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The effect of environment risk, corporate strategy, and capital structure on firm performance: An empirical investigation of restaurant firms

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Abstract

The co-alignment process has been used in hospitality strategy as a framework to explain strategic orientation of firms. In this study, using a sample from the US restaurant industry, the authors test the simultaneous impact of surrogates from constructs identified as part of the co-alignment model, i.e. environment, strategy, and structure, on firm performance. Results indicate that a significant variance in firm performance is explained by the variables from the foregoing constructs of the co-alignment model. The robustness of this study provides restaurant firms' managers a basis to evaluate their firms' strategic orientation vis-à-vis its impact on firm performance.

Keywords: Environment risk; Corporate strategy; Capital structure; Firm performance; Cash flow

1. Introduction

In the research domain that contains the study of firms from a strategic management perspective, firm strategy formulation and implementation decisions have been pointed out to be the key in explaining superior firm performance (Thompson et al., 2004; Hill and Jones, 1995). Conceptually, this relationship is purported to be within the paradigm that explains the effect of environment, strategy, and structure, on firm performance (Olsen

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et al., 1998). In this study, the authors use this underpinning to test surrogates from the corporate finance literature that represent the foregoing constructs in terms of their simultaneous effects on firm performance.

Inasmuch as incremental research is essential in building theory in a given field of study, it is essential that empirical tests are used as a basis to verify the underpinnings of theoretical models to confirm such ex ante conceptualizations. While prior studies in hospitality research have not tested the relationships among the constructs proposed in this effort, the justification to explore such relationships is based on the fact that it provides practitioners with a framework to view firm performance-related variables from a strategic perspective. Moreover, scholars in mainstream business research domains, i.e. strategic management and corporate finance, have not delved into testing such a model that confirms the empirical veracity of the constructs in being able to explain firm performance.

The authors make such an attempt in this paper while positing that the variance in firm performance can be better understood by using surrogates from the three constructs, i.e. environment risk, corporate strategy, and capital structure. The surrogates from these constructs are used to explain the proportion of variance in firm performance. Results indicate that a significant variance in firm performance is explained by the independent variables. In fact, the robustness of the empirical findings provides practitioners with a basis to evaluate their firms' strategic orientation from a financial perspective while lending support to the idea of organizational alignment or fit.

The following sections report a historical perspective on past efforts and theoretical underpinnings followed by a description of the constructs/variables and the interrelationships between them, hypothesis development and testing, and description of results, while concluding with the implications for practitioners and future research.

2. Historical perspectives and theoretical foundation

Several management researchers of the likes of Lawrence and Lorsch (1967), Jurkovich (1974), Porter (1980, 1985), Dess and Davis (1984), Kotha and Vadlamani (1995), and others have directly or indirectly made attempts to theorize the effects of single or multiple constructs, vis-à-vis the firm environment, strategy, and structure on firm performance. Research work in the management field had a significant impact on hospitality research (West and Olsen, 1988; Dev and Olsen, 1989). Although these empirically based research efforts could not confirm the relationship between the constructs purported by management theorists, these efforts were significant in that they incrementally added to the hospitality literature on strategy. This led to the emergence of the "Co-alignment Model" (Olsen et al., 1998), the theoretical underpinnings of which explicate the alignment between the firm's environment, its strategy, structure, and performance.

While it is important to underscore that the model has not been empirically verified in the hospitality industry setting, the efforts to test the model were based on management theory. The constructs and variables used to test the relationship among them were developed in tandem with concepts in strategic management. Although a few strategic management theorists (Barton and Gordon, 1987) have combined concepts in finance and strategic management to test models in business management, such an approach has been few and far between. This is an even more pressing issue given that both these domains have developed theories that relate to each other especially in the context of environment, strategy, structure (resource-based), and performance.

2.1. Underpinnings of the co-alignment process

The co-alignment process has been the focus of researchers in the hospitality industry, notably Olsen et al. (1998), as well as mainstream management theorists such as Thompson (1967), Venkatraman and Prescott (1990), and Farjoun (2002). It conceptualizes the relationship, i.e., "consistency, contingency, or fit" (Venkatraman and Prescott, 1990) among four key constructs, i.e. the environment, strategy choice, firm structure, and firm performance. According to Olsen et al. (1998), the co-alignment takes place, "if the firm is able to identify the opportunities that exist in the forces driving change, invest in competitive methods that take advantage of these opportunities, and allocate resources to those that create the greatest value, the financial results desired by owners and investors have a much better chance of being achieved" (p. 2). The present study uses the co-alignment model as the basis to explain variance in firm performance or value addition to the firm while using corporate finance-related constructs and variables (explanatory) (Chathoth and Olsen, 2005).

The authors' objective is to test the relationship among the variables that represent the constructs within the co-alignment model in order to validate the role of such variables in explaining firm performance. This is achieved by regressing the proxies of the independent constructs on firm performance in order to explain the variance in the dependent variable as a function of the simultaneous effects of the independent variables. Note that all proxies are entered into the model at the same time during testing. It should be pointed out that the authors do not intend to test for the co-alignment effects (Venkatraman and Prescott, 1990) between the surrogates that represent the constructs. Therefore, the primary research question for the study is: Is firm performance better explained by the variables that represent the environmental risk, corporate strategy and capital structure constructs?

3. Definition of constructs

The constructs identified in this study as part of the co-alignment process are environment risk, corporate strategy, capital structure, and firm performance. The proposed theoretical model illustrated in Fig. 1 is developed using the co-alignment model

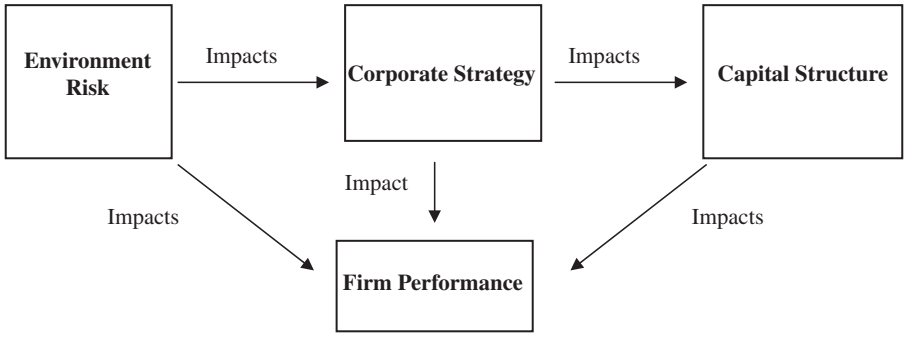

Fig. 1. The proposed theoretical model.

as the underpinning while combining concepts from strategic management and corporate finance.

Environment risk is conceptualized as the impact of the firm's external environment on the firm from a cash flow and profitability perspective (Oxelheim and Wihlborg, 1997). The variability of cash flows is indicative of the risk exposure of the firm, which Oxelheim and Wihlborg (1997) define as related to economic risk, business risk and market risk. This has been suggested by Ross et al. (1999) (economic risk), Fabozzi (1999) (business risk), and Damodaran (1997) (market risk) when attempting to explain the uncertainty and volatility impacts on firms' performance. Whereas economic risk captures the volatility of the macroeconomic environment, business risk captures the volatility of the firm's cash flows based on how they vary across time periods resulting from management of assets. On the other hand, market risk captures how the firm's market performance (stock performance) co-varies with that of the market average (Standard & Poor 500 Index). See Table 1 for a description of how these variables have been operationalized in this study.

Corporate strategies are captured by two variables as defined by Chathoth and Olsen (2005), i.e., growth-related (Zook and Rogers, 2001) and liquidity-related (Lancaster et al., 1999). These strategies pertain to the top management's decision to expand the business horizon of the firm while choosing which businesses to expand/compete in (Hill and Jones, 1995). The primary objective of such decisions is to improve the profitability of the firm (Thompson et al., 2004). The measures of growth used in this study include sales growth, asset growth, and growth potential. Table 1 provides a description of how these measures were operationalized. On the other hand, the use of a liquidity-related variable (LIQRAT, see Table 1 for a description of this variable) is justified from Kim et al. (1998) and John (1993).

The third construct, i.e. the capital structure, is defined using the resource based view (RBV) of strategy relative to how the firm finances its investment using debt and equity instruments. Thus, the structure component of the co-alignment process is viewed from a financial perspective, which is why the financial structure of the firm is used as a proxy for firm structure (Chathoth and Olsen, 2005). While the main objective of the firm is to manage these two components of its financial structure to minimize the cost of capital, it is critical that the firm's managers find an optimal balance between the debt and equity components to maximize firm value. It should be noted that capital structure decisions are influenced by the firm's external environment as well as corporate strategies (Ross et al., 1999). The variable used to capture the capital structure is DEBTRAT, which is defined in Table 1.

The fourth construct, i.e. firm performance, has been conceptualized from accounting and finance standpoints. While past research typically has either used one or the other of these viewpoints in a single study, we use variables from both these domains that depict firm performance to test the viability of the environment-strategy-structure relationships. Accounting measures of performance typically include return on equity, return on assets, return on sales, and return on capital (Capon et al., 1990). Return on equity was chosen as a measure of accounting-related performance. On the other hand, finance-related measures include bondholder and stockholder satisfaction measures. Since free cash flow per share is a good indicator of financial performance from the perspective of the firms' bondholders and stockholders (Damodaran, 1997; Ross et al., 1999), this was included as a variable depicting finance-related performance. These variables were operationalized as described in Table 1.

Table 1
Variables and measures

Variables	Measures	Description
Economic risk	ECONBETA	Slope of the function with annualized quarterly GDP growth rate of the US economy as the independent variable and the firm's annualized quarterly sales growth rate as the dependent variable
Business risk	OPCASHBETA	Slope of the function with the average cash flow from operations of firms listed on S&P 500 as the independent variable and the restaurant firm's cash flow from operations as the dependent variable
Market risk	MBETA	Slope of the function with the average market price per share of the S&P 500 firms as the independent variable and the restaurant firm's market price per share as the dependent variable
Sales growth	SALESGR	The average annualized quarterly sales growth rate for the period 1995 through 2000 was used as the measure for SALESGR
Asset growth	ASSETGR	Obtained by averaging the annualized quarterly growth rate of the market value of assets between 1995 and 2000. Note that market value of assets = book value of assets + (market value of equity–book value of equity) (e.g., Kim et al., 1998)
Growth potential	GRPOTEN	Calculated by averaging the restaurant firm's market value of total assets divided by its book value of total assets during the period (quarters) 1995 through 2000. The market value of the firm's assets was calculated by adding the difference between the market value of equity and the book value of equity to the firm's book value of total assets
Liquidity	LIQRAT	Derived by averaging the firm's cash and short-term investments divided by its total assets (John, 1993; Kim et al., 1998) for the period 1995 through 2000
Debt ratio	DEBTRAT	Obtained by averaging the firm's debt divided by its book value of assets (Kim et al., 1998) between 1995 and 2000 (quarterly data)
Free cash flow per share	FCFPERSHARE	Obtained by averaging the free cash flow divided by the number of common equity outstanding for the time period 1995 through 2000. The free cash flow per share was calculated by subtracting the firm's capital expenditure for each quarter from the firm's earnings before depreciation, interest, and taxes for those quarters (Kim et al., 1998)
Return on equity	RETONEQ	Derived by averaging the net income divided by total equity across the time period 1995–2000
Firm size	SIZELOG	Operationalized by calculating the natural logarithm of the average market value of assets for the period 1995 through 2000

4. Relationships between the constructs and variables

In the strategy domain, the relationship between the environment and the strategy constructs was elucidated through several research studies done in the 1960s, 1970s and 1980s. Within the context of corporate finance, this relationship translates into environment risk and its effect on corporate strategies. Environment risk that results in variation of cash flows, in the context of both the present and the future, may lead to growth strategies. For instance, Ross et al. (1999) suggest that the relationship between risk and return is positive. The higher the market risk of a stock, the higher the return that the stockholders seek by investing in that stock (Ross et al., 1999; Fewings, 1979). On the other hand, Veliyath (1996) suggests that the relationship between business risk and performance is negative. The higher the business risk, the lower will be the firm performance. Titman and Wessels (1988) suggest that the relationship between firm risk and debt level is negative. This relationship is applicable to a firm's business risk, as the authors operationalized firm risk using earnings.

The relationship between business risk and firm growth, i.e., sales and assets was tested by Shepherd (1972), who found a negative correlation between the two variables. Growth strategies can be achieved through related or unrelated diversification strategies (Rumelt, 1974), which may in turn result in better firm performance, an outcome with mixed yet inconclusive results as far as past research in this area is concerned (Hoskisson and Hitt, 1990). Moreover, according to Kim et al. (1998), industry effects may lead to different performance outcomes , vis-à-vis the relationship between growth and firm performance.

On the other hand, corporate liquidity strategies have been correlated with the external environmental risks. Firms with a higher volatility of earnings and lower return on physical assets typically invest in more liquid assets if the return on liquid assets is relatively higher to that of physical assets. Furthermore, the relationship between liquidity and performance has been tested, which reveals a positive relationship between liquidity and cash flow measures, i.e. free cash flow (Kim et al., 1998). Furthermore, the firm's earnings risk will have a negative relationship with debt levels (Titman and Wessels, 1988). In other words, if the environmental conditions lead to higher volatility of earnings, this would result in lower debt levels. Ross et al. (1999) suggest that firms with higher growth potential will have lower debt as compared to firms that have a lower potential to grow.

The strategy domain has witnessed research work pertaining to the relationship between a firm's strategy and structure (Chandler, 1962) where it was suggested that structure follows strategy. The relationship between growth strategies and liquidity tested by Kim et al. (1998) indicate that the direction of the relationship was positive. This was also found to be the case in the restaurant industry (Chathoth and Olsen, 2005), which provides support to the fact that firms with high growth strategies generally have a higher level of liquidity. The relationship between the growth strategy and the capital structure of the firm was suggested by Barton and Gordon (1987). They proposed that a firm's sales growth rate will have a positive relationship with debt levels. This further indicates that if the environmental conditions are favorable for the firm's growth, debt will be used lesser to fund that growth than equity. On the other hand, Ross et al. (1999) suggest that firms from high growth industries with higher growth potential have lower levels of debt as compared to firms from low growth industries.

The relationship between growth in assets and sales "show positive relationships to performance" (Capon et al., 1990; p. 1148). Furthermore, "growth analyzed in 88 studies,

is consistently related to higher financial performance'' (p. 1148). The relationship between liquidity and capital structure of the firm was tested by Kim et al. (1998) who found that as the firm invests more in liquid assets, there will be a lower reliance on debt, which will result in a lower debt ratio. This was confirmed by Baskin (1987), who reported that the relationship between debt and liquidity is negative. On the other hand, the relationship between debt structure and performance was reported by Capon et al. (1990), who suggested that out of the 149 relationships reported using debt as the independent variable and firm performance as the dependent variable, 90 reported a negative relationship between firm debt level and performance. Shah (1994) demonstrated that changes in capital structure affects stock prices, which in some ways was confirmed by Harris and Raviv (1990), who suggested that there is a positive correlation between leverage and firm value.

The above relationships between constructs and variables explain the interdependencies between them, which form the basis of using these variables as proxies in testing their effect on firm performance. Note that although variables in the environment construct impact the variables in the corporate strategy construct, and the variables in the corporate strategy construct in turn impact the variables of the firm's capital structure, the relationship is non-recursive. Therefore, while testing the effects of these constructs on firm performance, it is safe to assume that firm performance does not affect these variables; instead these variables would impact firm performance. Although it could be argued that firm performance in a prior period could impact the environment risk assessment, strategy formulation, and the capital structure of a firm in forthcoming time periods, such relationships would mostly exist in time series models. In this study, a cross-sectional analysis is conducted while averaging the data over a definite time period. Based on the foregoing arguments, vis-à-vis, the relationship between the constructs, we posit a unidirectional relationship between the independent variables and dependent variable leading to the formulation of a non-recursive model.

5. Hypothesis and model development

As pointed out earlier, a firm's performance will be superior to other firms if it is able to manage the environmental forces, develop a corporate strategy, i.e., growth and/or liquidity, and choose a capital structure to support the corporate strategy. The model with all the measures representing the foregoing constructs will help explain a significant variance in firm performance represented by free cash flow per share and return on equity. In other words, this model will hold good to explain the variance in performance using both finance related, i.e., cash flow measures as well as accounting measures of performance. This leads to the hypothesis:

H1. Variables of the model that represent the constructs environment risk, corporate strategy, and capital structure will explain a significant amount of variance in firm performance that includes cash flow measures, i.e. free cash flow per share as well as accrual measures, i.e. return on equity of the firm.

In order to test the above hypothesis, incremental models were developed using variables from the constructs. These models are developed with firm performance as the dependent variable and environment, corporate strategy, and capital structure (introduced incrementally into the model) as the independent variables. Note that based on past

research (see Section 4), the direction of the relationship between the independent and the dependent variables was defined, as described below.

5.1. Environment, corporate strategy, and performance

$$\begin{aligned}\text{Performance (cash flow)} = b_0 &- b_1 \times \text{business risk} - b_2 \times \text{market risk} \\ &+ b_3 \times \text{asset growth} + b_4 \times \text{growth potential} \\ &+ b_5 \times \text{liquidity} + b_6 \times \text{firm size}, \end{aligned} \tag{1a}$$

$$\begin{aligned}\text{Performance (accrual)} = b_0 &- b_1 \times \text{business risk} + b_2 \times \text{market risk} \\ &+ b_3 \times \text{sales growth} - b_4 \times \text{liquidity} - b_5 \times \text{firm size}. \end{aligned} \tag{1b}$$

5.2. Environment, capital structure, and performance

$$\begin{aligned}\text{Performance (accrual)} = b_0 &- b_1 \times \text{economic risk} + b_2 \times \text{market risk} \\ &- b_3 \times \text{debt ratio} - b_4 \times \text{firm size}. \end{aligned} \tag{1c}$$

5.3. Environment, corporate strategy, capital structure, and performance

$$\begin{aligned}\text{Performance (cash flow)} = b_0 &- b_1 \times \text{business risk} - b_2 \times \text{market risk} \\ &+ b_3 \times \text{asset growth} + b_4 \times \text{growth potential} \\ &+ b_5 \times \text{liquidity} + b_6 \times \text{firm size}, \end{aligned} \tag{1d}$$

$$\begin{aligned}\text{Performance (accrual)} = b_0 &- b_1 \times \text{economic risk} + b_2 \times \text{market risk} \\ &+ b_3 \times \text{sales growth} - b_4 \times \text{liquidity} \\ &- b_5 \times \text{debt ratio} - b_6 \times \text{firm size}. \end{aligned} \tag{1e}$$

6. Research design and operationalization of variables

6.1. Unit of analysis

Data were collected from secondary sources for effective testing of the hypothesis. Since the model pertains to testing the effects of constructs, i.e., environment risk and corporate strategy, and their effect on firm performance; corporate strategy and capital structure, and their impact on firm performance, the unit of analysis was at the firm's corporate level for variables that pertain to corporate strategy, capital structure, and firm performance.

6.2. Measures

Environment risk was operationalized using the dimensions of risks, i.e. economic risk, defined as the covariance between the GDP growth rate and the firm's sales growth rate;

business risk, defined as the covariance between the average cash flow of the S&P 500 firms and the restaurant firm's cash flow; and market risk, defined as the covariance between the average market price of the S&P 500 stock and the market price for each firm (see Table 1). The dimensions of corporate strategy, i.e. growth was operationalized using sales growth, asset growth and growth potential; and liquidity will be operationalized using the firm's investment in cash and marketable securities as a percentage of total assets. The capital structure of the firm was operationalized using the debt ratio while firm performance will be operationalized using the two dimensions, cash flow (free cash flow per share) and accrual returns (return on equity). See Table 1 for a description of variables, measures, and their operationalization.

6.3. Control variables

The control variables in this study include geographic dispersion and firm size. Firms selected as part of the sample included restaurant firms that reported at least 80% of their revenue generation from US operations. This also controls for external environment conditions other than those that emanate from within the United States. Firm size was the other control variable, which would help in discerning the effects of firm size on the variables used in this study.

7. Data and analysis

Data from 48 publicly traded restaurant firms with primary operations in the United States were collected from COMPUSTAT through Wharton Research Data Service (WRDS) while using factors identified in the previous section to control for the sample characteristics. Note that data were collected between the time periods 1995 and 2000, as this period reflected robust growth for the restaurant industry in the United States. The economic boom reported in this period helped control for any firm strategy-related issues affected by environment-related impacts. Also, data related to the environment risk construct were obtained between the time periods (quarters) 1992–2000 to derive the measures for environment risk related variables (see Table 1 for the operationalization of these variables).

Regression analysis was used as the statistical method based on the theoretical models developed in Section 4. This type of analysis was used to gauge the direction and magnitude of the relationship between variables. The magnitude of the standardized coefficients obtained through regression analysis was used for interpretation.

8. Results

The relationships among the constructs were tested using measures of the firm performance construct as the dependent variables and the variables of the environmental risk, corporate strategies, and capital structure constructs as independent variables. Incremental models were tested to confirm that the full model with measures representing all three independent constructs is the best model that explains the most variance in firm performance.

Testing began with the correlation matrix provided in Table 2 which shows no high correlation between variables. Assumption tests were carried out for incremental models,

and the results reveal that multicollinearity is not a problem as the tolerance and Variance Inflation Factor for almost all variables of the tested models were close to 1 (see Table 3). Also, the Normal Probability Plots for the model were closer to the diagonal, indicating that the model met the homoscedasticity assumption in that the error variances of the independent variables were not correlated.

Results indicate (see Table 4) that the full model explains 59% of the variance of the firm's return on equity. This clearly is the best model, as compared to other incremental models that explain 35% (environment risk, corporate strategy, and firm performance) and

Table 2
Correlation matrix

	Measures	1	2	3	4	5	6	7	8	9	10	11
1	ECONBETA	1.00										
2	OPCASHBETA	−0.11	1.00									
3	MBETA	0.04	0.04	1.00								
4	SALESGR	−0.13	−0.24	0.07	1.00							
5	ASSETGR	−0.07	−0.14	0.44**	0.25	1.00						
6	GRPOTEN	−0.33*	−0.13	0.22	0.74**	0.22	1.00					
7	LIQRAT	0.08	−0.30*	−0.08	0.54**	−0.01	0.47*	1.00				
8	DEBTRAT	0.10	−0.08	0.18	−0.19	−0.07	−0.29*	−28	1.00			
9	FCFPERSHARE	0.20	−0.46*	−0.29*	0.13	−0.18	0.09	0.40**	−0.09	1.00		
10	RETONEQ	−0.40*	0.07	0.15	0.03	0.20	0.14	−0.06	−0.55**	−0.09	1.00	
11	SIZELOG	−0.14	0.60**	0.23	−0.15	0.046	0.134	−0.35*	−0.13	−0.34*	0.03	1.00

*Indicates correlation is significant at $p = 0.05$ (2-tailed).
**Indicates correlation is significant at $p = 0.01$ (2-tailed).

Table 3
Results of assumptions tests

	Equations	Independent measures	Tolerance	VIF
(1a)	$\text{FCFPERSHARE} = b_0 - b_1 \times \text{OPCASHBETA} - b_2 \times \text{MBETA} + b_3 \times \text{LIQRAT} + e$	OPCASHBETA	0.91	1.10
		MBETA	0.99	1.00
		LIQRAT	0.90	1.10
(1b)	$\text{RETONEQ} = b_0 - b_1 \times \text{ECONBETA} + e$	ECONBETA	0.99	1.00
(1c)	$\text{RETONEQ} = b_0 - b_1 \times \text{ECONBETA} + b_2 \times \text{MBETA} - b_3 \times \text{DEBTRAT} + e$	ECONBETA	0.99	1.00
		MBETA	0.98	1.02
		DEBTRAT	0.97	1.02
(1d)	$\text{FCFPERSHARE} = b_0 - b_1 \times \text{OPCASHBETA} - b_2 \times \text{MBETA} + b_3 \times \text{LIQRAT} + e$	OPCASHBETA	0.91	1.10
		MBETA	0.99	1.00
		LIQRAT	0.90	1.10
	(*Note*: Model same as Eq. (1a))			
(1e)	$\text{RETONEQ} = b_0 - b_1 \times \text{ECONBETA} + b_2 \times \text{MBETA} - b_3 \times \text{LIQRAT} - b_4 \times \text{DEBTRAT} - b_5 \times \text{SIZELOG} + e$	ECONBETA	0.97	1.03
		MBETA	0.89	1.12
		LIQRAT	0.80	1.25
		DEBTRAT	0.89	1.12
		SIZELOG	0.76	1.30

Table 4
Results of regression analysis

	Equations	Model F statistic	Model R^2	Adj[a] R^2	Independent measures	Standardized beta weights
(1a)	$\text{FCFPERSHARE} = b_0 - b_1 \times \text{OPCASHBETA} - b_2 \times \text{MBETA} + b_3 \times \text{ASSETGR} + b_4 \times \text{GRPOTEN} + b_5 \times \text{LIQRAT} + b_6 \times \text{SIZELOG} + e$	7.89****	0.35	0.31	OPCASHBETA MBETA LIQRAT	−0.36** −0.26* 0.27*
	Revised Model : $\text{FCFPERSHARE} = b_0 - b_1 \times \text{OPCASHBETA} - b_2 \times \text{MBETA} + b_3 \times \text{LIQRAT} + e$				ASSETGR GRPOTEN SIZELOG	NS NS NS
(1b)	$\text{RETONEQ} = b_0 - b_1 \times \text{ECONBETA} + b_2 \times \text{MBETA} + b_3 \times \text{SALESGR} - b_4 \times \text{LIQRAT} - b_5 \times \text{SIZELOG} + e$	*Note*: Only ECONBETA was significant. Hence, model is rejected				
	Revised Model : $\text{RETONEQ} = b_0 - b_1 \times \text{ECONBETA} + e$					
(1c)	$\text{RETONEQ} = b_0 - b_1 \times \text{ECONBETA} + b_2 \times \text{MBETA} - b_3 \times \text{DEBTRAT} + b_4 \times \text{SIZELOG} + e$	12.11****	0.51	0.47	ECONBETA MBETA	−0.35** 0.22′
	Revised Model : $\text{RETONEQ} = b_0 - b_1 \times \text{ECONBETA} + b_2 \times \text{MBETA} - b_3 \times \text{DEBTRAT} + e$				DEBTRAT SIZELOG	−0.58**** NS

(1d)	$\text{FCFPERSHARE} = b_0 - b_1 \times \text{OPCASHBETA} - b_2 \times \text{MBETA} + b_3 \times \text{ASSETGR} + b_4 \times \text{GRPOTEN} + b_5 \times \text{LIQRAT} + b_6 \times \text{SIZELOG} + e$	7.89****	0.35	0.31	OPCASHBETA	−0.36**
					MBETA	−0.26*
					LIQRAT	0.27*
	Revised Model : $\text{FCFPERSHARE} = b_0 - b_1 \times \text{OPCASHBETA} - b_2 \times \text{MBETA} + b_3 \times \text{LIQRAT} + e$				ASSETGR	NS
					GRPOTEN	NS
					SIZELOG	NS
	(*Note*: Model same as Eq. (1a))					
(1e)	$\text{RETONEQ} = b_0 - b_1 \times \text{ECONBETA} + b_2 \times \text{MBETA} + b_3 \times \text{SALESGR} - b_4 \times \text{LIQRAT} - b_5 \times \text{DEBTRAT} - b_6 \times \text{SIZELOG} + e$	9.42****	0.59	0.53	ECONBETA	−0.36***
					MBETA	0.31*
					LIQRAT	−0.25*
	Revised Model : $\text{RETONEQ} = b_0 - b_1 \times \text{ECONBETA} + b_2 \times \text{MBETA} - b_3 \times \text{LIQRAT} - b_4 \times \text{DEBTRAT} - b_5 \times \text{SIZELOG} + e$				DEBTRAT	−0.67****
					SIZELOG	−0.28*

Note: * indicates significance at $p = 0.05$, ** indicates significance at $p = 0.01$, *** indicates significance at $p = 0.005$, **** indicates significance at $p = 0.001$, ′ indicates significance at $p = 0.1$, NS indicates "not significant," i.e., $p > 0.1$.

[a]Adj. R^2 is the Adjusted R^2.

51% (environment risk, capital structure, and firm performance) of the variance in firm performance.

Note that size as a control variable is significant, which indicates that smaller firms report higher return on equity than bigger firms when economic risk is lower and market risk is higher than the average firm, given that the liquidity and the debt ratio of the firm is lower than the average firm. This is important for the managers of firms to consider when formulating strategies. Firm size should be considered as an important variable in the strategy formulation process. On the other hand, the relationships among free cash flow per share and variables of the independent constructs were limited to the environment risk and corporate strategy constructs. This model explains 35% of the variance in free cash flow of the firm, which further supports the model hypothecation.

Also note that firm size was not significant, which indicates that both big and small firms behave in a similar manner in terms of the relationship between free cash flow per share and the independent variables related to environment risk and corporate strategies. Therefore, the key finding of this study is that the constructs that included strategic management concepts and corporate finance theory help in explaining the value addition to the firm. The robustness of the study provides adequate construct validity in using theoretical underpinnings from both research domains in developing the firm performance model, as purported by Olsen et al. (1998). This provides the answer to the research question, i.e. is firm performance better explained by the variables that represent the environment risk, corporate strategy and capital structure constructs?

9. Implications, limitations, and conclusions

The main objective of this study was to test if the firm performance-related model that includes the key alignment constructs of environment risk, corporate strategies, and capital structure holds good. The results obtained from the statistical analysis support this relationship. This study confirms that the variables that represent constructs of the co-alignment model simultaneously help explain a significant variance in firm performance. This is supported by the fact that the results obtained underscore that the variables representing the environment risk, corporate strategy, and capital structure constructs simultaneously explain a significant variance in firm performance.

From a managerial perspective, this study's contribution lies in the fact that it helps managers in the formulation of strategies that address the environment volatility and uncertainty dimensions as well as develops resources that support their strategy formulation decisions. While this study creates awareness in practitioners to gauge the relationship between the firm's environment, its strategy and structure, it provides them a basis to develop surrogate measures to capture the effects of the constructs developed in this study and applying them to their firm specific situations.

Insofar as the model helps in the explication of firm performance and in the use of proxies that represent the constructs of the co-alignment model, the co-alignment effects were not tested in the present study. The present study lays the groundwork for developing key measures for each of the constructs within the co-alignment model. Measures such as ECONBETA, OPCASHBETA, and MBETA that represent the environment risk construct, which were tested in the present study, could be used in future research efforts. New measures such as the ones that represent the interaction between the economic macro-environment and the cost structure of the firm could be added on to the existing measures

to include the effects of the firm's external value drivers. Also, measures that capture the effects of other environmental categories, i.e. socio-cultural and technology could be used in future research efforts.

The development of measures applies more to the corporate strategy construct. Since all three measures, i.e. SALESGR, ASSETGR, and GRPOTEN were not significantly related to firm performance, it is essential to verify this in future research efforts, which may lead to the development of new measures. The present study focuses on restaurant firms that are publicly owned and operate within the United States. To be able to make inference to other restaurant firms that operate nationally and are privately owned, future research could carry this effort forward to include privately held restaurant firms that operate within the United States. This will help control for country effects and currency effects, which are essential for testing the constructs, especially the environment risk construct. Furthermore, this will help in testing the model using a new sample of restaurant firms with a different attribute or set of attributes, which will improve the generalizability of the model as proposed in this study.

The limitation of this study is the sample size, which comprised of 48 firms. Since the screening criteria used to include firms as part of the sample restricted the sample size to 48 firms, this could have been a factor that led to negative results pertaining to some of the variables. Future studies could consider a larger sample size to test the models analyzed in this study.

The objective of this study was to test if a significant amount of variance in firm performance is explained by environment risk, corporate strategies, and capital structure constructs. Future research efforts could test co-alignment as well as causal relationships between these constructs. This will be the next step to test and refine, as well as determine the viability of the co-alignment model.

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