An assessment of the impact of Covid-19 Pandemic on the Financial Performance of Micro-businesses in the tourism Sector of Saint Lucia.

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1. Introduction

Lives, businesses, nations, and the global economy have all been impacted by the outbreak of the novel coronavirus in 2019 (COVID-19), wreaking tremendous havoc in every aspect of humanity's life. For businesses, this culminated in substantial financial losses to both small and large enterprises. Business enterprises, particularly those in the tourism industry, especially micro-enterprises, were affected even more (Shafi and Ren, 2020; Abbas et al., 2021). This research, therefore, investigates the impact of the covid-19 pandemic crisis on the financial performance of micro-enterprises within the tourism sector in Saint Lucia.

1.1 Research Problem Statement

The tourism sector in Saint Lucia contributes 56.4% to the country's GDP and 90% to its exports (World Tourism Organization (WTO), 2021). In addition, 47.8% of the country's employment is generated by this sector, with microenterprises contributing a greater share (Statista, 2022). The isolation of Saint Lucia, which is only accessible via cruise ship or airplane, as well as high taxes, could play a key role in assessing how the Covid-19 pandemic crisis may affect micro-enterprises differently in the country. Studies by Chiappini et al. (2021), Liew (2022), Chen et al. (2020), Sharif et al. (2020) and Rababah et al. (2020) showed that the covid-19 pandemic crisis negatively affected businesses' financial performance in dwindled profits (negatives), stock returns, and revenues in the US, China, Singapore, and most Asian countries. Also, more than 63% of the original operational capacity was lost (Liew, 2022). Notwithstanding, some businesses' performance in the United States showed a positive relationship with the pandemic and aided in explaining risks (Ahmad et al., 2021). Moreover, studies within the tourism sector in the Caribbean explored the covid-19 pandemic's effect at the country and industry-wide level generalising the effects on all industry participants (Mulder, 2020; Gounder and Cox, 2022; Franklyn-Green et al., 2022). But the pandemic's effect has been more severe on micro, small, and medium-sized enterprises (Shafi and Ren, 2020).

As evidenced above, the extant literature is replete with knowledge on the effect of the covid-19 pandemic crisis on businesses and the tourism sector as a whole. However, according to WTO (2021), the country-wide effect of the pandemic is differing. While in major countries, the effects were devastating for businesses, some businesses made profits nonetheless (Ahmad et al., 2021). The isolated location of Saint Lucia could therefore elicit different effects of the covid-19 pandemic. Additionally, effects on all participants industry-wide in tourism could be at variance. According to studies by Aburumman (2020) and Wieczorek-Kosmala (2022), some industry participants with cash-driven potencies (liquidity) and marketing acumen did not experience significant falls in their sales turnover and profits. This, therefore, justifies the need to assess the effects among micro-enterprises in the tourism sector in Saint Lucia since dynamics change.

Furthermore, COVID-19-related government interventions and restriction strategies adopted in Saint Lucia would be included in COVID-19's effect on micro-enterprises, allowing an all-inclusive and comprehensive look at the COVID-19 unraveling structure. Particularly, literary recovery strategies would be assessed to assist in developing suggestions, recommendations, policies, and structures to put in place going forward and in preparation for the next natural crisis that may hit micro-businesses in the tourism industry of Saint Lucia.

1.2 Research Questions

To properly explore this research study as explained, the following research questions have been set:

1. What is the impact of the COVID-19 Pandemic on the financial performance of micro-enterprises in the tourism sector in Saint Lucia?

2. What is the difference in micro-enterprises revenues, profits, and cost of operations before and after the covid-19 pandemic crisis within the tourism sector in Saint Lucia?

3. What policy interventions, recommendations, and short- and long-term structures have been implemented in Saint Lucia to improve the financial performance of micro-enterprises during and after the COVID-19 Pandemic?

1.3 Research Aims and Objectives

This research intends to investigate the effect of the covid-19 pandemic crisis on the financial performance of micro-enterprises in the tourism sector in Saint Lucia. The research further assesses literary recovery strategies to assist in developing suggestions, recommendations, policies, and structures to put in place going forward and in preparation for the next natural crisis that may hit micro-businesses in the tourism sector of Saint Lucia.

Specifically, this research seeks to:

- Determine the impact of the COVID-19 Pandemic on the financial performance of micro-enterprises within the tourism sector.
- Determine the differences in the before/after COVID-19 micro-enterprises performance in revenues, profits, and cost of operations within the tourism sector.
- Explore recovery strategies adopted by micro-enterprises and advance policies and recommendations in sustaining micro-businesses within the tourism sector.

2 Literature Review and Research Hypothesis

2.1 Effect of COVID-19 crisis on the financial performance of micro-enterprises

Crises could be man-made and/or natural occurrences resulting from our interactions in the natural world, emerging from financial, economic, political, environmental, and health risks that cause extreme difficulties and dangers (Shafi & Ren, 2020). The COVID-19 pandemic crisis affected every country, bringing a majority of businesses to a halt. This was most especially true for businesses in the tourism industry since they fully depended on tourists (Rababah et al., 2020). In studies by Chiappini et al. (2021), Liew (2022), Chen et al. (2020), Sharif et al. (2020), and Rababah et al. (2020), it is seen that the COVID-19 pandemic crisis negatively affected businesses' financial performance measured in dwindled profits (negatives), stock returns and revenues in the US, China, Singapore, and majority of Asian countries. It is reported that the effect resulted in less than 37% of the original operational capacity (Liew, 2022). Notwithstanding, some businesses' performance in the US particularly showed a positive relationship with the pandemic and aided in explaining risks (Ahmad et al., 2021). Inferring from this, the first hypothesis is put forward that due to the small and widespread nature of micro-enterprise operations, the COVID-19 pandemic negatively affected the financial performance of micro-enterprises.

Hypothesis 1. COVID-19 has a negative effect on the financial performance of micro-enterprises within the tourism sector in Saint Lucia.

Additionally, studies by Moosa and Khatatbeh (2021), Farzanegan et al. (2021), and Popescu (2021) evidence a bidirectional relationship between tourist arrivals and the COVID-19 pandemic crisis, indicating that these cause each other. Moreover, micro-enterprises within the tourism industry are highly dependent on tourists arriving for business (Nugroho & Negara, 2020). In support of the first hypothesis, a second hypothesis explores the relationship between the pandemic itself and the "lifeblood" of the micro-enterprises business; tourist arrivals. This is postulated as:

Hypothesis 2. COVID-19 has a negative effect on the tourist arrivals at micro-enterprises within the tourism sector in Saint Lucia.

2.2 Significant difference in the before/after COVID-19 micro-enterprises performance

Consistent with the first hypothesis, this section aims to examine the direct impact of the COVID-19 pandemic on the financial performance of micro-enterprises. While major industries experienced negative effects, studies by Aburumman (2020) and Wieczorek-Kosmala (2022) have highlighted certain strategies, such as cash-driven potencies and marketing acumen, that enabled businesses to mitigate declines in sales turnover and profits. To gain a comprehensive understanding, it is crucial to investigate whether there is a significant difference in the performance of micro-enterprises before, during, and after the COVID-19 pandemic. Based on these considerations, we propose the following hypothesis:

Hypothesis 3. There is a significant difference in the financial performance of micro-enterprises operating in the tourism sector in Saint Lucia before, during, and after the COVID-19 pandemic.

3. Research Methodology

3.1 Data collection

An online survey will be adopted to collect all the data needed to put forward the empirical findings in this research from 2018-2021. This approach offers time and cost-saving advantages (Shafi & Ren, 2020). There are over 6,000 micro, small, and medium enterprises in St. Lucia (Caribbean Development Bank, 2022). Among these enterprises, approximately 61% are engaged in the tourism sector, with a predominant concentration of 96% attributed to micro-sized businesses (International Trade Centre, 2021). Saint Lucia Tourism Authority searched the research participants (MSMEs) [https://www.stlucia.org/] and other local-based NGOs such as Saint Lucia Hotel and Tourism Association (SLHTA) [https://www.slhta.com/], including tourism catalogues such as TripAdvisor to pull micro, small and medium enterprises operating in the tourism sector in St. Lucia for all the ten districts (that is; enterprises in Food and Beverage, Transportation and Travel, Accommodation, Entertainment and Recreation, Events and Conferences). In particular, collections/directories were accessed from Saint Lucia Tourism Authority such as Collection de Pepites (to search accommodation services), Eat & Drink (to search local restaurants, kabawe krawl bars and craft cocktails) and Yachting & Sailing (to search entertainment and travel experience MSMEs). The NGO (SLHTA) would be contacted to obtain their membership operating on the Island. The MSMEs' accessed would be contacted using their email or telephone numbers provided on the Saint Lucia Tourism Authority directory or their names backtraced on their social media pages or websites provided. These businesses once they have been contacted and the purpose of the research explained, they would be sent the questionnaire link for their responses. Additionally, a snowball sampling strategy would be adopted to assist in collecting the data; especially for those MSMEs who contact information are not directly accessible online.

3.2 Sample

The minimum sample size was calculated based on the formula in Equation (1) below.

$$Sample\ size\ (n) = \frac{z^2\sigma^2 N}{e^2 N + z^2\sigma^2} \qquad (1)$$

where $z = 1.96$ (*95% confidence level*), $\sigma = 0.5$ (*50% MSMEs population proportion variance*), $e = 0.05$ (*5% margin of error*) and $N = 3660$ (*61% of 6000 MSMEs population operating within the tourism sector*) (Del Águila and González-Ramírez, 2014). Based on these parameters, the minimum sample size was determined as 348. However, to improve reliability of the survey results, the sample would be increased to 400 MSMEs in St. Lucia.

Additionally, owing to the adoption of multiple regression analysis to assess the effect of the covid-19 pandemic crisis, a sample size of 400 is sufficient to generate consistent results (Hair Jr. et al., 2017).

According to Iacobucci (2010), an unbiased sample size of 30-500 is appropriate to explore cause-effect modelling. Wolf et al. (2005) add that sample size greater than 200 is sufficient in non-complex models. Furthermore, Hair Jr. et al. (2017) indicate that minimum sample size should be ten times the number of variables and recommended that sample size larger than 30 often follows the normal distribution and thus appropriate for any regression problem. Consistent with literature, this research seeks to obtain a sample size of 400 for the research analysis to provide high power and accuracy in the models.

3.3 Questionnaire development

The questionnaire items were developed based on previous studies carried out by International Labour Organization (ILO, 2020) and United Nations Development Programme (UNDP, 2020) in exploring effects of the pandemic on firms. This was piloted among CEOs, board directors, managers, heads of accounting and operations and enterprise owners. The items were revised to capture quantitative responses in most parts for this research with the final questionnaire containing 14 questions of three sections: enterprise profile (4 questions), impact on operations (5 questions) and government interventions (5 questions).

3.4 Model Variables

3.4.1 Dependent variables

The studies of Jamil and Ahmad (2020) and Bhalla et al. (2022), utilised return on equity, return on investment and return on asset for measuring the financial performance of micro-enterprises. Zhang and Ayele (2022) also employed sales growth, capital growth and employment growth as the basis for measuring financial performance. All these reflect the profits and revenues of the micro-enterprise. Thus employing the profit (**PROFIT**) and revenue (**REVENUE**) of the micro-enterprise in this research. Additionally, Moosa and Khatatbeh (2021) and Farzanegan et al. (2021) saw a bidirectional relationship between tourist arrivals and COVID-19, hence tourist arrivals (**TARR**) is also used as a dependent variable.

3.4.2 Independent variables

Like Popescu (2021) and Farzanegan et al. (2021), the covid-19 (**COVID**) is dummied as a dichotomous variable taking 1 for the periods 2020-2021. Tourist arrivals (**TARR**) is additionally used in Model M1 as a predictor variable.

3.4.3 Control variables

Similarly, guided by the works of Aboura (2022) and Heinzel and Koenig-Archibugi (2022), government intervention in the form of government restrictions (**GREST**) and government tourism initiative (**GTINI**) are used as control variables. Over the years, Saint Lucia's government adopted key government policies in the tourism sector to boost the benefits of tourism equitably among all participants and create better job tenure, wealth, and employment opportunities for its people. Additionally, these measures sought to fund micro-enterprises and improve their sustainability in the tourism industry (*see* Saint Lucia Tourism Policy, 2003, the Saint Lucia Tourism Benchmarking and Competitiveness Assessment, 2013 and Tourism Strategy and Action Plan 2020-2030) (United Nations Development Programme, 2022). The **GREST** in this study is only measured in 2020 when Saint Lucia's government-imposed restrictions in the country (WTO, 2021). The **GREST** is dummied as 1 in 2020 and zero all else for periods considered in the study. Furthermore, **GTINI** is measured on two fronts; initiative in direct micro-enterprises funding and initiative in ticket faire and taxes reduction aimed at promoting tourism and increasing tourist arrivals. These are also measured as dummy variables in the models to further elicit variabilities.

3.5 Model Specification

Hypothesis 1 and 2 are respectively specified in Model M1 (*in Equation **2***) and M2 (*in Equation **3***) as follows:

M1:
$$PROFIT_{i,t} = \beta_0 + \beta_1 COVID_{i,t} + \beta_2 TARR_{i,t} + \beta_2 GREST_{i,t} + \beta_3 GTINI_{i,t} + \varepsilon_{i,t} \quad (2)$$

M2:
$$TARR_{i,t} = \beta_0 + \beta_1 COVID_{i,t} + \beta_2 GREST_{i,t} + \beta_3 GTINI_{i,t} + \varepsilon_{i,t} \quad (3)$$

Additionally, the test of hypothesis 3 is based on the test statistic defined in Equation **4** below with the decision region.

$$t = \frac{\bar{d}_{PERFORMANCE} - \mu_d}{s_d/\sqrt{n}} \quad (4)$$

where $\bar{d}_{PERFORMANCE}$ denotes the mean difference in financial performance before/after covid-19 pandemic crisis. μ_d is the null hypothesised value. In this test, this is equivalent to zero. s_d and n are the sample standard deviation and the sample size respectively with $(n-1)$ degrees of freedom (Weir and Vincent, 2020).

The assignment for this project is listed below on ***Table 1***; it will be closely followed to meet the project's goals and objectives within the mutually agreed-upon time.

Table 1

Activity	Deadline
Ethical approval	2nd December,2022
RQs and Scope(performance)	5th December,2022
Literature review (reading, writing)	6th December,2022
Data Collection (methodology)	10th December,2022
Data analysis (writing)	11th December,2022
Discussion and conclusions	15th December,2022
Write up (introduction, conclusion, and full draft)	16th December,2022
Submission	17th December,2022.

This project assignment must be turned in by December 17th, 2022, at the latest. All potential ethical difficulties would be appropriately discussed with my supervisor and taken through the appropriate approval process for any ethical issues pertaining to this project by November 5th, 2022.

I will complete the proposal phase of this project by November 3rd after reviewing the goals and research topics with my project supervisor. The literature review is projected to be concluded by mid-November, at which time the focus will shift to data collection, which is now labour-intensive because of the worldwide pandemic. All Covid-19 protocols will be followed while doing these project activities since safety is a significant concern. The examination of the data gathered from the firms will provide the key results and suggestions for this specific work about the strategy chosen by the selected micro-entrepreneurs. To guarantee high-quality work, all inputs will be scrutinised in-depth and looked at from all directions.

My supervisor will get the whole document—along with the comments and findings—by December 15th, 2022, for approval.

4.1 Results

Out of the 403 questionnaires sent out, 400 responses met the research selection criteria, achieving an unbiased sample size of 30-500 appropriate to explore cause-effect modelling to ensure the research provided high power and accurate models. An analysis of the sectors in the sample shows a representation of all major sectors within Saint Lucia, as shown in the diagram below.

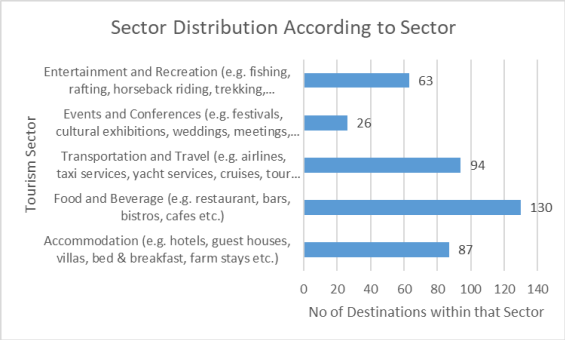

Fig1: Destination centre distribution across the sample (n =400)

Food and beverage are the main sectors, while events and conferences are in the minor sector.

4.1.1 Hypothesis 1. COVID-19 has a negative effect on the financial performance of micro-enterprises within the tourism sector in Saint Lucia.

A descriptive analysis of the profits made during this period shows that while the mean profit for the year 2018 (XCD 4267.54), this amount subsequently dropped in 2019 (XCD 3469.93) and 2020 (XCD 2475.71), proving a challenging year for the tourism industry in Saint Lucia. However, despite this economic downturn, there is a recovery in 2021, with the profit rising slightly to XCD 3467.53, as shown in Table 1 below;

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
2018 average profit received (XCD)	400	500	450000	4267.54	22604.603
2019 average profit received (XCD)	400	0	60000	3469.93	4775.774
2021 average profit received (XCD)	400	0	190000	3467.53	9623.179
2020 average profit received (XCD)	400	0	30000	2475.71	2504.221
Valid N (listwise)	400				

Table 1: Descriptive Statistics for the Average Profit Received in 2018, 2019, 2020, and 2021.

Besides, there is a reduction in profit variability as evidenced by the decreasing standard deviation, with the industry facing challenges in 2020 (There is a low mean and narrow range of profits during this period) but showing a modest recovery in 2021

An analysis of the costs of operations also tends to increase across this period, with the year 2018 showing a mean of XCD 13,646.76 in terms of operation expenses, while 2019 reports XCD 13,946.57, while remains relatively high in 2020 (XCD 13,313.58) as shown in the Figure below.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Average spent as the cost of operations in 2018 (XCD)	400	1200	170000	13646.76	15089.139
Average spent as the cost of operations in 2019 (XCD)	400	2100	190000	13946.57	14054.532
Average spent as the cost of operations in 2021 (XCD)	400	1800	175000	13885.17	12460.194
Average spent as the cost of operations in 2020 (XCD)	400	1600	170000	13313.58	12632.395
Valid N (listwise)	400				

Table 2: Descriptive Statistics for the Average Costs of Operations in 2018, 2019, 2020, and 2021.

However, despite a slight increase in 2021 (XCD 13,885.17), the overall trend shows that these costs remained relatively high over four years, as seen in Figure 2 below.

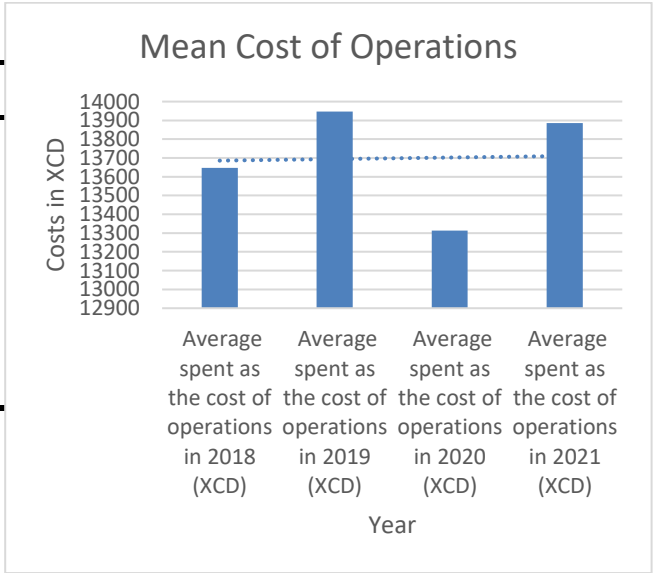

Fig 2: Costs of Operations in the year (2018-2021)

However, with these costs drastically increasing in 2019, they decrease at a similar rate in 2020 up to 2021, when the operations costs start increasing again.

A paired sample statistic for the revenue received, the average cost of operations, and the average profit received also showed an overall decrease from 2018 to 2020. (The mean is XCD 16,851.68, with a standard deviation of XCD 17,531.48 and a standard error of the mean of XCD 876.57 in 2018, while the mean revenue decreases to XCD 14,835.40 in 2020 with a slightly lower standard deviation of XCD 15,006.12 and a smaller standard error of the mean of XCD 750.31)

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Er
Pair 1	2018 average revenue received (XCD)	16851.68	400	17531.479	
	2020 average revenue received (XCD)	14835.40	400	15006.119	
Pair 2	Average spent as the cost of operations in 2018 (XCD)	13646.76	400	15089.139	
	Average spent as the cost of operations in 2020 (XCD)	13313.58	400	12632.395	
Pair 3	2018 average profit received (XCD)	4267.54	400	22604.603	
	2020 average profit received (XCD)	2475.71	400	2504.221	

Table 3: A comparison of the average revenue, costs of operations, and average profit in 2018 and 2020

This paired samples analysis indicates a reduction in average revenue, average cost of operations, and average profit from 2018 to 2020.

While using a 95% confidence interval for the difference in mean ranges, the t-statistic is 11.197 with 399 degrees of freedom, resulting in a highly significant p-value of .000 ($p < 0.001$) for the average revenue received, as shown below.

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	2018 average revenue received (XCD) - 2020 average revenue received (XCD)	2016.275	3601.540	180.077	1662.257	2370.293	11.197	399	.000
Pair 2	Average spent as the cost of operations in 2018 (XCD) - Average spent as the cost of operations in 2020 (XCD)	333.183	5781.771	289.089	-235.145	901.510	1.153	399	.250
Pair 3	2018 average profit received (XCD) - 2020 average profit received (XCD)	1791.830	22503.538	1125.177	-420.186	4003.846	1.592	399	.112

Table 4: A paired samples t-test results for the differences in average revenue received, average cost of operations, and average profit between 2018 and 2020

Besides, for the average costs of operation between the two periods, the difference in means ranges from -235.145 to 901.510 with a t-statistic of 1.153, 399 degrees of freedom, and a resulting p-value of .25. The average cost of profit for the same period gives a t-statistic of 1.592 with 399 degrees of freedom and a resulting p-value of .112. An analysis of the three p-values shows a substantial difference in average revenue between 2018 and 2020, and there is no conclusive evidence to show a significant difference in the average cost of operations and average profit between 2018 and 2020.

4.1.2 Hypothesis 2. COVID-19 has a negative effect on the tourist arrivals at micro-enterprises within the tourism sector in Saint Lucia.

Tourist arrivals vary over the period, showing an increase in 2019 compared to the number of arrivals in 2018 (427.27) and a disruptive impact in 2020 when the mean number of arrivals dropped to 361.90. While 2018 to 2019 looks favorable for this sector, COVID-19 directly affects the sector, portrayed by a decrease in minimum and maximum values, as shown in the table below.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Numberoftouristswhovisitedin2018	400	20	1200	403.22	193.103
Numberoftouristswhovisitedin2019	400	10	1300	427.27	198.701
Numberoftouristswhovisitedin2020	400	7	1300	361.90	168.305
Numberoftouristswhovisitedin2021	400	6	1300	418.60	172.790
Valid N (listwise)	400				

Table 5: A Descriptive Statistics for the Number of Arrivals in 2018 to 2021

However, there is a partial recovery in mean tourist arrivals from 2020 to 2021, suggesting gradual improvement as control variables, including government restrictions and government tourism initiatives, progressed. However, this mean does not return to the pre-pandemic levels, indicating that 2021 was still a path to recovery.

Besides, a graphical analysis of tourists visiting Saint Lucia shows a downward trend in the number of visiting tourists, with an analysis of their totals showing a downward trend, as shown in the graph below.

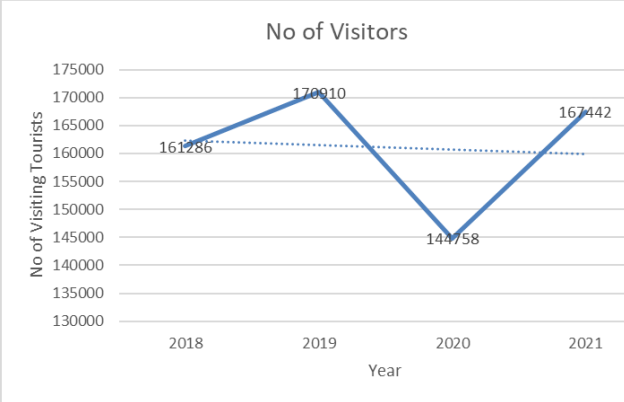

Fig 3: A line graph on the number of tourists vising different destinations from 2018 to 2021

The period between 2019 and 2020 has the highest decline, with this situation starting to drastically change at the start of 2021 when the trend takes an upward trajectory.

4.1.3 Hypothesis 3. There is a significant difference in the financial performance of micro-enterprises operating in the tourism sector in Saint Lucia before and during the COVID-19 pandemic.

The results of an ANOVA for the data on the profits, revenues, and costs of operations portray a significant F-statistic and a p-value less than 0.05 (Sig. < 0.05) in each year's ANOVA table indicating statistically significant differences in average revenue between at least two groups as shown in the ANOVA table below.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
2018 average revenue received (XCD)	Between Groups	41043596177.135	12	3420299681.428	16.223	.000
	Within Groups	81590152600.615	387	210827267.702		
	Total	122633748777.750	399			
2019 average revenue received (XCD)	Between Groups	36250149689.782	12	3020845807.482	12.049	.000
	Within Groups	97024344674.218	387	250708900.967		
	Total	133274494364.000	399			
2020 average revenue received (XCD)	Between Groups	34961361799.256	12	2913446816.605	20.542	.000
	Within Groups	54886894536.744	387	141826600.870		
	Total	89848256336.000	399			
2021 average revenue received (XCD)	Between Groups	36466112464.778	12	3038842705.398	27.004	.000
	Within Groups	43549504051.222	387	112531018.220		
	Total	80015616516.000	399			
Average spent as the cost of operations in 2018 (XCD)	Between Groups	29373271996.783	12	2447772666.399	15.410	.000
	Within Groups	61471895335.655	387	158842106.810		
	Total	90845167332.438	399			
Average spent as the cost of operations in 2019 (XCD)	Between Groups	35306419516.031	12	2942201626.336	26.171	.000
	Within Groups	43507993840.279	387	112423756.693		
	Total	78814413356.310	399			
Average spent as the cost of operations in 2020 (XCD)	Between Groups	28506821808.561	12	2375568484.047	26.144	.000
	Within Groups	35164559048.879	387	90864493.666		
	Total	63671380857.440	399			
Average spent as the cost of operations in 2021 (XCD)	Between Groups	30436261635.473	12	2536355136.289	31.150	.000
	Within Groups	31511060616.967	387	81423929.243		
	Total	61947322252.440	399			
2018 average profit received (XCD)	Between Groups	1766571788.216	12	147214315.685	.282	.992
	Within Groups	202109698411.222	387	522247282.716		
	Total	203876270199.437	399			

2019 average profit received (XCD)	Between Groups	412595215.463	12	34382934.622	1.532	.110
	Within Groups	8687803538.847	387	22449104.752		
	Total	9100398754.310	399			
2020 average profit received (XCD)	Between Groups	202190104.136	12	16849175.345	2.835	.001
	Within Groups	2299987954.641	387	5943121.330		
	Total	2502178058.777	399			
2021 average profit received (XCD)	Between Groups	2199963772.305	12	183330314.359	2.042	.020
	Within Groups	34749657691.335	387	89792397.135		
	Total	36949621463.640	399			

Table 6: ANOVA analysis of the financial performance across all micro-enterprises

Besides, similar to the average revenue for each year, the ANOVA results show significant differences in the average cost of operations between at least two groups while showing variability due to governmental interventions and COVID-19 effects. While the period before COVID-19, 2018 and 2019, shows no significant difference between groups (Between Groups) based on the non-significant F-statistic and p-value greater than 0.05, the year after COVID-19, 2020 and 2021 suggest a substantial difference in the average profits between at least two groups. The above ANOVA results indicate that there are variations in average revenue, cost of operations, and profit received each year, emphasising the heterogeneity witnessed within the tourism sector due to changing government interventions and responses.

An analysis of the profits made by different enterprises within Saint Lucia also shows significant variance in the total profits made by the businesses. While the accommodation sector shows a noticeable increase in profits from 2018 to 2021, the entertainment and recreation sector sees a dip in profit within the same period.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Average Profit 2018	5	2196.8254	6118.5769	3869.397788	1829.6418646
Average Profit 2019	5	2329.6825	5785.0575	3453.219295	1400.8944701
Average Profit 2020	5	1703.1915	4581.6092	2474.389661	1202.3877737
Average Profit 2021	5	2079.4681	7337.9310	3420.115624	2206.7662660
Valid N (listwise)	5				

Table 7: Descriptive Statistics on Profits Across Micro-Enterprises

Besides, events and conferences businesses display variation across the years, emphasising their sensitivity to changes in government restrictions. At the same time, the food and beverages exhibited a decline in average profits from 2018 to 2019, followed by a modest recovery in 2020 and 2021. The Figure below shows this variation across sectors.

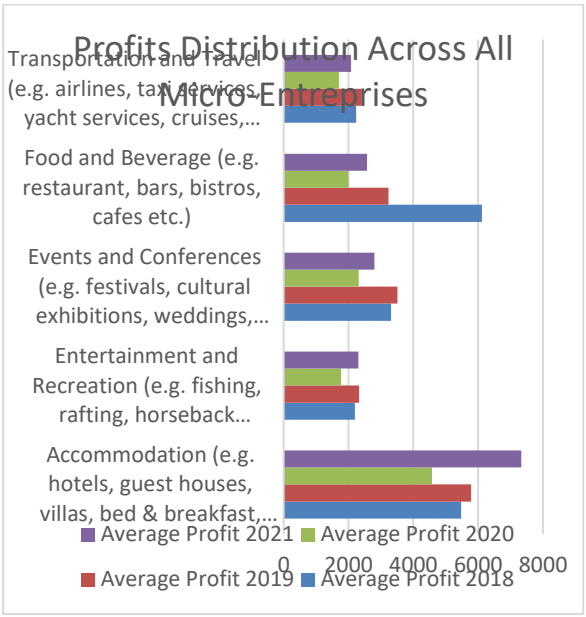

Fig 4: Profits Distributions Across Micro-Enterprises During and After COVID-19

Lastly, the transportation and travel sector portrays a relatively consistent average profit across the years, noting the highest average profit in 2019 and a slight decline in subsequent years.

4.2 Discussion

Previous research indicates that COVID-19 negatively affected the tourism sector, leading to shifts in travel behaviors, job losses, and economic losses for micro-enterprises in the tourism sector. While these effects can be attributed to the COVID-

19 effects, other control variables also had a significant impact on the tourism section.

This study's results confirm the pandemic's significant impact on micro-enterprises' financial performance, with the analysis portraying a considerable decrease in both average revenue and profit and a relatively stable average cost of operations. Larue's study on labor issues and COVID-19 supports this observation, noting that the induced labor market disruptions and diminished worker demand could have contributed to this phenomenon. The closure of many premises, the reduced number of tourists in this enterprise, and the strict public health restrictions contributed to the reduction in operating costs. Besides, these results support Ahmad et al. findings that while some businesses' performance showed a positive trajectory during the pandemic, most businesses' profits significantly reduced as the government implemented policies to slow down the infection rate. This observation arises with these shifts in the operational capacity of the tourism business, evidenced by the bidirectional relationship between tourists' arrivals in Saint Lucia. There was a steady decline in the number of arriving tourists from 2019, where the section has maintained an upward trajectory compared to prior years. However, it is essential to note that despite the study results showing varying differences in the ability to handle the COVID-19 pandemic across sectors, it is also evident that the average profits from 2018 to 2020 across the sectors showed a decline.

Government tourism initiatives adopted by Saint Lucia's government boosted the sustainability of the tourism industry, with tax reduction and direct micro-enterprise funding showing a direct relationship with sector stabilisation. All the businesses that received government text reliefs in 2020 and 2021 showed an increase in their profits in the preceding year, as shown in the Figure below.

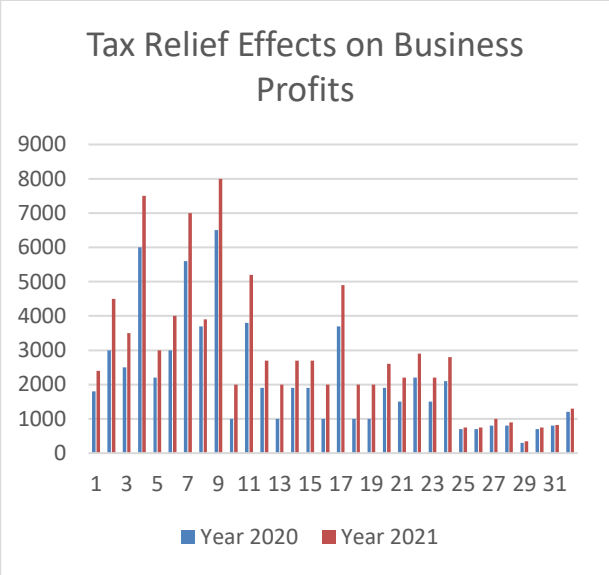

Fig 5: Saint Lucia Government Tax Relief Effects on the Tourism Business Profits

Banus study on the specifics of the tax systems notes that these fiscal relaxation measures had a significant impact on the tourism sector, with this move helping stabilise cash flow within the struggling tourism business. Besides, Chen et al. note that the simulated policies implemented by governments allowed the businesses to ensure they could maintain an economically significant level of consumption. Therefore, this analysis proves the existence of a statistically significant relationship between government restrictions and government tourism initiatives. ($t = 4.32$, $p = 0.001$). Besides, the study analysis results for the three hypotheses reveal a statically significant correlation in how COVID-19 negatively affected tourist arrivals in micro-enterprises, financial performance, and showed a significant difference in the financial performance of the tourism business operating in Saint Lucia before and after the COVID-19 pandemic.

5. Conclusion

Tourism sectors will continue to be a key driver of Saint Lucia's economic growth, and with the businesses in this sector not up to full recovery, strategic measures and interventions to promote the resilience and sustainability of micro-enterprises. With companies still calling for the government to

reduce tax levies, stop raising VAT, provide small business loans and grants, more opportunities, and help promote their business, there is a need to increase government support programs tailored to the sector's unique needs. The study analysis on the effects of tax reliefs on the business shows a positive correlation. Introducing more financial assistance programs, streamlined regulatory practices, and financial assistance would be crucial in promoting this sector. In addition to these temporary exemptions and government aid, it is important to prepare the country's sector for the future by incorporating digital skills into businesses. The increasing technological innovation across the globe has seen a rise in the use of technology, and these businesses need to explore solutions that help them track employee behavior and forecast demand.

Besides, there is a need for Saint Lucia to promote cooperation among the country's tourism sector, fostering partnerships between governments, micro-enterprises, larger businesses, and relevant stakeholders to enhance the sector's overall resilience. Saint Lucia needs to encourage micro-enterprises to embrace adaptive business models, explore contingency plans, and adopt cost-effective operational models that can mitigate the impact of future crises. While financial assistance and tax incentives will play a vital role in this process, there is a need to ensure these businesses create a robust and adaptable tourism sector that is able to respond to future shocks. Besides, the micro-enterprises need to develop strategies to promote domestic tourism and long-term sustainability plans, including innovation hubs that consider short-term recovery and future crisis preparedness.

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