Working Capital Management and Firm Performance in the Hospitality and Tourism Industry

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Abstract

The aim of this study is to provide empirical evidence concerning the effects of working capital on firm performance in the hospitality and tourism industry. We identify an inverted U-shaped relationship between working capital and firm performance. More specifically, the U-shaped relationship exists for accommodation, food and travel firms. In contrast, a positive linear relationship is valid for sport firms while changes in working capital have no effect on performance for gambling firms. To the best of our knowledge, this study is the first empirical research study to extend cross-country analysis in respect of sub-hospitality and tourism industries to a worldwide context. The findings suggest that hospitality and tourism managers should consider the diversity of relationships between working capital and firm performance in sub-hospitality and tourism industries when deciding on an appropriate strategy for working capital management.

Keywords: Working capital management, performance, hospitality and tourism industry, panel data analysis.

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1. Introduction

The hospitality and tourism industry is considered to be vulnerable to external circumstances such as unexpected economic conditions, climate change and financial crises. Seasonality poses a preeminent challenge to the hospitality and tourism industry as it may result in fluctuations to profitability. Therefore, it can be asserted that while working capital management is important for all firms, it is especially important for those in the hospitality and tourism industry.

The hospitality and tourism industry has different structural characteristics to those of other industries. These characteristics can be viewed as the existence of a robust level of competition, capital intensity, high risk and high leverage (Singal, 2015). Easy entry to the sector, high price competition, a high level of fixed costs and substitutable services make the hospitality and tourism industry more competitive than other industries. Due to its extensive holdings of real estate, land, building and equipment, hospitality and tourism is a capital-intensive industry. These fixed assets can be used as collateral for borrowing and this in turn can lead to high level liabilities in the hospitality and tourism firms' capital structure, together with a high leverage ratio. All these structural characteristics make the hospitality and tourism industry and its sub-industries different to other industries.

Working capital management is an important component of a firm's financial strategy and refers to the financing, investment and control of current assets and current liabilities within specific policy guidelines. Efficient working capital management occurs when the management team determine strategic plans and decisions with the aim of efficiently managing short-term assets and liabilities. The objective thereby is to ensure that managers can finance short-term obligations while simultaneously avoiding over investment in current assets (Mun and Jang, 2015). Further, deficiencies in working capital management may culminate in the failure of business operations (Morshed, 2020). Several researchers (Boisjoly et al., 2020; Le, 2019; Aktas et al., 2015; Kieschnick et al., 2013; Singhania and Mehta, 2017) agree that efficient working capital management is vital because it positively affects the firm's profitability, value, competitive advantage, stock performance, market rating and shareholder's value. In addition,

efficient working capital is one of the value drivers for firms and one of the key pre-requisites to the success of firms overall (Wasiuzzaman, 2015a).

In our sample, the hospitality and tourism industry's working capital level, is 4.57% of sales. When sub-industries are considered, working capital levels are: 3.29% for accommodation, 0.79% for food, 7.10% for gambling, 5.14% for sports and 13.19% for the travel industry. These ratios demonstrate the heterogeneity in working capital level across sub-hospitality and tourism industries, highlighting the need to examine these industries further. It can be readily asserted that working capital management has received less attention in the existing literature than might be expected. A desire to reduce this deficiency and to provide relevant and useful evidence on this topic motivated us to carry out this study.

The aim of this research is to provide empirical evidence relating to the effects of working capital on firms' performance in the hospitality and tourism industry. More specifically, the aims of this study are: 1) to explore the effect of working capital on firms' profitability, 2) to investigate the U-shaped relationship between working capital and firm performance across sub-industries. To attain these aims, we examine the relationship between working capital and firm performance, and the nature of this relationship in the hospitality and tourism industry as well as in the sub-hospitality and tourism industries, namely accommodation, food, gambling, sports and travel. We identify a U-shaped relationship between working capital and firm performance. However, this relationship is not consistent across sub-industries.

Our study constitutes a significant contribution and adds value to the existing literature in the following four distinct ways. Firstly, to the best of our knowledge, this study is the first empirical research study to extend cross-country analysis in respect of specific sub-hospitality and tourism industries to the global level. Earlier studies focus on just one specific country or a small number of specified countries. Secondly, from the perspective of industry analyses, our study not only encompasses the hospitality and tourism industry in 33 countries, but also embraces five sub-industries within the hospitality and tourism industry of these 33 countries. In contrast, most of the previous studies focus only on firms located in one sector without reference to its sub-industries. Thirdly, in respect of the dataset used herein, our study analyses a large unique data set including 1156 firms' data taken from 33 countries around the world, spanning the period from 2004 to 2019. Unlike previous studies, this study includes a higher number of firms' data, over a longer period of time and using the latest available data. Fourthly, our study reveals three different relationships between working capital and firm performance, namely a non-linear (U-shaped) relationship, a positive linear relationship or no relationship at all. More specifically, the U-shaped relationship exists for accommodation, food and travel firms, and a positive linear relationship exists for sport firms. However, changes in working capital have no effect on profitability for gambling firms. These three relationships are demonstrated within the framework of our study. In contrast, previous studies identify either an inverted U-shaped relationship or a negative linear relationship in their analyses. Significantly,

our study contributes to current literature by investigating three diverse relationships between working capital and firm performance across sub-hospitality and tourism industries.

The remainder of this study is structured as follows. The second section provides a discussion on existing theories and the literature review. The third section contains the data and methodology employed in the study, and details the two-step system GMM approach. The fourth section concerns the empirical findings while the fifth section presents robustness checks. The sixth section provides a discussion, highlighting the implications and pointing out the limitations of the study. The final section presents the conclusion.

2. Theories and Literature review

2.1. Theories

The academic literature regarding cash holdings can be traced back to Keynes (1936), who reveals that there are three motivations for firms to hold cash. These are the transaction cost motive, the precautionary motive and the speculative motive. Firms need cash to carry out their normal activities, to meet unforeseen events and to take advantage of profitable future investment opportunities (Martinez-Sola et al., 2013). According to these motivations, cash is beneficial for firms and works as a buffer against the disadvantage of a liquidity shortage (Mun and Jang, 2015). In their study, Chang et al. (2017) indicate that the literature provides four motivations for firms to hold cash. These are the transaction cost motive, the precautionary motive, the agency motive and the tax motive. Furthermore, they suggest that in theory there may be a point at which the level of cash held achieves an exact offset between the benefits and the costs.

Another important theory in the finance thought is the trade-off theory developed by Miller and Orr (1966). The trade-off theory maintains that there exists an optimum cash level that balances cost and benefits. Miller and Orr (1966), assume a ‘two-asset’ setting with one asset being the firm's cash balance and the other being a portfolio of liquid assets. These liquid assets have marginal yield and per transfer between the two-asset has marginal cost. In addition, Miller and Orr (1966) state that transfers may take place at any time. Therefore, firms may determine the optimal level of cash holdings by trading off between the costs and benefits of having liquid assets. A recent study (Bahreini and Adaoglu, 2018) claims that the trade-off theory suggests firms should determine a certain level of debt ratio, and any increase above this level may lead to financial problems.

The pecking order theory developed by Myers and Majluf (1984) is critical of the trade-off theory. The pecking order theory makes no assumptions about an optimal level of cash holdings. The theory argues that the tendency in a firm is to depend on internal sources of funds, and a preference for debt over equity in the event that external financing is needed. The pecking

order theory further suggests that firms should avoid issuing equity as high issuing costs make equity very expensive. This theory claims that holding cash has value and enables the firm to avoid external financing. Opler et al. (1999) state that the pecking order theory is consistent with shareholder wealth maximisation. According to Bahreini and Adaoglu (2018) the pecking order theory suggests that in order to fund new investment projects, firms should first use internal financing, and only where internal financing is insufficient should they then use external financing.

2.2. Literature review

Several earlier studies indicate issues relating to aggressive or excessive levels of working capital. An aggressive policy may increase profitability since less cash is tied up in current assets. However, aggressive working capital policy might also increase firm risk since the possibility of cash shortages or running out of inventory arises (Aktas et al., 2015). In a wide-ranging examination of seven U.S. industrial sectors, Jose et al. (1996) establish that aggressive liquidity management is associated with higher profitability in several but not all industries. In addition, aggressive working capital policy is referred to as a high risk and return policy (Altaf, 2020). In contrast, an excessive policy reduces the risk of financial distress or manufacturing problems but does so at the expense of decreasing profitability. Excessive working capital can be a risky policy meaning that a firm likely undergoes financial difficulties and even bankruptcy. This is due to the fact that investment in working capital comprises the amount of money tied up, which might otherwise have been invested in profitable opportunities (Banos-Caballero et al., 2012; Afrifa, 2016).

Given the costs and benefits associated with both aggressive and excessive working capital management policies, there might conceivably be an optimal level between working capital and firm performance (Afrifa, 2016). An optimal working capital level balances costs and benefits and maximises profitability (Banos-Caballero et al., 2012). According to Mun and Jang (2015), firms seeking to increase profitability could either attempt to operate efficiently, or alternatively obtain and maintain optimal working capital management. Firms with low working capital are expected to improve their performance by investing in working capital up to a certain level. Any movement above or below this level, would lead to a diminution of performance (Afrifa, 2016). More specifically, Aktas et al. (2015) demonstrate that the optimal level of working capital does in fact exist, and that it is attainable when firms reduce non-requisite working capital or increase their investment in working capital for firms with low working capital.

Some of the previous studies in this field demonstrate a negative linear relationship between investment in working capital and firm performance. For example, Deloof (2003)

examines large Belgian firms and identifies a significant negative linear relationship between working capital and operating performance. This suggests that a reduction of working capital investment is likely to lead to higher profits. García-Teruel and Martínez-Solano (2007) evaluate Spanish SMEs profitability and reveal a negative relationship between profitability and working capital management. In addition, Wasiuzzaman's (2015b) study explores the negative relationship between working capital and the profitability of manufacturing firms in Malaysia. In his study, Le (2019) examines a sample of firms in Vietnam and observes a significantly negative relationship between net working capital and firm value, profitability and risk. Furthermore, by examining 28 European Union (EU) listed firms, Akgun and Karatas (2020) provide empirical evidence of a negative relationship between gross working capital and firms performance during the 2008 financial crisis. All of the above mentioned studies identify a negative linear relationship, suggesting that lower investment in working capital would result in higher profitability.

A growing number of empirical studies agree that an inverted U-shaped (concave) relationship between working capital and profitability does exist. For example, Singhania and Mehta (2017) investigate the effect of working capital on the profitability of non-financial firms and state that there is a non-linear relationship. In their analysis, Mun and Jang (2015) suggest a significant inverted U-shaped relationship which points to the existence of an optimal working capital level. In empirical terms, research shows (Altaf 2020; Banos-Caballero et al., 2016; Afrifa, 2016) that an inverted U-shaped relationship exists. Furthermore, by examining Indian hospitality firms, Altaf (2020) indicates that any deviation from the optimal break-even point would have a negative impact on performance. By investigating small Japanese businesses, Tsuruta (2018) states that there is an inverse U-shaped relationship between working capital and firm performance in year t + 1. In contrast, the relationship is positive over longer periods. Further, Boțoc and Anton (2017) demonstrate in their study an inverted U-shaped relationship between working capital level and firm profitability.

In contrast to our study, earlier literature focuses on only one specific country or a small number of countries. The research output from Mun and Jang (2015), Jose et al. (1996) and Dogru and Sirakaya-Turk (2017) analyses data for U.S. firms only. Similarly, García-Teruel and Martínez-Solano (2007) and Banos-Caballero et al. (2012) focus only on Spain, and Deloof (2003) researches Belgian firms only. By comparison, Al-Najjar (2014) analyses five Middle Eastern countries and Singhania and Mehta (2017) in their research investigate 14 emerging economies in Asia. In addition, most studies to date focus on firms located in one industry without reference to sub-industries. For example, Mun and Jang (2015) examine only restaurant firms while Dogru and Sirakaya-Turk (2017), Aissa and Goaied (2016) and Menicucci (2018) use data only from hotel firms. Similarly, Seo (2018) focuses on casino firms only. Further, some of the earlier research studies use limited samples. For instance, Dogru and Sirakaya-Turk (2017) use data from 41 hotel firms, Mun and Jang (2015) use financial data from 298 restaurant firms, and Al-Najjar (2014) uses data from 123 tourism firms. In addition, several of these

earlier studies analyse over a shorter time period than our own study. For example, Banos-Caballero et al. (2012) cover the period 2002-2007, Singhania and Mehta (2017) focus on the period between 2004-2014, and García-Teruel and Martínez-Solano (2007) examine the period between 1996-2002.

3. Data and Methodology

Our study uses firm-level financial data pertaining to the hospitality and tourism industry from the Bureau van Dijk Osiris database, and macro-level data from IMF Financial Statistics and the World Tourism Organization. The Bureau van Dijk Osiris dataset contains firm-level financial variables with a time frame of up to twenty-six years in different production and service firms, including the hospitality and tourism industry. This dataset contains 2696 hospitality and tourism firms from 109 countries. Banos-Caballero et al. (2012), Al-Najjar (2014) and Mun and Jang (2015) state that there should be a sufficient number of observations to run panel data regression. Therefore, we firstly excluded the firms that have no observation for dependent variables or independent variables. Secondly, we removed the firms if a country contains only a small number of hospitality and tourism firms to reduce country-level bias risk. In total, we dropped 1540 firms from 76 countries. In addition, we selected the time period from 2004 to 2019 as insufficient data existed prior to this period. It should be pointed out that a sufficient number of observations is necessary to test second-order correlation in the two-step system GMM estimation (Banos-Caballero et al., 2012). Consequently, the sample for panel data analysis in this study consists of 1156 firms from 33 countries.

Table 1 displays the number of hospitality and tourism firms in selected industries. We used NACE Rev. 2, which is one of the global classifications of economic activities. The hospitality and tourism firms are classified into five sub-industries namely accommodation, food, gambling, sports and travel. We selected hospitality and tourism firms with five codes (55, 56, 92, 93 and 79). These two-digit NACE Rev. 2 codes cover all hospitality and tourism firms. The NACE Rev. 2 classification is similarly used by Ooi et al. (2015) for these five industries. Additionally, Table 1A which is presented in the Appendix, displays the number of firm - year observations in each selected country.

Table 1. Industry Classification of the Firms

Industry	Explanation and NACE Rev. 2 codes*	Number of Firms
Accommodation	Hotels, motels and similar accommodation (55)	400
Food	Food & beverage services (56)	286
Gambling	Gambling & betting activities (92)	26
Sports	Sports & entertainment activities (93)	258
Travel	Travel agency & tour operations related activities (79)	186
	TOTAL	1156

**Notes: NACE Rev. 2 codes are shown in parenthesis.*

This study uses firm performance as the dependent variable, and firm- and macro-level independent variables. Firm performance can be measured by Return on Assets *(ROA)*, Return on Equity *(ROE)*, net profit or other performance indicators. Estimation using financial ratios is a superior method for firm performance analysis if there are multiple firms. *ROA* is widely used as a firm performance indicator in hospitality and tourism studies (Kim and Ayoun, 2005; Mun and Jang, 2015; Menicucci, 2018). Furthermore, *ROA* is a more appropriate measure for financial performance since it captures both profitability and assets productivity. Hence, we use *ROA* as the dependent variable. In respect of the robustness check, we selected *ROE* as the dependent variable and compared the consistency of the results with *ROA*. Yoon and Jang (2005) selected *ROE*, and Chen (2010) and Al-Najjar (2014) selected both *ROA* and *ROE* as firm performance measures.

Furthermore, we followed in the footsteps of studies by Chen et al. (2013), Mun and Jang (2015) and Li et al. (2019) by selecting working capital ratio as a major indicator for *ROA*. In addition, we checked the consistency of the results with *ROE* in the robustness checks section. The independent variable in the analysis is working capital, and this variable can be measured with working capital ratio (*WC*) or cash convention cycle (*CCC*). However, *CCC* possesses some limitations. Mun and Jang (2015) strongly emphasise the point that the *CCC* takes into account only the operational side of the firm and does not consider financial aspects. Indeed, the *CCC* comprises only inventories, accounts receivables and accounts payables. It does not include cash. In contrast, working capital sheds light on a firm's financial aspects as well as its operational side by comprising all components of current assets and current liabilities. More specifically, working capital measurement encompasses current assets and may include stocks of raw materials, work-in-progress and finished goods, debtors, short-term investments and cash. Furthermore, working capital covers current liabilities including trade creditors, overdrafts and short-term loans. It can be stated that the scope of working capital is wider than that of the *CCC*. Kieschnick et al. (2013) support this view and in their study, they

indicate that the *CCC* could be the earliest integrated form of working capital. In addition, they state that cash conversion is about the management of account receivables, the management of inventories and the use of trade credits; it is not about cash management. Furthermore, Boțoc and Anton (2017) assert that those studies which had made extensive use of *CCC* and its components to examine the impact of working capital on firms' profitability, could not capture the amount of cash included within the operating cycle. As a result, we used working capital ratio (*WC*) and square of working capital ratio (WC^2) as independent variables. *WC* is determined by the difference between current assets and current liabilities relative to total assets.

Figure 1 shows *ROA* versus *WC* and WC^2 using mean values for all the hospitality and tourism firms in the current sample. A positive relationship is observed between *ROA* and *WC*, and it appears that the relationship between *ROA* and WC^2 might be negative. These relationships should be further investigated with the panel data regression approach.

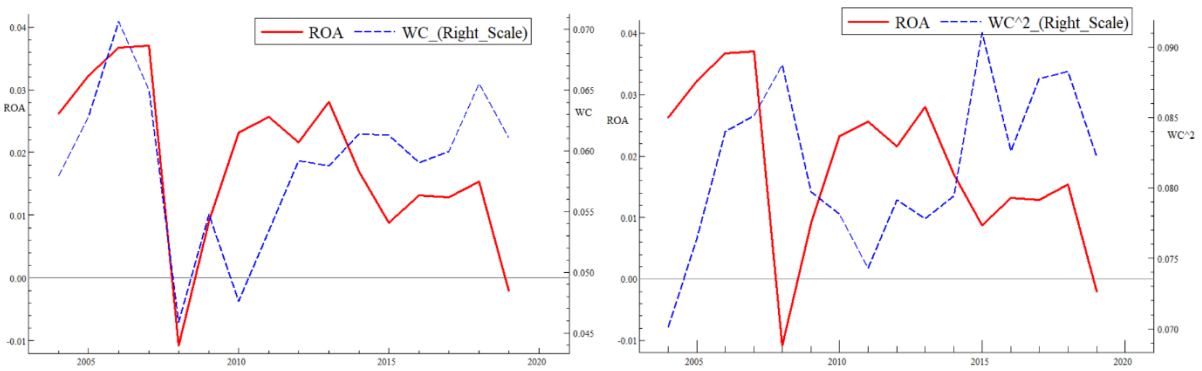

***Figure 1**: ROA* versus *WC* and WC^2

For firm-level control variables, we used cash (*CASH*), firm's debt (*DEBT*), capital expenditure (*CAP*), sales (*SALES*), and size (*SIZE*). These financial variables are widely used in tourism studies as the main control variables for firm performance (Yoon and Jang, 2005; Chen, 2010; Agiomirgianakis and Magoutas, 2012; Al-Najjar, 2014; Mun and Jang, 2015; Lado-Sestayo et al. 2016; Sharma et al. 2016). *CASH* is measured by cash and cash equivalent relative to the firms' current assets. The relationship between cash holdings and firm value is a controversial theme within the existing research literature. Fresard (2010) states that cash policy is an integral component of the firm's strategic dimension and also that cash holdings strategically impact product market outcomes. Those firms holding large cash reserves increase their share in the market to a greater degree than their sectoral competitors. Al-Najjar (2014) uses cash as one of the firm-level control variables to assess the impact on the profitability of

377 tourism firms in five Middle East countries, and indicates that cash positively affects the performance of tourism firms. In contrast, Brush et al. (2000) state that cash usage might negatively affect firm performance due to unprofitable investment in the short-term. However, a decrease in cash level might positively affect the performance of tourism firms, if cash is used for short-term profitable investment. Furthermore, a higher cash level can decrease profit from interest, and a negative relationship between cash level and the profitability of tourism firms is observed. As a result, evidence of cash might be positive or negative according to the cash allocation of the firms.

DEBT is measured by loans plus creditors relative to its total assets. Several studies test the impact of financial debt (leverage) on the profitability of tourism firms. Yoon and Jang (2005) survey 62 restaurant firms in the U.S. between 1998-2003. Their hypothesis states that the relationship between financial leverage and profitability is negative. Their findings, however, disprove this hypothesis and conclude that the relationship is positive. Agiomirgianakis and Magoutas (2012) examine 134 Greek hotels between 2006-2010. They conclude that leverage is negatively correlated with the hotel firm's profitability while inventories have no influence on profitability. In their study, Lado-Sestayo et al. (2016) use debt as a firm-level control variable on the impact of profitability in the Spanish hotel accommodation industry. They state that debt negatively affects profitability. The negative impact of debt on the financial performance of the tourism firms might be due to time lags. Campello (2006) investigates the impact of *DEBT* on firm performance with lags of *DEBT*. He suggests that *DEBT* should be used with lags since it takes time to affect firm performance. In addition, David et al. (2008) offer evidence that lags of *DEBT* provide significant and robust results. Song et al. (2017) test the impact of leverage on the performance of restaurant firms with one to three lags, and they observe that three lags (t-3) of leverage is a significant variable for the food industry. In our study, we selected the lag of *DEBT*, and expected a positive sign between this variable and firm performance.

CAP is measured by tangible fixed assets relative to its total assets. Capital expenditure is one of the strategic variables affecting firm performance in the hospitality and tourism industry. Sanjeev (2007) employs fixed assets as an efficiency input for hotel and restaurant firms in India. Sharm et al. (2016) examine the impact of capital and labour on gross output in accommodation, food, amusement, gaming, recreation and other service industries. They conclude that capital is a significant factor in the gross output of tourism firms. Furthermore, Campello (2006) suggests using the lag of *CAP* on firm performance since fixed assets usually affect firm performance in subsequent years. In response, we selected the lag of *CAP*, and expected to see a positive sign.

SALES is measured by sales growth ($Sales_t - Sales_{t-1} / Sales_{t-1}$). *SALES* positively correlates with profitability, and indicates an increase in the economic health of tourism firms (Sandvik et al., 2014). In their study, Mun and Jang (2015) use *SALES* as a firm-level control

variable, and state that *SALES* positively affects the profitability of restaurant firms. In our study, we expected a positive sign between *SALES* and firm performance.

In line with research from Agiomirgianakis and Magoutas (2012), Chen et al. (2013), Al-Najjar (2014) and Menicucci (2018), *SIZE* is computed by the natural logarithm of total assets. The effect of size on tourism firms' financial performance is the focal point of investigation in a number of studies. Chen et al. (2013) argue that a hotel's size is positively correlated to a hotel's profitability, operating efficiency, and growth. It is necessary to point out here that the research findings delineated by Chen et al. (2013) are consistent with research from Menicucci (2018) and Agiomirgianakis and Magoutas (2012) who also observe that firm size is positively correlated with its profitability. Further, Hsu and Jang (2009) state that firm size positively affects restaurant firms in the U.S. In contrast, Aissa and Goaired (2016) claim that size reduces the profitability of Tunisian hotels. These contradictory findings are also supported by Chen and Chang (2012) and Sun and Kim (2013) as these authors maintain that size is an insignificant variable for hospitality and tourism firms. To conclude, the expected sign of size can be either positive or negative.

Next, we decided to use gross domestic product growth (GDP) as the macro-level independent variable which affects hospitality and tourism firms' performance. Our sample consists of hospitality and tourism firms which attract both domestic and international customers, and GDP is a better measure than any other macro-level variable. Chen (2010), Al-Najjar (2014) and Mun and Jang (2015) use *GDP* as a macro-level control variable in firm-level analysis in tourism firms. They suggest that *GDP* is a significant factor and that it has a strong effect on tourism firms' performance. Further, Kim et al. (2006) investigate the effect of *GDP* on tourism expansion in Taiwan at the macro-level, and they claim that there is a two-sided causality between *GDP* and tourism expansion. Thus, in our study we expected to observe a positive sign for the relationship between *GDP* and firm performance. Furthermore, we included a dummy variable for the 2008 crisis period in the panel data regression to represent the impact of the crisis period on the performance of the hospitality and tourism firms. The expected sign is negative as the return of hospitality and tourism firms usually diminishes during crisis periods.

With respect to one of the robustness checks, we replaced *GDP* with international tourism expenditure growth (*ITE)*. The data source for this variable is the World Tourism Organization. Al-Najjar (2014) selects *ITE* as a macro variable for the analysis of the tourism industry, and states that *ITE* positively affects the financial performance of tourism firms. As in the case of *GDP*, we expected to observe a positive relationship between *ITE* and firm performance. Table 2 shows expected signs of firm- and macro-level, and states the economy variables in the panel data estimation.

Table 2. Expected Sign of the Variables

	Expected Sign
WC_t	+
WC_t^2	-
$CASH_t$	+/-
$DEBT_{t-1}$	+
CAP_{t-1}	+
$SALES_t$	+
$SIZE_t$	+/-
GDP_t	+
ITE_t	+
Crisis	-

Table 3 - Panel A contains a summary of statistics pertaining to the dependent and independent variables, and Table 3 - Panel B presents correlation coefficients. *ROA* is positively correlated with *WC*, *CASH*, *SALES*, *SIZE*, *GDP*, and *ITE*. It is negatively correlated with *DEBT* and *CAP*. This is a good signal for the impact of *DEBT* and *CAP* with delay, and we decided to use the lag of these variables in the estimations. The correlation between independent variables is small (less than 80%), and this indicates that there should be no multicollinearity problem in the two-step system GMM estimations.

In addition, Table 2A in the Appendix shows mean, median and standard deviations of the firm-level variables in the industries. Summary statistics values are different in each of these industries, and this demonstrates that we should investigate the impact of *WC* for each of these industries separately.

Table 3. Descriptive Statistics

Panel A: Summary Statistics					
	Mean	Median	Std. Dev.	Min.	Max.
ROA	0.018	0.034	0.190	-0.999	0.999
ROE	0.062	0.075	0.300	-0.999	0.998
WC	0.058	0.033	0.279	-0.999	1.000
CASH	0.448	0.435	0.282	0	1.000

DEBT	0.148	0.099	0.156	0	0.999
CAP	0.430	0.429	0.297	0	0.999
SALES	0.195	0.051	1.029	-1.970	22.223
SIZE	14.036	14.036	2.976	1.033	25.484
GDP	0.033	0.028	0.034	-0.073	0.145
ITE	0.079	0.076	0.140	-0.520	1.612

Panel B: Correlations

	ROA	*ROE*	*WC*	*CASH*	*DEBT*	*CAP*	*SALES*	*SIZE*	*GDP*	*ITE*
ROA	1									
ROE	0.810	1								
WC	0.329	0.182	1							
CASH	0.140	0.094	0.236	1						
DEBT	-0.282	-0.112	-0.439	-0.233	1					
CAP	-0.033	-0.088	-0.390	-0.067	-0.188	1				
SALES	0.020	0.027	0.031	-0.010	0.001	-0.041	1			
SIZE	0.180	0.117	0.059	0.105	-0.066	-0.004	-0.089	1		
GDP	0.055	0.037	0.039	-0.095	0.029	0.022	0.051	0.057	1	
ITE	0.039	0.029	0.009	-0.064	-0.010	0.032	0.045	0.035	0.033	1

***Notes**: Panel A displays descriptive statistics, Panel B presents panel data correlations.*

In our study, we used the two-step system GMM approach and this method requires the use of stationary data. We checked the stationary properties of the series using ADF-Fisher and PP-Fisher type panel unit root tests developed by Maddala and Wu (1999). Firstly, these panel data tests take the p-values of individual firm's unit root statistics, these statistics are then combined with panel statistics. The Schwarz information criterion is used for the number of lags in these tests. We checked panel data stationary of the series excluding firm size using ADF-Fisher and PP-Fisher type tests with a constant, and a constant and trend. All the panel series are stationary with at least two tests at the 1% significance level. Thus, the system GMM estimate can be applied with these dependent and independent variables.

Following this process, we estimated the impact of working capital on firm performance using the panel data regression in Equation (1). The system GMM approach with two-step procedure of Arellano and Bond (1991) can be used for panel data estimation. This method is suitable for small *T* (few time periods) and large *N* (many firms), and it controls the endogeneity

problem. However, Windmeijer (2005) develops a finite sample correction that determines the two-step system GMM estimator with estimated asymptotic variance, and this method has bias-corrected parameters. It is for this reason that we decided to use Windmeijer's (2005) bias-corrected two-step system GMM in panel data regression analysis with the following equation.

$$ROA_{it=} = \alpha + \beta_1 ROA_{it-1} + \beta_2 WC_{it} + \beta_3 WC_{it}^2 + \beta_4 CASH_{it} + \beta_5 DEBT_{it-1} + \beta_6 CAP_{it-1} + \beta_7 SALES_{it} + \beta_8 SIZE_{it} + \beta_9 GDP_{it} + Industry_{dummy} + Crisis_{dummy} + \varepsilon_{it} \quad (1)$$

Where *ROA* is return on assets, *WC* is working capital, WC^2 is square of working capital, *CASH* is cash, *DEBT* is debt, *CAP* is capital, *SALES* is sales growth, *SIZE* is in total assets, *GDP* is gross domestic product growth, *Crisis* is dummy variable for the 2008 crisis period, $Industry_{dummy}$ is industry dummies for food, gambling, sports and travel industries, and ε is the error term. We did not include a dummy variable for the accommodation industry to avoid dummy variable trap in panel data regression. In line with research by Banos-Caballero et al. (2012), Mun and Jang (2015), the inverted U-shaped effect of working capital ratio on firm performance is checked with WC^2.

We performed several checks in order to see the robustness of the results in Equation (1). We included only the crisis year in the above estimation. However, Roodman (2009) recommends including time dummies to estimate more robust standard errors. Therefore, the first robustness check is to include all years, and re-estimate the model with Equation (2). We used a panel data with 16 years, and the focus of this study is to not check year effects. Thus, we included all years but did not report year coefficients in line with the approach by Gim and Jang (2019), Mao et al. (2018) and Park and Jang (2012). The second robustness check is to replace the macro variable (*GDP*) with a new variable (*ITE*) and keep year effects with Equation (3). *GDP* is an important indicator for all hospitality and tourism firms. However, *ITE* is mostly a significant variable for the hospitality and tourism firms with international revenue. The third robustness check is to use *ROE* instead of *ROA* as a firm performance indicator and keep year effects with Equation (4). The fourth robustness check is to use *ROE* as the dependent variable and replace *GDP* with *ITE* with Equation (5). Finally, the last robustness check is to use *ROE* as the dependent variable and in each of the industries. All of these robustness checks include year effects, and allow us to see the consistency of the main results with robust standard errors.

$$ROA_{it=} = \alpha + \beta_1 ROA_{it-1} + \beta_2 WC_{it} + \beta_3 WC_{it}^2 + \beta_4 CASH_{it} + \beta_5 DEBT_{it-1} + \beta_6 CAP_{it-1} + \beta_7 SALES_{it} + \beta_8 SIZE_{it} + \beta_9 GDP_{it} + Industry_{dummy} + Year_{dummy} + \varepsilon_{it} \quad (2)$$

$$ROA_{it=} = \alpha + \beta_1 ROA_{it-1} + \beta_2 WC_{it} + \beta_3 WC_{it}^2 + \beta_4 CASH_{it} + \beta_5 DEBT_{it-1} + \beta_6 CAP_{it-1} + \beta_7 SALES_{it} + \beta_8 SIZE_{it} + \beta_9 ITE_{it} + Industry_{dummy} + Year_{dummy} + \varepsilon_{it} \quad (3)$$

$$ROE_{it=} = \alpha + \beta_1 ROE_{it-1} + \beta_2 WC_{it} + \beta_3 WC_{it}^2 + \beta_4 CASH_{it} + \beta_5 DEBT_{it-1} + \beta_6 CAP_{it-1}$$
$$+ \beta_7 SALES_{it} + \beta_8 SIZE_{it} + \beta_9 GDP_{it} + Industry_{dummy} + Year_{dummy} + \varepsilon_{it} \quad (4)$$

$$ROE_{it=} = \alpha + \beta_1 ROE_{it-1} + \beta_2 WC_{it} + \beta_3 WC_{it}^2 + \beta_4 CASH_{it} + \beta_5 DEBT_{it-1} + \beta_6 CAP_{it-1}$$
$$+ \beta_7 SALES_{it} + \beta_8 SIZE_{it} + \beta_9 ITE_{it} + Industry_{dummy} + Year_{dummy} + \varepsilon_{it} \quad (5)$$

4. Empirical findings

The results for all firms in this sample based on Windmeijer's (2005) bias-corrected two -step system GMM estimate, are shown in Table 4 – Panel A. The first diagnostic test statistics is the Wald test, and this test shows the overall significance of independent variables. The Wald test indicates the joint significance of panel data regression at the 1% significance level. The second diagnostic test statistics is the Hansen test which displays the validity of the instrumental variables. This test uses Chi-Square distribution. The Hansen test indicates that the instruments set is valid. The third diagnostic test statistics is the Diff-in-Hansen test. This test checks instrument validity and the additional moment restriction in the two-step system GMM estimate. This test also indicates that the instruments are valid in the system GMM estimation. The fourth diagnostic test statistics is the Arellano-Bond (1991) autocorrelation test. Arellano-Bond's (1991) AR (1) and AR (2) p-values indicate that there is no autocorrelation in the system GMM estimation.

The findings of our study show that *WC* is positive and significant, whereas WC^2 is negative and significant at the 1% significance level for all of the firms in the current sample. These findings indicate that there is an inverted U-shaped relation between working capital ratio and firm performance. All of the firm-level control variables are significant at the 10% significance level. In line with expectations, *CASH*, lag of *DEBT*, lag of *CAP*, *SALES* and *SIZE* positively affect *ROA*. The macro-level control variable, *GDP*, is positive and significant at the 10% significance level, and this finding shows that the current year's GDP positively affects hospitality and tourism firm performance. The dummy variable for the crisis period is negative and significant at the 1% significance level, and this indicates that the 2008 crisis had a significant and negative impact on the financial performance of hospitality and tourism firms.

In addition, we included four dummy variables in respect of the sub-industries, and Table 4 - Panel A shows that there are significant differences between the coefficient of these industry dummies. This finding shows that we should run the same two-step system GMM

estimations for five sub-industries and check the consistency of findings at the aggregate level. Table 4 - Panel B shows the estimations with sub-industries. The diagnostic checks are valid for all sub-industries except for the gambling industry. The significance of firm-level control variables and macro-level control variable (*GDP*) are different in each of the industries in Table 4. The gambling industry's *ROA* is not affected by any of the control variables. The reason for this might relate to the operational structure of these firms. Marketing and managerial factors might be the dominant factor in gambling firms, and therefore, managerial factors might be necessary for a meaningful panel data analysis. La Rosa and Bernini (2018) investigate the determinants of Italian gambling SMEs' profitability using both managerial and financial variables, and find the only two significant financial variables to be leverage and firm size.

Furthermore, Table 4 shows that *CASH* is significant for accommodation and travel industries, but it is insignificant for the food and sports industries. The reason for this might be due to the impact of liquidity on *ROA* in these industries. Higher liquidity will result in a lover level of interest income, and we can find no relationship between cash level and the profitability of food and sports firms. The other reason might be the use of cash for long-term investments. Brush et al. (2000) select to use lag of cash flow to handle this problem. However, we found that a firm's current level of cash significantly affects all firms in the aggregate estimation. It is for this reason that we did not use the lag of control variables in the sub-industry analysis.

Table 4- Panel B shows that *DEBT* is a significant variable for accommodation and sport industries, but an insignificant variable for the food and travel industries. This finding similar to Jung et al.'s (2019) finding for the restaurant industry, although they use the current level of debt. Song et al. (2017) recommend using three lags (t-3) of debt for the food industry, and this finding highlights the importance of lag selection for different hospitality and tourism industries. Le and Park (2010) use leverage ratio as one of the control variables for the determinants of ROA in the airline industry. They suggest that leverage has no impact on the financial performance of airline companies. As a result, our findings are similar to those of previous studies.

CAPITAL is found to be significant for all of the industries except for the accommodation industry. Similarly, Tang and Jang (2008) select property, plant and equipment (*PPE*) to total assets ratio as one of the control variables, and use this variable as one of the determinants of hotel profitability. In addition, they present an insignificant impact of *PPE* on *ROA*. We consider only one lag of capital expenditure in industry based estimations to keep the same approach in the main model. Campello (2006) suggests that once firms invest in fixed assets, this decision might affect firm performance in subsequent years. Thus, the single lag of *CAPITAL* might not be enough to investigate the effect of *CAPITAL* on accommodation firms.

Further, our research suggests that *SALES* is a significant variable for all of the industries except for the food industry. Similarly, Sun and Kim (2013) and Ozdemir et al. (2021) use sales growth as one of the control variables, and determined that sales growth does not affect the financial performance of hospitality firms. The insignificancy of sales growth in the food industry shows the importance of cost and expense items in the income statement of food firms. According to Sun and Kim (2013), sales growth must be retained in the model since the control variables increase the accuracy of the estimations.

SIZE is found to be significant for food and sports industries, but this variable is insignificant for accommodation and travel firms. These findings are similar to those from Hsu and Jang (2009) and Sun and Kim (2013) who state that firm size positively affects restaurant firms in the U.S. Further, they added that there is no correlation between firm size and financial performance for hotels and airline firms. Thus, there might be different findings for sub-industries.

Table 4- Panel B shows that *GDP* is significant for accommodation, but not for food, sport and travel industries. Conversely, Chen (2010) and Mun and Jang (2015) use the panel data regression approach, and find that *GDP* is insignificant for the hospitality industry. A recent study (Akron et al., 2020) uses the lag of GDP, and reveals that lagged *GDP* is significant for the investment performance of the U.S. hospitality industry. These findings demonstrate that the impact of *GDP* might be different in sub-industries, and previous year's growth might be a significant variable for the financial performance of these industries.

The results of industry-level analysis for working capital management are different to the results for all the firms presented in Table 4 - Panel A. We observe that both *WC* and WC^2 are significantly in line with the expected outcome (*WC* is positive and WC^2 is negative) for accommodation, food and travel industries in Table 4- Panel B. Therefore, a U-shaped effect of working capital on firm performance exists only for these industries. In terms of the sport industry, *WC* is positive and significant whereas WC^2 is negative but insignificant. These findings imply that working capital increases firm performance without achieving an optimal level. Table 4 - Panel B shows that the mean *ROA* is negative for sports firms, and that sports firms carry a high level of current liabilities. Consequently, an optimal level of *WC* cannot be found for sports firms. With respect to the gambling industry, *WC* and WC^2 are in line with the expected outcome, but both parameters are insignificant. The findings of our study suggest that there is an optimal level of working capital for accommodation, food and travel firms, and that the firms in these industries need to optimise their working capital level in order to enhance their financial performance.

Table 4. The System GMM Estimates

Panel A	Panel B

	All Firms	A	F	G	S	T
Constant	-0.136**	-0.042	-0.189**	-0.130	-0.442***	-0.129**
	(2.475)	(0.762)	(2.510)	(0.668)	(4.289)	(2.513)
ROA_{t-1}	0.232***	0.187***	0.201***	0.335*	0.268***	0.270***
	(6.580)	(3.086)	(4.831)	(1.756)	(4.720)	(2.379)
WC_t	0.238***	0.145***	0.296***	0.036	0.308***	0.280***
	(8.254)	(5.091)	(5.595)	(0.166)	(4.769)	(5.832)
WC_t^2	-0.260***	-0.265**	-0.306***	-0.108	-0.091	-0.170**
	(4.911)	(3.886)	(3.144)	(0.149)	(1.002)	(2.179)
$CASH_t$	0.035**	0.051***	-0.006	0.046	0.027	0.053**
	(2.083)	(3.369)	(1.163)	(0.363)	(0.483)	(2.022)
$DEBT_{t-1}$	0.118***	0.138*	0.051	0.261	0.162***	0.121
	(3.165)	(1.738)	(0.692)	(1.063)	(2.640)	(1.637)
CAP_{t-1}	0.097***	0.035	0.168***	0.055	0.151**	0.179***
	(3.518)	(0.921)	(3.435)	(0.290)	(2.120)	(5.782)
$SALES_t$	0.013***	0.006*	0.008	-0.003	0.025***	0.013***
	(3.534)	(1.647)	(1.119)	(0.379)	(3.023)	(2.567)
$SIZE_t$	0.005*	0.001	0.012**	0.006	0.024***	0.002
	(1.699)	(0.246)	(2.304)	(0.439)	(3.585)	(0.757)
GDP_t	0.101*	0.226***	0.133	0.065	-0.026	0.218
	(1.692)	(3.054)	(1.208)	(0.068)	(0.146)	(1.053)
Crisis	-0.028***	-0.019***	-0.033***	-0.017	-0.049***	-0.006
	(4.766)	(3.115)	(2.908)	(0.789)	(2.844)	(0.703)

$Dummy_F$	0.031*	-	-	-	-	-
	(2.389)					
$Dummy_G$	-0.009	-	-	-	-	-
	(0.103)					
$Dummy_S$	-0.058	-	-	-	-	-
	(1.315)					
$Dummy_T$	0.069***	-	-	-	-	-
	(1.921)					
Wald test	0.000	0.000	0.000	0.001	0.000	0.000
Hansen test	0.371	0.313	0.417	1.000	0.476	1.000
Diff-in-Hansen tests	0.189	0.518	0.562	1.000	0.988	1.000
AR(1)	0.000	0.000	0.000	0.129	0.000	0.005
AR(2)	0.308	0.726	0.551	0.339	0.476	0.680
Observations	10014	3560	2697	198	2087	1472

***Notes**: t-statistics are in parenthesis. Wald test, Hansen test, Diff-in-Hansen test, AR (1), and AR (2) show p-values. ***, **, * indicate a significance of 1%, 5%, and 10% respectively. A=Accommodation, F=Food, G=Gambling, S=Sports, T=Travel industries. $Dummy_F$, $Dummy_G$, $Dummy_S$, and $Dummy_T$ represent industry dummies.*

5. Robustness checks

The empirical findings section demonstrates that there is an inverted U-shaped relationship between working capital and *ROA*, and this inverted U-shaped relationship is not the same across all sub-industries. In order to test the robustness of this result, we ran several panel data regressions that used different approaches. As a first robustness check we included all years with the suggestion of Roodman (2009), and estimated the model with Equation 3. This model is similar with the main model (Equation 1), and we only replaced crisis dummy with all years in Table 3A - Panel A in the Appendix. Diagnostic checks indicate validity of estimate, and the findings are similar for working capital as well as for control variables. The results show the consistency of inverted U-shaped relationship between working capital and

ROA. As a second robustness check with *ROA*, we replaced *GDP* with *ITE*. This macro variable is a better indicator for tourism companies where the source of income is international tourism revenue. The result of the second robustness check with Equation 3 is shown in Table 3A - Panel B. Diagnostic checks again indicate validity of estimate, and *ITE* is significant at the 10% significance level with expected positive sign. The results of working capital ratios show that there is an inverted U-shaped relationship between working capital and *ROA*, which is similar to our findings in Section 4.

During the third and fourth robustness checks, we replaced the dependent variable of *ROA* with *ROE*. We used equations 4 and 5 in Table 3A - Panel C and Panel D. Panel C shows the estimation result with *GDP*, whereas Panel D shows the estimation result with *ITE* as the control macroeconomic variable. Both these models are estimated with year dummies. Diagnostic checks indicate the validity of estimate, and we found the same results for an inverted U-shaped relationship between working capital and *ROE*. These results confirm that the findings for an inverted U-shaped relationship between working capital and financial performance of hospitality and tourism firms are robust in different estimations. Lastly, we used a robustness check for the sub-industry analysis using *ROE* as the dependent variable. Table 4A reports the result of robustness checks for industries using *ROE* as the dependent variable in the Appendix. We demonstrate that the U-shaped relationship exists for accommodation, food and travel firms, but not for sport firms. Furthermore, the findings for gambling firms are similar to the results in the empirical findings. These robustness checks confirm the validity of our findings as set forth in the empirical evidence section.

6. Discussion

Our study provides valuable empirical contributions to policy makers in the hospitality and tourism industry as well as to academia. To the best of our knowledge, this is one of the very few works to investigate the impact of working capital on different hospitality and tourism industries. Our research demonstrates that changes in working capital have no effect on performance for gambling firms. Cash is the main finance source of gambling firms and they have small amounts of account receivables, inventories, account payables and bank credits. Therefore, the impact of working capital on *ROA* and *ROE* might be viewed as insignificant.

A study by (Seo, 2018) uses leverage instead of working capital in order to investigate the factors of firm performance, and suggests that U-shaped leverage is valid for the U.S. casino industry. In contrast to Seo (2018), our study reveals that a U-shaped relationship is not valid for working capital in the gambling industry. Significantly, the positive impact of working capital cannot be applied to all hospitality and tourism firms. These firms' managers should consider the context of their own industry when making working capital decisions. In addition, our findings on sports firms are different to those delineated by the existing literature. Panagiotis (2011) uses current assets to current liabilities (liquidity ratio) to analyse the financial performance of Greek football clubs. He states that the liquidity ratio is an

insignificant variable on sports firms' performance. However, we determined that there is a positive linear relationship between working capital and the performance of sports firms. Our findings suggest that Panagiotis's (2011) findings cannot be applied to worldwide sports firms.

Many researchers (Mun and Jang, 2015; Altaf, 2020; Park and Kim, 2020) agree that there is an inverted U-shaped relationship between working capital and the performance of hospitality and tourism firms. Several existing research studies (Afrifa, 2016; Banos-Caballero et al., 2016; Botoc and Anton, 2017) demonstrate that a U-shaped relationship between working capital and firm performance is valid in different industries. A study by Inoue and Lee (2011) selects various firm-level control variables such as leverage and size for airline, casino, hotel and restaurant industries. Their study concludes that the significance of control variables is not the same in these industries. Similarly, we observed that the firm-level control variables of cash, debt, capital, firm sales, firm size and the macro-level control variables of GDP have differing impacts on financial performance across sub-hospitality and tourism industries. Research by Sharma et al. (2016), examine the impact of capital and labour on gross output in tourism industries. Their findings discern similar results and highlight the importance of industry-based analysis. Our study reveals that the inverted U-shaped relationship between working capital and firm performance is valid if the hospitality and tourism firms concerned are not separated into sub-industries.

6.1. Implications

The findings of our study present clear theoretical and practical implications for the hospitality and tourism industry. In terms of practical implications, the findings of our study potentially provide guidance to managers of hospitality and tourism firms. It is recommended that managers should carefully review industry-specific conditions. Further, it is evident that the hospitality and tourism industry is sensitive to economic and financial turbulence. Therefore, these managers should focus on improving the efficiency of working capital management to a greater degree than managers in other industries.

Our study results indicate that when hospitality and tourism managers make working capital decisions, they should take into account the characteristics of the sub-hospitality and tourism industry within which their firm operates. For instance, if their business is in the accommodation, food and travel industry, the findings suggest that managers should target an optimal level of working capital. Furthermore, the findings demonstrate to managers that it is possible to maintain the optimal level by increasing or decreasing their investment in working capital. If their business is in the sport industry, working capital positively affects their profitability. This finding suggests that managers of sports firms can enhance their firm's profitability by increasing their investment level in working capital. Additionally, our results suggest equally that managers need to be aware that excessive or aggressive investment in working capital might increase a firm's risk. In contrast, within gambling firms, it can be seen

that working capital has no effect on profitability. In such cases, the implementation of either an aggressive or excessive working capital policy will not influence the firm's profitability.

In this regard, hospitality and tourism managers play a significant role in determining efficient working capital management. If they are not sufficiently able to manage current assets and current liabilities in an appropriate way, this might entail serious financial and operational problems for their firm. It is recommended that managers should pay more attention to managing working capital effectively and should not ignore the impact of efficient working capital management on the firm's performance.

In terms of theoretical implications, our study reveals the strengths of efficient working capital management on firms' performance. It argues that efficient working capital management can be used as a strategic tool to increase a firm's profitability. Theoretically, our research provides empirical evidence regarding the effects of working capital on firms' performance in the hospitality and tourism industry. It displays an inverted U-shaped relationship between working capital and firm performance (*ROA* and *ROE*) which points to the existence of an optimal working capital level for hospitality and tourism industries. However, one interesting finding is that not all sub-hospitality and tourism industries' performance react in the same way to changes in working capital.

6.2. Limitations and future research

Despite its empirical contribution to the hospitality and tourism literature, our study contains several limitations. Firstly, we use active hospitality and tourism firms in our sample, and this means that the findings of our study cannot serve as a reference for financial distress and bankruptcy models. Secondly, the data consists of firms from the hospitality and tourism industry, and the findings of our study might be different to findings available for other service industries. Thirdly, our study does not include firm-specific variables, and data from financial statements might need to be supported using survey data for each of the firms under consideration. Future researchers could investigate the managerial moderating effect that attempts to explain an inverted U-shaped relationship between working capital and the performance of hospitality and tourism firms by using available survey data. Fourthly, we investigate a large group of countries in our study. The results might be different for each country, and future studies might investigate country specific features. Finally, our dataset does not cover the year 2020, and for this reason the results do not refer to the impact of working capital on firm performance in the Covid-19 pandemic period. A recent study (Shen et al., 2020) uses forecasted *ROE* for Chinese firms, and suggests that tourism is adversely affected by the Covid-19 crisis. In the near future, it would be beneficial to investigate working capital management in hospitality and tourism firms during the Covid-19 period.

7. Conclusion

Our research investigates the effect of working capital on firm performance in the hospitality and tourism industry. Our study analyses a large unique data set including 1156 firms' data taken from 33 countries around the world, spanning the period from 2004 to 2019. We use the two-step system GMM approach for panel data regressions in our study.

Our findings reveal that there is an inverted U-shaped relationship between working capital and firm performance in the hospitality and tourism industry. Furthermore, we determine that a U-shaped relationship does not exist for all sub-hospitality and tourism industries. More specifically, we identify three diverse relationships between working capital and firm performance across sub-hospitality and tourism industries. There is an optimal level of working capital for accommodation, food and travel firms. In contrast, a positive linear relationship exists for sport firms, and changes in working capital have no effect on performance for gambling firms. In addition, these findings are robust using year effects, a new macro variable and *ROE* as the dependent variable.

To conclude, our study contends that working capital has significant effects on the performance of the hospitality and tourism industry, with the exception of the gambling industry. Moreover, our findings constitute a significant contribution to the existing literature, and have practical implications for the hospitality and tourism industry. Finally, when managers make a decision regarding efficient working capital management, they should consider that the effect of working capital on firm performance is not the same across all sub-hospitality and tourism industries.

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Appendix

Table 1A. The number of firm-year observations

Countries	*ROA*	*ROE*	*WC*	*CASH*	*DEBT*	*CAP*	*SALES*	*SIZE*
Australia	410	385	410	408	249	390	356	413
Bermuda	489	482	489	489	329	489	484	487
Brazil	120	87	119	117	95	110	93	117
Canada	307	272	306	303	198	264	244	305
Cayman Islands	482	466	482	482	298	482	455	458
Chile	173	152	171	169	94	170	145	163
China	759	745	759	759	635	759	743	747
Croatia	197	193	197	197	182	197	178	183
Cyprus	221	198	219	211	181	213	192	208
Egypt	212	212	212	213	109	213	197	217
France	382	364	373	381	339	382	367	383
Germany	260	250	260	259	211	260	240	255
Hong Kong	309	309	309	309	246	309	307	307
India	1238	1153	1240	1238	575	1214	1074	1211
Indonesia	295	289	295	295	240	295	283	286

Israel	215	201	214	215	176	207	181	206
Italy	142	129	142	140	131	141	133	136
Japan	1611	1605	1611	1611	1593	1611	1552	1589
Malaysia	414	406	412	392	367	412	404	417
Mexico	188	187	188	188	153	185	180	186
Rep. of Korea	232	232	233	233	186	233	208	220
Serbia	108	99	108	103	66	108	85	91
Singapore	363	355	363	363	261	354	349	365
South Africa	170	165	170	167	151	161	157	175
Sri Lanka	522	508	522	514	452	512	466	488
Sweden	223	213	223	223	162	219	209	215
Switzerland	133	132	133	133	110	133	122	134
Taiwan	405	405	405	405	241	405	383	385
Thailand	385	369	385	367	302	375	359	383
Turkey	190	158	190	190	158	181	166	176
UK	773	722	773	761	618	766	738	787
US	1998	1744	1998	1990	1604	1975	1968	2036
Vietnam	545	519	545	545	390	545	497	501
Total	14471	13706	14456	14370	11102	14270	13515	14230

Table 2A. Summary statistics of the firm-level variables in industries

	A	*F*	*G*	*S*	*T*
ROA					
Mean	0.024	0.028	0.007	-0.021	0.044
Median	0.029	0.049	0.043	0.022	0.051

Standard Deviation	0.135	0.187	0.291	0.253	0.171
ROE					
Mean	0.052	0.088	0.087	0.014	0.109
Median	0.054	0.109	0.090	0.057	0.115
Standard Deviation	0.232	0.326	0.398	0.365	0.275
WC					
Mean	0.038	0.039	0.065	0.061	0.132
Median	0.023	0.010	0.019	0.031	0.116
Standard Deviation	0.253	0.247	0.297	0.327	0.295
CASH					
Mean	0.418	0.488	0.546	0.465	0.417
Median	0.369	0.510	0.573	0.468	0.387
Standard Deviation	0.299	0.255	0.238	0.291	0.268
DEBT					
Mean	0.108	0.152	0.132	0.164	0.220
Median	0.070	0.115	0.084	0.101	0.176
Standard Deviation	0.130	0.136	0.159	0.180	0.181
CAP					
Mean	0.554	0.406	0.356	0.377	0.272
Median	0.610	0.397	0.286	0.334	0.157
Standard Deviation	0.283	0.244	0.302	0.314	0.270
SALES					
Mean	0.208	0.135	0.189	0.241	0.204
Median	0.058	0.043	0.032	0.044	0.074

Standard Deviation	1.061	0.796	1.056	1.208	1.011
SIZE					
Mean	14.261	14.027	13.253	13.481	14.438
Median	14.220	14.141	13.479	13.517	14.052
Standard Deviation	2.567	2.884	3.488	3.081	3.585

***Notes**: A=Accommodation, F=Food, G=Gambling, S=Sports, T=Travel industries.*

Table 3A. Robustness checks

Dependent Variable	Panel A- ROA	Panel B- ROA	Panel C- ROE	Panel D- ROE
Constant	-0.195***	-0.154**	-0.128***	-0.092*
	(3.448)	(2.606)	(2.844)	(1.680)
ROA_{t-1}	0.233***	0.225***	-	-
	(6.975)	(6.284)		
ROE_{t-1}	-	-	0.301***	0.316***
			(8.2020)	(7.643)
WC_t	0.235***	0.235***	0.476***	0.449***
	(8.613)	(8.455)	(7.383)	(6.538)
WC_t^2	-0.242***	-0.252***	-0.505***	-0.493***
	(4.781)	(4.496)	(3.577)	(2.995)
$CASH_t$	0.048***	0.031*	0.063**	0.047
	(2.813)	(1.693)	(2.135)	(1.499)
$DEBT_{t-1}$	0.106***	0.121***	0.081**	0.111*
	(2.975)	(3.184)	(2.180)	(1.926)
CAP_{t-1}	0.071***	0.083***	0.089*	0.074***
	(2.633)	(2.881)	(1.724)	(2.608)

SALES $_t$	0.013***	0.012***	0.022***	0.016***
	(3.752)	(3.441)	(2.679)	(2.280)
SIZE $_t$	0.012***	0.008**	0.021***	0.003**
	(3.436)	(2.164)	(3.068)	(2.217)
GDP $_t$	0.182*	-	0.552**	-
	(1.801)		(2.162)	
ITE $_t$	-	0.026*	-	0.051***
		(1.785)		(3.195)
Wald test	0.000	0.000	0.000	0.000
Hansen test	0.105	0.126	0.163	0.67
Diff-in-Hansen tests	0.570	0.189	0.144	0.203
AR(1)	0.000	0.000	0.000	0.000
AR(2)	0.315	0.269	0.325	0.174
Observations	10014	9576	9414	8994
Industry dummy	Yes	Yes	Yes	Yes
Year dummy	Yes	Yes	Yes	Yes

Notes: *t-statistics are in parenthesis. Wald test, Hansen test, Diff-in-Hansen test, AR(1), and AR(2) show p-values. ***, **, * indicate a significance of 1%, 5%, and 10% respectively. Industry and year dummy variables are included but not reported.*

Table 4A. Robustness checks for industries

	A	*F*	*G*	*S*	*T*
Constant	0.087	-0.315**	-0.222	-0.588***	-0.052**
	(1.330)	(2.453)	(0.253)	(4.380)	(2.062)
ROE_{t-1}	0.312***	0.333***	0.154	0.257***	0.274***

	(6.097)	(7.634)	(0.163)	(3.566)	(3.655)
WC_t	0.249***	0.641***	0.508	0.608***	0.381***
	(3.927)	(5.58)	(0.521)	(4.584)	(2.680)
WC_t^2	-0.401***	-0.978***	-0.251	-0.388	-0.176*
	(2.524)	(4.777)	(0.366)	(1.228)	(1.692)
$CASH_t$	0.068*	0.023	-0.622	0.041	0.140*
	(1.910)	(0.310)	(1.277)	(0.503)	(1.934)
$DEBT_{t-1}$	0.051	0.142*	0.329	0.301*	0.015
	(0.639)	(1.825)	(0.506)	(1.913)	(0.062)
CAP_{t-1}	0.092	0.178*	0.237	0.101	0.111*
	(1.566)	(1.942)	(0.356)	(0.887)	(1.892)
$SALES_t$	0.007*	0.024	0.209	0.038**	0.028**
	(1.677)	(1.376)	(1.555)	(2.484)	(2.338)
$SIZE_t$	0.001	0.016*	0.153	0.031***	-0.001
	(1.406)	(1.914)	(1.301)	(3.837)	(0.145)
GDP_t	0.358***	0.285	1.154	-0.159	0.912**
	(3.726)	(0.539)	(1.403)	(0.253)	(2.037)
Wald test	0.000	0.000	0.000	0.000	0.000
Hansen test	0.272	1.000	1.000	1.000	1.000
Diff-in-Hansen tests	0.546	1.000	1.000	1.000	1.000
AR(1)	0.000	0.000	0.501	0.000	0.002
AR(2)	0.720	0.466	0.171	0.881	0.427
Observations	3403	2524	191	1907	1389
Year dummy	Yes	Yes	Yes	Yes	Yes

Notes: *t-statistics are in parenthesis. Wald test, Hansen test, Diff-in-Hansen test, AR(1), and AR(2) show p-values. ***, **, * indicate a significance of 1%, 5%, and 10% respectively. A=Accommodation, F=Food, G=Gambling, S=Sports, T=Travel industries. Year dummy variables are included but not reported.*