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Exploring the relationship between manager profile and management control: Evidence from Moroccan Manufacturing Companies

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Abstract:

This study examines the impact of managerial profile on management control in Moroccan manufacturing companies, using a method of analysis based on correlation and multivariate regression. The independent variables include the manager's age, experience and training, while management control is considered the dependent variable. By exploring these relationships, the study aims to identify the specific influences of managers' individual traits on the design and implementation of management control systems in this particular context. The expected results will contribute to enriching strategic management practices by providing valuable insights for practitioners and researchers interested in corporate governance and organizational performance in Moroccan companies.

Keywords: Manager profile, Behavioral contingency factors, Manager age, Manager experience, Manager training, Management control, Moroccan manufacturing companies

1. Introduction

In the dynamic and competitive context of Moroccan manufacturing companies, the role of the manager is of paramount importance in ensuring effective and optimal management. Several researchers have emphasized the importance of managerial profile, including aspects such as age, experience and type of training, in organizational performance and success (Miller, 1983; Hambrick and Mason, 1984). In particular, these characteristics can have a significant impact on management control practices, which are essential for the strategic and operational steering of companies.

Management control, as a key strategic steering function, is profoundly influenced by the behavioral choices and personal traits of the manager. The aim of this study is to analyze how

the manager's profile, as a behavioral contingency factor, influences management control practices within Moroccan manufacturing companies. We will attempt to answer the following question: *How does the manager's profile influence management control practices in Moroccan manufacturing firms?*

This question raises the importance of understanding how the decisions and behaviours of managers can modulate the management control practices used in organizations. According to Mintzberg (1979), the leader plays a key role in defining organizational structures and processes, including management control mechanisms. Contemporary research has also highlighted the importance of cultural and contextual factors in the way managers adopt and adapt management control practices.

The aim of this article is therefore to examine the impact of the manager's profile on management control in Moroccan manufacturing companies. This study is based on a rigorous quantitative method, involving the analysis of data collected from 250 Moroccan manufacturing companies. Using analytical methods such as correlation and multivariate regression, we seek to identify relationships between managerial characteristics and management control practices.

Our study fills this gap by focusing on three key dimensions of a manager's profile: age, experience and type of training. A manager's age can affect his or her strategic vision and openness to new technologies and innovative practices (Bantel and Jackson, 1989). Similarly, accumulated experience can provide managers with a better understanding of manufacturing dynamics and the management skills needed to navigate complex, uncertain environments (Finkelstein and Hambrick, 1996). Finally, a manager's educational background can also play a crucial role, influencing his or her analytical and decision-making skills, as well as his or her ability to adopt and implement sophisticated management control systems (Barker and Mueller, 2002).

To analyze these relationships, we collected detailed data on executive characteristics and management control practices in the companies studied. Correlation analysis enabled us to measure the strength and direction of relationships between variables, while multivariate regression was used to model the simultaneous effects of different dimensions of managerial profile on management control. The results of these analyses show significantly that managerial profile has a substantial impact on management control practices.

2. Literature Review

2.1. Management control

Management control, a central field in business management, encompasses a set of practices and processes designed to ensure the optimal management of resources and the achievement of the organization's strategic objectives. According to Anthony (1965), management control is defined as the process by which managers ensure that resources are obtained and used effectively and efficiently to achieve organizational objectives. This

definition underlines the importance of management control in allocating resources and making strategic decisions based on accurate data and information.

For Kaplan and Norton (1992), management control goes beyond simple financial accounting by also including non-financial measures such as key performance indicators (KPIs) and balanced scorecards. These tools enable managers to assess organizational performance holistically, integrating financial and non-financial perspectives for a better understanding of success factors and challenges.

Management control is also studied from the point of view of its strategic implications. According to Simons (1995), management control systems play a crucial role in implementing an organization's strategy. He introduces the concept of "levers of control" as formal and informal mechanisms used by managers to influence individual behavior and achieve organizational goals. This approach highlights the importance of designing control systems that support and reinforce overall corporate strategy.

To this end, management control is essential for performance management and continuous improvement. According to Merchant and Van der Stede (2017), management control practices such as budgeting, activity-based management and performance measurement are crucial for aligning operational actions with long-term strategic objectives. These authors stress the importance of an integrated approach to management control that combines both financial and non-financial measures to assess performance and drive organizational innovation.

According to Atkinson et al (2001), management control systems must be adaptive, capable of responding to external changes while supporting the internal flexibility needed to adapt to internal challenges. This requires the proactive design of control systems that anticipate the organization's future needs and provide timely, relevant information for strategic decision-making.

2.2. Behavioral contingency theory in management control

From the 1970s onwards, pioneering researchers such as Khandwalla (1972) and Hayes (1977) introduced the notion of contingency into management control, emphasizing the adaptability of control systems to complex contexts. This approach was enriched by Pariente (1999), who emphasized the role of contextual factors in the configuration of control systems. Gilles (2000) extended this perspective by integrating the human dimension, asserting that relationships between actors influence control practices and information processing.

Subsequent research, such as that by Hayes, explored how divisions can perform differently depending on internal, external and relational factors. Otley (1980) then developed a model incorporating technology, organizational structure and environment as contingency factors. Fisher (1995) added five categories of contextual factors, emphasizing the importance of adapting control systems to these external variables.

The concept of "fit" is central to contingency theory, where Milan (2002) explains that organizations move from adaptation to maladaptation in response to variations in their environment, thus influencing their performance. Drazin and Van de Ven (1985) assert that

organizational performance depends on the fit between the organizational structure and its context.

While leading management control theorists have often overlooked the influence of managers, sociologists such as Couteret (1998) emphasize their central role in organizational dynamics. Managers' personal values and intuition shape decision-making and the use of management control tools, thus influencing corporate strategy and management, as Marchesnay (1986) argues. The study of the manager as the central pivot of the company reveals the importance of his or her values, intuition and training in shaping management control. This perspective sheds crucial light on how strategic decisions and management tools are influenced and implemented within organizations.

2.3. Profil of manager

The manager exerts considerable influence over the company's management system, often personifying it (Coupal, 1994). As the main actor, he or she holds all the power and centralizes decisions (Affes and Chabchoub, 2007). Bernard (2010) describes this profile as a "snapshot in time" influenced by the executive's personality, training, professional experience and social networks.

Contingency theory argues that an organization's effectiveness depends on the fit between its structure and the conditions of its environment. This approach suggests that management control must be adapted to the particularities of the company and its environment. Mintzberg (1979) points out that the profile of the manager plays a crucial role in this adaptation, since the manager's leadership style and skills influence the way in which control systems are implemented and used. Furthermore, Simons (1995) proposes that managers must use interactive control systems to stimulate innovation and learning in the organization, thus reinforcing the relevance of contingency theory in the modern context of management control. To this end, alignment between managerial profile, organizational structure and control systems is essential for effective and efficient management.

Next, we describe the three variables we will be dealing with in this research.

a) **Age of manager:** Managerial age is often associated with differences in management attitudes and behaviors. Davila (2005) found that the age of the manager is relevant in explaining the management control system. Younger managers tend to be more open to new technologies and modern management methods (Wally & Baum, 1994). On the other hand, older managers may have a preference for traditional practices due to their experience and resistance to change (Lassoued & Abdelmoula, 2006).
b) **Management experience:** Managers' professional experience also plays a crucial role in the implementation and effectiveness of management control systems. Holmes and Nicholls (1989) and Bergeron (1996) suggest that managers with more experience have a better understanding of management and are more apt to implement sophisticated control systems. However, Chapellier (1994) and Affès and Chabchoub (2007) note that experience does not always guarantee successful adoption of modern control tools, as it must be accompanied by a willingness to continually update and adapt.

c) **Type of management training:** Managers' academic and professional training strongly influences their approach to management control. Chapellier (1997) distinguishes between "ambitious managers" with advanced training who adopt structured management models, and "old conservatives" with rudimentary systems. Managers with a background in management or finance are generally more inclined to use complex management control tools, such as dashboards or profitability analysis (Ben Hamadi et al., 2014). On the other hand, those with a technical or non-management background may be less likely to see the importance of these tools (Germain, 2000).

3. Research Method

3.1. Research model

In this research, we have mobilized contingency theory, which, despite the criticisms often levelled at it, finds a favorable echo and remains widely adopted in the field of management science. Indeed, numerous studies have demonstrated the significant influence of contingency factors on the management control system (Chapellier, 1994; Bergeron, 1996; Curran et al, 1997; Germain, 2000; Reid and Smith, 2000; Laitinen, 2001; Chenhall, 2003; Davila, 2005; Lassoued and Abdelmoula, 2006; Jänkälä, 2007; Ngongang, 2007; Komarev, 2007; Chapellier and Mohammed, 2010; Chapellier and Ben Hamadi, 2012; Chapellier et al., 2013; Ben Hamadi, 2013, etc.).

The literature identifies two main types of contingencies: structural contingencies, which are linked to organizational structure, and behavioral contingencies, which are associated with the characteristics of managers and accounting players. In the present research, we have chosen to focus on behavioral contingency factors.

Our general hypothesis is formulated as follows:

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

Our hypothesis will be tested to determine the extent to which managers' behavioral characteristics influence the adoption and use of management control in Moroccan manufacturing companies. By exploring these relationships, this study aims to enrich understanding of behavioral dynamics and offer practical insights for improving corporate management and performance in this specific context.

In this research, we have a single dependent variable: Management Control " MCS " and three independent variables: Age of the manager "AGE", level of experience "EXP" and type of training of the manager "TRG". Given the objectives of our study, we will present a model of the relationship between behavioral contingency factors and management control. Thus, we have:

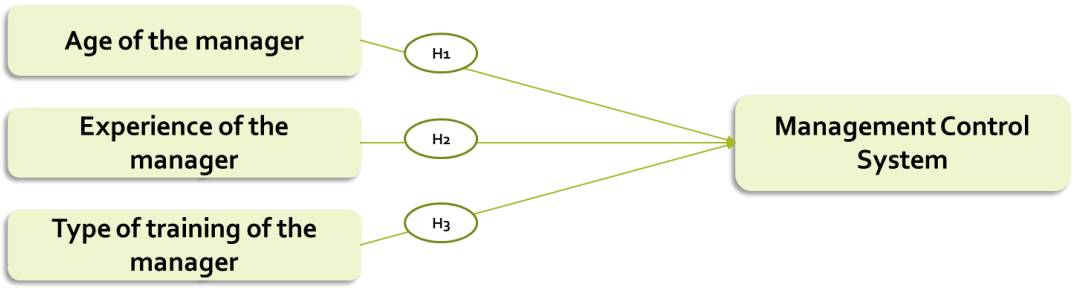

Figure 1. Study conceptual model
Source: Compiled by author

- **Operationalization of the construct "Age"**

The age of the manager is measured by the following item:

Table 1. Operationalization of the "Age" construct

Variable	Items
Age	Age of manager in years

We therefore make the following assumption:

H1: *There is a positive relationship between the age of the manager and the use of management control.*

- **Operationalization of the construct "Experience"**

The manager's experience is measured by the following four items:

Table 2. Operationalization of the "Experience" construct

Variable	Items
Experience	Total years of professional experience
	Executive experience
	Experience in current sector
	Diversity of positions held.

We therefore make the following assumption:

H2: *There is a positive relationship between managerial experience and the use of management control.*

- **Operationalization of the construct "Type of training"**

The type of training received by the manager is measured by the following two items:

Table 3. Operationalization of the "Type of training" construct

Variable	Items
Type of training	Manager training
	Non-managerial training

We therefore make the following assumption:

H3: *There is a positive relationship between the type of training received by managers and the use of management control.*

3.2. Sample and data collection

We chose Moroccan manufacturing companies covering the period from November 2023 to February 2024. We adopted a positivist paradigm, following a hypothetical-deductive approach. In this respect, we opted for a quantitative approach in order to gather the information and construct the data needed to provide answers to our problem.

We administered questionnaires in the field to 250 Moroccan manufacturing companies. In the final phase, we collected 190 questionnaires. The construction of our questionnaire required a pre-test. This enabled us to anticipate the future of our survey (Van der Stede et al., 2005). Pre-testing involves checking the questionnaire with a small, diversified sample of individuals, with a view to improving its quality (Malhotra, 2004). The aim of this technique is to reveal any errors made, to ensure that questions are clear and well understood, and to assess the average response time (Converse and Presser, 1986; McLaughlin, 1999; Evrard et al., 2003; Jolibert and Jourdan, 2006).

The table below shows the number of questionnaires sent and returned:

Table 4. Results of the survey of Moroccan manufacturing companies

Target	Questionnaires administered	Questionnaires returned		Questionnaires not recovered	
	Number of questionnaires administered	**Number of questionnaires returned**	**Percentage %**	**Number of questionnaires not recovered**	**Percentage %**
Moroccan manufacturing companies	**250**	**190**	**76%**	**60**	**24%**

Source: Compiled by author

After collecting data from 190 Moroccan manufacturing companies, the data were subjected to an exploratory analysis using SPSS software. The data thus collected were subjected to various analyses: an exploratory factorial analysis, a correlation analysis, then a multivariate linear regression analysis.

These statistical analyses consisted in validating our measurement scales and subsequently testing the hypotheses of our research model, namely the effect of the (independent variable) behavioral contingency factors on management control (dependent variable).

In a questionnaire, the ways of answering may change, and some may be used instead of others. In this context, Steven (1946) proposes four types of measurement scale: nominal, ordinal, interval and ratio.

For the purposes of this research, the interval scale was chosen to measure the variables in our model. To this end, all items are presented on the most commonly used 5-point Likert scale. This attitudinal scale has the advantage of being richer in terms of information, making it possible to operationalize the various statistical analysis tools (descriptive statistics, principal component analysis (PCA), regression matrices, etc.).

Similarly, the adoption of the Likert scale was guided, on the one hand, by its ease of administration for our target audience. Secondly, it is a measurement scale often used in management research.

We now present the results of the descriptive analysis of our sample:

Table 5. Sample characteristics

Sample characteristics	Workforce	Percentage	Percentage cumulative
Legal form			
SA	25	13,2	13,2
SARL	165	86,8	100
Total	190	100	
Number of employees			
Between 10 and 99	15	7,9	7,9
employees	115	60,5	68,4
Between 100 and 200	60	31,6	100
employees	190	100	
Over 200			
Total			
Company year of existence			
Less than 5 years	15	7,9	7,9
Between 5and 10years	50	26,3	34,2
Between 10 and 25 years	109	57,4	91,6
Over 25 years	16	8,4	100
Total	190	100	

Source: Compiled by author

Table 6. Description of the manager's profile

Age	**N**	**%**
20 - 30	20	10.5
30 - 40	85	43.2
40 - 50	60	31.6
50 - 60	20	10.5
Over 60	5	4.2
Total	190	100
Training		**N%**
Manager	120	63.2
No manager	60	31.6
No training	10	5.2
Total	190	100
Experience		**N%**
Less than one year		5
1 - 3	2.6	
3 - 10	50	
Over 10 years	25.9	
Total	34	
	17.9	
	101	
	53.6	190

Source: Compiled by author

4. Result and Discussion

4.1. Exploratory Factorial Analysis

Statistical analyses of the data were carried out in two stages. The first stage concerned the psychometric quality of the measurement instruments, which enabled us to purify and confirm the measurement scales included in our study. The second stage involved hypothesis testing to validate the research model.

In fact, the validity and reliability of all multi-item measures were assessed. The reliability of each measure was assessed by comparing the Cronbach's alpha coefficient for each scale with the generally accepted minimum of 0.7. In this study, the descriptive analyses revealed good psychometric measurement instruments, with fairly high Cronbach's alpha coefficients, above 0.7, and very satisfactory contribution factors and representational quality (Table 7).

Table 7. Cronbach's Alpha scale reliability

Constructs and indicators	Unidimensionality Variance explained & Eigenvalue	Reliability Cronbach's alpha (α)	Rhô Jöreskog (ρ)	Convergent validity (AVE)
Age of manager	51.56	0.883	0.807	0.511
Executive experience	69.30	0.821	0.825	0.602
Manager training	71.80	0.921	0.800	0.502
Management control	64.23	0.899	0.845	0.614

Source: From the author's survey

4.2. Correlation and regression analysis

a) **Correlation analysis**

In the present research, we used Pearson's correlation test to test the linear relationship between the independent variables and the dependent variable (Table 8).

The table shows that there is a significant relationship at 1% (Sig. = 0.000 < 0.001) between the two types of variable.

Table 8. Correlation test

Variables	AGE	EXP	TRG
AGE	1		
EXP	-0.004	1	
TRG	0.009	0.040	1

Source: From the author's survey

b) Regression analysis

To test the research hypotheses and the relationship between the independent and dependent variables, we used multivariate linear regression.

The test results show that adjusted R Square = 54.7%, i.e. the independent variables explain 54.7% of the variation in the dependent variable; the Durbin-Watson value = 1.746 is

between 1.5 and 2.5, so the result does not violate the first-order series autocorrelation hypothesis (Table 9).

Table 9. Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.744	0.554	0.547	0.39275	1.746

Source: From the author's survey

In addition, the F-test has Sig. = 0.000 < 0.001 (Table 10), so the regression model is appropriate (1% level of statistical significance), i.e. there is at least one independent variable affecting the dependent variable.

Table 10. Anova test

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	74.399	6	12.400	80.386	0.000
	Residual	59.851	388	0.154		
	Total	134.250	394			

Source: From the author's survey

The results of the regression analysis in Table 11 show that the variables AGE, EXP, and TRG all have Sig. = 0.000 < 0.001, so the regression model is statistically significant at 1%, fits the data set, i.e. these independent variables (AGE, EXP, and TRG) exert a significant effect on the dependent variable (MCS).

Table 11. Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-1.680	0.315		-6.553	0.000		
	AGE	0.335	0.048	0.523	6.962	0.000	0.980	1.014
	EXP	0.423	0.045	0.495	8.320	0.000	0.975	1.022
	TRG	0.418	0.046	0.502	9.120	0.000	0.968	1.019

Source: From the author's survey

4.3. Discussion of results

Our research studied the relationship between the profile of the manager and management control for a sample of 190 companies in the manufacturing sector. Indeed, we have tried to contribute to the debate on the design of management control in manufacturing companies in developing countries such as Morocco, where it must be effective and capable of providing accounting information that satisfies the requirements of the manager.

The results concerning the profile of the manager show a significant impact on the use of management control.

- The results of the empirical study using correlation and linear regression methods to demonstrate the impact of managerial age on management control in Moroccan

manufacturing companies reveal interesting trends with a β=0.523. In line with Hambrick and Mason's (1984) "Upper Echelons" theory, the data show a positive correlation between older management age and a more conservative approach to management control. Older managers, in line with the observations of Hermann and Datta (2005), prefer rigid, formalized control systems, seeking to minimize risk. Younger managers, on the other hand, tend to adopt more flexible and innovative management control practices, in line with their propensity to accept risk and encourage innovation. These results confirm that the age of the manager significantly influences the way in which management control systems are implemented and used in the context of Moroccan manufacturing companies.

Hypothesis 1 is therefore confirmed.

- With regard to the manager's experience of management control in Moroccan manufacturing companies, the results are significant and consistent with existing theories. The analyses show a strong positive correlation between managerial experience and management control effectiveness, with a β=0.495. More specifically, managers with diversified experience tend to adopt more robust and sophisticated management control. These results are in line with the work of Bantel and Jackson (1989), who assert that diversity of experience improves decision-making processes and innovation, as well as that of Pfeffer (1983), who stresses the importance of experience for the development of managerial skills. Thus, the accumulated experience of managers leads to a better understanding and implementation of management control systems, thus promoting optimized organizational performance.

Hypothesis 2 is therefore confirmed.

- As for executive education, the results reveal significant trends with a β=0.502. According to Hitt and Tyler (1991), managers' academic training influences their ability to make complex strategic decisions. The study shows that executives with management training are more likely to adopt sophisticated, integrated management control systems, confirming Barker and Mueller's (2002) observations on the importance of managerial training. By contrast, managers with a non-managerial background tend to favour analytical and quantitative approaches, thus aligning their practices with the theoretical principles of scientific management. These results suggest that the type of managerial training plays a crucial role in the way Moroccan manufacturing companies use and perceive management control, thus influencing their organizational effectiveness and strategic performance.

Hypothesis 3 is therefore confirmed.

We can confirm through this study that the various management control practices need to be adapted to behavioral contingency factors by focusing on the manager's profile.

Like all scientific work, this study has its limitations. The research focused on companies in the manufacturing sector. Consequently, the research results may not be generalizable to all Moroccan companies. In addition, there are a limited number of contingency variables that prove crucial in explaining management control practices. Thus, those that have been discarded could contribute, through their integration, to increasing the explanatory power of the proposed

model. Thus, a future study could integrate other variables that were not included in this research.

5. Conclusion

In conclusion, this study explored the impact of managerial profile on management control within Moroccan manufacturing companies. Through the analysis of variables such as the age, experience and training of managers, it became clear that these factors play a crucial role in the design and adoption of management control systems. The results show that more experienced and better-trained managers tend to implement more sophisticated management controls, adapted to the specific challenges faced by their companies.

This research also highlighted the importance of considering individual managerial traits in formulating effective organizational strategies and improving overall corporate performance. The practical implications of this study are significant for policymakers, practitioners and researchers interested in corporate governance and strategic management. By continuing to explore these complex dynamics, it is possible to further optimize management control practices in response to changing market requirements and growth opportunities in the Moroccan economic context.

However, despite the significant contributions of this research, several limitations need to be taken into account. Firstly, the study focused solely on a sample of 250 Moroccan manufacturing companies, which could limit the generalizability of the results to other geographical or sectoral contexts. In addition, although the statistical methods used, such as correlation and multivariate regression, are robust, other methodological approaches could provide complementary insights, such as in-depth case studies or mixed methods.

Finally, this research calls for future studies to delve deeper into the underlying mechanisms governing the relationship between executive profile and management control. It would be interesting to further explore how other variables, such as the executive's personality or cultural factors, influence management control practices. In addition, a longitudinal study would provide a better understanding of how changes in the manager's profile influence control strategies at different stages of the company's development. Finally, a cross-cultural comparison could enrich our understanding of the differences in management practices in different national and cultural contexts.

By integrating these perspectives and overcoming the limitations identified, future research could provide even more valuable insights for improving management and leadership practices in manufacturing companies not only in Morocco, but also on a global scale. These advances would contribute to strengthening the relevance and applicability of management theories in diverse and dynamic organizational environments.

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