

# Small Firm Behaviour in Sri Lanka

Jonathan Batten  
Samanthala Hettihewa

**ABSTRACT.** This paper investigates the behaviour of small firms in Sri Lanka using a countrywide cross-sectional survey. The 73 responding firms provide information on whether certain variables: the firm's utilisation of assets; labour; technology; family savings; and access to bank financing, vary with four firm-specific factors: industry; family ownership; size; and whether the firm's manager was also an owner of the firm. Sampled small firms are mostly family owned and owner managed although a significant number of family owned firms are managed by non-family managers. Most firm's under-utilise assets, use existing rather than the latest technology, and are reliant upon family savings. Statistical analysis provides evidence of significant cross-sectional variation in small firm practice. The results are explained in terms of the cost of acquiring new technology, asymmetries and opacity in financial information, and the non-value maximising behaviour of firm owners who are also firm managers.

## 1. Introduction

The objective of this study is to investigate the implications of cross-sectional variation in small firm management practice. The small firm sector is particularly important economically in developing economies although recent studies are limited. This study attempts to bridge some of this gap by investigating the small firm sector in Sri

Lanka,<sup>3</sup> and determining the relationship between key firm-specific variables and management practices. Where possible, the link between expected practice and economic theory is established. The implications for government policy are also considered when a clear link exists between the firm's actual management practice and government policy. A countrywide, random survey is used as the basis for identifying cross-sectional variation in small firm management practices. Cross-sectional variation may arise from differences in industry, size, ownership, and the relationship of the manager of the firm to the owners of the firm. The areas of management practice investigated are the firm's approach to the management of assets, labour, finance and technology.

Based upon 73 responding firms, from a mail-out of 300 randomly selected small firms, the survey results suggest that the largest groups of small firms are in the primary and tertiary sectors (34.2% each), are family owned (61.6%) and managed by owner managers (52.0%), although a significant proportion (62.2%) of family owned firms are managed by employed managers. These results are largely consistent with other studies in the U.S. (Berger and Udell, 1998), and Asia (Moore, 1997) where family owned and owner managed small firms tend to be the norm. However, having a high proportion of non-family managers in family firms is inconsistent with some studies in other developing countries that suggest family owned firms may attempt to "block the mobility" of non-family managers to ensure employment for family members (Levinson, 1987). The results suggest that though ownership and management structures of small firms vary (due to differing cultural and social factors), management behaviour may be explained in terms of the agency theories first proposed by Jensen and Meckling (1976). These theories suggest that

---

Final version accepted on May 28, 1999

Jonathan Batten  
Nanyang Business School  
S3-B1A-22 Nanyang Avenue  
Nanyang Technological University  
Singapore  
E-mail: ajabatten@ntu.edu.sg

and

Samanthala Hettihewa  
Department of Economics and Finance  
University of Western Sydney  
Macarthur, P.O. Box 555  
NSW 2560, Australia  
E-mail: s.hettihewa@uws.edu.au



*Small Business Economics* 13: 201–217, 1999.  
© 1999 Kluwer Academic Publishers. Printed in the Netherlands.

conflicts exist between management and old and new stockholders of the firm due to the expense preference and non-value maximising behaviour of managers, and the asymmetries in information between contract counterparties.

The survey results suggest a pragmatic approach to cost management from managers who are not owners, with a greater proportion of non-owner managed firms prepared to reduce costs through sacking labour than owner managed firms, although both groups are prepared to do so. Also non-family owned firms show a greater reluctance to sack labour than family owned firms. This may be due to a desire to create workforce stability in non-family owned firms and the preference to maintain the employment of family members in family owned firms even though this behaviour may be non-value maximising.

Statistical analysis also highlights other significant cross-sectional variation between the set of firm variables and firm management practice. Primary sector and family owned firms tend to under-utilise assets, while family firms are more content to use existing rather than the latest technology. Surprisingly non-owner managed firms tend to be more reliant upon family networks for finance (though this may be due to the significant proportion of these firms being family owned), while owner managers prefer to approach banks for financing. We attribute this result as a desire to maintain information asymmetries between family members to avoid the "free rider" problem identified by Garlick (1971). Differences in the approach to financing are consistent with a financing pecking order underpinned by owners concern for the dilution of ownership to non-family members. Despite expected differences in information opacity between types of firms, there was no obvious cross-sectional difference in the degree of difficulty in accessing bank loans between the different types of responding firms.

This study is structured as follows: the next section (2) examines economic policy in Sri-Lanka with an emphasis on small firm policy initiatives. Then section 3 develops a series of propositions on why certain firm variables are expected to influence the firm's approach to the utilisation of assets, management of labour, use of technology and source of finance. Section 4 details the research methodology, while Section 5 presents

the results from an analysis of the survey data. Initially, since the data was categorical, cross-tabulations of the various variables are tested using chi-squared analyses. Since there is statistical evidence that a number of firm-specific variables may collectively account for the variation in firm practice, a binary logistic regression technique is also applied to the set of firm-specific variables. This technique is used since the management practice variables had a binary response. The regression results confirm the significance of the univariate results and suggest that firm factors collectively account for variation in all of the management practice except the degree of access to bank loans, where no relationship was found. The final section considers the implications of these results and provides suggestions for future research areas.

## 2. Economic policy in Sri Lanka

Sri Lanka, with a population of 17.4 million people in 1997, maintained strong economic growth through the 1990s despite the well-documented ethnic crisis which resulted in a culturally based civil war, high defence expenditures and increased levels of foreign debt (Hettihewa, 1993). Economic growth peaked in 1993 at 6.9% and remained between 5% and 6% thereafter, while per capita gross national product (GNP) grew from US\$375 in 1988 to US\$640 in 1995, an increase of 71% over the period. Unemployment was recorded as 12.5% in 1995, while inflation fell from 15% in 1988 to 7.7% in 1995. These economic indicators understate the significant positive changes in the social fabric of the Sri Lanka in recent years. Alternate measures of the well being of individuals, (e.g. the Human Development Index, see ul-Haq (1995)) highlight the significant positive changes in the real living standards of Sri Lanka where there has been a high level of satisfaction of basic needs although GDP per capita is relatively low.

A feature of Sri Lankan economic policy in the 1960s and 1970s was its focus towards the management of the deterioration in the terms of trade. Safeguarding local industries using trade restrictions and promoting "infant industries" were popular concepts.<sup>2</sup> Inefficiencies and reduced competitiveness in these export industries were partly

offset by ongoing devaluation of the local currency (the Sri Lankan Rupee SLR). However, while providing some benefits in the form of more competitive exports, negative impacts were increases in the cost of manufactured imports essential for the longer-term development of the secondary and tertiary industry sectors. Other negative impacts were the failure to diversify exports and to develop technical expertise in the production process. Consequently by the 1980's, Sri Lanka was still largely agricultural and dependent on three major agricultural export products namely, tea, rubber and coconut, although policy initiatives had begun aimed at developing small and medium scaled industry (e.g. the formation of the Industrial Development Board in 1969).

During the late 1970s economic policy became more outward looking with strategy directed towards achieving higher levels of exports and liberalising trade. This was highlighted by the Five-Year Plan 1972–1977 where the small firm sector was given priority in the development policy agenda. Specific policy objectives were directed towards saving foreign exchange through the introduction of the dual exchange rate (Foreign Exchange Entitlement Certificates) scheme, creating new employment, encouraging the location of secondary industry to rural areas, and diversifying the agricultural base to higher-value crops. There were also attempts at promoting price stability and equity for producers and consumers using schemes such as the food crib system (Ellis et al., 1997). Nonetheless, the trade imbalance could not be solved due mainly to lower prices for traditional agricultural and gem exports, and the low productivity level of manufactured products compared with the newly emerged Asian countries. One implication of this survey is that the low productivity level of industry may be due to the difficulty small business experiences when trying to acquire new (“state-of-the art”) technology, despite having access to debt finance and some government support for its acquisition.<sup>3</sup>

The failure of Sri Lanka to achieve stated economic objectives might be compared with the success of the newly industrialised Asian economies and other Asian nations such as the Philippines and Thailand during this period. However the situation is changing. In the late 1980s some favourable signs were seen in terms

of export diversification, with manufacturing exports counting for more than 50% of total trade exports. Although there is still an obvious need for the government to ensure competitive and fair pricing in subsidised and protected industries (Rajapakse, 1996), and to maintain the pace of microeconomic reforms, in particular by withdrawing from its involvement in food marketing channels (Ellis et al., 1997).

### 3. Development of key propositions

There are a number of reasons why cross-sectional variation may exist for different types of small firms. Firstly, government policy may have been directed towards the establishment of a particular status quo in one industry group. For instance the primary sector in Sri Lanka has been singled out for special treatment by government through its infant industries policy. The separation of ownership and control of the firm, between family and non-family members, may result in agency problems associated with corporate governance and in choosing the optimal capital structure for the firm. Owner managers may also engage in non-value maximising behaviour to reduce risk, or exhibit expense preference behaviour for lifestyle reasons (Berger and Udell, 1998). Asymmetries in information may also exist between non-family and family members, small firm owners and firm managers, and between small firms and financial intermediaries. The following five Propositions examine these issues in more detail:

*Proposition 1: Firm classification will have a significant effect on the small firm's utilisation of assets. Specifically, larger firms, primary and secondary sector firms and family owned firms are expected to under-utilise assets.*

All firms would be expected to try to maximise the utilisation of assets. However some assets may still generate positive net present values despite being under-utilised. Having under-utilised assets is also less risky than having fully utilised assets. During periods of economic downturn the level of excess capacity of existing (manufacturing or agricultural) equipment may increase. The reverse is also true. Having excess capacity allows for production cycles. A simple example is the firm

having two machines with the second machine as a backup. Smaller and newer firms with low initial wealth endowments are better able to control the expense preference or risk reduction behaviour of management, and so will ensure that assets are fully maximised. Overall larger firms and firms from industries reliant upon capital equipment (secondary and perhaps primary industry) are more likely to have under-utilised assets than smaller and tertiary sector firms.

Also, we suggest that an unintended consequence of government support to specific industry sectors (e.g. the tea industry) has encouraged the under-utilisation of assets compared with other non-supported industry sectors. Government policy encouraged the consolidation of unproductive small farms so they could achieve economies of scale and make better usage of equipment. However, apart from industry consolidation, subsidisation also discouraged changes in management practice preventing much needed structural adjustment, or improving competitive practice and fairer prices. This is illustrated by the primary sector where minimum price schemes and government policy was directed towards establishing high value-added horticultural exports as a major industry (e.g. spices such as vanilla). These policies tended to be unfocused, poorly co-ordinated and had a dubious welfare impact (Dunham, 1993).

Assets may be under-utilised when the firm's management exhibits non-value maximising and expense preference behaviour for lifestyle reasons. Due to focused incentive structures within firms, non-owner managers are likely to try to avoid this sort of behaviour. The opposite would be the case for family owned or owner managed firms, where incentive structures may be more independent of the actual financial performance of the firm. Overall, firms that are family owned or owner managed are expected to under-utilise assets, while larger firms, due largely to excess capacity, and the primary sector firms, due to inefficiencies arising from government support, will also under-utilise assets.

*Proposition 2: Firm classification will have a significant effect on the small firm's management of labour. Specifically, primary sector, family owned, owner managed and smaller*

*firms are expected to cut costs through labour shedding.*

During periods of economic downturn a simple method to reduce firm overhead is to sack labour. Managers of firms, whose business is more cyclic, such as agriculture, would then prefer a more flexible workforce. However greater flexibility may encourage instability in the supply of labour. The relationship between labour and management may be simply described as a trade-off between the desire for stability and flexibility in the supply of labour, with the relationship formalised in a contract between the two parties.

The nature of the contracts between labour and the firm's managers may facilitate the shedding of labour during downturns in the business cycle. For instance organised labour (unions) may negotiate with management for the natural attrition of labour through retirements and the lack of new hires, rather than sacking a specified percentage of the work force. This has been the practice in many developed, western style economies. On the other hand the lack of a contract may facilitate the immediate dismissal of labour. Clearly smaller and less capitalised firms may not have the financial resources to tolerate the gradual decline in labour costs associated with the natural attrition of labour, and so must be more expedient in their cost reduction.

Also, firms operating in the primary, or agricultural sector, tend to rely on individual, unskilled, contingent contractors (e.g. day labourers) to accommodate the seasonalities of production. These firms enjoy more flexibility in the supply of labour than firms in other industries, and will either not hire new workers or sack existing workers to reduce costs. This is consistent with evidence from developed countries (e.g. Hornsby and Kuratko, 1990) where recruiting, motivating, and retaining skilled employees is one of the main problems for small firms. Thus secondary and tertiary firms would be more reluctant to sack the skilled labour that had been difficult to acquire.

Larger firms may also require greater stability in the supply of labour and so may offer long term contracts to attract and retain labour. These firms may incur higher transaction costs associated with sacking long term labour (e.g. redundancy

payments, retraining costs) than smaller firms. For this reason, larger firms may prefer the natural attrition of the workforce to reduce costs. Conversely smaller firms, are expected to require greater flexibility in the management of firm costs and so will be prepared to shed labour more easily than larger firms.

Government sponsored development of selected industries would be expected to generate rapid growth in small firms in the selected industries. Wynarczyk et al. (1993) observed that in the fast growing small firm, management policy will be continuously developing and the skill set required to conduct the firm will change. While workforce training and development may help to improve firm value, there is also a gap between the general awareness on the part of management of the need to train their workforce, and an actual commitment to training. This was the case with small firms in Britain (Wynarczyk et al., 1993) and may be due to the perception that management considers training to be an operating expense rather than an investment in the firm (Finegold and Soskice, 1988). Training staff may then be a luxury for many small firms. This suggests that to acquire a new set of skills very small or new firms may simply sack and replace labour since they cannot afford to train their existing workforce.

However this would not be the case for all small firms. Family owned firms may be more prepared to train family members than non-family members (e.g. the owner's child is sent to college). This is also a form of "blocked-mobility" for non-family labour to management positions in the firm. For example, Levinson (1987) reports that highly qualified non-family members are disadvantaged in family firms receiving limited opportunities towards career development. Family owned firms might also try to maintain sufficient employment for family members. These firms have a stable supply of labour from within the family and so will use non-family labour only when necessary (e.g. in primary sector firms at harvest times). Thus although family owned firms may be prepared to offer long term loyalty and trust to labour, expediency in cost reduction and the desire to maintain the employment of family members will ensure that non-family labour is sacked first.

Firms when they hire managers incur agency costs since managers are likely to put their own

welfare above the welfare of the owners of the firm. The simplest way of controlling these agency costs is to allow management incentives to be linked to the financial well being of the firm. Family owned firms are less likely to impose these governance structures since they may wish to engage in expense preference behaviour. Expense preference behaviour may take the form of the firm maintaining the employment of family members who should otherwise be sacked. This is consistent with Covin (1994) who observes that family owned firms are less likely to have formal written policies to guide employees, and to use performance based criteria. Thus non-owner managers in small firms may have no obvious incentives to sack labour to improve firm profitability.

Collectively these various factors suggest primary sector firms and smaller firms, due to the contingent nature of their employment contracts with labour, and family owned and owner managed firms, due to their expense preference behaviour and their desire to employ family members, are more prepared to sack labour than non-family owned firms.

*Proposition 3: Firm classification will have a significant effect on the small firm's use of technology. Specifically, larger and owner managed firms are expected to make use of the latest technology.*

Firm management may justify the acquisition of new technology on the basis of the positive net present value resulting from the difference between asset income and the cost of acquisition and implementation of the new technology. The improved income stream generated by the technology may arise from higher revenues, lower costs, or synergies to existing firm technology. However these expected positive benefits may be difficult to prove to owners particularly if the initial cash flows are negative. Consequently non-owner managers who are both cost-conscious (since they have incentive schemes linked to the immediate well being of the firm) and reluctant to take additional risks without guaranteed higher returns may be more content to utilise existing technology than acquire new technology with speculative outcomes.

The potential negative short-term cash flows associated with the acquisition of new technology may be financed. To the extent that the small firm may lack savings or access to other external funds, such as bank debt, to mitigate these negative cash-flow effects, then the cost of acquiring new technology may create a hurdle for many small firms. In addition, smaller firms may be less able to document and apply for finance to acquire new technology than larger firms. However, new smaller firms with some start-up capital, may be able to take advantage of new technology to achieve instant cost economies, or comparative advantages over competitors in terms of marketing or sales. Larger firms may also be better able to exercise the comparative advantages provided by greater access to capital and acquire new technology to maintain their market position. That is, when technology is costly, larger firms will try to use the cost of technology as a barrier to entry.

Structural change in economies may encourage the development of small business in niche industry areas where barriers to entry, based on size, may be reduced by the rapid pace of technological change. However, while the cost of acquiring the appropriate technology is also important and may create a hurdle to industry entry, outside contracting and industry downsizing provide other opportunities for small business, particularly in service areas (Keeble, 1990). Thus entrepreneurs with sufficient initial wealth to acquire the appropriate technology may create a comparative advantage over other firms in niche service areas. These start-up enterprises are likely to be owner managed. This suggests that owner managed firms are likely to rely upon new technology to create a comparative advantage over other firms.

Overall, despite reducing technology costs, given the relatively low income and cash flow of most small firms, cost will still remain an important hurdle for small firms when acquiring new technology. Smaller firms are then expected to use existing technology while larger firms are expected to use the latest technology. Also, owner managed firms are expected to use the latest technology to gain an immediate comparative advantage over other types of firms.

*Proposition 4: Firm classification will have a*

*significant effect on the small firm's use of bank (and non-bank financial intermediaries) finance or family savings for financing. Specifically, owner managed and family owned firms are expected to rely upon family savings for financing, while larger firms are expected to rely upon bank financing.*

There is little public information available on the financing of business in developing countries (White and Wignaraja, 1995). However it is accepted that unless a firm has adequate finance to start with the chances of success are very small. Funding is considered an important problem in small business due to:

- i) the lack of tangible assets that can be pledged as collateral;
- ii) high financial and firm risks;
- iii) the age of the small firm;
- iv) the lack of skill in preparing feasibility reports;
- v) the lack of published financial track records which are periodic, audited and provide accumulated repayment or credit history; and
- vi) the lack of cost benefit analysis to assess the viability of a project.

The choice of financing for firms in developed countries has been shown to follow a "pecking order" (Myers, 1984) where first choice is given to internal sources of funds (e.g. retained earnings), then external sources in the form of additional debt or equity, in both private and public markets. Agency and information concerns appear to dictate the choice between the various combinations. In less developed countries, such as Sri Lanka, public markets would not be available for financing, leaving only private markets that are dominated by banks. While there is a strong bank presence in Sri Lanka, information opacity may inhibit small firm access to bank funds. Alternately, small non-bank financial intermediaries, including moneylenders, have good local knowledge and so are able to act as alternative financial intermediaries to banks. Moneylenders play an important role since they understand the co-operative dimensions that exist between family, kin and the community better than traditional lending institutions such as banks. In effect moneylenders may solve the potential information

opacity and asymmetry problems between small firm borrowers and providers of funds.

There is debate in the economic development literature on the expected behaviour of family members in family owned firms when additional funds are required for the firm's expansion. The arguments centre upon the information asymmetries between family members and may be seen as an extension of theories popular in the development literature where kinship (family) links are seen as an obstacle to economic development (Lewis, 1955). There is some evidence (Garlick, 1971) that family members, in family owned firms, are reluctant to provide additional savings to support new investment, since this signals information on individual wealth to other family members, who will then attempt to free ride on the effort of their wealthier kin. Owner managers may be able to avoid this source of conflict and borrow directly from financial intermediaries, also avoiding ancillary problems of equity dilution or equity readjustment within family groups. Alternately non-owner managers unconcerned with maintaining information asymmetries between family members may apply to the owners of the firm (and the owners' family) to obtain funds.

The capital structure of the small firm is also time varying. Recently Berger and Udell (1998) argued that small firms have different capital structures at different stages of the firm's life cycle. That is, as the firm ages and becomes larger the financial mix will change. In the U.S., small innovative start-up firms (high-risk, high growth) are mostly reliant upon the entrepreneur's (or family's) equity. As these firms become larger they are able to obtain a variety of loans from financial institutions and suppliers. Occasionally some firms obtained equity participation called "angel finance" from wealthy individuals not related to the entrepreneur. Lower risk, lower growth firms tended to access debt. Often there was some form of collateral supporting the debt in the form of firm assets or owner's assets. Without collateral or a financial track record, information opacity may prevent small firms from obtaining finance from financial intermediaries. This suggests that smaller firms would be more reliant on family savings although this may also be a feature of the age of the firm.

Given the two major groups of financial intermediaries in Sri Lanka, banks and money-lenders, both would be expected to engage in the organised process of screening, contracting and monitoring of loans described by Berger and Udell (1998) for U.S. financial intermediaries. Banks are expected to lend money when the risk characteristics of the individual firm are less than a predefined maximum risk profile. This risk profile may be formally determined using a variety of credit scoring techniques. These techniques tend to emphasise historical cash flow and collateral. Banks may also try to avoid certain types of loans or lend selectively due to political influence. While the risks known to borrowers may be reduced through the pledging of collateral (adverse selection and moral hazard problems), banks must also be capable of correctly assessing the risks associated with the loan. Banks may not be able to do this due to asymmetries and opacity in information. It is also possible that some financial intermediaries, e.g. moneylenders, may lack the formal skills (e.g. to credit score) required to assess available information and so may simply not lend. More likely these potential lenders will rely upon informal assessments and place recourse upon the personal wealth of the owner through guarantees or pledges of collateral. Moneylenders would be better able to do this than banks that are likely to have more formal lending policies.

Overall, due to the potential free rider problem from kin, and a desire to maintain the information asymmetries within families, owner managed and family owned firms are expected to prefer bank loans rather than additional family equity. This strategy avoids diluting control of the firm to non-family members, however it does require improving the transparency of financial information. Larger firms may already have more transparent information than smaller firms and so are better able to approach banks for financing.

*Proposition 5: Firm classification will have a significant effect on the small firm's access to bank finance. Specifically, larger firms are expected to have easier access to bank loans.*

The knowledge and the facilities to set up clear plans, to implement and carry out those objectives and to establish monitoring and controlling

methods, are essential for firm success. However the lack of knowledge and the lack of these facilities may make it extremely difficult to prove to the lender that the firm has the ability to successfully repay lent funds. Owner managers are more likely to be innovators and specialists and may be poor administrators or managers. Non-owner managers presumably have been hired for their management skills, and should be more adept at performing these key functions.

Preparation of professional financial proposals is considered important in obtaining external funds. For example, financial proposals require the amount of funding needed by the firm to be clearly stated with details as to the purpose and usage of the funds. From this amount, the short-term, medium term and long term requirements should be precisely identified. Short-term funding should not be tied up with long term needs and visa versa. The small firm must identify the difference between purchase capital and working capital. The availability of assets (both firm-specific and personal) that can be given as collateral must be clearly listed. Guarantees or pledges of collateral from other family members, and an outline of the preferred repayment programme matched with the firm's cash-flow are also likely to be required.

Overall, small firms in the words of Berger and Udell (1998) may be unable to "convey their credibility". Information is likely to be more transparent the larger the firm. Larger firms enjoy economies of scale in the generation of the information that potential lenders require. Larger firms are also more likely to have managers capable of managing the information dissemination process and have access to non-personal collateral, which can be used to support a bank loan. Consequently, larger firms are expected to have easier access to bank loans than smaller firms.

#### 4. Data and method

This paper reveals the findings of a mail survey of small firm management of Sri Lankan firms. The firms surveyed are derived from the Sri Lanka Small Firm Database, which is a complete listing of small firms. The evidence presented in the paper is the response to the survey from the listed managers of three hundred (300) randomly selected small firms. Anonymity was assured to

the respondents by sending an unmarked reply-paid questionnaire. Interested respondents were also promised a copy of the findings. From an overall mail-out of 300 firms, 73 questionnaires were returned and processed. This resulted in an effective response rate of 24.3% (i.e. 73/300), which is considered a good response rate for a mail survey of this nature. Given the limited statistical information available on small firms in Sri Lanka it is not apparent whether a response bias has been introduced into the sample. However the results suggest a good mix of respondents by the various small firm variables. Also, given the large sample size and the significant level of response it is fair to infer that the information considered in the paper accurately represents the practices of the small firm sector in Sri Lanka.

The 73 respondents were:

- (a) mostly above 40 years of age (59 or 80.8%);
- (b) mostly male (67 or 91.8%);
- (c) mostly secondary school educated with only 17 (23.3%) having tertiary education; and
- (d) mostly well experienced in managing firms with 53 respondents (72.6%) having a minimum of 5 years management experience.

The respondent profile is consistent with other surveys of south Asia where firms tend to be managed by patriarchs who have extensive personal connections (Redding, 1990). There was only a low correlation between management experience and education (0.256). However the results suggest that while in absolute terms there are fewer higher educated managers, education was still important for managers with more management experience. Specifically there is a greater proportion of managers with higher education who have 4 years or more management experience (9/17 or 52.9%), than managers without higher education (20/56 or 35.7%).

The survey was structured to record the various firm-specific characteristics and management practices of the 73 respondents. The firm-specific characteristics are:

- (a) Firms classified by industry. There are eleven (11) industry categories. These are later consolidated into 3 groupings, primary (25 or 34.2%), secondary (23 or 31.6%) and tertiary sectors 25 (34.2%).

- (b) Firms classified by ownership. There are two categories whether the firm was not a family owned firm (28 or 38.4%), or whether it was a family owned (45 or 61.6%).
- (c) Respondent classified by ownership. There are two categories, whether the respondent was not an owner manager (35 or 48.0%), or whether the respondent was an owner of the firm (38 or 52.0%).
- (d) Firms classified by size. There are six categories that are consolidated into 2 groupings, whether the firm had sales less than Sri Lankan Rupees (SLR) of 80,000 per annum (US\$1480), or whether the firm had sales greater than SLR 80,000 per annum. (The exchange rate was 1US\$ = 54SLR). There are 27 or 37.0% of firms with sales < 80,000 SLR, while there are 46 firms (63.0%) with sales > 80,000 SLR. While the smallest of these firms are very small in terms of turnover compared to western firms, it should be pointed out that many of the "small" small firms had twice in sales the average Sri Lanka GNP per capita.

Five management practice variables are considered, whether the respondent believed the firm:

- (a) Under-utilised assets. Respondents answered no (16 or 21.9%) or yes (57 or 78.1%);
- (b) Cut costs through shedding labour. Respondents answered no (38 or 52.1%) or yes (35 or 47.9%);
- (c) Used existing or the latest technology. Respondents answered the firm used new or "state of the art" (20 or 27.4%) or existing (53 or 72.6%) technology;
- (d) Used family savings, or bank or non-bank (other financial intermediaries including moneylenders), for new financing. Respondents answered the firm used mostly family savings (50 or 63.5%) or mostly bank/non bank finance (23 or 31.5%); and
- (e) Experienced difficulty raising finance from banks. Respondents answered no (39 or 53.4%) or yes (34 or 46.6%).

After undertaking a descriptive analysis of the data, a more complex analysis was undertaken by constructing two-way tables of the four firm characteristics and the five management practice

variables. Cross-tabulations between the various firm characteristics and the management practice variable are examined using chi-square tests ( $\chi^2$ ), since the survey was based upon categorical data. The null hypothesis for these tests was that the firm variable and the management practice variable are independent.

Since the results suggested that a number of firm variables are associated with some management practices, multivariate tests, using binary logistic regression analysis are also conducted. The regression analysis determines the significance of the relationship between the set of five management practices of the *i*th firm ( $MP_i$ ) and the set of *i*th firm variables  $S = \{\text{Industry (I), Family Ownership (F), Owner manager (O) and Sales (S)}\}$ . That is, for each *i*th firm management practice,  $MP_i = \alpha + \beta_1 I + \beta_2 F + \beta_3 O + \beta_4 S$ , where the null hypothesis ( $H_0$ ) is that at least one of  $\beta_1 \rightarrow \beta_4 \neq 0$ , while the alternate hypothesis ( $H_1$ ) is that any  $\beta_1 \rightarrow \beta_4 = 0$ . The intercept is not expected to be significant ( $\alpha = 0$ ). Acceptance or rejection of the null hypothesis is based on a standard G-test statistic.

## 5. Analysis of results

### a) Analysis of firm-specific variables

The primary industry sector was the highest single industry category accounting for 25 (34.2%) out of 73 enterprises. This group included 13 (16.7%) from the agriculture and plantation sector, and 12 (15.4%) from the mining and processing sector. The secondary sector came as the second highest category with 8 (10.2%) enterprises from the garment industry, and 10 (12.8%) from other manufacturing industries. There was no response from the construction and finance industries. The large capital requirements in establishing firms in those two sectors may have precluded them from the original mailout to small firms. Transport and storage counted for only one enterprise among the 73 responses. This result was also likely to be due to the presence of significant establishment costs, a form of industry entry barrier, for small firms in this industry. The majority of the firms indicated that they were not family firms (45 or 61.6%), while most firms were sole owner operators. Most firms (46 or 63.0%) had annual sales

above SLR80,000 though there were three very small firms whose annual sales were less than SLR20,000.

The correlations between the firm-specific variables were all low. The two correlations that were statistically  $> 0$  include the negative correlation between the family ownership and owner manager variables ( $-0.362$ ), and the negative correlation between the owner manager variable and size ( $-0.224$ ). Cross tabulations of the four dependent variables, with the significance tested using  $\chi^2$  statistics, provides an insight into these relationships. These two pairs of variables were also the only statistically significant  $\chi^2$  relationships: the cross tabulation between the family and owner manager variable ( $\chi^2 = 9.582$ ,  $p = 0.002$ ); and the owner manager and size variable ( $\chi^2 = 3.666$ ,  $p = 0.056$ ). The first result reflects the greater proportion of family owned firms using non-owner managers (28/45 or 62.2%) than family members (contrary to expectations of constrained mobility). The second result was due to the greater proportion of the largest firms using non-owner managers (26/35 or 74.3%). That is, owner managed firms tend to be smaller than the other firms in the sample, although there are no other significant relationships with any of the other variables (such as industry).

#### b) *Analysis of management practice variables*

Most respondents (57 or 78.1%) believe their firm under-utilises assets and utilise technology that is existing (53 or 72.6%) rather than new or “state of the art”. Marginally more firms do not cut costs through sacking of workers (38 or 52.1%). The respondents also indicate that most used family savings to finance their firm (50 or 68.5%) rather than borrow from financial intermediaries. Most respondents (39 or 53.4%) also find no difficulty in obtaining finance from a bank or lending institution (though it is perhaps more realistic to express this result as 46.6% of respondents do have difficulty obtaining finance). These initial results are consistent with the non-value maximisation of assets, the influence of agency factors, hurdle costs of new technology, and information opacity.

The correlations between the independent variables were low. The two correlations that are

statistically  $> 0$  include the positive correlation between the under-utilisation of asset and the labour shedding variables (0.243), and the positive correlation between the use of technology variable and the access to family savings (0.220). Cross tabulations of the four dependent variables, with the significance tested using  $\chi^2$  statistics, also provide an insight into these relationships. These two pairs of variables are also the only statistically significant  $\chi^2$  relationships: the cross tabulation between the under-utilisation of assets and the labour shedding variable ( $\chi^2 = 4.323$ ,  $p = 0.038$ ); and the use of technology and the access to family savings variable ( $\chi^2 = 3.478$ ,  $p = 0.062$ ). The first result is due to the greater proportion of firms who under-utilise assets and are also not prepared to sack labour to reduce costs (12/16 or 75.0%). That is, cost conscious firms are reluctant to under-utilise assets and are also prepared to sack labour to reduce costs. The second  $\chi^2$  result was due to the greater proportion of new technology acquisitions that are financed by family funds (17/20 or 85%). This suggests that banks may have been reluctant to lend to firms to acquire the latest technology.

#### c) *Statistical relationships between firm-specific variables and management practice*

Table I presents the results from cross tabulations of the industry, family ownership, manager and size of a small firm and the small firm’s approach to the management of assets, labour, technology, finance and access to bank loans. The effects of the four firm-specific variables are also tested using  $\chi^2$  tests. Later, binary regression techniques are applied to test the multivariate relationships between the four firm-specific variables and a specific management practice. The regression results are presented in Table II. Collectively these results enable evaluation of the five propositions presented earlier.

*Proposition 1: Firm classification will have a significant effect on the small firm’s utilisation of assets. Specifically, larger firms, primary and secondary sector firms and family owned firms are expected to under-utilise assets.*

The results from the  $\chi^2$  tests, reported in Table I,

TABLE I  
Cross tabulations: Management practice and small firm-specific variables

| Small firm variable:                 | Survey response of management practice |     |                                    |     |                                 |          |                                 |            |                                     |     |
|--------------------------------------|----------------------------------------|-----|------------------------------------|-----|---------------------------------|----------|---------------------------------|------------|-------------------------------------|-----|
|                                      | Firm under-utilises assets             |     | Cuts costs through labour shedding |     | Use of technology               |          | Access to finance               |            | Has difficulty accessing bank loans |     |
|                                      | No                                     | Yes | No                                 | Yes | New                             | Existing | Family                          | Non-Family | No                                  | Yes |
| <i>Industry</i>                      | $\chi^2 = 4.345$<br>$p = 0.114$        |     | $\chi^2 = 2.328$<br>$p = 0.312$    |     | $\chi^2 = 4.383$<br>$p = 0.112$ |          | $\chi^2 = 4.547$<br>$p = 0.103$ |            | $\chi^2 = 3.596$<br>$p = 0.166$     |     |
| 1. Primary: 25 (34.2%)               | 2                                      | 23  | 10                                 | 15  | 7                               | 18       | 21                              | 4          | 11                                  | 14  |
| 2. Secondary: 23 (31.6%)             | 7                                      | 16  | 14                                 | 9   | 3                               | 20       | 13                              | 10         | 16                                  | 7   |
| 3. Tertiary: 25 (34.2%)              | 7                                      | 18  | 14                                 | 11  | 10                              | 15       | 16                              | 9          | 12                                  | 13  |
| <i>Family ownership</i>              | $\chi^2 = 2.775$<br>$p = 0.096$        |     | $\chi^2 = 6.831$<br>$p = 0.009$    |     | $\chi^2 = 1.580$<br>$p = 0.209$ |          | $\chi^2 = 0.373$<br>$p = 0.542$ |            | $\chi^2 = 0.214$<br>$p = 0.644$     |     |
| 1. Not family owned: 28 (38.4%)      | 9                                      | 19  | 20                                 | 8   | 10                              | 18       | 18                              | 10         | 14                                  | 14  |
| 2. Family Owned: 45 (61.6%)          | 7                                      | 38  | 18                                 | 17  | 10                              | 35       | 32                              | 13         | 25                                  | 20  |
| <i>Owner manager</i>                 | $\chi^2 = 0.035$<br>$p = 0.852$        |     | $\chi^2 = 11.461$<br>$p = 0.001$   |     | $\chi^2 = 3.554$<br>$p = 0.059$ |          | $\chi^2 = 4.125$<br>$p = 0.042$ |            | $\chi^2 = 2.404$<br>$p = 0.121$     |     |
| 1. Not owner manager: 35 (48.0%)     | 8                                      | 27  | 11                                 | 24  | 6                               | 29       | 28                              | 7          | 22                                  | 13  |
| 2. Owner manager: 38 (52.0%)         | 8                                      | 30  | 27                                 | 11  | 14                              | 24       | 22                              | 16         | 17                                  | 21  |
| <i>Annual sales</i>                  | $\chi^2 = 0.002$<br>$p = 0.962$        |     | $\chi^2 = 0.210$<br>$p = 0.646$    |     | $\chi^2 = 3.835$<br>$p = 0.050$ |          | $\chi^2 = 0.070$<br>$p = 0.791$ |            | $\chi^2 = 0.043$<br>$p = 0.836$     |     |
| 1. Sales < Rs80,000 p.a.: 27 (37.0%) | 6                                      | 21  | 15                                 | 12  | 11                              | 16       | 19                              | 8          | 14                                  | 13  |
| 2. Sales > Rs80,001 p.a.: 46 (63.0%) | 10                                     | 36  | 23                                 | 23  | 9                               | 37       | 31                              | 15         | 25                                  | 21  |
| Column Total (73 respondents)        | 16                                     | 57  | 38                                 | 35  | 20                              | 53       | 50                              | 23         | 39                                  | 34  |

This table records the cross-tabulations between the five management practice variables and the four firm-specific variables. Since the responses are categorical, chi-squared tests ( $\chi^2$ ) are used to determine the significance of association between the two sets of variables. The null hypothesis for these tests was that the two variables were independent. A significant  $\chi^2$  (determined using the  $p$ -values beneath each value) indicates the firm-specific variable may have a significant effect on the management practice.

suggest that asset underutilisation is associated with family ownership ( $\chi^2$  test 2.775 at  $p = 0.096$ ). The cross-tabulation of the firm-specific variable with the management practice variable suggests this is due to a greater proportion of family owned firms (38/45 or 84.4%) underutilising assets than non-family owned firms (19/28 or 67.9%). The  $\chi^2$  tests for size of the firm and whether the firm is owner-managed, are not statistically significant, however the industry of the firm appears to be important (a greater proportion of primary sector firms underutilise assets), although the result was not statistically significant ( $\chi^2$  test = 4.345 and  $p = 0.114$ ).

The significance of the binary regression coefficient, reported in Table II, provides additional statistical support for the significance of the industry variable. The regression also confirms the null hypothesis that at least one of the coefficients is different to zero, though at a low level of significance (the G-test of 7.287 had a  $p$ -value of 0.121). The Pearson goodness of fit test  $p$ -value of 0.52 also indicates that there is insufficient evidence for the model to not fit the data. The high level of concordant pairs (69.4%) also provides support for the predictive ability of the model, although the Goodman-Kruskal Gamma<sup>4</sup> of 0.44 suggests only a low predictive ability.

The results confirm the proposition that firms that are family owned and primary sector firms underutilise assets, though there is no statistical evidence to support the proposition that larger firms and owner managed firms underutilise assets. The best explanation for these results is that the incentive structures within the family owned and perhaps primary sector small firms are not discouraging non-value maximising behaviour. It is possible that improving the incentive structures by making them contingent on the actual financial performance of the firm will lead to efficiency improvements. The absence of a relationship between firm size and asset utilisation suggests that excess capacity (or the lack of excess capacity) is homogeneous between firms. The result for primary sector firms is also consistent with non-value maximising behaviour in those industries selected for government subsidies. This issue would require further investigation.

*Proposition 2: Firm classification will have a*

*significant effect on the small firm's management of labour. Specifically, primary sector, family owned, owner managed and smaller firms are expected to cut costs through labour shedding.*

The results from the  $\chi^2$  tests, reported in Table I, suggest that the propensity to cut costs through the sacking of labour is associated with family ownership ( $\chi^2$  test 6.831 at  $p = 0.009$ ) and whether the firm is owner-managed ( $\chi^2$  test 11.461 at  $p = 0.001$ ). The cross-tabulation of the firm-specific variable with the management practice variable suggests this is due to a greater proportion of family owned firms (17/45 or 37.8%) prepared to sack labour than non-family owned firms (8/28 or 28.6%), and a greater proportion of non-owner managed firms (24/35 or 68.6%) prepared to sack labour than owner managed firms (11/38 or 28.9%). The  $\chi^2$  tests for the size and industry of the firm were not statistically significant. The significance of the binary regression coefficients, reported in Table II, confirms the  $\chi^2$  tests results though not to the same degree of significance (the family ownership coefficient is only significant at  $p = 0.112$ ). The regression also confirms the null hypothesis that at least one of the coefficients is different to zero, though at a high level of significance (the G-test of 15.075 had a  $p$ -value of 0.005). The Pearson goodness of fit test  $p$ -value of 0.65 also indicates that there is insufficient evidence for the model to not fit the data. The high level of concordant pairs (73.8%) and the Goodman-Kruskal Gamma of 0.54 also provide support for the good predictive ability of the model.

The results confirm the proposition that firms that are family owned and not owner managed are more likely to sack labour to reduce costs than other types of firms. There is no statistical evidence to support the proposition that the size and industry of the firm was associated with the willingness to sack labour to reduce costs. The best explanation for the first result is that family firms wish to maintain the employment of family members, and so are more prepared to sack labour than non-family owned firms, whereas non-family firms want to maintain workforce stability, thereby lowering the risk of the firm. Their motivation requires further investigation. The incentive struc-

TABLE II  
Management practice as a function of small firm-specific variables: Binary logistic regression results

| Predictor:                                          | Survey response to management practice (MP <sub>i</sub> ) |                                                |                                        |                                                           |                                                 |
|-----------------------------------------------------|-----------------------------------------------------------|------------------------------------------------|----------------------------------------|-----------------------------------------------------------|-------------------------------------------------|
|                                                     | Firm under-utilises assets (yes or no)                    | Cuts costs through labour shedding (yes or no) | Use of technology (existing or latest) | Access to finance (family savings or lending institution) | Has difficulty accessing bank loans (yes or no) |
| Constant ( $\alpha$ )                               | -0.128<br>0.975                                           | 0.651<br>0.856                                 | -4.332<br>0.235                        | -5.493<br>0.136                                           | -0.710<br>0.898                                 |
| Industry ( $\beta_1$ )<br><i>p</i> -value           | -0.6889<br>0.074                                          | -0.2688<br>0.401                               | -0.222<br>0.518                        | 0.4454<br>0.173                                           | -0.1449<br>0.622                                |
| Family ownership ( $\beta_2$ )<br><i>p</i> -value   | 1.3577<br>0.049                                           | 0.9244<br>0.112                                | 0.6791<br>0.277                        | 0.1496<br>0.798                                           | 0.0878<br>0.872                                 |
| Sole owner manager ( $\beta_3$ )<br><i>p</i> -value | 0.8133<br>0.241                                           | -1.3747<br>0.015                               | -0.5729<br>0.365                       | 0.1688<br>0.054                                           | 0.8178<br>0.133                                 |
| Annual Sales ( $\beta_4$ )<br><i>p</i> -value       | 0.2999<br>0.650                                           | -0.0125<br>0.983                               | 1.0024<br>0.085                        | 0.5401<br>0.357                                           | 0.0670<br>0.899                                 |
| G-test<br><i>p</i> -value                           | 7.287<br>0.121                                            | 15.075<br>0.005                                | 7.650<br>0.100                         | 6.792<br>0.147                                            | 2.707<br>0.608                                  |
| Pearson test ( <i>p</i> value)                      | 0.520                                                     | 0.650                                          | 0.243                                  | 0.224                                                     | 0.756                                           |
| Goodman-Kruskal Gamma                               | 0.44                                                      | 0.54                                           | 0.37                                   | 0.37                                                      | 0.23                                            |
| Concordant pairs%                                   | 69.4                                                      | 73.8                                           | 67.0                                   | 66.1                                                      | 58.2                                            |
| Discordant pairs%                                   | 26.8                                                      | 22.3                                           | 30.9                                   | 30.5                                                      | 36.6                                            |
| Ties                                                | 3.8                                                       | 4.0                                            | 5.4                                    | 3.4                                                       | 5.2                                             |

The binary regression analysis determines the significance of the relationship between the set of five management practices of the *i*th firm (MP<sub>*i*</sub>) and the set of *i*th firm variables  $S = \{\text{Industry (I), Family Ownership (F), Owner manager (O) and Sales (S)}\}$ . That is, for each *i*th firm management practice,  $MP_i = \alpha + \beta_1 I + \beta_2 F + \beta_3 O + \beta_4 S$ , where the null hypothesis ( $H_0$ ) is that at least one of  $\beta_1 \rightarrow \beta_4 \neq 0$ , while the alternate hypothesis ( $H_1$ ) is that any  $\beta_1 \rightarrow \beta_4 = 0$ . MP<sub>*i*</sub> is a dichotomous variable. The intercept is not expected to be significant ( $\alpha = 0$ ). Acceptance or rejection of the null hypothesis is based on a standard G-test statistic. Other goodness of fit tests includes the Pearson test and its associated *p*-value and the measures of association between the observed responses and the predicted responses based upon the logistic regression. The significance of each individual coefficient is determined using a *z*-statistic. Only the *z*-statistic's *p*-value is shown in the table.

tures within non-owner managed firms appear to be encouraging value maximising behaviour since non-owner managers are prepared to sack labour to reduce costs.

*Proposition 3: Firm classification will have a significant effect on the small firm's use of technology. Specifically, larger and owner managed firms are expected to make use of the latest technology.*

The results from the  $\chi^2$  tests, reported in Table I, suggest that the use of technology is associated with the size of the firm ( $\chi^2$  test 3.835 at  $p = 0.050$ ) and whether the firm is owner-managed

( $\chi^2$  test 3.554 at  $p = 0.059$ ). The cross-tabulation of the firm-specific variable with the management practice variable suggests these results are due to a greater proportion of non-owner managed firms (29/35 or 37.8%) prepared to use existing technology than the latest technology than owner managed firms (24/38 or 63.2%), and a lower proportion of the smaller firms (16/27 or 59.3%) prepared to use existing technology than larger firms (37/46 or 80.4%). The  $\chi^2$  tests for the family ownership and industry variable were not statistically significant. The significance of the binary regression coefficients, reported in Table II, only confirms the  $\chi^2$  tests result for the size variable (the size regression coefficient is significant at

$p = 0.085$ ). It is possible that the correlation between size and the owner manager variable ( $-0.224$ ) affects this result. In these circumstances the univariate result provides a better gauge of the relationship. The regression does confirm the null hypothesis that at least one of the coefficients is different to zero (the G-test of 7.65 had a  $p$ -value of 0.100). The Pearson goodness of fit test  $p$ -value of 0.243 also indicates that there is insufficient evidence for the model to not fit the data. The high level of concordant pairs (67.0%) and the Goodman-Kruskal Gamma of 0.37 also provide support for the predictive ability of the model.

The results confirm the proposition that firms that are owner managed are more likely to use technology than other types of firms. Non-owner managed firms appear to be more prepared to use existing technology perhaps because its outcomes are less speculative. This result may suggest that the incentive structures within non-owner managed firms appear to be discouraging the use of the latest technology, though these attempts at value maximisation may be short sighted. The expected relationship between size and the use of the latest technology was for large firms to use technology as a barrier to entry. The results suggest the opposite, that is small firms will try to use technology to gain a comparative advantage. There is no statistical evidence to support the proposition that the industry and family ownership of the small firm is associated with the willingness to use the latest technology.

*Proposition 4: Firm classification will have a significant effect on the small firm's use of bank (and non-bank financial intermediaries) finance or family savings for financing. Specifically, owner managed and family owned firms are expected to rely upon family savings for financing, while larger firms are expected to rely upon bank financing.*

The results from the  $\chi^2$  tests, reported in Table I, suggest that differences in the access to finance is only associated with whether the firm is owner managed ( $\chi^2$  test 4.125 at  $p = 0.042$ ). The cross-tabulation of the firm-specific variable with the management practice variable suggests this results is due to a greater proportion of owner managed firms (16/38 or 42.1%) who borrow from lending

institutions, than non-owner managed firms (7/35 or 20.0%). The  $\chi^2$  tests for the industry, family ownership and size variables are not statistically significant. The industry  $\chi^2$  test was almost significant at the 90% confidence level though the relationship was not supported by a significant regression coefficient. The significance of the binary regression coefficients, reported in Table II, only confirms the  $\chi^2$  tests result for the owner manager variable (the owner manager regression coefficient is significant at  $p = 0.054$ ). The regression does not confirm the null hypothesis that at least one of the coefficients is different to zero (the G-test of 6.792 only had a  $p$ -value of 0.147). Notwithstanding the low G-test score the Pearson goodness of fit test  $p$ -value of 0.224 is low but still indicates that there is insufficient evidence for the model to not fit the data. The high level of concordant pairs (66.1%) and the Goodman-Kruskal Gamma of 0.37 also provide support for the predictive ability of the model.

The results confirm the proposition owner managed firms are expected to prefer bank loans to family funds. This strategy overcomes concerns of potential free rider problems from kin, and also maintains existing information asymmetries within families. The lack of significance of the other firm variables suggests that small and family owned firms may not suffer from funding problems due to information opacity, and family owned firms might not be concerned about the dilution of control.

*Proposition 5: Firm classification will have a significant effect on the small firm's accessibility to bank finance. Specifically, larger firms are expected to have easier access to bank loans.*

Neither the  $\chi^2$  tests nor the regression results suggest the firm variables affect the difficulty of accessing bank loans. This result is consistent with all of the different types of firms successfully conveying their credibility to potential lenders. This may be due to the more personal and informal arrangements available from moneylenders as much as from improvements in the quality of information and the ability to obtain collateral. This is an interesting result and requires further and more detailed investigation. The cross tabu-

lation of the owner manager variable with the difficulty of access did suggest that a slightly greater proportion of owner managers had difficulty accessing bank loans, though the  $\chi^2$  test result was not statistically significant ( $p = 0.121$ ).

## 6. Conclusion

The objective of this study was to investigate the implications of cross-sectional variation in small firm management practice by investigating the small firm sector in Sri Lanka, and determining the relationship between key firm-specific variables and management practices. A countrywide, random survey was used as the basis for identifying cross-sectional variation in small firm management practices. The results suggest industry classification has minimal effect on management practice, family ownership affects the utilisation of assets and labour, and firm size affects the type of technology used by the firm. Whether the firm was owner managed provided the greatest variation in small firm practice affecting the use of labour, technology and access to finance. There was also no evidence of constrained mobility since most family-owned firms and non-owner managers managed larger firms. Also, most new technology acquisitions were financed by family funds.

The key results between the firm and management practice variables suggested:

- (i) Firms that are family owned and primary sector firms tend to underutilise assets suggesting that the firm's incentive structures are not discouraging non-value maximising behaviour. This result may also be due to the effects of government subsidies.
- (ii) Firms that are family owned and not owner managed are more likely to sack labour to reduce costs than other types of firms. This suggests that family firms wish to maintain the employment of family members, and so are more prepared to sack labour than non-family owned firms. Also, the incentive structures within non-owner managed firms appear to be encouraging value maximising behaviour.
- (iii) Firms that are owner managed and small are more likely to use the latest technology than

other types of firms. They do so to gain a comparative advantage over other firms and suggests an important link between entrepreneurial activity and technological innovation. This result may suggest that the incentive structures within non-owner managed firms appear to be discouraging the use of the latest technology, though these attempts at value maximisation may be short sighted.

- (iv) Owner managed firms prefer bank loans to family funds. This strategy overcomes potential free-rider problems from kin, and also maintains existing information asymmetries within families. The lack of significance of the other firm variables suggests that small and family owned firms may not suffer from funding problems due to information opacity, and family owned firms might not be concerned about the dilution of control.
- (v) There is no firm-specific variation in the degree of difficulty in accessing bank loans. This suggests all types of firms are equally able to convey their credibility to potential lenders. This may be due to the more personal and informal arrangements available from moneylenders as much as from improvements in the quality of information and the ability to obtain collateral.

These results also highlight the differences in small firm management between countries. For example, the high level of professional management evident in small firms in Sri Lanka is more consistent with the business structures of the Japanese and Korean firms (see Redding, 1990, p. 205) than the firms of overseas Chinese which tend to be family managed.

One concern for government policy is the heterogeneous nature of the small firm sector. Government policy may be either applied unilaterally to all firm sectors or focused to a specific sector such as the primary sector. The small firm sector may also receive indirect benefits as a flow-on from direct benefits received elsewhere. In these instances the effectiveness of policy in achieving specific outcomes may be compromised by an inability at the outset to correctly establish the relationship between the policy objective and the target population of small firms. Policy must also be co-ordinated, integrated and capable of

being implemented. Given the heterogeneous nature of the small firm sector in Sri Lanka it is crucial that policy be focused to well defined groups and co-ordinated for it to be successfully implemented. The limited evidence to date suggests the implementation of policy may be improved. For example Athukorala and Rajapatirana (1993) argue that policy inconsistencies and poor implementation at the micro level resulted in the lacklustre outcomes of financial liberalisation in Sri Lanka.

Also, Sri Lanka is expecting to achieve newly emerged industrialised country status in the near future. One important issue for government is the impact of globalisation on firm practice. For example, many small firms may be unprepared for the structural changes that will occur from increased competition in the marketplace and in the financial sector where credit rationing may occur. The impact of globalisation will also not be uniform and diversity in the small firm sector may mitigate successful policy action unless it too is focused and co-ordinated to niche or target sectors, though there will be additional concerns with ensuring the equitable treatment of all affected firms.

In addition, the empirical results suggest a number of potential areas for further research including:

- (i) determining the stability of small firm behaviour over time and the comparison of the results in this study with other developing countries;
- (ii) monitoring the growth cycle and changes in the capital structure of small business as the small firm ages; and
- (iii) investigating the role of moneylenders as financial intermediaries and determining the processes adopted to establish the credit worthiness of applicants and the source of their finance.

## Notes

<sup>1</sup> The Central Bank of Sri Lanka (1998, pp. 107–128), “Economic Progress of Independent Sri Lanka” defines small firms as cottage and small scale industries, where the capital stock in plant and equipment is less than Sri Lankan Rupee 4 million (approximately US\$74,000), and where the total number of employees is less than 50. There are approximately 100,000 such entities in Sri Lanka.

<sup>2</sup> For example see the tea industry (Ali, Choudhry and Lister, 1997) and rice, see Gunawardana and Oczkowski (1992).

<sup>3</sup> The 1997 Budget extended tax and import concessions on the acquisition of advanced technology to animal husbandry, fisheries, and tourism and community development projects. However the minimum investment varied from SLR 1 to 4 million (US\$18,500 to US\$74,000) subject to various criteria. The size of these potential investments placed these concessions outside the reach of many smaller firms (NewsLetter from the Sri Lankan High Commission, Canberra Australia).

<sup>4</sup> The Goodman-Kruskal Gamma takes a value between 0 and 1, with values near 1 indicating the model has better predictive ability.

## References

- Ali, Ridwan, Yusuf. A. Choudhry and Douglas W. Lister, 1997, *Sri Lanka's Tea Industry: Succeeding in the Global Market*, Discussion Paper No. 368, Washington D.C. World Bank.
- Athukorala, Premachandra and Sarath Rajapatirana, 1993, ‘Liberalization of the Domestic Financial Market: Theoretical Issues with Evidence from Sri Lanka’, *International Economic Journal* 7(4), 17–33.
- Berger, Allen and Gregory Udell, 1998, ‘The Economies of Small Business Finance: The Roles of Private Equity and Debt Markets in the Financial Growth Cycle’, *Journal of Banking and Finance* 22, 613–673.
- Central Bank of Sri Lanka, 1998, ‘Economic Progress of Independent Sri Lanka’, in *Annual Report*, Colombo, pp. 107–128.
- Covin, Jeffrey, 1994, ‘Perceptions of Family-Owned Firms: The Impact of Gender and Educational Level’, *Journal of Small Business Management* (July), 29–39.
- Dunham, David, 1993, ‘Crop Diversification and Export Growth: Dynamics of Change in the Sri Lankan Peasant Sector’, *Development and Change* 24(4), 787–813.
- Ellis, Frank, Piyadasa Senanayake and Marisal Smith, 1997, ‘Food Price Policy in Sri Lanka’, *Food Policy* 22(1), 81–96.
- Finegold, David and David Soskie, 1988, ‘The Failure of Training in Britain: Analysis and Prescription’, *Oxford Review of Economic Policy* 4(3), 21–53.
- Garlick, Peter, 1971, *African Traders and Economic Development in Ghana*, Clarendon Press: Oxford.
- Gunawardana, Pemasiri J. and Eddie A. Oczkowski, 1992, ‘Government Policies and Agricultural Supply Response: Paddy in Sri Lanka’, *Journal of Agricultural Economics* 43(20), 231–242.
- Hettihewa, Samantha, 1994, ‘The Economic Implications of Sri Lanka's Debt Problem’, *Indian Journal of Applied Economics* 2(3), 12–35.
- Hornsby, J. S. and D. K. Kuratko, 1990, ‘Human Resource Management in Small Business: Critical Issues for the 1990's’, *Journal of Small Business Management* (July), 9–18.
- Jensen, Michael C. and William H. Meckling, 1976, ‘Theory of the Firm: Managerial Behaviour, Agency Costs, and

- Ownership Structure', *Journal of Financial Economics* **3** (October), 305–360.
- Keeble, David, 1990, 'Small Firms, New Firms and Uneven Regional Development', *Area* **22**, 234–245.
- Levinson, Richard, 1987, 'Problems in Managing a Family Owned Business', in C. Arnoff and J. Ward (eds.), *Family Business Sourcebook*, Omnigraphic Inc.
- Lewis, Arthur, 1955, *The Theory of Economic Growth*, George Allen & Unwin: London.
- Moore, Mick, 1997, 'Societies, Politics and Capitalists in Developing Countries: A Literature Review', *The Journal of Development Studies* **33**(3), 818–830.
- Myers, Stewart C., 1984, 'The Capital Structure Puzzle', *Journal of Finance* (July), 575–592.
- Rajapakse, Purinima, 1996, 'The Implications of the Emerging Trade Environment for Sri Lanka', *Asian Development Review* **14**(2), 116–151.
- Redding, Stephen G., 1990, *The Spirit of Chinese Capitalism*, Walter de Gruyter: Berlin and New York.
- ul Haq, Mahbub, 1995, *Reflections on Human Development*, Oxford University Press: Oxford and New York.
- White, Howard and Ganeshan Wignaraja, 1992, 'Exchange Rates, Trade Liberalisation and Aid: The Sri Lankan Experience', *World Development* **20**(10), 1471–1480.
- Wynarczyk, Pooran, Robert Watson, David Storey, Helen Short and Kevin Keasey, 1993, *Managerial Labour Markets in Small and Medium Size Enterprises*, Routledge: London.

Copyright of Small Business Economics is the property of Springer Science & Business Media B.V. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.