Accounting Innovations and Companies' Performance During Pandemics

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The International Conference on Business and Technology (ICBTEdinburgh' 2025), 12-13 April 2025, Edinburgh, United Kingdom

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Abstract
This paper investigates the impact of accounting innovations on companies' performance during the COVID-19 pandemic in the United Arab Emirates. This research used the deductive approach, with primary data collected through surveys. The results show a positive relationship between Lean Accounting and firms' financial and operational performance during the pandemic. In addition, the result indicates that the impact of lean accounting on firms' operational performance is subject to firm size. This paper increases our understanding of how lean accounting can be a powerful tool in navigating the challenges of a pandemic.

Keywords: Lean accounting; Company performance; Pandemics
JEL codes - M40; M41; M48

1. Introduction

This paper's motivation focuses on whether accounting innovations such as lean accounting can combat firms' financial problems during pandemics. Lean accounting was developed to support a firm strategy of continuous improvement, waste reduction, and eliminating inventory. Lean accounting was introduced to aid in reflecting the actual performance image of lean practitioners through lean accounting tools such as performance measurement, transaction elimination, calculating lean financial benefits, and target costing. (Baggaley and Maskell, 2003). Most companies need to see the expected improvement in the lean strategy implementation on their financial statement (Kennedy & Brewer, 2006). This paper investigates the impact of lean accounting on firms' performance during the COVID-19 crisis in the emerging market of the United Arab Emirates (UAE). This study aims to inquire about how lean accounting affects firms' financial performance during the COVID-19 pandemic and how lean accounting influences firms' operational performance during the COVID-19 pandemic.

1. Literature review

Lean strategy focuses on non-financial improvements, such as increased lead time, on-time delivery, waste reduction, and inventory reduction. At the same time, traditional and ABC methods cannot recognize such improvements (Baggaley & Maskell, 2003), highlighting the importance of aligning lean strategy and management accounting practices (Chenhall, 2005). The results of this study will be justified through the Contingency theory. According to this theory, the organization's performance depends on the alignment of the organization's context and structure.

Some previous studies investigated the impact of the COVID-19 pandemic on different aspects (Lawal et al., 2022; AlSuwaidi et al., 2024). For example, Chenhall (2005) provides empirical evidence on the vital role of strategy integration throughout the company. Fullerton et al. (2014) provide evidence of a positive relationship between lean accounting tools and corporate performance. More recently, Reitsma et al. (2020) highlight the importance of top management support in facilitating lean adoption among suppliers. Khalfallah and Lakhal (2021) investigated the relationship between agile manufacturing and its impact on operational and financial performance in Tunisian manufacturing firms. The key findings include that Lean practices positively influence agile manufacturing capabilities. However, implementing lean accounting presents challenges, as Dieste et al. (2021) report mixed results regarding its financial impact. Based on the above discussion, the following hypotheses state: *(H1) There is a positive relationship between lean accounting and firms' financial performance during the COVID-19 pandemic. (H2) There is a positive relationship between lean accounting and firms' operational performance during the COVID-19 pandemic.*

3. Methodology

3.1 Research Methods

For this research, we followed the deductive approach. According to this approach, an existing theory is tested, and hypotheses are driven from this theory (Woiceshyn & Daellenbach, 2018; El-Bannany et al., 2022; ElKelish, 2021; Irsyadillah et al., 2023). On the other hand, the deductive approach cannot justify how people react to the environment (ibid). To achieve the objectives of this study, we will use quantitative data to test our hypotheses.

3.2 Data Collection

Using simple random sampling, this paper used cross-sectional surveys targeted to senior accountants in various company sizes and industries following previous empirical studies (e.g., ElKelish and Rickards, 2018; ElKelish et al., 2024; Hussain et al., 2022; Alshehhi et al., 2023; Rabboua et al., 2024; Solaimani et al., 2020). The survey collected data on lean accounts and their impact on firms' finances and operations. Due to COVID-19, we were limited to emailing our targeted respondents online surveys. We sent out 200 surveys and received 50, a response rate of 25%.

4. Results and discussions

4.1 Descriptive statistics

Table 1 presents the descriptive statistics for the study variables. The first (LA & FFP) and the second (LA & FOP) survey sections exhibit minimum and maximum values of 1 and 5, respectively. The mean score for Section 1 (LA & FFP) is 3.77, which is higher than that of Section 2 (LA & FOP), which has a mean of 3.59. This suggests that respondents express a stronger agreement regarding the impact of Lean Accounting on firms' financial performance than on their operational performance.

Table 1: Descriptive Statistics (General)

Variable	N	Maximum	Minimum	Mean	Standard Deviation	Skewness Statistic	Kurtosis Statistic
LA & FFP	50	5	1	3.77	0.88	-1.14	1.41
LA & FOP	50	5	1	3.59	0.76	-.62	1.65

(LA & FFP) Lean Accounting and Firms' Financial Performance (Questions 1 to 3); (LA & FOP) Lean Accounting and Firms' Operational Performance (Questions 4 to 7); (N) number of observations.

The survey results show that respondents' opinions support the positive relationship between Lean Accounting (LA) Firms' Financial Performance and (FFP) during COVID-19, with an overall average score of 3.77. More specifically, question (1), stating: "There is a positive relationship between lean accounting and firms' profitability during the COVID-19 crisis in the UAE," has the lowest mean value of 3.58. In comparison, question (2) states, "There is a positive relationship between lean accounting and firms' efficiency during the COVID-19 crisis in the UAE." It has the highest mean value of 3.90. in addition, the survey results show respondents' opinions that support the positive relationship between Lean Accounting (LA) and Firms' Operational Performance (FOP) during COVID-19, with an overall average score of 3.59. More specifically, question (7) states, "There is a positive relationship between accounting and customer satisfaction during the COVID-19 crisis in the UAE," which has the lowest mean value of 3.56. In comparison, question (6) states: "There is a positive relationship between lean accounting and order acceptance during the COVID-19 crisis in the UAE." which has the highest mean value of 3.70.

4.2 One Sample T-test

Table 2 shows the one-sample T-test for the first three questions representing the first study hypothesis (H1). The results for all three questions have significant positive values at the 1% confidence level (using a test value of 2.5). Therefore, the first study hypothesis states: *"A positive relationship exists between lean accounting and firms' financial performance during the COVID-19 pandemic."* is accepted.

Table 2: One-Sample T-Test for Section 1 (H1)

	T	df	Sig. (2-tailed)	Mean Difference
Q1	6.67	49	<.001***	1.08
Q2	10.38	49	<.001***	1.40
Q3	9.91	49	<.001***	1.34

Test Value = 2.5. ***Significance at the 10% confidence level.

Similarly, Table 3 shows the one sample T-test results for questions four to seven, representing our second study hypothesis. All four questions have significant positive values at the 1% confidence level (using a test value of 2.5). Therefore, the second study hypothesis states: "*A positive relationship exists between lean accounting and firms' operational performance during the COVID-19 pandemic*." is accepted.

Table 3: One-Sample T-Test for Section 2 (H2)

	T	df	Sig. (2-tailed)	Mean Difference
Q4	8.19	49	<.001***	1.12
Q5	7.11	49	<.001***	1.06
Q6	8.19	49	<.001***	1.2
Q7	6.96	49	<.001***	1

Test Value = 2.5. ***Significance at the 10% confidence level.

4.3 ANOVA test statistic

Table 4 shows the study hypothesis (H1) and company size results. The results showed an insignificant difference with a p-value of 0.80. This result indicated that companies in specific group sizes did not benefit more or less than the others from Lean accounting during the COVID-19 crisis. Likewise, Table 5 shows the study hypothesis (H1) and industry-type results, which indicate an insignificant difference with a p-value of 0.27. Therefore, the study hypotheses (H1) and (H2) hold regardless of the company size and industry.

Table 4: One-Way ANOVA Analysis For (H1) And Company Size

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.79	3	0.26	0.32	0.80
Within Groups	37.30	46	0.81		
Total	38.098	49			

Table 5: One-Way ANOVA Analysis for (H1) And Industry Type

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	3.98	4	0.99	1.31	0.27
Within Groups	34.10	45	0.75		
Total	38.09	49			

Table 6 shows the study hypothesis (H1) and company size results. There is a significant difference at the 10% confidence level. This result indicates that the impact of lean accounting on firms' operational performance is subject to firm size, which is consistent with the concept of economies of scale. Likewise, Table 7 shows the study hypothesis (H2) analysis. The results showed no significant difference.

Table 6: One-Way ANOVA Analysis for (H2) And Company Size

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.91	3	1.30	2.42	0.07*
Within Groups	24.81	46	0.54		
Total	28.73	49			

*Significance at the 10% confidence level.

Table 7: One-Way ANOVA Analysis for (H2) And Industry Type

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.18	4	0.29	0.48	0.74
Within Groups	27.54	45	0.61		
Total	28.73	49			

5. Conclusion

This paper highlights the relationship between lean accounting and firms' financial and operational performance in the UAE. By fostering efficient resource use, reducing waste, and enhancing decision-making, lean accounting practices have provided firms with a critical tool for resilience amid unprecedented disruptions during the pandemic. The findings support the hypotheses that lean accounting positively correlates with firms' financial and operational outcomes, aligning with the contingency theory that emphasizes adaptability in times of crisis. This research significantly advances our understanding of lean accounting as a strategic response mechanism in emerging markets, particularly under crisis conditions.

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