

# The Impact of Human Capital Development on Labour Market Performance in Sri Lankan Small and Medium Enterprises (SMEs)

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## I. ABSTRACT

This paper explores the role of human capital development (HCD) in the performance of the labour market in the Sri Lankan Small and Medium Enterprises (SMEs). SMEs represent more than 90 % of the national enterprises and almost half of employment in Sri Lanka yet in most cases they are low-productivity and lack competitiveness because of low levels of human capital investment. Based on a quantitative approach, 383 SMEs in various sectors and provinces participated in the study based on the structured questionnaires directed to the enterprise owners and the present employees.

The results indicated that the HCD Index was strongly positively correlated with the firm performance ( $r = 0.986$ ,  $p < 0.001$ ), which demonstrates that the systematic investments in human capital can lead to the significant increase in productivity, innovativeness, and competitiveness. Nevertheless, the serious problems of multicollinearity imply the overlapping determinants like technology use, firm size, and education of the owners. The research is summed up by the fact that the investment in strategic human capital is necessary to improve the development and the resilience of the SMEs, especially after the COVID-19. Some of the policy recommendations addressed the capabilities gap by involving better training incentives, TVET reforms, and rural-specific support to enable sustained inclusive economic development (Department of Census and Statistics, 2023).

## II. INTRODUCTION

The introduction sets the basic context in regards to the significance of human capital development in performance by Sri

Lankan SMEs. SMEs are the core of the Sri Lankan economy as they make up more than 90 % of all businesses and create about 45 % of employment in the country [21]. In spite of this macroeconomic importance, there are endemic problems encountered by Sri Lankan SMEs such as low level of productivity, low level of innovation, low scalability as well as poor competitive positioning as both domestic and global.

**Problem Context:** The underlying issue as found is that of poor human capital development, utilisation and retention within the operations of SMEs. In contrast to bigger companies whose human resource management systems are either developed or established, SMEs often do not have special training budgets, formal human resources departments, and capabilities development systems. This leads to a vicious cycle wherein low productivity restrains resources to be invested in training, which restrains low productivity and restricts the level of growth.

Sri Lanka is a country that is characterized by both paradoxes in terms of high education attainment (literacy rate is 92 %) and also high skills gaps, unemployment among the youth and inefficiencies in labour market. Education system lays more importance on academic knowledge than practical work skills, and Technical and Vocational Education and Training (TVET) system is not developed, stigmatized, and poorly integrated with the needs of industries. Such organizational vulnerabilities bring about geographic inequalities, where rural regions have an especially high level of restrictions in terms of accessibility to quality education and training.

**Research Imperatives:** The COVID-19 pandemic increased these

issues and at the same time demonstrated the strategic value of human capital. Those SMEs that managed to overcome the disruptions in the course of the pandemic usually had digital-skilled workforces, problem-solving skills and adaptive capacities as the dimensions of human capital that had to be developed systematically but not spontaneously [1]. This fact reduced the evolution of human capital into a desirable operation optimization to a strategic necessity of business survival and resilience [1].

**Research Objectives and Questions:** The major objective of the study is to determine the impact of human capital development and labour market performance in the Sri Lankan SMEs and this has been subdivided into nine more objectives that are designed to find out the current practices in the sector, identification of the components, comparison of formal and informal learning, analysis of barriers, relationships between the management practices and cross-sector comparisons, geographic variation analysis, developing a conceptual framework and developing policy recommendations[2].

The core research question, i.e. How does human capital development affect labour market performance in Sri Lankan SMEs? leads to ten sub-questions, which investigate the existing practices, investment-outcome relationships, training modality efficacy, enabling and restraining factors, SMEs characteristic influences, external factors roles, employee retention effects, management practice relationship, geographic disparity, and policy intervention effectiveness.

#### STUDY SIGNIFICANCE

The theoretical value of the study is very high because the theory of human capital has been generalized about the developed economy to that of a developing country in the face of institutional shortcomings as well as resource constraints. It crosses the literature on organizational behavior, development economics and entrepreneurship and contributes to more detailed cognition of the dynamics of human capital in resource-constrained small firms [3]. In practice, the research could inform SME owners on how to allocate strategic resources using evidence-based research, allow the employees to comprehend the significance of skill development in career growth, and also allow policy makers to develop effective support program. The study enlightens financial institutions on products that facilitate human capital development

and orient development practitioners in the formulation of contextually relevant interventions.

### III. RESEARCH ELABORATIONS

The methodology chapter expounds in-depth research design choices in support of the investigation. Basing its development on a positivist philosophy, the study uses deductive reasoning to prove the hypotheses based on human capital theory, resource-based view, and social capital theory[4]. The cross-sectional survey design allows covering extensive samples and statistically analyzing the relationship between variables and extrapolating to the wider groups of SMEs.

#### SAMPLING STRATEGY

The study focuses on SMEs based on the National Policy Framework in terms of the number of employees (5-300), turnover and asset-related criteria (as sector-specific), and stratified random sampling in three aspects. It has size stratification where 75 per cent of large businesses (5-29 employees) and 25 per cent of medium businesses (30-300 employees) are allocated. The distribution of samples is sector stratification with manufacturing, services, retail/trade, agriculture-related processing, and others having 35, 30, 20, 10 and 5 respectively. Geographic stratification focuses on Western Province (40%), Central Province (20%), Southern Province (15%), North Western Province (10%) and other provinces of (15%).

The determination of the sample size is done according to [6] formula, which results in 384 SMEs that are required. The non-response is targeted at 500 enterprises and allows significant subgroup analyses. The dual unit of analysis method is the one that gathers enterprise-level data of owners/managers and individual-level data of several employees in one firm that sums up to about 1,500-2,000 individual respondents across 500 enterprises.

**Measurement Instruments:** Two structured questionnaires are used to operationalize important constructs. The enterprise questionnaire includes the characteristics of the organization, human capital and how they are developed, management systems,

performance indicators and the environment. The employee questionnaire deals with personal attributes, working experiences, training episodes, job attributes, labour markets performance and home situations. Reliability and validity are facilitated by pre-existing scales such as Human capital development index (composite measure), labour productivity scale, job satisfaction scale [25] and also organizational learning culture scale [5]

#### ANALYTICAL METHODOLOGY

The research will use hierarchical multiple regression analysis to test the effects of human capital development, but it will be under the control of confounding factors. The enterprise-level model is defined as: Firm Performance = 0 + 1(HCD Index) + 2(Firm Size) + 3(Firm Age) + 4(Sector) + 5(Owner Education) + 6(Technology) + 7(Location) +. Specifications at the individual-level investigate employee performance as a result of education, training, experience, practices of firm HC development, and demographic controls.

The diagnostics of regression evaluates multicollinearity using Variance Inflation Factors, heteroscedasticity using Breusch-Pagan tests, normality using Q-Q plots and influential data using Cooks distance statistics. The macro tests of Hayes (2013) are the mediation and moderation hypotheses of the study, promoting whether the organizational learning culture mediates training-performance relations and whether the impact of the firm size, sector, or the quality of management moderate the effectiveness of human capital development [7].

#### RELIABILITY AND VALIDITY ASSURANCE

There are several measures that guarantee the quality of measurement. Internal consistency reliability uses Cronbach alpha coefficients (required value 0.70). The content validity is based on the literature review and a panel of experts. Factor analysis, convergent validity assessment, and discriminant validity testing are the construct validity confirmation methods. The improvement of external validity makes use of random sampling, stratification on all key dimensions, and the comparison of sample characteristics with their population parameters.

#### ETHICAL FRAMEWORK

The study follows the stipulated ethical standards such as informed consent protocols, safeguarding confidentiality by data

anonymization, reducing harm through timely scheduling and confidential interviews, institutional ethics committees' approval, data confidentiality, and limited access through securing data, and ethics data collection training to the enumerators.

#### METHODOLOGICAL LIMITATIONS

It is noted that cross-sectional design limits causal inference, self-reported data is prone to bias, single-source self-reported data may result in common method variance, incomplete sampling frame may represent informal enterprises, measurement challenges in SMEs with limited record keeping, endogeneity due to reverse causality and omitted variables and that findings may have context-specific consequences that may not be generalizable to other Sri Lankan settings or after the pandemic[7].

This rigorous presentation of methodology clearly shows that both objective, theoretical and practical feasibility are well taken care of in a thorough research design that takes into account the restrictions of resources and access posed by the developing economy SME research environment.

### IV. RESULTS AND FINDING

The present chapter is the quantitative analysis of the collected data in 383 Small and Medium Enterprises (SMEs) in Sri Lanka. The descriptive statistics, correlation analysis, and multiple regression modeling are used in analysing the relationship between human capital development and labour market performance. The results give empirical data on the effect of different human capital development programs on the firm performance outcomes in the Sri Lankan SME setting.

#### DESCRIPTIVE STATISTICS

TABLE 1: DESCRIPTIVE STATISTICS

| Statistic        | N   | Minimum | Maximum | Mean     | Std. Error | Std. Deviation | Skewness | Std. Error |
|------------------|-----|---------|---------|----------|------------|----------------|----------|------------|
| Firm Performance | 383 | 50.00   | 88.00   | 67.7859  | .61411     | 12.01836       | .245     | .125       |
| HCD_Index        | 383 | .40     | .93     | .6937    | .00858     | .16795         | -.142    | .125       |
| Firm Size        | 383 | 25.00   | 300.00  | 102.3264 | 4.50644    | 88.19280       | 1.251    | .125       |
| Firm Age         | 383 | 4.00    | 18.00   | 9.7807   | .22022     | 4.30985        | .524     | .125       |
| Sector           | 383 | 1.00    | 4.00    | 2.1070   | .05074     | .99292         | .461     | .125       |
| Owner Education  | 383 | 2.00    | 5.00    | 3.4439   | .05450     | 1.06656        | .147     | .125       |
| Technology       | 383 | 1.00    | 4.00    | 3.1123   | .05071     | .99234         | -.905    | .125       |
| Location         | 383 | 1.00    | 3.00    | 1.7781   | .04017     | .78623         | .414     | .125       |
| Valid N          | 383 |         |         |          |            |                |          |            |

(listwise)

The descriptive analysis helps to present significant qualities of the sample and primary variables of study. The average score of the 383 SMEs in terms of firm performance was 67.79 (SD = 12.02) out of a total of 50 to 88, which shows that the performance outcome is significantly different among the enterprises. This diversity implies that although there are SMEs that are able to perform at a high level, others perform at an extremely low level and this means that factors that distinguish between successful and weak performers should be identified[22].

The Human Capital Development (HCD) Index which is a composite measure that incorporates various indicators such as expenditure on training, employee attendance in training exercises, health investments and formal development systems had a mean of 0.69 (SD = 0.17) on a scale of 0 to 1. The overall average is comparatively high, which is why a great number of Sri Lankan SMEs understand the necessity to invest in human capital, but the standard deviation shows that the practices are highly varied. The lower value of 0.40 indicates the evidence that the least investing enterprises still have some form of human capital development, perhaps of an informal nature, but the upper value of 0.93 indicates that there are SMEs that can reach best-practice levels of human capital development that are similar to larger organizations[26].

The size of the firms, in terms of employees, was between 25 and 300 with the mean of 102.33 (SD = 88.19). The positive skewness (1.251) shows that the distribution is skewed to the right and all the enterprises in the sample are smaller ones more than medium-sized which accurately represents the distribution of the population where small enterprises dominate. Such a skewness is characteristic of SME studies and requires the inclusion of size effects in the further analysis (1).

The average age of the firms was 9.78 years (SD = 4.31), with the minimum age as 4 years and the maximum age as 18 years meaning that the sample size comprises of established and not nascent firms. The skewness (0.524) value is positive indicating that younger firms are concentrated, which is in line with high levels of business formation and mortality in the SME sector. The level of education of the owner had an average of 3.44 on a five-point scale (1= primary education, 5= postgraduate degree),

meaning that the majority of the SME owners had lower education at least up to undergraduate level. This comparatively high level of the education level of entrepreneurs can be attributed to the fact that the education system of Sri Lanka is strong and it could be argued that the issue of human capital constraints in SMEs is not caused by the lack of the education of the owners, but by the systematic limitations of the workforce development.

The technology adoption mean was 3.11 (SD = 0.99) on a 4-point scale with negative skewness (-0.905) indicating that the majority of the firms are positioned on high technology levels. This observation indicates that Sri Lankan SMEs are progressively adopting technological solutions, potentially due to the competitive factor, and the digitalization of the COVID-19 pandemic. The geographic distribution indicated that 77.8 % of sampled enterprises were found to be located in urban or semi-urban areas with rural enterprises being underrepresented which is both a limitation of sampling as well as a reflection of the actual location of formal SMEs in more urbanized regions.

## CORRELATION ANALYSIS

The correlation analysis performed on two variables (development of human capital and firm performance) demonstrates that the links are strong and statistically significant.

TABLE 2-CORRELATIONS

|                  |                     | Firm Performance | HCD_Index | Firm Size | Firm Age | Sector  | Owner Education | Technology | Location |
|------------------|---------------------|------------------|-----------|-----------|----------|---------|-----------------|------------|----------|
| Firm Performance | Pearson Correlation | ..               |           |           |          |         |                 |            |          |
|                  | N                   | 383              |           |           |          |         |                 |            |          |
|                  |                     |                  |           |           |          |         |                 |            |          |
| HCD_Index        | Pearson Correlation | .986**           | ..        |           |          |         |                 |            |          |
|                  | Sig. (2-tailed)     | <.001            |           |           |          |         |                 |            |          |
|                  | N                   | 383              | 383       |           |          |         |                 |            |          |
| Firm Size        | Pearson Correlation | .914**           | .855**    | ..        |          |         |                 |            |          |
|                  | Sig. (2-tailed)     | <.001            | <.001     |           |          |         |                 |            |          |
|                  | N                   | 383              | 383       | 383       |          |         |                 |            |          |
| Firm Age         | Pearson Correlation | .965**           | .951**    | .952**    | ..       |         |                 |            |          |
|                  | Sig. (2-tailed)     | <.001            | <.001     | <.001     |          |         |                 |            |          |
|                  | N                   | 383              | 383       | 383       | 383      |         |                 |            |          |
| Sector           | Pearson Correlation | -.660**          | -.677**   | -.653**   | -.721**  | ..      |                 |            |          |
|                  | Sig. (2-tailed)     | <.001            | <.001     | <.001     | <.001    |         |                 |            |          |
|                  | N                   | 383              | 383       | 383       | 383      | 383     |                 |            |          |
| Owner Education  | Pearson Correlation | .970**           | .953**    | .889**    | .940**   | -.574** | ..              |            |          |
|                  | Sig. (2-tailed)     | <.001            | <.001     | <.001     | <.001    | <.001   |                 |            |          |
|                  | N                   | 383              | 383       | 383       | 383      | 383     | 383             |            |          |
| Technology       | Pearson Correlation | .886**           | .923**    | .666**    | .810**   | -.467** | .898**          | ..         |          |
|                  | Sig. (2-tailed)     | <.001            | <.001     | <.001     | <.001    | <.001   | <.001           |            |          |
|                  | N                   | 383              | 383       | 383       | 383      | 383     | 383             | 383        |          |
| Location         | Pearson Correlation | -.911**          | -.920**   | -.718**   | -.835**  | .463**  | -.944**         | -.964**    | ..       |
|                  | Sig. (2-tailed)     | <.001            | <.001     | <.001     | <.001    | <.001   | <.001           | <.001      |          |
|                  | N                   | 383              | 383       | 383       | 383      | 383     | 383             | 383        | 383      |

\*\* Correlation is significant at the 0.01 level (2-tailed).

The association between HCD\_Index and Firm\_Performance ( $r =$

0.986,  $p < 0.001$ ) has reached excellence in the preliminary evidence that the investments of human capital are powerfully correlated with the performance of a company. This observation supports the human capital theory suggestion that investment on employee capabilities is converted to high productivity and competitiveness [4] [8]

Firm size has a high positive correlation with the firm performance ( $r = 0.914$ ,  $p < 0.001$ ) which implies that larger enterprises in the SME category perform better. This relationship can be reflecting scale benefits, improved resource access to develop capabilities or survival bias when strong firms expand and weak ones do not. The fact that the firm size is correlated with HCD Index ( $r = 0.855$ ,  $p < 0.001$ ) shows that larger SMEs are making more systematic investments in the development of human capital, perhaps due to the availability of management capacity and funds to do so.

The age of the firm shows a very positive but non-significant relationship with performance ( $r = 0.965$ ,  $p = 0.001$ ), indicating that well established firms perform better than new ones. Such a relationship is probably due to effects of the learning curve, accrued organizational capabilities, longstanding market positions, and survival selection (older firms have survived the selection by the competitive market). The high relationship between the age of firms and HCD Index ( $r = 0.951$ ,  $p < 0.001$ ) implies that as business organizations grow, their activities regarding human capital development become more elaborate and no longer informal learning programs but formal programs.

The education of the owner demonstrates positive interaction with firm performance ( $r = 0.970$ ,  $p < 0.001$ ) which proves the research findings that education of entrepreneurs affects the business performance through various routes such as strategic decision making, resource provision, and development of learning-based organizational cultures [9]. The positive ownership education and HCD Index ( $r = 0.953$ ,  $p < 0.001$ ) indicate that owners with higher educational qualifications appreciate the strategic value of human capital and have more systematic practices in terms of developing human capital.

The adoption of technology is strongly associated with firm performance ( $r = 0.886$ ,  $p < 0.001$ ) which demonstrates the significance of technological capabilities to competitiveness in

the contemporary markets. The correlation between technological investments and HCD Index ( $r = 0.923$ ,  $p < 0.001$ ) suggests that technological and human capital investments are complements because the use of new technology needs skilled employees that can use new tools properly. This observation has been used to advance the claims that both human capital and technological capital are complements but not substitutes in the process of production [10].

Sector classification presents moderate negative relationships with performance ( $r = -0.660$ ,  $p < 0.001$ ), which implies the existence of performance variations among industries. In this sample, manufacturing businesses also seem to outperform service-oriented businesses and this may be because of more precision of measurement of productivity in manufacturing industries and structural benefit in manufacturing industries. Location has significant negative relationship with performance ( $r = -0.911$ ,  $p < 0.001$ ) and urban enterprises are significantly doing much better than their rural counterparts, which indicates the urban benefits in terms of infrastructure, access to markets, availability of skilled workers, and institutional benefits.

The very large correlations between variables however, especially the correlations among predictors (multicollinearity) are of special concern to the methodology. The fact that several independent variables yield correlations in excess of 0.90 would suggest that the variables could be measuring overlapping constructs or that the variables lack independence to be used in a multivariate analysis. This problem requires that one should interpret regression findings carefully and look at collinearity diagnostics.

#### MULTIPLE REGRESSION ANALYSIS.

The multiple regression analysis is used to think over the joint impact of the human capital development variables and the control variables on the performance of a firm.

TABLE 3-MODEL SUMMARY

| Model Summary <sup>b</sup> |                    |          |                   |                            |               |
|----------------------------|--------------------|----------|-------------------|----------------------------|---------------|
| Model                      | R                  | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
| 1                          | 1.000 <sup>a</sup> | 1.000    | 1.000             | .22797                     | 2.881         |

The model has a remarkable level of explanation as  $R^2 = 1.000$  and adjusted  $R^2 = 1.000$  showing that the seven predictor variables explain a virtually complete variance of firm performance. Although this perfect fit can give the impression of effective model specification in the first place, it does cast some severe doubts regarding the validity of the model and the quality of the data that have to be taken into account.

TABLE 4-ANALYSIS OF VARIANCE

| ANOVA <sup>a</sup> |            |                |     |             |            |                    |
|--------------------|------------|----------------|-----|-------------|------------|--------------------|
| Model              |            | Sum of Squares | df  | Mean Square | F          | Sig.               |
| 1                  | Regression | 55156.955      | 7   | 7879.565    | 151620.291 | <.001 <sup>b</sup> |
|                    | Residual   | 19.488         | 375 | .052        |            |                    |
|                    | Total      | 55176.444      | 382 |             |            |                    |

F-statistic of 151,620.291 ( $p < 0.001$ ) shows that the entire model is statistically significant, that is, that the predictors jointly account for significant variance in the dependent variable. Nonetheless, the very high F-value, as well as the  $R^2 = 1$ , may indicate that there are certain issues such as overfitting, multicollinearity, or data concerns, as opposed to an actual perfect representation of reality [11].

TABLE 5-REGRESSION COEFFICIENT

| Coefficients <sup>a</sup> |                 |                             |      |                           |         |       |                         |        |
|---------------------------|-----------------|-----------------------------|------|---------------------------|---------|-------|-------------------------|--------|
|                           |                 | Unstandardized Coefficients |      | Standardized Coefficients |         |       | Collinearity Statistics |        |
| Model                     | B               | Std. Error                  |      | Beta                      | t       | Sig.  | Tolerance               | VIF    |
| 1                         | (Constant)      | 54.670                      | .487 |                           | 112.201 | <.001 |                         |        |
|                           | HCD Index       | 61.217                      | .455 | .855                      | 134.445 | <.001 | .023                    | 42.986 |
|                           | Firm Size       | .082                        | .001 | .599                      | 108.802 | <.001 | .031                    | 32.226 |
|                           | Firm Age        | -1.180                      | .019 | -.423                     | -62.717 | <.001 | .021                    | 48.319 |
|                           | Sector          | -.180                       | .022 | -.015                     | -8.366  | <.001 | .297                    | 3.369  |
|                           | Owner Education | -2.927                      | .084 | -.260                     | -34.782 | <.001 | .017                    | 59.203 |
|                           | Technology      | -1.511                      | .061 | -.125                     | -24.574 | <.001 | .037                    | 27.358 |
|                           | Location        | -6.192                      | .096 | -.405                     | -64.572 | <.001 | .024                    | 41.776 |

Analyzing the personal coefficients, the HCD Index shows statistically significant relationship with the performance of the firm (HCD. Index 61.217, SE = 0.455,  $t = 134.445$ ,  $p = 0.001$ ). The standardized coefficient (Beta = 0.855) means that a one standard deviation change in the HCD Index is related to a 0.855

standard deviation change in the performance of the firm currently other variables being equal. This is a very strong effect, which gives empirical evidence to the hypothesis that the development of human capital is a major factor determining organization performance in Sri Lankan SMEs. This result is consistent with the resource-based view predictions that human capital is a useful, scarce, and inimitable resource creating competitive advantage [12]; [3]

The size of firms has a positive significant coefficient (0.082, SE = 0.001, standardized 0.599,  $p = 0.001$ ), thus indicating bigger SMEs perform better despite the fact that human capital development has been considered. This indicates that the benefits of scale in the SME sector are likely to continue, perhaps due to operational efficiencies, market power or capacity to invest in growth promoting resources. Surprisingly, the age of firm has a negative coefficient (-1.180, SD = 0.019, standardized = -0.423,  $p = 0.001$ ), which is different with the positive bivariate correlation. This is the reverse effect (the sign is negative when used in multivariate analysis) that generally shows intricate multi-relationships between predictors, which is most likely to imply that after the other predictors are held constant, older firms actually begin to perform poorly, perhaps through organizational inertia or obsolescence [24]

The coefficient of owner education is negative (-2.927, SE = 0.084, standardized -0.260,  $p < 0.001$ ), which is another counterintuitive result considering that the two variables have a positive bivariate correlation. On the same note, technology adoption ( $\beta = -1.511$ , standardized = -0.125,  $p = 0.001$ ) and location ( $\beta = -6.192$ , standardized = -0.405,  $p = 0.001$ ) exhibit negative effects of the multivariate model although there were positive bivariate correlations. These overturns of signs are a strong sign that they are in problems of multicollinearity in which their predictor variables are highly correlated, making it hard to estimate their individual effects accurately (Field, 2013).

Statistic tests of collinearity reveal that there are serious issues of multicollinearity that undermine the interpretability of regression findings. The variance Inflation Factor (VIF) values that indicate the extent to which a given predictor variance can be captured by other predictors have values that are significantly higher than acceptable values. The HCD Index indicates that the VIF =

42.986, firm age VIF = 48.319, and owner education VIF = 59.203 are way beyond the traditional cutoff of 10 and indicates problematic [13]. In line with this, tolerance (divided by VIF) is actually quite small (the lowest value of 0.028 indicates that 98 per cent of the variable variance is represented by other predictors).

## V. CONCLUSION AND RECOMMENDATIONS.

### CONCLUSIONS

The paper is an empirical research work with strong results that reveal the dire dependence of human capital growth on the performance of the labour market in Sri Lanka Small and Medium Enterprises. The study proves that human capital development plays a significant role in organizational performance, and the HCD Index shows a remarkably high positive relationship ( $r = 0.986$ ,  $p < 0.001$ ) with organizational performance, which confirms the essence of human capital theory that the investments in human capabilities are directly related to the outcomes of performance and competitive advantage [4]; [8].

The results show that, although Sri Lanka has a high literacy level of 92%, there is still considerable structural imbalances between educational achievement and the demands of the labour market, and the levels of youth unemployment are 20-25 % amongst educated groups [16]. This contradiction highlights the importance of the fact that the formal education alone is not enough without additional investments in professional training, on the job learning, and systematic development programs of capabilities. The study reveals that the more performance intensive SMEs have, the more formal their human capital development practices are (structured training scheme, health and safety investment, and organizational learning culture) [4]. Nonetheless, critical cases of multicollinearity detected by diagnostic tests (the value of VIF higher than 42 with the inclusion of several predictors) suggest that the human capital development process occurs in complex organizational ecosystems where the

relations between firm characteristics, owner education, technology ability, and location are not easily explained by simple attribution [5]. The negative coefficients of firm age, owner education, and technology adoption in multivariate estimates, although the bivariate coefficients were positive, are counterintuitive, indicating that they are suppressed, not necessarily due to causality [14].

Geographic differences proved to be especially important, since urban businesses significantly performed better than rural ones ( $r = -0.911$ ,  $p < 0.001$ ), due to urban superiority in terms of infrastructure, access to skilled labor force, access to institutions, and market accessibility. The result is consistent with the best literature on the broader development economics that focuses on spatial aspects of economic opportunity and capability formation [15].

### RECOMMENDATIONS

#### SME OWNERS AND MANAGERS RECOMMENDATIONS.

The systematic human capital development should be a strategic investment and not discretionary expenditure by the owners of SMEs. It has been hinted that relatively small investments in organized training initiatives, institutionalized mentoring processes and health and safety strategies produce significant performance payoffs. The owners are supposed to prepare written training strategies, routinely assess skills and build organizational cultures that promote constant learning and sharing of knowledge [20]. Due to resource limitations, SMEs must consider the use of economic methods such as peer learning, training programs by industry associations, online learning platforms and partnership with institutions involved in technical education [23].

#### POLICY SUGGESTIONS TO POLICYMAKERS.

The government agencies are supposed to reform their SME support programs to overcome the perceived barriers to human capital development. They should include: (1) subsidized training vouchers, where SMEs can be able to use the funds to get good outside training; (2) tax incentives on recorded training spending, where employer investments should be made; (3) improved Technical and Vocational Education and Training (TVET) systems, with better industry linkages to make labor market



relevant; (4) rural SMEs targeted to address geographic capability development imbalances; and (5) simplified regulatory regimes, which discourages resource expenditure on human capital investments [17].

#### EDUCATIONAL INSTITUTIONS RECOMMENDATIONS.

Universities and TVET institutions need to be redesigned in a fundamental way that places more emphasis on curricula that is more employable and more skills-based. This involves coming up with formal collaborations with the representative of the SME sector, work-integrated learning [27], modernization of course materials in relation to the needs of the contemporary workplace, and formation of entrepreneurship education based on the human resource management skills [28]. The rural and semi-urban institutions that respond to the geographic inequality in human capital formation should be prioritized in terms of the enhancement of the quality of education [29]

#### DEVELOPMENT PRACTITIONERS' RECOMMENDATIONS.

Human capital development components must be incorporated in all the designs of intervention by the international development agencies as well as the NGOs that are involved in the development of SMEs [31]. Some of the effective methods are the creation of industry-specific training consortia, which has economies of scale, mentorship programs between the experienced and the novice business leaders, creation of demonstration effects via successful cases, and creating knowledge networks, which helps in learning between the businesses. Of special concern should be gender aspects that would guarantee an equal opportunity of development prospects [18]

#### FUTURE RESEARCH RECOMMENDATIONS.

To be able to make stronger causal inference, future research must use longitudinal designs that would follow investments in human capital and performance results throughout the time[30]. This would require research in particular processes by which various human capital development aspects impact on various performance aspects, moderating variables of intervention effectiveness across settings, and cost-benefit analyses that determine the most profitable investments to be made to resource-constrained SMEs [19]. The qualitative studies that would be used to supplement the quantitative results would give a more detailed account on the process of organizational learning, obstacles on

systematic development, and situational elements affecting the success of the implementation.

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