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Investigating Relationship between Working Capital Management and Capital Structure

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Abstract

The main purpose of this paper is to investigate the relationship between working capital management and capital structure quantitatively. Many firms are facing financial deficit issues due to lack of working capital management. Debt policy decisions has been an important tool for the managers to tackle with financial complexities. Quantitative research approach was followed in this paper using self-administered survey questionnaire. Top managers were selected as sample to obtain their views on the WCM components influencing capital structure decisions and the extent to which they felt that these had been considered as successful. The SMART-PLS (Partial Least Square) version 2.0 software was used for the analysis of the results. From the statistical findings it was found that working capital management play an important role in managing capital structure of Malaysian public listed firms. Managers must utilize the budget appropriately and control costs to set performance goals of the organization.

Key Words: *Working capital management, capital structure, quantitative, Malaysia*

1. Introduction

Working capital management (WCM) is part of the financing considerations besides capital structure and capital budgeting (Ross, Westerfield and Jordan, 2010). For companies it is important that the manager be able to make a managerial decision to overcome financial deficit issues. Meanwhile, in determining the firm's capital structure, the finance manager also need to take into account the firm's working capital management, which basically means managing the firm's current assets and current liabilities at satisfactory level (Dong and Su, 2010; Gill, Biger and Mathur, 2010). The current restrain on cash and credit is threatening the survival of many firms in all over the world including Malaysia. Malaysia as one of the post-industrial societies has undergone a fierce competition within its rivalries. It was noted from Ting and Lean (2011) that, determination of debt policy decisions is an important issue in Malaysian companies. Malaysia as an emerging country have been a hotspot for investigating the clarity of firm's activity towards debt and equity financing decisions.

The theory of working capital management by Sagan (1955) mentioned that manager's responsibility to provide funds as needed and to invest funds available based on the cash flows and total current asset positions. In addition, pecking order theory presumes an increase in the cost of financing with asymmetric information. The pecking order theory is very important because it has elicited increasing arguments. Some of the literature on the pecking order theory are provided by Kraussi et al. (2015); Serrasqueiro and Caetano (2015). Since then the theory of working capital have been revolutionized with agency theory, stakeholder theory, stewardship theory and so on. However, none of them were able to predict actual role of working capital towards managing capital structure.

According to studies like (Driffield, Mahambare, & Pal, 2007; Haron, 2014), the relationship between capital structure and firm value have been widely studied in both theoretically and empirically, but were unable to tackle the issue of capital structure in total. Furthermore, (Haron, 2014) investigating capital structure issues in Malaysia revealed that since Modigiliani and Miller (1958) many studies have been performed extensively on capital borrowings by debt and equity but still the understanding in this area is inconclusive. However, in Malaysia, the concept of WCM has not been researched extensively as compared to other corporate finance topics like capital structure, capital budgeting and corporate governance, due to WCM is perceived as short term investment and financing decisions. Thus this paper with one step forward contributes by investigating the WCM factors quantitatively in order to know its influence on capital structure decisions of firms.

2. Literature on Working Capital Management

Working capital management is defined as the excess of current assets of a business over current items owed to employees and others. Corporate restructuring through integrated

working capital approach would improve leveraging business intelligence to create efficient working capital solutions. In the integrated WCM approach managers are more focused on external variables in the decision making process, and are managed in a more integrated manner. In the non-integrated WCM approach, managers are to strengthen internal processes associated and WCM components are managed in a more nonintegrated manner. Furthermore, San and Heng (2011) investigating the relationship between capital structure and firm performance for 49 Malaysian construction company found that there is strong relationship between them.

The main objective of this paper is to investigate the relationship between WCM, capital structure and profitability. To increase organisation ability for innovative products, concepts, ideas and strategic planning in the dynamic competitive market, there is a strong requirement of understanding the fundamental factors that may impact organization and its productivity. There have been many empirical evidences from previous literature investigating the importance of capital structure for the firms. There are many preceding studies investigating a variety of variables in relation to WCM are potentially associated for the profitability. In this empirical work, the alternative theories and literature related to WCM were considered. The six determining perspectives of WCM approach: perceived environmental uncertainty, budgetary control, organisational structure, organisational culture, level of complexity and asymmetric information was considered in this paper to determine whether integrated or non-integrated WCM approach have influence on capital structure decisions. Thus, the variables together with the theoretical predictions as to the direction of their relationship with capital structure are addressed in this paper.

2.1 Perceived environmental uncertainty (PEU)

PEU is defined as the extent to which managers perceive uncertainty about their environment and their effect on the firm (Butler, 2001).The concept of uncertainty in the organisation has always been a key variable explaining interpersonal behavior of the management. In the organisational context, the more better the organisational structure, the higher the effectiveness of the organisation (Ellis & Shpielberg, 2003).In behavioral research, PEU have been widely used especially in the management contexts. In the profession of accounting, uncertain environment is obvious have several studies like (Chenhall & Morris, 1986; Ferris, 1982; Gordon & Narayanan, 1984) have found impact of perceived uncertain environment within the accounting environment. Furthermore, Gul and Chia (1994) mentioned that, PEU is a strategic level construct that measures perceptions of top management. Similarly, Sawyerr, McGee, and Peterson (2003) tested a model of the effects of perceived uncertainty on firm performance utilizing a sample of managers in the technology factors and found that increased perceived uncertainty results in better firm performance.

2.2 Budgetary Control

Budgeting control refers to the establishment of budgets relating to the responsibility of managers to the requirements of a policy (Adams, 2001). The use of budget in the firms are the most common issues have been discussed by previous studies like (Bruns & Waterhouse, 1975; Nyland & Pettersen, 2004; Otley, 2003).However, control over budget is a critical tool that influences regulatory decision making, but yet the mechanism of budgetary control is unclear (Carpenter, 1996).Although budgeting processes are widespread in accounting systems that are used in all sorts of relationships between the organisation and the outside world, the purpose of this paper is to explain the use of budgeting and budgetary control within companies in order to help managers who run the firm.

2.3 Organisational structure

Organisational structure refers to the patterned relationships among the roles individual play in the formal organisation(Flamholtz, 1996). Structured policy affect operations is centralized, wherein decision making authority is concentrated at the top of the organisational hierarchy (Griffin & Moorhead, 2010).Organisational structure provides a foundation for the organisation as an effective control system that generates new approaches, and redesigned systems that are effective for an organisation. Thus it is expected that organisational structure as a component of WCM will be able to control and redesign the capital structure mechanisms in the organisation.

2.4 Level of complexity

Child (1972) defined complexity as the range of activities that are important for the operations of the organization. Furthermore, Campbell (1988) mentioned that complexity model possess four main characteristics that have been found to be significant contributor to the performance when utilized together (Jacko & Ward, 1996). The level of complexity influences the degree of dependency and interdependency in the activities of working capital. These level of complexities affects the decision making of managers in adverse market changes.

2.5 Organisational culture

Organisational culture refers to the belief, values and assumptions that helps an individual to behave in the organisation (Dwivedi, 1995). It is very difficult for the organisations to function without any regulations, formal flow of information, government policies, procedures and other activities. It is the duty of the organisations to build up the skills and abilities of their employees. Thus, organisational culture play an important role to associate the employee behaviour in relation to the job tasks and the organisation.

2.6 Asymmetric information

Information that is known to one party in a transaction but not to the other leading to adverse selection and moral hazard problems (Kettell, 2011). Asymmetric information is the situation

where there is imperfect knowledge or information on borrowing and lending. There is asymmetric information whenever there is lack of necessary information and control on the ability and willingness to repay the debt or borrowings (Bebczuk, 2003). Debt capital usage will increase with a decrease in the long term debt when there is more accurate information in the market. Pecking order theory states that, the higher the extent of asymmetric information would reduce the incentive to issue equity. Asymmetric information changes through time in the environment of taking financial decisions.

3. Capital Structure

Capital structure (CS) is defined as the mixture of financial tools that enhances firm's value. Capital structure is the financing mix that increases the value of the firm. However, there are mixed opinions among scholars regarding the importance of capital structure on firm's value. According to Adeyemi and Oboh (2011), capital structure is the percentage of a particular capital and each equity and debt has its own advantages and shortcomings. Some believes that firm's value is not dependent on financing mix decisions, but the modern theory of capital structure provided by Modigliani and Miller (1958) confirmed that firm's value is dependent on financing mix decisions taken by the firms (Baker & Martin, 2011).

Research scholars however, still have different opinions to confirm the role of capital structure to create firm value. In order to get optimal capital structure, the financial managers of the companies have to face great challenges. According to Artikis, Eriotis, Vasiliou, and Ventoura-Neokosmidi (2007) an incorrect financial decision may risk the company with financial distress and eventual bankruptcy. The extent to which the applicability of WCM has been realized in Malaysia, as an emerging economy, especially in regard to financing decisions (capital structure decisions), has not been well known yet, and little empirical evidence to attest to this fact of to the contrary has not been well documented. However, previous studies like (Preve & Sarria-Allende, 2010; Taleb, Abd, & AL-Shubiri, 2010) mentioned that, in the corporate world crucial factors affecting capital structure decisions and working capital management is a challenging issue.

However, Brooks and Mukherjee (2013) mentioned that, the decision on managing current assets and liabilities and cash flows for long term fixed investment as a part of capital budgeting is the financial issues for managers. Thus it is crucial to identify what factors of managing WCM are able to reduce the obstacles faced by the managers in balancing the capital structure and cost benefit strategies. The main goal of this paper is to fill this gap by analyzing role of WCM components towards capital structure

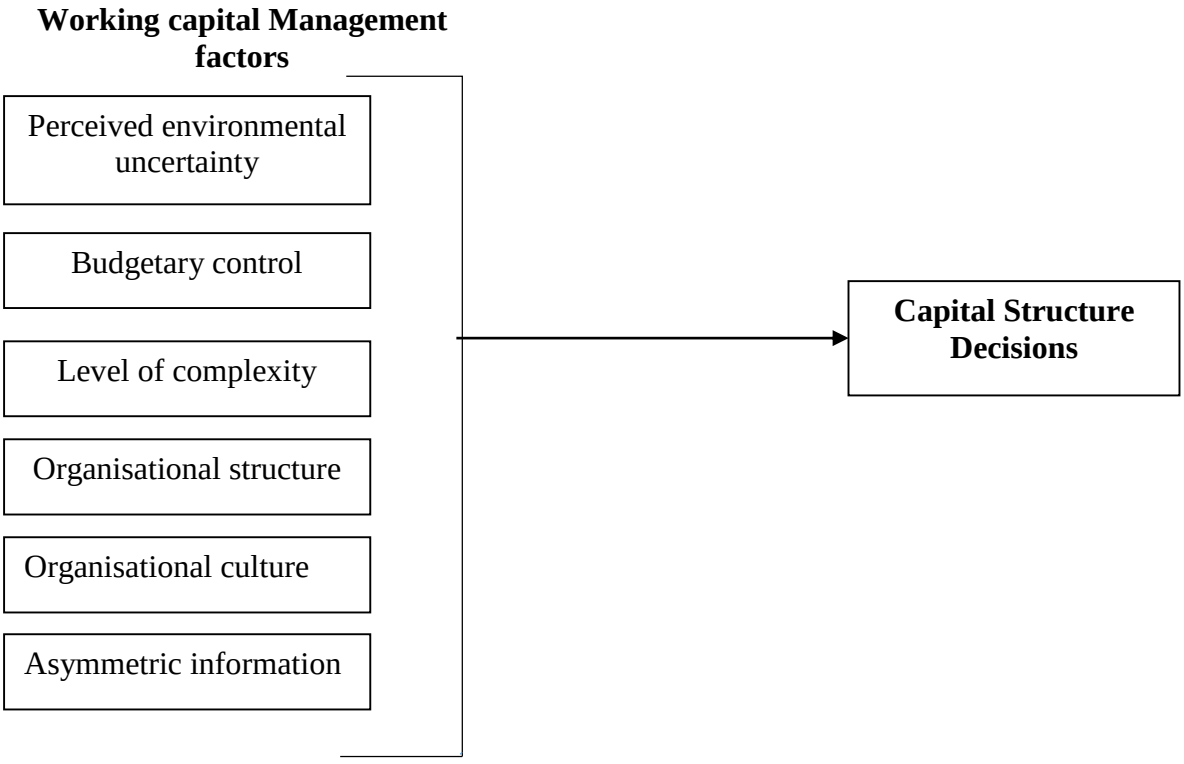
4. Methodology

Quantitative research approach was followed in this paper using self-administered survey questionnaire. This paper in line with the qualitative investigation performed by (Darun, 2011)

in order to validate the model and the variables taken into consideration for investigation capital structure decisions, utilizes quantitative research design. The population of the paper is restricted to the companies listed in the Bursa Malaysia Stock Exchange. In total 816 companies were listed in Bursa Malaysia at the date of June 2015. Top managers were selected as sample to obtain their views on the WCM components influencing capital structure decisions and the extent to which they felt that these had been considered as successful. The SMART-PLS (Partial Least Square) version 2.0 software was used for the analysis of the results. The Partial Least Squares (PLS) approach to Structural Equation Modeling (SEM) is a useful and flexible tool for statistical model building. The flexibility and scope of PLS facilitates the analysis and investigation of large and complex path models, particularly in the more exploratory fashion, as in this research (Christmas, 2005).

The model developed was an approach to quantitatively validate the conceptual framework provided and suggested by (Darun, 2011) on investigating the role of WCM factors on the financial structure decisions in the public listed companies of Malaysia. In addition to the five components provided an additional factor asymmetric information was undertaken as a major contribution for the paper.

Figure 1: Conceptual framework



The hypothetical statement proposed to be addressed in this paper is:

H1: WCM factors are positively associated with capital structure decisions

5. Results

A total of 149 respondents were used as a final data of the finance management executives of Malaysian companies. The reason to involve the finance managers as respondents is to facilitate appropriate analysis and interpretation of data without any bias.

The questionnaires were given to the managers of Malaysian public listed companies to fill, the sample size used was 160 out of which 149 were completed and 11 poorly answered. Table 1 showed the sample demographics of the companies in terms of the number of employees, years established and their annual sales. In terms of the category of the company, majority of the companies were from the food and beverage sector with 20.1 percent. 20 construction industries were selected with 13.4 percent followed by 18 hardware and pharmaceutical industries contributing 12.1 percent as respondent. Similarly, diversified sector contributed around 11.4 percent.

Table 1: Demographic information of the company

	Frequency	**Percent**
Category		
Hardware	18	12.1
Pharmaceutical	18	12.1
Automotive	2	1.3
Home & Office Appliances	16	10.7
Diversified	17	11.4
Chemical	16	10.7
Electric & Electronic	10	6.7
Construction	20	13.4
Food and Beverages	30	20.1
Oil & Gas	2	1.3
Number of employees		
150 and below	24	16.1
151 to 500	39	26.2
501 to 1000	33	22.1
1001 and above	53	35.6
Company established		
before 1997	78	52.3
1997 to 2008	62	41.6
2008 until now	9	6.0
Annual Sales (2015)		
less than MYR 100 mil	5	3.4
MYR 100 mil to MYR 500 mil	46	30.9
MYR 500 mil to MYR 1000 mil	12	8.1

RM 1000 mil and above	86	57.7

Other sectors like oil and gas, automotive, home appliances, and chemical contributed the remaining percentage of 20 percent. In terms of the number of employees it was found that majority of the companies were having 1000 or more employees with 35.6 percent. Around 26 percent of the companies were having 151 to 500 employees followed by 22.1 percent of the companies having 500 to 1000 employees. Finally, around 16.1 percent of the companies were having less than 150 employees. In terms of the company's annual sales, around 57.7 percent of the companies were having more than RM 1000 million of sales; whereas, around 30.9 percent of the companies were having annual sales between RM 100 million to RM 500 million.

5.1 Reliability and Validity

In research, the reliability and validity of findings are vital things to be taken note of. This can be realized by laying more emphasis on the adequacy of the design of the paper and the quality of the methods used for measurements. To validate the instrument, the validity and reliability tests were carried out to assess the correction coefficients within the achieved constructs. As evidenced Table 2, the values for the reliability of each construct was higher than the recommended benchmark of 0.70 (regarded as a good indicator of reliability) (Bagozzi and Yi, 1988), A reliability 0.69 was achieved by one of the constructs which were almost 0.7 and can be partially acceptable.

Table 2: Construct Reliability and Validity for integrated WCM

Variables	AVE	Composite Reliability	Cronbach Alpha
Budgetary	0.589	0.877	0.825
Information	0.662	0.855	0.744
Uncertainty	0.514	0.894	0.865
Capital structure	0.529	0.886	0.850
Complexity	0.612	0.826	0.683
Culture	0.585	0.849	0.762
Structure	0.525	0.867	0.815

Table 3: Construct Reliability and Validity for nonintegrated WCM

Variables	AVE	Composite Reliability	Cronbach Alpha
Asymmetry	0.6109	0.8245	0.6817
Budgetary control	0.5007	0.8333	0.7494
Capital Structure	0.5435	0.826	0.7187
Complexity	0.5895	0.8037	0.7138
Perceived uncertainty	0.4474	0.8266	0.7485
culture	0.5599	0.8352	0.7389
structure	0.4186	0.8102	0.7244

This proved that all measures achieved reliability that can be regarded as strong and adequate. The composite reliability was determined for the evaluation of the model's internal consistency. The average variance extracted (AVE) is another tool for the assessment of the reliability of a reflective measure, and it is the squared loading average of each item on a construct. It is employed for the assessment of how a theoretical latent construct fully explains the variance of a given set of items which are supposed to evaluate the construct. Similarly, the AVE is used for the measurement of the amount of captured variance by the construct's indicators against the number of variances that was caused by the error in the measure (Yao, 2004). The AVE ought to be more than 0.5 in all reflective measures, but based on this paper, the AVE was used as the reflective measure of validity.

5.2 Structural Model

PLS analysis relies on the bootstrapping statistics for assessing the adequacy of the data and for hypothesis testing. The researcher re-sampled 200 times in order to obtain the statistics and used the default alignment of sample. Bootstrapping computes the standard error (i.e., t-values; p-values; two-tailed) for each variable and the path coefficients of the model. Significance testing for t-values of 1.96 at the 5% significance level is the recommended level. However, the acceptable range is t-values of 1.65 at the 10% significance level.

Figure 2: Bootstrapping results for integrated WCM

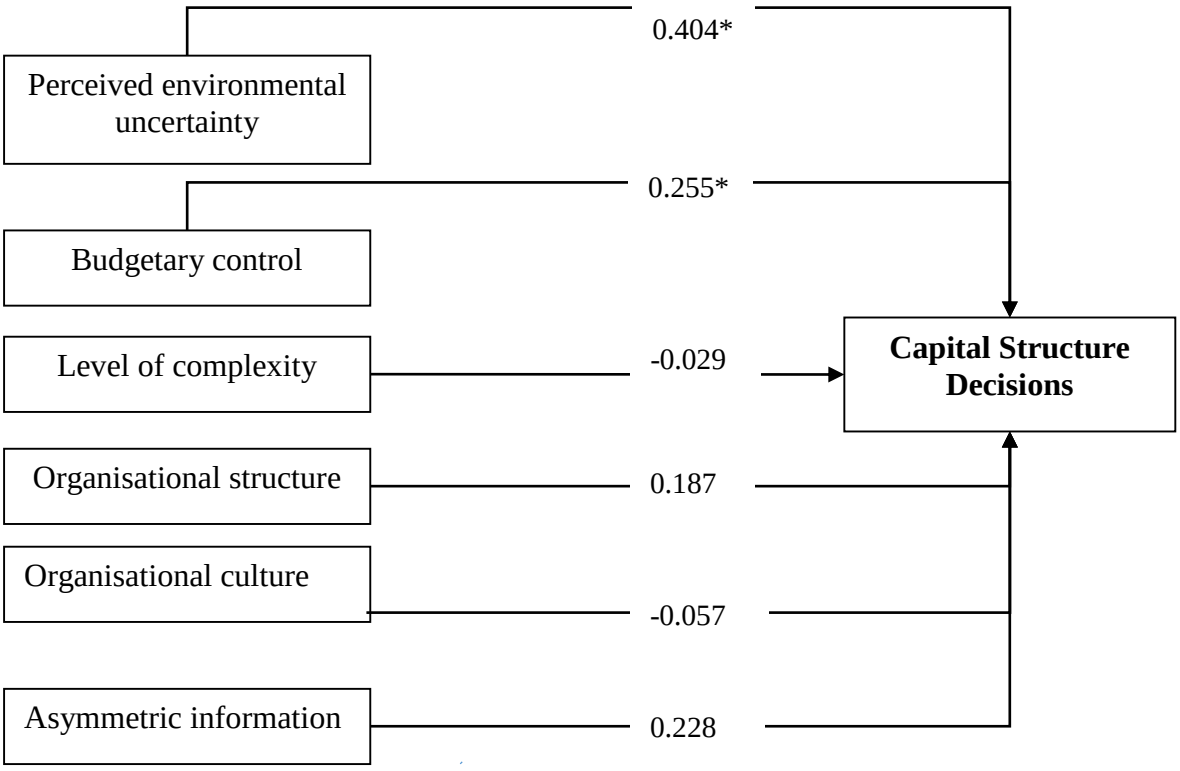


Table 4: Bootstrapping outer model for integrated WCM

Variables	Original Sample (O)	T Statistics
Asymmetry -> Capital Structure	0.2278	2.5951*
Budgetory control -> Capital Structure	0.2545	2.4769*
Complexity -> Capital Structure	-0.029	0.4286
Perceived uncertainty -> Capital Structure	0.4040	3.7146*
culture -> Capital Structure	0.1869	2.7393*
structure -> Capital Structure	-0.0567	0.7482

Note: t-value >1.96 is significant

Figure 3: Bootstrapping results for non-integrated WCM

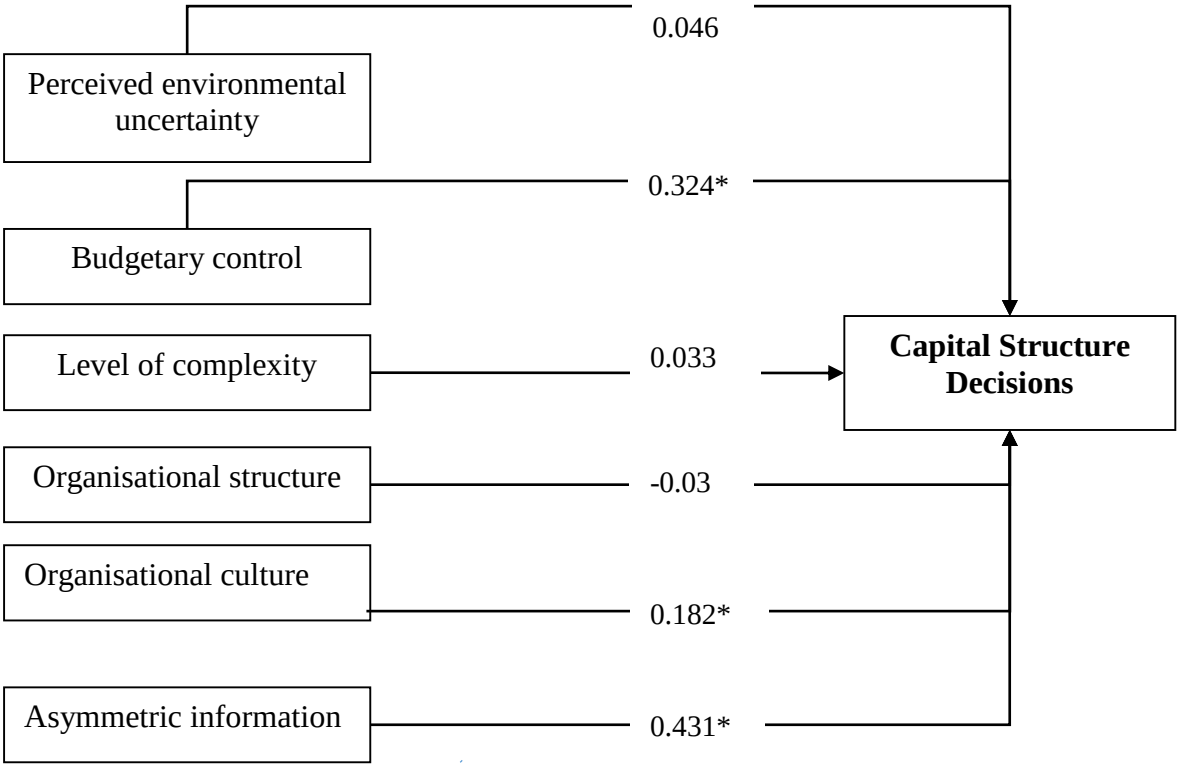


Table 5: Bootstrapping outer model for non-integrated WCM

Variables	Original Sample (O)	T Statistics
Asymmetry -> Capital Structure	0.4301	4.5158*
Budgetory control -> Capital Structure	0.3254	4.1272*
Complexity -> Capital Structure	0.0338	0.6028
Perceived uncertainty -> Capital Structure	0.0467	0.6482
culture -> Capital Structure	0.1842	2.7204*
structure -> Capital Structure	-0.0315	0.4237

Note: * stands for significant at p <0.05; t statistics > 1.96

The influence of WCM on capital structure is revealed in the structural outer model (see Figure.2 and 3). Although PLS is unable to provide overall model fit index, the path coefficients

and the predicted directions were very well explained to support the integrated and nonintegrated WCM model. Out of the six integrated WCM factors investigating its influence on capital structure, it was found that the level of complexity (β = 0.035, t-statistics = 0.517) and organizational structure (β = 0.056, t-statistics = 0.699) were not significant for both integrated and non-integrated WCM. The results indicated that integrated firms are actually superior in their WCM as compared to the non-integrated firms. One aspect that needs to be considered gives the positive association between WCM factors and capital structure. The results imply that there should be other financial and non-financial factors affecting profitability of the firm. The manager's effort together with interdependency helps for decision making purposes.

6. Conclusions

From the statistical findings it was found that working capital management play an important role in managing capital structure of Malaysian public listed firms. Based on the empirical evidence adduced in this paper, a number of logical conclusions can be made. Adopting a hybrid approach with strong horizontal information linkage affecting WCM activities to the extent that managers are more teamwork oriented and flexible. The positive and statistically significant relationship between WCM and capital structure implies that finance managers can manager capital structure for their firms by extending WCM to their customers and ensuring that their WCM policies are neither too lenient nor too strict. This finding was significant to the study performed by Banos et al (2014); Aktas et al. (2015); Mun and Jang (2015) who confirmed that working capital is critical for customer services by the managers. They should ensure that they are able to continue the operations and satisfy the operational expenses. Managers must utilize the budget appropriately and control costs to set performance goals of the organization. This paper was not able exhaust all working capital management components that have effects on capital structure in public listed firms. Therefore, effect of prepayments, accrued expenses, government regulations and policy, economic environment and culture on capital structure of public listed firms need be established in future studies.

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