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The Impact of Organizational Structure on Firm Performance: Evidence From Malaysian Large Firms

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ABSTRACT

Large firms are associated with bureaucratic or mechanistic structure, nevertheless organic structure is essential in today's highly competitive and ever changing business environments. Therefore, objective of this research is to examine the relationship between organizational structure and firm performance among large firms in Malaysia. The effect of hostility as a moderator also has been investigated. These investigations have been performed using Partial Least Square (PLS) for a sample of 138 large firms that listed on the main board, Bursa Malaysia. The study uses three performance measures (net profit, return on asset and sales growth) as an independent variable. The results indicate that organic structure has positive relationship with firm performance. This relationship also moderated by environmental hostility.

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INTRODUCTION

The organizational structure is vital in every organization to control employees and to ensure that efforts are channelled towards business activities that facilitate the achievement of organizational goals (Katsikea *et al.*, 2011). Therefore, an appropriate organizational structure must be in place to ensure that the objectives of the firm, to obtain greater firm performance, are met.

Large firms are associated with bureaucratic or mechanistic structure. This is because, as they grow, they become larger and usually have tight procedures and formal controls of their operations (Burns and Stalker, 1961; Sandino, 2007). Nevertheless, organic structure is essential in today's highly competitive and ever changing business environments. This is to become faster and adaptive to change and also to facilitate the entrepreneurial efforts. The reason for the current developments stem from the fact that large firms face difficulties in acting fast and capitalizing on the first mover advantage due to the firm's bureaucratic structure. The complexity of the organizational structure impedes information flows, lengthens decision making and thus kills fast acting initiatives (Burns, 2008).

The organic structure is informal and flexible and more appropriate in unstable, unpredictable and turbulence external business environments (Burns and Stalker, 1961). It is characterized by flatness;

horizontal communications and interactions, low specialization; decentralized decision making.

The contingency theory argues that greater firm performance or effectiveness can be achieved in more than one way, provided that the selection of variables must be suitable (Robertson and Chetty, 2000). Accordingly, the introduction of the third variable may help to reduce potential misrepresentations and gain a better understanding (Rosenberg, 1968). That is why it is recommended by theorists that any theory of corporate or business strategy must be a contingency based approach (Ginsberg and Ventkatraman, 1985). Thus, in this study, the environmental factor which is hostility was chosen as a moderating variable. Hostility is the degree of threat to the firm characterized by unsafe industry setting, intense competition and lack of business opportunities (Covin and Slevin, 1989).

Literature Review:

Contingency Theory:

The central premise of the contingency theory is that, there must be congruence between or 'fit' among key variables such as the environment, structure, and strategy in order to achieve greater firm performance (Burns and Stalker, 1961; Child *et al.*, 2003). In other words, the relationship between two variables depends on the level of a third variable. For example, the relationship between

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entrepreneurial orientation and firm performance might be stronger in turbulent environments.

The advantage of using the contingency theory in ascertaining the determinants of firm performance is that it provides guidelines on how to achieve superior performance by understanding that different work settings require different approaches and that efficiency is related to the continuing alignment of various contingencies (Bradshaw, 2009). Thus, each firm must build its own exclusive strategy based on the organization's environment, history, set of personalities, and culture (Brudney and Murray, 1997).

Consistent with these views, it is important to investigate the impact of a third variable on the relationship between a predictor variable and a criterion variable. This is because may be the relationship between the two variables are dependent on the level of a third variable which is the moderating variable. The impact of the predictor variable varies across the different levels of the moderators such as environment (Ventkatraman, 1989).

According to Burns and Stalker (1967), organizational structure and firm performance have a contingent relationship; mechanistic or bureaucratic form is more appropriate in a stable environment while organic is conducive in a dynamic environment. The mechanistic or bureaucratic type has more managerial or hierarchical levels, higher centralization, more formal rules, a narrower control range, and a greater dependence on vertical instruction in communication. In contrast, organic or adaptive structures are less hierarchical, decentralized, have less formal rules, a wider control range and vertical mode of instruction in communication Nahm *et al.*, 2010).

The Relationship between Organizational Structure and Firm Performance:

An efficient organizational structure is crucial for the firm to achieve its goals and objectives (Campbell and Craig, 2005). It forms one of the management's top priorities. Besides, the organizational structure is the basic foundation of an organization and influences the behavior of the organization's members (Dalton *et al.*, 1980). Thus, optimum firm performance can be achieved with proper adjustment of the organizational structure. In other words, the organization must find the ideal structure for their organization.

In this highly competitive business environment where customer's preferences change rapidly and technology is advancing at an unprecedented rate, the organization must be able to respond and adapt to the changes faster than their competitors. Thus, the main quality of the new organizational structure is the ability of being flexible and acclimatizes to the fast changing environment (Farhanghi *et al.*, 2013; Sakalas and Ventskus, 2007). This is the key to

succeed in today's business world. Therefore, the firm structure must always be organic (Kuratko, 2007) to enable firms to be more flexible and adaptive, aggressive, faster and better at generating novel products, services, and process improvements (Morris *et al.*, 2009).

An appropriate organizational structure has been identified as a must for achieving a highly entrepreneurial firm that is able to recognize new opportunities and transforms ideas and creativity into realities (Covin and Slevin, 1990; Hostager *et al.*, 1998). The mechanistic structure is not suitable for today's entrepreneurial firms because of their rigidity that stifles communications (Zhu and Jiao, 2013). Besides, the centralization or high level autonomy practiced by the higher levels of the organization will affect the success of the firm (Thornhill and Amit, 2000).

In addition, the organic structure is most likely associated with the broad and future oriented information behavior (Gordon and Narayanan, 1984). In other words, the firm must avoid the bureaucracy or mechanistic structure presented in a large organization (Falbe, *et al.*, 1999). Many large firms have lost the entrepreneurial spirit due to their size and success because as they grow larger, their ability to be flexible and innovative has been paralyzed (Echols and Neck, 1998). Thus, their flexibility and creativity are reduced and this is why the organizational structure must be modified from time to time to enable revitalization (Ramezan, 2011). According to Kuratko (2007) and Kuratko *et al.* (2014), an entrepreneurial firm's structure must be always organic to enable firms to become more flexible and adaptive, aggressive, faster and better at generating novel products, services, and process improvements

As current environments become more and more dynamic, threatening and complex, organizations have to be more competitive and entrepreneurial. Therefore, the organizations must find ways to move the company towards a more organic structure (Kuratko, 2007). In the past four decades, many researchers have agreed with Burns and Stalker's proposition that a firm with an organic structure in hostile environments will outperform others (Aiken *et al.*, 1980; Covin and Slevin, 1989). Previous research indicates that organic structures facilitate the entrepreneurial strategies to enhance a company's financial performance, while mechanistic structures do not (Covin and Slevin, 1989). Additionally, high levels of performance achieved by many entrepreneurial firms are with flexible and non-bureaucratic structures (Jogaratham and Tse, 2006).

According to Ramezan (2011), among the advantages of the organic structure is that firstly, it is able to adapt to the changes faster and easily due to the simple structure characterised by decentralized decision making, lack of rigid rules and procedures, open communication and fluid job descriptions. In

other words, the organic structure is the most adaptive form of organizational structure. Second, the multi-talented employees are allowed to do multi-tasking works. The employees are encouraged to work in a team where the decision making is horizontal and flat in structure. Thus, it is less time consuming and encourages risk taking. Third, the divisions only consist of the top management, strategic groups, and project teams. This is to avoid departmental barriers and facilitate the cross-functional teams and integration of specialized sources of knowledge. Fourth, the authority and decision making are decentralized, thus, empowerment of the employees promotes proactiveness, openness and trust amongst them. Fifth, the informality is higher in an organic structure, thus the employees have more freedom, face to face communication, practice the two loops of communication; upward and downward, and employees are included in the decision making process. This facilitates the creation of knowledge in the organization.

A loose organic situation enables the firm to be more flexible in order to be creative, innovative, take risks, explore, and to do experiments. The mechanistic structure has rigid rules, policies and routines that inhibit the employees from exploring new ideas and their behavior and communication is based on standardized rules. Thus, it is difficult to integrate the available information, resources and knowledge (Menguc and Auh, 2010).

Organizational structures have been associated with firm performance over the years. However, the precise nature of the relationship between the two constructs is not clear (Stank *et al.* 1994: 41). In addition, the literature on the relationship of these two constructs is among the most vexing and ambiguous in the field of management and organizational behavior. Evaluations and generalizations concerning the nature and direction of these relationships are tenuous (Dalton *et al.*, 1980). Thus, the need for empirical research on the organizational structure-performance relationship is encouraging.

There are three dimensions of the organic structure that are often associated with firm performance; less formalization, decentralization, and low specialization. Decentralization exists when the decision-making authority and control is not only concentrated at the top level management in an organization but also that the middle and lower levels of management are given the authority to make decision. Formalization concerns the rules and standard procedures of the decision-making and working relationship. Less formalization means the employees are given the freedom to perform tasks (Willem *et al.*, 2007). Specialization is the division of tasks and activities according to the employee designations in the organization (Stank *et al.*, 1994). Low level of specialization exists when each

employee performs a variety of and regularly changing tasks (Willem *et al.*, 2007).

The element of decentralization in an organic structure is found to be conducive to organizational effectiveness (Burns and Stalker, 1961; Dewar and Werbel, 1979; Floyd and Wooldridge, 1992; Rapert and Wren, 1998; Schminke *et al.*, 2000). Decentralization encourages employees to act faster in the complex, and rapidly changing environments and also respond to market conditions (Liao *et al.*, 2010; Schminke *et al.*, 2000). The centralization of decision-making limits the flow and speed of communication within the business units (Lawrence and Lorsch., 1967) which leads to delays in recognizing business opportunities.

Decentralization increases job satisfaction, and motivation (Dewar and Werbel, 1979). This is because the middle and lower level managers have more autonomy and greater participation in the decision-making process (Hall and Saias, 1980). It also encourages innovative behaviour and thus leads to the fulfilling of the customer's preferences. This is supported by the seminal meta-analytic works of Damanpour (1991). Further, decentralization enables the employees to initiate and experiment more innovative ventures (Miles and Arnold, 1991; Russell, 1999). In addition, the participation of team members in decision making empowers employee to innovate more. The costs will also be reduced because decisions are made faster (Claver-Cortés *et al.*, 2012).

Previous researches on mechanistic versus organic structure were found that, there are inconsistent findings of the organic structure on the firm performance. This may be due to the industry types, firm's size and the external environments. Recently, the study conducted in Iranian consultant firms shows that the organic structure has positive influence on firm performance (Farhanghi *et al.*, 2013). According to this study, in today's business environment the firms' organizational structure must be more flexible and adaptive. This also supported the study conducted on large Spanish firm that the firms, in which firms that have decentralize decision making influenced the firm performance positively (Claver-Cortés *et al.*, 2012). This is also similar to the study among the restaurant franchisees in the United States where, the firms with organic structure have positive effect on firm performance (Sul and Khan (2006). The study conducted among 6,065 listed corporations in China securities market finds that flat structure is valuable for both short term and long term corporate performance (Zhu and Jiao, 2013). Thus, it can be hypothesized that;

Hypothesis 1: The organic structure has a direct positive relationship with firm performance than the mechanistic structure.

Environmental Hostility as a Moderator:

Fundamentally, the effectiveness of mechanistic and organic organizational structures is dependent on the nature of a firm's external environment (Burns and Stallker, 1961; Khandwalla, 1977). In hostile environments, the organizational structure of the large firms must be more organic or flexible (Khandwalla, 1972, 1973) in order to respond to the changes in the business environment.

The effect of environments on the organizational structure has also been found in the classical works of Burns and Stalker (1961), Thompson (1967) and Perrow (1970). To deal with complex environments, firms must adopt organic structures to ensure that they are more responsive to the challenging environments (Miller, 1983). When the external business environments are risky, hostile, very stressful and the rate at which products and services are becoming obsolete is very high, the firms must implement loose, informal and decentralize decision making. This is to ensure faster decision making and action to adapt with the fast changing environment. Thus, building on these arguments, the following hypotheses suggest a positive influence of environmental dynamism and hostility on the organic structure in relation to firm performance. Therefore it can be hypothesized that;

Hypothesis 2: The hostility of the environment will positively moderate the relationship between the organic structure and the firm performance of the firm.

Research Method:

The instrument for organizational structure was adapted from Khandwalla (1977). The eight item scale was used to measure the firm's structural organicity. These measurement items were built upon the Burns and Stalker (1961) operationalisation of the organic versus mechanistic continuum. There are three dimensions identified in this mechanistic-organic structure scale, namely, formalization, specialization, and centralization (Khandwalla,

1977). This scale had consistently demonstrated high Cronbach alpha values in previous studies and was the primary reason for choosing it. This study employed 8 items with a seven-point scale ranging from (1) "strongly disagree" to (7) "strongly agree." Environmental hostility was measured using three items. Each of the items used the 7-point scale. These scales were developed by Miller and Friesen (1982) and were widely used by previous authors who affirmed their reliability and validity (e.g. Miller 1983; Dess *et al.*, 1997; Moreno and Casillas, 2008; Zahra and Garvis, 2000).

The data for this study have been collected through a mail survey done by a structured questionnaire. Out of 660 mailed surveys, only 138 were returned with a usable response, resulting in 20.9% response rate.

In order to identify the impact of organizational structure on firm performance in Malaysian large firms, PLS-SEM was used to test the proposed hypotheses. Recently, there are increasing interests among the researchers to use PLS-SEM because of its ability to handle formative measures, small sample sizes, and non-normal data. Therefore, these are the most prominent reasons for its application and gained acceptance in management and economics field (Hair *et al.*, 2011).

Results:**Sample Demographics:**

Based on the firm's profile as illustrated in Table 1, 45 (32.6%), of the firms had been established for 10 to 20 years, followed by the firms with 21 years to 30 years of establishment, 34 (24.6%) while only 8 (5.8%) firms had been established for more than 50 years. Next, in terms of number of employees, 106 (76.9%) firms had more than 300 employees. Of the 14 sectors included in this study, 40 firms (29%) were in the industrial products sector, representing the biggest number of firms in a particular sector, followed by consumer product sector with 35 firms (25.4%).

Table 1: Firm's Profile for Model 1.

Demographic Variables	Number of Firms (N=138)	Percentage
Age of the Firm		
Less than 10 years	11	8
10-20 years	45	32.6
21-30 years	34	24.6
31-40 years	21	15.2
41-50 years	19	13.8
more than 50 years	8	5.8
Number of Employees		
Less than 300 employees	32	23.2
300-600 employees	36	26.2
601-900 employees	15	10.9
901-1200 employees	11	8.0
1201-1500 employees	8	5.8
1501-1800 employees	5	3.6
1801-2100 employees	5	3.6
More than 2100 employees	26	18.8
Sector		
Consumer Products	35	25.4

Construction	3	2.2
Services	18	13.6
Finance	5	3.6
Properties	14	10.1
Industrial Products	40	29
Trading	8	5.8
IPC	1	0.7
Hotels	2	1.4
Plantations	7	5.1

Step 1: Assessment of Measurement Model:

The validity and reliability of the measurement model for this study is evaluated using the following analyses: internal consistency reliability, indicator reliability, convergent validity and discriminant validity (Urbach and Ahlemann, 2010).

In this study, the internal consistency of the each construct ranges from 0.85 to 1.00 and this is above the recommended threshold value of 0.70 as shown in Table 2. Thus, the results point out that the items used to represent construct have satisfactory internal consistency reliability.

It can be seen in Table 2 that, for indicator reliability, 3 items were eliminated for organic

structure, and 2 items eliminated for hostility construct 0. Only items that have loading that above 0.50 were retained for further analysis (Hair *et al.*, 2010).

In order to test the convergent validity, the average variance extracted (AVE) is use to measures the variance captured by the indicators relative to measurement error, and it should be greater than 0.50 to justify using a construct (Barclay *et al.*, 1995). The result of the analysis in Table 2 shows that all constructs have AVE ranging from 0.53 to 1.00 which is demonstrated an adequate convergent validity.

Table 2: Internal Consistency, Indicator Reliability, and Convergent Validity

Construct / Items	Loading	Composite reliability (CR)	Average variance extracted (AVE)
Firm Performance		0.89	0.73
ROS	0.93		
ROA	0.95		
Sales Growth	0.66		
Organic Structure		0.85	0.53
OS_3	0.58		
OS_4	0.70		
OS_5	0.76		
OS_6	0.92		
OS_8	0.64		
Hostility		1.00	1.00
Hos_1	1.00		

The discriminant validity is the complement of the convergent validity. It is indicates the degree to which one construct differs from the others. It can be assessed by using two measures; i) cross loading, and; ii) Fornell Larcker's (1981) criterion. First, the loadings of the indicators must be higher on their respective construct compared to other constructs. In this vein, Table 3 shows the indicators' loading of with respect to all constructs correlations. From

Table 3, it can be seen that all measurement items loaded higher in its construct compare to other constructs, and loading of each block is higher than any other block in the same row and columns. It is obvious that, the loading clearly separates each construct as theorised in the conceptual model. Therefore, the cross loading of the items in measurement model's discriminant validity are satisfied.

Table 3: Discriminant Validity: Cross Loadings

Construct	Hostility	FP	Organic Structure
Hostility			
Hos_1	1.00	0.04	0.11
FP			
ROS	-0.01	0.93	0.20
ROA	0.10	0.95	0.29
SG	-0.08	0.66	0.08
Organic Structure			
OS_3	0.08	-0.02	0.58
OS_4	0.03	0.09	0.70
OS_5	0.09	0.10	0.76
OS_6	0.09	0.31	0.92
OS_8	0.13	0.09	0.64

Bold values are loadings for items which are above the recommended value of 0.5

Table 4: Discriminant Validity: Fornell-Larcker criterion

Construct	1	2	3
1.Hostility	1.00		
2.Firm Performance	0.04	0.85	
3.Organic Structure	0.11	0.26	0.73

Diagonals (in bold) represent the square root of AVE while the other entries represent the correlations

Second measure of the discriminant validity is the Fornell-Larcker criterion. There are two ways of assessing the Fornell-Larcker criterion (Chin, 2010); i) compare the square root of AVE to construct correlations, and; ii) compare the AVE with the squared correlations among the construct correlations. The aim is to ensure the AVE / square root of AVE should be greater than each of the construct correlations. This is to ensure that the measurement model demonstrated adequate discriminant validity (Fornell and Larcker, 1981). From Table 4, all square roots of AVE exceeded the off-diagonal elements in their corresponding row and column. Thus, the result confirmed that Fornell and Larcker's criterion is met.

Step 2: Assessment of Structural Model:

The second step in evaluating the model in PLS analysis is assessment of the structural model. The structural model covers the relationships among hypothetical constructs. Bootstrapping is used to assess the structural model in PLS. The number of bootstrap samples used in this study was 1,000, and the number of cases is equal to the number of observations in the original sample.

Table 5 shows that organic structure ($\beta = 0.26$, $p < 0.01$) was positively related to firm performance. The environmental hostility positively moderated this relationship ($\beta = 0.09$, $p < 0.10$). This supports both Hypothesis 1 and Hypothesis 2. The variance explained for this interaction effects model was 0.06%.

Table 5: Hypotheses and Results

Hypotheses	Path Coefficient	t Value	Supported
H1	0.26	4.16***	Yes
H2	0.09	1.43*	Yes
R ²		0.06	

* $p < .10$; ** $p < .05$; *** $p < .01$ **

Discussion and conclusion:

In this study, it is found that the organic structure was positively related to firm performance. In other words, the less formalized, decentralized and less specialized organization structure leads to higher firm profitability and growth. This findings support previous research by Claver-Cortés *et al.* (2012), Covin and Slevin (1990), Farhanghi *et al.* (2013), Sine *et al.* (2006) and Sul and Khan (2006). According to Kuratko (2007), the firm structure must be always organic to enable firms to become more flexible and adaptive, aggressive, faster and better at generating novel products, services, and process improvements (Morris *et al.*, 2009). The mechanistic structure is not suitable for today's entrepreneurial firms because of their rigidity and stifling communications. Besides, centralized or high-level autonomy possessed by higher levels of the organization will affect the success of the firm (Thornhill & Amit, 2000).

In line with contingency theory, prior literatures suggest that superior firm performance can be achieved when the key variables such as the environment, industry conditions, organizational structures, and strategies are aligned. Based on this argument, this study included environmental hostility as a moderating variable to be clearer about the underlying factors affecting firm performance. In this study, it is found that, the relationship between organic structure and firm performance moderated by environmental hostility. It can be concluded that,

when the environment in which the firms operate is very risky, stressful, hostile and hard to keep afloat, the organizational structure will be less formalized, specialized and decentralized in order to achieve higher firm performance.

The key contributions of this research are first; the empirical evidence of the impact of organizational structure on large firm performance. Organizational structures of large firms are formal, highly specialized with centralized decision making. In other words, large firms practice the mechanistic structure. Thus, it is difficult for them to act faster. They have less entrepreneurial spirit and as a result, this affects the performance of the firm. However, it is empirically proven in this study that the organic structure of the large firms had a positive effect on the firm's profitability and growth. This also supported that in today's uncertain business environment, the organizational structure must be flexible for faster decision making and to adapt with the changing environments (Farhanghi *et al.*, 2013). Second; this study supported Burns and Stalker's (1967) propositions, that, organizational structure and firm performance have a contingent relationship; organic or adaptive structures is conducive in a dynamic environment.

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