International Journal of Academic Research in Accounting, Finance and Management Sciences
Vol. 6, No.1, January 2016, pp. 61–72
E-ISSN: 2225-8329, P-ISSN: 2308-0337

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The relationship between the Profile of Manager and Management Accounting Practices in Tunisian SMIs

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Abstract *In today's changing environment, SMEs must strengthen their competitiveness and credibility with all their external partners. So to survive and prosper, managers need adequate management practices in order to provide relevant accounting information. This paper examines the effect of profile of manager on management accounting practices which was defined in terms of traditional management accounting, modern management accounting and management accounting practices related to export. As to the profile of manager, it is defined by age, type of training and experience. To validate the hypotheses, a multiple linear regression method is used. The data is collected by questionnaire from 221 Tunisian manufacturing SMEs. The findings indicate that the profile of manager affect in part the use of management accounting practices.*

Key words Accounting management practices, SMIs, contingency theory, profile of manager

DOI: 10.6007/IJARAFMS/v6-i1/1980 URL: http://dx.doi.org/10.6007/IJARAFMS/v6-i1/1980

1. Introduction

The SMEs are at the center of the Tunisian economy (Ben Hamadi *et al*., 2014; Kossai and Piget, 2014). In fact, they contribute to the growth of the economy that providing alone 36% of GDP and 70% of exports (Ben Hamadi *et al*., 2014).

Despite their dominant economic position, the SMIs suffer from several barriers to their development such as difficulties to get funding from banks, the problem of asymmetric information and transparency and the inability to adopt adequate use of management practices. Thus, if they were to continue playing a major role in the economy, and strengthen its competitiveness and credibility with all its external partners, a relevant management accounting system, through the management accounting practices, is necessary to better meet the need of managers. In fact, successful implementation of a management accounting system is more determined by behavioral factors than by economic and technical factors (Shields and Young, 1993).

The purpose of this study is to examine the impact of the behavioral contingency factor as profile of manager through the age, experience and type of training of the manager on the management accounting practices in the Tunisian SMIs.

2. Literature review

2.1. Contingency theory

In this research, we mobilize the contingency theory which always appropriate in the field of management accounting and researcher continue to use it (Ayadi and Affes, 2014; Ben Hamadi *et al*., 2014; Chapellier *et al*., 2013; Hammed *et al*., 2013; Sisaye and Birnberg, 2010).

Otley (1980) applied contingency theory to management accounting practices and explained that there is no single general standard accounting practice that can be applied to all firms. Thus each organization has its own management accounting practices.

The literature shows the potential influence of certain factors like the profile of manager (Ben Hamadi *et al*., 2014; Ngongang, 2007, 2010), the size (Ben Hamadi *et al*., 2014; Chapellier *et al*., 2013), the

organizational structure (Hammed *et al*., 2013; Sisaye and Birnberg, 2010) and export (Chapellier *et al*., 2013; Chapellier and Mohammed, 2010) on the management accounting system.

2.2. The management accounting practices

The main focus of management accounting is improve the organization performance and profitability and assist managers by providing relevant financial and non-financial information for making decisions (Aouni *et al*., 2015; Tappura *et al*., 2015).

Management accounting practices (MAP) are very essential to success for the organization (Ashfaq *et al*., 2014). Even SMI should not be dispensed with tools to support decision-making and monitoring of operations under the pretext that it is smaller than big business (Desiré-Luciani *et al*., 2013).

For some authors, more the company is small, more the accounting information system is simple (Affes and Chabchoub 2007; Chapellier and Mohamed, 2010), more sophistication is low (Abdel Kader and Luther, 2008; Vallerand *et al*., 2008) and management tools are quite simple and sometimes basic and the number of methods used is low.

The study of Bajan-Banaszak (1993) conducted in France shows that the dashboard is one of the most implanted management tools, represents 71% of SMEs equipped while cost accounting is only present in 40% of these companies. This researcher also shows that the increase in size is accompanied by a diversification and complexity of management tools.

The research of Van Caillie (2003) on the management control practices to 100 manufacturing SMEs shows that 95% of questioned leaders attribute to their management control system the mission of the elaboration and the follow-up of the budgets, 85 % the calculation of cost prices and only 10% the strategic activities such as the strategic dashboards, the follow-up of the profitability or the customer satisfaction.

As for the investigation of Nobre (2001) on methods and management control tools from 86 companies with 50 to 500 employees in SMEs shows that management accounting is mainly based on traditional methods of full costs (in $^{2}/_{3}$ of cases). But sometimes using of the direct costing (in ¼ of cases) and activity-based costing is rarely present in SMEs. The use of tools such as dashboards, formalizing objectives, approach or budget variances calculation is widespread in sample over 100 employees.

Face to high competitive and turbulent environment, some researchers suggest that management accounting practices need to change by using the advanced management accounting tools as activity based costing because traditional management accounting is just focus on internal process rather than dealing with external problems such as producing customer value and creating competitive advantages (Sunarni, 2013). However the failure or underperformance of SMEs is often due to their failure to use appropriate management accounting tools (Lucas *et al*., 2013).

For this study the management tools used are the cost accounting, the complete cost price, the direct cost price, the analysis of budget variances, the operational dashboard, the activity-based costing, the benchmarking, the value chain analysis, the product life cycle analysis, the main product profitability analysis, the main customer profitability analysis, the foreign markets profitability the analysis, the analysis of the profitability of the foreign customers and the analysis of the logistic expenses caused by the export, inspired by the work of Chenhall and Langfield-Smith (1998), Nobre (2001), Baines and Langfield-Smith (2003), Vallerand et al., (2008), Berland et De Rangé (2013).

2.3. Profile of manager

The manager of SME has a very strong influence on its management system (Lefebvre, 1991) when he/she tends to personify the company (Coupal, 1994). The manager is the most dominant actor (Affes and Chabchoub, 2007), holding all the powers and where everything is centralized. This state corresponds to the profile of very numerous Tunisian small companies arisen from the political orientations taken during the last 15 years. Bernard (2010) defines profile similar "to a balance sheet, to a photo at the given moment" when it is often explained by the personality, the training, the professional experience, the membership to social networks.

Chapellier (1997) distinguishes three profiles of managers of SMEs: the "ambitious managers", the "uncertain beginners" and the "old conservatives". These profiles are highly correlated with the management accounting practices. This author found that "ambitious managers" have more structured

management models than the "old conservatives" who have rudimentary and little used systems. While the"uncertain beginners" have heterogeneous practices. Chapellier established a link between the profiles of the leaders and the management accounting practices. He found that a great majority of the "ambitious managers" have "strong or very strong" practices of accounting of management. They also have more variety of accounting data, more detailed and generally more elaborate than the "old conservatives" where two thirds have "low or very low" practices of accounting of management and a light majority is for the "uncertain beginners". The latter hold complexity heterogeneous systems. The author found no significant relation between the profile of the leader and general accounting practices, cost accounting and risk analysis. However, the "ambitious managers" had more complex practices in management control, budget management, profitability analysis and elaboration of dashboard, than the "old conservative" (Nobre, 2001).

As for Ben Hamadi *et al.* (2014), they tried to determine to what extent the profile influence on the adoption of budgetary innovations in SME. They highlighted three profiles of Tunisian leaders, the young managers who adopt more budgetary innovation than the accomplished adults whereas the experimented patriarches do not adopt it. So the profile of the Tunisian actor influences the management accounting system of the SME.

Davila (2005) found that the age of the entrepreneur is relevant to explain the management accounting system. Solle and Roubey (2003) explain that the emergence of management tools is intimately linked to social relations. Moisdon (1997) declares that to rationalize the choice of management tools is a reductive vision and depends largely on subjective appreciations. Walley *et al.* (1994) note that the factors which relate to the characteristics of the actors have a significant influence on the adoption of modern systems of costing.

Ngongang (2007) found that both behavioral contingency factors of experience and age of the manager had no significant effect on accountants practice. Similarly, in Tunisian context Lassoued and Abdelmoula (2006) conclude that the age of the leader has no influence on the use of accounting data. They also show that the experience of the manager did not significantly influence the use of accounting data, but the leader training level is significantly related to the degree of use of accounting data without determining clearly the direction of the relationship. However, the profile of the manager determines the use of tools and accounting practices of the Tunisian SMIs.

To study the profile of the manager, we consider the age of the manager, the experience and the type of training. Thus, we propose these hypotheses:

H: *There is a positive relationship between the profile of manager and the use of the management accounting practices*

Ha: *There is a positive relationship between the age of the manager and the use of the management accounting practices*

Hb: *There is a positive relationship between the experience of the manager and the use of the management accounting practices*

Hc: *There is a positive relationship between the type of training of the manager and the use of the management accounting practices.*

2.4. Control variables

This work uses a series of control variables that might affect the dependent variables in our model: firm size, export, ownership structure and organizational structure.

2.3.1.Organizational structure

The literature shows the relationship between organizational structure and the accounting management tools. In our study we choose the structure decentralization, defined by Chenhall and Morris (1986) as the degree of autonomy delegated to managers, because it produces superior results when environmental conditions are uncertain (Christ and Burritt, 2013).

When an organization is confronted by high uncertainty a decentralized structure is required and consequently a more sophisticated MAS that provides relevant information to support managers in their

planning, controlling, decision-making and help to reduce uncertainty (Chong and Chong, 1997; Gordon and Narayanan, 1984).

Kalika (1987) found that the most differentiated and structurally decentralized organizations have the most developed planning and control systems. These results join the conclusions of Bruns and Waterhouse (1975) who observe that the most sophisticated budgeting practices are found in the most decentralized structures. Further to the work of Bruns and Waterhouse (1975), Merchant (1981) reaches, also, similar conclusion by showing that the budgetary process is more sophisticated, more formalized, more complex, and more participative in the biggest and most decentralized companies (Sponem, 2001; Germain, 2005).

2.3.2. Export

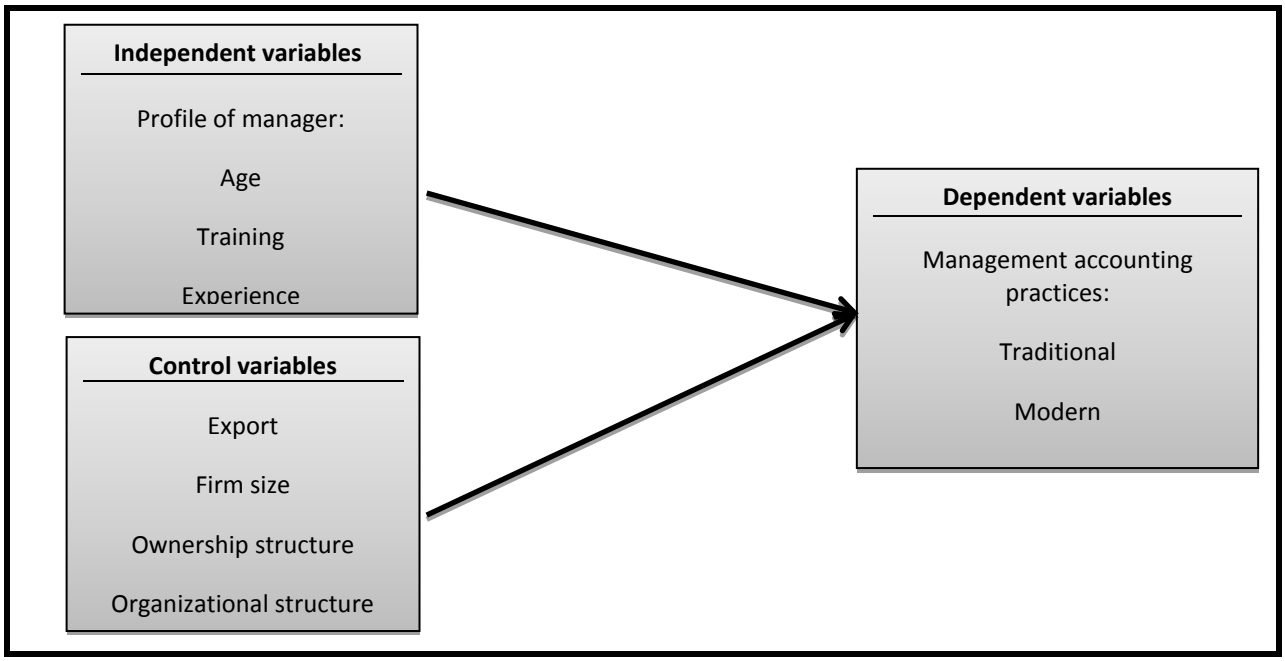
Export is one of the strategies used by Tunisian SMIs because market is very competitive and narrow (Boubakri *et al*., 2013; Zghidi and Zaiem, 2011). Thus Tunisian SMIs have an interest to be competitive and have a relevant accounting information system. Chapellier and Mohammed (2010) spot a significant relationship between the variable export and complexity of the accounting information system. In fact, exporting SMEs must establish accounting information systems more formal and sophisticated giving effective accounting information in order to conquer new foreign markets. The effective management of foreign activities needs sophisticated management control systems that can respond to local differences while winning advantages of global opportunities (Davila *et al*., 2012).

2.3.3. Ownership structure

The managerial ownership is examined in several studies in cases of developed countries like the United States. The managerial ownership of these countries is, however, typically different from Tunisia, which is dominated by family ownership (Elmanaa Madani and Khlif, 2010). Sheng and Pereira (2014) explain that higher levels of ownership concentration can reduce the information asymmetry because owners can request management information in a more rapid and centralized manner and can prevent the opportunistic behavior of managers. In this study, ownership structure is defined by the proportion of shares owned by the main shareholder of the company (Sheng and Pereira, 2014).

We present our conceptual model as follows.

*Figure 1.*The conceptual model of profile of manager on management accounting systems



3. Methodology of research

3.1. Sample and data collection

Data for this study were collected using a questionnaire survey. Before submitting the questionnaire a pre-test was conducted toward five managers and three researchers to ensure understanding and clarity of the questions. Then the questionnaire was personally addressed to the senior managers attached to the accounting department or the head office in 300 Tunisian companies operating exclusively in the industrial sector chosen from the data base of the Tunisian Industry. The survey was conducted during two months in 2012. At the end of the process a total of 226 questionnaires were returned and 221 were useable. Empirical Data were analyzed using multiple regression model conducted using the SPSS statistical software 20.0. Regarding the size of firm, the majority of companies (34.8%) presented a number of employees between 20 and 50 people. Our study sample consists of 27.1% of non-exporting firms and 72.9% of exporting companies, which have a 22.2% export turnover from 10 to 30%. For the ownership structure, the majority of our sample of firms (48.4%) is family owned and over 90% of each company shares belong to one family (Table 1). We summarize in Table 2 the descriptive statistics of profile manager.

Table 1. Descriptive Statistics for the Sample

Size of firm	**N**	**%**
<10	24	10,9
10 - 20	30	13,6
20 - 50	77	34,8
50 - 200	58	26,2
> 200	32	14,5
Total	221	100,0
Export turnover	**N**	**%**
0%	60	27,1
< 10%	47	21,3
10 - 30%	49	22,2
30 - 50 %	20	9,0
50 - 90 %	21	9,5
> 90%	24	10,9
Total	221	100,0
Ownership structure	**N**	**%**
Less than 25 %	29	13.1
25 - 50 %	34	15.4
50 - 75 %	27	12.2
75 - 90 %	12	5.4
More than 90 %	107	48.4

Table 2. Descriptive of profile manager

Age	**N**	**%**
20 - 30	26	11.8
30 - 40	101	45.7
40 - 50	66	29.9
50 - 60	25	11.3
More than 60 years	3	1.4
Total	221	100
Training	**N**	**%**
Management	23	10,4
Commercial	11	5,0
Technical	37	16,7
Accounting	138	62,4
No training	12	5,4
Total	221	100
Experience	**N**	**%**
Less 1 year	4	1.8
1 - 3	38	17.2
3 - 10	82	37.1
More than 10 years	97	43.9
Total	221	100

3.2. Measurement of research variables

The variables in the research model are divided between the variables to explain management accounting practices (traditional, modern, related to export), the explanatory variables are the contingency factors among profile of manager (age, training and experience) and the control variables (firm size, export, ownership structure and organizational structure). The variables of this research are measured using different items formulated as questions from previous work or developed for the necessity of this work (Table 3).

3.3. Construct validity and reliability of measures

The statistical analyzes of data were carried out in two stages. The first step concerns the psychometric quality of the measurement instruments, which can purify and confirm the measurement scales included in our study. The second step concerns the hypotheses testing to validate the research model.

In fact, all multi-item measures were assessed for validity and reliability. The reliability of each measure was assessed by comparing the Cronbach's Alpha score for each scale against the generally accepted minimum of 0.7. In this study, descriptive analyzes emphasized the good psychometric measurement instruments through quite high Cronbach's alpha coefficients higher than 0.7, as well as contributions factor and the quality of representation that are quite satisfactory (Table 4).

The measures were then assessed via confirmatory factor analysis (CFA) using the AMOS software 21.0. We checked the internal consistency of the measurement model and its convergent validity. We found that all constructs of the model have a satisfactory internal consistency with Rhô Jöreskog (ρ) values above 0.7 as recommended by Roussel *et al.* (2002). The convergent validity of the measurement models is verified by examining each construct's average extracted variance (AVE); these were all found to be greater than 0.5 (Hair *et al.,* 2010) (Table 4).

Table 3. Operationalization of variables

Variables	Measure
Size of firm	*Number of employees: less than 10/10-20/20-50/50-200/more than 200
Profile of manager	*Age of manager: 20-30/30-40/40-50/50-60/more than 60 years
	*Type of Training: Management/Commercial/Technical/Accounting/No Training
	*Experience : Number of years in this business: Less than 1 year/1-3/3-10/More than 10 years
Ownership structure	*The proportion of shares owned by directors: Less than 25%/25-50%/50-75%/75-90%/More than 90 %
Export	* Dummy variable No export (0)/Export (1)
	*Impact of the export on the accounting: Items are measured on a Likert scale 5 points on the impact of the export on: The use of accounting and financial software, the use of commercial management and administrative software, the Internal operating procedures adopted in your business, the profile of the staff recruited, the profitability of your business taken globally, the profitability of the products exported, the cost of your labor, the Accuracy of accounting information to produce, The volume of accounting information to produce, the frequency of accounting information to produce, the level of motivation of workers, the skill level of the company's workers, the complexity of the business organization, the requirement level of your external controllers (tax authorities, auditors, customs)
Organizational structure	*Items are measured on a Likert scale of 5 points adopted the work of Hage and Aiken (1969), Gordon and Narayanan (1984), Kalika (1987): The authority is delegated to the appropriate managers for: development or introduction of new products or services, selection of large investments, budgetary allocations, pricing decisions, recruitment and dismissal of staff, export decisions.
Management accounting practices	*Items are measured on a Likert scale of 5 points were inspired by the work of Chenhall and Langfield-Smith (1998), Nobre (2001), Baines and Langfield-Smith (2003), Vallerand et al. (2008), Berland and De Rangé (2013): the cost accounting, the complete cost price, the direct cost price, the analysis of budget variances, the operational dashboard, the activity-based costing, the benchmarking, the value chain analysis, the product life cycle analysis, the main product profitability analysis, the main customer profitability analysis, the foreign markets profitability the analysis, the analysis of the profitability of the foreign customers and the analysis of the logistic expenses caused by the export.

Table 4: Results of the validation of measurement scales

Constructs and indicators	Unidimensionality Variance explained & Eigenvalue	Reliability Cronbach's alpha (α)	Rhô Jöreskog (ρ)	Convergent validity (AVE)
Management accounting practices				
traditional (MAT)	61,650(3,083)	0,838	0.807	0.507
modern (MAM)	65,853(3,293)	0,870	0.868	0.569
related to Export (MAE)	87,100(2,613)	0,926	0.930	0.816
Organizational structure	62,234 (3,734)	0,877	0.872	0.536
Export impact	71,251(9,931)	0,969	0.966	0.673

4. Results

In order to obtain the objectives of the research study, statistical tools like average, standard deviation, correlation, regression, T tests, F tests have been used to analyze the data.

4.1. Descriptive statistics of management accounting practices

Table 5 shows the descriptive statistics of each item of used management accounting practices. The highest four averages are the practice of complete cost price (3.89); the direct cost price (3.84); the main customer profitability analysis (3.34) and the main product profitability analysis (3.30). The result shows that Tunisian manufacturing firms seem to adopt and practice more traditional management accounting (MAT) than modern management accounting (MAM).

Table 5. Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
MAT					
Complete cost price	221	1	5	3,89	1,271
Direct cost price	221	1	5	3,84	1,279
Operational Dashboard	221	1	5	3,21	1,447
Cost accounting	221	1	5	3,06	1,535
Analysis of budget variances	221	1	5	3,05	1,510
MAM					
Main customer profitability analysis	221	1	5	3,34	1,495
Main product profitability analysis	221	1	5	3,30	1,487
Product life cycle analysis	221	1	5	2,67	1,505
Benchmarking	221	1	5	2,24	1,421
Value chain analysis,	221	1	5	2,13	1,410
Activity-based costing	221	1	5	2,12	1,489
MAE					
Analysis of the profitability of the foreign customers	221	1	5	2,65	1,562
Analysis of the logistic expenses caused by export	221	1	5	2,63	1,543
Foreign markets profitability the analysis	221	1	5	2,62	1,535

4.2. Correlation analysis

The results of the Pearson correlations among all variables as reported in Table 6 show the independent variables are not strongly correlated except for the positive correlation between age and experience (r=0,463; p<0.01).

Table 6. Correlation Matrix of Variables

Variables	MAT	MAM	MAE	AGE	EXP	TRAI	SIZE	OWN	EXPOR1	EXPOR2	STRUC
Pearson correlation	1										
Sig. (bilateral)											
Pearson correlation	,510**	1									
Sig. (bilateral)	,000										
Pearson correlation	,411**	,648**	1								
Sig. (bilateral)	,000	,000									
Pearson correlation	-,054	-,051	-,083	1							
Sig. (bilateral)	,425	,454	,221								
Pearson correlation	,095	,093	,008	,463**	1						
Sig. (bilateral)	,158	,168	,903	,000							
Pearson correlation	-,092	,001	,003	-,034	,075	1					
Sig. (bilateral)	,174	,993	,970	,611	,264						
Pearson correlation	,262**	,118	,280**	,010	,247**	,115	1				
Sig. (bilateral)	,000	,079	,000	,883	,000	,087					
Pearson correlation	-,128	-,098	-,109	,050	,181**	,050	-,049	1			
Sig. (bilateral)	,057	,147	,105	,463	,007	,463	,467				
Pearson correlation	,070	,068	,502**	-,001	-,040	-,024	,312**	-,041	1		
Sig. (bilateral)	,301	,315	,000	,984	,550	,718	,000	,544			
Pearson correlation	,135*	,148*	,511**	-,051	-,071	,049	,289**	-,059	,819**	1	
Sig. (bilateral)	,045	,027	,000	,448	,295	,468	,000	,384	,000		
Pearson correlation	,272**	,204**	,267**	-,187**	-,037	-,020	,059	-,073	,094	,121	1
Sig. (bilateral)	,000	,002	,000	,005	,582	,763	,383	,277	,165	,072	

* Correlation is significant at the 0.05 level (bilateral). ** Correlation is significant at the 0.01 level (bilateral).

4.3. Hypotheses testing

The hypotheses were tested using multiple linear regression[1], the following three regressions were estimated:

$$Y_1= \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \beta_8X_8 + \varepsilon \quad \text{(Model 1)}$$
$$Y_2= \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \beta_8X_8 + \varepsilon \quad \text{(Model 2)}$$
$$Y_3= \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \beta_8X_8 + \varepsilon \quad \text{(Model 3)}$$

Where:

Y_1=MAT= traditional management accounting, Y_2=MAM=modern management accounting, Y_3=MAE= magement accounting related to export

X_1=age of manager, X_2=experience of manager, X_3=type of training of manager, X_4=size of firm, X_5=ownership structure, X_6=export /no export, X_7= impact export, X_8= organizational structure

β_0, β_1, β_2, β_3, β_4, β_5, β_6, β_7 et β_8: the determination coefficients of the constant, of the control variable and of the independent variable in explaining the dependent variable.

ε: error term

The regressions were used to identify those independent variables that have the most significant effect on the management accounting. The results of these regressions are presented in Table 7.

The first regression (Model 1) explored hypotheses in which the MAT was the dependent variable. The second regression (Model 2) related to hypotheses in which the MAM was the dependent variable. The third regression (Model 3) related to hypotheses in which the MAE was the dependent variable.

The association age, experience, training, size, ownership structure, export, organizational structure, and the extent of adoption of MAT, MAM, MAE was assessed using multiple regression.

All models are significant and have R^2 values (Y_1 = 0,178; Y_2 =0,095; Y_3 = 0,346) (Table 7).

Model 1 was found to be significant (F =5,724; p=0,001), with an R^2 of 0,178 meaning the model accounted for 17.8% of the variance in the MAT.

We found the age of manager (X_1) failed to make contribution to the model 1 (β =-,050; t= -,683; p=,496). Hence our result does not support hypothesis Ha. Similary, the variable experience (X_2) failed to make an independent contribution to the model (β =,104; t=1,379, p= ,169). Our result therefore does not support hypothesis Hb. The variable training (X_3) contribute to explain the use of traditional management accounting practices but negatively (β = -,133; t= -2,099 ; p= ,037) and has no effect on MTM and MTE. Thus, we can't support the hypothesis Hc. We found the control variables that size of firm (X_4), export with her two indicators (X_6, X_7) and organizational structure (X_8) contribute to explain the use of traditional management accounting practices. But ownership structure (X_5) hasn't impact on MAT.

Model 2 was found to be significant (F =2,766; p =0,006), with an R^2 of 0,095 meaning the model accounted for 9.5 % of the variance in the MAM, this percentage is low but is significant.

The variable age of manager (X_1) failed to make contribution to the model 2 (β = -,072; t=-,949; p=,343), also for the variable training (X_3) with (β = -,028; t= -,415; p= ,679). Thus the data does not support the hypotheses Ha and HC. However the variable experience (X_2) make an independent contribution to the model (β =,151; t=1,906; p=,058). Hence the hypothesis Hb was supported.

For the control variables we found only that impact export (X_7) and organizational structure (X_8) contribute to explain the use of modern management accounting practices.

Model 3 was found to be significant (F=14,015; p =.000), with an R^2 of 0.346 meaning the model accounted for 34.6 % of the variance in the MAE.

The variable age of manager (X1) failed to make contribution to the model 3 (β =-,058; t= -,900; p =,369). Subsequently the hypothesis Ha is not supported. Also the experience (β=,059; t= ,876; p= ,382) and

[1] Preliminary analysis revealed all the statistical assumptions of multiple linear regression were met for each model. We found absence of autocorrelation of residus with the test of Durbin–Watson and the correlation structure of the explanatory variables does not indicate a significant risk of multicollinearity in our regression models referring on Variance Inflation Factor (VIF) where the highest VIF value as 3,165<10.

training (β =-,015; t=-,270; p=,787) failed to make contribution to the model 3. Consequently neither Hb nor Hc are supported.

However the variables X4 (β =103; t=1,658; p=, 099), X6 (β =,237; t=2,399; p=,017), X7 (β=,261; t=2,659; p=,008) and X8 (β =,192; t=3,360; p=,001) contribute to explain the use of management accounting practices related to export.

Table 7. Multiple linear regression model

VARIABLES	MAT (Y_1)			MAM (Y_2)			MAE (Y_3)		
	β	t	p	β	t	p	β	t	p
(Constant)		,222	,825		,136	,892		-1,452	,148
AGE (X_1)	-,050	-,683	,496	-,072	-,949	,343	-,058	-,900	,369
EXP (X_2)	,104	1,379	,169	,151	1,906	,058***	,059	,876	,382
TRAI (X_3)	-,133	-2,099	,037**	-,028	-,415	,679	-,015	-,270	,787
SIZE (X_4)	,235	3,373	,001*	,050	,681	,497	,103	1,658	,099***
OWN (X_5)	-,105	-1,642	,102	-,097	-1,449	,149	-,072	-1,265	,207
EXPOR1 (X_6)	-,196	-1,771	,078***	-,173	-1,492	,137	,237	2,399	,017**
EXPOR2 (X_7)	,204	1,852	,065***	,258	2,229	,027**	,261	2,659	,008*
STRUC (X_8)	,236	3,670	,000*	,171	2,536	,012**	,192	3,360	,001*
R		,421			,307			,588	
R^2		,178			,095			,346	
R^2 adjusted		,147			,060			,321	
F		5,724			2,766			14,015	
p		,000*			,006*			,000*	

**p <0,01 ; **p<0,05 ; ***p <0,1*

5. Discussions and conclusions

This paper has investigated the relationship between profile of manager and management accounting practices for a sample of small and medium sized firms in manufacturing sector. Indeed, we try to contribute to the debate on the design of management accounting in SMEs in developing countries such as Tunisia, where it must be efficient and able to provide accounting information that satisfies the requirements of managers.

The results about the profile of manager show a partial impact on the use of the management accounting practices. In fact, the age of the manager doesn't have a significant effect on the use of accounting management tools. Therefore, hypothesis Ha is not supported. This result converges to the work of Lassoued and Abdelmoula (2006) and Ben Hamadi *et al.* (2011) in Tunisian context.

However the experience has a significant effect on the modern management accounting practices MAM used and subsequently Hb is partially supported. Nevertheless Lassoued and Abdelmoula (2006) show that the experience of the manager did not significantly influence the use of accounting data and the leader training level is significantly related to the degree of use of accounting data without determining clearly the direction of the relationship.

As to the type of training, it has a significant effect on MAT but is negative and has no effect neither on MAM nor on MAE. Thus, the assumption Hc is not supported. We can explain that if the leader trained in the management, he will have the same modern management tools and management tools connected to export as the other leaders, but less traditional management tools.

We can confirm through this study that the accounting management tools are present in SMIs. We note different practices were used simple or complex. To be useful and used, the accounting management tools need to be adapted to contingency factors like size of firm and the profile of the manager.

This study has limitations as any scientific work. The research focused on small and medium-sized firms in manufacturing sector. Therefore the research results may lack generalizability to the overall Tunisian small and medium-sized enterprises (SMEs). Also, there are a limited number of contingency variables that prove to be crucial in explaining the management accounting practices. So those that were discarded could contribute by their integration, to increase the explanatory power of the model proposed. Thus, future study might incorporate other variables that were not included in this research.

References

1. Abdel Kader, M. et Luther R. (2008). The impact of firm characteristics on management accounting practices: A UK based empirical analysis, *The British Accounting Review,* 40(1), 2-27.

2. Affes, H. et Chabchoub A. (2007). Le système d'information comptable: les déterminants de ses caractéristiques et son impact sur la performance financière des PME en Tunisie, *La Revue des Sciences de Gestion,* Direction et Gestion 224-225, 59-68.

3. Aouni, B., McGillis S. and Abdulkarim M. E. (2015).Goal Programming Model for Management Accounting and Auditing: A New Typology, Annals of Operational Research, DOI 10.1007/s10479-015-1969-3.

4. Ashfaq K., Younas S., Usman M., and Hanif Z., (2014). Traditional Vs. Contemporary Management Accounting Practices and its Role and Usage across Business Life Cycle Stages: Evidence from Pakistani Financial Sector. International Journal of Academic Research in Accounting, Finance and Management Sciences. Vol. 4, No. 4, pp. 104–125, E-ISSN: 2225-8329, P-ISSN: 2308-0337.

5. Ayadi F. and Affes H. (2014). Contextual factors impact on the use of new management accounting practices: An empirical analysis in the Tunisian context. J. Res. Int. Bus. Manag. 4(3):44-55

6. Baines, A., et Langfield-Smith, K. (2003). Antecedents to management accounting change: a structural equation approach. *Accounting, Organizations and Society, 28*(7-8), 675-698. doi: 10.1016/s0361-3682(02)00102-2

7. Bajan-Banaszak, G. (1993). L'expert-comptable et le conseil en gestion, *Revue Française de Comptabilité*, n° 249, 95-101.

8. Ben Hamadi, Z.et Chapellier, P., (2010). Le système de données comptables des dirigeants de PME tunisiennes: Facteurs de contingence et impact sur la performance financière. Management International.

9. Ben Hamadi, Z., Bonache A.B, Chapellier P., et Mohammed, A. (2011). « Les déterminants de la complexité des systèmes de données comptables des dirigeants de petites et moyennes entreprises : Une méta-analyse sur données individuelles », *hal.archives ouvertes.fr/docs/00/64/65/18/PDF/Ben_ Hamadi.pdf*.

10. Ben Hamadi, Z., Chapellier P. et Villeseque-Dubus F.(2014). «Innovations budgétaires en PME: l'influence du secteur d'activité et du profil du dirigeant », innovations, p 223-252

11. Berland, N. et De Rongé, Y. (2013). *Contrôle de gestion*. Pearson Education France.

12. Bernard, O. (2010), « Système de contrôle de gestion et trajectoire du propriétaire-dirigeant de petite entreprise: Le secteur de l'agencement d'intérieur dans le Grand-Est», Doctorat en sciences de gestion, Université Paris-Est-Marne la Vallée.

13. Boubakri, W.B., Zghidi, A.B.Y., & Zaiem, I. (2013). The Effect of Export Stimuli on Export Performance: The Case of the Tunisian Industrial Firms, International Review of Management and Business Research, Vol 2, Issue 1, pp 155 – 167.

14. Brierley, J.A. (2008). An Examination of the Factors Influencing the Level of Consideration for Activity-based Costing. International Journal of Business and Management, Vol.3, N°8, page 58-67.

15. Burns W. J. et Waterhouse J. H. (1975), Budgetary control and organization structure, Journal of Accounting Research, 13, 177-203.

16. Chapellier, P. (1997). Profils de dirigeants et données comptables de gestion en PME. *Revue internationale PME,* 10(1),9-41

17. Chapellier, P. et Ben Hamadi, Z. (2012). « Le système de données comptables des dirigeants de PME tunisiennes : complexité et déterminants », *Management International*, 16(4), 151-167.

18. Chapellier, P. et Mohammed, A. (2010). Les pratiques comptables des dirigeants de PME Syriennes dans un contexte de libéralisation de l'économie, 31ème Congrès de l'Association Francophone de Comptabilité (AFC), Nice.

19. Chapellier, P., Mohammed, A. et Teller, R. (2013). Le système d'information comptable des dirigeants de PME syriennes : complexité et contingences. *Management & Avenir, 65*(7), 48. doi: 10.3917/mav.065.0048

20. Chenhall, R.H. et Morris, D. (1986). The impact of structure, environment, and interdependence on the perceived usefulness of management accounting systems. *The Accounting Review*, 61(1), 16-35.

21. Chenhall, R.H. et Langfield-Smith, K. (1998). The relationship between strategic priorities, management techniques and management accounting: an empirical investigation using a systems approach. *Accounting, Organizations and Society*, 23(3), 243−264.

22. Chenhall, R.H. (2003). Management control systems design within its organizational context: findings from contingency-based research and directions for the future. *Accounting, Organizations and Society*, 28 (2-3), 127-168.

23. Chong, V.K., & Chong K.M. (1997). Strategic choices, environmental uncertainty and SBU performance: a note on the intervening role of management accounting systems. Accounting and Business Research, 27 (4), 268-276.

24. Christ L.K. and Burritt R.L. (2013).Environmental management accounting: the significance of contingent variables for adoption. Journal of Cleaner Production, Vol. 41, pp. 163-173 (online).

25. Coupal M. (1994), les PME, copie conforme de son fondateur, Revue Organisation, 3: 1.

26. Davila, T. (2005). An exploratory study on the emergence of management control systems: formalizing human resources in small growing firms, *Accounting, Organizations and Society*, 30(3), 223-248.

27. Desiré-Luciani, M.N., Hirsch, D., Kacher, N., et Polossat, M. (2013). Le grand livre du contrôle de gestion. Eyrolles.

28. Elmanaa Madani W., Khlif, W. (2010), Effets de la structure de propriété sur la performance des entreprises tunisiennes, La Revue des Sciences de Gestion, Direction et Gestion n° 243-244 – Comptabilité – Finance.

29. Germain, C. (2005), La conception des systèmes de contrôle de gestion: les relations entre les budgets et les systèmes de mesure de la performance, congrès de l'AFC.

30. Gordon, L.A. et V.K. Narayanan (1984), Management accounting systems, perceived environment uncertainty and organization structure: an empirical investigation, Accounting Organizations and Society, 9:1,33-47.

31. Hage J., Aiken M. (1969), "Routine technology, social structure, and organization goals", Administrative Science Quarterly, Vol. 14, N°3, pp. 366–376.

32. Hair, J.F., Black, W.C., Babin, B.J., & Anderson, R.E. (2010). Multivariate Data Analysis, 7th Ed., Prentice Hall, Upper Saddle River, New Jersey.

33. Hammad, S.A. Jusoh R. et Ghozali I. (2013), Decentralization, perceived environmental uncertainty, managerial performance and management accounting system information in Egyptian hospital, International Journal of Accounting and Information Management, Vol. 21 No. 4, 2013, pp. 314-330

34. Kalika, M. (1987), Structures d'entreprises, réalités, déterminants, performances, Economica.

35. Kossaï, M. et Piget, P. (2014). Adoption of information and communication technology and firm profitability: Empirical evidence from Tunisian SMEs, The Journal of High Technology Management Research, 25(1),9-20.

36. Lassoued, K. et Abdelmoula I. (2006). Les déterminants des systèmes d'information comptables dans les PME: une recherche empirique dans le contexte tunisien, 27ème Congrès de l'Association Francophone de Comptabilité (AFC), Tunis.

37. Lefebvre E. (1991), Profil distinctif des dirigeants de PME innovatrices , Revue internationale PME, 4 : 3, 7-26.

38. Lucas, M.; Prowle, M.; Lowth, G. (2013). Management Accounting Practices of (UK) Small-Medium-Sized Enterprises (SMEs). Improving SME performance through Management Accounting Education, Volume 9, Issue 4, Chartered Institute of Management Accountants, ISSN: 1744-7038 (Online).

39. Merchant, K.A. (1981). The design of the corporate budgeting system. Influence on managerial behaviour and performance, The Accounting Review, 56, 813-829.

40. Moisdon, J-C. (1997), (sous la direction de), Du mode d'existence des outils de gestion, Editions Seli Arslan, Paris.

41. Ngongang, D. (2007). Analyse des facteurs déterminants du système d'information comptable et des pratiques comptables des PME tchadiennes. *La Revue des Sciences de Gestion, Direction et Gestion*, N° 224-225: 49-57.

42. Ngongang, D. (2010). Analyse de la pratique des coûts dans les PMI camerounaises. *Revue Libanaise de Gestion et d'Économie*, *3*(5), 92-114.

43. Ngongang, D. (2013). Système d'information comptable et contrôle de gestion dans les entreprises camerounaises. *La Revue Gestion et Organisation*, *5*(2), 113-120.

44. Nobre, T. (2001). Méthodes et outils de contrôle de gestion dans les PME, *Finance –Contrôle–Stratégie*, 4(2), 119-148.

45. Otley, D. (1980), The contingency theory and management accounting: achievement and prognosis, Accounting, Organizations and Society, 5:4,413-428.

46. Roussel, P., Durrieu, F., Campoy, E. & El Akremi, A. (2002). Méthodes d'équations structurelles : Recherche et Applications en gestion, Paris : Editions Economica, collection Recherche en Gestion.

47. Sheng H.H.; Pereira V.S. (2014), Effects of Internationalization on Ownership Structure: Evidence from Latin American Firms, Brazilian Administration Review, v. 11, n. 3, art. 5, pp. 323-339.

48. Shields, M. and M. Young. (1993). Antecedents and Consequences of Participative Budgeting: Evidence on the Effects of Asymmetrical Information. Journal of Management Accounting Research: 265-280.

49. Sisaye, S., et Birnberg, J. (2010). Extent and scope of diffusion and adoption of process innovations in management accounting systems. *International Journal of Accounting and Information Management*, *18*(2), 118-139.

50. Sponem, S. (2001), L'explication de la diversité des pratiques budgétaires : une approche contingente, 23ème congrès de l'Association Française de Comptabilité, Toulouse.

51. Sunarni, C.W. (2013). Management Accounting Practices and the Role of Management Accountant: Evidence from Manufacturing Companies throughout Yogyakarta, Indonesia. Review of Integrative Business and Economics Research. Vol 2(2) 616.

52. Tappura S., Sievanen M., Heikkila J., Jussila A., Nenonen N. (2015). A management accounting perspective on safety. Safety Science 71, 151–159.

53. Vallerand, J., Morrill, J. et Berthelot S. (2008). Positionnement de la PME manufacturière canadienne face aux outils de gestion enseignés dans les programmes de formation universitaire en administration.9ème Congrès International Francophone sur l'Entrepreneuriatet les PME, Louvain-la-neuve.

54. Van Caillie, D. (2003). L'exercice du contrôle de gestion en contexte PME: étude comparée des cas français, canadien et belge. Actes du 23ème Congrès de l'Association Francophone de Comptabilité.

55. Zghidi A.B.Y.; Zaiem I. (2011). Stratégie d'adaptation du produit et performance à l'export : Effets du secteur d'activité et des caractéristiques internes de l'entreprise, 20ème conférence d'AIMS, Nantes.