

THE RELATIONSHIP BETWEEN HUMAN CAPITAL, SOCIAL CAPITAL AND FIRM GROWTH OF SMALL ENTERPRISES IN SRI LANKA

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Abstract

This study examined the effect of entrepreneur's human capital and social capital on the growth of small enterprises (SEs) in Sri Lanka. The research study seeks to accomplish this examination by proposing a conceptual model of SE growth by using sales growth rate as an outcome variable. The data have been collected from 97 manufacturing enterprises that employ less than 50 employees in Colombo district of Sri Lanka. The hypotheses derived from human capital and social capital theories were tested in order to assess the relationship among human capital, social capital and the small enterprise growth. However, unlike previous research, the study gives specific consideration to how the relationship between human capital and small enterprise growth is moderated by social capital. The findings of the study suggest that human capital variables namely, *training with work experience in same field*, *technical & professional education* and *education with experience in government sector* have positive effect on sales growth through social capital variable namely, *organizational network with network maintenance*. The research also highlighted the direct and indirect effect of *training with work experience in same field* on *sales growth*. Implications and directions for future research were discussed.

Keywords: Human capital, Social capital, firm growth, Small enterprises, Sri Lanka

1. INTRODUCTION

The small enterprises play a very important role in the economies of both developed and developing countries. It is the sustained growth of these businesses that creates the new jobs and other benefits sought by communities while, at the same time hold out to their owners the possibility of wealth, variety, self-fulfillment, and independence (Dobbs & Hamilton, 2007).

Human capital and social capital are associated with the performance and related to subsequent growth. Empirical studies support the existence of relationship between the human capital and social

capital and firm growth. The majority of those studies have taken in to consideration of only one dimension i.e human capital or social capital. It is therefore important to study the impact of both two dimensions simultaneously on firm growth. Our focus on Sri Lankan small enterprises provides both theoretical and practical significance.

Theoretically, the topic of human capital, social capital and firm growth has been extensively studied in developed economies, but has received limited or lesser attention in the case of developing countries. Once the thirty year long civil war was over in Sri Lanka, a series of new enterprises are booming and it is necessary for the entrepreneurs to develop their

human and social capital in order to achieve a sustainable growth. This study thus contributes particularly to both researchers and real small entrepreneurs to understand the impact of human and social capital on firm growth. The objective of the present paper is to answer the question: To what extent does the human capital and social capital enhance small enterprise growth? The paper is organized as follows; firstly, we underpin our formal hypotheses and the associated model with a discussion of relevant theory and prior research conclusions. Secondly, we present a discussion on the methodological issues regarding data, sampling, measures, and analytical tools utilized to test the hypotheses. Thirdly, a discussion on the results of our analysis is included and finally we discuss our interpretation and conclusions in regard to the findings. The last section contains a discussion about limitations of our research and implications for research and practice.

2. REVIEW OF LITERATURE

2.1. HUMAN CAPITAL AND SMALL ENTERPRISE GROWTH

Castanias, and Helfat (1992) defined 'human capital' as a hierarchy of skills and knowledge with varying degrees of transferability. Human capital is comprised of relevant education and employment experience and other types of experiences such as family background, professional background and vocational training (Doris Gomezelj and Antoncic,2008). According to the human capital theory, individuals with more or higher quality human capital, i.e. skills, knowledge and expertise developed through education and personal experience, achieve higher performance (Barney, 1991; Saffu, 2008). Education is one of the most

widely studied entrepreneurial variables and related to knowledge, skills, problem solving ability discipline, motivation and self- confidence. It assists in the accumulation of explicit knowledge that provides skills useful to entrepreneurs. (Cooper et al.1994; Robsen and Obeng,2007;Davidsson & Honig, 2003). These may enable the entrepreneur to cope with problems and thereby be more successful. A review of the literature on the relationship between the level of education of the entrepreneur and the performance of the business has established a generally positive relationship. In addition to the formal education, human capital includes non- formal education, such as specific training courses that are not a part of traditional formal education.

Relevant experience is also an important element of human capital. Coleman (2007) found that prior business experience was significant and positive in profitability of SMEs. Cooper , Gimeno-Gascon, and Woo (1994) found that higher level of education and industry-specific experience contributed to firm survival and growth. Entrepreneurs with some managerial experience, normally in their previous job, are likely creating firms which grow faster than firms founded by individuals without such experience(Storey, 1994). As noted by the Packalen (2007) those with industry experience may bring detailed knowledge about how an industry works, and are likely to have a better understanding of customer demand, and the previous experience would help in growing up a prosperous company in the industry. Saffu et al (2008) found in their study of tourist enterprises in Western and Central regions of Ghana that prior experience in the industry enhance venture performance. The impact of an entrepreneurial family background on enterprise

growth also has been recognized in the entrepreneurship literature (Saffu, 2008). Gimeno et al (1997) have found that entrepreneurs who are more intrinsically motivated and have a family history in entrepreneurship are more likely to accept a lower level of economic performance to remain in business.

2.2. SOCIAL CAPITAL AND SMALL ENTERPRISE GROWTH

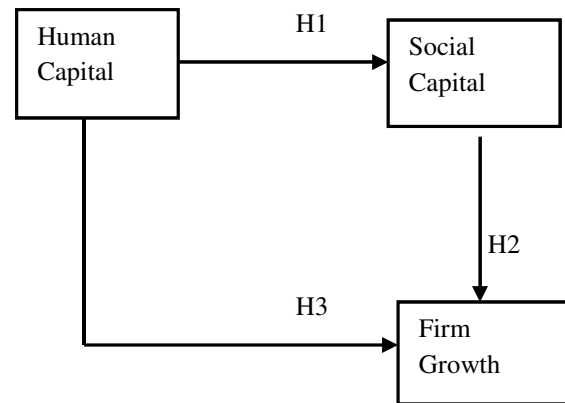
Social capital is the aggregate of resources embedded within, available through, and derived from the network of relationships possessed by an individual or organization (Inkpen & Tsang, 2005). Previous studies have found that the size of network and the frequency or duration of the interaction constitute the means for creating and enhancing social capital (Anat & Ken, 2002; Dollinger, 1990). Social capital in this context is defined as an entrepreneur's relations and contacts with others. Such contacts, to the extent that they provide the means for identifying opportunities or obtaining resources or to the extent that they facilitate the utilization of other resources, are potential sources of competitive advantage (Anat & Ken, 2002). Entrepreneurs mobilize their network type of social capital embedded in various institutions to secure business resources. Fong and Chen (2007) found that in Chinese context, network members working in government or party agencies would play an essential role in obtaining important resources, such as those similar to government contacts and market information.

3. HYPOTHESES

In this section, the researcher justifies the relationship between human capital, social capital and firm growth. Our conceptual model is shown in figure 1,

which makes explicit the expected links among the three variables: human capital, social capital and firm growth. For the purpose of simplicity, the diagram shown in figure 1 does not show all direct and indirect paths expressed by the model.

Figure 01: Hypothetical framework



H1: Human capital dimension has direct effect on social capital dimension.

H2: Social capital dimension has direct effect on firm growth.

H3: Human Capital dimension has direct effect on firm growth.

H4: Besides direct effects, human capital indirectly affects on firm growth through its effect on social capital dimension.

4. RESEARCH METHODOLOGY

This section provides an exposition of sample and data collection procedures and measurement of variables used in the study.

4.1. SAMPLING AND DATA COLLECTION

The research design employed the survey method for data gathering. Operational definition for small enterprises in this study is those that employ 50 or lesser number of employees. A representative random sample of 100 small manufacturing firms was selected from among 2420 small enterprises located

in Colombo district and equipped with data bases maintained by the Department of Census and Statistics (DCS) of Sri Lanka. The random sample represented a broad cross-section of manufacturing enterprises from a wide array of standard industry classification (SIC) code industries. The researcher started the survey in mid of July 2009 and obtained results from 100 firms by September 2009. By omitting the sample with missing data, researcher was able to use 97 firms in this study. The Colombo district was chosen for the survey in view of its potential for steady economic growth through the development of its small business sector and also as it is the main commercial city of Sri Lanka. The questionnaire was originally designed and written in English. It was then translated in to Sinhala (local language) and checked up for inter-translator consistency. In order to ensure that there are no ambiguities and that questions are readily understood by the parties concerned, the questionnaire was pilot-tested with 10 respondents. These respondents were excluded from the final study. Face-to-face interviews were the most preferred means of collecting data. For the most part, the interviews were taken place within the premises of the firms themselves.

4.2. OPERATIONAL MEASURES OF THE VARIABLES

This section was devoted to describe the items used in measuring the variables applied in our study. After a literary review and a series of discussions held with various practitioners, researcher mainly carried out the measures taken up and as adopted in the established studies on entrepreneurship and small enterprises.

4.2.1. HUMAN CAPITAL

Seven indicators of human capital were used: formal education, acquisition of technical and craft skill, years of work experience in same field or/and different field, previous ownership experience in same field or/and different field, training received, family background and technical skills of employees. Based on these indicators, 19 variables were used to measure human capital dimension of SME-owner managers.

Formal Education of the owner is defined as the highest level of education achieved by the owner. For the purpose of this study, educational background is measured by using a 6-level scale, as : 1= Did not go to school, 2= Primary school(<O/L),3= GCE O/L pass, 4= GCE A/L pass, 5=Degree (first Degree) ,6= post graduate degree. Fong and Chen (2007) argue that those with higher levels of education are more able to master a variety of complicated information, activity and documentation for the purpose of mobilizing resources for their businesses. Technical and craft skills are drawn through different sources: technical college, professional education, previous job, family tradition and self learning. Dichotomous variables were coded as “1” for those who acquired technical skills through above sources and “0” for those who had not acquired such skills from any of above sources. Training or Professional development is based on the responses made to the question, “Have you participated in any training or professional development programs related to your present activity? (Codes 1=yes,0= no). The Family background was measured in terms of the occupation of father (codes 1=father is an entrepreneur, 0= none).

Prior work experience could be categorized under three types: namely, work experience in the same field, work experience in different fields and the work experience as a government employee. It is a dichotomous variable based on experience as a worker (codes 1= previous work experience, 0= none). At the same time, we measured work experience in accordance with the number of their employment. Prior ownership experience is a dichotomous variable based on the ownership of any other business (coded 1= previous ownership, 0= none) in the same field or in different fields. Years of ownership experience was also measured in terms of years. Technical skill level of employees was measured by counting the number of employees who had completed technical courses relevant to his or her current job.

4.2.2. SOCIAL CAPITAL

From the literature review, researcher could identify three types of networks in which those entrepreneurs can develop their networks and draw on them to obtain resources for their businesses: personal-social networks, organizational networks and supportive networks. The term personal social network in this study refers to family members and closest friends. The organizational network consists of small enterprises and large enterprises and the supportive network consists of officers attached to organizations that provide supportive services for small enterprises. The size of each network was measured in a manner consistent with the previous research by counting the number of members with whom the entrepreneur keeps contact on a regular basis during the past six month period with the intention of securing business information and/or resources that were regarded as important for his or her business.

The Commitment on the part of the respondents to maintain a network relationship between entrepreneurs and their networks was measured by asking respondents to indicate the average number of telephone calls they had given per week, the average number of annual cards sent per year, the average number of e-mails sent per month to network members, the average number of meetings held and the number of associations in which the entrepreneurs had secured membership. SME owners share different resources with network members and achieve mutual benefits. We categorized those resources into eight categories: finance, technology, labour skill development, market and market information, raw material supply, consulting, subcontracting and other resources. We used eight dummy (1=yes, 0= no) variables to measure the amount of resources received by owners from their networks and eight other dummy variables to measure the degree of resources given to the networks over a period of previous six months.

4.2.3. FIRM GROWTH

Firm growth has been cited as a key measure of performance in prior research (Coleman, 2007). Researchers have measured the firm growth in various ways. For instance, Lee and Tsang (2001) used sales and profit. Wijewardana and Tibbits (1999) also used sales, while Robson and Obeng (2008) employed the level of employment. The researcher has employed annual sales as the growth measure. In this particular instance, the growth was defined as the change taken place in sales from 2007 to 2008.

4.3. DATA ANALYSIS METHODS

For phase 1, exploratory factor analysis using the principle factor method with varimax rotation was used to identify the underlying factors of human capital and social capital dimensions. Factor analysis has the ability to produce descriptive summaries of data matrices that aid in the detection of meaningful patterns among a given set of variables (Dess, Lumpkin, & Covin, 1997). The initial number of factors was chosen with regard to expectations based on communality values, eigen values and scree plot criterion. In phase 2, step-wise regression analysis approach was used. Finally, the human capital and social capital growth model was estimated as a path model.

5. RESULTS

Table 1 presents a summary of the business and owner characteristics. Of the 97 entrepreneurs who participated in this study, 84.5 percent were male and 15.5 percent of them were females. Age ranged between 22 and 88 years, with a mean of 41 years. In respect of education, 9.3 percent of the respondents had completed primary education, 49.5 percent had passed G.C.E. Ordinary Level and 30.9 percent had passed G.C.E. Advanced Level. When asked as to how their businesses were established, 80.4 percent indicated that they had created the businesses by themselves, 19.6 percent reported that they had inherited their businesses.

The businesses were largely structured as sole proprietorship (88.7 percent) or partnerships (9.3 percent) with two limited liability companies. With regard to the type of industry, 26.8 percent of the sample was dominated by food, beverages and tobacco producers. The Enterprises related to textiles

& wearing apparel and leather products comprised 14.4 percent of the sample while wood related and chemical related small enterprises represent 15.5 percent and 17.5 percent respectively. The average number of employees was 11.1 percent.

5.1. PRINCIPAL COMPONENT FACTOR ANALYSIS FOR HUMAN CAPITAL DIMENSION

Initially, the factorability of 19 variables was examined by using Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test of sphericity . Since the Kaiser-Meyer-Olkin measure of sampling adequacy was acceptable level (0.501) and Bartlett's test of sphericity was significant ($\chi^2= 365.45, p<0.5$) ,the data were put into factor analysis.

The original 19 variables were analyzed by the principle component factor analysis with varimax rotation, in order to identify underlying factors which are explaining human capital dimension in a more meaningful way; seven factors with eigen values greater than one were extracted. One variable (Number of technically qualified employees) was dropped from the analysis because of their low communalities.

The analysis of the remaining 18 variables yielded seven significant factors which explained 72.885 of the total variance. They have significantly high communalities (from 0.495 to 0.880). It confirmed that each variable shared some common variance with other variables. The Person product-movement correlation matrix for the variables used for final factor extraction is presented in table 2. Correlation coefficients are low enough to conclude that multicollinearity will not affect our results.

Table 01: Description of participating small business owners

Business Owner Characteristics	Frequency	Percent
Gender		
Male	82	84.5
Female	15	15.5
Average Age of Entrepreneur (Years)	41	
Level of Education		
Primary school	9	9.3
G.C.E. Ordinary Level Pass	48	49.5
G.C.E. Advanced Level Pass	30	30.9
Graduate Degree	9	9.3
Post Graduate	1	1
Enterprise Characteristics		
How the Business was Established		
Established by You	78	80.4
Inherited	19	19.6
Legal form of Business		
Sole Proprietorship	86	88.7
Partnership	9	9.3
Limited Liability Company	2	2.0
Average Age of the Business(Years)	9.6	
Average Number of Employees	11.1	
Type of Industry		
Food, beverages and tobacco	26	26.8
Textiles & wearing apparel, leather	14	14.4
wood & wood products, furniture	15	15.5
Chemical, petroleum, rubber	2	2.1
Non-metallic mineral products	17	17.5
Basic metal industries	9	9.3
Machinery & equipment	1	1
Coir & fiber(coconut)	5	5.2
Other products	8	8.2

N=97

The seven factors and the variables loaded against each, along with the relevant statistical values, are given in table 3. The factor loadings have ranged

from 0.909 to 0.424. The higher a factor loading, the more its test reflects or measures a factor.

The first factor was represented by four variables with factor loadings ranging from 0.909 to 0.536. They were technical knowledge acquired from previous job, having had training, prior work experience in the same field and number of years work experience in the same field. The number of years work experience in the same field has very high loading (0.909) compared with other variables. The first factor can be named as “*Training with experience in same field*” (TR_WESF) this factor accounted for 18.67 percent of the rated variance.

The second factor consists of three variables with loading ranging from 0.565 to 0.866 and it was included as formal education, prior work experience as government employee and the number of years prior work experience as government employee. This factor explained 12.00 percent of the rated variance. The second factor may be termed as “*education with experience in government sector*” (ED_EGS).

The third factor can be named as “*self learning with work experience in different fields*” (SL_WEDF). This factor comprised three variables representing technical skills acquired through self learning, work experience in different fields, number of years work experience in different fields. Factor loadings of these variables ranged from 0.495 to 0.920. A variance of 10.18 percent was explained by this factor.

The fourth factor primarily represented the ownership experience gained in different fields. Three variables were included in this factor. They were technical skills acquired through self learning, prior ownership experience gained in different fields and the number of years prior ownership experience in other different fields. Their factor loadings ranged from 0.426 to

0.920. The factor explained 9.94 percent of the variance. This factor can be named as “*self learning with ownership experience in different fields*” (SL_OEDF).

The fifth factor comprised two variables, namely, technical skills acquired through family tradition and father being an entrepreneur. These two variables are exhibiting the importance of entrepreneurial family background and can be named as “*family tradition*” (FA_TR). They carried factor loadings of 0.788 and 0.857 respectively. The factor explained 8.95 percent of the variance.

Two variables were included in the sixth factor. They were ownership experience in the same field and the number of years, ownership experience in the same field. Their factor loadings are 0.855 and 0.826 respectively. The factor explained 6.88 percent of the variance. As two variables are related to the prior ownership experience in the same field of business we named this factor as “*ownership experience in the same field*” (OW_ESF)

The last factor consisted of three variables representing technical education, professional education and having some kind of training. Although the variable “*having training*” was loaded fairly high on factor 1 as well, because of its higher loading and the greater relevance, it was also included into this factor. Their factor loadings ranged from 0.424 to 0.738. As these three variables are representing the further education and training received by owner-managers we named this factor as “*Technical and professional education*” (TE_PRE). The variance explained by this factor amounted to 7.79 percent.

5.2. PRINCIPAL COMPONENT FACTOR ANALYSIS FOR SOCIAL CAPITAL DIMENSION

Before using factor analysis for social capital dimension, initial tests were conducted to determine the suitability of our data for such an analysis. The Bartlett test of sphericity was significant ($\chi^2=1061.79, p<0.5$). The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.540, above the accepted value of 0.5. Given these overall indicators, the factor analysis was conducted with all 41 variables.

When 41 variables were analyzed by principle component factor analysis with varimax rotation, 14 factor solutions emerged in 16 rotations, with an eigenvalue of 1. Since we wanted to reduce the number of variables manageable level and more reflection, we observed the scree plot diagram and eigenvalues. We clearly observed that scree plot was begun to level off at around eigenvalue 2 and factor number five. Based on that, we determined to extract five factors.

Table 0 2 : Correlation matrix of variables used for final factor construction of human capital dimension

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Number of years worker experience in same field	1.000																	
2. Work experience in same field	.828***	1.000																
3. Received training	.469***	.420***	1.000															
4. Previous job	.403***	.466***	.205**	1.000														
5. Experience as government employee	.069	-.024	.255**	.091	1.000													
6. Nu. of years exp. as government employee	.004	-.113	.153	.147	.677***	1.000												
7. Formal education	.243**	.164	.264***	.098	.306***	.279***	1.000											
8. Work experience in different field	-.122	-.147	.062	-.135	-.219**	-.148	-.039	1.000										
9. Nu. of years worker exper. in different field	-.194*	-.206**	.110	-.179	-.029	-.127	-.085	.709***	1.000									
10. Technical knowledge from self learning	.095	.088	.088	-.254	-.032	-.104	.023	.246**	.146	1.000								
11. Ownership experience in different field	-.051	-.067	-.067	-.094	.001	.046	-.031	-.127	-.109	.211**	1.000							
12. Nu. of years ownership exp. in different field	-.122	-.144	-.144	-.007	.049	.086	-.072	-.097	-.083	.160	.762***	1.000						
13. Father is an entrepreneur	-.206**	-.275***	-.107	-.204	-.147	-.111	-.161	.009	-.075	-.210**	.046	.067	1.000					
14. Family tradition	-.323***	-.416***	-.239**	-.352***	-.126	-.143	-.119	.163	.195*	-.159	-.084	-.026	.549***	1.000				
15. Ownership experience in same field	-.075	-.123	.064	-.069	-.104	-.070	.104	.002	.013	.096	-.060	-.046	-.101	.040	1.000			
16. Nu. of years ownership exp. in same field	-.143	-.157	-.137	.007	-.085	-.057	.020	-.094	-.081	.087	.234**	-.037	.048	.015	.511***	1.000		
17. Professional education	.066	.088	.395***	.011	.117	.052	.134	-.059	-.033	-.050	-.131	-.100	-.220**	-.240**	.112	-.047	1.000	
18. Technical college	.260**	.157	.157	-.069	.022	.064	.047	.002	.013	-.094	-.060	-.046	-.006	-.060	-.054	-.045	.227**	1.000

***Correlation is significant at the 0.01 level (2-tailed) , **Correlation is significant at the 0.05 level (2-tailed), *Correlation is significant at the 0.10 level (2-tailed)

Table 03: Principal component factor analysis for human capital dimension (varimax rotation)

Notes: Number of Variables = 18; Number of observations =97

Variable	Communality	Factor Loadings						
		Factor 1 TR_WESF	Factor 2 ED_EGS	Factor 3 SL_WEDF	Factor 4 SL_OEDF	Factor 5 FA_TR	Factor 6 OW_ESF	Factor 7 TE_PRE
1. Number of years worker experience in same field	0.860	.909	.025	-.065	-.003	-.081	-.063	.136
2. Work experience in same field	0.880	.887	-.113	-.107	-.041	-.226	-.109	.060
3. Received training	0.656	.554	.325	.230	-.066	-.067	.047	.424
4. Previous job	0.574	.536	.135	-.279	-.166	-.242	-.075	-.315
5. Experience as government employee	0.781	-.018	.866	-.069	.028	-.098	-.113	.043
6. Number of years experience as government employee	0.774	-.083	.854	-.140	.048	-.077	-.102	-.012
7. Formal education	0.495	.322	.565	.061	-.048	.015	.250	.065
8. Work experience in different field	0.786	-.046	-.113	.867	-.096	.065	-.058	-.047
9. Number of years worker experience in different field	0.784	-.155	-.001	.849	-.111	.028	-.076	.005
10. Technical knowledge from self learning	0.571	.110	-.095	.495	.426	-.287	.200	-.029
11. Ownership experience in different field	0.863	-.025	.011	-.083	.920	.016	.079	-.048
12. Number of years ownership experience in different field	0.802	-.118	.050	-.080	.875	.009	-.104	-.049
13. Father is an entrepreneur	0.772	-.106	-.101	-.106	.056	.857	-.039	-.006
14. Family tradition	0.755	-.297	-.065	.161	-.101	.788	.036	-.072
15. Ownership experience in same field	0.754	-.063	-.015	.048	-.090	-.057	.855	.067
16. Number of years ownership experience in same field	0.734	-.084	-.051	-.127	.109	.041	.826	-.107
17. Professional education	0.717	-.045	.101	-.059	-.155	-.355	.079	.738
18. Technical college education	0.582	.167	-.020	-.042	.011	.141	-.101	.722
Eigen value		3.361	2.161	1.833	1.791	1.611	1.239	1.123
Proportion of Variance Explained		18.670%	12.007%	10.183%	9.949%	8.952%	6.884%	6.241%
Cumulative Variance Explained		18.670%	30.676%	40.859%	50.808%	59.760%	66.643%	72.885

Source: Author's computation

Again 41 variables were factor analyzed to extract five factors. We observed that 18 of variables had communality value as less than 0.4. These variables were dropped. The remaining 23 variables were factor analyzed. Another two variables also failed to reach the 0.4 communality value and we had to drop them too. There were two other variables that could not be theoretically explained and those two variables were also dropped. The retained 18 variables yielded five factors in five rotations. These factors explained 65.657 percent of the total variance. Product movement correlation matrix for the variables used for final factor solution and the final results of PCF were summarized in table 4 and 5 respectively. The factor loading ranged from 0.476 to 0.873. Factor 1 explains 26.42 percent of the total variance while factor 2 explains 12.10 percent of the total variance. Likewise, the factors 1 through 5 cumulatively explain 65.66 percent of the total variance in the 19 different variables.

Factor 1 has a positive correlation with seven factors: namely, the size of organizational network, the number of annual cards sent per year, subcontracts received from large businesses, the average number of telephone calls given per week, number of e-mails send per week, total network size and the number of association maintaining membership. As these seven variables are representing organizational network and network maintenance activities, factor 1 may be interpreted as a factor related to “*organizational*

network and network maintenance” (ORN_MA). Factor 2 was represented by five variables with factor loadings ranging from 0.772 to 0.476. They were raw materials received from SMEs, market information received from SMEs, market information given to SMEs, raw materials given to SMEs, and number of e-mails sent per week. As these variables exhibit network activities with SMEs, we may construe it as a factor related to “*Resources sharing with SMEs*” (RS_SME). Factor 3 comprised three variables: namely, consultancy received from government, technology received from government and market information received from government. It may be read as the “*government supportive activities*” (GO_SUP). Factor 4 was represented by three variables: the size of social network, consultancy given to friends, and consultancy received from friends. As these three variables are representing social network and sharing consultancy with friends, it may be inferred as a factor related to the “*sharing consultancy with social network*” (SH_CO_SN).

The last factor in social capital dimension consisted of three variables relating to the supportive network. They were the finance received from financial institutions, number of e-mails sends per week and the size of supportive network. It may be read as the “*supportive network with financial institutions*” (SU_NE_FI).

Table 04: Correlation matrix of variables used for final factor construction of social capital dimension

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
1. Finance rec. from financial institutions																				
2. Technology received from government	-.030																			
3. Raw materials received from SME	-.043	.151																		
4. Market information received from SME	.166	.270**	.529***																	
5. Consultancy received from friend	.021	-.019	-.194*	-.032																
6. Consultancy received from government	-.054	.700***	.055	.371***	.024															
7. Subcontracts rec. from large businesses	.221**	-.141	.104	.048	.026	-.054														
8. Raw materials given to SMEs	.084	.182*	.399***	.254**	-.164	.037	-.083													
9. Market information given to SME	-.044	.161	.373***	.585***	-.049	.211**	-.030	.104												
10. Consultancy given to friends	-.155	-.012	-.048	.132	.397***	.134	-.159	-.104	.171											
11. Market information received from government	.047	.322***	.069	.130	-.051	.410***	-.107	.100	.024	.069										
12. Number of emails send per week	.271***	-.042	.371***	.423***	-.027	-.051	.294***	.257**	.188	.090	.015									
13. Number of annual cards send per year	.171*	.059	.073	.372***	.126	.058	.399***	-.036	.165	-.031	-.077	.457***								
14. Av. Nu. of telephone calls given per week	.204**	.255**	.331***	.363***	.033	.157	.448***	.027	.166	-.177*	.116	.478***	.541***							
15. Nu. of ass. you maintaining membership	.147	.366***	.298***	.442***	-.024	.362***	.346***	.052	.296***	-.015	.182*	.438***	.302***	.513***						
16. Size of social network	.217**	-.032	-.174*	.182*	.495***	.031	-.027	-.213**	.240**	.394***	.082	.132	.220**	.159	.185*					
17. Size of organizational network	-.022	.114	.440***	.463***	-.039	.130	.415***	.095	.263***	-.062	.065	.281***	.508***	.466***	.394***	-.018				
18. Size of supportive network	.436***	.225**	.080	.240**	-.077	.197*	.303***	.063	.118	-.083	.100	.387***	.137	.360***	.419***	.085	.114			
19. Total network size	.279***	.157	.258**	.479***	.180*	.173*	.416***	-.014	.338***	.096	.085	.416***	.507***	.553***	.553***	.502***	.735***	.551***		

***Correlation is significant at the 0.01 level (2-tailed) , **Correlation is significant at the 0.05 level (2-tailed), *Correlation is significant at the 0.10 level (2-tailed)

Table 05: Principle components factor analysis for social capital dimension (varimax rotation)

Variable	Community	Factor Loadings				
		Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
		ORN_MA	RS_SME	GO_SUP	SH_CO_SN	SU_NE_FI
1. Size of organizational network	0.756	.786	.320	.054	-.046	-.177
2. Number of annual card send per year	0.587	.741	.093	-.064	.154	.046
3. Subcontracts received from large businesses	0.647	.736	-.159	-.155	-.150	.185
4. Average number of telephone calls given per week	0.644	.730	.132	.164	-.044	.254
5. Total network size	0.811	.720	.237	.113	.347	.322
6. Number of associations you maintaining membership	0.573	.542	.258	.367	.041	.277
7. Raw materials received from SMEs	0.726	.246	.772	.071	-.249	-.051
8. Market information received from SMEs	0.731	.308	.736	.230	.169	.112
9. Market information given to SMEs	0.572	.119	.687	.075	.273	-.078
10. Raw materials given to SMEs	0.528	-.173	.590	.065	-.340	.172
11. Number of e-mails send per week	0.612	.407	.476	-.140	.032	.447
12. Consultancy received from government	0.785	.074	.075	.873	.093	-.054
13. Technology received from government	0.734	.053	.109	.845	-.066	.010
14. Market information received from government	0.451	-.052	.040	.661	.014	.100
15. Size of social network	0.776	.121	.010	.007	.837	.248
16. Consultancy given to friends	0.610	-.162	.193	.058	.721	-.151
17. Consultancy received from friends	0.557	.089	-.188	-.011	.715	-.046
18. Finance received from financial institutions	0.695	.082	-.018	-.050	.026	.827
19. Size of supportive network	0.680	.259	.061	.211	-.041	.751
Eigen value		5.020	2.301	2.169	1.667	1.319
Proportion of Variance Explained		26.420	12.108	11.415	8.771	6.943
Cumulative Variance Explained		26.420	38.528	49.943	58.715	65.657

5.3. RELIABILITY ANALYSIS

Composite reliability assesses the inter-item consistency which is estimated using Cronbach's alpha. Typically, reliability coefficient of 0.60 or high are considered adequate (Bagozzi & Yi, 1988). As seen from Table 6, Cronbach's alpha values of all factors well above 0.60 and considering the alpha

values of the measures used in this study, the internal consistency and reliability were acceptable.

Table 06: Factors related to human and social capital dimensions and alpha coefficient

Factor	Number of Items	Composite Reliability
<u>Human Capital Dimension</u>		
Training with work experience in same field (TR_WESF)	4	0.77
Education with experience in government sector (ED_EGS)	3	0.69
Self learning with work experience in different field (SL_WEDF)	3	0.64
Self learning with ownership experience in different field (SL_OEDF)	3	0.65
Family tradition (FA_TR)	2	0.71
ownership experience in same field (OW_ESF)	2	0.68
Technical and professional education (TE_PRE)	3	0.64
<u>Social Capital Dimension</u>		
Organizational network and network maintenance (ORN_MA)	7	0.85
Resources sharing with SMEs (RS_SME)	5	0.73
Government supportive activities (GO_SUP)	3	0.73
Sharing consultancy with social network (SH_CO_SN)	3	0.69
Supportive network with financial institutions" (SU_NE_FI)	3	0.63

5.4. HYPOTHESIS TESTING

Step-wise regression analysis was used to investigate, respectively, the relationship between human capital, social capital and firm growth. The results of regression are listed in table 7. Hypothesis H1 has focused on causal relationship between human capital dimension and social capital dimension. Three factors related with human capital dimension have significant and positive effect on organizational network with network maintenance, supporting hypothesis H1. Training with work experience in same field has a greater effect ($\beta = 0.476, p < 0.001$) in

explaining the organizational network with network maintenance. Technical & professional education ($\beta = 0.256, p < 0.01$) and education with experience in government sector ($\beta = 0.235, p < 0.01$) also have significant positive effect on organizational network with network maintenance. Two factors related to human capital having positive effects on resources sharing with SMEs: namely, training with work experience in same field and self learning with work experience in different fields further supporting hypothesis H1. Training with work experience in same field has the strongest effect on resources sharing with SMEs ($\beta = 0.231, p < 0.05$).

Table 07: Sales growth model parameter estimates

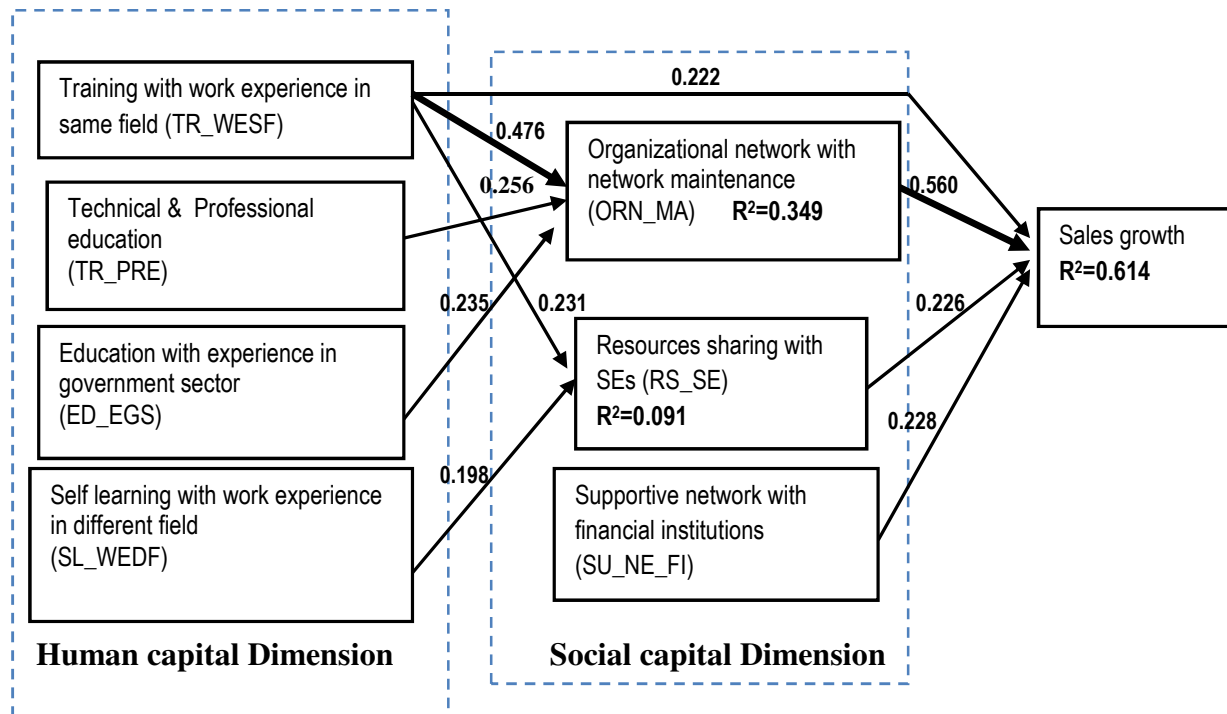
Predictor construct	Predicted construct	path Coefficient	t-value	Sig .
TR_WESF	ORN_MA	0.476	5.631	0.000
TE_PRE	ORN_MA	0.256	3.031	0.003
ED_EGS	ORN_MA	0.235	2.774	0.007
TR_WESF	RS_SME	0.231	2.323	0.022
SL_WEDF	RS_SME	0.198	1.995	0.049
ORN_MA	Sales growth	0.560	7.441	0.000
RS_SME	Sales growth	0.226	3.338	0.001
SU_NE_FI	Sales growth	0.228	3.471	0.001
TR_WESF	Sales growth	0.222	2.870	0.005
Model fitting indicators	ORN_MA	RS_SME	Sales Growth	
R ²	0.349	0.091	0.614	
Adjusted R ²	0.328	0.071	0.597	
F	16.274	4.593	35.800	
Significance of F	0.000	0.013	0.000	

Notes : Path coefficients are equal to standardized regression coefficients in multiple linear regression analysis.

Hypothesis H2 has focused on causal relationship between social capital dimension and sales growth. Three out of five factors of social capital dimension have significant positive effect on sales growth: namely, organizational network with network maintenance ($\beta = 0.560, p < 0.001$), resources sharing with SMEs ($\beta=0.226, p < 0.01$) and supportive network with financial institutes ($\beta=0.228, < 0.01$). In addition to the indirect effect on sales growth through social capital dimension, training with work experience in same field has a direct positive effect on sales growth ($\beta = 0.222, p < 0.01$), thus supporting hypothesis H3. Several studies have also reported a positive relationship between prior work experience and venture growth (Capelleras & Rabetino, 2008). One explanation for this result is that those individuals who previously worked as salaried

employees in firms belonging to the same industry had gained valuable experience in technical and management aspects. This experience enables them to overcome more easily the problems they encounter right along their business growth.

It was predicted that relations between human capital and firm growth would be mediated by social capital (H4). As shown in table 7, and figure 2, four factors related with human capital dimension (TR_WESF, TR_PRE, ED_PRE, SL_WEDF) have indirect significant effect on sales growth through two factors of social capital dimension (ORN_MA, RS_SME) by supporting hypothesis H4. The estimated path diagram for the proposed human capital, social capital and sales growth model is presented in figure 2. The numbers that are assigned to each arrow show the estimated standardized coefficients.



Notes: thick arrows show the paths which have strong impact on dependent variables.

Figure 02: Estimated path diagram

The structural model was evaluated by the R^2 of the dependant construct. As indicated in Table 7, the R^2 for the ultimate dependant construct, sales growth, was 0.61 with a p-value <0.001 . The structural model is therefore considered appropriate because a significant portion of the variance in the dependant constructs has been explained by the independent constructs.

6. DISCUSSION AND CONCLUSIONS

The objective of this paper was to determine the relationship between human capital, social capital and firm growth. Our results provide support for conceptualizing the causal relationship between human capital, social capital and firm growth. We have shown that the entrepreneur's human capital relates positively and directly to the social capital. In

addition, we observed direct effects of human capital on firm growth. One of our main findings is that prior work experience in same field of business and having participated relevant training courses contribute significantly to the explanation of the cross-sectional variance of the social capital and sales growth (table 7) . In addition, human capital components of entrepreneurs such as technical & professional education, education & prior experience in government sector and self learning with work experience in different field enhance social capital. To be more specific, prior work experience of the entrepreneur in the same industry, technical & professional education and education with experience in government sector appears to improve organizational network with network maintenance. Organizational network with network maintenance

has positive and significant effect on sales growth. According to Chen *et al* (2009), among Latin American and East Asian entrepreneurs, contacts were found to be a key benefit of work experience, helpful in identifying business opportunities, obtaining financing and other resources, and alleviating management challenges.

As a developing country, Sri Lanka has not a big market. Most of the small enterprises are engaged in supplying raw materials or their outputs to the large enterprises based on subcontracts. By developing and maintaining network relationship with large enterprises, the small entrepreneurs can enhance their sales. Training with work experience in same field and self learning with work experience in different field are influencing entrepreneur's resources sharing with SMEs. Resources sharing with SMEs have significant and positive effect on sales growth. Miller *et al* (2007) also have found a similar situation among small businesses in US communities. Sharing resources among the network members enhance production and marketing presenting an efficient means for gaining access to know-how and resources that may not be internally generated. Our findings offer practical applications for enhancing small business growth. To the practicing owner-managers, this study suggests how social capital might strengthen firm capabilities. Rather than acting individually in current competitive market, by developing and maintaining network type of relationships among the similar types of organizations, the small entrepreneurs can achieve mutual advantages and they can enhance their enterprise growth.

The importance of these findings is that they highlighted the role played by both human and social

capital in the growth of small enterprises in Sri Lanka. Further, as human capital variables including work experience and training had a positive impact on firm growth, these findings emphasize the need to ensure that entrepreneurs do have access to industry related experience and training. Thus, the programs aimed at promoting small enterprise sector should be designed in such a way so as to address both human and social capital needs.

6. LIMITATIONS AND FUTURE RESEARCH

This study has several limitations. Firstly, by focusing on manufacturing enterprises, the study scope is limited. Secondly, the focus on small enterprises renders the study size-specific. Thirdly, by studying only one district in Sri Lanka the study suffers from being district-specific. Another limitation is the focus on human capital and social capital as the determinants of firm growth. There may be more factors that may impact on firm growth. Generalisability of the findings to service sector, medium and large enterprises and other districts is cautioned. These limitations suggest areas for future research. Research is needed to compare the growth factors of small manufacturing enterprises with service oriented enterprises of the economy. Future research is needed to focus on small enterprises in the other districts in Sri Lanka. Additionally, research on medium and large enterprises throughout the country is warranted to ascertain if the findings about firm growth are size-specific and/or district-specific.

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