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How does COVID-19 influence the Micro Small and Medium Enterprise Sector in Sri Lanka?

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Abstract

Micro Small and Medium Enterprise (MSME) sector is considered to be the backbone of an economy where a strong MSME sector contributes towards the economic stability and well-being of a country. More importantly, technology plays a critical role in the development of business performance as technological know-how is vital for business to survive amidst COVID-19 outbreak. Hence, it encourage the entrepreneurs to improve their awareness of technology and thereby to use new technology to improve the business performance. Further, it has been identified that entrepreneurial competencies are important to ensure higher business performance where most successful entrepreneurs utilize their competencies to improve business performance. Hence, the purpose of this study is to investigate the changes that have taken place in relation technological literacy, entrepreneurial competency, and business performance amidst the COVID-19 pandemic in Sri Lanka. The study is a quantitative, cross-sectional study and the data was collected from 48 entrepreneurs of micro and small enterprises. The results of the study reveal that significant change have taken place through a structured questionnaire in relation technological literacy, business performance, and entrepreneurial competency amidst COVID-19. The level of commitment of the entrepreneurs found to have improved significantly after the COVID-19 pandemic. However, there has been a learn improvet in the technological literacy among micro and small entrepreneurs. Therefore, the policy makers need to focus on developing suitable strategies to improve the technological know-how by the micro and small entrepreneurs.

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1. Introduction

The Micro Small and Medium Enterprises (MSMEs) play a vital role in the socio-economic development of the country since a strong MSME sector contributes towards the economic stability and well-being of a country. MSME sector in Sri Lanka plays a vital role as it accounts for more than 75% of the total number of enterprises and provides 45% of employment in the country. According to the Ministry of Industry and Commerce (2017), the MSME sector contributes 52% of the Gross Domestic Production (GDP). Accordinly, the MSME sector can be considered as a driving face in creating for inclusive economic growth, regional development, employment generation, and poverty reduction. Currently, the Sri Lankan government has recognized that it is important to enhance the national and international competitiveness through growth and development to face the emerging challenges and develop the MSME as a thriving sector. Therefore, there is a pressing need to increase the growth of MSME by providing state-of-art technology, strengthening entrepreneur culture, and skills development (Ministry of Industry and Commerce, 2017).

Information and knowledge have become increasingly important in the contemporary globalized economy. Sri Lanka considers information communication technology (ICT) as a key tool for transforming the economy. The computer literacy rate in Sri Lanka is 30.1% (aged 5-69) which means more than one out of four persons have computer literacy whereas digital literacy is 44.3% which means more than two out of five people are digitally literate (Department of Census and Statistics of Sri Lanka, 2019). According to the National Youth Survey 2009, nearly 43% of 25-29-year-old had computer literacy (De Silva, Kodikara & Somarathne, 2013) and in 2019 it increased to 51.5% (Department of Census and Statistics of Sri Lanka, 2019). These statistics reveal that there is a moderate level of computer and digital literacy in Sri Lanka.

Technology plays a critical role in the development of business performance. For MSMEs, technological literacy is a vital knowledge resource that

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helps them to expand their business operations locally and globally. Technological know-how is also important for business firms to survive to successfully amidst the business turmoil at present (Kulathunga, Ye, Sharma & Weerathunga, 2020). Hence, it motivates the entrepreneurs to improve their awareness of technology and thereby to use new technology in their business operations to enhance business performance.

Further, it has been identified that entrepreneurial competencies are important to ensure higher business performance. Most successful entrepreneurs utilize their competencies to improve business performance and through this new entrepreneurial opportunities are created (Omerzel & Antoncic, 2008). Chandler and Hanks (1994) also note the growth of a business enterprise is directly correlated with entrepreneurial competencies. Therefore, entrepreneurial competency is becoming important for entrepreneurs to proactively deal with the business environment. During the past few decades, the entrepreneurial competencies have improved mainly due to the strategic role played by the entrepreneurs (Wickramaratne, Kiminami, & Yagi, 2014).

Since has advent of the COVID-19 pandemic, most of the economic activities of MSMEs have been negatively affected and these have had to undergo severe hardships. The primary challenge faced by the MSME sector is the breakdown of the supply chain due to the lockdowns and curfew. Hence, the adoption of technology for business activities has become particularly important during the COVID-19 era as it becomes one of the primary modes of contacting customers. Utilisation of online marketing, online teaching and knowledge sharing methods, webinars, web-based lecture programs have increased significantly. Many private sector organisations have introduced online working for their staff and this can be identified as a significant change that has taken place due to the present situation (Gunawardena, 2020). Further, it is identified that strengthening the entrepreneurial spirit, motivating entrepreneurs to grab opportunities, and planning for business resilience is crucial for business to service under current situation (Gunawardena, 2020). Further, entrepreneurs are challenged to improve their competencies in order to succeed in this pandemic situation.

At present, there are limited studies conducted to investigate the impact of COVID-19 on the business performance of the MSME sector. This could be the first study that aims at filling the empirical gap in the MSME and COVID-19 literature, aas this investigate how two important variables, namely, technological literacy and entrepreneurial competency, affect business performance of the MSME sector. Hence, the objective of this study is to investigate have the changes in technological literacy, entrepreneurial competency, affect business performance, amidst the COVID-19 pandemic in Sri Lanka.

This paper contributes to the MSME literature in various ways. Firstly, this study explains how technological literacy and entrepreneurial competency influence business performance, both financial and non-financial performance. Secondly, this paper contributes to the empirical studies of the COVID-19 pandemic by identifying the differences in the impact of technological literacy, entrepreneurial competency on business performance. Thirdly, the findings of this paper could be providing the direction and a framework for future studies to extend the MSME literature. This paper is structured as follows: section 2 provides a brief explanation of literature review and the hypothesis development. Section 3 explains the methodology used in the study. Section 4 summarizes the data analysis and results while section 5 concludes the paper.

2. Literature Review and Hypothesis Development

2.1 What are Micro, Small, and Medium Enterprises (MSMEs)?

Different countries use different definitions for MSMEs based on their level of development. According to the International Labour Organisation (ILO), vast difference exist in the MSME sector among developed and developing countries. More interestingly, within the country itself significant difference in the MSMEs sector could be observed. ILO further highlights that majority of the micro and small enterprises in developing countries operate in the informal sector as these businesses are typically family-owned or self-employed operations. Nevertheless, the commonly used yardsticks to categorize the business operations into micro, small, and medium are the total number of employees, annual turnover, and total investment. Accordingly, in Sri Lanka, the Ministry of Industry and Commerce categorizes the business operations based on the number of

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employees and an annual turnover (see Table I).

Table 1: Defining SMEs in Sri Lanka

Sector	Criteria	Size		
		Micro	Small	Medium
Manufacturing Sector	Annual Turnover	Less than Rs, Mn. 15	Rs. Mn. 16 - 250	Rs. Mn. 251 - 750
	No. of Employees	Less than 10	11 – 50	51 – 300
Service Sector	Annual Turnover	Less than Rs, Mn. 15	Rs. Mn. 16 - 250	Rs. Mn. 251 - 750
	No. of Employees	Less than 10	11 – 50	51 – 200

Source: National Policy Framework for SME Development

2.1.1 MSMEs in Sri Lanka

The MSMEs play a critical role in the Sri Lankan economy. According to Gunawardena (2020) the contribution of the MSMEs to the GDP of the country is 52%. Further more than 90% of these business operations found to be in the non-agricultural sector, and MSMEs account for 45% of the total employment of the country (Gunawardena, 2020) . Highlighting the ILO's observations on MSMEs in the developing countries, based on the Economic Census 2013/2014, the Department of Census and Statistics of Sri Lanka (2017) reported that 963,669 firms had been established in the informal sector while providing a livelihood for more than 1.9 million persons. Further, Gunawardena (2020) shows that 75% of the MSMEs are established in the rural areas in Sri Lanka while more than 45% of the micro-level establishments are found to be unregistered. Some of the key highlights of micro and small establishments of Sri Lanka are depicted in Table II. Hence, these statistics overwhelmingly notes that the businesses in the micro and small sector play a significant role in the Sri Lankan economy.

Table 2: Key Statistics

Criterion	MSME Sector	Micro	Small
Number of establishments	1,019,681	935,736 (91.8%)	71,126 (7.0%)
Economic sector distribution			
Industry	25.6%	25.3%	28.8%
Trade	41.0%	42%	31.3%
Service	33.4%	32.7%	39.9%
Distribution of employment (Total)	3,003,119	1,338,675 (44.6%)	529,751 (17.6%)
Economic sector distribution			
Industry	100%	29.7%	14.0%
Trade	100%	68.1%	16.8%
Service	100%	44.6%	22.6%
Percentage of registered enterprises	58,0%	54.6%	89.1%
Percentage of unregistered enterprises	42.0%	45.4%	10.9%

Source: Gunawardena (2020)

2.2 Entrepreneurial Competencies and Business Performance

The term entrepreneurial competencies differ from one context to another, It is largely defer minded by the on different approaches and notions of the concept (Solesvik, 2012; Mitchelmore & Rowley, 2010). Hence, it is important to understand the concept of entrepreneurial competencies. According to Bird (1995), entrepreneurial competencies are owned by the individuals who attempt to transform organizations by organizing resources and opportunities. She further notes that characteristics such as specific knowledge, motives, traits, self-images, social roles, and skills as reacts considered under entrepreneurial competencies are fundamental for the inception, existence, and growth of firms. Moreover, Man et al. (2002) state that the overall ability of an entrepreneur to conduct business activities successfully can be identified as entrepreneurial competencies.

Hence, the identification of entrepreneurial competencies is essentially

[2] *According to the statistics published by the Department of Census and Statistics of Sri Lanka based on the Economic Census 2013/14, there are over one million business firms established in the SME sector while providing employment opportunities to approximately 2.255 million persons in the non-agricultural sector (Gunawardena, 2020).*

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important to ensure the successful continuation of business ventures, particularly in the context of emerging economies. This is so because Solesvik, (2012) highlights that patern of existence and growth of business ventures in emerging economies are significantly different to those compared to found in developed economies. Therefore, Mitchelmore and Rowley (2010) identify the entrepreneurial competencies as a unique set of competencies relevant to conduct business firms successfully. Accordingly, they note that demographic, psychological, and behavioral characteristics, skills, and technical know-how as essential aspects of an entrepreneur to enhance business performance.

In addition, different scholars have employed a variety of entrepreneurial competencies to measure business performance normaly personal background and experience such as commercial experience, history of innovation, production and marketing experience, status, entrepreneurial experience, and previous contact with venture capitalists (Tseng & Tseng, 2019; RezaeiZadeh et al., 2017; Murray, 1996), socio-economic factors such as educational attainment, previous business experience (Boldureanu et al., 2020; Khan, 2014; Basu & Goswami, 1999), intellectual abilities, social abilities and managerial skills and abilities (Popescu et al., 2020; Pansiri & Temtime, 2008; Gasse et al., 1997) and personal qualities such as outgoing personality, approachability, leadership, self-confidence, innovativeness and the ability to engage in risk-taking (Kocherbaeva, Samaibekov & Isabaeva, 2019; Santandreu-Mascarell et al,, 2013; Man & Lau, 2005; Martin & Staines, 1994).

Moreover, Tehseen and Ramayah (2015) note that due to rarity and uniqueness, the entrepreneurial competencies are difficult to imitate by the rivals. Therefore,leads to enhance the business performance. Accordingly, different scholars have employed a variety of entrepreneurial competencies to measure business success. Therefore, following Baylie and Singh (2019), this study identifies goal setting, systematic planning, and monitoring, persistence, and commitment as the main entrepreneurial competencies which bring successful business performance. Hence, it is believed that valuable skills, knowledge, and abilities possesed by an entrepreneur are capable of delivering a sustainable competitive advantage over other competitors in the market. Thus, the following; hypothesize

colud be development.

Hypothesis 1: Entrepreneurial competencies impact on business performance of micro and small enterprises.

2.3 Technological Literacy and Business Performance

Technology has become a powerful force in the world. This dynamic and complex nature of technology has created a requirement for skill and knowledge development in the use of information, tools, energy, materials, and continuous learning (Maughan, 2005). Interpretation of technological literacy is indeed disconcertingly diverse (Barnett, 1994). Gilster (1998) provides a general explanation on ICT literacy as "Digital Literacy" where he explains ICT literacy as the "ability to understand and to use information from a variety of digital sources". It was argued that digital literacy is a broader concept than ICT literacy where more dimensions of ICT implementations should be considered when studying the digital literacy of an organization (Dulanjani & Priyanath, 2020).

Technological Literacy involves more hands-on skills in using technology, compared to the technology where it focuses on computers and the internet (Bugliarello, 2000). Technological that includes four competencies; "(a) able to accommodate and cope with rapid and continuous technological change, (b) generate creative and innovative solutions for technological problems, (c) act through technological knowledge both effectively and efficiently, and (4) assess technology and its involvement with the human life judiciously" (Gagel, 1997, p.25). According to Prime (1998), technological literacy consists of knowledge and skills; knowledge on technological problem solving, important technologies, social and cultural effects of technology, prerequisite knowledge from other disciplines, and the form or structure of technological knowledge. Technological literacy can be determined as a crucial knowledge resource, which assists in gaining advantages emerging from the technological revolution (Kulathunga, Ye, Sharma & Weerathunga, 2020).

Hence, many scholars have studied technological literacy as a knowledge resource that affects business performance. Osano (2019) shows that technological literacy is considered a vital knowledge resource that

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assists Small and Medium Enterprises (SMEs) to expand their businesses internationally. The impact of technological literacy on SME business performance has been explored in many ways, as internal control systems, strategic decisions, and business processes. It has been found that Improved technological knowledge and skills, contribute to the implementation of a strong internal control system thus improveing performance of SMEs (Kulathunga, Ye, Sharma & Weerathunga, 2020). Limsarun (2015) notes that technological literacy affects the strategic decisions of an SME and this in turn affects the performance of the business. Akhtar, Azeem, and Mir (2014) have shown that SMEs's business processes and decisions are positively affected by the Internet and information technology adoption; it could also provide an opportunity to SMEs by bridging the gap among different markets, industries, competitors and partners in an economical way. Further, James (2007) explains that technological literacy enables to establish a massive network among the businesses, and also helps in the automation of business functions enascity the firms for achieve higher productivity. Future, if smoothens the flow of information paving has way for effective business decisions making. Therefore, it can be argued that a hands-on skill in using technology has an impact on business performance of micro and small enterprises. Hence the following hypothesis can be developed.

Hypothesis 2: Technological literacy impacts on business performance of micro and small enterpirses.

3. Research Methodology

3.1 Sample and Data Collection

In this research, we employed a structured questionnaire to collect data. The questionnaire surveys allow examining the views of a large number of people who are geographically scattered. Furthermore, it is an effective way of gathering information when an attitude, perception, or belief are the subject of interest (Robson & McCartan, 2016). Accordingly, this In this study questionnaire was piloted by 55 entrepreneurs involved in running micro and small enterprises in the western province, Sri Lanka. There entrepreneurs registered for the Diploma in Small Business Management (DSBM) and Higher Diploma in Small Business Management (HDSBM) at the University of Colombo. They operate in nine different sectors: Apparel,

Hotel, Agriculture, Furniture, Bakery, Ayurvedic, Construction, Hardware, and Mill. The study addresses a broader range of sectors to increase the external validity of the research findings. Out of the questionnaire distributed, 48 responses were secured. This accounted for more than 87% of the sample. The descriptive analysis of the business profiles is shown in Table 3.

Table 3. Profile of the sample.

	Frequency	Percentage
Industry sectors		
Apparel	12	25
Hotel	9	18.75
Agriculture	6	12.5
Furniture	3	6.25
Bakery	3	6.25
Ayurveda	3	6.25
Construction	1	2.08
Printing	3	6.25
Hardware	1	2.08
Milk	1	2.08
Trade	2	4.17
Saloon	2	4.17
Packaging	2	4.17
Size		
<10 employees	19	39.58
10-50 employees	23	47.92
51-300 employees	6	12.5
No. of years of existence		
< 3 years	5	10.42
3-7 years	15	31.25
7-15 years	16	33.33
> 15 years	12	25

Source: Developed by Authors

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The profile of the sample was as follows: when considering the industry sector, the highest percentage (25%) of firms were from the apparel sector, while 18.7% and 12.5% of firms represented the hotel and agriculture sectors, respectively. When considering the number of employees, 47.9% of firms had 10–50 employees and 39% of firms had less than 10 employees. Almost 33% of MSMEs had been operating for 7–15 years, while 31% of micro and small enterprises had in 3-7 years of industry experience, while 10% of them were newly established firms.

3.2 Measurement of Variables

To achieve the objectives of this study,eight variables were considered, these were measured using items adapted from literature and modified to suit the Sri Lankan context and these were measured using a five-point Likert scale, before and after the COVID 19. The period before 11 March 2020 was considered a as 'Before COVID 19' and the period after 11 May 2020 considered as an 'After COVID 19'. To measure technological literacy, the variables under the sections of application of ICT infrastructure for business operations, ICT knowledge of employees, and ICT policy on conducting business operations, were used and there were measured using a five-point Likert scale (Pham, 2010)). Each of these sections contains 17, 5, and 7 questions respectively (see Annexure 1). For entrepreneurial competency, the four indexes were created by considering questions under the goal setting, systematic planning, and monitoring, persistence, and commitment (Baylie & Singh, 2019). Finally, the performance of micro and small enterprises were measured by using two indexes considering financial performance and non-financial performance (Chen et al., 2009; Orser & Riding, 2003). In each performance, five questions were considered in constructing the index (see Annexure 1). Also, the indexes for each of these sectors were computed using min-max normalization.

3.3 The Model

To investigate the changes in technological literacy, entrepreneurial competency, and business performance amidst the COVID-19 pandemic in Sri Lanka, the paired sample t-test was employed. The paired sample t-test is used to determine whether the mean difference between two sets of observations is zero for the same object. The purpose of the test is to determine whether there is statistical evidence that the mean difference

between paired observations on technological literacy, entrepreneurial competency, and business performance from zero before and after COVID 19 periods. The test statistic for the paired samples t-test is depicted in equations (1) and (2) respectively.

$$t = \frac{\bar{x}_{diff} - 0}{s_{\bar{x}}} \quad (1)$$

where

$$s_{\bar{x}} = \frac{s_{diff}}{\sqrt{n}} \quad (2)$$

$\bar{x}_{diff}$ represents sample mean of the differences; n represents sample size; s_{diff} is sample standard deviation of the differences; $s_{\bar{x}}$ captures estimated standard error of the mean ($\frac{s}{\sqrt{n}}$) In the next step, the linear cross-section regression model is estimated. A regression analysis was carried and to determine the relationship between the dependent variable (financial or non-financial performance) against the subsectors of Technological Literacy, and Entrepreneurial Competencies. The model is specified in equation (3):

$$y_i = x_i\beta_i + z_i\alpha_i + \varepsilon_i \quad (3)$$

The dependent variable in the model is financial or non-financial performance. x_i is a k×1 vector of technological literacy, this includes the application of ICT infrastructure for business operations, ICT knowledge of employees, and ICT policy on conducting business operations of firm i. In this study, explicitly measured entrepreneurial competency characteristics include goal setting, systematic planning and monitoring, persistence, and commitment respectively and future were measured by using z_i in a k×1 vector. ε_i represents unobserved firm characteristics. This study utilized the STATA 16 software to perform the paired sample t-test and regression analysis on the collected data.

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4. Data Analysis and Results

As recommended by Hair et al. (2016), Cronbach's alpha was applied to assess the reliability of latent variables. The results are summarized in Table IV. Accordingly, all the Cronbach's alpha values were higher than the threshold of 0.7, thus providing evidence for the reliability of the dataset.

Table 4. Internal consistency reliability

Section	Latent Variable	Cronbach's Alpha	
		(Before COVID 19)	(After COVID 19)
Technological Literacy	Application of ICT infrastructure for business operations	0.89	0.90
	ICT knowledge of employees and ICT policy on conducting business operations	0.89	0.90
		0.89	0.90
Entrepreneurial Competencies	Goal Setting	0.88	0.90
	Systematic Planning and Monitoring	0.89	0.89
	Persistence	0.89	0.89
	Commitment	0.89	0.89
Business Performance	Financial Performance	0.89	0.89
	Non-Financial Performance	0.89	0.89

Note: The time period before 11 March 2020 and time period after 11 May 2020 are considered to be Before COVID 19 and After COVID 19 respectively.

Source: Developed by Authors

A paired t-test was need to compare technological literacy, entrepreneurial competency, and business performance before and after COVID 19 (see Table V). Shapiro-Wilk test was used to test the assumption of normal distribution. Data were analyzed with Stata 16 (Stata Corporation College Station, Texas, USA).

Table 5. Mean difference between Index of Technological Literacy, Entrepreneurial Competency, and Business Performance before and after COVID 19

Sectors	Index	Mean (Before COVID)	Mean (After COVID)	Mean Difference	Sig (P Value)
Technological Literacy	Application of ICT infrastructure for business operations	0.514838	0.41688	0.097958	0.0004***
	ICT knowledge of employees	0.484783	0.397826	0.086957	0.0001***
	and ICT policy on conducting business operations	0.371118	0.311335	0.059783	0.0019***
Entrepreneurial Competencies	Goal Setting	0.430124	0.428261	0.001863	0.9591
	Systematic Planning and Monitoring	0.429766	0.428261	0.001505	0.9636
	Persistence	0.396419	0.392754	0.003666	0.8634
	Commitment	0.408385	0.497826	-0.08944	0.0084***
Business Performance	Financial Performance	0.388406	0.352174	0.036232	0.0883*
	Non-Financial Performance	0.386288	0.304348	0.08194	0.0421**

Note: *, **, *** indicate 10%, 5% and 1% level of significance respectively, N=48.

The period before 11 March 2020 and period after 11 May 2020 are considered to be Before COVID 19 and After COVID 19 respectively.

Source: Developed by Authors

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The paired t-test results (Table V) showed a mean of infrastructure index before and after COVID 19 as 0.51 and 0.41 respectively, given a mean difference as 0.09. The test statistic suggests there is a statistically significant difference between the mean of infrastructure before and after COVID 19. Also, the results indicate statistical evidence that the mean difference of knowledge and policy indexes are statistically significant at the 1% level. The commitment index is the only index that the mean difference is statically significant under the entrepreneurial competencies. The financial and non-financial performance is statistically significant and finally shaw a difference in mean financial performance before and after COVID 19. Interestingly, other than the commitment of entrepreneurs, the coefficient of mean values of technological literacy and entrepreneurial competencies are lower for all the indexes after the COVID19 period compared to before COVID 19 period. However, the mean value coefficients of entrepreneurial competencies has come down marginally compared to technological literacy, after the COVID 19. This implies that the firms formulated strategies to overcome during the COVID 19 period, particularly through the advancements in the entrepreneurial competencies, a significant increment in the commitment levels of the entrepreneurs supports this argument. Perhaps, despite the prevalence of the COVID 19 pandemic, the higher commitment of the entrepreneurs might be the reason for a slight drop in the mean value coefficient of the financial performance of firms, after the COVID 19. However, these findings were further investigational by using regression analysis (see Table 6).

Table 6. Regression relating ICT, EC on FP and NFP before and after COVID 19

	(1) Before COVID Financial Performance	(2) After COVID Financial Performance	(3) Before COVID Non-Financial Performance	(4) After COVID Non-Financial Performance
Application of ICT infrastructure for business operations	0.265	0.303	-0.0642	0.0401
	(1.26)	(1.37)	(-0.31)	(0.17)
ICT knowledge of employees	0.365**	-0.476***	0.494***	-0.0388
	(2.33)	(-2.90)	(3.00)	(-0.21)
ICT policy on conducting business operations	-0.522***	0.0678	-0.463**	0.0951
	(-2.88)	(0.36)	(-2.53)	(0.45)

Goal Setting		0.292	0.697**	-0.00497	0.226
		(1.13)	(2.56)	(-0.03)	(1.29)
Systematic Planning and Monitoring		0.266*	0.198	0.200	0.178
		(1.69)	(1.20)	(1.32)	(1.02)
Persistence		0.00124	-0.234	0.486**	0.305
		(0.01)	(-1.00)	(2.58)	(1.41)
Commitment		0.137	0.397**	-0.183	0.0265
		(0.76)	(2.09)	(-1.24)	(0.16)
_cons		-0.0271	-0.0186	0.143	-0.0323
		(-0.34)	(-0.22)	(1.47)	(-0.29)
N		46	46	46	46
R^2		0.566	0.631	0.390	0.321

Note: t statistics in parentheses, * p < 0.1, ** p < 0.05, *** p < 0.01. The time period before 11 March 2020 and time period after 11 May 2020 are considered to be Before COVID 19 and After COVID 19 respectively.

Source: Developed by Authors

Table 6 gives the regression model summary results for four models concerning before and after COVID 19. It presents R Square for each model which is the coefficient of determination measuring the extent to which the independent variables influence the dependent variable of the model. For example, R squared was 0.566 an indication that there was a variation of 56.6 percent on the financial performance of micro and small enterprises before COVID 19 due to changes in characteristics of technological literacy (application of ICT infrastructure for business operations, ICT knowledge of employees and ICT policy on conducting business operations) and entrepreneurial competency (goal setting, systematic planning and monitoring, persistence, and commitment). However, R squared was 0.39 therefore 39% of the variations in the non-financial performance of micro and small enterprises after COVID 19 were caused by the variations in characteristics of technological and entrepreneurial competency.

The regression findings presented also showed only the variables ICT knowledge of employees, ICT policy on conducting business operations, and systematic planning and monitoring were significant at 5%, 1%, and 10 % significant level respectively on financial performance before COVID 19. In contrast, the variables, ICT knowledge of employees and goal setting were significant at 5%, and 1% significant level respectively, after COVID 19. Also,

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the ICT policy on conducting business operations was negatively impacted on finical performance, before COVID 19 indicating all other variables held at zero, a unit change in policy would lead to a 0.522 reduction in financial performance. In comparison to before COVID 19, the ICT knowledge of employees was negatively impacted on financial performance indicating a unit change in knowledge would lead to a 0.476 reduction in financial performance, while goal-setting and commitment would lead to 0.697 and 0.137 change in financial performance, respectively. The results are similar for non-financial performance before COVID 19 with financial performance, but the variable of persistence was significant and positively impacted. However, none of the variables were significant after COVID 19 (on non-financial performance). Perhaps, these results are achieved due to the majority of the entrepreneurs the our sample are engaged in non-technological driven enterprises. Nonetheless, regardless of the industry, Amaratunge (2003) notes that most of the Sri Lankan entrepreneurs consider business initiatives as a means of employment generation in order to overcome poverty. Hence, they tend to give less priority utilize to advanced technology in micro and small businesses.

5. Conclusion

This research attempted to investigate the changes in technological literacy, entrepreneurial competency, and business performance amidst the COVID-19 pandemic in Sri Lanka. Accordingly, we employed the paired sample t-test to determine the mean difference between paired observations on technological literacy, entrepreneurial competency, and business performance from zero before and after COVID 19 periods. Also, a regression analysis was employed to determine the relationship between the dependent variable.(financial or non-financial performance) against the subsectors of technological literacy, and entrepreneurial competencies. The model was tested with data collected via a structured questionnaire distributed among the micro and small enterprises in the Western Province of Sri Lanka. STATA was used 16 for the preliminary analysis. The paired sample t-test suggests that there is a statistically significant difference between the mean of application of ICT infrastructure for business operations, ICT knowledge of employees, and ICT policy on conducting business operations under the sections of technological literacy, and commitment under the entrepreneurial competencies. Other than the

commitment of entrepreneurial competencies, the mean values are lower for all the indexes after the COVID19 period compared to before the COVID 19 period indicating thet the commitment of entrepreneurs may increase their financial and non-financial performance after the COVID 19 period. The regression findings indicate that the goal setting and commitment would positively impact financial performance, while the ICT knowledge of employees negatively impacts financial performance, after COVID 19. This denotes that the necessity of transforming the micro and small enterprises from their conventional business setup to modern technology in order to overcome potential challenges that may be caused particularly due to the COVID 19 pandemic. Thus, the entrepreneurial competencies will be a key factor in achieving this and the higher level of commitment shown by the entrepreneurs will stimulate this transformation process. In this study, we can identify some implications for the policymakers where they need to devise suitable short and long-term strategies to improve technological knowledge and skills of micro and small entrepreneurs in Sri Lanka. This is a must in achieveing business success, and thereby the overall economic development of the country.

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