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The Impact of Social Capital on Financial Accessibility in Rural Vietnam

Master Thesis

by

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The study of the impact of social capital on economic outcomes is currently on the rise. Social capital is a multidimensional concept hard to grasp. This paper makes an attempt to comprise such range of dimensions and analyzes its impact in a potential channel for growth, financial development. Three rural based provinces of Vietnam are the places where this analysis takes upon. Vietnamese society is deeply embedded in Confucianism values, yet the entire country has undergone a series of socioeconomic reforms in the last decades which may be challenging such values. This paper finds evidence that these reforms have had a positive impact on financial development through the encouragement of one of these dimensions, group membership.

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1. Introduction

Despite being around for quite some time, social capital analysis is currently on the rise as a result of the potential links that it might have on explaining growth disparities. Many studies have set to the task of explaining non-regional, regional and within country growth differences as a result of social capital. Nevertheless, besides conceptual and measurement issues, the link to economic growth is so broad, that studies struggle to identify direct channels and tend to ignore the multifaceted condition of this type of capital.

One of the channels through which social capital may have an impact on the economy is on the development of the financial sector. This potential course of growth is still at an early stage in the literature and few studies have been conducted at the cross-country (Calderón, Chong, and Galindo, 2002; Law and Ibrahim, 2013) and country level (Guiso, Sapienza, and Zingales, 2004). Trust embedded within the community is one of the many dimensions that social capital acquires. Even though the efficiency of the institutional framework matters, financial contracts are fundamentally incomplete without a minimum degree of trust among agents. This is even more relevant in developing countries, where the institutional setting is absent or quite irrelevant. Furthermore, the formal financial sector in this type of countries is known to be limited and in turn, formal financial accessibility represents a challenge for households. Accessibility may also be conditioned by the lack of knowledge of the benefits that engaging into the formal financial sector might bring along. Thus, besides smoothing transactions, social capital's role is not limited to that, and might solve information barriers to further access into the financial sector.

Avoiding internal validity problems that cross-country studies often suffer from and attempting to capture all the dimensions of social capital, I simplify the channel through which growth might occur and try to assess the impact of social capital in financial accessibility in rural Vietnam. To do so, I analyze a panel data set representative of rural Vietnam between the years 2007 to 2017. Putnam (1995) describes the existence of two types of capital, *bonding* capital, which refers to the type which arises in tight and close networks, and *binding* capital, which refers to the one that arises in broader and heterogeneous networks. To grasp both types of social capital I consider three dimensions: *group membership*, *generalized trust* and *trust in the family*. In Vietnam, Confucianism values make the family a central pillar, yet the market oriented socioeconomic approach taken by the one-party state in the last decades have proved to be a threat to conventional values. These reforms have aimed to encourage the broadening of households' networks through an increase in general trust and group membership.

Furthermore, to measure formal financial accessibility I rely on four indicators: *credit rationing*, *informal borrowing*, *formal savings* and *stock market participation*. The particularities of Vietnam make for an interesting study. Due to the limited coverage of the formal sector, informal lending sources, mainly from the family and friends, are a common thing. The lack of reliability and the inflexible conditions of the informal sector undermine the development of the formal sector and prevent households to grow at their full potential. Broadening networks may guarantee higher accessibility to the formal financial sector, whereas smaller networks might discourage such behavior and foster the reliance on relatives for financial matters. Thus, the original expectations on my analysis were to find that *trust in the family* would have a negative impact in formal financial accessibility, whereas *group membership* and *generalized trust* would, in turn, encourage it.

Regarding the results obtained, no impact was found on the role of the family. The family figure seems to be diminishing in rural Vietnam and this has caused households to seek for alternative sources of lending. Surprisingly, knowing more people was found to increase the likelihood of households having outstanding informal loans by 5.24% , and also a decrease in the likelihood of having at least one formal bank account by 1.93%. The combination of a limited extension on the supply of the formal financial sector in the country and an increase in potential informal lenders seems to be offsetting the positive effects that *generalized trust* might have on financial accessibility. This contradicts previous findings on the positive effects of *generalized trust* (Knack and Keefer, 1997; Neira, Vázquez, and Portela, 2009; Zak and Knack, 2001). However, it supports Portes (1998) and Akçomak (2009) statements on the negative outcomes of social capital, which are often overlooked. On the other hand, *group membership* seems to increase financial accessibility and in turn financial development. Households where the head belongs to at least one group are 4.79% less likely to have outstanding loans with friends and family, 2.49% more likely to have at least one formal saving account and 1.9% more likely to participate in the stock market. These findings are supported by previous works assessing the impact of *group membership* in the financial sector (Newman, Tarp, and Khai, 2012; Vo, 2018). Furthermore, it lays the path for further research on the potential mechanism through which *group membership* may discourage *informal borrowing*. Encouraging group affiliation represents a potential channel through which households gain financial accessibility through the demand side. Yet, these efforts should be complemented by an improvement on the supply side of the formal sector.

2. Literature Review

This section will discuss in depth the concept of social capital, different definitions given by major authors, its tricky measurement and the selected definition for this study. Furthermore, the channels through which social capital has an impact on growth will be mentioned, among them, the one concerning the outcome of this thesis, the impact of social capital on financial accessibility.

2.1 Social Capital

2.1.1 Origin and Definition

During the last decades, there has been an increasing interest in non-economic explanations to economic phenomena that go beyond the neo-classical theories proposed by several authors (Domar, 1946; Harrod, 1939; Solow, 1956). One of these approaches considers the individual, not only an economic agent, but also to be embedded in different social environments characterized by certain norms and values (Akçomak, 2009). The fact that the community's features where the individual lived in started to be taken into account, gave birth to the concept of "social capital", firstly coined by Jacobs (1961) and Loury (1977). The later stated that an individual's social origin was a major determinant for his or her development (Loury, 1977). References to social capital in academic literature have been exponentially growing in the last 15 years (Claridge, 2004). Portes (1998), states that the involvement and participation of an individual within its social environment does not embody any idea really new to sociologists. Yet he argues that its recent notoriety has occurred as a result of its relation with economic outcomes (Portes, 1998). This new relation has often overlooked the concept's less attractive features, which will be expanded below, and has served policy makers as a source of power and as a non-economic solution to social problems.

Perhaps the most-well known and extensive works are the ones provided by Putnam (1993, 1995), Fukuyama (1995, 2001) and Coleman (1988). According to Claridge (2004), they are also responsible for the modernization and revival of the concept. Providing a definition is the first of many obstacles that one encounters when trying to study this form of capital, given its ample meaning. With its recent increase in popularity, Portes (1998) argues that the term has been applied to so many events and in so many different contexts as to lose any distinct meaning. Nevertheless, some satisfactory definitions have been provided by the main authors in the field. For instance, Putnam (1995) defines it as those shared actions, trust and social organization that collectively derive mutual benefit. Coleman (1994), considers social capital to be anything that facilitates individual or collective action, generated by networks or relationships, reciprocity, trust and social norms. Thus, in summary, it represents the social norms in the system and the interaction amongst individuals living in there, with the final purpose of benefiting both parties.

In an attempt to comprise the vast array of definitions, Akçomak (2009), establishes seven common elements at the micro and macro level. The first four elements at the microlevel: (*i*) social capital arises from social networks, (*ii*) utilizing the social network generates it, (*iii*) individuals can invest in it to obtain a return, and (*iv*) social capital may have a negative impact on outcomes as well. From the first two elements, it can be deduced that the existence of a social network, is deemed necessary but not sufficient (Akçomak, 2009). Besides the structure, two other factors are required for social capital to exist. Firstly, Lin, Burt, and Cook (2001), state that action from the individual is required, even though Coleman (1988) identifies it as contingent to social capital, without action social capital's existence is rather unperceivable. Portes (1998) further points out to the availability and quality of resources from individuals' associates as a second necessary element, which individuals can claim access to. Going back to the third level of the micro approach, it reflects, just as with any other type of capital, the fact that one can invest in it. (Portes, 1998).

Wrapping up the micro perspective, the last and fourth element, touches on the ignored side effects of social capital. For instance, Fukuyama (2001, p. 8) provides examples of organizations such as the Ku Klux Klan and the Mafia, which achieve cooperative ends on the basis of shared norms, yet they also produce abundant negative externalities for the larger society in which they are embedded. Moreover, Fukuyama (1995), in previous works, mentions the case of kinship groups, where solidarity and levels of trust within it are high, but not with people outside of it. According to Acemoglu, Reed, and Robinson (2013), social capital's negative impact could go as far as to perpetuate in power autocratic leaders. Satyanath, Voigtlaender, and Voth (2013) analyze the causes of the downfall of democracy in the interwar Germany, concluding that the existence of vibrant networks of clubs and associations undermined the democratic order. These findings, run in stark contrast with Putnam (1995)'s main message, which declared that the decline of social capital was threatening American democracy. Thus, the key takeaways from the micro lens is that both, structure and actions are required for social capital to arise and become visible, and investment increases its impact. Yet, due to its non-uniform condition, adverse effects are also a possibility.

Moving beyond the micro dimension, Akçomak (2009) identifies that certain definitions consider the term "collectivity", and that accessing the social capital from this group does not require any individual action, as it is assigned to the person once they are born in it. The norms, values and solidarity provided by the community, act as a sort of leasing which the individual is expected to return by behaving in a certain manner (Akçomak, 2009). For instance, Jacobs (1961) mentions the social capital created and accumulated within neighborhoods, which arises from social relations of the people living in there. Thus, Akçomak (2009) recognizes three elements at the macro level: (v) norms, values and solidarity are sources of social capital. Furthermore, (vi) trust in the community is a source as well, either through repeated interactions (*personalized trust*), or through knowledge common to all actors in the community (*generalized trust*). Lastly,(vii) regardless of its origin, it is based on social networks or associations. Both micro and macro elements are highly interchangeable and hard to disentangle and differentiate. There tends to be two opposing approaches in the literature. Those who take the micro approach (De Graaf and Flap, 1988; Portes, 1998), and regard the individual as the one in charge of mobilizing the resources inherent in the social network, and on the other hand, those who conceive this form of capital as a community asset that facilitates or hamper certain individual behavior for the well being of the individual itself or the community (Coleman, 1988; Knack and Keefer, 1997).

For the purpose of this thesis, despite focusing on households as the subject of study and their actions to gain financial accessibility, the approach taken certainly leans more towards the latter, since the explanatory variables considered fall within the definitions of the macro perspective. That is to say, associations, views towards society and views towards the family represent all sources of social capital. These factors consider the possibilities a community offers or lacks, and determine the household's behavior, which can be beneficial or detrimental for the household itself.

2.1.2 Conceptual Issues

In recent years social scientists have shown great interest in the potential link between social capital and economic performance (Calderón, Chong, and Galindo, 2002). However, explanations on how this concept transforms into growth have been problematic. The grassroots of this problem go beyond the definition issue and have to do with the uncertainty on whether social capital can enter into growth accounting measures just as the other forms of capital do. Many of the studies that have tried to link the impact of social capital on the economy have attempted to address the similarities between social capital and other forms of capital.

Robison, Schmid, and Siles (2002) analyze the properties of social capital and how comparable these are to those of physical capital, besides the investment component previously mentioned, they analyse the following features: transformation capacity, durability, flexibility, substitutability, decay, ability to create one capital form from another, opportunities for investment and alienability. On a similar note, Akçomak (2009) further provides a review of elements that characterize social capital relative to those of physical and human capital. This is not to say, however, that there is a general consensus on this view. Arrow (2000), Ostrom (2000), and Solow (2000) point out to some of the weaknesses of the analogy between physical capital and social capital. For instance, Ostrom (2000) argues that traditional models that capture changes in stock of physical capital give no insight on how to account for changes in social capital. Moreover, Sobel (2002) emphasizes that the efforts done by advocates of the concept are not persuasive enough and thus should avoid the use of it entirely.

Nevertheless, some of the features described by Robison, Schmid, and Siles (2002) and Akçomak (2009) are worth mentioning for the purpose of this study. First, social capital possesses the capacity, when combined with other inputs, to supply economic needs which would not be possible in its absence. This is referring to its transformative role, which allows to achieve certain outcomes with a lower cost (Coleman, 1994). Second, relationships with other people possess different degrees of durability, for instance, family ties may be an indestructible form of capital whereas those established with friends may be of limited duration (Robison, Schmid, and Siles, 2002). Furthermore, Akçomak (2009), classifies the durability of social capital to be more fragile than the other forms of capital as a result of residing in the relation and not on the nodes. Thus, for example, a relationship bond can be easily broken if one party terminates it. Just like with durability, social capital can be flexible or inflexible, for example, the relationship with a family member has many potential gains, whereas that with a neighbor may not result in such a range of advantages. Furthermore, substitutabitility and complementarity are two additional elements found in physical capital and that can be found in social capital. Lutz (1997) states that the trust embedded in friendships can substitute monitoring costs in a company. Besides, agents can compensate for the deficiencies in human or financial capital by establishing good relations (Neira, Vázquez, and Portela, 2009). Those two properties are important components of the objective of this thesis, since social capital's relation with the institutional framework and the degree of solvency of the latter will reveal social capital's role in determining financial accessibility.

On the other hand, Ostrom (2000) notes that contrary to physical capital, social capital appreciates with use. This is nonetheless a common property with human capital, since with repetition people can master certain skills (Akçomak, 2009). However, something that has a detrimental effect for both, human and physical capital, the passage of time, also has a toll on social capital (Robison, Schmid, and Siles, 2002). An individual changing neighborhoods may preserve some of its previous relationships yet the lack of face to face contact erodes this link and can lead to the loss of potential benefits from that community. The ability for social capital to create more of it or of other forms of capital is also a property that cannot be overlooked. The foundation of an organization based on social ties and the addition of new members not only creates additional capital, but also might increase the human capital of its members. Narayan and Pritchett (2000) argue that social capital exerts a positive impact on human capital by increasing education. Lastly, networks established by parents can be transferred to their offspring and thus, social capital can be inherited, even though it rests upon them to preserve it. This is supported by Arrow (2000), who uses the word alienable to refer to the transfer of social capital from one people to the other. Sobel (2002) identifies transferability properties to be limited to a certain extent, a shop owner may change but the new owner may easily lose costumers if the he/she lacks the skills to keep them.

In summary, when considering social capital as the social relationships established within a community, many of its properties match those of the other forms of capital (Robison, Schmid, and Siles, 2002). Regardless of the social capital measurement chosen, complementarity and substitutability are of major importance if social capital turns out to have an impact on financial accessibility. This significance would only be more remarkable for the particular circumstances of Vietnam, which will be unfolded on the following section. To a lesser extent, some of the rest of the properties of social capital can be also identified on this link. For instance, the availability of financial products is well known to have a positive impact on living standards, bringing out to the surface the transformative role of the concept. Furthermore, durability and transferability properties of the ties between a bank teller and a costumer can also be observed, i.e. when the costumer withdraws the money from that bank account or when the customer's son inherits his/her financial assets.

2.1.3 Measurements

Putnam, Leonardi, and Nanetti (1993)'s analysis on Italy was a milestone in the literature of social capital impact on economic growth. According to Sabatini (2006), after this publication, the economics research has produced a considerable amount of papers investigating the relationship between different aspects of the multidimensional concept of social capital and economic growth. The underlying mechanisms through which social capital can foster growth are many and some of them have been previously mentioned when describing its properties. However, it is important to make a distinction between the different measures the literature contemplates. Depending on the dimension selected for social capital selected, different channels are identified. Narayan and Pritchett (1999) identifies three dimensions that the literature tends to use for social capital: the degree of trust, voluntary membership in associations and social norms.

On the one hand, those works that select trust as the main social capital indicator, tend to follow the advantages that were once enumerated by Fukuyama (1995). The role of social capital as a complement and substitute is manifested through the trust measurement. According to Fukuyama (1995), trust acts as a complement for traditional factor endowments, such as labor and capital. Secondly, the fact that high trust societies can function with fewer regulations and enforcement mechanisms makes trust itself a substitute for contracts. This in turn, increases efficiency and reduces transaction costs (Hardin et al., 1982). This is not to say, however, that high trust societies and an efficient functioning institutional framework are mutually exclusive. When the institutional system operates properly, then the role of trust should be seen in the light of the facilitation of complex transactions (Fukuyama, 1995). Moreover, Granovetter (1985), stresses the role of trust as a discouragement for opportunistic behavior. This opportunistic behavior is also known as the principal-agent problem. Moe (1984) cites the principal-agent problem mitigation as another direct effect of high trust societies. In low trust societies, the agent, the one receiving the good or service, may have an incentive to shirk unless the principal, the lender, is willing to incur high supervision costs. Repeated interactions among agents increase the opportunity cost of deceiving and makes the agent's behavior more foreseeable (Sabatini, 2006). Thus, in high trust societies, principal agent problems are expected to be less acute (Moe, 1984). To sum up, regarding trust role in economic performance, Arrow (1972), suggests that it can be plausibly argued that much of the economic backwardness in the world can be explained by the lack of mutual confidence. In the literature this variable usually includes different types of trust or confidence, ranging from confidence in members of the family, neighbors, the people of one's country, etc (Sobel, 2002). However, a distinction is necessary regarding the scope of people that trust is referring to since effects may not always be positive. According to Fukuyama (1995), low levels of *generalized trust* may in turn be associated higher levels of trust within subgroups, i. e. family and friends. Thus, it could be argued that these two measurements of trust are inversely related and this paper will make a distinction between these two types of measurements.

On the other hand,the second commonly included variable is one that measures the participation in different associations in an attempt to measure the social integration of the members of the community being analysed (Neira, Vázquez, and Portela, 2009). However, concerning the link of this variable to economic growth, it is less straightforward than with trust (Bertrand, Luttmer, and Mullainathan, 2000). Putnam, Leonardi, and Nanetti (1993) are perhaps the biggest advocates of this connection, arguing that network relationships improve the efficiency of society by facilitating coordinated actions. This is produced through a spillover from memberships in organisations to the cooperative values and norms that citizens develop and is, logically, more pronounced in areas where there are stronger, dense, horizontal, and more cross-cutting networks. Well-established networks translate into a more successful government and a more efficient economy (Beugelsdijk and Van Schaik, 2005). Skills of cooperation and a shared responsibility for collective endeavors are values inculcated by civic organizations Putnam, Leonardi, and Nanetti (1993). The relationship between membership and trust is very high and some of the effects of associations may be due to trust and vice versa. For instance, social networks allow trust to become transitive and spread, and trust itself lubricates cooperation (Bala and Goyal, 2001). According to Putnam (1995), people who tend to trust others are as well more engaged in civic life and build more social capital than the people who mistrust. Membership becomes then, a mandatory indicator to be considered for social capital.

Putnam (1995) makes a distinction between *bonding* and *bridging* social capital. *Bonding* refers to the within group ties, composed normally by families and friends. When these ties extend beyond the group boundaries and reach other groups and communities, they are considered to be *bridging*. Thus, the networks broaden and become much more heterogeneous. The level of *generalised trust* and *group membership* of a household represent an extended network characterised and thus, the ties possessed, can be classified as *binding*. This not to say that high levels of trust of families and friends imply reduced networks and a social capital more characterised by its *bonding* properties. Yet, if we follow Fukuyama (1995)'s statements, a move into that direction should be expected.

Lastly, in an attempt to comprise all features in a society that can be considered social capital, several studies have constructed a broad index of social capital. For instance, Putnam (1995) constructed an index of social capital in the US that took into account trust, volunteerism and community organizational life. Being more ambitious, Lee, Jeong, and Chae (2011) constructed a social capital index for South East Asia consisting of 44 variables. Sabatini (2009) went beyond that, and created an indicator which consisted of 200 variables representing important dimensions of social capital. Nevertheless, concerning financial accessibility,this analysis will consider the three elements separately and see whether they complement each other or on the contrary, act as counter forces.

2.2 Link to Growth

Considering all of the aforementioned advantages at an aggregate level, a credible explanation for growth differentials among regions with similar endowments could be provided. The social capital idea had been identified as a cause to explain the growth delay of post-communist countries in transition to a market economy and to assess the underdevelopment of third world's rural and urban areas (Sabatini, 2006). On their groundbreaking study, Putnam, Leonardi, and Nanetti (1993), find a positive and significant correlation between social capital and local institutions' performance in the North relative to the South. In a following study, Helliwell and Putnam (1995), observe an effect on the economic performance and an effect in the long-run process of economic growth in Italian regions. Other notorious works done at the country level are the ones by Alesina and La Ferrara (2000, 2002) who compare U.S localities. The biggest contribution they bring to the table is that racial and ethnic polarization as well as income inequality are inversely related to community participation. Thus, besides linking it to economic outcomes, they provide a new channel through which social capital is determined.

Regarding the magnitude of the effect, Whiteley (2000), finds a positive and significant impact of social capital, measured in terms of interpersonal trust on growth, at least as strong as that of human capital. Furthermore, Knack and Keefer (1997), find that trust and civic norms have a strong impact on economic performance. They argue that the trust and growth link is relatively large in poor countries as a result of the backwardness of financial sectors, property rights and contract enforcement. Providing a different approach to economic development, La Porta et al. (1997b), uses the revenue of the 20 largest firms as a proportion of GDP. The key take away of this study is that revenues are positively related with generalized trust, but negatively related with trust in the family. This results support Fukuyama (1995)'s statements that family strength is detrimental for the for the growth of a country. Revisiting the works of Knack and Keefer (1997), Zak and Knack (2001) increase the original sample and their results, are on par with the statements made by Hardin et al. (1982) and the results observed by Alesina and La Ferrara (2000, 2002). They corroborate the former because they find that trust is higher in nations with more efficient formal institutions for enforcing contracts, while they support the latter by showing that more heterogeneous populations score lower on trust. Lastly, a robustness check is provided for Knack and Keefer (1997)'s and Zak and Knack (2001)'s work by Beugelsdijk, De Groot, and Van Schaik (2004). Robustness is found on the latter paper, which they attribute to the inclusion of 12 mostly less developed countries. They conclude that despite data limitations which may lead to contradictory outcomes, the effect of trust matters for explaining variation in economic performance (Beugelsdijk, De Groot, and Van Schaik, 2004).

Some other studies, despite focusing on cross country analysis, narrow it down to a particular region. It is worth noting the advantages of using a similar region when analysing social capital for a couple of reasons. Firstly, according to Temple (1999), countries' heterogeneity in terms of social, political and institutional characteristics is somehow reduced if studies are conducted within a region. Secondly, besides heterogeneity in general terms, regarding social capital measurements, countries may differ in terms of relevant proxies for social capital and some of these might be unrelated with one another, as it was found in Knack and Keefer (1997)'s study (Holm and Danielson, 2005). At a regional level, Neira, Vázquez, and Portela (2009) make an attempt to explain GDP differences across countries in Europe. The results reveal that social capital does account for per capita differences, however, the magnitude is lower than for the other types of capital though (Neira, Vázquez, and Portela, 2009). Beugelsdijk and Van Schaik (2005), with a bigger sample, find that active membership is correlated with economic growth and trust is not. Regarding the results on active membership, this contests Putnam (1993)'s generalization on social networks, what matters is the active involvement in them and not their mere existence (Beugelsdijk and Van Schaik, 2005). Moving away from Europe and concerning the region where the country being analysed on this thesis is located, Helliwell (1996) focuses on South Asian countries growth disparities. He argues that part of the of the development differences may lie in a tighter and more robust set of social institutions than those found elsewhere in the modern world (Helliwell, 1996).

Regional and non-regional cross country studies have proved that there is an important component of growth that can be attributed to social capital. However, this sort of analyses face the usual weaknesses of internal validity, overlooking particular countries' nuances that may have a considerable effect. Social capital proxies measurement may differ across countries and a more accurate variable may not overcome this obstacle. For instance, Beugelsdijk and Van Schaik (2005) argues that hunting associations may not be deemed important in the Netherlands whereas in Finland they are. What's more, active membership was shown to be crucial in Beugelsdijk and Van Schaik (2005)'s results whereas in the rest of the papers analysed here considering cross country memberships this is often overlooked. On the other hand, the usage of trust also has its disadvantages. According to Sabatini (2006), this variable is often built by aggregating individual perceptions which reflect the position they occupy within the social structure. This sole process causes the loss of the linkage with the social and historical circumstances where social capital is located (Sabatini, 2006). Fine (2001) states that if trust happens to be context-dependent, and context itself is highly variable any generalisation makes social capital impact rather illegitimate. Thus, by focusing on a single country, this project aims to mitigate the heterogeneity and the lack of context that cross-country bring along. Given that there is no social capital proxy without weaknesses, combined with the multifaceted condition of the concept, selecting multiple dimensions reinforces the model's robustness and allows to capture different effects.

2.3 Financial Channel

Even though the effects of social capital on the economy as a whole are a preferred channel to analyze, this may be too broad and some authors have opted to refine and narrow the causality channel. Akçomak (2009) argues that the idea that social capital improves economic outcomes is appealing, yet it would rather be much clearer if a particular channel was identified through which social capital improves, indirectly, economic outcomes. This has led many authors to test the impact of social capital on alternative variables which in turn have a direct effect on the economy, thus, attributing an indirect effect of social capital instead of the previously discussed direct effect. Some of the alternative links focus on the impact of social capital on innovation (Akçomak, 2009; Barrutia, 2010; Tura and Harmaakorpi, 2005), crime (Land, McCall, and Cohen, 1990; Williams and Sickles, 2002), human capital (Coleman, 1988) and financial development (Calderón, Chong, and Galindo, 2002; Guiso, Sapienza, and Zingales, 2004).

In the last decades, there appears to be a consensus that financial development has a positive influence on economic growth. (Levine, Loayza, and Beck, 2000). According to Calderón, Chong, and Galindo (2002), despite being a very intuitive relationship the literature has been rather silent about it. Furthermore, Sterken, Garretsen, and Lensink (2004) point out that when analysing financial development a lot of attention has been payed to the institutional setting, whereas social norms are often neglected. For this section an in-depth analysis will be given to previous works on the role of social capital on financial development. It is well established that financial development fosters economic development, thus, to what extent social capital contributes to this channel of growth? This section will analyse those works providing a cross-country approach and then, as will be done on this project, those making assessments at the country level.

Calderón, Chong, and Galindo (2002) state that there is a possibility that in the absence of a solid institutional framework social trust may step in and smooth transactions, an idea which goes in line with the results obtained by Knack and Keefer (1997). For instance, trust may play a crucial role in determining the development of the financial sector (Calderón, Chong, and Galindo, 2002). One of the most comprehensive papers covering this channel is the one by Guiso, Sapienza, and Zingales (2004). Their main argument is that since financial contracts are the ultimate trust-intensive contracts, social capital should have major effects on the development of financial markets (Guiso, Sapienza, and Zingales, 2004).

The exchange of money embedded within financial contracts depends not only on the legal enforce-ability of contracts, but also on the extent to which the lender trusts the borrower. Returning to the principal agent problem, regarding finances, opportunistic behavior is avoided through the establishment of additional clauses. In this case, opportunistic behavior occurs in the form of the debtor deceiving from what has been agreed upon by failing to meet payments. The clauses often require the financee some form of collateral (Calderón, Chong, and Galindo, 2002). Efficiency of the legal framework, i.e. repossession of the collateral in case of dispute, will determine the validity of these clauses. Yet, even in a scenario where the rule of law holds, Calderón, Chong, and Galindo (2002) state that financial contracts are intrinsically incomplete and trust will be a key determinant for market development. This follows Fukuyama (1995)'s statements regarding social capital's role as a facilitator during complex transactions, even in the case of a proper functioning system. According to this reasoning, the properties of social capital, more concretely, substitutability and complementarity, come to the surface.

In a situation in which the contract enforcement was inefficient or simply was not there, social capital would act as replacement. As a matter of fact, La Porta et al. (1997a) suggest that it might be that trust substitutes for legal institutions. On the other hand, if, as previously mentioned, social capital were to act as a facilitator, it would serve as a complement for the existing system. The existing literature on this topic, thus, try to control for the system's quality somehow. Guiso, Sapienza, and Zingales (2004) refers to this as "environmental variables". This allows to assess not only whether social capital is determinant or not, but also the actual weight that it plays in society. Another issue concerning this relationship is the potential endogeneity of the explanatory variable at hand, threatening the possible causality channel. When testing for the impact of social capital on the economy, Knack and Keefer (1997) are the first ones that try to deal with the problem by econometric means. They do so by instrumenting trust with a variable which considers the country's largest group based in terms of ethnicity and language. Theoretically this makes sense, as Alesina and La Ferrara (2000, 2002) did find trust to be related with a place's level of ethnic fragmentation. The threat to exogeneity of the independent variable can be translated to the financial development link, for both variables, trust and membership. A more developed financial system may improve the trust of the agents and also encourage membership in associations since it gives the possibility to organize more events that could be funded by financial contracts (Calderón, Chong, and Galindo, 2002). Just as with the "environmental variables", authors exploring this link address endogeneity with relative success.

2.3.1 Empirical Evidence in the Financial Literature

Moving onto cross country analysis, most of the studies that will be mentioned below use data from the World Value Survey (WVS). With the aim of being nationally representative, WVS surveys include approximately 1000 respondents by waves of roughly five years in several countries around the globe (Sabatini, 2006). The downside of these surveys is that they tend to be over-represented by urban areas and better educated persons (Inglehart, 1994). Calderón, Chong, and Galindo (2002), from 1980 to 1994, for a cross section of countries, analyze the link between trust and a broad range of financial structure and development measures, showing that trust is correlated with financial depth and efficiency as well as with stock market development. Calderón, Chong, and Galindo (2002) expect trust to be positively related with indicators of the size and activity of the financial sector and negatively linked with measures of its inefficiency. Thus, a small financial market would be determined by mistrust from depositors to banks and from banks to borrowers. On the other hand, they measure the efficiency of the sector by the interest margins. Angbazo (1997) has proved that an increase in risks is partially transferred to deposit suppliers and credit users in the form of higher net interest margins, which allows Calderón, Chong, and Galindo (2002) to propose that places with lower trust will have higher interest margins.

Trust proves to be significant and positive for size, activity and efficiency of the financial market. In order to see what is the relation between trust and rule of law, they include an interaction of both on the regression model. The results reveal that the importance of social capital is diminished in countries with a higher rule of law (Calderón, Chong, and Galindo, 2002). To combat endogeneity, they adopt Knack and Keefer (1997)'s ethnolinguistic approach as well as the number of telephones per capita. The latter idea is taken from Collier et al. (2000), who argues that the number of telephones and radios per citizen diminished the costs of social interaction. Despite getting results on the same direction, no significance is achieved. On a similar note, Sterken, Garretsen, and Lensink (2004), on their study on the role of social norms in explaining differences of financial development in 43 countries, they find the impact of social norms to be on par with legal institutions. However, out of the two measures they use for financial development, stock market capitalization and bank credit, social capital's impact is solely significant for the former (Sterken, Garretsen, and Lensink, 2004). Contrary to these findings, Law and Ibrahim (2013), with similar financial indicators and borrowing from the social capital index constructed by Lee, Jeong, and Chae (2011), find the impact of social capital to be relatively weak and stress its role as a complementary force.

Moving onto country-specific cases,Yahyazadehfar, Tehranchian, and Hami (2014), using the number of annual judicial cases per thousand individuals as an inverse indicator for trust in Iran, between 1983 to 2012, show that the decrease of social capital has a deteriorating effect on the financial sector. Hong, Kubik, and Stein (2001), find that, in the United States, people who know their neighbors have higher stock market participation rates. Many of the ideas on that paper are borrowed from Guiso, Sapienza, and Zingales (2004)'s work. Similar to Putnam (1995)'s research, they explore and exploit the differences between the North-South Italian regions and end up finding evidence which supports the hypothesis that trust and financial development are highly correlated. To measure social capital, they use electoral participation and per capita blood donations. Meanwhile, to measure financial development they select a variety of household's financial choices: use of checks, portfolio allocation, availability of loans and reliance on informal lending (Guiso, Sapienza, and Zingales, 2004). Households located in high trust regions are found to invest a higher portion of their wealth in stocks, more likely to use personal checks and to obtain credit when they demand it. On the other hand, they are less likely to borrow from friends and relatives the higher the social trust in the area, which supports Fukuyama (1995)'s claims that low social capital areas are often characterized by more frequent reliance on transactions with narrower groups composed of family and friends. Furthermore, after observing the importance of social capital in determining the development of the sector, they find that social capital's role is bigger in those areas where judicial efficiency is lower, making the case that it goes from a complementary to a substitute role. In order to assert causality, the authors instrument one social capital variable on the other, obtaining higher results in terms of magnitude. Their main reasoning relies on the fact that both variables, referendum voter turn-out rate and blood donations, are voluntary actions not contingent on any other factor (Guiso, Sapienza, and Zingales, 2004).

At the household level, Grootaert (1999) finds a relation between participation in local organizations and an increase in the likelihood of having savings, assets and credit accessibility in Indonesia. Some of the indicators selected for my own model were inspired by the works described in this section. Among them, financial assets ownership, which Hong, Kubik, and Stein (2001) and Guiso, Sapienza, and Zingales (2004) consider in their own analysis, as well as informal lending and credit rationing, also covered in Guiso, Sapienza, and Zingales (2004)'s and Grootaert (1999)'s study. The rest of the variables used are borrowed from ideas obtained from Vietnam-specific studies, which will be presented in the following section.

3. Context

Rural Vietnam has been chosen as the case study. The fact that it falls within the category of "developing country", and that rural areas are where the study is conducted, sets the perfect conditions for social capital to play a major role in everyday transactions. It remains to be seen whether this is also applied to the financial sector as well. A brief background will be provided in order to understand the country's current situation.

The country has experienced substantial social, economic and political changes attributed to two wars, which roughly lasted a decade each, and the country's reunification (Turner and An Nguyen, 2005). This reintegration brought along the implementation of the communist system in the South, and with it the agricultural sector was organized into state farms and collectives (Ronnas and Sjöberg, 1991). However, Irvin (1995) argues that the combination of several factors such as the American embargo, conflicts with Cambodia and a deterioration of the relations with the Soviet Union led to a series of macroeconomic imbalances which forced a reconsideration of the state-planning approach. As a result, in 1986, a renovation process followed by the deployment of a package of reforms under the name of *doi moi*. These reforms aimed at promoting socioeconomic development and closer integration with the rest of the world by moving away from a central control towards a market economy with the neoliberal measures that this implied. It is important to analyze the impact that these reforms had on the two elements in rural Vietnam elements essential for the analysis at hand: social capital and the financial sector.

In spite of a slow start, a decade after the implementation, reforms started to be felt, and the rural areas went from monocrops to multicrops, from purely agricultural occupations to more diversified ones, from a substitution of quantitative targets for qualitative ones and from self-subsistence production to one of cash crop and commodity production (Boothroyd and Nam, 2000). More significantly, successive land reforms in the years 1988 and 1992 granted land titles to the farmers and regulated the rights associated with those titles (Ravallion and Walle, 2006).However, these provision of collaterals was not as effective since no financial reforms occurred of such magnitude. According to Boothroyd and Nam (2000), one of the causes attributed to the the sluggish transformation rate was already attributed to the capital constraints that villagers faced. Furthermore, by 1993, Boothroyd and Nam (2000)'s investigation concluded that 70 to 90 % of all investigated households were poor as a result of insufficient funds. More concrete sources regarding poverty, established that 60 percent of the population lived under the 1 dollar per day poverty line (Vietnam and Vietnam, 1998). To counter this, agricultural banks were funded to increase the availability of loans to peasants, yet these measures partially failed as banks profits were diminished and the provision of loans to the most vulnerable was, in turn, drastically reduced. The lack of funding in rural areas proves to be a major constraint and remains up to this day. Despite funds' shortage, Vietnam is considered to be a "miracle" economy averaging GDP growth rates of 7% since 1990 without notorious increases in inequality Lopez Jerez (2014). What's more, by 2006, the percentage of the population living with less than 1 dollar had been drastically reduced to 16%.

During the 90s, agricultural production was a major pillar of the country's economy, 80% of the population who lived in rural areas relied on agriculture for their main source of income (Bao Duong and Izumida, 2002). Even though rural areas have undergone diversification in terms of crops and sectors, more than half of the population still lives off their agricultural output Bao Duong and Izumida (2002). Thus, the country remains mainly rural. The following section will explore the country's levels of social capital according to the three measures selected for this analysis: *group membership, generalized trust and trust in the family.* Given the fact that the country remains a one-party state but has been experiencing socioeconomic reforms for the last decades, it could be expected for social capital to have evolved. However, considering Confucian values that are common for societies in the region, may make original social capital levels resilient to change.

3.1 Social Capital in the Country

Despite the fact that the number of papers on the link between social capital and economic growth keep growing, literature on the evolution and the current stage of social capital in Vietnam remains rather unexplored. Notwithstanding, there are a number of works which partially cover important aspects regarding social capital at the macro and micro level.

For instance, Dalton et al. (2002), using findings from the 2001 WVS wave, analyses the networks, association membership and trust for the whole country. Firstly, regarding networks, Dalton et al. (2002) observe that family remains a focal point. As expected in Confucian societies, family is the basis of economic organization in an agrarian economy, and the position of the father and the parents is reinforced by cultural traditions (Van Bich, 2013). What's more, relatives' importance has proved to be resistant to the major changes the country has undergone. When the results are compared to other countries in the region, Vietnam stands out since the gap between family networks and broader networks is greater than anywhere else (Dalton et al., 2002). In addition, friend networks are relatively less important. Dalton et al. (2002) also find that within the country, the North-South division is also remarkable, being the Northern people more likely to engage in family or friendship network activities than their Southern neighbors. Narrower networks seem to be prioritized in the country, even though there is some evidence that younger generations may be extending their networks, (Dalton et al., 2002) acknowledge that social modernization in the country remains at an early stage. These results ought to be taken with caution as more than two decades have passed since then. An update on the evolution of these networks will follow in the result's section. However, on a more recent study about Vietnamese society done Shimane (2013), it was found that individuals still depended massively on their close relationships.

On the other hand, regarding group membership there are contradictory views on its trends. Before introducing the results obtained by Dalton et al. (2002), the history of civil society in the country is worth mentioning. Civil society refers to the arena outside the family, the state and the market, where people associate to advance common interests (Nørlund, 2007). There are some contradictory views regarding its trends. The piecemeal market reforms under *doi moi*, which went beyond the market sphere (Nørlund, 2007), revitalized groups and associations, which in turn, gave rise to civil society in the country (Thayer, 1992). There was a proliferating number of organizations and associations since the early 90s (Thayer, 1992). By 2005, there were 320 national associations operating at the national level and 2150 associations at provincial and municipal level (Bui, 2013, p. 80). These organizations challenged and survived the power of the party state, which had until then clamped them down (Bui, 2013). However, Womack (2019), providing a comparison with social activity in Eastern Europe, maintains that such organizations are not as autonomous and assertive. Bui (2013) reinforces this idea, by stating that the state exerts influence over these associations through different means.

Regardless of the autonomy of these organisations, its mere existence and rising popularity go to show that membership in associations has become a usual thing in the country. Dalton et al. (2002) confirm this, by stating from the WVS 2001 results that Vietnamese population is engaged in an active social life, with the typical respondent belonging to 2.33 groups, higher in relative terms than the rest of the countries of the region. This is not say, that all are active members. Dalton et al. (2002) point out that, just as with the rest of the countries in South East Asia, it is common for only 10% of the individuals in the sample the sample that belong to at least one group group to be really involved in the organization's activities. Lastly, membership is more common among better educated individuals (Dalton et al., 2002).

Given the tight small networks that citizens keep, one should expect trust to be high only among relatives and friends. Among the characteristics of Confucianism, with regard to trust, it encourages caution with strangers (Dalton et al., 2002). Besides *doi moi*, it is important to take also into account the role of communism, which is uncertain as previous analyses in Eastern European regions show no clear pattern on trust directions as a result of the high heterogeneity (Inglehart, 1997). According to Dalton et al. (2002), in the 2001, 41% of the Vietnamese said that most people could be trusted which was on par with countries in the region, and was relatively high with countries on the same stage of economic development. Northern provinces not only are more engaged in family and friend activities, but also they tend to trust more than their southern neighbors, which certainly seems contradictory since northern people also participate more in family events (Dalton et al., 2002). However, this do not need to be mutually exclusive. Lastly, Dalton et al. (2002) finds a non-linear relationship between trust and membership, with membership generally being correlated with trust, yet individuals involved in five or more groups are the ones that trust the least.

Concerning province level analysis,Norlund (2005) provides a micro-level analysis of households in four provinces and studies the use of social capital as a tool to deal with poverty. Her conclusion is that market-economy oriented reforms is eroding traditional social networks and replacing them with new networks characterised by its links to the government (Norlund, 2005). Thus, it follows the aforementioned argument of network replacement.

From these results,a few things can be concluded for social capital. Despite liberalization effects that *doi moi* has brought to the table, family networks remain a fundamental pillar as a result of the enduring influence of Confucianism in Vietnamese society. Regarding the interaction of social capital and communism, according to Whiteley (2000), Social capital appears to be important regardless of the democratic credentials of the regime in power. However, *group membership* is certainly on the rise, and lastly, *generalized trust* is relatively high and more so in the North. Thus, by 2001, social capital in Vietnam appeared to lean towards *bonding* types of ties despite a potential broadening of the networks of individuals, especially through group membership. Conclusions have to be taken with caution though, firstly because these results are from two decades ago and it would be necessary to compare them with the most recent WVS wave. Secondly, considering the strong rural component of the country, these results may not be nationally representative and even less if cities are over-represented as (Inglehart, 1994) has stated about WVS waves.

3.2 Financial Sector

In developing countries, farmers and small enterprises tend to face more difficulties to access formal credit since commercial banks have fewer branches and the international organisations have less penetration (Viet Nguyen and Berg, 2014). Thus, the existence of dual credit markets is almost inevitable. This duality has been and still a reality of the financial market in Vietnam. For this section, a brief history of the development of the rural financial sector will be provided and whether the reforms on the last decades of the 20th century have boosted the formal financial market.

Before *doi moi* took place in Vietnam, rural finance was composed of the State Agricultural Bank, credit cooperatives and the informal sector and very only a few farmers could obtain loans from these formal institutions (Izumida and Duong, 2001). Reforms increased the amount of formal banks to three . Regarding the rural sector, following decollectivization, land not only became farmers' property, but also could be used as collateral through the *Land Use Certificates* issued to an individual household (Izumida and Duong, 2001). Land redistribution in the form of small parcels to farms did in turn foster the creation of small enterprises which demanded credit for investment. Izumida and Duong (2001) provides a review on financial development by tracking the number of borrowing households, outstanding loans and average loan size of the Vietnam Bank for Agriculture and Rural Development (VBA), the largest state-owned institution. Observing the outcome, he classifies the evolution as " amazing". Yet credit supply has not been able to meet the increasing demand and non-institutional sources of fund have largely prevailed (Migheli et al., 2018). As a result, by 1998 the number of rural households having outstanding debts from informal sources still accounted for 54.2 percent (Izumida and Duong, 2001).

Duong and Izumida (2002) provide an analysis of the financial rural market, and the determinants for, firstly, successful-credit applications, and secondly, for formal and informal borrowing. Despite achieving diversification of the financial sector and the implementation of laws concerning the use of collaterals, *doi moi* has not alleviated credit demands and informal borrowing remains in place. Financial constraints certainly prevent people from growing beyond their own means and represents an obstacle for entrepreneurship among other things. According to Pham and Talavera (2017), access to finance is one of the main obstacles for firms. Hence, financial constraints seem to be a general issue the entire country faces, in both rural and urban areas.

3.3 Financial Accessibility in Rural Vietnam

Given that the country is undergoing changes in terms of social capital as a result of the new market oriented approach, and that the financial system remains relatively underdeveloped, it is interesting to see whether social capital may act as an enabler of financial accessibility and what its function is with respect to the existing institutional framework. Much of the literature concerning financial development explores credit availability and credit rationing, that is, the likelihood of being rejected or partially rejected for a credit. Thus, this section will be analyzing the role of social capital and the determinants for credit rationing. A clarification is needed regarding the use of the term financial development. The following papers focus more on the determinants of financial accessibility, just as the analysis that is to be done in this paper. However, it can be argued, that, higher financial accessibility results in financial development.

Pham and Talavera (2017) provide an analysis of credit constraints for Vietnamese small-medium enterprises (SME) in the manufacturing sector, between the years 2011 to 2015. To measure social capital, social networks are considered.Pham and Talavera (2017) describe the existence of three types of networks: official networks, managerial networks and social networks. In this case, they consider official networks, that is, ties with government officials and bankers.Markussen (2015) refers to this as linking ties. The reasoning behind is that, as a result of asymmetric information, lenders may resort to search for information through different means, and official networks may be one. The results indicate that firms are more likely to apply for credit and get better loan terms when they know government officials or bankers (Pham and Talavera, 2017). More importantly, informal lending presents as well better loan conditions, thus firms opt for informal lending ex ante applying to formal lending. At a household level, in the rural areas of 12 provinces, Markussen and Tarp (2014), provide a similar approach, yet he mixes official networks or linking ties with bonding ties. That is, it refers to those within group ties that happen to occupy public offices. Once again, the survey employed in this study, from 2008 to 2012, reveals the relevance of the family network. More than half of the land-renting households obtained their land through family ties and 90% out of all private transfers came from relatives (Markussen and Tarp, 2014). This paper extends Pham and Talavera (2017)'s conclusions regarding credit availability and the presence of public officials in the household network and solely find significance of the network on informal lending. They extend the argument of informal over formal lending by stating that public officials are less likely to be held accountable by redistributing resources through informal means (Markussen and Tarp, 2014).

Considering active group membership as a proxy for social capital, Newman, Tarp, and Khai (2012) provide an analysis of household saving behaviors in rural Vietnam. More concretely,they find evidence that information transmitted through Women's Union and Farmer's Union, two major groups in the country, increases the proportion of assets held in bank accounts. On a similar note, Vo (2018) explores the positive effects of group participation in coping with shocks. One channel through which membership made households cope better with economic downturns was found to be with higher levels of savings, and members of the Farmer Union and the Communist Party were associated with higher levels of savings.

Despite not being a novelty connection, the link between social capital and financial accessibility remains rather at an early stage and it remains to be seen the how the three social capital dimensions interact with each other. From this section, it can be deduced that the role of group membership, besides being on the rise, at least from the data of 2001 (Dalton et al., 2002), seem to have positive effects by granting households and firms financial accessibility. Thus, *group membership*, will become the main measure of social capital. *Trust in the family* and *generalized trust* will be further considered as secondary explanatory variables. Both have been proved to foster informal lending (Markussen and Tarp, 2014; Pham and Talavera, 2017). Regarding the dependent variable, owning a formal saving account will be also considered, since group membership has proved to boost the level of savings (Vo, 2018), and serves as an information hub to spread the benefits of having a formal bank account (Newman, Tarp, and Khai, 2012).

4. Theoretical Analysis

Ever since the economic reforms, the agricultural sector has achieved a remarkable success, mainly through decollectivisation, which reconsidered farm households as economic units (Duong and Izumida, 2002). This has resulted in new opportunities for investment, however, wars' legacy in the form of funds' shortage remains an issue to this day. According to Duong and Izumida (2002), it is well established in the literature that households in rural areas are quite heterogeneous when referring to production, consumption and endowments. Thus, besides the notorious infrastructure deficits, for instance, gathering information for determining credit-worthiness of potential borrowers turns out very costly. As a result, the backwardness of the financial sector may lead to discrimination in the lending market context in the form of credit rationing. The scarcity will obviously be more acute for the most disadvantaged households. Hence, households may be treated different depending on what groups they belong to. Opportunistic behavior is generally extended in this type of markets, and given the high costs implied in monitoring an individual or a household, lenders may resort to use characteristics of the applicants' groups when making loan decisions. This is further supported by Nguyen, TB LE, and Freeman (2006), which state that bankers may seek extra information from applicants' networks. Group membership in Vietnam seemed to be on the rise ever since the country started a market-oriented approach. Thus, the abundance of this sort of groups may provide a double function, firstly, allowing individuals to gain financial accessibility, and secondly, guaranteeing the formal financial sector the reliability of the household. Parallel to this, the characteristics of this environment are suitable for the existence of an informal financial sector which can overcome asymmetric information issues as a result of its flexibility and monitoring advantages (Duong and Izumida, 2002). On the other hand, one cannot overlook the fundamental importance that family retains in the country and may contribute undermining the formal sector.

Citing again Pham and Talavera (2017), regarding the three networks mentioned in the previous section, they report that these tend to be used when referring to issues concerning social capital in emerging countries. Furthermore, Sobel (2002) states that given the condition of social capital as a multifaceted concept, if it is going to be used, one needs to specify the exact definition one is referring to. Thus, this study will be focusing in social networks, which comprises, on the one hand, networks established with relatives, and on the other hand, networks with social organisations or associations (Pham and Talavera, 2017). When relating it with the types of social capital conceived by Putnam (1995), social networks fall into two. Those narrow social networks referring to relatives represent *bonding capital* and when relating it to the financial sector, closer narrow networks may inhibit or hinder formal financial accessibility.

This is due to the fact that individuals or households may resort to the services provided by these ties and abstain from dealing with the formal sector. On the contrary, group membership, would represent *bridging* social capital, since it broadens the household's network making it more heterogeneous and in turn, increase formal financial accessibility. Lastly, *generalized trust* can be considered a second proxy for the size of the network, and should, in principle, guarantee higher financial accessibility. This paper will analyze how these factors affect different elements which determine formal financial market accessibility.

4.1 Hypotheses

The first variable analysed will be credit rationing, that is, whether a household has been rejected or partially rejected for credit. Lending is a trust intensive activity since the lender must trust that the borrower will not run away with the money. Thus, credit rationing will be more likely for households where social capital is absent, that is, where the lender can not gather enough information about the borrower and as a result the opportunity cost of providing the credit goes up. This is studied and proved by a broad range of authors (Guiso, Sapienza, and Zingales, 2004) did it for Italy, and Markussen and Tarp (2014) and Pham and Talavera (2017) for Vietnam, however, using different proxies for social capital and ignoring the effects that group membership may bring to the table. On the other hand, the effect of the other two variables remain uncertain. Higher *trust in the family*, may mean a smaller network and less information for the bank teller and thus, increase the likelihood of being credit rationed for the household. On the demand side, it can also mean for the family to refrain completely of applying for credit in the formal market. For the case of *generalised trust*, the obvious thinking that a broader network translates into more information. Yet, it may also mean that the household has an extended network of informal lending supply at its disposition and refrain for applying.

Hypothesis 1 (H1): *Households that belong to any sort of organization are less likely to be credit rationed.*

Secondly, as stated above, higher social capital should increase the possibilities of obtaining a loan. How is this expected to play out with the level of informal lending? Certainly, if the previous hypothesis is confirmed, higher social capital in the form of in more formal lending, yet there are two issues that may push in the opposite direction in this case. Firstly, informal lending comes as a substitute when formal funds are unavailable or relatively scarce. Thus, if households are denied accessibility to credit through formal sources, obtaining a loan in the informal financial sector becomes the next resort. Secondly, this type of borrowing would generally come from the tighter network the household possesses, that is, family and close friends. Therefore, the variable considering *trust in the family* may be positively correlated with informal lending, whereas *group membership* might go in the opposite direction. This leads to two hypotheses, the first one being:

Hypothesis 2 (H2): *Households that belong to any sort of organization are less likely to borrow from informal sources.*

Despite being a country which displays relatively similar levels of generalized trust in the region, the importance of smaller networks stands out, thus it remains to be seen whether this is manifested through higher likelihood of informal lending.

Hypothesis 3 (H3): *On the other hand, households which report higher trust in the family may in turn resort to more informal lending.*

Whereas Guiso, Sapienza, and Zingales (2004) found results in this direction, Pham and Talavera (2017) and Markussen and Tarp (2014) observed that informal sources were preferred as a result of better conditions. Nonetheless, this preference has to do with the approach taken with social capital, which focuses on official networks that may use informal means in order to not be held accountable.

Moving to the third indicator, opening a bank account may turn out very costly. Among these costs, one can identify travel distances to the nearest branch, learning how to apply for it and how different financial products work. The opportunity costs engaging into opening an account may be believed for households to be too high. As a result, they may opt to hold their savings in the forms of cash at home or at some other location instead. Here is where group membership comes into play, groups and associations may reduce these costs by providing households with the relevant information through the social network, as Newman, Tarp, and Khai (2012) found for the case of the Women and Farmer's Union.

Hypothesis 4 (H4): *Households which belong to any sort of organization are more likely to hold formal financial bank accounts.*

Of course, holding a savings account may be conditioned by other variables that may as well be taken into account. Furthermore, higher *trust in the family* may discourage formal savings and promote other types of savings in the form of informal accounts. The impact of *generalized trust* just as with the previous hypotheses remains ambiguous.

Hypothesis 5 (H5): *Higher trust in the smaller network may in turn discourage such behavior.*

Lastly, taking financial instruments one step further, the last hypothesis states whether households that belong to a group may participate in the stock market by holding shares. Guiso, Sapienza, and Zingales (2004) refer to it as the most "trust-intensive" for of investment. Hong, Kubik, and Stein (2001) establish that social networks can boost participation in the labor market through observational learning and word of mouth. For instance, potential investors may learn from one another the returns that the market has to offer or directly, on how to execute trades. Even though Hong, Kubik, and Stein (2001) construct an index which has more to do with daily social interactions, events held at associations may be the perfect hub to discuss such nuances or even the friendships made in the associations can provide households with insight information. Here the role of trust in friends and family has no clear direction. Yet, following Confucianism values, which fear the stranger, and assuming low levels of financial education which may promote risk aversion, households may abstain from engaging in such activities.

Hypothesis 6 (H6): *Households in which the head belongs to any sort of organization are more likely to hold financial assets.*

Hong, Kubik, and Stein (2001)'s social interaction approach partly accounts for interactions between neighbors, thus, if there is one variable to capture to a certain extent such effect in the model is *generalized trust*. Hence the last hypothesis states tries to test the following:

Hypothesis 7 (H7): *Households in which generalised trust is higher are more likely to hold financial assets.*

This study aims to test diverse financial indicators on rural households in Vietnam. Previous studies have analysed some financial indicators which rely on social capital, yet none have provided such a comprehensive review, with the exception of Guiso, Sapienza, and Zingales (2004), whose work has inspired many of the ideas of this thesis. Yet, Guiso, Sapienza, and Zingales (2004)'s work was done on a much richer developed country, none had previously been done in a developing country and certainly not using group membership as the main social capital proxy. This thesis sets to test whether households which belong to a socio-economic group are less likely, first, to be credit rationed, and secondly to borrow from informal means. Moreover, whether these households at the same time, are more likely to use financial instruments such as formal saving accounts and financial assets.

5. Methodology

This section will tap on a thorough description of the data selected as well as the chosen model to analyse the role of social capital in household financial accessibility. Furthermore limitations of both tools will be described.

5.1 Data

The dataset for this study originates from the project 'Impact of Shocks on the Vulnerability to Poverty: Consequences for Development of Emerging Southeast Asian Economies' (DFG FOR 756). The surveys were carried out in Vietnam for the years 2007, 2008, 2010, 2013, 2016 and 2017. Three of the poorest provinces in Vietnam were chosen for the survey: Ha Tinh, Thua Thien Hue and Dak Lak (Bank, 2010). The surveyed areas are located in the Northern Central Coast bordering Laos, for the case of Han Tinh and Thua Thien, and in the Northwestern highlands bordering Cambodia, for the case of Dak Lak (Hardeweg, Klasen, and Waibel, 2013).The sample is conducted in such a way that is representative of the rural population of the entire country. It represents a milestone relative to previous surveys done in the country covering a longer time span and including information on the shocks and risks which rural households are exposed to (Hardeweg, Klasen, and Waibel, 2013). Such a length allows to analyse the evolution of social capital indicators in the rural areas, making it very suitable for the study.

The fact that the survey is of longitudinal or panel type allows to track households, along with a collection of multiple observations unique to every household, over a time span of almost a decade. According to Deaton (1997), one of the great attractions of panel data, comes from the fact that individual and household dynamics can be monitored, including living standards. They can be used to address the impact of different shocks and measure the biggest winners of economic development (Deaton, 1997). Even though tracking the outcome of individual groups can be also done by applying repeated cross-sections, panel data provides the unique advantage of tracking the dynamics at the individual and household level (Deaton, 1997). The survey is comprised of two separate questionnaires, the first, covering household and individual level characteristics, and a second one, a concise village questionnaire which will be used to get information about economic development indicators. Besides household characteristics, which cover data regarding social capital, the orientation of this survey towards household shocks include the tools the households possess on how to cope with these shocks. Fortunately, this implies that an entire section of the household questionnaire covers information on borrowing, lending, public and other transfers and insurance.

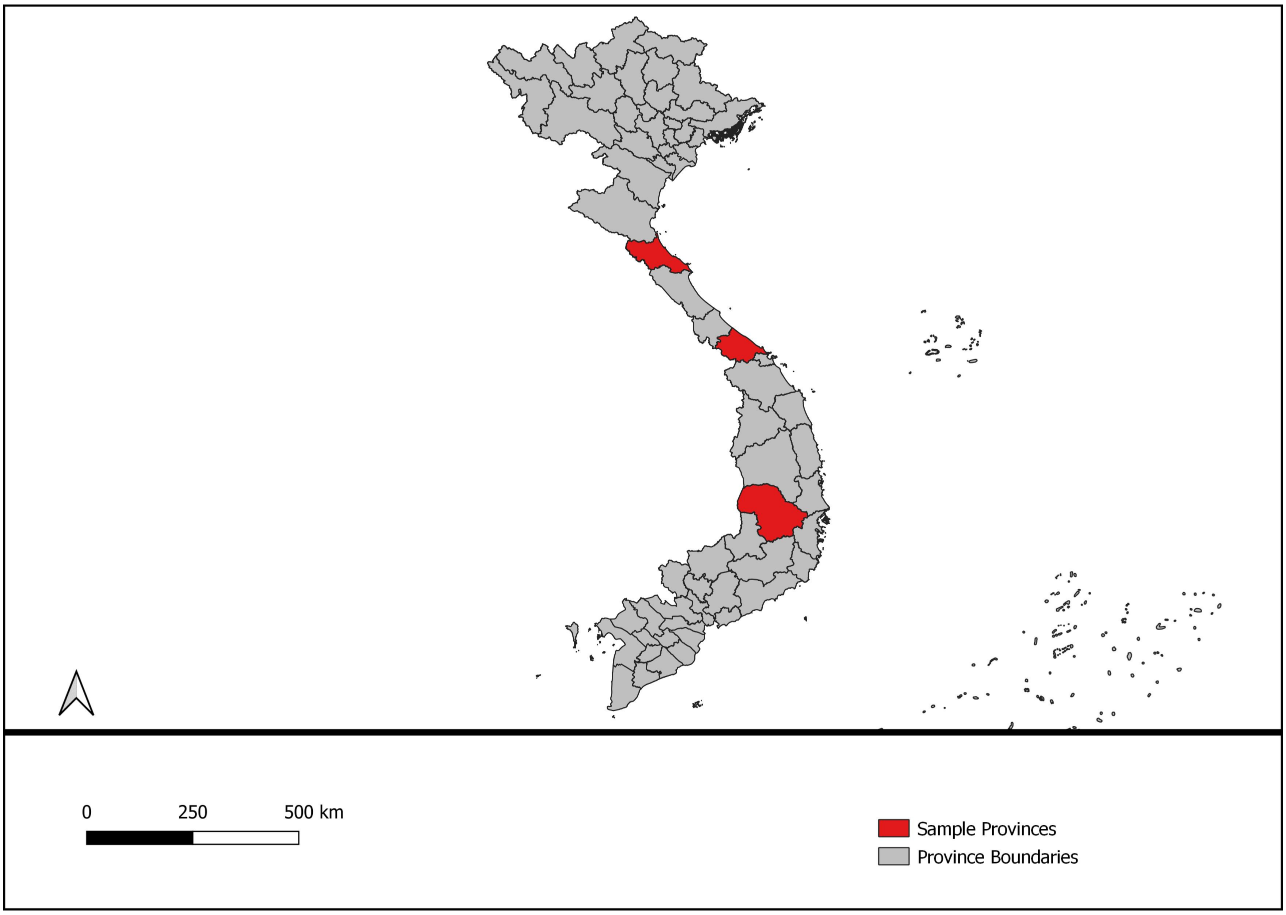

Figure 5.1: Vietnam

Notes: Author's elaboration. From North to South, highlighted, the provinces of Ha Tinh, Thua Thien and Dak Lak respectively.

Regarding the sampling strategy, given its condition as a vulnerability assessment, the target population consisted of rural households whose per capita income was likely near the poverty line (Hardeweg, Klasen, and Waibel, 2013). The sampling approach was based on a three-stage cluster sampling design. Among the three provinces, the first stage or primary sampling unit (PSU) selection corresponded to sub-districs or communes, the second stage, to villages, and lastly, the third stage which selected 10 households by village ordered by its size. As a result, a total of 2195 households were selected. Attrition represents one of the biggest problems of panel data,since there are a vast array of reasons houses are lost throughout the gathering process, so as time goes on, fewer of the original household remain in the survey (Deaton, 1997). Nevertheless, this did not represent a major issue for the survey in question, as only 0.23 percent of households could not be interviewed in the second wave (Hardeweg, Klasen, and Waibel, 2013). Yet, Deaton (1997) states that one of the main reasons for attrition is due to individuals who leave the original household or who move away from the original survey area, making these households not suitable for the survey. Given the dynamics in household composition of the chosen provinces in Vietnam, mainly temporary rural to urban migration, some of the information gathered was unreliable or incomplete (Hardeweg, Klasen, and Waibel, 2013). As a result of the shift in household structure, there was a replacement rate between

17 to 23 percent in the country. The survey measured two types of household size, a narrow version and a wider version which considered members that temporarily lived at the household. Thus, in order to partially mitigate the shifts in the household structure, this study is done accounting solely for the narrow estimation.

5.2 Empirical Specification

One of the limitations of the survey design was that the variables concerning the purposes of this thesis, social capital and financial decisions, were available in the survey waves at different levels. The former, *membership in organizations, trust in the family and generalised trust* were recorded at the individual level. On the other hand, financial decisions, such as *credit rationing and percentage of wealth held in stocks*, were gathered at the household level. In order to overcome this problem, I conducted my study at the household level, and considered for my dimensions of social capital the head of the household observations. To validate this assumption, a brief exploration was conducted on the literature of household financial decision making to find arguments that would back up this idea. On the process, further ideas were taken into account to control for household financial decision making as well as determinants for being credit rationed, etc.

Assuming that the social capital that the head possesses represents the overall social capital of the household requires that the one conducting the financial decisions is the head of the household as well.Despite being a strong assumption, it is partially backed up by the literature. A significant portion of the studies on intra-household allocation has adopted the theoretical assumption that the family can be treated as a single-decision maker (Lundberg and Pollak, 1994). For instance, Becker and Becker (1981) assume on their model that the head of the household makes financial decisions on behalf of other household members. Even though individuals may have unique preferences, in a review of family financial decision making, Kim, Gutter, and Spangler (2017) point out that it is assumed in traditional utility models that the head of the household make decisions as if all members maximize their utility. Using UK Family Expenditure Surveys, Dauphin et al. (2011) argue that even if children over the age 16 may operate as decision makers within the household, parents decisions may prevail. However, this reveals that also the spouse may have a say in household decisions. Moreover, many studies in developing countries, deviate from the unique decision maker assumption by estimating the effects of increasing women's relative economic resources within the household (Duflo, 2003; Thomas, 1994). This also gives further consideration to the gender dimension, making it something mandatory to include in the model. Regardless of the head, there is evidence that men and women specialize in different household work, as women take responsibility for different household chores, whereas men take on more of the non-routine tasks, like managing household finances (Bianchi et al., 2012; Borra, Browning, and Sevilla, 2017). Antman (2014) conducts a study in Mexico examining the relationship between work status of the spouse of the head of the household and the likelihood that the spouse alone is responsible for the household financial decisions. She finds consistent results in the hypothesis that an increase in economic resources leads to more bargaining power, that is, when spouses work out of home, they are more likely to be involved in household decisions. Thus, besides gender, the work of the spouse ought to be taken into account in the model. On the other hand, L'Esperance (2018) finds no significance in terms of gender, yet she does find a bigger impact depending on the level of financial literacy of the person, making human capital an additional variable to be considered in the model.

If social capital of the head of the household is to be considered representative of the entire household, the review on the literature on household financial decision making, despite being contradictory at some points, goes to show that three other elements are important to control for. Firstly, the gender of both, the head and the spouse, secondly, their respective work, and lastly, their level of human capital. These explanations, however, focus on the demand side, and do not provide an explanation which may increase the likelihood of banks to concede loans or allowing opening an account. These will be addressed below, with the introduction of the model, yet many of these variables addressing the demand side match the supply's side decisions. For instance, it could be argued that the human capital levels and gender may condition banks' decisions. A second problem arises when introducing the other two variables for social capital. Unfortunately, the questions regarding trust were introduced in the survey at a later stage, more concretely on the fifth wave, which corresponds to the year 2013. Thus, I take the first observation available for these two proxies and use it for the previous years. This limitation gives *group membership* more accuracy out of the three social capital dimensions covered and reinforces it the idea of it as the main explanatory variable. To outline the strategy followed, I begin with a discussion of the following model specification:

$$FA_{hit} = \alpha_i + \lambda_t + Membership_{hit}\alpha_t + w'_{hit}\alpha_t + v_{hit} \tag{5.1}$$

FA_{hit} is the outcome of interest and refers to the financial accessibility indicators considered. Thus, the dependent variable, represents *credit accessibility, informal borrowing, having a formal bank account and holding financial assets at household* h at province i in time t. α_i and λ_t denote province and time fixed effects respectively. $Membership_{hit}$ represents the main explanatory variable, which represents the head of the household membership. A second downside regarding the social capital proxy utilized is that it is recorded as a binary variable, that is, whether the head of the household belongs to any socio-political organisation, not the amount. Dalton et al. (2002), when providing their analysis on group membership, accounts for the number of groups instead, capturing a more accurate reality, since it could be argued that the more groups an individual belongs to the bigger is the social network. Nevertheless, the fact that the head belongs to a network or not is already accounting for a broader network, which may already facilitate higher financial accessibility. The vector w_{hit} stacks for several of the household characteristics, among them the other two social capital indicators, as well as household and local development characteristics. Lastly, V_i represents a dummy variable for province i. The error term is denoted by v_{hit}, I followed the recommendation of Deaton (1997) and cluster standard errors at the level of the primary sampling unit.

All the dependent variables in the model came as binary or were computed to move solely from 0 to 1. For *credit rationing* by the formal lending institution a value of 1 was given to individuals who were credit rationed by different "formal institutions", excluded were individuals that were credit rationed by family and friends. Commercial, state banks, cooperatives and village funds all fell under the formal institution category and are considered as such for the subsequent dependent variables. Thus a value of 0 would refer to individuals that had not been credit rationed by formal institutions. On the other hand, regarding *informal borrowing*, assigns a value of 1 to households which had any outstanding loans or had been repaid within the year previous to the survey and that were obtained through informal means. Informal means would apply for lending done by family and friends .

Formal savings refers to 1 when the household has at least one formal bank account and 0 otherwise. For the value of 0 in this case, it represents households that have no savings, or if they do, they hold liquid assets at a friends or relatives' house. Lastly, for the fourth dependent variable, *financial assets*, it equals one if the household in question holds assets in the form of shares.

Given the dichotomous aspect of the dependent variables I proceed to implement a *Probit* model to estimate the determinants of the dependent variable. In a binary response model, the interest lies primarily in the response probability (Wooldridge, 2015):

$$\mathbb{P}[Y_i = 1|x_{1i}, ..., x_{ki}; \beta_0, ..., \beta_K] = \Phi(\beta_0 + \sum_{k=1}^{K} \beta_k X_{ki}) \tag{5.2}$$

In this case, x denotes a full set of explanatory variables, whereas y could refer to any of the financial accessibility indicators previously described. Generally coefficients from the output of a *probit* regression cannot be interpreted since $\Phi(.)$, represents the cumulative distribution function of the standard normal distribution (Wooldridge, 2015). To put it simply, it says that, conditional on the regressors, the probability of the outcome variable, Y_i is 1, , is a certain function of a linear combination of the regressors. Thus, the marginal effects of the regressors are estimated. That is, how much the conditional probability of the outcome variable changes when you change the value of regressor, while holding all other regressors constant at some values (Wooldridge, 2015).

5.3 Limitations

The data chosen brings along some limitation for the purpose of this study. Three matters need to be pointed out. Firstly, guaranteeing the exogeneity of the explanatory variables. Secondly, accounting for the institutional framework for the provinces analyzed. Thirdly, limited information is provided regarding group membership.

Proving causality for the social capital dimensions selected appears to be a complicated task. Trust and group membership may be caused by higher financial accessibility and not the other way around. For instance, more credit obtained through formal financial sources to organize events might in turn result in higher membership (Calderón, Chong, and Galindo, 2002). Furthermore, a more developed financial system may led to the increase in trust among the agents conducting the exchange. Guaranteeing the exogeneity of the explanatory variables is an issue hard to deal with. Several papers cope with it in different ways. Calderón, Chong, and Galindo (2002) apply as instrumental variables the number of phones per capita and the level of ethnic fractionalization. Both variables are available in the survey, yet the reasoning does not apply for this model. The fact that the methodology applied is at the household level raises some problems. On the one hand, it is well-established on the literature the advantages that mobile phones have had on financial inclusion (Ouma, Odongo, and Were, 2017). On the other hand, belonging to the same ethnic group may smooth financial transactions, and in Vietnam, ethnicity is a major factor in economic differences (Baulch et al., 2007). In other words, it is easy for instruments to have a direct effect on the dependent variable, and this would in turn violate the exclusion restriction (Wooldridge, 2015). To deal with endogeneity, Guiso, Sapienza, and Zingales (2004), instrument one of their social capital proxies on the other. Both social capital dimensions referring to the extended network, *generalized trust* and *head membership*, could potentially work. Yet, this is also discarded given the low correlation they have, as displayed in table 6.1. Given the limited options, conclusions will be interpreted with caution and several controls are considered in order to avoid omitted variable bias.

Another issue that comes up is on how to measure the institutional framework. Much of the literature revolves around whether social capital complements or substitutes the existing institutional framework. Whereas many papers capture this through different means, this survey does not have any appropriate measure for it. For instance, Markussen and Tarp (2014) use land expropriation by the state as a proxy for the inefficiency of the system, as this demonstrates that land property rights are fragile and easily violated. I tried to compute an indicator for efficiency by analyzing the immediate consequences that costumers faced in the formal financial market whenever they had defaulted on a loan. For the immediate consequences, a raise in the interest rate and the seizure of the collateral were considered. However, this proved to be an inaccurate measure, as there was not enough variability, since most of the defaults were immediately punished. Therefore, given the condition of the country as "developing", institutional inefficiency is assumed.

Another major source of uncertainty is the lack of information regarding group membership. Firstly, the number of groups is not reported, preventing the sample from comparing it to Dalton et al. (2002)'s work. Secondly, the type of associations is not mentioned either and lastly, the type of membership. Being unable to account for group heterogeneity and whether the head of the household is an active member, prevents this study from analyzing the particular mechanisms through which the network effect operates, just as other authors have done (Vo, 2018; Whiteley, 2000).

6. Results

This section will be divided into three parts. The first section will analyse the evolution of social capital in Vietnam, and then compare it with the dataset at hand, to see whether market oriented reforms are indeed having an effect in the long term and how close is the data set selected to the reality of the country. Furthermore, summary statistics will be provided regarding financial access indicators and correlations of the social capital dimensions selected. The second section sections will present the results of the model proposed in the previous chapter and a discussion will follow on whether they corroborate the hypotheses raised.

6.1 Descriptive Analysis

6.1.1 An Updated Revision on Social Capital

Almost 20 years have gone by since Dalton et al. (2002) analysed the social capital dimensions of Vietnam. On this section, I aim at providing an updated reality of the country's social capital indicators by checking on subsequent waves of the WVS. Furthermore, the results will be compared to those of the data sample used in here, in order to test whether social capital in rural areas follow a similar trend to the national one. For the sake of comparability with the sample, and for the purpose of the model at hand, importance of the family will be substituted with *trust in the family*, one of the social capital indicators considered for the model. As previously stated, a limitation of this summary analysis is that the *group membership* dimension cannot be compared directly. Thus, these results will be solely mentioned and only displayed on the appendix. A note of caution is due here, since they represent the social capital levels of the head of the households, however, as has been argued, this is representative of the entire household to a certain extend.

The years 2007 and 2017, which mark the length of the sample survey, are compared to the WVS waves 5 and 7, which cover the years 2005-2009 and 2017-2020 respectively. However, since *trust in the family* and *generalized trust* were introduced in the year 2013 in the survey, this makes the comparison less accurate, yet the trend up until the year 2017 can be assessed still. Responses on trust in the family address the same question for both samples: *How much do you trust family members?*. Figure 6.1 display the results. In a time-span of ten years, respondents who trust their family completely have gone up by 5%. On the other hand, in rural areas, full trust in relatives have been reduced 47.8%. Therefore, it seems the national sample's increase may be capturing the effect of individuals living in the city. Thus, it looks like in rural areas the figure of the family is losing weight, which in turn, could led to households opting for alternative sources of lending.

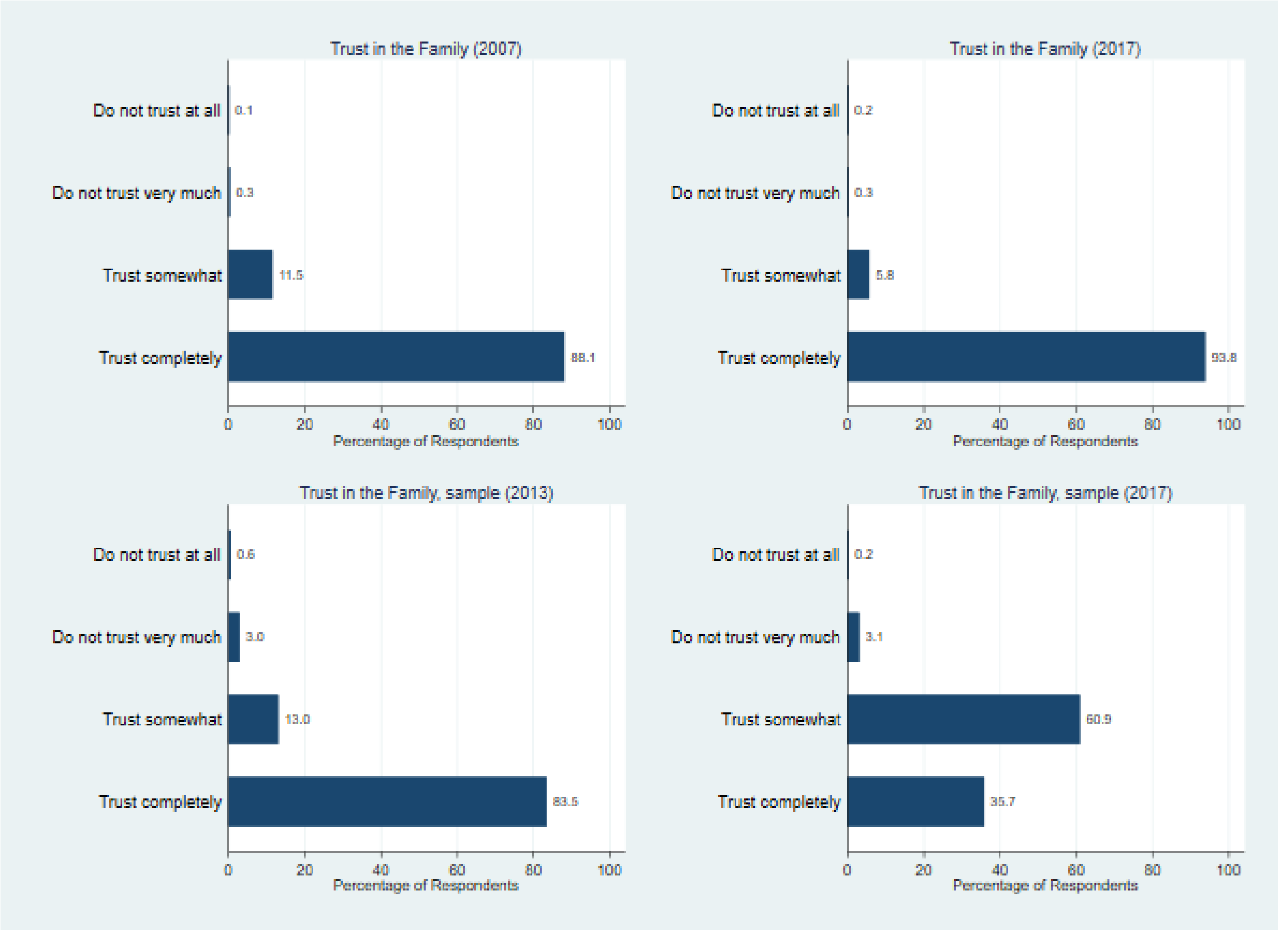

Figure 6.1: Evolution of Family Trust

Notes: Author's elaboration. Top row belongs to WVS waves 5 and 7 respectively (Inglehart, 1994). Bottom row corresponds to the sample survey analysed (Hardeweg, Klasen, and Waibel, 2013).

Figure 6.2 show the results for the evolution of *generalized trust* at the country and rural level. For this case, the question proposed to measure it was: *Would you say that most people can be trusted?*. In contrast with 6.1, *generalized trust* seem to have diminished for both samples. However, the reduction is much more pronounced for the case of the national sample (23.2%) than for the rural one (8%). Thus, diminishing values in *generalized trust*, go to show that people are more cautious when dealing with strangers in 2017.

Lastly, regarding *group membership*, given that a straight comparison cannot be provided, results will be analyzed separately. Unfortunately, as previously stated, the sample survey does not provide information of the number of groups by household, just whether every member is associated to a group or not. However, the number of groups per person can be compared to percentage of heads of the households that belong at least to one group. The WVS data shows that the average number of groups individual belong to has gone down considerably. From the original amount that Dalton et al. (2002) reported in 2001, 2.33, to 1.4 in 2007, and 0.9 in 2017 according to figure B.1. Thus, the rising trends expected at the beginning of the century have taken a "U-turn". On the other hand, the percentage of heads of the households affiliated to a group appear to be slightly on the rise with respect to 2007. Figure B.2 shows an increase of 4% in the number of heads that belong at least to one group.

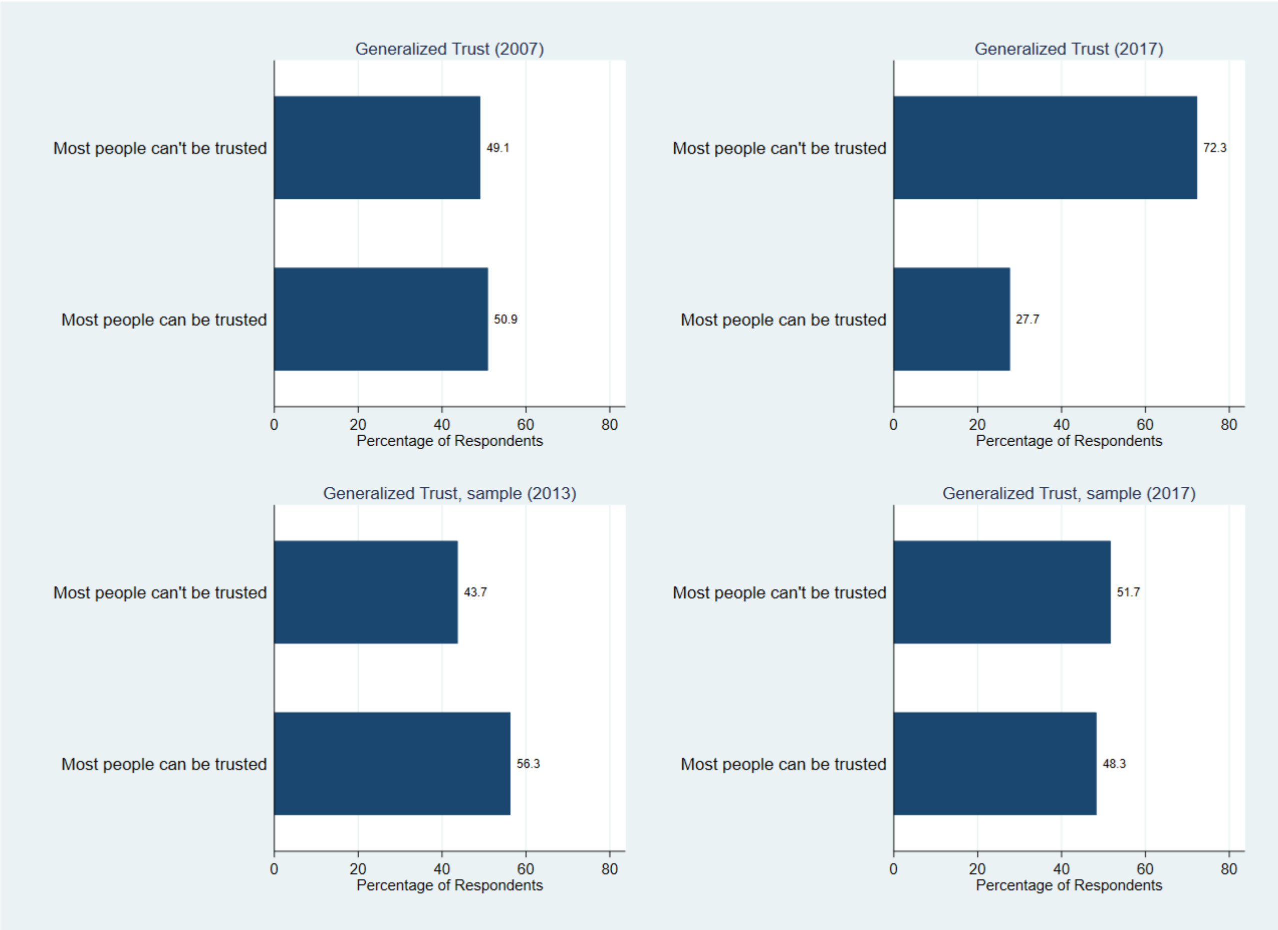

Figure 6.2: Evolution of Generalized Trust

Notes: Author's elaboration. Top row belongs to WVS waves 5 and 7 respectively (Inglehart, 1994). Bottom row corresponds to the sample survey analysed (Hardeweg, Klasen, and Waibel, 2013).

The overall decrease in *generalized trust* could be attributed to the financial shocks of 2008 and the prevalence of Confucianism. Moser (1996) argues that in times of crisis, trust in the community breaks down. However, he also states that during these downturns narrow networks are strengthened as that is the time when households need support the most. Whereas this is the case for the national sample, surprisingly, this does not hold for the rural sample.To counter these shocks, alternative social networks may grant these households the financial supply needed. One of this networks could be membership in associations.It will be interesting to see whether this effect is confirmed across the different financial indicators.

6.1.2 Sample Summary Statistics

The tables 6.1 and 6.2 below display the correlation among social capital dimensions as well as the summary statistics of financial indicators. All social capital dimensions are correlated positively, yet at very low levels. On the other hand, financial indicators display the reality of the formal credit market. 77% of the households were denied credit in the formal market, only 8% own at least one formal bank account and 4% own shares. In contrast, a higher amount of households have outstanding informal loans, 33%.

Table 6.1: Cross-correlation table of Social Capital Dimensions

Variables	Membership head	Generalized trust	Trust in the family
Membership head	1.000		
Generalized trust	0.080	1.000	
Trust in the family	0.037	0.121	1.000

Table 6.2: Summary Statistics of Financial Indicators

	Sum	Mean	SD	Min	Max	N
Credit Rationing	867	0.77	0.25	0	1	12,892
Informal Borrowing	4,320	0.33	0.46	0	1	13,138
Formal Saving	987	0.08	0.27	0	1	11,775
Financial Assets	551	0.04	0.19	0	1	13,119

6.2 Analysis of Results

The tables currently on this section will go into the appendix and the ones updated on this section will show the margins. Marginal effect ($\mathrm{d}P/\mathrm{d}X$) indicates the effect of one unit change in an exogenous variable on the probability that a household : (1) was credit rationed, (2) borrowed through informal means, (3) held a formal saving account, (4) possessed financial assets. Given that the three social capital dimensions are also binary variables, a unit change implies going from: not being a member to being a member, not trusting people generally to trust them and not trusting your relatives to trust them.

From now on, I will be referring to the columns of every table as the specifications of the model. Specification (1) will include the simplest form, with the controls summarised. Whether the head is either a government official or works in business is also included, since this status may grant easier access to the formal sector. Specification (2) will add time and province fixed effects. Village fixed effects are not included as a result of collinearity and were substituted by province fixed effects. Specification (3) will add additional community level economic development. Among them, the number of houses, enterprises and bank branches as well as the average distance to them. Finally, specification (4) will include the other two social capital dimensions, *generalized trust* and *family trust*.

6.2.1 Credit Rationing

For this dependent variable, default history, land ownership and the health of the head household health were added. Default history is commonly used in the literature, since having been unable to meet previous payments may determine future credit applications (Guiso, Sapienza, and Zingales, 2004; Pham and Talavera, 2017). *Doi moi* guaranteed property rights to a certain extent, thus the ownership of land may serve as a collateral for households and decrease the chances of being credit rationed (Nguyen, TB LE, and Freeman, 2006). Lastly, an increase in the health status implies a deterioration in the well being of the head, which may make banks pessimistic about future repayment and thus, deny credit. Table 6.3 presents credit rationing determinants. Among the social capital dimensions, membership of the head appears solely significant at the 10% on the first specification. A shift from the household head from not being a member to becoming a member of at least one group, reduces credit rationing with a probability of 1%. However, as fixed effects and development indicators are included, this significance goes away. As expected the household's default history as well as the health of the head increases the likelihood of being credit rationed.

6.2.2 Informal Borrowing

Regarding the likelihood of holding an outstanding loan with the informal sector, no further additions were considered. The output in table A.2 shows that women working outside of the household appear to be significant across all specifications and even at the 1% level on the fifth specification. From working in the household to working outside of it decreases the likelihood of having an outstanding loan with the informal sector goes down by roughly 8.5 %. Regarding the social capital proxies, *head membership* and *generalized trust* appear significant in specification (4) at the 5% and 1% level respectively. Moreover, affiliating to an organization reduces the likelihood of having an outstanding loan with the informal sector by 4.8%. On the other hand, going from not trusting to trusting everybody increases the likelihood of having an outstanding loan with the informal sector by 5.24%.

6.2.3 Formal Savings

Moving onto the likelihood of having at least one formal saving account, table 6.5 presents the results. Before jumping into the social capital results, it is worth mentioning two expected results. The human capital levels of head and the spouse are significant across specifications, the effects, however, are small in magnitude. Human capital levels are not binary, and measure the highest level of education attained. Specification (4) show that an increase of 1 level on the education scale increases the likelihood of the household to have at least one formal bank account by 0.1% and 0.27%, for the head and the spouse respectively. *Head membership* and *generalized trust* are both significant at the 5% level in specification (4). Becoming a member of at least one organization increases the likelihood of the household to have at least one formal saving account by 2.49%, whereas trusting more people decreases the likelihood of having at least one bank account by 1.93%.

6.2.4 Financial Assets

Lastly, 6.6 display the determinants for a household's likelihood to hold financial assets. One unexpected result hard to interpret is that the healthier the head of the household appears, the more likely the household is to be holding financial assets. That is, in specification (4), going from being "sick" to "being able to perform daily activities", for instance, increases by 1.58% the likelihood of holding financial assets at the 5% level. Just as with the formal saving determinants, and with similar magnitudes, the human capital of the spouse matters. Lastly, the membership of the head remains significant across specifications, increasing by 1.9% the likelihood of possessing financial instruments.

Table 6.3: Credit Rationing determinants

	(1)	(2)	(3)	(4)	(5)
Membership head	-0.01042*	0.00101	0.00150	-0.00266	-0.00276
	(0.00588)	(0.00683)	(0.00688)	(0.00693)	(0.00694)
Trust in Relatives					-0.00328
					(0.01565)
Generalized trust					0.00033
					(0.00626)
Late repayment and default	0.08506***	0.07719***	0.07666***	0.07921***	0.07879***
	(0.00863)	(0.00889)	(0.00891)	(0.00892)	(0.00897)
Head of the household health	0.01454***	0.01116*	0.01208**	0.01255**	0.01253**
	(0.00399)	(0.00464)	(0.00467)	(0.00471)	(0.00470)
Head of the Household education	-0.00009	-0.00014	-0.00011	-0.00008	-0.00008
	(0.00018)	(0.00021)	(0.00021)	(0.00021)	(0.00021)
Spouse education	0.00036	0.00033	0.00029	0.00016	0.00016
	(0.00047)	(0.00057)	(0.00058)	(0.00058)	(0.00058)
Working wife	0.03249*	0.02739	0.03260*	0.02868	0.02863
	(0.01473)	(0.01586)	(0.01561)	(0.01592)	(0.01592)
Government officials and businessmen	-0.01578	-0.02599	-0.02490	-0.01972	-0.01890
	(0.01507)	(0.01640)	(0.01636)	(0.01678)	(0.01676)
Land Ownership	-0.01465	0.00396	0.00102	-0.00208	-0.00227
	(0.01970)	(0.02005)	(0.02022)	(0.02033)	(0.02027)
Observations	9094	7802	7630	7292	7271
Province FE	N	Y	Y	Y	Y
Time FE	N	Y	Y	Y	Y
Development indicators	N	N	N	Y	Y

Note: Standard errors clustered at the primary sampling unit (PSU);development indicators include number of houses in the village, enterprises with more than five employees, bank branches and average distance to them respectively; household characteristics include gender, household head age,gender and ethnicity respectively, household size and annual income. Results in the table display the margin results under the Stata command *margins, dydx(*).*This table has one extra column, since trust in the family was introduced in specification (4) before economic development indicators to see whether it would some significance was achieved. It wasn´t the case. Probit direct results are displayed in the appendix.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 6.4: Informal Borrowing

	(1)	(2)	(3)	(4)
Membership head	-0.0463***	-0.0147	-0.0158	-0.0479**
	(0.0119)	(0.0130)	(0.0130)	(0.0134)
Trust in Relatives				0.0165
				(0.0361)
Generalized trust				0.0524***
				(0.0131)
Head of the household health	0.0052	-0.0098	-0.0095	-0.0106
	(0.0074)	(0.0080)	(0.0080)	(0.0082)
Head of the Household education	-0.0001	-0.0001	-0.0001	-0.0003
	(0.0005)	(0.0005)	(0.0005)	(0.0005)
Spouse education	0.0003	-0.0001	-0.0001	-0.0001
	(0.0012)	(0.0013)	(0.0013)	(0.0014)
Working wife	-0.0633**	-0.0719**	-0.0750**	-0.0847***
	(0.0223)	(0.0231)	(0.0230)	(0.0235)
Government officials and businessmen	0.0090	-0.0092		
	(0.0283)	(0.0308)		
Observations	8926	7634	7634	7274
Province FE	N	N	Y	Y
Time FE	N	N	Y	Y
Development indicators	N	N	N	Y

Note: Standard errors clustered at the primary sampling unit (PSU);development indicators include number of houses in the village, enterprises with more than five employees, bank branches and average distance to them respectively; household characteristics include gender, household head age,gender and ethnicity respectively, household size and annual income.Results in the table display the margin results under the Stata command *margins, dydx(*)*. Probit direct results are displayed in the appendix.

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

Table 6.5: Formal Savings

	(1)	(2)	(3)	(4)
Membership head	0.0299***	0.0297***	0.0232**	0.0249**
	(0.0088)	(0.0088)	(0.0103)	(0.0106)
Trust in Relatives				0.0175
				(0.0229)
Generalized trust				-0.0193**
				(0.0089)
Head of the household health	-0.0021	-0.0021	-0.0038	-0.0030
	(0.0055)	(0.0056)	(0.0059)	(0.0060)
Head of the Household education	0.0013***	0.0013***	0.0010*	0.0010**
	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Spouse education	0.0031***	0.0031***	0.0029***	0.0027***
	(0.0007)	(0.0007)	(0.0007)	(0.0007)
Working wife	-0.0140	-0.0138	-0.0082	-0.0109
	(0.0165)	(0.0167)	(0.0177)	(0.0184)
Government officials and businessmen	0.0328	0.0345*	0.0341	
	(0.0167)	(0.0168)	(0.0166)	
Observations	8147	8027	6735	6402
Province FE	N	N	Y	Y
Time FE	N	N	Y	Y
Development indicators	N	N	N	Y

Note: Standard errors clustered at the primary sampling unit (PSU);development indicators include number of houses in the village, enterprises with more than five employees, bank branches and average distance to them respectively; household characteristics include gender, household head age,gender and ethnicity respectively, household size and annual income.Results in the table display the margin results under the Stata command *margins, dydx(*)*. Probit direct results are displayed in the appendix.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 6.6: Financial Assets

	(1)	(2)	(3)	(4)
Membership head	0.0206***	0.0228***	0.0217***	0.0190**
	(0.0069)	(0.0083)	(0.0083)	(0.0085)
Trust in Relatives				-0.0168
				(0.0179)
Generalized trust				0.0055
				(0.0067)
Head of the household health	-0.0194***	-0.0152**	-0.0155**	-0.0158**
	(0.0044)	(0.0048)	(0.0048)	(0.0049)
Head of the Household education	0.0003	0.0004	0.0004	0.0004
	(0.0002)	(0.0003)	(0.0003)	(0.0003)
Spouse education	0.0006	0.0017***	0.0018***	0.0017**
	(0.0005)	(0.0006)	(0.0006)	(0.0006)
Working wife	-0.0055	0.0100	0.0099	0.0127
	(0.0130)	(0.0144)	(0.0144)	(0.0152)
Government officials and businessmen	0.0517***	0.0254*		
	(0.0127)	(0.0143)		
Observations	8884	7169	7153	6814
Province FE	N	Y	Y	Y
Time FE	N	Y	Y	Y
Development indicators	N	N	N	Y

Note: Standard errors clustered at the primary sampling unit (PSU);development indicators include number of houses in the village, enterprises with more than five employees, bank branches and average distance to them respectively; household characteristics include gender, household head age,gender and ethnicity respectively, household size and annual income. Results in the table display the margin results under the Stata command *margins, dydx(*)*. Probit direct results are displayed in the appendix.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

7. Discussion

This section will analyze the results obtained in depth and and whether they corroborate previous findings, and if there are any potential new insights that may lead to new paths for future research.

One dimension of social capital that appeared to be not significant throughout accessibility indicators was *trust in the family*. Figure 6.1 provides evidence of the diminishing role of the family. As a result, the prevalence of the informal sector in detriment of the formal sector is not determined by stronger family ties. Trusting relatives more does not translate into an increase in the likelihood of having an outstanding loan in the informal sector, and neither does it foster holding wealth in the form of cash rather thank in bank accounts or in the form of shares. Thus, these findings deny hypotheses 3 and 5. Given that a weakening in tighter networks was not, in turn, compensated by an increase in *generalized trust* this thesis cannot confirm nor deny findings by Fukuyama (1995) and Knack and Keefer (1997), who argue about the inverse relation between *generalized trust* and *trust in the family*. However, it remains to be seen whether broader networks in the rural areas determine higher formal financial accessibility.

Some surprising findings come from the *generalized trust* dimension when compared to previous studies. The results go in an opposite direction to the statements that trust in the community can improve economic outcomes in the form of financial development (Calderón, Chong, and Galindo, 2002; Guiso, Sapienza, and Zingales, 2004). Nevertheless, comparison of results have to be interpreted with caution. Calderón, Chong, and Galindo (2002) conduct the analysis at the cross country level, and Guiso, Sapienza, and Zingales (2004) measure *generalized trust* through alternative proxies. Contrary to Guiso, Sapienza, and Zingales (2004)'s findings, no positive impact is found for *generalized trust*. They find that in locations where trust is higher, households participate more in the stock market, have less outstanding loans with friends and family and are less likely to be credit rationed.

Concerning the results found in this study, credit rationing appears to show for all social capital dimensions considered in my model. However, for the case of informal borrowing, the findings show that higher *generalized trust*, at the household level, increases the likelihood of having outstanding loans with friends and family. At first, the results are quite puzzling given that *trust in the family*, a potential source of informal lending, is not significant. The remaining source is friends. Unfortunately, there was no variable that captured the effects of trust in friends. Thus, it might be the case that *generalized trust* is picking up for the effect of that omitted variable. Another potential and logical answer is that, if higher *generalized trust* translates into a bigger network of friends, that means the supply is higher in the informal credit market. According to Guiso, Sapienza, and Zingales (2004), informal lending may substitute formal one when the latter is unavailable. Thus, if we consider the limited supply of loans that the rural formal financial sector faces, and combine it with a higher potential supply of credit from an extended network, households may refrain altogether from dealing with the formal financial sector.

Abstaining from participating in the formal sector in Vietnam is supported by Markussen and Tarp (2014) and Pham and Talavera (2017). However, the findings in here place, in contrast with theirs, place a higher weight on friends lending than on family lending, given the diminishing confidence placed towards relatives. An interaction of *generalized trust* and heads of the household that work as *government officials* could further support the argument given by these two authors. That is, households with friends holding such positions may get more loans and with better conditions in those loans in the informal sector. Nevertheless, I was not able to test this as a result of collinearity.

For the same reason, households may be more likely to hold their wealth at friends' households rather than going through the process of opening a bank account. Lastly, *generalized trust* appears to have no impact on holding financial assets. That is, the mechanisms identified by Hong, Kubik, and Stein (2001) through which *generalized trust* may boost stock market participation, word to mouth and observational learning, do not seem to apply for households in rural areas in Vietnam. These findings have to be taken with caution, since Hong, Kubik, and Stein (2001) analyze the United States, a country where the financial literacy is more widespread. On the contrary, the likelihood of knowing someone within the household extended network that possess this sort of knowledge and even more, that holds shares in rural areas in Vietnam, is very low. However, Guiso, Sapienza, and Zingales (2004) find similar results for Italy, which by that time had low rates of market participation as well, but perhaps, higher financial literacy. Overall, this finding rejects hypothesis 7, and provides a new perspective of *generalized trust*, as an inhibitor of formal financial development through an increase in informal loans.

Group membership for the heads of the household seem to be expanding modestly for the sample in accordance to figure B.2. It appears to promote financial accessibility in three out of the four financial accessibility indicators selected for that matter. Not having an outstanding loan with the informal sector seems to be going hand in hand with holding a formal saving account and owning financial assets. Information failures represent a major barrier to formal financial saving in developing countries. These failures lead households to save in low-yielding forms, i.e. cash. Group membership can correct for these information asymmetries by facilitating the transmission through the social network they create (Putnam, 1993). Thus, social organizations act as a substitute for the inefficiencies of the system.

Newman, Tarp, and Khai (2012) provide two channels through which the information failures could be addressed. Firstly, through information sharing, and secondly, through the norms established within the groups. Particular details about the benefits of keeping wealth in banks may be transmitted through group events and the connections made in there. Furthermore, the rules established in this context may condition the economic decision-making of the household. Just as with the potential benefits of holding saving accounts, the potential gains of participating in the stock market may be transmitted. The positive effects of *group membership* in Vietnam are further supported by Newman, Tarp, and Khai (2012), confirming hypothesis 4. At the same time, organizations' influence may discourage households to borrow from the informal market, spreading the news about its limitations and lack of reliability. This confirms 2.

Several reports have shown the positive effects of social capital in stock market participation are supported by Guiso, Sapienza, and Zingales (2004) and Hong, Kubik, and Stein (2001). Yet, very little was found on the question of the role of *group membership* effects in the stock market. This thesis provides an alternative dimension through which social capital can boost participation in the stock market. The explanations provided by Newman, Tarp, and Khai (2012) on formal savings may have spillover effects in the stock market participation indicator, confirming hypothesis 6. Credit rationing is the only indicator of financial accessibility in which none of the social capital dimensions have an impact on. Economic factors and health indicators seem to prevail for bank tellers when it comes to decide whether to extend credit to a household or not. This is corroborated if one considers that the poorest households were selected in the sample.

8. Conclusion

This combination of findings provides some support for the conceptual premise that social capital may have important effects on increasing financial accessibility. Yet, Portes (1998)' claims that not all social capital is necessarily good also applies here. Positive effects of social capital seem transmitted through associations. *Group membership* turns out to increase formal financial market accessibility via information transmission and social norms creation. In a country like Vietnam, such groups, can correct for local market failures by providing information neither the state nor the market has access to. Hence, bringing out to the surface the substitute property of social capital. Furthermore, the knowledge transmitted within groups teaches members about financial literacy, enhancing human capital, and stressing the transformative role of social capital. Further research should look into whether the mechanisms proposed byNewman, Tarp, and Khai (2012) for increasing formal savings apply as well for the increase in formal borrowing and stock market participation.

On the other hand, *generalized trust* appears to reduce formal financial accessibility by encouraging informal borrowing and reducing the rate of savings through formal means. On the contrary, the figure of the family seem to be diminished and this, in turn, results in no negative impact on the formal financial markets as was originally expected. Nationally, or at least according to the WVS data, the effects of the crisis have made households more dependent of the family network, less inclined to join associations and more wary towards strangers. On the contrary, *doi moi* appears to have had long lasting effects in the promotion of *group membership* in rural Vietnam. The encouragement of group membership by the government presents itself as a non-economic solution to alleviate financial constraints of rural population, despite their initial tumultuous relationship. Needless to say, an improvement on the supply side should be prioritized, so investment is promoted and the side effects of *generalized trust* in fostering the duality of the credit market are deterred.

The conclusions in here have to be taken with caution. Even though this work has made the effort to include as many possible controls to infer causality, there may be still unobserved time varying factors. Thus, endogeneity may prevail, as many studies have shown. Lastly, the constraints of observational data represent an obstacle in tracking the specific mechanisms through which the network effect operates. Due to this, only theoretical explanations were given. Future research should provide more sophisticated explanations by applying randomized control trials.

Appendix A. (Appendix A title)

Table A.1: Credit Rationing determinants, probit output

	(1)	(2)	(3)	(4)	(5)
Membership head	-0.08863 *	0.00873	0.01297	-0.02346	-0.02438
	(0.04997)	(0.05892)	(0.05961)	(0.06122)	(0.06135)
Trust in Relatives					-0.02897
					(0.13832)
Generalised trust					0.00296
					(0.05529)
Late repayment and default	0.72363***	0.66621***	0.66400***	0.69985***	0.69647***
	(0.07236)	(0.07630)	(0.07682)	(0.07849)	(0.07895)
Head of the household health	0.12370***	0.09636*	0.10463**	0.11092**	0.11078**
	(0.03392)	(0.04008)	(0.04047)	(0.04158)	(0.04158)
Head of the Household education	-0.00074	-0.00123	-0.00092	-0.00071	-0.00073
	(0.00151)	(0.00182)	(0.00183)	(0.00186)	(0.00185)
Spouse education	0.00306	0.00282	0.00249	0.00142	0.00143
	(0.00396)	(0.00495)	(0.00501)	(0.00511)	(0.00513)
Working wife	0.27643*	0.23636	0.28231*	0.25343	0.25306
	(0.12517)	(0.13681)	(0.13502)	(0.14048)	(0.14059)
Government officials and businessmen	-0.13423	-0.22427	-0.21566	-0.17421	-0.16710
	(0.12813)	(0.14153)	(0.14167)	(0.14830)	(0.14820)
Land Ownership	-0.12462	0.03416	0.00882	-0.01838	-0.02009
	(0.16765)	(0.17310)	(0.17514)	(0.17960)	(0.17920)
Observations	9094	7802	7630	7292	7271
Province FE	N	Y	Y	Y	Y
Time FE	N	Y	Y	Y	Y
Developmentindicators	N	N	Y	Y	Y

Note: Standard errors clustered at the primary sampling unit (PSU);development indicators include number of houses in the village, enterprises with more than five employees, bank branches and average distance to them respectively; household characteristics include gender, household head age,gender and ethnicity respectively, household size and annual income. Probit direct results are displayed in the appendix.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A.2: Informal Borrowing, probit output

	(1)	(2)	(3)	(4)
Member head	-0.1638***	-0.551	-0.594	-0.649**
	(0.0422)	(0.0489)	(0.0488)	(0.0506)
Trust in Relatives	0.0166	0.1648	0.1665	0.0622
	(0.1042)	(0.1285)	(0.1286)	(0.1364)
Generalised trust				0.1460***
				(0.0499)
Head of the household health	0.0184	-0.0369	-0.0356	-0.0401
	(0.0263)	(0.0301)	(0.0300)	(0.0309)
Head of the Household education	-0.0004	-0.0005	-0.0005	-0.0012
	(0.0016)	(0.0017)	(0.0017)	(0.0018)
Spouse education	0.0012	-0.0003	-0.0002	-0.0004
	(0.0042)	(0.0050)	(0.0049)	(0.0051)
Working wife	-0.2239**	-0.2702**	-0.2815**	-0.3196***
	(0.0789)	(0.0867)	(0.0862)	(0.0889)
Government officials and businessmen	0.0319	-0.0345		
	(0.1000)	(0.1159)		
Observations	8926	7634	7634	7274
Province FE	N	N	Y	Y
Time FE	N	N	Y	Y
Developmentindicators	N	N	N	Y

Note: Standard errors clustered at the primary sampling unit (PSU);development indicators include number of houses in the village, enterprises with more than five employees, bank branches and average distance to them respectively; household characteristics include gender, household head age,gender and ethnicity respectively, household size and annual income. Probit direct results are displayed in the appendix.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A.3: Formal Savings, probit output

	(1)	(2)	(3)	(4)
Member head	0.1744***	0.1727***	0.1440**	0.1550**
	(0.0508)	(0.0512)	(0.0640)	(0.0661)
Trust in Relatives				0.1092
				(0.1429)
Generalised trust				-0.1202*
				(0.0552)
Head of the household health	-0.0125	-0.0119	-0.0233	-0.0190
	(0.0323)	(0.0325)	(0.0366)	(0.0372)
Head of the Household education	0.0075***	0.0074***	0.0061*	0.0062*
	(0.0022)	(0.0022)	(0.0025)	(0.0026)
Spouse education	0.0181***	0.0178***	0.0180***	0.0170***
	(0.0039)	(0.0039)	(0.0041)	(0.0041)
Working wife	-0.0818	-0.0801	-0.0507	-0.0679
	(0.0961)	(0.0969)	(0.1099)	(0.1146)
Government officials and businessmen	0.1911	0.2007*		
	(0.0977)	(0.0977)		
Observations	8147	8027	6735	6402
ProvinceFE	N	N	Y	Y
TimeFE	N	N	Y	Y
Developmentindicators	N	N	N	Y

Note: Standard errors clustered at the primary sampling unit (PSU);development indicators include number of houses in the village, enterprises with more than five employees, bank branches and average distance to them respectively; household characteristics include gender, household head age,gender and ethnicity respectively, household size and annual income. Probit direct results are displayed in the appendix.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A.4: Financial Assets, probit output

	(1)	(2)	(3)	(4)
Member head	0.1410***	0.1746***	0.1673***	0.1458**
	(0.0476)	(0.0643)	(0.0647)	(0.0656)
Trust in Relatives	-0.1304	-0.1296	-0.1074	-0.1288
	(0.0971)	(0.1260)	(0.1339)	(0.1370)
Generalized trust			0.0410	0.0419
			(0.0508)	(0.0518)
Head of the household health	-0.1333***	-0.1168**	-0.1196**	-0.1211**
	(0.0304)	(0.0373)	(0.0374)	(0.0380)
Head of the Household education	0.0019	0.0030	0.0029	0.0027
	(0.0015)	(0.0022)	(0.0022)	(0.0023)
Spouse education	0.0042	0.0132**	0.0137**	0.0130**
	(0.0033)	(0.0045)	(0.0045)	(0.0046)
Working wife	-0.0379	0.0765	0.0763	0.0978
	(0.0893)	(0.1106)	(0.1114)	(0.1166)
Government officials and businessmen	0.3549***	0.1947		
	(0.0870)	(0.1094)		
Observations	8884	7169	7153	6814
Province FE	N	Y	Y	Y
Time FE	N	Y	Y	Y
Development indicators	N	N	N	Y

Note: Standard errors clustered at the primary sampling unit (PSU);development indicators include number of houses in the village, enterprises with more than five employees, bank branches and average distance to them respectively; household characteristics include gender, household head age,gender and ethnicity respectively, household size and annual income. Probit direct results are displayed in the appendix.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Appendix B. (Appendix B title)

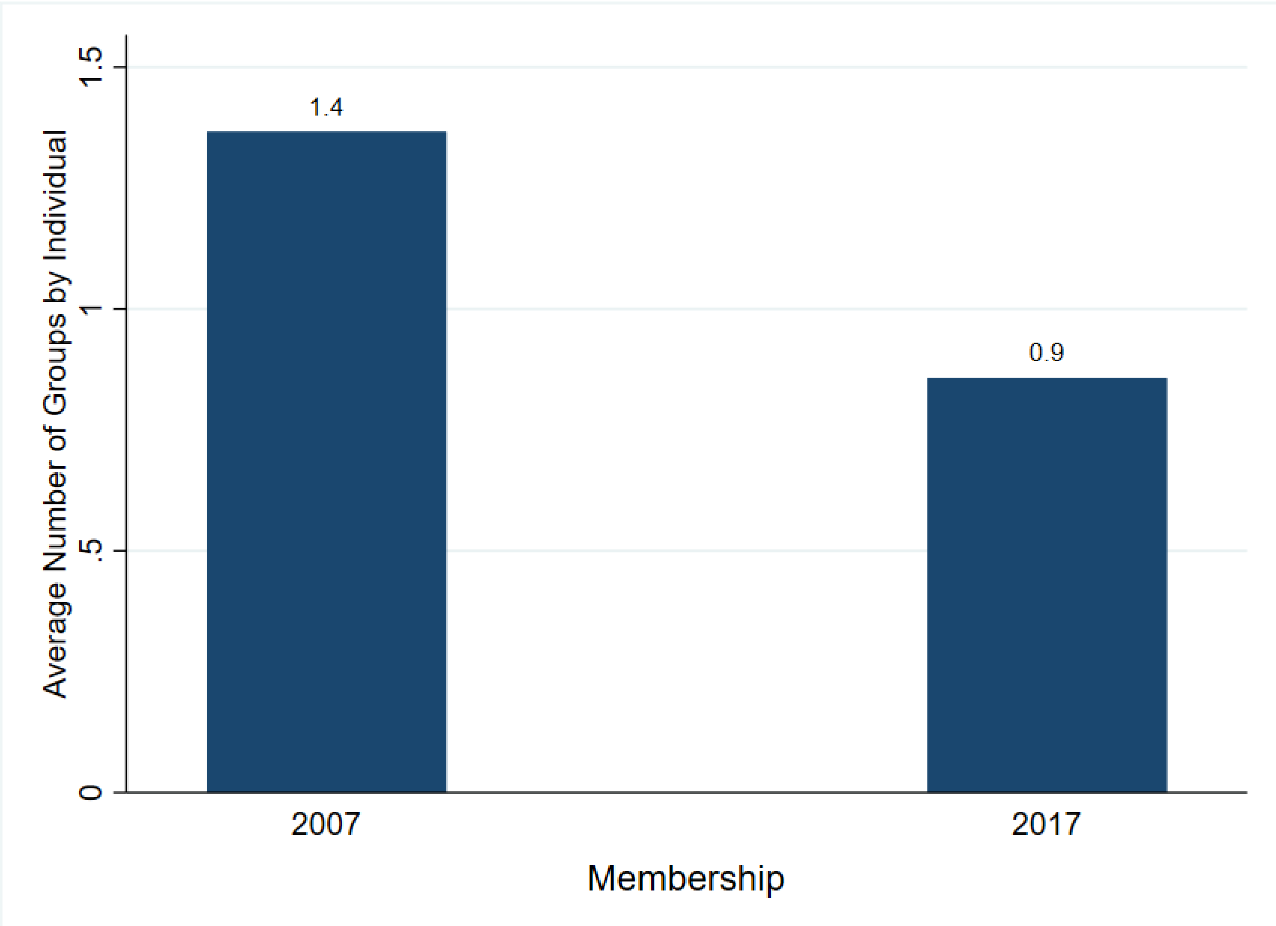

Figure B.1: Evolution of Number of Groups by Individual

Notes: Author's elaboration. Data refer to WVS waves 5 and 7 respectively (Inglehart, 1994).

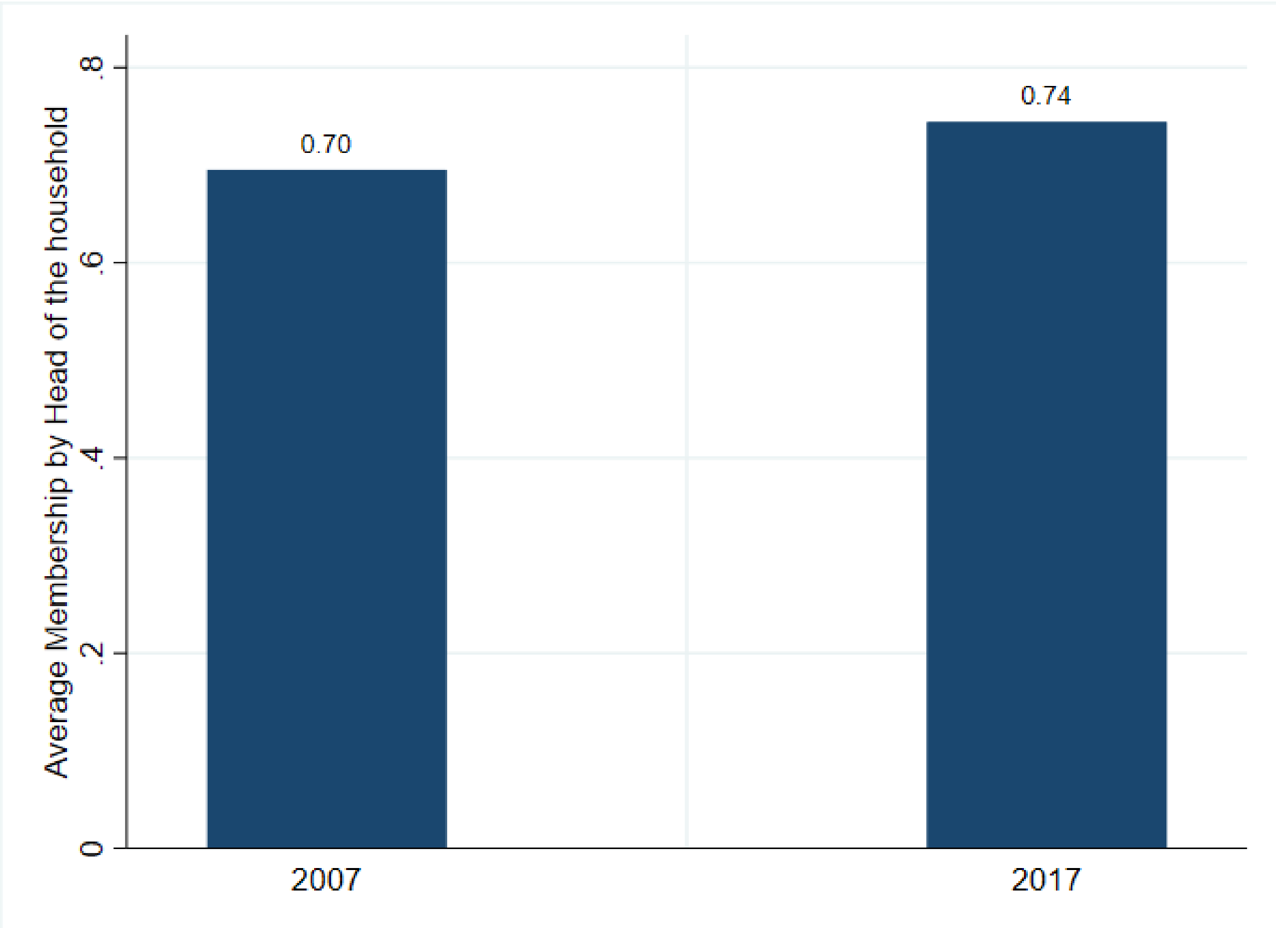

Figure B.2: Evolution of Head Membership

Notes: Author's elaboration. Bottom row corresponds to the sample survey analysed (Hardeweg, Klasen, and Waibel, 2013).

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