

The Influence of External Environment and Business Strategy on the Effectiveness of Management Accounting Practices: A Contingency Theory Perspective

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Abstract: This paper reports the results of a study of management accounting practices (MAPs) in a mix of organisations in Libya. The study explicitly focuses on the intervening role of MAPs in cause-effect relationships between external environment, business strategy and organizational performance. Regression results indicate that no single contingent variable has a significant effect on all types of MAP investigated. While budgets and performance measures are largely moulded by business strategy, the contingentness of costing practices in terms of external environment hostility is discernable, as is the mediating role of MAPs between business strategy and organisational performance. By discerning the individual impacts of the contingency variables of environment and strategy on organisational performance via MAPs (i.e. cost, budgets and measurement performance), this study gives a more in-depth understanding of these relationships and contributes to enriching our understanding of how MAPs can be adopted more effectively and efficiently from a contingency perspective, through identifying the impact of this relationship on organisational effectiveness in an emerging economy.

Keywords: Contingency theory; Management accounting practices; External environment; Business strategy; Organizational performance

I. INTRODUCTION

This study seeks to primarily contribute to the limited knowledge of management accounting in emerging economies. It involves a questionnaire survey of management accounting practices (MAPs) in a mix of manufacturing and non-manufacturing firms in Libya and explores the relationships between MAPs and some contingent factors that might influence organisational performance. At a second level it seeks to look at the indirect effect of contingent variables on organisational performance via MAPs. Contingency formulations emerged in the mid 1960s as an important perspective of organisation theory and were gradually developed through empirical research as a response to rapid changes confronting business, particularly increasing environmental uncertainty (Kreitner, 1998). Central to the formulations is the concept of fit which posits that organisational outcome (e.g. sales growth) is the consequence of a match between two or more factors (e.g. strategy and product quality). The contingency theory approach to management accounting has a relatively established tradition (e.g. Bruns & Waterhouse, 1975; Otley, 1980). Its premise is that there is no universal or perfect management accounting system (MAS) that equally applies in all circumstances. When the specific circumstances of an enterprise change, its MAS needs to also change for it to remain effective (Clarke, Hill, & Stevens, 1999; Gerdin & Greve, 2004;

Haldma & Laats, 2002; Jones, 1985; Otley, 1980; Reid & Smith, 2000). Otherwise there will be a misfit which would then lead to lack of communication and coordination, and as a result, poor performance (Selto, Renner, & Young, 1995).

II. REVIEW OF THE EMPIRICAL LITERATURE

In addition to the theoretical literature, a total of 20 previous studies published between 1980-2010 have been analysed (see Tables 1). Although many different approaches of fit have been applied in the reviewed studies, most researchers did not fully recognise the implications of the different approaches and difficulties related to these approaches towards each other (Gerdin & Greve, 2004; Gerdin & Greve, 2008; Schoonhoven, 1981; Venkatraman, 1989). These led some researchers to believe that their findings were contradictory or were strongly supported by previous studies, whereas this was not necessarily the case. Most researchers did not make their research construct clear, for example why a MAS is used as a moderator variable rather than a mediator variable, and vice versa. In addition, the focus was generally limited to an aspect of management accounting information such as performance measures instead of a wide range of MAPs in use.

Studies that focus on the influence of business environment on MAS distinguish between (a) external factors such as *environmental uncertainty* and *market competition*, assumed independent of organisational actions (Abdel-Kader & Luther, 2008; Chong & Chong, 1997; Jones, 1985; Libby & Waterhouse, 1996; Mia & Clarke, 1999; Waterhouse & Tiessen, 1978), and (b) internal or organisational factors, such as *size, strategy and structure* (Abdel-Kader et al., 2008; Baines & Langfield-Smith, 2003; Brownell, 1985; Gordon & Miller, 1976; Hoque & James, 2000; Reid et al., 2000; Soobaroyen & Poorundersing, 2008). Although informative, the results of much of these works are disparate and incoherent, prompting calls for clearer specifications of the dimensions of contingency factors (Chapman, 1997; Chenhall, 2003).

Table 1 Summary of Studies of Contingency-Based Empirical Studies of Management Accounting Practice

	Author/s and year	Country	Contingent factor	Sample size and industry	Methods of data collection
1	Gordon and Narayanan (1984)	USA	Perceived environmental uncertainty and Organisational structure	34, NMNFC	SINW
2	Govindarajan (1984)	USA	Perceived environmental uncertainty	58, MNFC/NMNFC	QUSNR
3	Chenhall and Morris (1986)	Australia	Perceived environmental uncertainty, Organisational structure and interdependence	68, MNFC	QUSNR
4	Govindarajan (1988)	USA	Strategy and Organisational structure	24, MNFC	QUSNR
5	Gul (1991)	Australia	Perceived environmental uncertainty	42, MNFC	QUSNR
6	Abernethy and Guthrie (1994)	Australia	Strategy	49, MNFC	QUSNR
7	Gul and Chia (1994)	Singapore	Perceived environmental uncertainty and Organisational structure	48, MNFC/NMNFC	QUSNR
8	Abernethy and Lillis (1995)	Australia	Strategy	42, MNFC	SMINV
9	Libby and Waterhouse(1996)	Canada	Competition, Organisational structure, Size and Greater organizational capacity to learn	24, MNFC	QUSNR
10	Chong and Chong (1997)	Australia	Perceived environmental uncertainty and Strategy	62, MNFC	QUSNR
11	Perera and Poole (1997)	Australia	Strategy	105, MNFC	QUSNR
12	Chenhall and Langfield-Smith (1998b)	Australia	Strategy and Management techniques	78, MNFC	QUSNR
13	Bouwens and Abernethy (2000)	Netherlands	Strategy	85, MNFC/NMNFC	QUSNR
14	Hoque, Mia, and Alam (2001)	New Zealand	Competition and Computer-aided manufacturing	71, MNFC	QUSNR
15	Hoque (2004)	New Zealand	Perceived environmental uncertainty and Strategy	52, MNFC	QUSNR
16	Hoque (2005)	New Zealand	Perceived environmental uncertainty	52, MNFC	QUSNR
17	Hyvönen (2007)	Finland.	Strategy information technology	51, MNFC	QUSNR
18	Kattan et al. (2007)	Palestine	Perceived environmental uncertainty	MNFC	CSTDY
19	Abdel-Kader and Luther (2008)	UK	Perceived environmental uncertainty, Customers' power, strategy, structure, size, AMT, TQM JIT, and product perishability	245, MNFC	QUSNR
20	King, Clarkson, & Wallace (2010)	Australia	Size, organisational structure, strategy and perceived environmental uncertainty	144, NMNFC	QUSNR

MNFC: manufacturing; NMNFC: non-manufacturing; QUSNR: questionnaire; SINW: semi- structured interview

Recently, contingency theory has been applied to explain the factors expected to impact on the adoption of different levels of management accounting sophistication (Abdel-Kader & Luther, 2008; Gerdin, 2005; Tillema, 2005). However contingent variables have been mainly used in previous studies to explain observed characteristics of MAS without paying sufficient attention to the difference of the hypothesised fit between contingent variables, MAS, and organisational and managerial performance (Drazin & Van de Ven, 1985; Gerdin & Greve, 2004; Tillema, 2005). Hence the need for a better specification of the environmental dimensions in order to properly capture the concept of fit and explain the adoption and effectiveness of management accounting practices (MAPs) (Chapman, 1997; Chenhall, 2003). For example, instead of just trying to find whether there is just congruence (i.e. focus on context and ignore impact on performance), studies need to go beyond recognising contextual factors by considering different levels of fit in relation to organisational performance. This, in addition to a general lack of knowledge of identifying the relationships between MAPs and contingent factors in emerging countries, is the motivation for this study.

III. THE PRESENT STUDY

This study investigates the intervening role of MAPs in cause-effect relationships between external environment, business strategy and organizational performance in a mix of business organisations in Libya. At the time this study was conducted, the business environment in Libya was mainly characterised by a programme of gradual transition from a centrally planned economy to a market economy. This transition which effectively started in the late 1980s has brought about incentives for private enterprise in general and the privatisation of hitherto state-owned companies in particular, joint ventures and inward investment. Naturally, in order for companies to survive and succeed in this new and dynamic environment, they need to adapt to its uncertainties and other challenges.

To capture the contingent relationships mentioned above in sufficient depth in this business environment, this study combines the *congruence* approach, which examines the relationship between contingent factors and MAPs, and an *interaction form* of the relationship among contingent factors, MAPs and organisational performance. The interaction form tries to establish whether the contingency fit is through an interaction between contingent variables (or organisational context) and organisational structures/controls on performance. A theoretical model (see Figure 1) which includes six variables (three related to external environment, namely *dynamism, heterogeneity and hostility*; and three related to business strategy, namely *mission strategy, competitive strategy and products & markets change strategy*) was developed based on an extensive review of the relevant literature and the examination of various possible forms and levels of fit. This model extends to include *mediated* relationships (see Figure 2) between contingent variables, MAPs (in terms of cost, budgets and performance measurement practices) and organisational performance.

FIGURE 1
The Research Theoretical Model

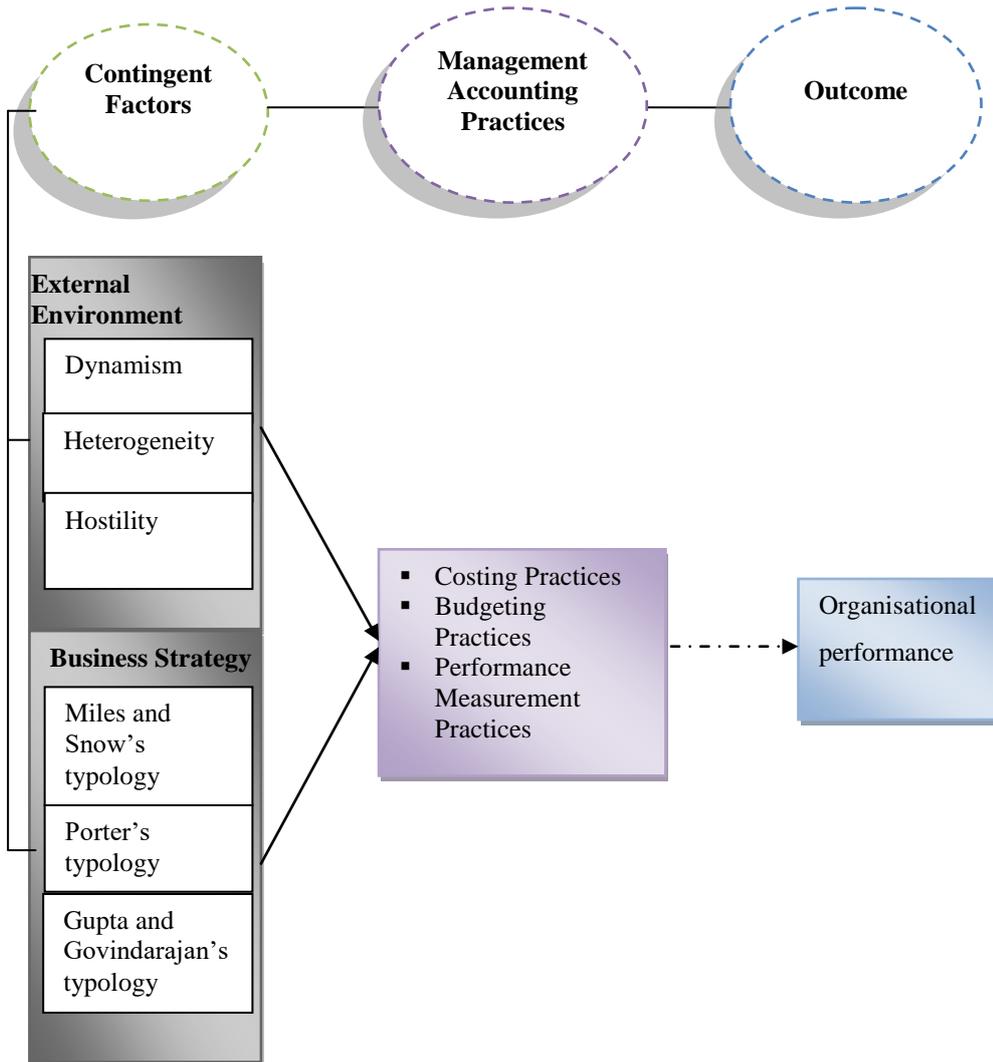
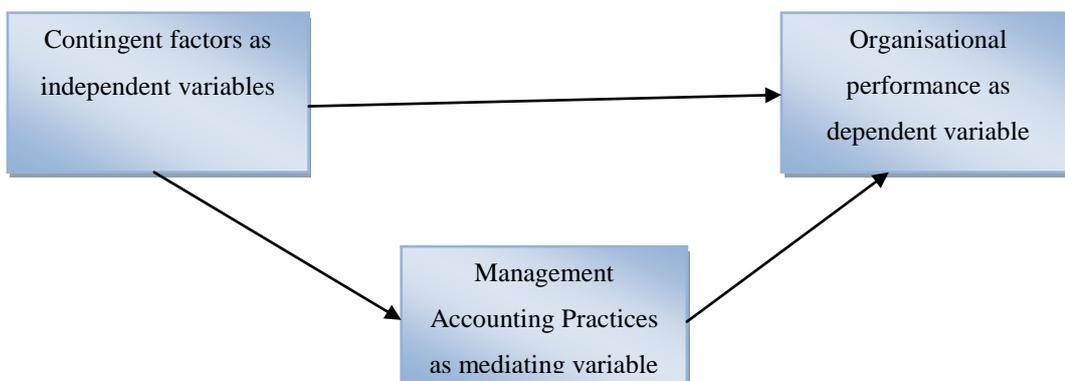


FIGURE 2
Mediation Forms of Fit



IV. RESEARCH DESIGN

The congruence approach is the simplest form of the relationship between contingent factors and MAS. It is therefore hypothesised that there is a relationship between the external environment, business strategy and the extent of MAPs usefulness in terms of (i) costing, (ii) budgeting and (iii) performance measurement. In this context, usefulness means the combination of level of usage and level of meeting expectation. This hypothesised relationship is expressed in detail as follows:

Hypothesis1. The degree of dynamism of the external environment impacts on the extent of Management Accounting Practices' usefulness in terms of (i) costing, (ii) budgeting and (iii) performance measurement.

Hypothesis2. The degree of heterogeneity of the external environment impacts on the extent of Management Accounting Practices' usefulness in terms of (i) costing, (ii) budgeting and (iii) performance measurement.

Hypothesis3. The degree of hostility of the external environment impacts on the extent of Management Accounting Practices usefulness' in terms of (i) costing, (ii) budgeting and (iii) performance measurement.

Hypothesis4. The degree of strategic mission impacts on the extent of Management Accounting Practices' usefulness in terms of (i) costing, (ii) budgeting and (iii) performance measurement.

Hypothesis5. The degree of strategic competitive advantage impacts on the extent of Management Accounting Practices' usefulness in terms of (i) costing, (ii) budgeting and (iii) performance measurement.

Hypothesis6. The degree of strategy in the rate of change in products or markets impacts on the extent of Management Accounting Practices usefulness' in terms of (i) costing, (ii) budgeting and (iii) performance measurement.

Management accounting information can have an impact on the relationship between contingent variables and organisational performance. This implies that MAPs may act as an intervening construct between contingent variables and organisational performance. According to Schoonhoven (1981: 351) “when contingency theorists assert that there is a relationship between two variables [...] which predicts a third variable [...] they are stating that an interaction exists between the first two variables”. This study examines interaction in the form of a possible mediating role of MAPs in the above contingency relationships. Mediation identifies the presence of an intervening impact between the independent variable and the dependent variable through a third variable, called the mediation variable (Venkatraman, 1989). Thus a mediation model supposes that context variables are antecedent variables affecting MAPs (Soobaroyen et al., 2008). This indicates that, unlike the moderation model, the mediation model permits MAPs to be contributors to the dependent variable (i.e. performance), as well as possibly for MAPs to be dependent on other variables (i.e. contingent factors). This implies that MAPs (i.e. management accounting information) may act as an intervening construct between contingent variables and organisational performance, but the view adopted in this study is that, the hypotheses related to the relationships between contingent factors and MAPs need to be examined first and only if a significant relationship is found, can the hypotheses related to effect of contingent factors on organisational performance through MAPs be (formulated and) tested. The hypotheses developed later to assess the effect of contingent variables on organisational performance through MAPs are as follows:

Hypothesis7. The degree of hostility of the external environment impacts on organisational performance through the extent of costing practice usefulness.

Hypothesis8. The degree of strategy mission impacts on organisational performance through the extent of Management Accounting Practices usefulness in terms of (i) budgeting and (ii) performance measurement.

Hypothesis9. The degree of strategy competitive advantage impacts on organisational performance through the extent of Management Accounting Practices usefulness in terms of (i) budgeting and (iii) performance measurement.

Hypothesis10. The degree of strategy products and markets change impacts on organisational performance through the extent of Management Accounting Practices usefulness in terms of (i) budgeting and (ii) performance measurement.

Primary data were collected by means of a cross-sectional questionnaire survey of finance directors of 233 manufacturing and non-manufacturing companies in Libya during the period July– September 2009. At total of 123 (52.8%) usable responses were received and tests revealed no-response bias. The results of the chi-square test of demographic characteristics and the independent sample t-test on all key questionnaire variables revealed no statistically significant differences ($p > 0.05$) in the mean scores between the early and late responses.

V.RESULTS

Management Accounting Practices (MAPs)

The MAPs of the 123 participating companies summarised in Table 2 below are comparable to those of previous studies (such as Chenhall & Langfield-Smith, 1998; Joshi, 2001; Szychta, 2002; Wijewardena & De Zoysa, 1999). For example, traditional cost practices are more popular than more contemporary ones, and full costing is more common as a traditional cost practice than variable and standard costing. Confirming the results of earlier studies (e.g. Chenhall & Langfield-Smith, 1998; Drury, Braund, Osborne, & Tayles, 1993; Joshi, 2001) also is the popularity of most budgeting practices. The reliance on budgets however seems to de-emphasise most performance indicators listed in the survey questionnaire. This result is not consistent with what other studies have reported in both developed and developing countries such as Australia, the UK and India (Chenhall & Langfield-Smith, 1998; Drury et al., 1993; Joshi, 2001) or the recommendations made by many researchers to adopt a mix of financial and non-financial performance indicators (e.g. Banker, Potter, & Srinivasan, 2000; Ittner & Larcker, 1998; Kaplan & Norton, 1992; Otley, 2001; Rappaport & Nodine, 1999)

TABLE 2
Management Accounting Practices (MAPs)

<i>Costing practice</i>	<i>Used level percentage</i> (N=123)*					<i>Mean &</i> <i>(SD)</i>	<i>Meet the needs rate*</i>					<i>Mean &</i> <i>(SD)</i>
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>		<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	
Full costing	13.8	6.5	14.6	30.9	34.1	3.65 (1.37)	13.0	8.1	25.2	30.1	23.6	3.43 (1.29)
Variable costing	27.6	10.6	17.9	21.1	22.8	3.01 (1.53)	27.6	10.6	27.6	20.3	13.8	2.82 (1.40)
Standard costing	37.4	17.9	15.4	14.6	14.6	2.51 (1.48)	36.6	13.0	20.3	15.4	14.6	2.59 (1.48)
Target costing	77.2	4.1	10.6	5.7	2.4	1.52 (1.05)	77.2	1.6	8.1	8.1	4.9	1.61 (1.22)
Quality cost reporting	86.2	2.4	2.4	5.7	3.3	1.37 (1.59)	86.2	.8	3.3	5.7	4.1	1.4 (1.07)
Life-cycle costing	91.9	1.6	3.3	1.6	1.6	1.20 (.72)	91.9	.8	.8	5.7	.8	1.23 (.80)
ABC	96.7	.8	.8	.8	.8	1.08 (.49)	97.6	.8	0	0	1.6	1.07 (.51)
<i>Budgeting practice</i>	<i>Used level percentage</i> (N=123)*					<i>Mean &</i> <i>(SD)</i>	<i>Meet the needs rate*</i>					<i>Mean &</i> <i>(SD)</i>
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>		<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	
Sales budget	8.9	7.3	21.1	21.1	41.5	3.79	11.4	7.3	30.9	33.3	17.1	3.37

						(1.30)						(1.19)
Master budget	8.9	12.2	24.4	20.3	34.1	3.59 (1.31)	8.9	14.6	29.3	28.5	18.7	3.33(1.2)
Production budget	13.0	7.3	24.4	23.6	31.7	3.54 (1.35)	9.8	12.02	29.3	30.9	17.9	3.35 (1.19)
Administrative expenses budget	14.6	10.6	17.1	26.0	31.7	3.50 (1.41)	16.3	14.6	27.6	22.8	18.7	3.13 (1.33)
Direct materials budget	22.0	6.5	23.6	22.0	26	3.24 (1.47)	21.1	8.9	30.9	20.3	18.7	3.06 (1.38)
Cash budget	22.0	12.2	17.9	19.5	28.5	3.20 (1.52)	17.1	17.9	29.3	18.7	17.1	3.01 (1.32)
Overheads budget	19.5	13.0	26.8	17.9	22.8	3.11 (1.42)	16.3	17.1	30.1	26	10.6	2.98 (1.23)
Direct labour budget	23.6	10.6	22.8	21.1	22.0	3.07 (1.47)	22	6.5	34.1	22.8	14.6	3.01 (1.33)
Capital budget	23.6	16.3	17.9	21.1	21.1	3.00 (1.48)	20.3	19.5	26.8	20.3	13	2.86 (1.31)
Flexible budget	39.8	21.1	19.5	8.1	11.4	2.30 (1.37)	29.3	20.3	23.6	20.3	6.5	2.54 (1.28)
Performance measurement practices	Used level percentage (N=123)*					Mean & (SD)	Meet the needs rate*					Mean & (SD)
	1	2	3	4	5		1	2	3	4	5	
Meeting budget target	40.7	17.9	19.5	17.1	4.9	2.28 (1.29)	43.1	13.0	23.6	15.4	4.9	2.26 (1.29)
Return on investment	42.3	17.9	22.0	13.8	4.1	2.20 (1.21)	43.1	14.6	23.6	16.3	2.4	2.20 (1.23)
Customer satisfaction	50.4	14.6	26.0	4.1	4.9	1.98 (1.17)	53.7	13.0	20.3	11.4	1.6	1.94 (1.16)
Benchmarking	51.2	19.5	15.4	11.4	2.4	1.94 (1.16)	52.8	17.1	11.4	15.4	3.3	1.99 (1.25)
Market share	57.7	14.6	17.9	5.7	4.1	1.84 (1.15)	56.9	13.0	21.1	7.3	1.6	1.84 (1.1)
Divisional profit	53.7	29.3	10.6	4.9	1.6	1.72 (.95)	57.7	17.1	13.0	11.4	.8	1.8 (1.1)
Employees' satisfaction	63.4	13.0	11.4	12.2	0	1.72 (1.08)	61.8	9.8	20.3	6.5	1.6	1.76 (1.09)
Economic value added	87.8	5.7	3.3	3.3	0	1.22 (.66)	63.4	13.8	15.4	7.3	0	1.67 (.99)
Residual income	91.1	4.1	.8	2.4	1.6	1.20 (.72)	71.5	12.2	7.3	8.1	.8	1.54 (.99)
Balanced scorecard	96.7	0	.8	2.4	0	1.09 (.50)	82.9	7.3	4.1	4.1	1.6	1.43 (.87)

*1 = Not at all, 2 = Slightly, 3 = Moderately, 4= Often, 5 = Highly; M= Mean

The Effect of External Environment and Business Strategy on MAPs

Simple regression was used to investigate the effect of each individual independent variable on the dependent variable. The results summarised in Table 3 indicate that the impact of each external environment dimension on MAPs (i.e. cost, budgets, performance measures practices) is not significant, except for some impact of environment hostility on costing practices [$\beta = -0.204$, $R^2 = 0.042$ and $F = 5.239$]. Thus, there is no support for H1 and H2, and limited support for H3, and the impact of each external environment dimension on MAPs overall has no support. On the other hand, all types of strategy have a significant impact on budget practices, performance measurement practices but not on costing practices. However, the overall picture is that business strategy has an impact on MAPs, so the three hypotheses (i.e. H4, H5 and H6) are accepted.

TABLE 3
Simple Regression Results for Independent Variables Influencing MAPs

External Environment	Dynamism				Heterogeneity				Hostility			
	R ²	F	S.E	β	R ²	F	S.E	β	R ²	F	S.E	β
Cost practices	.002	.249	.483	-.045	.002	.298	.430	-.050	.042	5.239	.333	-.204*
Budget practices	.018	2.215	.732	.134	.013	1.540	.653	.112	.020	2.425	.513	-.140
Performance measure practices	.000	.023	.397	-.014	.000	.013	.353	.010	.005	.653	.278	-.073
MAPs overall	.003	.333	.455	.052	.002	.256	0.405	.046	.029	3.563	0.315	-.169
Business Strategy	Mission strategy				Competitive advantage strategy				products and markets change strategy			
	R ²	F	S.E	β	R ²	F	S.E	β	R ²	F	S.E	β
Cost practices	.011	1.381	.433	.106	.001	.175	.406	.038	.001	.113	.320	.031
Budget practices	.070	9.113	.640	.265*	.085	11.18	.593	.291*	.047	5.927	.477	.216*
Performance measure practices	.126	17.272	.334	.355**	.064	8.251	.322	.253*	.035	4.450	.258	.188*
MAPs overall	.081	10.597	.393	.284*	.060	7.658	.371	.244*	.033	4.158	.296	.182*

*p < .05; **p < .001.

To establish whether a set of contingency variables taken jointly is likely to be more powerful in explaining variations in MAPs, multiple regression was used to examine the association between a single dependent variable (i.e. MAPs) and a number of independent variables (i.e. set dimensions of each contingent factor). Thus, this analysis will include two models (see Table 4). Each contingent factor represents one model and the dimensions (variables) of these factors represent independent variables. In the first model, Table 4 shows that the value of the F-ratio, which indicates whether the regression model (as a whole) predicts the dependent variable, is not significant (sig > 0.05). In other words, the change in the MAPs is not associated with a unit change in the dimensions of the external environment. Therefore the dimensions of the external environment have no impact on the MAPs of the responding companies.

TABLE 4

Multiple Regression Results for Independent Variables Influencing MAPs

External environment variables						
Model one	variables	B	S.E	Beta	Tolerance	VIF
	Dynamism	-.060	.594	-.012	.564	1.774
	Heterogeneity	.930	.613	.209	.419	2.385
	Hostility	-.989	.381	-.281*	.677	1.476
	R ² (F)	.056 (2.375)				
Business strategy variables						
Model two	variables	B	S.E	Beta	Tolerance	VIF
	Mission strategy	1.071	.496	.238*	.626	1.597
	Competitive strategy	.681	.474	.162	.598	1.673
	Products and markets change	.190	.402	.057	.515	1.942
	R ² (F)	.097 (4.242)*				

*p < .05

With regard to strategy, Table 4 indicates that model two is significant at the 0.05 level ($F = 4.242$), which reflects its reliability in examining the extent of the effect of the business strategy variable on MAPs, noting that the joint impact on MAPs comes from the mission strategy dimension [$\beta = 0.238, p < 0.05$] and that there are no multi-collinearity problems present.

Intervening role of MAPs between contingent variables and organisational performance

This section builds on the results above of the direct relationships between contextual factors and MAPS and attempts to investigate whether the relationship between contingent factors and organisational performance is operating via MAPs. Thus far, it has been suggested that contingent variables such as external environment and business strategy may induce managers to use MA information for decision-making. This implies that MAPs may as an intervening construct between the contingent variables and organisational performance. It can therefore be assumed that the relationship between these variables and organisational performance may be due partly to indirect effects via the extent of MAPs’ usefulness. As a first step, the ‘direct’ effect of MAPs on organisational performance is assessed.

The results of simple regression (see Table 5) indicate that the impacts of all types of MAPs on organisational performance are highly significant [$R^2 = 0.096, \beta = 0.310, p < .001$ for cost practices; $R^2 = 0.104, \beta = 0.323, p < 0.001$ for budgets practices; $R^2 = 0.111, \beta = 0.333, p < 0.001$ for performance measure practices]. This implies two things: first, Libyan companies receive high benefits from their MAPs to facilitate organisational performance; second, the assumption of an indirect relationship between contingent factors and organisational performance through MAPs is verified. The results of the additional tests carried out using hierarchical multiple regression are summarised in Table 6 and explained below.

TABLE 5
Effect of MAPs on Organisational Performance

	R^2	F	$S.E$	β
<i>Cost Practices</i>	.096	12.905	.018	.310**
<i>Budget Practices</i>	.104	14.069	.012	.323**
<i>Performance measure practices</i>	.111	15.094	.022	.333**
<i>MAPs overall</i>	.145	20.545	.019	.381**

** $p < .001$.

TABLE 6
Indirect/ Direct Effect of External Environment and Business Strategy on Organisational Performance via MAPs

<i>Independent variable</i>	<i>Indirect effect via MAPs (mediator variable)</i>						<i>Direct effect</i>			
	<i>Cost practices</i>						R^2	F	$S.E$	β
	β	$S.E$	t	β	$S.E$	t				
<i>Environment Hostility</i>	-.040	.023	-1.74				.133	18.59	.067	-.365**

<i>Independent variable</i>	<i>Indirect effect via MAPs (mediator variable)</i>									<i>Direct effect</i>			
	<i>Budgets practices</i>			<i>Performance measure practices</i>			<i>MAPs overall</i>			R^2	F	$S.E$	β
	β	$S.E$	t	β	$S.E$	t	β	$S.E$	t				
<i>Mission strategy</i>	.086*	.038	2.25	.123*	.045	2.73	.110*	.043	2.56	.009	1.13	.091	.096
<i>Competitive strategy</i>	.086*	.037	2.36	.077*	.035	2.20	.086*	.0377	2.28	.014	1.77	.085	.120

<i>Products & markets change strategy</i>	.052*	.026	1.98	.047	.026	1.80	.0517	.0285	1.81	.004	.511	.067	.65
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* $p < .05$; ** $p < .001$, the dependent variable is organisational performance

Regarding the direct effect of external environment dimensions (dynamism, heterogeneity and hostility) and each business strategy type (i.e. build/harvest, differentiation/cost leadership and prospectors/defenders) on the extent of MAPs’ usefulness, it was earlier explained that

- only one dimension (hostility) had an impact on the usefulness of costing practices
- while strategy types had a direct effect on both the usefulness of budget and performance measures practices.

It is clear from the results in Table 5 that the coefficient value (β) of the impact of hostility on performance measurement via cost practices usefulness is not significant. Thus, the hypothesis (H7) is not accepted. With regard to the strategy factor, the mission and competitive strategies have a significant indirect effect on organisational performance via budgeting practices, performance measure practices and MAPs overall, whereas the products & markets change strategy has an indirect effect only through the extent of use of budgeting practices. Therefore, hypotheses H8 and H9 are supported and accepted, while hypothesis H10 is partially accepted for budgeting practices only.

VI. CONCLUSIONS

The main results of the present study can be summarised as follows. The testing of hypothesised direct and mediated relationships adopted using regression analysis indicates that there is no single variable that has a significant effect on all three types of MAP (i.e. cost, budgets and performance measurement practises). All the three business strategy variables examined are statistically linked to two types of MAP, namely budgets and performance measurement practices, while only one variable of external environment which is hostility has an impact on costing practices. In other words, the budgets and performance measurement practices are subjected to the influence of business strategy variables, contrary to cost practices which seem to be influenced only by the one variable of external environment i.e. hostility. Of significance also is the result that MAPs play a mediating role between business strategy and organisational performance.

By discerning the individual impacts of the contingency variables on organisational performance via MAPs this study gives a more in-depth understanding of these relationships and contributes to enriching our understanding of how MAPs can be adopted more effectively and efficiently from a contingency perspective, through identifying the impact of this relationship on organisation effectiveness in an emerging economy, and to bridging the gap in the MAPs literature. Further research can explore the differences highlighted in this study between contingent factors and MAPs in industrialised and developing countries and adopt more refined research constructs that properly capture the underlying contingent relationships in relation to MAP design and use that existing research has not been able to properly comprehend.

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