Relationships and Traders in Madagascar

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Abstract[1]

This paper documents the role that personal relationships play in economic exchange. Original survey data show that agricultural traders in Madagascar perceive relationships as the most important factor for success in their business. Evidence details the extent to which relationships are used to serve a variety of purposes such as: the circulation of information about prices and market conditions; the provision of trade credit; the prevention and handling of contractual difficulties; the regularity of trade flows; and the mitigation of risk. Of these, the regularity of supply and demand and the sharing of risk appear particularly important. Larger and more prosperous traders are those with quantitatively and qualitatively better relationships. Family plays little role in business beyond assistance at start-up.

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Sociologists have long emphasized the crucial role that interpersonal relationships play in the life and professional success of individuals and groups (e.g., Coleman (1988), Granovetter (1985), Putnam, Leonardi and Nanetti (1993)). In recent years, economists too have begun to recognize that economic exchange is influenced by the level of familiarity and trust that exists between agents (e.g., Gambetta (1988), Fukuyama (1995), Greif (1993, 1994), Platteau (1994), Fafchamps (1998), Tadelis (1998)). In a world characterized by imperfect information and enforcement, it has been shown both theoretically and empirically that personalized relationships can facilitate the circulation of information on new technologies (e.g, Barr (1997)) and market opportunities (e.g, Kranton (1996)), the screening of job and credit applicants (e.g, Montgomery (1991), Cornell and Welch (1996)), the sharing of risk (e.g., Fafchamps (1992), Coate and Ravallion (1993), Lund and Fafchamps (1997)), and the punishment of cheaters (e.g., Kandori (1992), Fafchamps (1998)). Much of this work remains confined to markets such as credit or labor in which moral hazard issues are severe. Applications to markets for commodities have so far been few (see, however, Gabre-Madhin (1997), Kranton (1996), Bernstein (1996)). The present paper fills this lacuna by documenting the role that personal relationships play in the trade of agricultural products.

This paper presents original evidence on the extent to which relationships are used by agricultural traders in Madagascar to serve a variety of purposes such as: the circulation of information about prices and market conditions; the provision of trade credit; the prevention and handling of contractual difficulties; the regularity of trade flows; and the mitigation of risk. Results show that larger and more prosperous traders are those with better relationships. The fact that larger, more successful traders are better connected will hardly surprise anyone who is familiar with African trade patterns (e.g., Bauer (1954), Jones (1959, 1972), Meillassoux (1971), Cohen (1969), Amselle (1977)). It is also in line with the new literature on social capital that identifies networks of relationships as a productive asset from which individuals can derive a return. But it

runs somewhat contrary to the expectation of policy makers and international agencies who often implicitly assume that larger traders are more sophisticated and that sophistication is synonymous to arms-length, anonymous exchange.

This is important because the common observations that large traders cultivate close relationships with each other is often interpreted as evidence of collusion and price rigging. Although we cannot comment directly on whether or not collusion is present in Madagascar grain markets, our results indicate that there are many other reasons why traders maintain a network of personal relations, such as access to information, regular trade flows, trade credit, and risk sharing. Our results also indicate that traders with better networks have higher productivity. By itself, this empirical regularity does not, however, constitute evidence that networks contribute to firm performance: relationships could be correlated with productivity simply because they are an inessential by-product of economic success.[2] To ascertain that relationships help productivity, we investigate whether networks play any practical role in the way firms deal with each other and show that relationships serve a useful purpose. This can be regarded as preliminary evidence that relationships and networks are more than an irrelevant by-product of market interaction. Fafchamps and Minten(1998) complement this approach with a rigorous empirical analysis of the contribution of social (network) capital to firm performance.

The paper is organized as follows. We begin in Section 1 with a brief description of the agricultural markets policies of the Malagasy government since independence. We also provide a rapid survey of the existing literature on agricultural markets in Madagascar, most notably the

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[2] This issue is quite distinct from that of relation of causality between network capital and firm performance: irrespective of whether network capital is useful or not, its accumulation is at least partly an outcome of past firm performance; it is similar, in this respect, to physical capital. The usefulness of network capital is also a separate from the role of entrepreneurship in firm performance. If network capital is essential to firm growth, at least in certain institutional environments, then smart entrepreneurs must accumulate it to be successful -- just like they need to accumulate machinery and equipment. The fact that network capital is critical to firm performance thus does not subtract from the role that entrepreneurship plays in firm development. Finally, the idea that networks are an irrelevant by-product of good entrepreneurship *per se* can be dismissed off hand: if networks serve no purpose, it is hard to see why entrepreneurs who are, as a rule, extremely busy would bother investing in the social interaction that is required for the formation of networks.

work of Barrett (1997a, 1997b). We then describe in Section 2 the data used in this paper and the survey methodology used to collect them. A characterization of agricultural traders is provided in Section 3. Section 4 is devoted to a detailed analysis of the different functions performed by relationships. Conclusions and prospects for future work are presented at the end.

Section 1. Agricultural Markets in Madagascar

After Madagascar obtained independence from France, governments initially increased the intervention of the state in agricultural markets (e.g., Dorosh and Bernier (1994), Shuttleworth (1989), Berg (1989)). By the end of the 1970's, most trade in agricultural products was in the hands of the state. A reversal of policy took place in the 1980's with a transition from a state food marketing system to a liberalized market. This transition, however, was very gradual. It begun in 1983 when the state officially abandoned its monopoly on the commerce of agricultural products. The initial liberalization measures implied that agricultural trading was open to everybody except in the plains of Marovoay and Lac Aloatra - two main production areas - where two government agencies, FIFABE and SOMALAC, could continue their monopoly. The roles of these two state companies were only redesigned in 1989. At the beginning of the reforms, floor and ceiling prices were maintained in effect. In June 1985 a government decree fixed the floor price of paddy while removing the ceiling price completely. But in reality the government effectively controlled domestic rice trade until 1986. From mid 1983 on, it supplied all the big cities with the "riz fokontany", i.e. subsidized rice. In Antananarivo fokontany rice represented until 1986 more than 60% of household rice consumption (e.g., Roubaud (1997)). The subsidy program continued until October 1988 but its importance declined gradually.

In November 1986, the government introduced a buffer stock scheme in response to high seasonal prices during that year and to defend the ceiling price. However, the buffer stock scheme was poorly administered and was ultimately terminated in 1990. In 1991, the government introduced an import tax of 30% on rice to protect local production. This tax was reduced in 1995

to 10%. Occasionally the government granted tax exoneration for certain companies and shipments to assure a steady food supply.

The current situation can be described as one in which private traders have been given free reign to set buying and selling prices and to move agricultural products around the country. The state continues to intervene in agricultural markets through buying and selling operations conducted for example by SOMACODIS but these agencies now only represent a very small percentage of the total volume of food products transacted domestically. In this respect Madagascar resembles many other African countries that have gone through a similar cycle of government interventionism and retreat (e.g., Berg (1989), Staatz, Dione and Dembele (1989), Gabre-Madhin (1997)).

Trade in agricultural products in Madagascar has been analyzed by other authors, most notably Barrett (1997a, 1997b) and Berg (1989). Agricultural food products flow mostly from rural areas to urban centers immediately after harvest, and from urban centers to rural areas in the lean period. Although the capital city Antananarivo occasionally draws food products from outside its own province (faritany), most marketed output is consumed within the province where it is produced (e.g., Minten et al. (1997)). Barrett and Dorosh (1996) show that most Malagasy rural households are deficit rice producers and must rely on the market for their subsistence. Food markets are thus important not only for urban dwellers but for rural inhabitants as well. Using surveys of Malagasy grain traders, Barrett (1997a) describes agricultural trade in the country as characterized by extreme disparity between large and small traders. He argues that most traders do not have access to the equipment and credit required to penetrate the more profitable segments of the business. As a result, most trading businesses remain small while a few large traders derive large margins in activities that are secluded from competition. Only in segments where entry is easy is competition fierce. A similar conclusion is reached by Abt Associates (1991) and Kristjanson and Martin (1991). Barrett concludes his work by calling for easier and wider access

to credit for traders.

Section 2. Survey Methodology

Although the work of Barrett and others provides much needed detailed information on agricultural markets in Madagascar, it largely ignores issues of social capital and personal relationships. To fill this lacuna, a survey of agricultural traders was conducted in Madagascar in a joint project between IFPRI (the International Food Policy Research Institute) and the local Ministry of Scientific Research (FOFIFA). The survey consisted of two rounds. The first round was held between May 1997 and August 1997. The questionnaire in the first round survey consisted mainly of questions dealing with the individual characteristics of the traders and with the structure, conduct, and performance of the trading sector. The second survey round was conducted between September 1997 and November 1997. The same traders were visited and they were asked mostly about the nature of their relationships with other traders, clients, and suppliers.

The sample design was constructed so as to be as representative as possible of all the traders involved in the whole food marketing chain from producer to consumer, wherever located. Three main agricultural regions were covered (Fianarantsoa, Majunga, and Antananarivo) and the sampling frame within these regions was set up as follows. Traders were surveyed in three different types of location:

(1) Traders operating in big and small urban markets in the main town of every province (faritany) and district (fivondronana). These traders are mostly wholesalers, semi-wholesalers, and retailers.

(2) Urban traders located outside the regular markets. These often are bigger traders, processors (e.g., rice millers), and wholesalers.

(3) Traders operating on rural markets at the level of the rural county (firaisana). These are mostly big and small assemblers and itinerant traders. Rural firaisanas were selected through

stratified sampling based on agro-ecological characteristics so as to be representative of the various kind of marketed products and marketing seasons.

The survey focused on traders who market locally consumed staples such as rice, cassava, potatoes, beans, and peanuts. The different forms in which these products are marketed were taken into consideration, i.e., paddy and milled rice, maize and maize flour, etc. Traders involved primarily in export crops, fruits, vegetables, and minor crops were excluded. Most surveyed traders -- 67% -- report rice as the agricultural product they trade most intensively. This reflects the importance of rice as the main staple food in the country. Other most actively traded products are beans and lentils (18% of the sample report them as their main traded product), cassava (5%), potatoes (5%), peanuts (4%), and maize (2%).

A total number of 850 traders were surveyed in the first round, 739 of whom were surveyed again in the second round. To facilitate comparison, the analysis presented here is based on traders that could be located in the two rounds.[3] The three provinces of Antananarivo, Fianarantsoa, and Majunga are represented more or less equally in the sample. A breakdown of the sample by size and occupational category is given in Table 1. Size categories are defined based on the total value of reported annual sales; occupational categories are based on the occupation of the respondent for the main traded crop at harvest time.[4]

The Table shows that retailers constitute the bulk of the sample. They are divided into retailers with a semi-permanent selling point -- usually a stall in the market itself; and retailers without fixed selling point, that is, those who sell immediately from the roadside. As the Table shows, the latter are typically smaller and less formal.[5] In contrast, the largest traders are assem-

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[3] Not surprisingly, the category of traders which were hardest to trace during the second survey round are those who are least formal and have the least permanent form of operation. As a result, small itinerant traders tend to be underrepresented in the results reported here.

[4] The definition of occupational categories is indeed complicated by the fact that traders who are semi-wholesalers for one product can be retailer for another. Traders may also change occupational category during the year, e.g., they may be assembler during the harvest season but semi-wholesalers the rest of the year.

[5] Because their fluid nature makes them harder to trade, they are underrepresented in the second survey round.

blers (traders who collect large quantities from the countryside and assemble them for shipment) and wholesalers (traders who operate in bulk). Having described the survey methodology, we are now ready to proceed with the analysis. We begin with a brief characterization of surveyed traders.

Section 3. A Brief Characterization of Agricultural Traders

Surveyed traders vary widely in the size of their operations. The total sales of the average trader amount to almost $3,300 a month[6] but there is enormous variation across traders: the Gini coefficient of total sales computed over the sample is 0.761 (Table 2). Similar results are obtained if we consider purchases or if we restrict ourselves to sales during the month preceding the second round interview. Size is correlated with occupational category: assemblers and wholesalers have the largest monthly turnover at $8,700 and $5,550, respectively; retailers have the smallest -- $1,300 and $400 for those with and without fixed selling point, respectively. These results are similar to those reported by Barrett (1997a) in his study of agricultural markets in Madagascar. To reflect variation in size, in much of the presentation that follows we divide the sample into three terciles called 'small', 'medium', and 'large', respectively. The data also indicate that trade in agricultural food products is a highly seasonal activity: monthly sales in the lean October period only amount to 40% of average annual sales. This is due to the highly seasonal nature of agricultural production and the relative lack of in-village storage (e.g., IFPRI (1998)). Most assembly takes place after harvest in April and May, which explains why the difference between annual averages and October sales is widest for assemblers. In contrast, retail where small traders dominate is less seasonal in nature since consumption takes place throughout the year.

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[6] Sales of listed staple food products over the period April 1996 to March 1997; conversion into US$ using an approximate exchange rate of 5,000 Francs Malgaches for US$1.

Next, we investigate whether the profitability of traders varies systematically with size. Gross margins are computed as the difference between total annual sales and purchases. Results provide an order of magnitude of the total payments to labor, management, and equipment, but they are subject to a lot of measurement error.[7] On average, gross margins amount to $460 a month -- significantly higher than the average GDP per head of $230 per year (e.g., The World Bank (1997)).[8] Assemblers have the highest gross margin -- $1800 a month -- retailers without table the lowest -- $70. In percentage terms, the average gross margin is 14% -- 19% among assemblers, 14% among wholesalers, 10% to 16% among retailers. There does not seem to be a systematic relationship between firm size and gross margin rate.

Capital and Labor

Next we examine the capital and labor structure of surveyed firms before turning to the human capital and family background of respondent traders. Working capital comes mostly from own sources, not from credit: 89% of the traders rely exclusively on their own funds for their business activities. The average working capital is US$2,060 -- roughly two thirds of average monthly sales (Table 3). Not only do larger traders have more working capital than small ones, they also appear to rotate it faster: the ratio between working capital and monthly sales indeed falls with firm size, i.e., from 1.7 among small traders to 0.9 among medium size traders and to 0.6 among large traders. Although most of the traders rely on own funds to finance their operations, 81% estimates that these funds are not sufficient and they would like to see their funds

[7] First, certain traders are hesitant to communicate their effective profit margin to outsiders and seek to disguise the volume of their activities. This generates inconsistencies in reported sales and purchases, e.g., medium size traders report higher average annual purchases than sales in Table 2. Second, very few traders keep an accurate accounting of their sales and purchases over the year (if only for fear of taxation). As a result, they easily forget how much and at which price they actually bought and sold products. Finally, we suspect that certain traders actually do not know how much they sold and bought as trading happens on an *ad hoc* basis. This is particularly true for small traders who seldom make a clear distinction between their production, consumption, and trade in agricultural products.

[8] To minimize errors due to inconsistencies between sales and purchases, gross margins were computed as follows. For each product, a gross margin was computed by multiplying quantities sold by the difference between sales and purchase price; adding the result over all products yields a gross margin estimate based on quantities sold. An alternative gross margin estimate was constructed using quantities purchased instead. The gross margin figures reported in Table 2 are the average of the two.

increase threefold.

Formal credit as a mean to finance trading activities is almost non-existent: it is mentioned by only 1.5% of the traders representing 6.1% of total sales. The minor importance of formal financial institutions is further illustrated by the fact that only 16% of the surveyed traders have a bank account; one trader out of 100 has a bank line of credit. Only 4% of the traders has ever asked for credit from a formal institution. When asked why they do not apply for formal credit, half of the traders respond either that they do not know how to apply (28%) or that the application procedure is too complicated (19%). The rest either consider the interest rate too high (23%) or or do not possess any collateral (16%). As is often the case in surveys of this type (e.g., Cuevas et al. (1993), Fafchamps et al. (1994), Fafchamps, Pender and Robinson (1995)), we observe a positive relationship between firm size and reliance on formal financial institutions.

Informal credit does not appear to compensate for the limited use of formal credit. Only one trader out of ten derives part of its working capital from informal credit sources. Less than 2% of the traders are members of savings mutuals; only 1% are member of a "tontine" (a rotating savings group). The use of trade credit is also very limited, as we shall discuss more in detail in Section 4. The median self-declared opportunity cost of capital reverts around 20% a year; some respondents declare facing a much higher shadow cost of capital, however. There is no clear relationship between size and the shadow interest rate perceived by traders.

The level of the equipment at the disposal of traders is very limited, even among large traders. The only piece of equipment that is nearly universal is the balance, which is owned by 79% of the surveyed traders. Half of the traders own a location that they use for storage -- typically the shop itself or a small warehouse. Less than one trader out of ten -- one out of three among large traders -- owns a vehicle for transportation purposes. The total equipment owned by traders is worth less than one fifth of their working capital; most trader capital is thus tied up in stocks and receivables.

Malagasy traders have imperfect access to modern means of communication. The great majority of traders (95%) do not have a telephone for their business; virtually none has a fax machine. Even among bigger traders, only 11.5% declare having a phone. Half of the surveyed traders nevertheless have access to a phone, but few avail themselves of this opportunity in the conduct of their business. The use of fax machines for trade purposes is virtually non-existent.

In terms of management experience, surveyed traders have on average spent 6 years trading in agricultural products. The average starting date is 1991, six years before the survey, but significantly later than the onset of agricultural trade liberalization (1983-1987) (see Section 1). The link with the previous state marketing system is minimal: only 2% of respondents ever were employed in the state marketing system. Large traders are slightly more experienced than small traders, but the difference is not very large.

The majority of surveyed traders operate all year round and focus most of their attention on trade, with no noticeable difference by firm size. Some 14% of the small traders list agriculture as their main activity while some of the bigger traders declare transformation, transport, or agriculture as their main source of income. As a secondary activity, farming remains important: 69% of surveyed traders participate, in one way or another, in agriculture. In addition, 16% of the respondents participate in non-farm activities, 17% obtain a regular salary, and 11% have a regular source of income other than earned income. Only 40% of the respondents (half of the small traders) derive all their income from agricultural trading.

Malagasy traders employ very few people other than themselves (Table 3) -- on average, one unpaid family helper, one permanent employee, and a little over one casual worker. Small and medium size traders have almost no external help in their business and they seem to do most of the trading on their own or with the help of family members. Large traders make more use of permanent and temporary employees and may also use the services of collecting agents. Judging from the number of months in a year than different categories of trade workers spend participat-

ing to the activities of the firm, temporary employees work about half the year while all other categories work close to full time. While one observes a positive relationship between employment and total sales, the relationship is far from being proportional. In other words, large traders have a much higher volume of activity per worker than small traders. Since they also use less working capital per volume of sales than small traders, they appear to be more efficient overall. Section 4 investigates whether relationships may account for part of the performance differential between small and large traders.

Human capital and family background

Turning to the personal characteristics and human capital of the owners (Table 4), we see that close to half the surveyed traders are female; the proportion of women is much higher among small than large firms, however. Large firms also tend to have a slightly older owner, but the difference is not large. Surveyed traders are, on average, well educated, having spent on average 9 years in school. At first glance, there appears to be little difference across firm size terciles but this is partly incorrect. Among the small traders, 11 % are not able to read or write. Morover, while 46% of the big traders finished at least secondary school, this percentage is only 15% for the small traders. Small traders are also more likely to identify with traditional religions and identify themselves as not belonging to the dominant religion on the island, christianism. Other religious affiliations are extremely rare. The overwhelming majority of the surveyed traders were born in the country and are ethnically Malagasy. Unlike in other parts of Africa (e.g., Fafchamps (1998)), the ethnic and religious make-up of the trading community is thus fairly homogeneous.[9]

Unlike much of the African mainland, Malagasy people share a common language which is spoken throughout the island, hence facilitating communication and trade. French is widely used in the administration and in high school instruction. When interviewed about the languages they

[9] The reader should bear in mind that Indo-Pakistani traders, who constitute a small minority of traders, tended to refuse participation to the survey.

speak regularly, almost 50% of surveyed traders declare speaking a language other than Malagasy on a regular basis -- usually French. Larger traders are slightly more likely to speak a second language, but the difference is small. Although language is not as much a barrier to exchange than it might be in other countries, regional differences and sensibilities exist and geographical mobility is limited.[10] Most respondents trade within the area where they were born or where they grew up. On average, only one trader out of twenty comes from outside the province where he or she operates.

The family background of surveyed traders suggests that agricultural trade is an activity undertaken mostly by mature, settled adults with a family and kids to provide for. Most surveyed traders are married but a large part of the smaller traders are either bachelors, widow(er)s, or divorced. The small trader category thus seems more heterogeneous, i.e., made of individuals who are in the beginning of their career and of people that might have entered the sector because of personal problems such as divorce or death in the family. Traders have three children on average, half of whom are old enough to help with the business. Respondents also have brothers and sisters who, if necessary, could assist in the firm. Parents education does not vary much across firm sizes and thus appears an unlikely determining factor in trade success.

In terms of personal wealth, 56% of the surveyed traders own a house but only 5% have a television and 23% a bicycle. 44% and 90 % of the traders possess a radio and a cassette recorder, respectively. In all cases, the percentage is higher for bigger traders who also tend to live in a more expensive home. The value of the house that traders live in is on average commensurate with the value of their working capital, hence suggesting that their business risk exposure is far from negligible. Finally, there does not appear to be a strong relationship between geo-

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[10] Although most Malagasy are from mixed Asian and African ancestry, people from coastal areas harbor a historical resentment against people from the central highlands who traditionally ruled the country. Divisions also exist along the lines of former kingdoms that historically divided the island. Remnants of pre-colonial caste distinctions between members of the former royal family, the middle class, and former slaves are said to survive in certain rural areas, but the survey made no attempt to revive these feudal classifications by asking questions about it.

graphical location and firm size (Table 4).

To summarize, Malagasy traders in agricultural food products are characterized by their extreme diversity in terms of volume of operation and their unsophisticated mode of operation (little equipment, few employees). In contrast with the common view that trade in Africa is mostly a secondary activity, most surveyed traders are heavily involved in trade: they have invested in it a large proportion of their total wealth and they derive a significant proportion of their income from it. Given the low level of technical sophistication of the industry as a whole and the relative unimportance of credit, even for large traders, returns to scale are unlikely to be present. As a result, one would expect entry to be easy and competition to be fierce.

Some of the evidence presented above seems to support this view, in particular the plethora of small traders, especially in retail, and the fact that small traders are younger and less established but otherwise share a family background similar to that of successful traders, suggesting a life-cycle explanation for size differences. Some of the facts, however, do not fit a simple free entry, life-cycle explanation for the size distribution of trading firms. Traders in the upper tercile of the firm size distribution use 15 times more working capital and 2.2 times more labor but they sell 44 times more and get 46 more gross margin than traders in the lower tercile. Without doing any complex calculation, it is clear that large traders have a much higher total factor productivity than small traders. What factors could explain this difference? Human capital has been put forth in the recent literature as a major determinant of economic performance (e.g., Mankiw, Romer and Weil (1992)). It is unlikely, however, that the very small difference in schooling observed between small and large traders could account for the difference in total factor productivity. Another possible candidate, one that is receiving increasing attention, is the social network capital of traders, that is, the relationships that they have with others. To explore this possibility, we now investigate the many roles that relationships play in the business of Malagasy traders.

Section 4. Trade and Relationships

We begin with Table 5 which illustrates the importance of relationships as perceived by traders themselves. The Table shows that relationships are by far the most important factor for the success of a trader. 71% of the respondents regard reputation and relationships as very important for the success of their business. This proportion is much higher than that for credit, price, or equipment. Access to credit, which is typically presented as a major constraint by small businesses the world over, ranks much lower than relationships: only 11% of the respondents see it as a very important factor in business success; close to 40% of the respondents think it is not important at all.

It is sometimes argued that relationships are important among the poor because they need the support of their family and community to deal with the vagaries of life while the rich can afford to behave in a more individualistic fashion (e.g., Platteau (1996)). This is not the case here. Table 5 indeed also shows that the importance given to relationships rises with firm size: while 62% of small firms think relationships are very important, 77% of large traders do. It is therefore not the case that the emphasis on relationships results from the presence in the sample of small, poor traders who life in symbiosis with their community. If anything, larger, richer traders put more emphasis on relationships than the poor, not less.

These results beg the question of why relationships are important. To try to answer this question, we examine six possible roles that relationships may play in trade: (1) business training and start-up support; (2) information sharing; (3) regularity of demand and supply; (4) credit; (5) prevention of contractual breaches; and (6) risk sharing.

Business training and start-up support

Table 6 shows that a quarter of surveyed traders had either a father or a mother in trade. Only 14% of respondents say they are in this business because of family traditions, however.

Half the traders were helped by family and friends at start-up and close to half learned the business with a relative or a friend. The rest learned business on their own. Larger traders seem to have had parents with more experience in trade but otherwise are similar to their smaller counterparts: if anything, they are more likely to indicate they learned the business on their own -- a finding hardly consistent with the idea that parents in trade is a condition for success. In addition, the bottom of the Table shows that traders have typically outgrown their family base: while on average they have about one relative in trade, they know close to 10 traders personally. Taken together, this evidence suggests that while, for some traders, family relationships were important at start-up for capital and experience, they do not seem to be strong determinants of business success. If anything, traders who learned the business from their family appear less likely to be successful. In contrast, non-family types of relationships which are initially unimportant seem to grow over time.

Table 6 also suggests that the number of traders that respondents know personally is unlikely to be, by itself, an important determinant of business success: although the numbers reported by small firms are smaller than those reported by medium and large firms, the differences are far from commensurate with variation in firm performance. Furthermore, there is no noticeable difference between the answers given by medium and large firms. If network capital matters, then it must through a channel more specific than simply knowing other traders personally.

Information sharing

In contrast with training and start-up support, non-family relationships appear critical for getting access to business-relevant information. Table 7 lists the sources of information on prices, supply, and demand conditions used by surveyed traders. The numbers bring to light the paramount importance of relationships as sources of information: other traders and suppliers and clients are by far the most important source of business information. Public sources such as

newspapers, radio, and public services play an extremely marginal role. Larger traders rely more than small traders on messengers, that is, individuals who are sent explicitly to collect information, but even among large traders their role is dwarfed by relationships. Another interesting regularity present in the data is that small traders are more likely than large traders to seek information from other traders instead of getting information from suppliers and clients. One likely explanation is that large traders have a closer relationship with their suppliers and clients and feel they can rely on the information they provide. Small traders, in contrast, probably fear they will be cheated if they trust what suppliers and clients tell them.

The frequency with which respondents share information with other traders appears fairly low, however, as shown in Table 8. While most respondents discuss quality, bad clients, and prices with others at least once a year, the great majority of them do not discuss these issues every week.[11] Taken together, the evidence suggests that Malagasy grain traders have not formed strong networks of information sharing based on trust. Interpersonal relationships such as those formed with regular clients and suppliers nevertheless serve as conduits for valuable information. This suggests that, to the extent that firms benefit from social capital for information gathering, they do not get it for free; they must create it through business contacts and relationships.

Regularity of supply and demand

Another possible role that relationships play is in ensuring secure supply and demand. Survey results indicate that finding a supplier or a client is a recurrent problem for respondents: between 40 and 50% of them face difficulties, at least occasionally, in identifying potential buyers and sellers. As Table 9 illustrates, traders who experience lots of difficulties are those who have the smallest numbers of regular suppliers and clients. In other words, traders with regular

[11] Some caution should be used when interpreting the results, however. First, respondents seem to have understood the questions relative to 'other traders' as meaning 'other traders who operate in a manner similar to yours', hence excluding suppliers and clients even if they are traders. Second, questions relative to bad clients and prices were only asked to respondents who have regular clients, thereby introducing a potential bias.

sources of supply and demand are less likely to encounter problems. Relationships thus reduce search costs.

Table 10 indicates the existence of a strong relationship between firm size and the emphasis on regular suppliers and clients: while large firms do between 40 and 45% of their business with regulars, this proportion is much smaller among small traders. As a result, larger traders economize on search costs relative to smaller traders and probably have more secure sources of demand and supply. Results further indicates that the ties respondents have with their regular suppliers and clients is not based on family or ethnicity: the overwhelming majority of them (90%) describe their ties as business only. This is not entirely surprising given that Madagascar, unlike other developing countries (e.g., Fafchamps (1998)), shares a single language and sense of ethnic homogeneity.[12] The emphasis that larger traders place on regular clients and suppliers is consistent with their use of suppliers and clients as sources of information about prices and market conditions: the existence of long term relationships between them ensure that the information provided is more accurate that what would be conveyed to an unknown trader.

Trade Credit

Another reason why traders might value relationships is because they open access to trade credit in the form of payment facilities with suppliers or advances paid by customers. Table 11 reports the proportion of purchases and sales made cash, on credit, and with advance payment. The overwhelming majority of transactions are cash only. On average, respondents operate one sixth of their business with some element of credit. When credit is present, it floats predominantly downstream, that is, from seller to buyer. The ratio of payables and receivables over monthly sales shows that respondents are, on average, net givers of credit, not so much because

[12] Although Malagasy people do not distinguish themselves according to language or ethnicity, they do pay attention to geographical origin, however. Unfortunately, no questions were asked about the geographical origin of regular clients and suppliers.

they sell more on credit than they buy -- on the contrary -- but probably because buyers take more time to pay.

Relationships play an important role in access to trade credit. Results shows that respondents virtually never grant or receive trade credit on the first transaction. The role of relationships in trade credit is further confirmed by the likely consequences of default. Table 12 shows that, if a respondent were to not pay a supplier, the credit of the respondent with other suppliers would not be affected very much: half of them estimated that not paying would only reduce their chances of getting trade credit with none or at most some of their suppliers. Similar responses were obtained when the question was asked about the respondent's clients. Taken together, these figures suggest that the reputational sanctions for breach of contract are mild (e.g., Kandori (1992), Fafchamps (1998a), Greif (1993, 1994)). This is consistent with our previous finding that information sharing networks appear undeveloped in Malagasy grain trade. As a result, knowledge about breach of contract does not circulate widely and individual traders can easily evade group sanction. The loss of the relationship, however, is valuable: as shown in Table 13, the large majority of respondents feel that it would be difficult for them to find a new supplier if they were to lose one -- as would most probably be the case if they failed to pay. These results are similar to those described by Fafchamps (1996) in the case of Ghana, and they are consistent with theoretical models of trade that emphasize the self-disciplining role of relationships (e.g., Ghosh and Ray (1996), Fafchamps (1998a, 1998b)).

Breaches of Contracts and Conflict Resolution

Further evidence in favor of the relationship-based models of trade can be found in the manner respondents prevent breaches of contract and handle contractual conflicts. Table 14 presents estimates of the absolute and relative frequencies of contractual disputes among surveyed traders. The evidence shows that the incidence of problems is high. On average, respondents face a quality or late delivery problem in 1 out of every 13 purchases and a late or non-

payment problem in 1 out of every 45 sales.[13] These averages, however, hide the fact that the frequency of problems is much higher among firms that contract forward. Among firms that place orders, for instance, a problem with supplies occurs on average in one third of the purchases; the proportion is even higher for large traders (Table 14). Among firms that sell on credit, a case of late or non-payment arises in one out of every 20 sales. Since these firms do not sell all their output on credit, this translates into one case of late or non payment in 20% of the credit sales. Fortunately, only one out of every 35 late payment cases turns into non-payment. Evidence collected in Ghana by Fafchamps (1996) suggests that what probably keeps this proportion low is the time traders spend chasing late payers. To summarize, the incidence of contractual problems is especially high whenever traders contract forward, which explains why few of them do.

Traders' desire to avoid the contractual problems created by forward contracting singularly complicates exchange and is achieved at considerable cost. First of all, as the Table itself shows, most transactions take place without orders and without credit. This means that virtually all trade in agricultural products in the entire island of Madagascar takes the form of cash-and-carry transactions. This can hardly be regarded as an efficient and convenient way of conducting trade. Very little if any forward looking transactions occur, and if they do, they are based on a strong relationship of trust between buyer and seller. Since traders hardly ever pay by check,[14] this implies that search costs are higher than they should be, and that massive amounts of currency constantly circulate in the countryside -- an invitation to theft and a perfect target for an inflation tax. Not surprisingly, many surveyed traders identify security as their number one problem (e.g., IFPRI (1998)).

The prevention of problems also has its costs. Table 15 indicates that the overwhelming majority of traders and their clients inspect quality before purchasing. In other words, quality is

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[13] Computed as 100%/7.7% for suppliers and 100%/2.2% for clients.

[14] The fact that Malagasy banks -- according to what we have heard -- take two to four weeks to clear checks drawn on another town hardly incite traders to pay by check: doing so would tie up their working capital for weeks on end.

inspected visually *each* time a product changes hands.[15] Given the multi-layered nature of agricultural trade and thus the large number of transactions involved in getting foodstuffs from producers to consumers, we see that inspecting quality alone must account for a significant proportion of the spread between producer and consumer food prices.

The Table also demonstrates that quality inspection is a task that traders hardly ever delegate: although they employ on average 3.3 people to assist with the business, traders nearly always inspect quality themselves, presumably because conducting the task accurately is critical for business. In other words, so few cases of bad deliveries are reported not because suppliers are truthful but because buyers go to great lengths to ensure they are not cheated. Given the amount of energy they spend on checking quality, it is surprising that bad deliveries occur at all. Traders' inability or unwillingness to delegate quality inspection also means that their volume of activity is limited by the quantities that the owner can inspect in person. It also implies numerous trips to supply areas, some of which are for nothing since traders do not use telephones, cannot or will not place or take orders, and and must search for buyers or sellers once they are on location. Such a system can be but expensive to run and in such an environment having close relationships with regular clients and suppliers must singularly simplify one's business -- hence the emphasis put on relationships as a factor of commercial success.

Similar difficulties arise in the granting of trade credit. Table 16 shows that the great majority of respondents check the credibility of clients before granting payment facilities. Apart from information collected from the client directly or from a personal visit to the client's shop, respondents rely primarily on information received from traders and other sources such as friends and family. There too relationships serve a role as facilitator of the screening of trade credit recipients. The relatively small proportion of respondents who cite information collected from traders and other sources and the fact that this proportion diminishes with firm size nevertheless

[15] Similar practices are described in Ethiopia by Gabre-Madhin (1997).

suggest that reputation mechanisms in agricultural trade in Madagascar can be described as embryonic at best. This stands in stark contrast with the intense sharing of information -- and the much higher incidence of trade credit -- that were found by one of the authors in Kenya and Zimbabwe (e.g., Fafchamps et al. (1994), Fafchamps, Pender and Robinson (1995), Fafchamps (1997), Fafchamps (1998b)). There, firms were found to actively share information about bad payers, either informally (Kenya) or via a credit reference bureau (Zimbabwe). The vetting of clients was also widely practiced. Agricultural trade in Madagascar more closely resembles the manufacturing sector in Ghana where little information sharing was uncovered (e.g., Fafchamps (1996)).

The reader may wonder why breach of contract is not efficiently deterred by the presence of legal institutions such as lawyers, courts, and the police. Table 17 indicates the conflict resolution methods most likely to be used after a breach of contract. By far the dominant response is to negotiate with the other party and, in some cases, to call upon a third party to serve as mediator. The use of lawyers is extremely rare (only one case was recorded). Respondents are even extremely reluctant to use the *threat* of calling the policy or going to court, let alone actually doing it. Again, these results are similar to those observed elsewhere (e.g., Fafchamps (1996), Bigsten et al. (1998)) though they demonstrate an even lower reliance on legal institutions than elsewhere in Sub-Saharan Africa. Not using legal institutions does not mean that conflicts are not resolved, however. In fact, four fifths of disputes with suppliers and clients are resolved and trade resumed. This brings out yet another function that relationships play: to facilitate the resolution of conflicts through negotiation. It is because parties wish to preserve their relationship that they agree to negotiate and to seek a mutually agreeable solution to their dispute, a solution that preserves the relationship itself. In other words, it is because traders value relationships that contractual disputes are resolved.

Risk Sharing

Relationships can also serve the role of insurance mechanism. Business in general and trade in particular are subject to all kinds of risks -- theft, non or late payment, adverse price fluctuation, storage loss, etc -- each of which can easily cripple a small trading business. In a world where trade credit is inexistent or rare, a trader without working capital cannot operate. Consequently, a trader whose working capital is either lost or tied up in bad debt and unsold stocks loses his or her income. The capacity to borrow from others therefore serves a crucial insurance purpose. Table 18 confirms that the overwhelming majority of respondents are involved in helping and being helped by others. Assisting and being assisted can be interpreted as the two sides of the same coin: people help each other because they expect to be helped in return (e.g., Fafchamps (1992), Coate and Ravallion (1993), Lund and Fafchamps (1997)). Interestingly, the Table shows that larger traders are as involved in solidarity networks as their smaller competitors, and that they have in general more friends they can count on in times of trouble. This contradicts the idea that solidarity mechanisms necessarily tax the rich and that, as a result, the rich are more individualistic (e.g., Platteau (1996)).

To investigate these ideas further, respondents were asked to rank a variety of statements about poverty, prosperity, and mutual assistance on a scale going from very true to very false. Results are summarized in Figures 1 to 9. The first two Figures presents respondents' attitudes toward poverty. Not surprisingly, the poor are less likely than the rich to blame laziness for poverty, but contrary to expectations they do not see poverty as the outcome of lack of assistance either. Small traders are more likely to declare that they have put money aside for difficult times and less likely to sell everything in bad times (Figures 3 and 4). In contrast, small traders are less likely to help others in need (Figure 5) and, in counterpart, less likely than large and medium size traders to receive assistance in times of trouble (Figure 6). If anyone is afraid that prosperity will be taxed away by family and friends, it is the poor: Figure 7 shows that small traders are sys-

tematically more likely to believe their family will invite themselves to their home if they succeed in trade. Consequently, small traders are more likely to derive individualistic pride in their business accomplishment (Figure 8). Individualism thus appears more present among small traders than among large ones. As for investment disincentives (Figure 9), they do not appear to be present either: small traders are systematically less likely to invest their profits in business than medium and large size traders -- possibly because they have less access to social insurance through solidarity networks.

To summarize, large traders appear less individualistic and more prepared than small traders to help others and get helped in return. The capacity to successfully join networks of solidarity may well be critical to their long term prosperity as it shelters them from some of the risks of business and enable them to invest more, grow more rapidly. In addition, solidarity relationships probably enable traders to borrow money not so much to deal with negative shocks but to take advantage of especially lucrative arbitrage opportunities. What remains unclear is whether similar attitudes would be found in economies where market supporting institutions are better developed. This represents an interesting avenue for future research.

Conclusion

We have investigated the role that relationships play in the conduct of agricultural trading businesses. We found that relationships play a wide variety of roles such as: (1) business training and start-up support; (2) information sharing; (3) regularity of demand and supply; (4) credit; (5) prevention of contractual breaches; and (6) risk sharing. Of these, the regularity of supply and demand and risk sharing appear particularly important in the sense that large traders enjoy a significantly larger proportion of sales and purchases from regular partners and systematically emphasize values and action consistent with risk sharing. Together with the circulation of information, the capacity and willingness to get and give trade credit, place and take orders, and simplify the inspection of quality are additional benefits traders derive from good relationships. The

value of relationships, not legal institutions, appears to be what motivates Malagasy grain traders to honor contracts and seek the resolution of conflicts through negotiation. These issues are analyzed in further detail in Fafchamps and Minten (1998) (see also Bigsten et al. (1998).

The importance of relationships is partly due to the extreme lack of sophistication in business practices: no payment by check; no invoicing; very little trade credit and placement of orders; visual inspection of quality by the trader or a trusted associate at each transaction; screening of clients through visual inspection of their shop and repeated interaction; and little or no evidence of reputation mechanisms to punish opportunistic breaches of contract. This lack of sophistication is not entirely unexpected given that the Malagasy government has historically repressed grain exchange and continues to provide very little if any support to private traders in agricultural products. But more than a decade after the initiation of market reform in Madagascar, these findings are disturbing and serve as a sobering reminder that, without development of supporting institutions, the free market remains nothing but a flea market. Clearly, relationships alone do not provide a sufficient basis for the development of an efficient trading system. They help mitigate some problems but certainly not all, and they do not benefit all traders alike.

What precise institutions are required is not immediately clear from this work, but results suggest two possible lines of attack. One approach consists in fostering the faster and more widespread accumulation of social capital. This could, for instance, be achieved by facilitating interaction and trust among traders, for instance by establishing a Chamber of Commerce or by developing of informal clubs and other brotherhoods.[16] A second approach would be to limit the need for social capital by reducing market imperfections, e.g., by setting up institutions that facilitate payments (e.g., faster check clearing), expedite inspection of quality (e.g., grading), reduce insecurity (e.g., police), circulate information (e.g., radio programs, credit reference bureau),

[16] See, for instance, the description of the role that muslim brotherhoods play in building up social capital among traders in Geertz, Geertz, and Rosen (1979). The problem with brotherhoods is that they may restrict entry and favor their members at the expense of outsiders (e.g., Taylor (1997), Fafchamps (1998)).

penalize cheaters (e.g., pursue fraud), and reduce risk (e.g., bank line of credit, futures market).

The results presented here suggest that successful traders owe their success not so much to individualism but rather to relationships. If anything, the evidence indicates that it is those who can create and nurture relationships who prosper as traders. Perhaps this is not original. After all, in the popular psyche, the trader is often portrayed as someone who is jovial and relates well with others. But the role of relationships is often overlooked in standard economic models that emphasize the maximization of profit through the accumulation of capital and the command of labor. There is also a social dimension to success, one that relies on the accumulation of valuable business relationships, of social network capital. Among traders, this accumulation process is one's passport to prosperity because it gives better access to information and risk sharing and it reduces the costs of search, quality control, and contract enforcement.

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Table 1. Breakdown of the Sample by Size and Occupational Category

	Size (1):							
Occupation:	Small	%	Medium	%	Large	%	Total	%
Assemblers	1	0.4%	22	8.7%	52	21.4%	75	10.4%
Wholesalers	26	11.5%	39	15.4%	79	32.5%	144	19.9%
Semi-wholesalers	13	5.7%	32	12.6%	37	15.2%	82	11.3%
Retailers with a fixed selling point	120	52.9%	137	53.9%	72	29.6%	329	45.4%
Retailers without fixed selling point	67	29.5%	24	9.4%	3	1.2%	94	13.0%
Total	227		254		243		724	

(1) Size categories are based on total sales.

Table 2. Size of Operation and Gross Margin

All figures given in US$. All figures subject to considerable measurement error.

	Firm size:				Gini	No. of
1. Size of operation	**Small**	**Medium**	**Large**	**Total**	**coef.**	**observ.**
Value of monthly sales 3/96-3/97	196	908	8635	3278	0.761	724
Value of monthly purchases 3/96-3/97	173	1198	6896	2812	0.747	717
Value of monthly sales 10/97	395	904	2421	1254	0.750	739
Value of monthly purchases 10/97	321	740	2015	1037	0.748	739
2. Margin						
Gross margin per month	26	193	1198	463	0.702	685
Margin rate = gross margin/sales (1)	13.4%	21.3%	13.9%	14.1%		

(1) Computed as average gross margin/average sales.

Table 3. Capital and Manpower

		Size:				No. of
1. Capital and equipment		**Small**	**Medium**	**Large**	**Total**	**observ.**
Working capital in $		331	829	4949	2061	714
% with outside funding		5.7%	13.8%	12.4%	11.0%	727
Opportunity cost of funds	mean	66.0%	31.2%	36.0%	43.4%	547
in percent per year (1):	median	20.0%	20.0%	30.0%	20.0%	547
Storage capacity in MT		5.1	9.5	62.9	26.2	724
Equipment value in $		26	169	885	399	739
No. of vehicles		0.0	0.1	0.3	0.1	739
2. Communication						
% with telephone		1.8%	2.0%	11.5%	5.1%	729
% with access to telephone		59.0%	52.4%	58.0%	56.5%	729
% using telephone		8.8%	7.1%	32.9%	16.2%	729
% with fax machine		0.4%	0.4%	0.8%	0.5%	729
% with access to fax		10.6%	18.9%	35.8%	21.8%	729
% using fax machine		0.4%	0.0%	2.0%	0.8%	729
3. Management						
Year since business has started		4.7	5.9	7.6	6.1	726
% Full time traders		85.0%	93.7%	87.2%	87.3%	739
% All year traders		80.6%	85.8%	84.0%	83.4%	729
4. Manpower						
No. unpaid family help		0.6	1.1	1.4	1.0	729
No. permanent employees		0.2	0.4	2.3	1.0	729
No. temporary employees		0.2	0.5	3.1	1.3	729
Total manpower (2)		2.0	3.0	7.8	4.3	729
Months of owner's time		10.7	11.1	11.2	11.0	729
Months of family help's time		6.0	11.8	14.6	10.9	729
Months of permanent empl.		1.8	4.3	27.5	11.3	729
Months of temporary empl.		0.6	1.9	19.3	7.3	729
Total months		19.1	29.1	72.7	40.5	729
No. of collectors		0.0	0.0	0.6	0.2	739

(1) Obtained from the answer to the question "How much could you pay back in 6 months if you could borrow [the equivalent of US$20]?" and expressed in percent per year.
(2) Owner/manager counted as 1.

Table 4. Human Capital, Family Background, Wealth, and Location

	Size:				No. of
1. Characteristics of owner	**Small**	**Medium**	**Large**	**Total**	**observ.**
% Female owners	59.3%	47.0%	32.4%	45.7%	711
Age	35.6	36.9	40.1	37.6	709
Years of schooling	8.1	8.8	10.1	9.1	735
% Non-christian	16.7%	6.8%	4.6%	9.1%	711
% Foreign	0.9%	0.4%	2.5%	1.2%	739
No. of languages spoken	1.35	1.42	1.62	1.47	729
2. Family of owner					
% Married	65.6%	80.3%	87.2%	76.7%	739
No. of children	3.0	3.2	3.6	3.3	711
No. sons aged 15 & above	0.7	0.9	1.0	0.9	739
No. daughters aged 15 & above	0.7	0.8	0.9	0.8	739
No. brothers aged 15 & above	2.5	2.4	2.6	2.5	739
No. sisters aged 15 & above	2.4	2.4	2.5	2.4	739
Years of schooling of father	2.8	2.9	3.4	3.0	576
Years of schooling of mother	2.4	2.4	2.9	2.6	576
3. Wealth					
% who own house	61%	45%	61%	56%	739
Value of house in $	894	1295	3666	1980	739
% who own pers. vehicle	3%	1%	12%	5%	739
4. Location					
% who operate in capital city	12%	21%	14%	16%	739
% who operate in other city	31%	29%	36%	31%	739
% who operate in rural areas	57%	50%	50%	53%	739
% who operate in Tana/Hauts Plateaux	12%	23%	18%	18%	732
% who operate in Vakinantaratra	9%	25%	26%	20%	732
% who operate in Fianar/Hauts Plateaux	26%	17%	33%	25%	732
% who operate in Fianar/Cote et falaise	9%	15%	10%	11%	732
% who operate in Majunga/Plaine	17%	13%	6%	12%	732
% who operate in Majunga/Hauts Plateaux	28%	7%	7%	13%	732

Table 5. Factors Important for Success As Perceived by Traders

To facilitate comparison, cumulative percentages of answers are reported

	Size: Small	Medium	Large	Total
A. Personal reputation and relationships				
Not important	7%	6%	3%	5%
A little important	17%	19%	9%	15%
Important	38%	27%	23%	29%
Very important	100%	100%	100%	100%
B. Access to Credit				
Not important	64%	28%	28%	39%
A little important	84%	63%	65%	70%
Important	96%	89%	83%	89%
Very important	100%	100%	100%	100%
C. Granting Credit				
Not important	63%	46%	40%	50%
A little important	90%	82%	75%	82%
Important	98%	98%	94%	97%
Very important	100%	100%	100%	100%
D. Purchase Price				
Not important	7%	2%	5%	5%
A little important	27%	19%	33%	26%
Important	72%	67%	72%	70%
Very important	100%	100%	100%	100%
E. Sale Price				
Not important	1%	1%	1%	2%
A little important	21%	11%	18%	17%
Important	72%	59%	63%	65%
Very important	100%	100%	100%	100%
F. Transport Equipment				
Not important	37%	31%	27%	32%
A little important	56%	44%	46%	49%
Important	84%	69%	68%	73%
Very important	100%	100%	100%	100%
No. observations	227	254	243	729

Table 6. Family and Business

	Size:			
A. Family in Trade	**Small**	**Medium**	**Large**	**Total**
% with parent in trade	27.8%	24.0%	26.3%	25.8%
No. years father in trade	3.4	3.8	5.1	4.1
No. years mother in trade	4.1	3.3	5.1	4.1
% with parent in agricultural trade	22.9%	14.2%	17.7%	18.0%
No. years father in agr. trade	2.2	1.9	4.0	2.6
No. years mother in agr. trade	2.7	1.8	4.0	2.8
B. Help at Startup				
% helped at startup by family/friends	54.2%	48.8%	56.8%	53.2%
Learned working with parents/relative	39.2%	27.2%	25.1%	30.7%
Learned working with friend/partner	15.4%	15.8%	14.0%	14.8%
Learned as employee of trader	0.9%	1.2%	2.9%	2.2%
Learned alone	44.5%	55.9%	58.0%	52.2%
C. Contacts				
No. relatives with wage job	1.8	1.7	2.1	1.9
No. relatives in trade	0.8	0.9	0.9	0.9
No. relatives in agricultural trade	0.7	0.7	0.8	0.7
No. traders known personally	6.3	10.3	10.0	8.8
Number of observations	227	254	243	739

Table 7. Sources of Information on Market Conditions

Table reports the main source of information on the following:

	Firm size:			
A. Prices:	**Small**	**Medium**	**Large**	**Total**
Other traders	81.1%	60.6%	39.9%	59.9%
Suppliers and clients	15.0%	31.1%	37.4%	28.3%
Messengers	3.5%	7.9%	22.6%	11.5%
Public sources	0.4%	0.4%	0.0%	0.3%
B. Supply conditions:				
Other traders	32.2%	19.7%	18.9%	23.2%
Suppliers and clients	64.8%	76.4%	68.3%	70.2%
Messengers	1.8%	3.5%	12.3%	5.9%
Public sources	1.3%	0.4%	0.4%	0.7%
C. Demand conditions:				
Other traders	30.0%	10.6%	10.3%	16.5%
Suppliers and clients	67.8%	85.8%	79.0%	77.5%
Messengers	0.9%	1.6%	8.6%	3.7%
Public sources	1.3%	2.0%	2.1%	2.3%
Number of observations	227	254	243	729

Table 8. Information Sharing

To facilitate comparison, cumulative percentages of answers are reported.

	Size: Small	Medium	Large	Total	No. of observ.
1. Discuss product quality with other traders:					
At least once a day	2%	2%	2%	2%	725
At least once a week	19%	11%	8%	13%	725
At least once a month	28%	27%	20%	25%	725
At least once a year	87%	73%	73%	78%	725
Never	100%	100%	100%	100%	725
2. Discuss bad paying clients with other traders (1):					
At least once a day	0%	1%	2%	1%	339
At least once a week	0%	3%	4%	3%	339
At least once a month	2%	18%	14%	13%	339
At least once a year	81%	71%	79%	77%	339
Never	100%	100%	100%	100%	339
3. Discuss prices with other traders (1):					
At least once a day	2%	3%	4%	4%	339
At least once a week	40%	16%	14%	18%	339
At least once a month	47%	31%	28%	32%	339
At least once a year	87%	76%	80%	80%	339
Never	100%	100%	100%	100%	339

(1) Asked to traders with regular clients only.

Table 9. Presence of Regular Partners and Ease of Search

	Ever fail to find a supplier:			
Regular suppliers:	**Never**	**Occas.**	**Often**	**Total**
% with regular suppliers	49.0%	59.8%	42.9%	51.2%
No. of regular suppliers	4.4	3.3	1.5	3.6
Number of observations	404	241	84	729
Percentage of sample	55.4%	33.1%	11.5%	100.0%
	Ever fail to find a client:			
Regular clients:	**Never**	**Occas.**	**Often**	**Total**
% with regular clients	76.0%	75.0%	47.0%	71.2%
No. of regular clients	6.5	5.9	2.8	5.8
Number of observations	451	162	116	729
Percentage of sample	61.9%	22.2%	15.9%	100.0%

Table 10. Regular Suppliers and Clients

	Size: Small	Medium	Large	Total
A. Regular suppliers:				
% with regular suppliers	33.0%	59.4%	62.6%	51.2%
No. of regular suppliers	1.4	3.4	6.2	3.6
% purchases from regular suppliers	22.8%	42.9%	45.6%	36.7%
No. years known reg. suppliers (1)	3.1	4.1	4.7	4.1
B. Regular clients:				
% with regular clients	52.0%	71.3%	88.9%	71.2%
No. of regular clients	3.0	5.8	8.3	5.8
% purchases to regulars	13.3%	26.1%	39.9%	26.8%
No. years known reg. clients (2)	2.3	4.0	4.2	3.8

(1) Computed for the respondents with regular suppliers only.
(2) Computed for the respondents with regular clients only.

Table 11. Trade Credit

	Size:			
A. Credit from and to suppliers:	**Small**	**Medium**	**Large**	**Total**
% purchases cash	90.8%	76.9%	79.4%	82.3%
% purchases on credit	9.1%	21.1%	17.2%	15.8%
% purchases advance payment	0.1%	2.0%	3.3%	1.8%
ratio payables/monthly sales	2.7%	7.7%	5.7%	6.2%
B. Credit to and from clients:				
% sales cash	94.8%	86.1%	76.4%	85.8%
% sales on credit	5.2%	13.3%	22.4%	13.6%
% sales advance payment	0.0%	0.7%	1.2%	0.6%
ratio receivables/monthly sales	6.6%	9.8%	16.1%	11.6%
Number of observations	227	254	243	739

Table 12. Loss of Trade Credit in Case of Non-Payment

	Non-payment to supplier	Non-payment by client
No loss of supplier credit	11%	21%
Loss of credit from some other suppliers	40%	59%
Loss of credit from most other suppliers	31%	15%
Loss of credit from all other suppliers	17%	5%
No. observations (1)	194	344

(1) Computed for the respondents with regular suppliers only.

Table 13. Difficulty of Finding Suppliers If Lose One

	Size: Small	Medium	Large	Total
Very easy	6%	8%	10%	8%
Fairly easy	3%	18%	20%	16%
Fairly difficult	56%	43%	41%	44%
Very difficult	36%	31%	30%	31%
Number of observations	36	87	71	194

Computed for the respondents with regular suppliers only.

Table 14. Frequency of Contractual Problems

	Size:			
1. With suppliers:	**Small**	**Medium**	**Large**	**Total**
No. transactions per month	6.5	5.5	11.5	7.8
No. cases deficient quality per month	0.07	0.30	0.48	0.28
No. cases late deliveries per month	0.03	0.08	0.10	0.07
% traders who place orders	7.4%	17.8%	19.2%	14.8%
Average incidence of problems:				
Among firms that place orders	17.8%	28.3%	40.7%	31.7%
Among firms that do not place orders	2.4%	4.4%	3.9%	3.5%
Over all firms	3.6%	8.3%	10.7%	7.7%
2. With clients:				
No. transactions per month	386	325	261	323
No. cases of late payment per month	0.14	0.77	1.12	0.68
No. cases of non payment per month	0.00	0.03	0.04	0.02
% sales on credit	5.2%	13.3%	22.4%	13.6%
Average incidence of problems:				
Among firms that sell on credit	2.1%	4.5%	5.4%	4.5%
Among firms that do not sell on credit	0.3%	0.3%	0.5%	0.3%
Over all firms	0.7%	2.3%	3.7%	2.2%

Table 15. Verification of Quality of Products

	Size:			
1. Quality inspection by respondent	**Small**	**Medium**	**Large**	**Total**
% always inspect quality before purchas	92%	83%	78%	84%
% owner inspects quality	99%	93%	89%	94%
% family helper inspects quality	0%	7%	6%	5%
% employee or agent inspects quality	0%	0%	5%	2%
2. Quality inspection by clients				
% client always inspect quality	90%	86%	82%	86%
3. Action taken by respondent if supplies are of bad quality:				
None/quality is the buyer's problem	69%	49%	46%	55%
Supplier provides a refund/replacement	18%	31%	36%	28%
Other	13%	21%	19%	17%
4. Action taken by client if supplies are of bad quality:				
None/quality is the buyer's problem	77%	58%	52%	62%
Supplier provides a refund/replacement	13%	25%	26%	21%
Other	10%	17%	22%	17%

Table 16. Credibility of Clients

Questions were asked only to respondents who ever grant credit to clients.

	Size: Small	Medium	Large	Total
1. Respondent verifies credibility of client before sale (1):				
Never	6%	7%	5%	6%
Seldom	8%	9%	9%	9%
Sometimes	38%	24%	30%	29%
Often	72%	37%	46%	47%
Always	100%	100%	100%	100%
2. Sources of information consulted before granting credit:				
% get information from client directly	98%	97%	94%	96%
% visit client's shop	9%	28%	33%	27%
% obtain information from other traders	38%	15%	25%	24%
% get information from client's bank	2%	0%	2%	1%
% get information from other sources	23%	11%	8%	12%

(1) Cumulative percentages reported to facilitate comparison.

Table 17. Conflict Resolution Method

	Supplier	Client
1. Conflict resolution method		
Direct negotiation	91.3%	93.6%
Mediator	3.8%	9.1%
Lawyer	0.0%	0.5%
Threat going to police	0.0%	3.6%
Threat going to court	0.4%	0.9%
2. Outcome of conflict		
Problem resolved	81.3%	80.9%
Still trading with party	87.5%	75.0%
Number of observations	160	220

Table 18. Risk Sharing and Access to Financial Help

	Size: Small	Medium	Large	Total
% who has ever helped others	72.2%	77.2%	80.2%	76.3%
% who has ever been helped by others	76.2%	75.6%	74.5%	75.0%
No. people who can help	1.7	2.5	2.7	2.3
Number of observations	227	254	243	739

Figure 1: "The poor are poor because they are lazy"

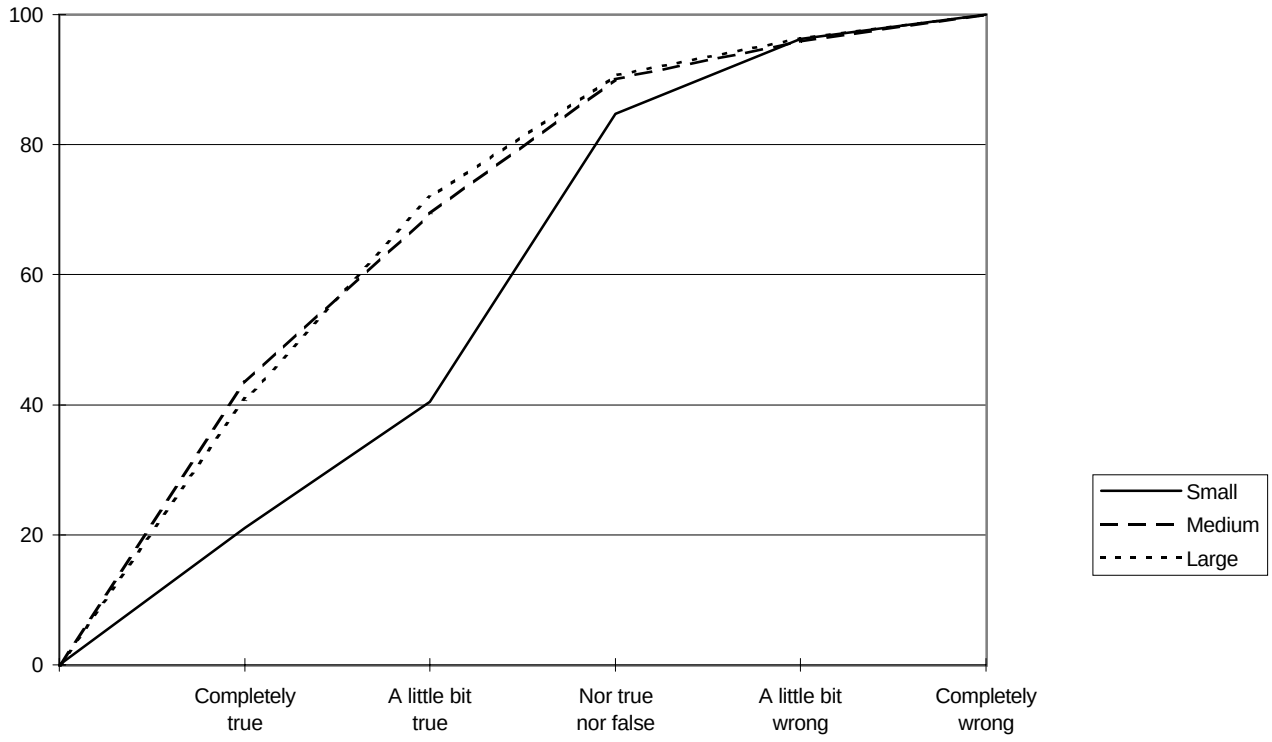

Figure 2: "The poor are poor because they have nobody to help them"

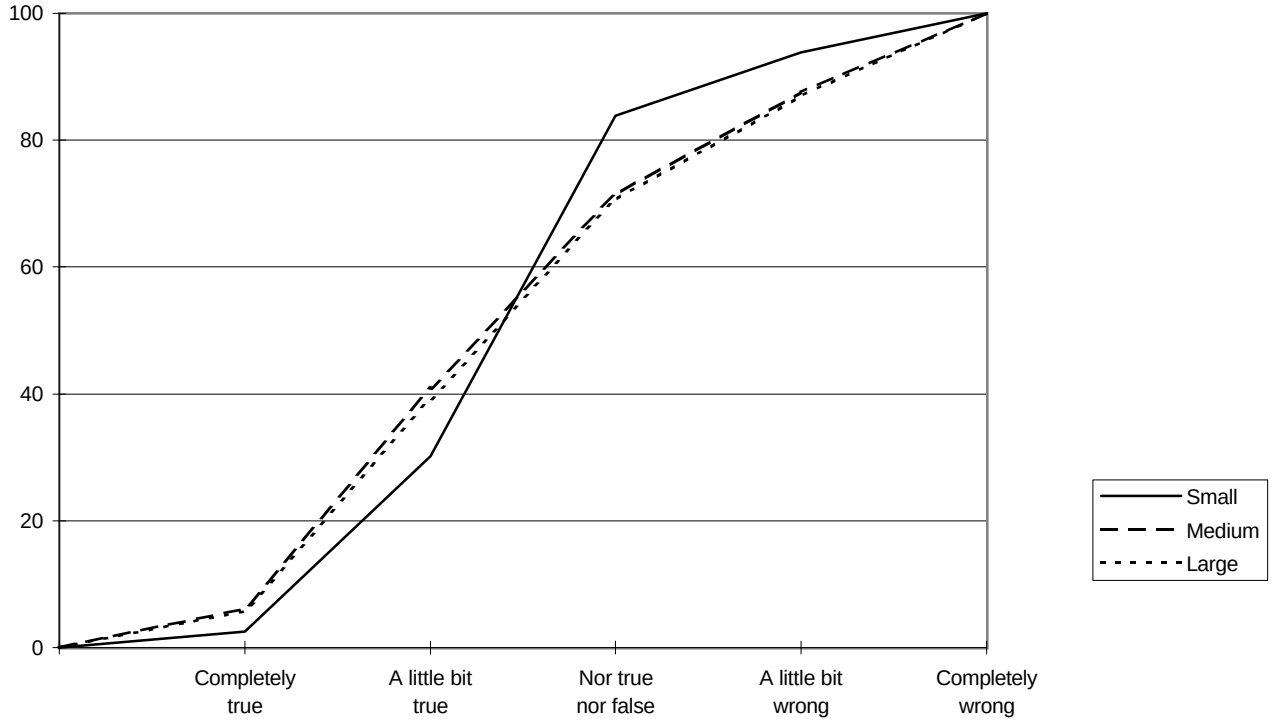

Figure 3: "I have put money aside for difficult times"

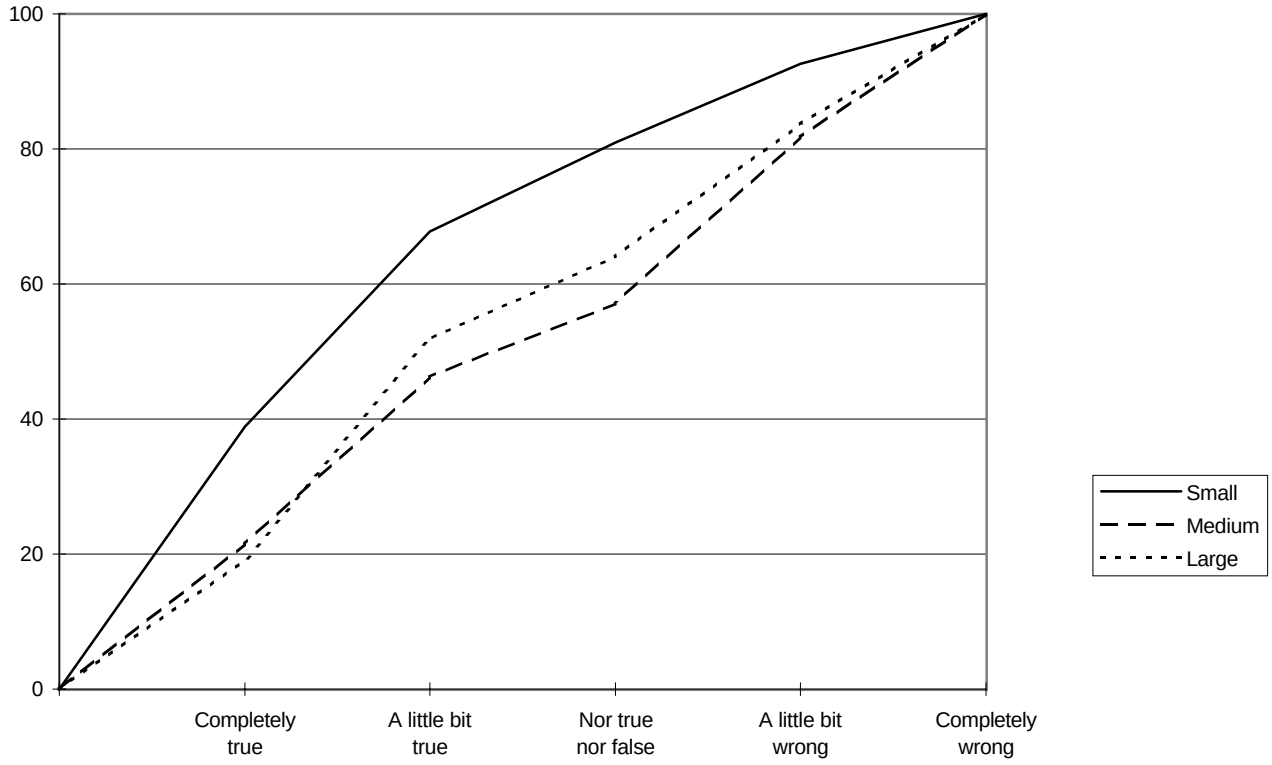

Figure 4: "If my business fails, I would have to sell everything to survive"

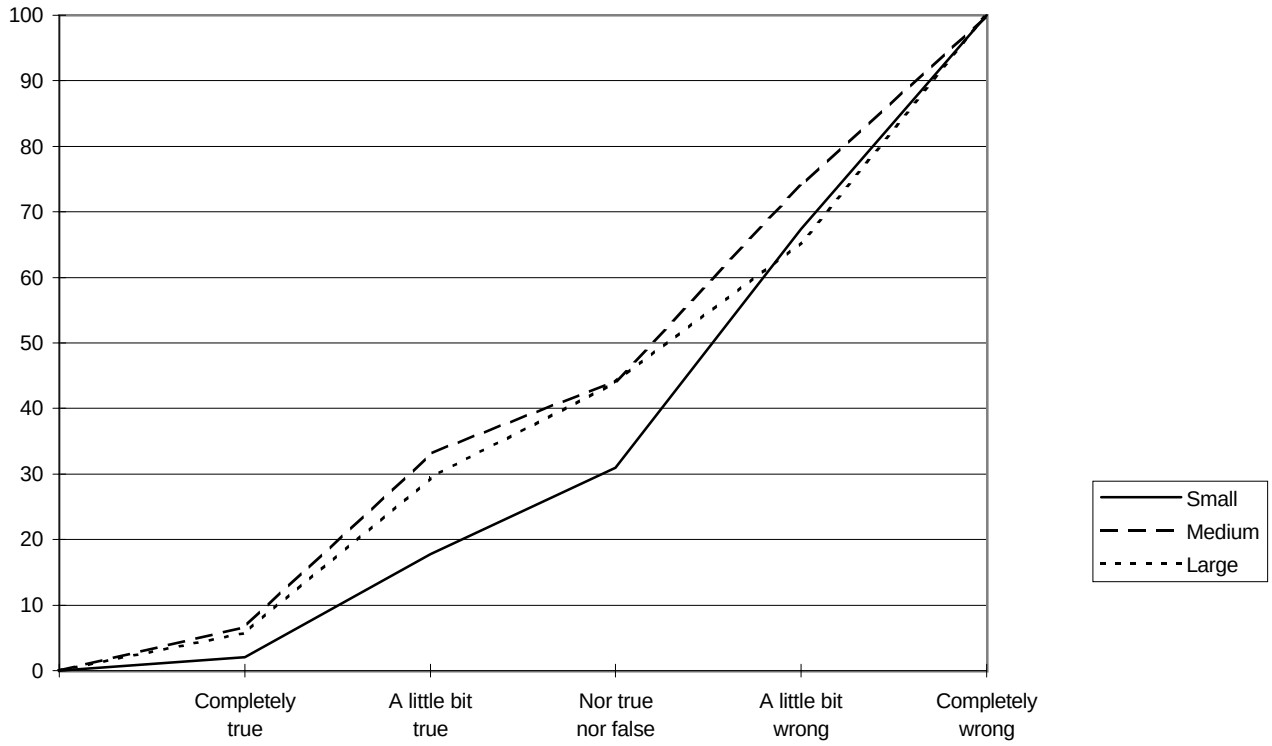

Figure 5: "I will help the others if they are in need"

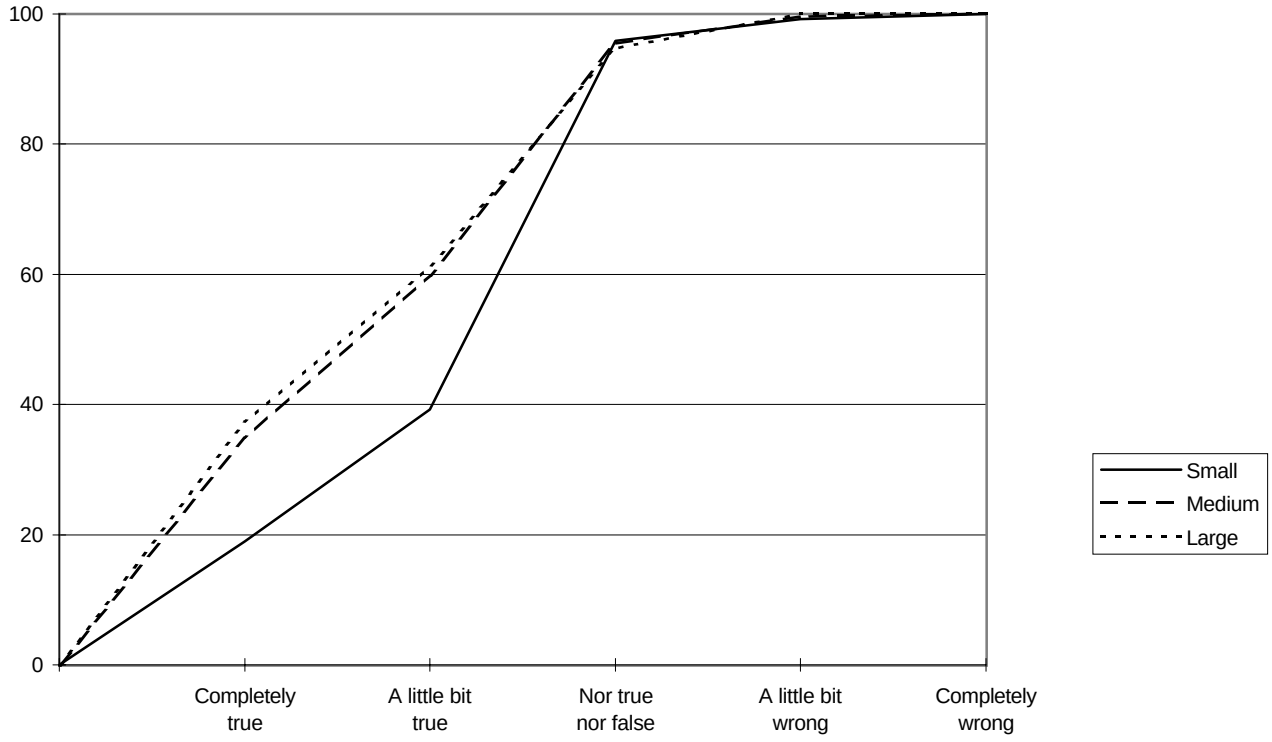

Figure 6: "I can count on family and friends in time of financial problems"

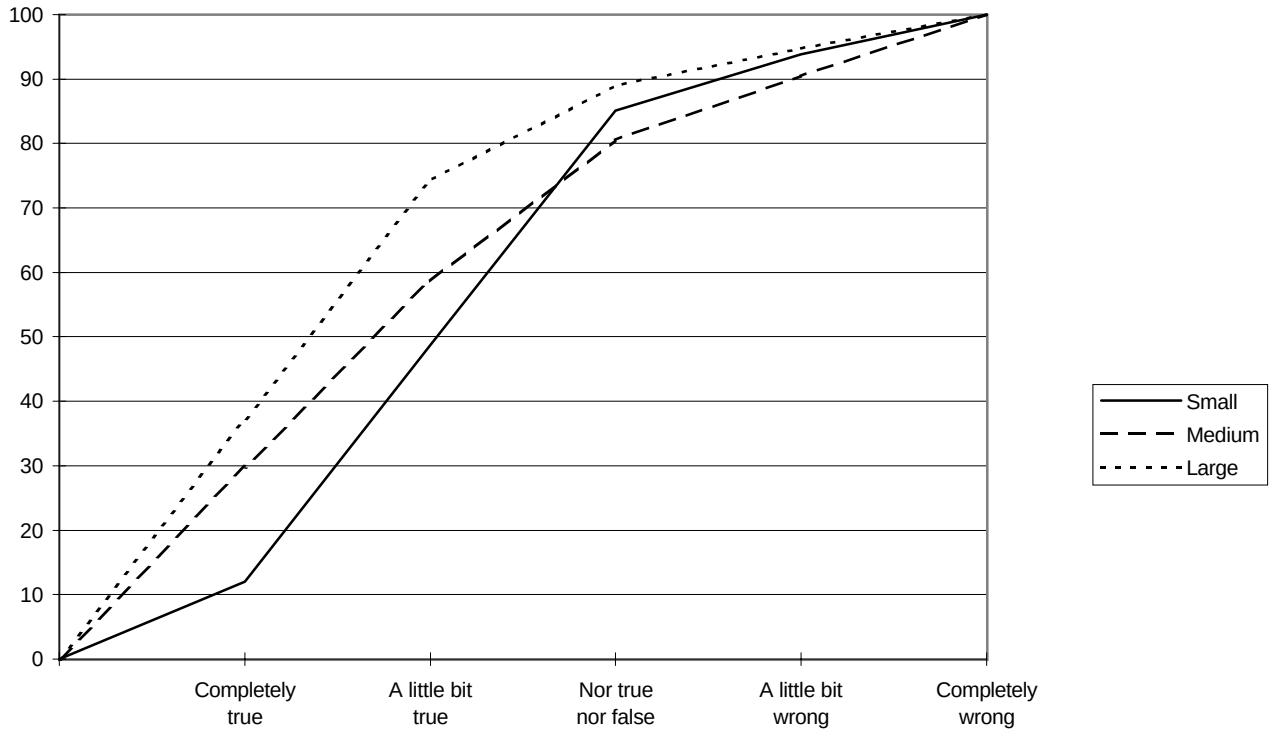

Figure 7: "If my business prospers, my family and friends will try to live off me"

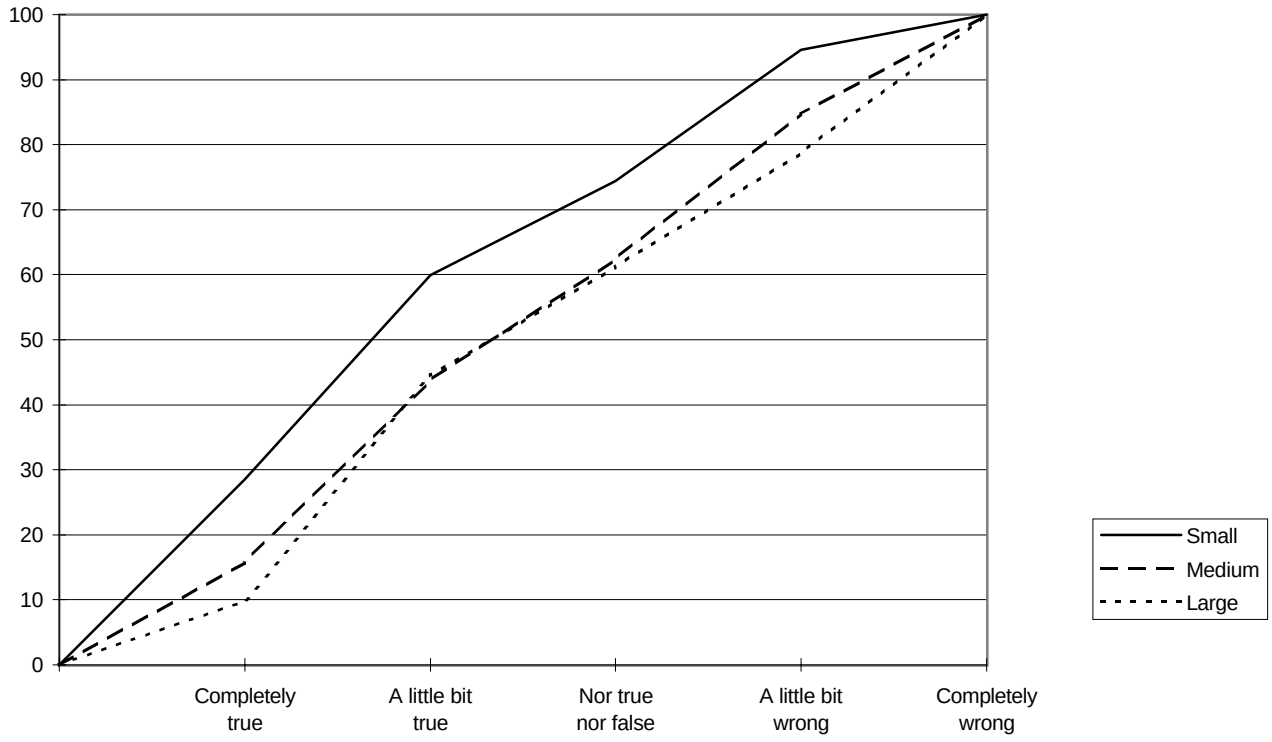

Figure 8: "I'm only proud of what I accomplish without the help of others"

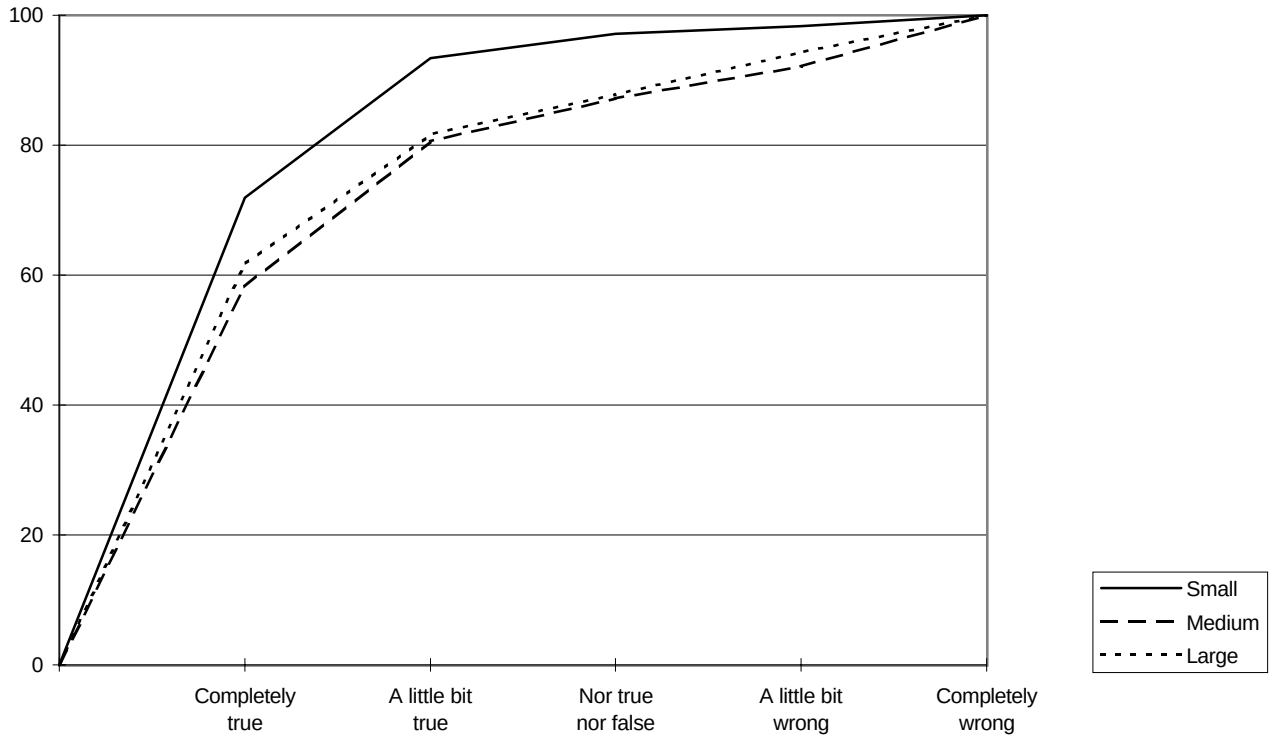

Figure 9: "If I had a lot of money, I would invest it in business"