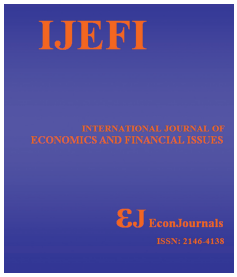

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Firm-specific and Contextual Determinants of Sri Lankan Corporate Hotel Performance

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ABSTRACT

Stimulated by the burgeoning tourism industry and its vital importance to the country's economy, this study examines the firm-specific and contextual determinants of Sri Lankan corporate hotel performance. We use data from a sample of 29 listed hotels for 7 years from 2012 to 2018. This study uses a multidimensional financial performance measure comprehensive financial performance score, in addition to return on assets and return on equity (ROE). Consequently, the results from the panel regression revealed that hotels' age and size are negatively and significantly affect financial performance. Furthermore, the results suggest that the profitability of Sri Lankan hotels is driven by managerial efficiency, Location factors, geographical diversification, and connection to a wider business network.

Keywords: Firm Performance, Determinants, Corporate Hotels
JEL Classifications: M410, M210, M370, L1

1. INTRODUCTION

With the exponential growth in the number of visitor arrivals and burgeoning foreign exchange income, the tourism industry is the most dynamic and robust sector of the Sri Lankan economy. A satisfactory political and economic stability, which was sustained in the country following the end of 30 years' tragic war in 2009, coupled with country's growing reputation has triggered the tourism industry to grow at a rate which has never been attained in the history (Jayawardhana et al., 2015; Kularatne et al., 2018). According to the Annual Statistical Reports (2017) of Sri Lanka tourism developing authority (SLTDA), a government organization, the total number of tourists' arrival in 2017 was nearly 2.12 million. This was almost a 320% increase compared to the total tourists' arrival of 0.44 million in 2008. Similarly, foreign exchange earnings from tourism have also risen from 319.5 million USD in 2008 to 3,924.9 million USD in 2017. Furthermore, the SLTDA report (2018) indicates that the employment generated in the tourism sector (both direct and indirect) has been increased from 123,124, in 2008 to 359,215, in 2017. Hotel sector as a core of the tourism industry has also shown considerable growth in term of infrastructure development during the last decade. SLTDA report (2018) shows that the number of Tourist Hotels has increased from 245 in 2008 to 401 in 2017. Similarly, No. of rooms has also been tripled during the last decade. Apart from the tourist hotels, the other supplementary establishments which provide the accommodation facility have also increased from 513 units in 2008 to 1693 units in 2017.

However, despite the robust growth of the tourism industry over the last decade, the corporate hotel sector which consists of 39 companies listed in Colombo stock exchange (CSE) in Sri Lanka has languished in term of financial performance over the last years. That is to say, according to our preliminary investigation, more than 20% of companies have reported a loss before income tax during the last 10 years continuously (Table 1). Moreover, our preliminary investigation reveals that the corporate hotel sector not only consists of 39 companies but also controls more than 100-

Table 1: Performance of hotels listed in CSE during 2012-2018 and composition of final sample

Year	No. of hotels	No. of hotels reported loss	No. of hotels reported loss (%)	No. of hotel in the final sample	No. of hotel in the final sample (%)
2012	33	9	27	29	88
2013	35	8	23	29	83
2014	36	7	19	29	81
2015	36	12	33	29	81
2016	36	9	25	29	81
2017	37	11	30	29	78
2018	39	10	26	29	74

star graded hotel directly or indirectly as subsidiaries. Thus, the financial performance of listed companies does not merely reflect the performance of 39 companies, but it reflects the performance of almost all the tourist hotels operate in Sri Lanka. Therefore, it is interesting and a timely need to investigate the determinants of Sri Lankan corporate hotel performance.

Given the importance of the present situation prevail among the Sri Lankan corporate hotels, the main purpose of our study is to cast the spotlight on the firm-specific and contextual factors on the corporate hotels' performance in Sri Lanka. Drawing from the existing literature, this study examines the relationship between corporate hotels' financial performance and numerous firm-specific and contextual factors such as firm age, firm size, location, firm affiliation status, firm's efficiency, intense of firm's promotion and advertising, and ownership structure following various stream of literature (Al-Najjar, 2015; Ben Aissa and Goaied, 2016; Chen and Lin, 2013; Wang et al., 2006; Yu and Lee, 2009). We believe that such examination would uncover the key drivers Sri Lankan hotels' performance and would provide important insight to the stakeholders.

This paper makes a number of contributions to the extant tourism literature. First, it makes a comprehensive analysis of determinants of corporate hotel performance. Most of the prior studies have considered a limited number of determinants of manifold. We, however, incorporate various determinants, yet tightly related to hotel industry. Second, we ascertain the overall financial performance using a new methodology that has not previously been used in the tourism literature for the same purpose. Motivated by Chen (2010) and following several previous studies (Bulgurcu, 2013; Chang et al., 2010; Ertuğrul and Karakaşoğlu, 2009; Kaynak et al., 2017; Kumar, 2016), we calculate comprehensive financial performance score (CFPS) incorporating five accounting ratios namely assets growth, revenue growth, return on assets (.), return on capital employed, and current ratio. The accounting ratios were selected based on factor analysis and the performance score was obtained using Entropy based technique for order performance by similarity to ideal solution (TOPSIS). Last, our study provides insightful findings that are equally important to the tourism stakeholders and to the academia.

2. LITERATURE REVIEW

Our study follows various streams of literature in identifying firm specific and contextual determinants of corporate performance in hotel industry. There is plenty of literature which has examined various firm specific and contextual determinants of corporate performance in hotel industry. These determinants include, but not limited to, firm age (Assaf and Cvelbar, 2011; Ben Aissa and Goaied, 2016), Size (Ben Aissa and Goaied, 2016; Chen, 2010; Israeli, 2002; Kim et al., 2013 O-neill and Mattila, 2006), indebtedness (Ben Aissa and Goaied, 2016; Chen, 2010; Lado-Sestayo et al., 2016), efficiency (Barros, 2005; Ben Aissa and Goaied, 2016; Brown and Ragsdale, 2002; Hwang and Chang, 2003), Corporate governance (Al-Najjar, 2013; Faizal, 2018), Ownership structure (Al-Najjar, 2015; Kallamu, 2016), affiliation to local or international chain of hotels (Chen, 2018; Ingram and Baum, 1997; Israeli, 2002; Ivanova and Ivanov, 2015), Intense of advertising and promotion (Chen and Lin, 2013; Masadeh et al., 2018), location (Assaf et al., 2015; Ben Aissa and Goaied, 2016; Parte-Esteban and Alberca-Oliver, 2015).

2.1. Firm Size

Fire age and size have always been subjected to examine in an effort of searching for determinants of firm performance. Studies which have examined the relationship between age, size and firm performance in the hotel industry are abundant. However, the direction and the strength of the association are inconclusive to date. Chen (2010) reported a significant positive relation between hotel size and occupancy rate. But the same study reported a significant negative relationship between hotel size and the other measures of hotels' performance (i.e., ROA and return on equity [ROE]). Kim et al. (2013) also found to have a positive relation among gross operating result and occupancy rate. Confirming the findings of Chen (2010), a study carried out by Ben Aissa and Goaied (2016) using financial data drawn from 27 hotels in Tunisia reported that the size of the hotel has a negative effect on the ROA. Following the findings of previous studies, we anticipated in the same vein of a relationship between size and financial performance of corporate hotels in Sri Lanka.

2.2. Firm Age

Studies examining the impact of hotel age on financial performance argue that with the increase of years in business, the hotels have the opportunity to gain experience, reputation, and local or international brand and hence positively influence on the financial performance (Ben Aissa and Goaied, 2016; Wang et al., 2006; Wang et al., 2006). However, firms may have an optimal level of an age where they can reach optimal profitability (Ben Aissa and Goaied, 2016). In the study of Ben Aissa and Goaied (2016), it is presented that when the Tunisian hotels reached to the 10 years of age the hotels' profitability is at its optimal and it starts to decline beyond that period. Baum and Mezias (1992) also have revealed that there is a possibility of potential failures with the increase

of the age of hotels and, thereby negative impact on the financial performance. Following the rational of Ben Aissa and Goaied (2016), we assume the relationship between age and financial performance is non- monotonic.

2.3. Efficiency

In the literature, considerable attention has been given to the evaluation of efficiency in the hotel industry. However, there is a paucity of studies which examine the relation between hotels' efficiency and hotels' financial performance and some exceptions are Ben Aissa and Goaied (2016), Shieh (2012). Nonetheless, the efficiency-performance relationship has been well tested in other industries. Studies examined the impact of efficiency on profitability revealed that improved efficiency increases the profitability (Baik et al., 2013). Ben Aissa and Goaied (2016) has also presented the evidence on the positive relationship between management efficiency and profitability of Tunisian hotels. Conversely, Shieh (2012) found cost efficiency is insignificantly associated with the financial performance of 68 international hotels operate in Taiwan. Using data envelope analysis (DEA), following (Barros, 2005; Ben Aissa and Goaied, 2016; Charnes et al., 1978; Hwang and Chang, 2003;), we examine the impact of managerial efficiency on financial performance of Corporate hotel in Sri Lanka.

2.4. Location

The importance of the geographical location of the hotels has been well demonstrated in the tourism literature. Peir-Signes et al. (2018), Ben Aissa and Goaied (2016), and Assaf et al. (2015) pointed out the location as one of the most critical aspects of hotel establishment since it has a significant impact on the firm performance. The hotels located in the scenic area (Ben Aissa and Goaied, 2016; Chen and Rothschild, 2010; He, 2003), in the coastal area (Ben Aissa and Goaied, 2016), and in Cities (Zhang and Enemark, 2016) outperform the hotels located in elsewhere. In Sri Lanka, SLTDA identifies seven major regions for which various tourist statistics are provided. Based on the SLTDA classification we identified three central locations such as Coastal, City, and Ancient. Although most of the corporate hotels belong to one of those locations, some of the multi-establishment hotels are located all over the country. Therefore, in addition to the above locations, we introduce a new location variable for those geographically diversified hotels (Table 2).

2.5. Ownership Structure

In the recent past, corporate governance has been given an increasing interest in the business literature (Abdullah, 2018; Al-Najjar, 2015). As a corporate governance mechanism, the impact of the composition of the ownership on corporate performance has been studied in academic literature from different viewpoints. From the agency theory viewpoint, the conflict between managers and shareholders (principal and agent), which arise as a result of the difference in risk attitudes, can be minimized using ownership structure as an effective governance tool (Jensen, 1999). When institutional shareholders hold the majority of shares, they can effectively intervene in the monitoring role of the firm, and it can help to lessen the agency cost (Jensen, 1999; Tong and Ning, 2004). Moreover, institutional shareholders have a suitable background to manage the firm efficiently (Al-Najjar, 2015). Given the importance of institutional investors in monitoring the firms and reducing the agency cost, some studies provide the evidence on the positive relation between the institutional investor and corporate firm performance (for example see Mcconnell and Servaes, 1990). However, the other stream of studies which compliment the conflict of interest hypothesis as proposed by Pound (1988) evidenced that there is a negative relationship between institutional shareholders and firm performance (Al-Najjar, 2015). The findings of the study carried out by Al-Najjar (2015) using a sample of 15 Jordanian listed tourism firms revealed the institutional and foreign investors have a negative impact on the corporate firm performance and hence underpinning the conflict of interest hypothesis. Based on the argument of Al-Najjar (2015), we assume the absence of an effective monitoring role of institutional investors in the Sri Lankan context.

2.6. Affiliation

Corporate hotel sector in Sri Lanka consists of a number of groups of hotels which controls more than 100 private tourist hotels. Therefore, this study seeks to distinguish the financial performance of group of hotels and individual hotels. Prior studies have argued, for example, that firms affiliated with a group of companies might have better financial performance than independent firms (He et al., 2013; Keister, 1998; Khanna, 2000). Moreover, the benefits of affiliation to a group of companies may be higher if the business group is well diversified (Khanna and Palepu, 1999). Bhaumik et al (2017) have argued that the firms affiliated to business group use internal capital markets to manage risk successfully translating them into profits. They tested this argument using a sample of 5152 Indian companies across 70 industrial sectors over 10 years' period and the results indicate that there is a positive significant relationship between business group affiliation and the profitability. When it comes to the tourism industry, a growing body of literature provide evidence on the positive relation between hotels affiliation to local or international chain and hotels' performance (for example see, among others, Chen, 2002; He, 2003; Hwang and Chang,

Table 2: Correlation coefficient matrix of continuous variables

	ROA	*ROE*	*CFPS*	*SIZE*	*EFFI*	*PUBLIC*	*ADVER*
ROE	0.975						
CFPS	0.482	0.479					
SIZE	−0.138	−0.114	−0.070				
EFFI	0.408	0.416	0.244	−0.006			
INST	−0.037	−0.007	−0.054	0.504	−0.009		
PUBLIC	0.125	0.166	0.084	−0.071	0.092	−0.156	
ADVER	−0.150	−0.149	−0.085	0.175	0.081	0.252	−0.23

2003). Ben Aissa and Goaied (2016) also revealed that the hotels affiliated to international chain in Tunisia are more profitable than their individual counterparts.

2.7. Intense of Firms' Promotion and Advertising

It is suggested that the advertising is one of the most important marketing tool (Hilmi and Ngo, 2011) which can accrue intangible value to firms (Hsu and Jang, 2008; Park and Jang, 2012) and thereby attract customers to hotels. The advertising thus has a positive impact on firm performance. This idea was supported by O'Neill et al. (2008) providing that advertising helps to improve the brand and hotel recognition. Using data from almost all categories of hotels in the US, they found to have a positive relation between room revenue of hotels and marketing expenses born by the hotels. Extant marketing literature has also claimed that advertising has a convincing and informative influence on customers and thus increase the number of customers. The effective advertising can increase the customer demand by changing the customer taste (Kaldor, 1950; Mittal and Baker, 2002) or by providing more information with customers which enable them to make a right evaluation (Demsetz, n.d.; Nelson, 1970., 1974). Providing further evidence on the positive relationship between advertising and firm performance, Chen and Lin, (2013) revealed that advertising has a significant positive impact on room revenue and room rate in Taiwanese hotels. Furthermore, they have demonstrated how and through which channels advertising can increase the revenue of Taiwanese hotels. Consequently, they conclude the advertising, regardless of its portion out of operating expenses, can create price premium rather than increase in quantity demand and hence increase the room revenue, while, has no effect on occupancy rate. This conspicuous relationship between advertising and financial performance lead our study to include selling and marketing expenses as a proxy for intense of firms' promotion and advertising.

3. RESEARCH DESIGN AND METHODOLOGY

3.1. Measures of Corporate Hotel Performance

Accounting-based financial performance measures are widely used in accounting, finance, and strategic management literature regardless of their limitations. The commonly used financial performance measures such as ROA, ROE, Sales Growth, and Return on Investment (ROI) are subject to several limitations as accounting numbers are often manipulated by managers and are affected when intangible assets are undervalued (Fisher, 1987; Watts and Zimmerman, 1990). However, the opponents of this idea argue that the use of accounting-based measures is more popular since data are readily available and managers regularly use in strategic decision making of the businesses. Moreover, accounting measures of firm performance are widely used to assess the short-term performance, i.e., to identify and eliminate unnecessary cost and nonproductive assets indicating its appropriateness in determining the performance (Morrow et al., 2004).

As an accounting based measure, among others, ROA has been extensively used in prior studies to measure profitability and it is frequently taken as the dependent variable in financial performance regression (Al-Najjar, 2013; Ben Aissa and Goaied, 2016; Chen, 2010; Issah and Antwi, 2017; Oxelheim, 2008). ROA reflects the efficiency of assets utilization by management in producing profits and hence it is a representation of short-term financial performance (Athanasoglou et al., 2008). In line with this notion, this study uses ROA as one of the measures of corporate hotel performance. In addition, ROE is also used to capture different aspect of financial performance of hotel companies. Lui and Hung (2006) stated that ROE can measure the firms' earning quality and it indicates how efficiently the shareholders' funds have been utilized in generating profits of the company.

3.1.1. CFPS

Although many studies have used ROA and ROE as the measures of financial performance of firms, it is debatable whether or not these two ratios alone can represent the actual performance of firms (Hsu, 2013). A successful assessment of financial performance should, therefore, include different measures which could assimilate different aspects of performance such as profitability, efficiency, leverage, growth, and market performance of a company. Review of previous studies shows many researchers use a combination of several financial ratios to evaluate the financial performance of various industries. For instance, Secme et al. (2009) evaluated the bank's financial performance using 27 financial ratios. Another study carried out by Wang (2009) clustered 21 financial ratios in assessing financial performance to avoid the repetition. Chen (2010) used the overall financial performance "SCORE" combining six different financial ratios namely ROA, ROE, Assets Turnover, Current ratio, Quick ratio, and Debt-equity ratio. He calculated a single comprehensive score for each hotel for each period using factor analysis. Then, the calculated scores for each hotel were regressed on several economic and company-specific variables to identify the effect of the economy and tourism growth on the financial performance of Taiwanese hotels.

Use of Multiple criteria decision making (MCDM) methods- for example, analytical hierarchy process (AHP) TOPSIS DEA is popular in performance evaluation literature. Hsu (2013) used the TOPSIS method to propose an evaluation model for investment analysis based on various financial ratios. Initially, he selected 21 indicators as variables for financial measures and reduced to ten most representative variables using dimension reduction methodology. Similarly, Deng et al. (2000), Wang (2009), Secme et al. (2009) used the TOPSIS method for financial and non-financial performance assessment in various industries. Number of other studies has also used TOPSIS method as MCDM approach for assessing, evaluating and ranking financial and non-financial performance (Bulgurcu, 2013; Chang et al., 2010; Ertuğrul and Karakaşoğlu, 2009; Kaynak et al., 2017; Kumar, 2016). In light of the previous studies, we calculated the CFPS using the TOPSIS method. The application of the TOPSIS method to compute CFPS values in this study involves three different steps. First, with the review of the literature we identified a set of financial ratios that could exhibit different dimensions of corporate performance and reduced to 5 the most important ratios namely assets growth, revenue growth, ROA, return on capital employed, and current ratio employing a factor analysis. The result of the factor analysis is

reported in the appendix A. Second, Appropriate weights for each criterion considered in the performance evolution process need to be determined. For this purpose, Entropy method as proposed by Shannon (1948) was used. Entropy method is one of the most popular methods for determining weights for indicators (Hsu, 2013). Employing entropy method needs to follow certain steps as mention below.

Step 1: Normalization of *m* x *n* evaluating matrix

$$A=\left[x_{ij}\right]_{mxn}\begin{bmatrix} x_{11} & x_{12} & \dots & x_{1n} \\ x_{21} & x_{22} & \dots & x_{2n} \\ x_{31} & x_{32} & \dots & x_{3n} \\ . & . & \dots & . \\ . & . & \dots & . \\ . & . & \dots & . \\ x_{m1} & x_{m3} & \dots & x_{mn} \end{bmatrix} \quad (1)$$

Where,
m=Number of alternatives, *i*=1, 2,….,*m*
n=Number of criteria, *j*=1,2,…….,*n*
x_{ij} = the performance indicator of i^{th} alternative with respect to j^{th} criteria

The original matrix A=(x_{ij}) should be normalized to the evaluation matrix R=(r_{ij}), where r_{ij} is the normalized valued of i^{th} alternative with respect to j^{th} criteria, and $r_{ij} \in [0,1]$. The initial values can be normalized using one of three methods (Chang et al., 2010) below depending on the nature of the data.

For the positive values:

$$r_{ij}=\frac{max_i x_{ij}-x_{ij}}{max_i x_{ij}-min_i x_{ij}} \quad (2)$$

For the negative values:

$$r_{ij}=\frac{x_{ij}-min_i x_{ij}}{max_i x_{ij}-min_i x_{ij}}, \quad (3)$$

For the moderate value:

$$r_{ij}=\frac{/\,x_{ij}-x_{obj}\,/}{max_i x_{ij}-x_{obj}}, \quad (4)$$

Consequently, we have following normalized evaluation matrix

$$R=\begin{bmatrix} r_{11} & r_{12} & \dots & r_{1n} \\ r_{21} & r_{22} & \dots & r_{2n} \\ r_{31} & r_{32} & \dots & r_{3n} \\ . & . & \dots & . \\ . & . & \dots & . \\ . & . & \dots & . \\ r_{m1} & r_{m3} & \dots & r_{mn} \end{bmatrix} \quad (5)$$

Step 2: Calculation of weights for each criteria based on entropy.

Weights can be calculated as follows according to (Chang et al., 2010);

- Compute the values using formula (6)

$$p_{ij}=-k\frac{X_{ij}}{\sum_{n=1}^{m}}p_{ij},lnp_{ij},\forall j \quad (6)$$

- Computed the d_i value using formula (7)

$$d_i=1-E_j,\forall j \quad (7)$$

- Calculated weights (w_j) for each criteria using formula (8). One condition muse be satisfied, $\sum_{j=1}^{n} w_j=1$.

$$w_j=\frac{d_{ij}}{\sum_{j=1}^{n} d_{ij}},\forall j \quad (8)$$

Third, we calculated the TOPSIS score for each alternative (each company) for each period (2012-2018) using entropy weights obtained in the step 2 above. TOPSIS score is representative of the best alternative from a set of finite alternative. The best alternative is decided based on the closeness to the positive ideal solution and farthest to the negatives ideal solution.

Following is the procedure for TOPSIS score calculation:
Step 1: Obtain the original matrix as shown in equation (1) for each period from 2012 to 2018.
Step 2: Constrict the normalized matrix $[r_{ij}]_{mxn}$

Since data for each evaluation criteria contain in the original matrix does not have uniform dimension, we normalized the data using following procedures in line with Wang (2009) and Wang and Lee (2007).

Cost criteria are normalized as:

$$r_{ij}=\frac{x_{ij}}{\sqrt{\sum_{n=1}^{m} x_{ij}^2}}, \quad (9)$$

Benefits criteria are normalized as:

$$r_{ij}=\frac{\frac{1}{x_{ij}}}{\sqrt{\sum_{n=1}^{m}(\frac{1}{x_{ij}})^2}}, \quad (10)$$

Step 3: The normalized decision matrix $[r_{ij}]_{mxn}$ is converted to weighted normalized decision matrix as follows.

$$V=(v_{ij})_{mxn}=\begin{bmatrix} w_1r_{11} & w_2r_{12} & \dots & w_nr_{1n} \\ w_1r_{21} & w_2r_{22} & \dots & w_nr_{2n} \\ w_1r_{31} & w_2r_{32} & \dots & w_nr_{3n} \\ . & . & \dots & . \\ . & . & \dots & . \\ . & . & \dots & . \\ w_1r_{m1} & w_2r_{m3} & \dots & w_nr_{mn} \end{bmatrix} \quad (11)$$

Where,w_j, j =1,2,….,*n*. is entropy weights for each criteria

calculated from equation (8), and $\sum_{j=1}^{n} wj = 1$.

Step 4: Determined the positive ideal solution and negative ideal solution by using equation (12) and (13) respectively.

$$A^{+} = \{v_1^{+}, v_2^{+}, ..., v_n^{+}\} = \{(max_i v_i j \mid j \in J), (min_i v_i j \mid j \in J)\} \quad (12)$$

$$A^{-} = \{v_1^{-}, v_2^{-}, ..., v_n^{-}\} = \{(max_i v_i j \mid j \in J), (min_i v_i j \mid j \in J)\} \quad (13)$$

Step 5: Calculated distance (separate measures) for each company for each period from positive ideal solution, d_a^{+} and negative ideal solution, d_a^{-} as follows:

$$d_a^{+} = \sqrt{\sum_{n=1}^{n} (v_{ai} - v_i^{+})^2}, a = 1, ..., m, \quad (14)$$

$$d_a^{-} = \sqrt{\sum_{n=1}^{n} (v_{ai} - v_i^{-})^2}, a = 1, ..., m, \quad (15)$$

Step 6: Calculated closeness coefficients for each company for each period separately by using following formula.

$$C_i = \frac{d_i^{-}}{d_i^{+} + d_i^{-}} \quad \text{a=1,…,} m \quad (16)$$

Step 7: We consider c_i values as the CFPS for the multivariate analysis.

The calculated value of c_i is indicative of multi dimensional financial performance for each hotel company in our sample. The higher value of c_i indicates higher overall financial performance where as lover value of c_i indicates lover overall financial performance.

3.1.2. Measures of firm-specific and contextual variables

The Firm-specific and contextual Variables considered in this study are firm age, firm size, efficiency, location, ownership structure, affiliation, and intense of firm's promotion and advertising. Following Ben Aissa and Goaied (2016), the number of years since incorporation of the hotel is taken as the age (*AGE*). In line with Chen (2010) the size (*SIZE*) of the hotel is measured as the natural logarithm of year-end total assets. Locations (*CITY, COASTAL, ANCIENT and MULTIPLE*) and affiliation to a group of hotels (*AFFI*) are dummy variables as shown in the Table 3. Institutional ownership (*INST*) and public holding (*PUBLIC*) are representative of ownership structure which have been widely used in the previous studies as mention in the literature section. Following Chen and Lin (2013) the intense of firm's promotion and advertising (*ADVER*) is measured as the selling and marketing expenses scaled by total operating expenses of the hotel.

Efficiency (*Effi)* is measured using the data envelopment analysis (DEA) introduced by Charnes et al. (1978). DEA is a mathematical programming approach that can determine the performance of homogeneous decision making units (DMUs) based on efficiency frontier which is derived taking into account the inputs and outputs. There are several DEA models and out of which CCR model and BCC model have been widely used in the tourism literature (Hwang and Chang, 2003; Sigala, 2004; Barros, 2005; Neves and Lourenco, 2009; Yu and Lee, 2009; Parte-Esteban and Alberca-Oliver, 2015; Kuaratne, Wilson, Mansson, Hoang, & Lee, 2019). These two models can be applied under two different DEA approaches namely input-oriented or output-oriented where if the producers should meet the market demand adjusting inputs freely, the input-oriented approach is more appropriate or otherwise (Hu, Shieh, Huang, & Chiu, 2009). We use input-oriented CCR model to determine the efficiency of Sri Lankan hotels since Sir Lankan hoteliers are required to meet the growing demand since 2008 and typically they need to meet customer demand in the order to improve the financial performance.

Following, Parte-Esteban and Alberca-Oliver (2015)we assume that there are D DMUs that utilize P inputs and produce Q outputs, the calculation of efficiency score under CCR model is depicted in following linear programming problem.

$$E_i = Min\theta i$$

Subject to following constrains:

Table 3: Variable definition and expected signs

Variable	Details	Sign
Endogenous variable		
ROA	Return on Assets (net income/total assets)*100	
ROE	Return on equity (net income/total equity)*100	
CFPS	Comprehensive Financial Performance Score based on Entropy based TOPSIS	
Exogenous variable		
AGE	Number of years in operation since incorporation of the firm	?
SIZE	Natural Logarithm of year-end total assets	?
EFFI	Input-oriented efficiency score based on DEA CCR model	+
CITY	Dummy Variable equals to 1 if the hotel is located in Colombo and 0 otherwise	+
COASTAL	Dummy Variable equals to 1 if the hotel is located in Coastal area and 0 otherwise	+
ANCIENT	Dummy Variable equals to 1 if the hotel is located in ancient cities and 0 otherwise	?
MULTIPLE	Dummy Variable equals to 1 if the hotel is located in multiple areas and 0 otherwise	?
INST	Percentage of shares held by institutional investors	?
PUBLIC	Percentage of shares held by the public	?
ADVER	Selling and marketing expenses scaled by total operating expenses	?
AFFI	Dummy Variable equals to 1 if the hotel belongs to a hotel group and 0 otherwise	?

$$\sum_{j}\lambda_{ij}Q_{kj} \geq Q_{ki} \qquad k,(k=1,2,\ldots,K)$$
$$\theta_i P_{mi} \geq \sum_{j}\lambda_{ij}P_{mj} \qquad m,(m=1,2,\ldots,M) \qquad (17)$$
$$\lambda_{ij} \geq 0 \qquad j,(j=1,2,\ldots..J)$$

E_i denotes the Efficiency score for i, m and k are the number inputs and outputs respectively. λ_{ij} is a vector of weights that is to be determined for each firm in the calculation of efficiency score. Q_{ki} and P_{mi} are the inputs and outputs of observation i, Q_{kj} and P_{mj} are inputs and outputs of observation j. In line with previous studies such as (Ben Aissa and Goaied, 2016; Hu et al., 2009), we used cost of sales, operating expenses and total assets as input, while, total revenue and other income as outputs.

3.2. Sample and Data

Initially, we consider all 39 companies listed under the Hotels and Travels sector in the CSE in Sri Lanka. However, four (04) companies with financial year end 31st December had to be excluded from the sample since the financial statements of those companies for the year 2018 had not been published at the time of data collection. In addition, another six (06) companies were also excluded from the final sample due to unavailability of data for some variables under consideration (Table 1 for additional information). This process ended up with final sample of 29 companies. Our study period was limited to 7 years spanning from 2012 to 2018 due to the fact that the annual reports, the main and only source of financial information in Sri Lanka, for the sample companies are available only from 2012 at the official website of CSE. All the financial data, ownership information, location details and other corporate information were hand-collected with the help research assistants. However, the reliability of the data was assured in the following manner. All four authors re-collected all the data for a sample of 3 randomly selected companies for whole study period and matched against the data collected by research assistants. This procedure resulted in re-collecting all the data for at least 12 companies per year for the entire study period and make sure the same data has been collected by research assistant.

3.3. Multivariate Panel Regression

We use the linear panel regression test in order to identify the influence of firm-specific and contextual variables on the financial performance of corporate hotels in Sri Lanka. The panel regression was performed employing a balance panel of 29 companies over a period of 7 years spanning from 2012 to 2018.

According to Baltagi and Hsiao (as cited in Chen, 2010) panel regression test can overcome several problems associated with longitudinal data which cannot be addressed using cross sectional or pure time series data analysis. Panel regression test allows us to control for unobserved heterogeneity (i.e., omitted variables that are correlated with independent variables) among individual hotels. Moreover, using panel data procedure can reduce the collinearity among independent variables and can specify the time-varying relationship among explanatory and response variables.

We perform pooled ordinary least square, fixed effect (FE) model or random effect (RE) model where appropriate following relevant diagnostics test. The fixed-effect model can control for unobservable time-invariant factors (for example management capabilities, certain business practices, policies, skilled employees, reputation of owners) of individual hotels that are correlated with explanatory variables and hence eliminating the omitted variable biased. Therefore, fixed-effect model estimates unbiased coefficients for the explanatory variables (Stock and Watson, 2003). The F-test results, which is part of the output of STATA command *"xtreg, fe,"* are used to assess the the appropriateness of the FE model over pooled ordinary least square estimation. The RE model is desirable when the unobserved variables within individual hotels are assumed to be uncorrelated or statistically independent with/from explanatory variables (i.e., observed variables). We test[1] the suitability of RE model over pooled ordinary least square estimation employing The Breusch and Pagan Lagrange Multiplier test (1980). Further, the Hausman's Specification test (1978) provides us the guidance to decide between RE model over FE model. The Hausman's test is based on the assumption that there is no correlation between individual effect and regressors and therefore the estimators of FE and RE model $(\beta RE - \beta FE = 0)$ should not differ systematically (Green, 2008). When this assumption is not hold, viz., the rejection of null hypothesis, FE model should be used. The results of all the diagnostic tests for each equation 18-20 are reported at the bottom of each Table 4.

To examine the impact of firm-specific and contextual factors on financial performance of corporate hotels in Sri Lanka, we estimated regression model based on equations 18-20. We run the regression for each of the financial performance measures separately where right hand side (RSH) of the equations remain same while left hand side (LHS) of the equations take different measures of financial performance measures.

$$ROA_{it} = \beta_0 + \beta_1 AGE_{it} + \beta_2 SIZE_{it} + \beta_3 EFFI_{it} + \beta_4 CITY_{it} + \beta_5 COASTAL_{it} + \beta_6 ANCIENT_{it} + \beta_7 MULTIPLE_{it} + \beta_8 INST_{it} + \beta_9 PUBLIC_{it} + \beta_{10} ADVER_{it} + \beta_{11} AFFI_{it} + \mu_i + \varepsilon_{it} \qquad (18)$$

$$ROE_{it} = \beta_0 + \beta_1 AGE_{it} + \beta_2 SIZE_{it} + \beta_3 EFFI_{it} + \beta_4 CITY_{it} + \beta_5 COASTAL_{it} + \beta_6 ANCIENT_{it} + \beta_7 MULTIPLE_{it} + \beta_8 INST_{it} + \beta_9 PUBLIC_{it} + \beta_{10} ADVER_{it} + \beta_{11} AFFI_{it} + \mu_i + \varepsilon_{it} \qquad (19)$$

$$CFPS_{it} = \beta_0 + \beta_1 AGE_{it} + \beta_2 SIZE_{it} + \beta_3 EFFI_{it} + \beta_4 CITY_{it} + \beta_5 COASTAL_{it} + \beta_6 ANCIENT_{it} + \beta_7 MULTIPLE_{it} + \beta_8 INST_{it} + \beta_9 PUBLIC_{it} + \beta_{10} ADVER_{it} + \beta_{11} AFFI_{it} + \mu_i + \varepsilon_{it} \qquad (20)$$

1 We use the STATA command "*xtreg y x1, re xttest0*" (Torres-Reyna, 2007).

Table 4: Regression results of Organization models (Equation 18-20)

Explanatory Variables	*ROA* (18)		*ROE* (19)		*CFPS* (20)	
	(i) Fixed	(ii) FGLS	(iii) Fixed	(iv) FGLS	(v) Fixed	(vi) FGLS
AGE	−0.806***	−0.040	−1.102***	−0.041	−0.019***	−0.000
	(0.000)	(0.194)	(0.001)	(0.184)	(0.001)	(0.624)
SIZE	0.483	−1.255***	1.498	−1.600***	−0.007	−0.025***
	(0.398)	(0.002)	(0.187)	(0.001)	(0.696)	(0.004)
EFFI	7.411***	3.646***	11.765***	7.988***	0.148***	0.143***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.006)	(0.000)
CITY	12.992***	6.691***	13.431	6.119***	0.083	0.049
	(0.002)	(0.000)	(0.104)	(0.000)	(0.572)	(0.137)
COASTAL	-	2.700***	-	3.049***	-	0.053**
		(0.002)		(0.004)		(0.018)
ANCIENT	-	0.777	-	2.621	-	0.017
		(0.489)		(0.250)		(0.630)
MULTIPLE	10.154***	5.312***	17.706***	5.899***	0.088	0.073**
	(0.001)	(0.001)	(0.004)	(0.001)	(0.422)	(0.026)
INST	6.058	0.371	8.726	−1.160	0.287**	0.082
	(0.102)	(0.865)	(0.234)	(0.664)	(0.030)	(0.272)
PUBLIC	7.208	3.966*	20.062*	2.455	−0.004	0.016
	(0.194)	(0.078)	(0.069)	(0.429)	(0.981)	(0.796)
ADVER	−9.267**	−4.998**	−15.123**	−15.19**	−0.083	−0.078
	(0.011)	(0.022)	(0.036)	(0.016)	(0.519)	(0.475)
AFFI	4.944***	1.538*	10.681**	3.012***	0.059	0.040*
	(0.002)	(0.084)	(0.001)	(0.009)	(0.286)	(0.073)
Constant	5.233	27.208***	−19.663	32.795***	0.938**	0.847***
	(0.650)	(0.001)	(0.391)	(0.001)	(0.024)	(0.000)
Observation	203	203	203	203	203	203
R-square	0.34		0.25		0.14	
F-statistics	9.65***				3.00***	
	(0.000)				(0.002)	
Wald- statistics		73.39***		68.22***		40.65***
		(0.000)		(0.000)		(0.000)
F-test (Fixed)	10.28***		5.66**		1.60**	
	(0.000)		(0.000)		(0.037)	
LM Test	119.17***		44.88***		0.11	
	(0.000)		(0.000)		(0.367)	
Hausman Test	29.510***		24.80***		18.04**	
	(0.000)		(0.003)		(0.034)	
Heteroskedasticity	4471.35***		7359.48***		119.95**	
	(0.000)		(0.000)		(0.000)	
Autocorrelation	6.975***		1.870		0.030	
	(0.0134)		(0.182)		(0.864)	

Where AGE_{it} is a number of years in operation since incorporation of the hotel. $SIZE_{it}$ is a size of the hotel measured as the natural logarithm of year-end total assets, $EFFI_{it}$ is efficiency score of the hotel calculated based on input-oriented DEA CCR approach. $CITY_{it}$, $COASTAL_{it}$ and $ANCIENT_{it}$ are dummy variables equal to 1 if the hotel is located in the main commercial city (Colombo), coastal area, and one of the ancient cities (i.e., Anuradhapura or Pollonnaruwa) or 0 otherwise. $MULTIPLE_{it}$ is also a dummy variable that takes 1 if the hotel has multiple establishment located in several geographical regions, $INST_{it}$ and $PUBLIC_{it}$ represent the percentage of shares held by institutional investors and public investors. $ADVER_{it}$ denotes the intense of firm's promotion and advertising and which is measured dividing selling and marketing expenses by total operating cost. $AFFI_{it}$ is a dummy variable which takes 1 if the hotel belongs to a group of hotels ad 0 otherwise.

4. DATA ANALYSIS, RESULTS AND DISCUSSION

4.1. Descriptive Statistics

In Table 5, we report sample descriptive statistics for all variables used in the panel regression analysis. For our analysis, we include 03 variables representing financial performance, 07 firm-specific variables and 04 contextual variables yielding 14 variables in total. *ROA* has a mean of 4.776% and a median of 5.071% indicating low profitability among corporate hotels in Sri Lanka. Nevertheless, *ROA's* of sample hotels vary between −27.301% and 26.300% with a standard deviation of 6.753. This high heterogeneity in *ROA* signifies that some hotels companies have seized the growing opportunity in the tourism industry while the rest of companies has failed to do so. Consistent with *ROA*, mean (median) of *ROE* is 4.085% (5.245%). However, it ranges from −80.978% to 28.590%

Table 5: Descriptive statistics for all variables

Variable	N	Mean	Median	Standard deviation	Min	Max
ROA	203	4.776	5.071	6.753	−27.301	26.300
ROE	203	4.085	5.245	10.933	−80.978	28.590
CFPS	203	0.452	0.457	0.144	0.009	0.961
AGE	203	36.448	37	13.556	16	91
SIZE	203	21.855	21.889	1.270	15.613	24.793
EFFI	203	0.821	0.919	0.239	0.001	1
CITY	203	0.167	0	0.374	0	1
COASTAL	203	0.275	0	0.448	0	1
ANCIENT	203	0.103	0	0.305	0	1
MULTIPLE	203	0.152	0	0.360	0	1
INST	203	0.834	0.872	0.139	0.204	0.996
PUBLIC	203	0.365	0.236	0.182	0.069	0.999
ADVER	203	0.104	0.085	0.087	0.120	0.764
AFFI	203	0.507	1	0.501	0	1

with relatively higher standards deviation of 10.933. The lowest *ROE* (i.e., 80.987%) belongs to a company included in our sample with high gearing ratio and comparatively higher negative income. *CFPS* is a score (i.e., entropy based TOPSIS score) on a range 0–1 has a mean (median) of 0.452 (0.457). The *CFPS* closer to1 infers the higher overall financial performance of hotel and vice versa. The higher variability of financial performance among corporate hotels in Sri Lanka is further evidenced by minimum and maximum (0.009 and 0.961) values of *CFPS* with standard deviation 0f 0.144.

4.2. Correlation Analysis

Table 2 presents the Spearman's correlation coefficient for continuous variables. The *EFFI* is positively and significantly correlated with two of our financial performance measures (i.e., *ROA* and *ROE*), indicating that managerial efficiency can enhance the profitability of hotel companies. The *EFFI* is also has a significant relationship with *CPFS* suggesting that overall financial performance are also influenced by managerial efficiency. The hotels size (*SIZE*) is negatively correlated with all three financial performance measures indicating that older hotel are less profitable. Intense of hotels' promotion and advertising (ADVER) is negatively and significantly associated with ROA and ROE.

4.3. Empirical Results and Discussion

Table 4 presents the results from estimating equations (18) to (19). The equations (18) through (20) estimate the impact of firm-specific and contextual variables on financial performance, which has three different measures such as *ROA*, *ROE* and *CFPS*. We estimate FE model for all equations (18-20) since the results of diagnostic tests are in favor of FE models (see column (i), (iii), and (v)). In addition, for robustness, we estimate FGLS models parallel to FE models and the results of which are presented in column (ii), (iv), and (v).

In column (i) of Table 4, Our results indicate that six out of eleven firm-specific and contextual variables (*AGE, EFFI, CITY, MULTIPLE, ADVER, and AFFI)* are highly significant in equation (18). The negative coefficient of *Age* (= −0.806) indicates that older hotels are less profitable compared to the newly established hotels. This negative relationship between hotels' age and financial performance is consistent across all FE model based on equations (18-20), confirming that the hotels' age has an inverse relation with financial performance. Our results regarding the age of hotels confirm the findings of previous studies that the hotels' profitability reached to its optimal at a certain age and start to decline afterward (Ben Aissa and Goaied, 2016), aging of the hotels may increase the likelihood of the potential failures and hence age has negative impact on financial performance (Baum and Mezias, 1992). The intense of hotels' promotion and advertising (*ADVER*) is also negatively affect financial performance (β_{10}=−9.267, *P*-value=0.011) and seems to oppose our prediction. However, the relationship appears in between *ADVER* and *ROA* can be justified with the argument that the price of service of heavily advertised hotels may be high as the promotion and advertising cost reflected in the prices and thereby having a more concentrated market (Orenstein, 1976). The positive sign of the coefficient of *EFFI* (β_3=7.411) in equation (18) suggests that the managerial efficiency of the hotels could be an important profitability (*ROA*) driver and is consistent with extant literature (Ben Aissa and Goaied, 2016). With regards to affiliation to a group of hotels (*AFFI*), we find that the profitability (*ROA*) of hotels belongs to a group is higher than that of for individual hotels, supporting the idea that the group affiliated firms have competitive advantage of easy access to capital using internal capital market so that they can successfully translate the risk into profits (Bhaumik et al., 2017).

Regarding contextual variables, the results in the column (i) in Table 4 show a positive and significant association between *CITY* and *ROA*, which implies that the profitability of city hotels is relatively higher than the profitability of other hotels. The results of both the FGLS models estimated parallel to the FE models based on equation (18) and (19) also show the coefficient of *CITY* variable is positive and highly significant (see column (ii) for=6.691, P-value=0.000 and see column (iv) for=6.119, P-value=0.000). Conversely, we did not find a significant relationship between *CITY* and overall financial performance (*CFPS*) (see column v and vi), indicating that there is no significant difference in overall financial performance between city hotels and other hotels. However, our findings with regards to City and ROA are aligned with the finding of Zhang and Enemark (2016). Moreover, our findings correspond to the higher occupancy rate (i.e., over 75% of the occupancy rate throughout the last seven years) reported in the Colombo city (SLTAD, 2017). In addition to the *CITY* variable, the positive coefficient of *MULTIPLE* variable provides us new

evidence that the hotels with many establishments that are located in different regions (i.e., multiple destinations) are more profitable than stand-alone hotels. Interestingly, the positive and significant relationship between *MULTIPLE* and financial performance (*ROA* and *ROE*) continue to hold in all the models estimated based on equation (18) and (19). We create this variable (i.e., *MULTIPLE*), observing the web sites and annual reports of the hotels, to identify the effect of having multiple destinations on profitability. Further, we assume that hotels with multiple destinations can attract more customers (i.e., foreign and local tourist) than the hotels restricted to a single location. Although, the results support for our argument the same should be interpreted with caution since we are not sure about whether the number of destinations for each hotel is consistent throughout our study period. The inclusion of variability in the number of destinations over the years for each hotel could confound our interpretation.

Turning to the results of estimating equation (19), we find that *EFFI*, *MULTIPLE*, and *AFFI* significantly and positively associated with *ROE* in the FE model. These results are consistent with the results we obtain from the FE models based on equation (17), where the financial performance measure (dependent variable) is *ROA*. Furthermore, the significant negative relationship between *AGE, ADVER* and *ROE* also exhibit in between *ROA* and aforementioned explanatory variables. Therefore, our interpretation for the relationship between *ROA* and *EFFI*, *MULTIPLE*, *AFFI AGE,* and ADVER could also be applicable to the *ROE*. Nevertheless, we did not find any significant relationship between *CITY* and *ROE* in FE model based equation (19). However, the robust results, after adjusting for Heteroskedasticity, obtained from FGLS model based on equation (19) are slightly different from the results of FE model. As shown in Table 4 column (iv), the estimates for *SIZE, CITY* and *COASTAL* are significant, where the negative coefficient of *SIZE* suggest that the larger firms have lower return on equity while the positive coefficients of *CITY* and *COASTAL* indicate that the city hotels and hotels located in coastal area are more profitable. The results also indicate that the *AGE* variable is no longer significant when the standard errors are adjusted for Heteroskedasticity (see column [iv]).

With regards to overall financial performance, we estimate both the FE model and FGLS model based on equation (20) to examine the impact of firm-specific and contextual variable on overall financial performance as measured *CFPS*. The results of regressions are presented in Table 4 column (v) and (vi). The results indicate that only three variables (*AGE, EFFI,* and *INST*) significantly impact on *CFPS* in the fixed affect models (See column [v]) and only five variables (*SIZE, EFFI, COASTAL, MULTIPLE* and *AFFI*) are significant in FLGS model (see column [vi]). Consequently, it can be noticed that unlike the impact of firm-specific and contextual variables on *ROA* and *ROE,* the impact of these variable on *CFPS* is relatively low. Moreover, the low R-square value (R^2=0.14) suggests that only 14% of variation in overall financial performance (i.e., *CFPS*) is explained by the selected firm-specific and contextual variables. In contrast, relatively high R-square values[2] (R^2=0.34 and R^2=0.25) obtained from model (18) and model (19) indicate that 34% of variation in *ROA* and 25% of variation in *ROE* are explained by these firm-specific and contextual variables.

The results reveal that the firm-specific and contextual variables have relatively high impact (either negative or positive) on *ROA* and *ROE* compared to *CFPS*. This means that hotels' internal factors and contextual factors are closely related to the profitability of Sri Lankan hotels. These findings have important implication for the Sri Lankan hoteliers that there is no guarantee of higher financial performance even during an economic upsurge since financial performance (especially short term) is driven by various internal and contextual factors such as managerial efficiency, the scale of the business, location, and affiliation to a wider business network.

5. CONCLUSION

Motivated by recent tourism industry boom experienced in one of the top destinations in South Asia, Sri Lanka, this research adds to extant tourism literature by making a comprehensive analysis of determinants of corporate hotels' performance and providing substantial evidence on it. Given the outcome, the main objective of this study was to empirically analyze macroeconomic, firm-specific and contextual determinants of corporate hotels' performance in Sri Lanka.

More specifically, by using a sample of 29 hotel companies over a period of 7 years, we examine the impact of firm-specific and contextual factors (age, size, efficiency, location, ownership structure, affiliation, intense of firms' promotion and advertising) on the corporate hotels performance (ROA, ROE and CFPS) in Sri Lanka. Furthermore, to identify the explanatory power of each firm-specific and contextual variable (explanatory variables), we employed multiple regression based on FE models. In addition to multiple regression, we used the FLGS model to mitigate the heteroskedasticity and serial correlation problems. The results show that the hotels' profitability highly depends on managerial efficiency, location, geographical diversification, the connection with a wider business network. However, we did not find a significant relationship between ownership structure and corporate hotels performance. Finally, while our results indicate that the firm-specific and contextual factors can explain 34% of variation in ROA and 25% variation in ROE, the large proportion of the profitability of Sri Lankan corporate hotels in still unexplained and influenced by some other factors that are not included in this study. This provides an opportunity for future studies to further examine the determinants of hotels performance by including various internal and external factors.

Our findings provide important implications for hotel owners, managers, policymakers, government and private organization alike. For the government, it is utmost important to sustain current double-digits growth in international tourists' arrivals in order to achieve the set target of positioning Sri Lanka as Asia's leading

2 R-square values are considerably higher than the reported R-square value when we use STATA routine "areg" or "regress" (i.e., 74% for ROA, 61% for ROE, and 29% for CFPS)

island destination.

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