typically smaller and less investment-intensive than those run by males, scholars employ the stereotype theory. In brief, because of their socially assigned feminine gender stereotypes, females are less likely to run large businesses, are reluctant to seek external finance and tend not to make optimal investments given their available business opportunities (Bardasi et al. 2011). There is a set of social roles associated with feminine stereotypes, such as the perceptions that they are weaker than their masculine counterparts, hold inferior social positions and follow informed constraints pre-set by social standards (Lee and Marvel 2014). These self-deflating attitudes and beliefs inevitably trigger the establishment of cognitive financial constraints. As such, it is reasonable to expect that female entrepreneurs are less likely to seek external finance.

² See, for example, Blanchflower et al. (2003), Fraser (2009) and Robb (2013).

In sum, firms run by entrepreneurs suffered from cognitive financial constraints may have a lower need of using external finance and also possess a lower level of capability of obtaining external finance (i.e. differential treatments from the banking industry). As such, we propose that

Hypothesis H1a: Individuals with cognitive financial constraints originating from their background characteristics (i.e. minor ethnicities, females) are less likely to use external finance.

Further, in the rare cases where external finance is required, it is expected that informal financing sources are probably to be preferred given that they are associated with lower risk, and are easier to access by minor ethnicities and females in comparison to formal finance. In other words, entrepreneurs with cognitive financial constraints, due to their cognitive biases, have a lower need of formal finance, and given their inferior characteristics, they also have a lower level of capability of obtaining formal finance. As such, we have

Hypothesis H1b: When entrepreneurs with cognitive financial constraints use external finance, they are more likely to employ informal financing sources than formal financing sources.

3.1.2 Individual social capital

Social capital is highly related to the capability of seeking external finance and also to the sources of financing (formal vs. informal).

Social capital is defined as the structure of informal social relationships conducive to developing cooperation among economic actors aimed at increasing social product, which is expected to accrue to the group of people embedded in those social relationships (Hayami 2009, p. 98).

This definition of social capital implies the role of social relationships forged through informal organisations, which could be horizontal (e.g. sports clubs) or hierarchical (e.g. family members). These relations are informal in the sense that they are *not* enforced by the state's coercive power.

It is noteworthy that social networks are typically classified as having either strong or weak ties. The strong/weak social ties are relations with high/low levels of emotional attachment. While family ties are 'strong ties', business and government ties are 'weak ties' (Putnam 1993). The role of family funding is found to be important to nascent entrepreneurs and small businesses (Lee and Persson 2016). Strong-ties funding is relatively accessible, partly because of the involvement of kinship/friendship emotions. However, as firms mature, relationships with weak ties become more and more important. Granovetter (1973) emphasises the 'strength of weak ties' and argues that weak ties are less reliable but more likely to provide access to a larger pool of potential funding. Regardless of the strength associated with social ties, scholars seem to agree that social networks, in general, are essential to accessing external finance.

In this study, we argue that the social networks associated with an entrepreneur derive from two sources, namely the entrepreneur's previous venturing activities and the current venture. Specifically, Kirschenhofer and Lechner (2012) argue that more experienced habitual entrepreneurs are more likely to possess the capability of attracting funding through direct social ties. The more experience an entrepreneur has, the stronger and more widely spread will be the associated network ties. As a consequence, experienced serial entrepreneurs should have advantages in terms of resource attraction. Their previously built-up networks mean that they not only possess better skills in searching for external capital but can also conduct the search in a larger pool of potential funding sources (Westhead and Wright 1998). In other words, they are more capable in searching and securing external funding sources.

Also, social networks newly established in the current ventures also play a key role in determining firm financing decisions. Menkhoff et al. (2012) investigate the financing of Thai SMEs and suggest that most loans do not involve tangible assets as collateral. Instead, lenders enforce collateral-free loans through third-party guarantees and relationship lending. Du et al. (2015) further argue that entrepreneurs must use their social capital, including relationships built upon political networks associated with local authorities, or business networks associated with businesspeople, and financial networks associated with bankers to seek survival and growth for their newly established ventures.

It is therefore to be expected that the social capital associated with an entrepreneur will facilitate his/her venture's capability of successfully gaining access to external finance. As such, we have

Hypothesis H2a: Individuals with more social capital (habitual entrepreneurs or individuals with wider networks) are more likely to use external finance.

In terms of the financing sources, an increase in entrepreneurial engagement or an expansion in the scope of social ties is expected to be associated with higher usage of informal finance. The reason being that personal social capital embedded in previous start-ups and current social networks is able to facilitate the flow of *private* information (Agarwal and Hauswald 2010), boosts the level of trust and bridges potential opportunistic behaviours in lending transactions (Anderson and Nyborg 2011). Thus, we propose

Hypothesis H2b: When entrepreneurs with more social capital use external finance, they are more likely to employ informal financing sources than formal financing sources.

3.2 Firm-level characteristics

3.2.1 Entrepreneurial orientation

Firm financing decisions may also be a function of organisational factors such as entrepreneurial orientation (EO). EO is a strategy-making process that provides organisations with a basis for making entrepreneurial decisions and actions. It refers to a firm's strategic organisational posture, capturing specific entrepreneurial aspects of decision-making styles, methods and behaviour (Lomberg et al. 2017). Conventionally, EO encompasses three *non*-mutually exclusive dimensions, namely innovativeness, proactiveness and risk-taking. It is well documented that EO firms perform better than non-EO firms (see Anderson et al. (2015) for a review).

However, the extant literature makes little mention of the financing decisions of these two types of firms. Do EO firms need more external finance than non-EO firms? If this is the case, which source, formal or informal finance, is preferred by EO firms?

To answer these questions, we quantify EO using two indicators, namely innovation and export. Innovative firms (i.e. firms that introduce new products or employ new production process) and exporting firms satisfy the three dimensions of EO, which are innovativeness, proactiveness and risk-taking. It is noteworthy that EO firms—innovative and/or exporting firms—do not only demand a higher level of external finance to support their EO activities but also are more capable in obtaining external loans, thanks to their activeness in business activities. Riding et al. (2012) suggest that small exporter firms are especially likely to seek external financing but less likely to obtain *formal* finance. The reason is that commercial lenders are *less* likely to approve loan applications from young, growth-oriented SME exporters because they perceive these firms' operations to be riskier than those of domestically oriented SMEs. Similarly, innovation-oriented small firms also operate under financially constrained situations (Zhu et al. 2012). One explanation for this is that, from the supply-side viewpoint, innovativeness combined with smallness and newness is associated with uncertainty and a higher default risk, which substantially reduces formal lenders' enthusiasm (Love and Roper 2015). Another explanation from the demand side is the entrepreneurs' reluctance to fully communicate their innovativeness to banks which, although a strategic decision to protect their competitive advantages from being imitated, creates additional informational asymmetry that inevitably reduces their access to formal loans (Guariglia and Liu 2014).

Building on previous studies, we suggest that EO firms are keen to seek external finance because they demand a higher level of capital and also are more capable of doing so. However, given the difficulties of and unwillingness to obtain formal finance, we expect that firms with an entrepreneurial orientation are more likely (than their non-EO counterparts) to use informal finance to fund their entrepreneurial projects. Put formally, we have

Hypothesis H3a: Entrepreneurially oriented (exported or innovative) firms are more likely to use external finance.

Hypothesis H3b: When entrepreneurially oriented firms use external finance, they are more likely to employ informal financing sources than formal financing sources.

3.2.2 Organisational social capital

Organisational social capital could also be a crucial determinant of firm financing decisions. Unlike personal social capital, which is embedded in entrepreneurs' individual networks, organisational capital is associated with the business itself. For example, local industry associations are important business networks that offer small businesses access to external resources such as information, business opportunities, collaboration opportunities and even informal finance such as trade credits from other members (Oparaocha 2015). Organisational social capital is particularly beneficial to resource-constrained firms (e.g. small businesses) because it provides them with the opportunity of using resources without having to acquire ownership of them (Johanson and Mattsson 2015).

Further, joining local industry associations could be considered to be a strategic decision for small businesses wishing to legitimise their existence in the local markets. In the context of Vietnam, this action is done with the purpose of establishing stronger connections with local officials and the state-owned commercial banks (Nguyen 2019). Given that the formal institutions in developing countries are insufficiently strong to protect banks in lending transactions, banks typically employ off-balance-sheet scrutiny methods to check a borrower's credibility (Nguyen et al. 2006). Being a member of industry associations may signal a business's legitimised position in its local market, thereby reducing lenders' concerns about informational asymmetries. As such, it is expected that firms holding memberships in their local industry associations have a stronger capability of gaining access to formal loans. It is noteworthy that holding a membership in local industry associations may not facilitate the flow of private information, thereby exerting little impact on firm access to informal finance. In short, we have

Hypothesis H4a: Firms having more organisational social capital (holding local industry association memberships) are more likely to use external finance.

Hypothesis H4b: When firms having more organisational social capital use external finance, they are more likely to employ formal financing sources than informal financing sources.

3.3 Contextual characteristics

3.3.1 Local governance quality

Also of interest are the institutional settings embedded in local regions that may affect firm financing decisions. The local institutional arrangement (i.e. the governance quality of local government) is now well known to be an important determinant of small business performance, particularly in developing countries (Nguyen et al. 2018). The reason is that firms located in regions endowed with a better quality of governance enjoy a lower level of transaction costs and a higher level of generalised trust. These regional characteristics have noted benefits for business transactions and collaboration, and hence economic growth (Baumol and Strom 2007).

However, it is unclear how local governance may affect firm financing decisions. Wu et al. (2016) conduct an initial investigation on this issue. They find evidence for the hypothesis that in a developed institutional environment, the informal financial markets are pushed to operate transparently so as to establish their legitimacy. This is because strong institutional settings tend to have strict regulatory and supervisory policies with respect to minimum capital requirements, the ceilings on unsecured loans, interest rate ceilings and the method of resolving unpaid loans (Rahman and Luo 2011; Satta 2004). There is scant empirical evidence on the relationship between local governance and firm financing decisions, and so we follow Wu et al. (2016) in suggesting that firms in regions with better governance quality are more likely to use external finance, especially informal finance.

In short, firms in stronger governance environments may raise their demand for external capital thanks to the reduced transaction costs. Also, they are more likely to opt for informal financing sources. Thus, we have

Hypothesis H5a: Firms located in regions with better governance quality by local governments are more likely to use external finance.

Hypothesis H5b: When firms located in regions with better governance quality use external finance, they are more likely to employ informal financing sources than formal financing sources.

3.3.2 Informal institutions

The institutional settings embedded in local regions are more than just local governance arrangements. They also include the informal ‘rules of the game’ such as shared values, norms and beliefs (Williamson 2000). These factors may strongly shape the choice of financing source. In the case of Vietnam, informal institutions (the norms and values of doing business) can be examined via a specific historical event. While the economic system in North Vietnam followed the pure socialist blueprint from the outset, South Vietnam was only transformed from capitalism in 1975 (Wheeler 2015). This political separation gives rise to significant differences in the entrepreneurial norms, values and beliefs between the two regions (Makino and Tsang 2011). Moreover, these informal institutions, just as can be seen in East and West Germany (Fritsch and Wyrwich 2014), are expected to persist irrespective that the two states were unified four decades ago and established a common framework of formal institutions throughout the whole country.

Given that entrepreneurs in the South were once exposed to capitalism, which is associated with pro-entrepreneurial values, they may be less risk-averse and more growth-oriented than entrepreneurs in the North, whose shared values are those of socialism, common ownership and interdependence (Dell et al. 2018). These institutional differences set the foundation for our expectation that entrepreneurs in the South are more likely to take on external finance to fund their investment projects. In contrast, entrepreneurs in the North are more likely to be constrained within their available internal capital and would probably opt to give up growth opportunities rather than actively take on external debts. Given the differences in the informal institutions (i.e. the entrepreneurship values) between the two regions, we expect that

Hypothesis H6a: Firms located in regions with pro-entrepreneurship informal institutions (South Vietnam) are more likely to use external finance.

In terms of financing sources, it is expected that formal finance is preferred to informal financing sources for two reasons. First, pro-entrepreneurship values and norms are typically associated with arm-length principles in doing business, including financial transactions (Nguyen et al. 2018). This boosts the tendency of using

formal finance in local business communities. Second, pro-entrepreneurship institutions highlight the values of individualism (in contrast to communalism widespread in the North Vietnam) (Dell et al. 2018). The lack of communal collective action norms particularly reduces the activeness of local informal financial lenders in the South Vietnam. As such, firms will need to rely more on formal finance. Therefore, we propose that

Hypothesis H6b: When firms located in regions with pro-entrepreneurship informal institutions use external finance, they are more likely to employ formal financing sources than informal financing sources.

A summary of the key arguments on each of the hypothesis is presented in Appendix Tables 4 and 5.

4 Data and methodology

4.1 Data

To explore the importance of entrepreneurs’ individual characteristics, firms’ organisational characteristics and the local contextual environments on small businesses’ financing strategy, this study employs the SME dataset published by the Central Institute for Economic Management (CIEM) of Vietnam. This dataset is a collaboration of CIEM with two other institutions, namely the Institute of Labour Science and Social Affairs (ILSSA) of Vietnam and the Development Economics Research Group (DERG) of Copenhagen University.

The SME survey has information on several operational aspects of small ventures (mostly household businesses) in Vietnam, including their production, sales structure, investment and employment. Besides covering venture information, the household characteristics of the owner-managers and their social network information are extensively surveyed. The first investigation was conducted in 2005, and since then, it has been carried out every 2 years. Approximately 2500 small businesses in 10 provinces across Vietnam are randomly selected to participate in the project. In this study, the authors employ the dataset over an 11-year period, from 2005 to 2015 (6 surveys in total). In cleaning the data, firms with no identification code and unmeaningful accounting information were dropped. Moreover, the outliers are

controlled for by censoring the top and bottom 1% of observations in each variable, leaving a final sample of 15,809 firm-year observations in the regression.

4.2 Variables and summary statistics

4.2.1 Dependent variables

The primary dependent variable is a set of firm financing decisions. We identify four mutually exclusive financing strategies using the following two questions in the survey: ‘Has your firm borrowed from banks or other formal credit institutions since the last survey?’ and ‘Has your firm borrowed from informal sources including private moneylenders, relatives and friends to owners, and other enterprises since the last survey?’ Firms that answer ‘no’ to both questions are coded 0, firms that use informal finance only are coded 1, firms that use formal finance only are coded 2 and firms that answer ‘yes’ to both questions are coded 3. As such, we have a categorical dependent variable with four potential outcomes. It is noteworthy that these four outcomes are mutually exclusive.

Table 1 presents the summary statistics for each category and the total sample. The mean statistics show that more than a third of the sampled firms use no external finance and another third use informal finance only. These statistics are consistent with previous findings (Nguyen 2019) that indicate that Vietnamese SMEs have limited access to bank loans. The *t* test also reveals that there is a significant difference in most characteristics between firms that use no external finance and firms that use no external finance (except for owner gender). Also, firms that use formal finance are largely different from firms that use informal finance, except from some characteristics of owner age, social networks and informal institutions (South variable).

4.2.2 Independent variables

As an exploratory study, we propose a set of variables that we expect to influence firm financing decisions. The variables are at three distinct levels: individual, organisational and contextual. According to the theoretical framework, the important determinants at the individual level are the entrepreneur’s cognitive financial constraints and social capital. We measure the degrees of cognitive financial constraints using two variables: the owner’s ethnic background and gender. These

individual-specific factors play an essential role in guiding individuals’ selection of cognitive patterns because they indicate the knowledge and experience of entrepreneurs, which may markedly influence their cognitive resources (Robert and Michael 2006). Specifically, *ethnic* is a categorical variable, which takes value 0 if an entrepreneur is Kinh ethnic (the major ethnic group in Vietnam), value 1 for Hoa ethnic (Chinese migrants—the second largest ethnic grouping) and value 2 for other minor ethnics. *Owner gender* is a dummy variable that takes value 0 for female and value 1 for male.

To measure social capital obtained from previous venturing experience, we use a *start-up experience* variable, which takes value 0 if the current business is the first venture and value 1 if it is not. In terms of social capital gained from the current venture, we count the number of people that an entrepreneur currently has regular contact with in the following four areas: (1) business people in the same sector; (2) business people in other sectors; (3) bank officials, including both formal and informal creditors; and (4) politicians and civil servants.³ Thus, *social network* is a count variable indicating the scope of social networking carried out by an entrepreneur.

From Table 1, we can observe some interesting patterns in the individual characteristics of the four groups of firms. In the formal group (firms that use formal finance only), the proportion of males is 67%, so higher than the other groups. In addition, it is also observed that entrepreneurs with wider social networks have recourse to both sources of financing and that entrepreneurs with higher personal wealth seem to opt for formal loans. These patterns set up an initial picture of the association between an entrepreneur’s personal background and the firm’s financing decisions.

The second level of analysis concerns organisational characteristics. There are two dimensions proposed in the theoretical framework: entrepreneurial orientation and organisational social capital. In terms of entrepreneurial orientation, we use two variables: export and innovation. *Export* is a dummy variable that takes value 1 if firms have exported since the last survey and value 0 if they have not. *Innovation* is positioned as a dummy variable, taking value 1 if firms introduced new products or improved their current offering or changed their

³ The survey identifies regular contacts as ‘people that you contact at least once every three months whom you find useful for your business operations.’

Table 1 Mean summary statistics

	No external	Informal	Formal	Both	Total	<i>t</i> test no external vs. external	<i>t</i> test formal vs. informal
Observations	5287	5241	1926	3355	15,809		
Percentage	33.44	33.15	12.18	21.23	100		
Ethnic	1.095	1.078	1.039	1.029	1.069	0.000	0.000
Owner gender	0.632	0.644	0.672	0.629	0.640	0.115	0.033
Owner age	47.063	45.486	45.045	43.874	45.649	0.000	0.108
Start-up experience	0.019	0.023	0.038	0.034	0.026	0.000	0.000
Social network	29.217	32.485	32.541	38.197	32.522	0.000	0.943
Personal wealth	2.311	2.345	2.576	2.613	2.415	0.000	0.000
Firm size	10.483	12.819	27.454	33.352	17.952	0.000	0.000
Asset structure	0.020	0.117	0.293	0.278	0.138	0.000	0.000
Export	0.037	0.047	0.096	0.110	0.062	0.000	0.000
Innovation	0.307	0.344	0.489	0.475	0.375	0.000	0.000
Association	0.257	0.138	0.424	0.233	0.234	0.000	0.000
Distance	87.753	112.981	102.834	107.097	101.866	0.000	0.009
Local governance quality	58.262	58.186	57.043	57.878	58.011	0.000	0.000
South	0.482	0.412	0.417	0.364	0.427	0.000	0.711

The statistics are provided for 15,809 firm-year observations from 2005 to 2015. The *t* test no external vs. external reports the *p* value of the *t* test between the group of firms that use no external finance and the group of all other firms. The *t* test formal vs. informal reports the *p* value of the *t* test between the group of firms that use informal finance and the group of firms that use formal finance. The data source is the SME dataset published by the Central Institute for Economic Management (CIEM) of Vietnam. Local governance quality dataset is obtained from the Province Competitiveness Index (PCI) of Vietnam

production process and value 0 if firms did not make any of these innovations over the last 2 years (i.e. since the last survey). Finally, we gauge organisational social capital using an *association* variable, which is a dummy with value 1 if firms are members of at least one local industry association and value 0 if they are not. As shown in Table 1, firms that export, innovate or hold memberships in local industry associations do use external finance, especially the formal source.

The third level in the theoretical model concerns contextual factors, including local governance quality and informal institutions. To measure local governance quality (i.e. law enforcement efficiency at the local level), we use the Provincial Competitiveness Index (PCI).⁴ This dataset indicates the governance quality

of a panel of 63 provinces. The quality is scored from 0 to 100, with higher scores reflecting better governance quality. Finally, to capture the differences in informal institutions (entrepreneurial values and norms of doing businesses), we created a *South* dummy variable, which takes value 0 if firms are located in North Vietnam (historically purely socialist) and value 1 if firms are located in South Vietnam (exposed to capitalism pre-1975).

The statistics show that firms operating in provinces with better governance quality (a higher PCI score) or are more entrepreneurship-friendly (i.e. based in South Vietnam) either do not use external finance or use informal debts only. A summary of the variable definitions is presented in Appendix Table 6.

4.2.3 Control variables

To be consistent with the previous studies, we include a set of covariates that jointly determine firm financing decisions. At the individual level, we control for *owner age*, which is a count variable indicating entrepreneurs' age. Younger entrepreneurs are more willing to take

⁴ Provincial Competitiveness Index (CPI) is a joint product of Vietnam Chamber of Commerce (VCCI) and the US Agency for International Development (USAID). The PCI index is calculated based on a survey of more than 17,000 domestic firms and 1700 foreign firms across provinces in Vietnam. The pilot study was conducted in 2005 on one-third of the total provinces of Vietnam (63 provinces in total). From 2006, the PCI index is available for all provinces and is updated annually. For more information: <http://eng.pcivietnam.org/>

risks than are their older counterparts (Sepulveda and Bonilla 2014). The reason for this is that older entrepreneurs have gained experience that leads them to be more cautious and less over-optimistic and inclines them to make decisions associated with a lower and stable risk; one such decision would be to eschew external finance in favour of making investments limited to the availability of internal funds. Also, we control for individuals' wealth using the survey question 'by how much do you estimate that your total household real income has changed since the last survey'. This item allows us to construct the *personal wealth* variable, which comprises six categories: (1) declined, (2) unchanged, (3) increased no more than 25%, (4) increased by 25–50%, (5) increased by 50–100% and (6) increased by more than 100%. Elston and Audretsch (2010) find that higher levels of owner wealth have a positive impact on the probability of obtaining loan financing for businesses thanks to the collateral effects. However, entrepreneurs with deep pockets may find external finance avoidable since they can fund their investments internally. As such, personal wealth may be associated with firm financing decisions in both positive and negative directions.

At the firm level, we measure the degrees of informational asymmetries using *firm size* variable, which is a natural log of the number of employees and *asset structure*, which is a ratio of fixed assets over total assets and is a proxy for the availability of collaterals. It is now well known that large firms are more likely than small firms to use bank loans (see Carreira and Silva (2010) for a review), and that firms with a greater number of fixed assets are more likely to be able to obtain bank loans (Du et al. 2015). Firm size (whether assessed in terms of revenues, total assets or the number of employees) and firm collaterals (fixed assets) serve as essential informational asymmetry reducers that can substantially moderate lenders' concerns about adverse selection and moral hazard. Table 1 shows that larger firms use both sources of financing while firms with collateral seem to opt for formal sources.

Finally, at the contextual level, to gauge the effects of geographical location on financing decisions, we use a *distance* variable, which specifies the distance from a province to the closest municipal cities (business and political centres). Yeung et al. (2017) evidently show that geographical exclusion (whereby bank loans are inaccessible due to branch closures) and condition exclusion (restrictive conditions attached to bank loans) may give rise to the proliferation of informal debt.

4.3 Specification and estimation

As the supply and demand factors simultaneously determine a firm's financing strategy, we follow the literature on firm financing decisions in proposing the following reduced-form equation:

$$\text{Financing decisions}_{igt} = \beta_0 + \beta_1 (\text{Individual factors}_{igt}) + \beta_2 (\text{Organisational factors}_{igt}) + \beta_3 (\text{Contextual factors}_{igt}) \quad (1)$$

$$v_i + v_j + v_i + \mu_{it} \quad (2)$$

where i denotes an individual business, g is the province and t is a year. Thus, (Financing decisions_{igt}) is one of the four observed financing outcomes of firm i in province g in year t . The term (Individual factors_{igt}) is a matrix of the entrepreneur's ethnicity, gender, age, start-up experience, social capital and personal wealth. Next, the term (Organisational factors_{igt}) is a matrix of firm-level characteristics, such as firm size, asset structure (collaterals), export, innovation and association memberships. The term (Contextual factors_{igt}) is a matrix of three variables: distance; governance quality of local governments and South (a proxy for pro-entrepreneurship culture).

The financing function also includes a time-specific component (v_t), accounting for macro-business-cycle effects, and an industry-specific component (v_j), which accounts for industry-specific business-cycle effects. These effects are controlled by the corresponding dummy variables. Firm-specific time-invariant characteristics are captured by v_i . This study controls for the unobserved heterogeneity of the dataset by estimating the equation using fixed-effects logit and multinomial logit technique. The fixed-effects logit and multinomial logit estimator allow us to examine the determinants of within-subject variability in the model of categorical dependent variables (Pffor 2014). Finally, μ_{it} is the idiosyncratic component of the error.

Our estimation strategy is as follows: First, we employ fixed-effects logit to distinguish firms that use external finance from firms that do not use external finance. We then employ the multinomial logit to compare firms using no external finance to firms that (1) use informal finance only, (2) use formal finance only and (3) use both formal and informal financing sources.

Second, we employ fixed-effects logit to distinguish firms that use formal finance only from firms that use informal finance only. We then employ the multinomial logit to compare firms using informal finance only to firms that (1) use no external finance, (2) use formal finance only and (3) use both formal and informal financing sources.

5 Results

Table 2 presents the empirical results. Column 1 reports the fixed-effects logit regression results of external financing (including firms that use either informal finance, formal finance or both sources) versus non-external financing—the benchmark. Columns 2–4 report the multinomial logit regression results with the unexposed group being the group of firms that use no external finance. Column 5 reports the fixed-effects logit regression results of two specific subsets of the sample, namely firms that use informal finance only—the benchmark—and firms that use only formal finance. Then, columns 6–8 report the multinomial logit regression results with the unexposed group being the group of firms that use informal finance. To facilitate the interpretation of the results, we report the relative-risk ratios and the odds ratios rather than the regression coefficients.⁵

5.1 Entrepreneurs' individual factors

The odds ratio associated with Hoa ethnic (Chinese migrants) in column 1 is smaller than 1 and statistically significant, indicating that entrepreneurs in this ethnic group are less likely to use external loans. Also, the odds ratio in column 5 is smaller than 1 and statistically significant. This indicates that where external finance is required, informal loans are preferred. This finding is in line with Nguyen-Viet and Imai (2018), who show that Chinese immigrants are a closely connected community. Indeed, compared to the Kinh ethnic group (the major group), Hoa ethnics (Chinese migrants) are approximately 50% more likely to use informal finance. Interestingly, we find no significant differences between Kinh ethnic and other minor ethnics.

Meanwhile, the odds ratio associated with the owner's gender in column 1 is greater than 1 and significant, signifying that male entrepreneurs are more likely to successfully gain access to external debts than their female counterparts. Specifically, male entrepreneurs are 10.2% more likely to seek external finance than their female peers, *ceteris paribus*. This finding is consistent with the literature on the gender gap which shows that females suffer from substantially higher social discrimination and difficulties when doing male-dominated jobs (e.g. entrepreneurship) (Joshi et al. 2015).

In general, the regression results show that an individual's ethnic background and gender may determine the financing decisions of his/her venture. Specifically, Hoa ethnic and female entrepreneurs are less likely to employ external finance. Also, where external finance is required, Hoa ethnic entrepreneurs are more likely to employ informal financing sources. As such, hypothesis H1a is supported to some extent (the risk ratios associated with minor ethnic in columns 1 and 5 are not significant) and hypothesis H1b is supported to some extent (the risk ratio associated with owner gender in column 5 is not significant).

Next, the risk ratio associated with start-up experience is greater than 1 and statistically significant in column 1, indicating that networks established in previous start-ups serve as useful facilitators to external debts. This social capital argument is re-confirmed by the significance of the social network variable in column 1. In general, the empirical findings suggest that social capital is relevant to gaining access to external finance. As such, hypothesis H2a is supported. It is also noteworthy that the effect of start-up experience (31%) is economically larger than the effect of social network participation (0.3%). However, we find no evidence showing that personal social capital influences the use of formal versus informal finance (the coefficients associated with start-up experience and social networks are insignificant in column 5). Therefore, hypothesis H2b is not supported.

5.2 Organisational factors

Turning to entrepreneurial orientation variables, while innovative firms (firms that introduce new products or deploy new production techniques) are more likely to use external debts, firms that export seem to opt for internal finance (being 30% less likely to seek external

⁵ In epidemiology, the risk ratio or relative risk is the ratio of the probability of an outcome in an exposed group to the probability of an outcome in an unexposed group.

Table 2 Regression results

	(1)	(2)		(3)		(4)		(5)	(6)		(7)	(8)
	Logit	Multinomial logit		Formal finance		Both sources		Logit	Multinomial logit		Formal	Both sources
	External vs. non-external	Informal finance	Formal finance	Formal finance	Both sources	Formal vs. informal	Non-external	Formal	Non-external	Formal	Both sources	
Hoa ethnic	0.858* (0.080)	1.125 (0.093)	0.548*** (0.083)	0.454*** (0.063)	0.515*** (0.080)	0.889 (0.074)	0.487*** (0.073)	0.403*** (0.055)				
Minor ethnic	1.009 (0.316)	1.118 (0.369)	0.932 (0.608)	0.672 (0.353)	0.905 (0.548)	0.895 (0.295)	0.834 (0.499)	0.602 (0.300)				
Owner gender	1.102** (0.052)	1.081* (0.049)	1.158** (0.075)	1.115* (0.064)	1.110 (0.073)	0.925* (0.042)	1.071 (0.067)	1.032 (0.054)				
Start-up experience	1.312* (0.193)	1.306* (0.193)	1.322 (0.236)	1.252 (0.220)	0.961 (0.186)	0.765* (0.113)	1.012 (0.175)	0.958 (0.151)				
Social network	1.003*** (0.001)	1.003*** (0.001)	1.001 (0.001)	1.004*** (0.001)	0.999 (0.001)	0.997*** (0.001)	0.998 (0.001)	1.001* (0.001)				
Export	0.763** (0.094)	0.772** (0.091)	0.900 (0.128)	0.686*** (0.089)	1.198 (0.157)	1.295** (0.153)	1.166 (0.142)	0.888 (0.094)				
Innovation	1.216*** (0.058)	1.152*** (0.056)	1.261*** (0.086)	1.262*** (0.075)	1.060 (0.074)	0.868*** (0.042)	1.094 (0.072)	1.095* (0.059)				
Association	0.944 (0.082)	0.802** (0.072)	1.284** (0.144)	1.070 (0.105)	1.662*** (0.168)	1.247** (0.112)	1.601*** (0.159)	1.334*** (0.109)				
Local governance	1.026*** (0.008)	1.041*** (0.009)	0.982* (0.010)	1.038*** (0.012)	0.951*** (0.011)	0.960*** (0.008)	0.943*** (0.010)	0.997 (0.011)				
South	0.588*** (0.037)	0.585*** (0.035)	0.850* (0.071)	0.497*** (0.039)	1.359*** (0.112)	1.710*** (0.101)	1.454*** (0.115)	0.849** (0.061)				
Owner age	0.986*** (0.002)	0.986*** (0.002)	0.992*** (0.003)	0.981*** (0.003)	1.007** (0.003)	1.014*** (0.002)	1.006** (0.003)	0.995** (0.002)				
Personal wealth	1.022 (0.021)	0.991 (0.021)	1.055* (0.031)	1.077*** (0.028)	1.075** (0.031)	1.009 (0.021)	1.064** (0.029)	1.087*** (0.025)				
Firm size	1.548*** (0.048)	1.321*** (0.039)	1.558*** (0.059)	2.057*** (0.069)	1.173*** (0.042)	0.757*** (0.022)	1.180*** (0.039)	1.558*** (0.041)				
Asset structure	2220.658*** (811.067)	503.886*** (186.015)	8844.332*** (3480.603)	17,860.028*** (6937.512)	14,445*** (2.148)	0.002*** (0.001)	17,552*** (2.779)	35,445*** (5.188)				
Distance	1.002*** (0.000)	1.002*** (0.000)	1.001*** (0.000)	1.002*** (0.000)	0.999*** (0.000)	0.998*** (0.000)	0.999*** (0.000)	1.000 (0.000)				
Constant	0.087*** (0.040)	0.029*** (0.015)	0.192*** (0.114)	0.003*** (0.002)	3.772** (2.435)	34,244*** (17.191)	6,578*** (4.038)	0.115*** (0.072)				
Log pseudo likelihood	-7527.1712	-16,480.803	-16,480.803	-16,480.803	-3350.2456	-16,480.803	-16,480.803	-16,480.803				
P_Chi ²	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000				
Pseudo-R ²	NA	0.206	0.206	0.206	NA	0.206	0.206	0.206				
Observations	15,809	15,809	15,809	15,809	7140	15,809	15,809	15,809				

The dependent variable in column 1 is a dummy variable that takes value 1 if firms use external finance and 0 otherwise. The dependent variable in columns 2–4 is a categorical variable of 4 outcomes: no external finance (unexposed group), informal finance only, formal finance only and both formal and informal finance. The dependent variable in column 5 is a dummy variable that takes value 1 if firms use formal finance and 0 for informal finance. The dependent variable in columns 2–4 is a categorical variable of 4 outcomes: no external finance, informal finance only (unexposed group), formal finance only and both formal and informal finance. The estimator in columns 1 and 5 is fixed-effects logit model. The estimator in columns 2–4 and 6–8 is fixed-effects multinomial model. A set of 6-year dummies and 2-digit industry dummies are included. Kinh ethnic is the benchmark for ethnic variables. Personal wealth is treated as a count variable for the sake of interpretation. Standard errors and test statistics are asymptotically robust to heteroskedasticity

*A 10% significant level
 **A 5% significant level
 ***A 1% significant level

finance than non-exporting firms). As such, hypothesis H3a is partially supported. This finding differs somewhat from our initial expectation that entrepreneurially oriented firms are regarded as riskier and are thus more likely to be financially constrained. The fact that innovative firms are 21.6% more likely to use external debts than non-innovative firms is a signal that firms with profitable business opportunities somehow successfully manage to obtain external funding for their investment projects. From the demand-side viewpoint, one explanation for this finding is probably that entrepreneurs are willing to reveal sensitive project information to lenders in an effort to reduce informational asymmetries if this is the only way of obtaining credit. From the supply-side viewpoint, despite suggestions to the contrary in the literature, lenders may not consider innovativeness to be a portent of risk and uncertainty. Indeed, lenders may view innovativeness as a potential channel for growth and thus see it as likely to secure borrowers' payment ability (Cleary et al. 2007).

Meanwhile, the odds ratios associated with export and innovation are insignificant in column 5. As such, hypothesis H3b is not supported.

The last dimension of organisational characteristics is industry association (organisational social capital). The odds ratio associated with the variable in column 1 is insignificant. As such, hypothesis H4a is not supported. However, the odds ratio associated with association variable in column 5 is statistically significant and greater than 1. Specifically, firms holding memberships in local industry associations are 66.2% more likely to seek formal finance. This finding thus supports the view that small businesses and new ventures are keen to leverage their memberships of industrial and political associations to gain access to scarce resources, such as bank loans (Zhou 2013). As such, hypothesis H4b is supported.

5.3 Contextual factors

Turning to the contextual determinants, the risk ratio associated with local governance quality in column 1 is greater than 1 and statistically significant. This result indicates that firms located in regions with strong governance quality are 2.6% more likely to seek external finance. As such, hypothesis H5a is supported. Also, the

risk ratio associated with the variable in column 5 is smaller than 1 and statistically significant, indicating that informal finance is more preferred in regions with strong governance quality. Therefore, hypothesis H5b is supported as well.

What surprises us is that the risk ratios associated with the South variable are smaller than one and statistically significant in column 1, indicating that firms in South Vietnam are almost 40% *less* likely to use external finance than are firms in North Vietnam. As such, hypothesis H6a is not supported. This finding, however, may reveal that informal institutions in the North may not be sufficiently friendly to entrepreneurship (e.g. there may be corruption practices) to persuade entrepreneurs that their private property is protected from appropriations (Nguyen 2019). Insecure property right protection thus reduces entrepreneurs' trust in government, leading to a situation whereby entrepreneurs are keen to make investments using external financing sources while redirecting their personal wealth to other safer channels (Cull and Xu 2005). As such, the low use rate of external finance in the South may indicate that entrepreneurs are more willing to reinvest their retained earnings than are their counterparts in the North, who may be keen to rely on non-equity finance to make investments.

Finally, the risk ratio associated with the South variable in column 5 is greater than 1 and statistically significant. This result indicates that when external finance is required, firms in the South are 35.9% more likely to seek formal finance than firms in the North. The finding implies that entrepreneurs in the South may prefer arm-length transactions instead of relationship-based transactions as in the North. Therefore, hypothesis H6b is supported.

The multinomial logit regression results presented in columns 2–4 and 6–8 are consistent with our key arguments and, in general, support the hypotheses. The results show that there is no substantial difference among the firms that use both formal and informal financing sources and the firms that use either one of the two sources. However, there are marked distinctions between firms that use no external finance and firms that do use external finance. Table 3 summarises the hypotheses in terms of their supported/unsupported empirical evidence.

5.4 Covariates

In terms of the control variables, the risk ratios associated with owner age are slightly smaller than 1 and significant in columns 1 and 5, indicating that older entrepreneurs are more risk-averse in the sense that they are less likely to seek external loans than are younger entrepreneurs. In particular, being 1 year older is associated with a decrease in the use of external finance of approximately 2%, and this is for both internal and external sources. This is aligned with previous findings that show that younger entrepreneurs are more optimistic and risk-tolerant than their older counterparts (Ulvenblad et al. 2013).

In contrast, the risk ratio associated with personal wealth is greater than 1 and significant in column 5, showing that wealthy entrepreneurs are more likely to opt for formal loans to increase their access to external finance. This finding, once again, reaffirms the importance of reducing informational asymmetries in obtaining bank loans.

In terms of organisational characteristics, informational asymmetry reducers, such as firm size and asset structure, are important keys that open the doors to both forms of external finance. It is noteworthy that the risk ratios associated with asset structure (a proxy of collaterals) are

economically much greater than the risk ratios associated with other factors. This finding therefore highlights the essential role of collaterals in gaining access to external loans.

Finally, the risk ratio associated with distance in column 5 is consistent with our expectation that firms in remote areas are more likely to use informal finance. However, the geographical difference in terms of economic size is not remarkable.

6 Discussion

In this paper, we aim to build a theoretical framework that explains the determinants of small firms' financing decisions. The determinants are classified by three levels: individual factors, organisational factors and contextual factors. Using this framework, we distinguish four types of firms: (1) firms that use no external finance, (2) firms that use informal finance only, (3) firms that use formal finance only and (4) firms that use both formal and informal finance. The theoretical framework is then empirically tested using a panel dataset of Vietnamese small businesses.

Findings in this study suggest that a firm's financing strategy depends on (1) who owns the firm, (2) what the firm has and (3) where it is located. In addition, the

Table 3 Summary of hypotheses

Hypothesis	Key argument	Empirical evidence
H1a	Minor ethnic and female entrepreneurs are less likely to employ external finance	Partially supported
H1b	Minor ethnic and female entrepreneurs, when employing external finance, are more likely to seek informal finance	Partially supported
H2a	Personal social capital is positively associated with the use of external finance	Supported
H2b	Personal social capital is positively associated with the use of informal finance	Not supported
H3a	EO is positively associated with the use of external finance	Partially supported
H3b	EO is positively associated with the use of informal finance	Not supported
H4a	Organisational capital is positively associated with the use of external finance	Not supported
H4b	Organisational capital is positively associated with the use of formal finance	Supported
H5a	Local governance quality is positively associated with the use of external finance	Supported
H5b	Local governance quality is positively associated with the use of informal finance	Supported
H6a	Pro-entrepreneurship institutions are positively associated with the use of external finance	Not supported
H6b	Pro-entrepreneurship institutions are positively associated with the use of formal finance	Supported

results show that there is no substantial difference among the firms that use both formal and informal financing sources and the firms that use either one of the two sources. However, there are marked distinctions between firms that use no external finance and firms that do use external finance and also between firms that use formal finance only and firms that use informal finance only.

Specifically, we suggest that the personal backgrounds of entrepreneurs (i.e. ethnicity and gender) and their social capital may determine how they finance their business ventures. Key findings reveal that entrepreneurs with backgrounds that are perceived to be inferior may suffer from a level of cognitive financial constraints that may increase their preference for financing their ventures via their own internal funds. This finding is consistent with the research on entrepreneur's cognitive styles, which refer to an individual's preferred way of gathering, processing and evaluating information related to creativity, problem-solving and decision-making (Dutta and Thornhill 2008; Hayes and Allinson 1998; Sadler-Smith et al. 2000). An individual's cognitive style tends to be consistent and could be represented as a function of the individual's personal background. As such, the findings that Hoa ethnic (Chinese migrants) and female entrepreneurs are less likely to use external finance could be regarded as evidence showing the relevance of demand-side financial constraints in decision-making, rather than the issues conventionally identified as informational asymmetries.

This study also highlights the importance of social capital in gaining external finance. Nguyen et al. (2006) show that in the absence of effective market institutions and business data, banks in Vietnam face considerable uncertainties (rather than risks) in lending to private businesses. Consequently, banks employ a combination of uncertainty avoidance and reliance on trust when lending to their business clients. Therefore, to obtain formal loans, it is important for small businesses to garner social capital from associating with banking officials (Du et al. 2015). Nonetheless, by highlighting the role of networking, we do not mean to downgrade the value of collaterals in reducing informational asymmetries. In fact, in the developing countries, collaterals play a larger role than in developed ones, which might be explained by higher levels of information asymmetry, a lower liquidation payoff or less banking market competition (Menkhoff et al. 2012). As such, over and above social

capital, collaterals are preferred by formal lenders probably because they are more cost-efficient in reducing informational asymmetries (i.e. there is no need for creditors to set up relationships with borrowers).

Concerning the association between entrepreneurial orientation (EO) and firm financing, this paper provides some new evidence that might expand our understanding of the financing strategies of innovative firms. Specifically, we find that entrepreneurially oriented companies can manage to obtain formal finance even though they might be considered riskier than their less entrepreneurially oriented counterparts (Wu et al. 2016). We suspect that the conventional assumption that creditors view EO firms as riskier than non-EO firms may not hold its validity in the developing countries. Indeed, banks may regard entrepreneurial orientation as a potential channel leading to growth, thus carrying the potential to secure the borrower's payment ability. Future research could explore this issue in more detail, identifying the potential mechanisms that grant innovative firms increased access to formal loans.

In addition, we note some interesting evidence on the impact of local governance quality (law enforcement efficiency) and informal institutions (norms and values of doing businesses) on firm financing. Improving local governance quality may push the local informal financial markets to operate in a transparent way so as to establish their legitimacy. As such, firms in provinces with better governance quality may find it relatively easy to access informal credit. In contrast, firms in regions endowed with pro-entrepreneurship values (i.e. they were once exposed to capitalism) are more likely to take on formal debt instead of relying on relationship-based finance.

This study makes contributions to the extant entrepreneurial finance literature in several ways. First, it moves forward from the conventional research question of 'what is the impact of informal finance on firm performance?' by proposing another angle of analysis of firm financing and asking 'how do firms that make different financing decisions differ?' While we broadly assume that small firms are forced to use informal loans because these are rationed by formal lenders, we do not have a full picture of the determinants of formal/informal financing decisions. As such, we aim to provide some insight into this issue by proposing a theoretical framework of three levels of determinants: individual, organisational and contextual. In addition, we also

argue that these factors may intertwine in both the demand and supply sides to shape a firm's formal/informal financing decisions. Some firms may *intentionally* opt for informal finance because it fits the demand of the firms' owners, organisational characteristics and local contextual situations. Informational asymmetries and market failures are only one side of the story. Our analysis is thus well aligned with Barslund and Tarp (2008) in arguing that the extent of credit market rationing may be less than is often assumed.

Second, this study shows that informal finance is not simply a manifestation of weaknesses in the formal financial system, but it is also a product of personal cognitive resources and local institutional and market interactions. Elston and Audretsch (2010) put forward the theory that country-specific institutional differences may impact on funding choices. We go further and suggest that sub-national (local) institutional arrangements may also play an essential role. This is particularly the case in developing countries, where the formal institutional frameworks remain inchoate and underdeveloped. In such a situation, local authorities have substantial room for reaching their own interpretations of central laws, some of which may be attached to rent-seeking behaviour (Nguyen et al. 2018). As Tsai (2004) puts it, even if the supply of official credit were sufficient, credit officers charged with the task of making loans often face local pressures and incentives for credit distributions that deviate from the original intentions of state authorities.

Because informal finance is a function of cognitions and institutions, the development and liberalisation of the formal element of the financing market do not mean that the informal sector will be reduced. This is in line with Steel et al. (1997) who observe that the expansion of demand and supply in the informal markets appears to be related more to the growth of real sector activities than to changes in financial policies. As such, even when the formal sector becomes perfect, the informal sector still has a role.

This study is of an important benefit for policymakers. Given that the informal financing section is a real choice for some businesses, more resources should be assigned to facilitating the performance and improving the efficiency of this sector. With that being said, findings in this study could act as initial indicators when designing policies/programs that seek to regulate

the informal credit sector, given that we now know who is more likely to be its clients, what types of businesses are more likely to use informal finance and where this type of financing is more popular.

Finally, this study is not without limitations that should be acknowledged, but they also provide potential avenues for future research. First, the generalisability of this study may be limited because the sample was restricted to Vietnamese SMEs that are exposed to Vietnamese political and institutional conditions, impacting on the generalisability of the findings. Future studies, therefore, should extend the proposed theoretical framework and re-test it in other contexts. Second, the dataset employed in this study is based on surveys, which may suffer from intrinsic response biases (e.g. sample selection biases, sample-dependent biases) (Wright 2015). Future research should thus re-test the validity of our findings using a larger dataset with longer survey periods. Finally, due to the limited information available in the SME survey, we are mostly restricted to the use of dummy variables in this study. As such, the relative importance of each financing source in the portfolio remains unknown. Future study might design questionnaires that capture the count values of the constructs used in this study, which would allow a deeper understanding of the determinants of firm formal/informal financing decisions.

7 Conclusion

This study investigates the determinants of small businesses' financing decisions. The determinants are classified by three levels: individual factors, organisational factors and contextual factors. Using this framework, we distinguish four types of firms: firms that use no external finance, firms that use informal finance only, firms that use formal finance only and firms that use both formal and informal finance. Findings in this study reveal that a firm's financing strategy depends on who owns the firm, what the firm has and where it is located. In this saying, the conventional method focusing on firm-level characteristics is insufficient to draw a complete picture of firm financing behaviours. As such, we suggest that scholars and policymakers should employ a holistic viewpoint when approaching the mechanisms through which small firms organise their financing sources.

Appendix

Table 4 Summary of hypotheses ‘a’ (whether to use external finance or not) by ‘need’ and by ‘capability’ arguments

Hypothesis	SMEs’ characteristics	Need	Capability
Individual level			
H1a	Minor ethnic and female entrepreneurs	Lower need	Lower capability
H2a	Personal social capital	NA	Higher capability
Organisational level			
H3a	Entrepreneurial orientation	Higher need	Higher capability
H4a	Organisational capital	NA	Higher capability
Contextual level			
H5a	Local governance quality	Higher need	NA
H6a	Pro-entrepreneurship institutions	Higher need	NA

Table 5 Summary of hypotheses ‘b’ (whether to formal or informal finance) by ‘need’ and by ‘capability’ arguments

Hypothesis	SMEs’ characteristics	Need	Capability
Individual level			
H1b	Minor ethnic and female entrepreneurs	Lower need of formal finance	Lower capability to obtain formal finance
H2b	Personal social capital	NA	Higher capability to obtain informal finance
Organisational level			
H3b	Entrepreneurial orientation	Higher need of informal finance	Higher capability of obtaining informal finance
H4b	Organisational capital	NA	Higher capability of obtaining formal finance
Contextual level			
H5b	Local governance quality	Higher need of informal finance	NA
H6b	Pro-entrepreneurship institutions	Higher need of formal finance	NA

Table 6 Variable definition

Variable	Definition
Ethnic	A categorical variable, which takes value 0 if Kinh ethnic (the largest ethnic in Vietnam), value 1 if Hoa ethnic (Chinese migrants—the second largest ethnic in Vietnam) and value 2 if other minor ethnics
Owner gender	A dummy variable, which takes value 0 for female and value 1 for male
Owner age	Age of the business owners
Start-up experience	A dummy variable, which takes value 0 if the current business is the first venture and value 1 if the current business is not the first
Social network	A count variable, indicating the number people that an entrepreneur currently has regular contact with in the following four areas: (1) business people in the same sector; (2) business people in other sectors; (3) bank officials, including both formal and informal creditors; and (4) politicians and civil servants
Personal wealth	A categorical variable, which takes value 1 if the personal wealth of the owner declined in the last 2 years (since the last survey), value 2 if unchanged, value 3 if increased no more than 25%, value 4 if increased by 25–50%, value 5 if increased by 50–100% and value 6 if owner’s personal wealth increased by more than 100%
Firm size	A continuous variable, which is the natural log of the number of employees
Asset structure	The ratio of fixed assets over total assets, a proxy for the availability of collaterals

Table 6 (continued)

Variable	Definition
Export	A dummy variable, which takes value 0 if firms did not export and value 1 if firms have exported since the last survey
Innovation	A dummy variable, which takes value 1 if firms introduced new products, improved current products or changed the production process and value 0 if firms did not make any of these innovations over the last 2 years
Association	A dummy variable with value 1 if firms are members of at least 1 local industry association and value 0 if they are not
Distance	A continuous variable which specifies the distance (km) from a province to the closest municipal city (business and political centres)
Local governance quality	The Provincial Competitiveness Index (PCI); the quality is scored from 0 to 100; the higher the score, the better the governance quality (law enforcement efficiency at the local level)
South	A dummy variable, which takes value 0 if firms are located in North Vietnam (historically purely socialist) and value 1 if firms are located in South Vietnam (exposed to capitalism pre-1975)

In the regression, for the sake of easy interpretation, the variable personal wealth is treated as a continuous variable in which the higher the value, the wealthier an entrepreneur is. The PCI dataset that is used to measure governance quality is obtained from <http://eng.pcivietnam.org/>

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