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The impact of management control on the performance of large distribution companies in Morocco

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Abstract

This study investigates the impact of management control on the managerial performance of large-scale retail companies in Morocco, addressing a research gap in the local literature. Despite the considerable growth of the Moroccan retail sector, there is limited research on management control practices within this context. The research focuses on the implementation and effects of management control systems in the Moroccan retail industry, specifically examining their contribution to enhancing managerial performance. Adopting a multidisciplinary approach drawing from management control, performance management, and the retail industry, the study centers on the case of Label'vie Group. Through empirical research, the aim is to elucidate how effective management control practices positively influence the managerial performance of Moroccan retail businesses. Anticipated findings are expected to offer valuable insights for scholars and industry professionals in the management control field, particularly in emerging economies like Morocco. Furthermore, this research addresses the literature gap in the Moroccan business landscape, highlighting the importance of understanding and implementing management control mechanisms in the dynamic realm of retail. The structured abstract aligns with the journal's requirements and provides a clear framework for readers to comprehend the purpose, methodology, expected findings, and practical implications of the study.

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1. Introduction

The retail sector, once a thriving institution, is currently dealing with a serious legitimacy crisis as a result of tense relationships with suppliers and growing environmental concerns resulting from its operations. Remarkably, within the academic sphere, the intricate dynamics of distributor-producer relationships have garnered significant attention, delving into the power dynamics within the supply chain and their implications for performance. Yet, surprisingly, the crucial dimension of power dynamics has remained conspicuously absent in distribution channel literature, despite the resounding call by Grewal and Dharwadkar (2002) to adopt a neo-institutional sociological perspective.

The retail landscape in Morocco, mirroring developments in the United States and France with the ascent of major players like Wal-Mart and Carrefour, presents a unique opportunity to investigate these critical dynamics further. Initially confined to major cities like Rabat and Casablanca, the phenomenon of large-scale retailing is progressively infiltrating smaller urban areas (Fouzi, 2007). This transformation has not only

reshaped the consumption patterns of Moroccan consumers, offering them a retail format characterized by self-service and transparent pricing, but also altered their expectations regarding quality and service. Additionally, these large retail establishments have introduced a wide array of quality products at competitive price points.

Furthermore, the surge of large-scale retailing has ushered in profound changes in the operations of domestic manufacturers. Suppliers looking to have their products featured in these retail giants must now possess adequate logistical and production capacities to meet the precise timing, location, and quantity requirements stipulated by their retail partners. This evolution of the Moroccan retail market has had far-reaching consequences for the entire economy, triggering a transformation in relationships among key stakeholders and necessitating manufacturers to adapt to the rigorous demands imposed by large retailers.

Within this evolving landscape, this study assumes paramount significance, poised to unveil the circumstances under which management control mechanisms can amplify managerial performance. In the context of our study, managerial performance is characterized by the degree to which managers and the departments under their purview effectively accomplish their diverse objectives (Govindarajan & Gupta, 1985). This research endeavour not only addresses an existing gap in the literature in the Moroccan context but also promises to introduce fresh perspectives, offering invaluable insights for future research in the field.

2. Literature Review

Since the 1950s, there has been a significant focus on recognizing the human and social aspects of management control, giving rise to the behavioral stream of management control research. This research domain centers on the manager, their behaviors, and attitudes within the budgeting process, aiming to comprehend how the budgeting process influences managerial performance, defined as the extent to which managers and their departments achieve their objectives across all expected dimensions. The concept of budgetary participation, which refers to the manager's involvement in budget development and goal-setting, has been a key subject of investigation. Empirical findings on its relationship with managerial performance are mixed. This may be due to the evolving nature of management control, which has expanded beyond budgetary control to encompass non-financial objectives, dashboards, and ad hoc studies. Consequently, researchers advocate considering management control as an interconnected system of processes rather than isolating individual components. This approach underlines managerial participation in management control, defined by the extent to which managers engage in this process by providing high-quality information to controllers and using the information received for their daily decisions. It distinguishes between knowledge contribution, an altruistic behavior, and the use of information, a self-interested behavior, as two distinct components of participation within this context.

2.1. Interactions between the Management Controller and the Manager

In the realm of management control, recognizing the importance of the human and social elements has spurred extensive research since the 1950s, resulting in the emergence of the behavioral stream in management control studies. According to reviews by academics like Kren (1997) and Langevin and Naro (2003), this research focuses on managers, their actions and attitudes during the budgeting process with the goal of enhancing managerial performance, which is defined as the extent to which managers and respective departments successfully achieve their various objectives (Govindarajan & Gupta, 1985). Notably, one prominent aspect under scrutiny is managerial participation in budgeting, encompassing the level of a manager's involvement and influence in shaping their budget or the opportunity for them to contribute to defining budgetary goals. Nevertheless, empirical research yields mixed results; while certain studies propose a positive correlation between budgetary participation and managerial performance, others indicate a negative connection, and some fail to establish any noteworthy association (Nouri & Parker, 1998). To address this inconsistency, researchers have explored various influencing factors, yet even a recent meta-analysis by Bonache, Maurice, and Moris (2010) couldn't establish an overarching connection between budgetary participation and managerial performance. This may arise from limitations in the budgetary participation concept itself, necessitating a more comprehensive view that considers ongoing discussions regarding action plans and their adaptations in the evolving context of management control. Therefore, Malmi and Brown (2008) advocate adopting a holistic approach and treating the management control system as an interconnected network of interdependent sub processes. The activities that make up management control are naturally linked to each other (Fullerton, Kennedy, & Widener, 2013; Widener, 2007). Looking at just one part, like budget development, from the bigger picture of management control processes might not lead to clear results. Given these points of view, this study tries to shed light on the managerial performance by looking at how a manger participants in management control, which includes all of its parts and not just budgetary control. The variable "managerial participation in management control" is characterized by the degree to which managers actively engage in this process on two fronts: firstly, by providing the management controller with high-quality information related to their past or future activities, and secondly, by utilizing the information received from management control in their daily decisions and significant actions (Godener & Fornerino, 2005b). This definition discerns two distinct forms of participation derived from knowledge

management studies, each characterized by differing information flows and motivations: "knowledge contribution" represents an altruistic behavior involving the provision of information that may benefit others, while "use of information present in the system" reflects a self-interested approach. This perspective advocates for a separation of the two components within managerial participation in management control.

2.2. The Standard of Information and Reports Delivered by the Management Controller

To provide context to evaluate the effectiveness of the managerial controller's performance, we can refer to principles associated with the management of information. This body of literature underscores that the quality of information accessible to all is contingent upon a series of processes encompassing data gathering, storage, dissemination, validation, consolidation, formatting, and other responsibilities overseen by a system manager (Goh, 2002; Nesheim & Gressgård, 2014). Within our field, these tasks fall within the domain of the managerial controller, involving activities such as gathering data, ensuring data integrity, conducting coherence checks, cross-referencing, and more. Through active involvement in organizing the management information system, collaborating with various stakeholders within the organization, and cross-referencing data from diverse sources, the managerial controller ensures the acquisition and quality of essential information. As a result, the managerial controller contributes to the creation of information and reports that effectively integrate the existing knowledge within the organization. Furthermore, the controller's role extends to customizing this information to fulfill the specific requirements of individual managers. The "relevance" of the information presented by the managerial controller is determined by how well it aligns with the perceived needs of a manager.

The "Manager's Contribution" enriches the information pool from which the management controller generates expected information and reports, thus enhancing their relevance. Nevertheless, as it involves interactions with the controller, the contribution also aids the controller in better comprehending the manager's inquiries, the additional information they seek, and the decisions they intend to make (Byrne & Pierce, 2007). Hence, it enhances the management controller's ability to tailor information to meet the manager's requirements and provide relevant insights. Existing literature (Dupuy, 1999; Johnson & Kaplan, 1987; Pierce & O'Dea, 2003) indicates a widespread lack of awareness among management controllers regarding the information needs of the managers they support, underscoring the significance of this contribution.

The Social Exchange Theory Blau (1964), rooted in the theory of reciprocity (Mauss, 1950), provides insight into the dynamics of resource sharing between individuals or between a person and an entity, such as an organization (Cropanzano, Rupp, Mohler, & Schminke, 2001).

When applied to the manager-controller relationship, it suggests that increased manager participation and collaboration in the management controlled process leads to higher information relevance from the controller. Conversely, when managers create a relational barrier with their controllers, it diminishes the motivation for maintaining the exchange and meeting the manager's needs (Bollecker & Niglis, 2009).

The manager's input improves the information repository that the controller uses to generate the anticipated information and reports, increasing their relevance. Additionally, these engagements with the manager facilitate a deeper comprehension of their concerns, the necessity for additional information, and the decisions at hand (Byrne & Pierce, 2007). Consequently, it strengthens the controller's ability to adjust to the manager's requirements and provide pertinent information. This is pivotal, given that existing literature underscores a lack of awareness among many controllers regarding the information needs of the managers they support (Dupuy, 1999; Pierce & O'Dea, 2003). As a result, we posit the following hypothesis:

H_1: The greater the manager's contribution to management control, the higher the satisfaction with the relevance of the information provided by the controller.

2.3. Mechanisms Enhancing Managerial Utilization of Information Supplied by the Management Controller

The Managerial use of information provided by the management controller represents a crucial dimension within the manager's participation in the management control variable. It underscores that a management control system's effectiveness doesn't solely hinge on furnishing tools, information, or analyses; rather, their efficacy depends on how extensively the manager incorporates them when making decisions and overseeing their teams.

The Managerial Use of information emanating from the management control service holds substantial significance, as it directly relates to the core purpose of management control. By drawing upon the knowledge management concept of "re-use" (Alavi & Leidner, 1999), we define it as the extent to which the manager takes into consideration, during decision-making, the information generated through the management control process.

This utilization level can vary significantly. Research in both public organizations (Lee & Fisher, 2007) and private enterprises (Wiersma, 2009) has revealed that certain managers make more extensive use of available financial and non-financial information, which can aid in decision-making, compared to their counterparts. Decision-makers individual habits, beliefs, desires, and priorities may influence their decision to take a different course than that suggested by management control. Additionally, the importance assigned to

management control information by their superiors also affects its utilization (Hachmanian & Hussenot, 1984; Jarvenpaa, 2007; Newman & Warren, 1977; Schein, 1985).

According to the research, the perceived value of knowledge, accessibility, and trust in the knowledge-sharing process all have an impact on the extent of knowledge re-use in the field of knowledge management (Watson & Hewett, 2006). Applying this knowledge management perspective to the field of management control implies that a manger is more likely to use data provided by the management controller when they believe it to be highly relevant. Two social psychology theories further support this cause-and-effect relationship. Firstly, Expectancy Theory (Vroom, 1964) asserts that individuals are motivated to take action when they believe it will lead to outcomes or rewards they value. Therefore, a manager is more motivated to utilize information from the management controller when they perceive it as relevant, as they believe it can assist in making sound decisions and achieving their goals. Secondly, the cost-benefit approach (Beach & Mitchell, 1978; Payne, 1982) aligns with the principles of Expectancy Theory, suggesting that managers seek an optimal balance between their desire to make informed decisions and the effort required for preparation. Consequently, when the management controller provides information tailored to their needs—pre-analyzed, well-structured, and selected to align with their inquiries and context—the manager is more likely to incorporate it into decision-making, as it reduces the effort needed for utilization while delivering value.

As a result, we formulate the following hypothesis:

H_3: The higher the manager's satisfaction with the relevance of the information provided by the controller, the greater the manager's utilization of this information.

2.4. Utilizing Management Control for Improved Managerial Performance

According to Ferreira and Otley (2009), leveraging management control information can have a more significant impact on overall performance than the control system's actual design. This distinction results from the fact that Anthony (1988) and Merchant and Van der Stede (2007) explain that the efficient use of information gives the entire management control process true significance, which fundamentally exists to facilitate the realization of an organization's objectives. When the management control system effectively fulfills its role, the utilization of its information inherently fosters heightened managerial performance. This assertion aligns with findings in the realm of knowledge management, where the correlation between the adept utilization of shared knowledge (knowledge re-use) and enhanced performance has been empirically substantiated, particularly by McIver, Lengnick-Hall, Lengnick-Hall, and Ramachandran (2013). Nonetheless, further empirical validation is warranted within the domain of management control under the following framework:

H_5: The higher the degree of utilization by the manager of the information provided by management control, the stronger the managerial performance.

2.5. Mediation Hypothesis

In defining a mediator, we refer to a factor that transmits the influence of variable "A" to variable "B." When variable "A" impacts the mediator variable "M," and variable "M" subsequently influences variable "B," a connection is established between variables "A" and "B" through the intermediary variable "M." According to Baron and Kenny (1986), this mediator is crucial in illuminating relationships.

By integrating hypotheses H1 (the influence of contribution on relevance) and H2 (the impact of satisfaction with relevance on utilization), we assert that contribution acts as a catalyst for utilization through the mediating factor of information relevance. This comprehensive hypothesis provides insight into how contribution shapes utilization, encompassing the manager's role through their contribution, the controller's role in interactions with the manager, and the generation of pertinent reports and analyses. Moreover, it underscores the manager's role in utilizing these reports more extensively when aligned with their requirements.

To articulate this, we formulate the following hypothesis:

H_6: Manager's satisfaction with the information provided by the controller and the manager's use of this information serve as two mediating variables in the impact of Manager's Contribution on their Managerial Performance.

3. Materials and Methods

3.1. Epistemological Stance

Our epistemological approach is grounded in positivism, driven by our desire to view reality as having an inherent essence and being governed by universal laws. This leads us to adopt an objective research approach, relying on empirical testing of previously formulated theoretical hypotheses. Our aim is to address gaps or inconsistencies in theories that describe reality and to highlight distinctions between theories and actual observations.

Our study seeks to uncover how management control influences managerial performance. The researcher aims to provide an objective explanation of this relationship, validating it through the testing of formulated hypotheses. These hypotheses will be confirmed or rejected based on their compatibility with the observed reality, enhancing the credibility of our findings.

To examine the impact of management control on managerial performance at Groupe Label'vie, we have chosen a quantitative approach, utilizing numerical data to quantify the phenomena under investigation. We collected this data through a questionnaire survey, an effective method for gathering information from a large number of participants.

This quantitative approach enables us to test our study's hypotheses using numerical data, validating or refuting them based on their alignment with the observed reality. Quantitative research is particularly suitable when there is a well-established theoretical framework in the literature, which often offers multiple frameworks that need comparison and integration.

We have adopted a hypothetico-deductive reasoning approach, beginning with a general theory and then examining its applicability in specific contexts.

For our analysis, we have chosen to employ structural equation modeling. Before starting this analysis, we determined the sample size using recommended methods to ensure it was sufficient for making generalizations about our study's target population. In distributing the questionnaires, we opted for an electronic method, sending them to directors and department heads for their responses, who then forwarded them to their respective teams.

Table 1. Minimum number of observations.

Criteria	Minimum sample size	Sources
Sample/Variable ratio	6*4 = 20 observations	Hair et al. (2019)
Roscoe (1975)	30 observations	Roscoe (1975) and de (Sekaran & Bougie, 2016)
The 10 times rule	10*4 = 40 observations	Hair, Hult, Ringle, and Sarstedt (2017)
10% of population size	4600*10% = 46 observations.	Depelteau (2010)

Note: * means multiplied by.

Table 1 outlines the minimum required observations for our study sample, as suggested by various recommendations. The range of minimum observation counts varies from 20 to 46. In our study, we have successfully accumulated 75 observations, with 69 of them deemed valid, surpassing the prescribed minimum thresholds. To elaborate on Table 1, the table illustrates the achieved number of observations, emphasizing that 69 of them are considered valid, thereby exceeding the recommended minimum thresholds.

According to the statistics, our sample is diversified in terms of the positions held within the Groupe LABEL'VIE, age, and length of service. However, 98.8% of our sample works in collaboration with the management control department.

3.2. Methodological Choices

Before designing our study questionnaire, we conducted a search for existing measurement scales that are relevant to the variables in our model. We were able to use those that the scientific community had already validated, so we did not need to conduct interviews to develop new measurement scales.

Our research began with a review of the existing literature to identify measurement scales that are most suitable for our case study. This allowed us to select the most appropriate scales for measuring the variables in our model and ensure their validity and reliability.

The measurement scales we adopted and adapted to our context primarily came from Govindarajan and Gupta (1985); Godener and Fornerino (2005a); Godener and Fornerino (2005b) and Godener and Fornerino (2017). For all the items comprising these measurement scales, respondents were asked to rate them on a 5-point Likert scale ranging from "strongly disagree" to "strongly agree," "not at all satisfied" to "very satisfied," and "not at all important" to "extremely important."

Manager's Contribution to Management Control: The manager's contribution to management control represents the extent to which the manager shares essential information, knowledge, thoughts, analyses, and interpretations with the management controller without distorting them. To measure this, we used the measurement scale developed by Godener and Fornerino (2005a) for assessing the "participation of the manager" dimension in management control. This scale was originally designed to gauge the perceptions of management controllers and was adapted in wording to account for the fact that our respondents are managers (outside of the management control department).

Satisfaction with the Relevance of Information: In our case study, satisfaction refers to the evaluation of the performance perceived by managers regarding the information provided by management control. To measure this variable, we adopted and adapted measurement scales validated in previous studies, as used by Fornerino, Godener, and Ray (2010).

Use of Information Issued by Management Control: The manager's utilization of information refers to the degree to which the manager considers information generated by the management control process when making decisions. In gauging this variable, we employed the scale developed by Godener and Fornerino (2005b), encompassing dimensions such as "consideration by managers of information received from the

management control process" and "integration of management control information into daily operations." We adapted the item wording to address managers beyond the management control department.

Managerial Performance: Managerial performance is defined as the extent to which the manager and their department accomplish objectives across all anticipated dimensions. This performance measure makes use of Govindarajan and Gupta (1985), that Nouri and Parker (1998) had previously used to reflect the achievement of managerial goals. It's important to note that our measure of managerial effectiveness is formative, not reflective, as each dimension or item actively contributes to shaping performance rather than merely reflecting it.

3.3. Exploratory Factor Analysis and Descriptive Analysis

The measurement scale for the "CM" (Contribution to Management Control) variable consists of four items. The correlation matrix shows that all correlations between these items are positive and significant. The Kaiser-Meyer-Olkin (KMO) measure is 0.711, and the Bartlett's test is significant (p<5%), confirming the suitability of applying Principal Component Analysis (PCA).

Regarding the validity of the "CM" scale, the PCA results reveal a single factor in which the items explain 55.6% of the total variance. The quality of item representation (communality) is above 0.4 for all items except for CM4 (0.384). Consequently, CM4 was eliminated, and a new factor analysis was conducted.

After removing CM4, the results show a KMO of 0.663 (down from 0.711). PCA still displays a single factor explaining 65.7% of the total variance (up from 55.6%). The quality of item representation is now above 0.4 for all items, and the factor loadings exceed 0.5 for all items. This PCA confirms the validity of our measurement scale. Regarding reliability, the Cronbach's alpha for the scale is 0.729, indicating good internal consistency.

The measurement scale for the "SM" (Satisfaction with Relevance of Information) variable also consists of four items. The correlation matrix shows positive and significant correlations between these items. The KMO measure is 0.754, and Bartlett's test is significant (p<5%), satisfying the conditions for PCA.

For the validity of the "SM" scale, PCA results display a single factor in which the items explain 55.6% of the total variance. The quality of item representation (communality) is above 0.5 for all items except for SM4 (0.413). Consequently, SM4 was removed, and a new factor analysis was conducted.

After removing SM4, the results show a KMO of 0.717 (down from 0.754). PCA still displays a single factor explaining 73.4% of the total variance (up from 62.4%). The quality of item representation is now above 0.5 for all items, and the factor loadings exceed 0.5 for all items. This PCA confirms the validity of our measurement scale. Regarding reliability, the Cronbach's alpha for the scale is 0.717, indicating good internal consistency.

The measurement scale for the "UI" (Use of Information Issued by Management Control) variable consists of four items. The correlation matrix shows positive and significant correlations between these items. The KMO measure is 0.845, and Bartlett's test is significant (p<5%), meeting the criteria for PCA.

For the validity of the "UI" scale, PCA results display a single factor in which the items explain 73.4% of the total variance. The quality of item representation is above 0.5 for all items, and the factor loadings exceed 0.5 for all items. This PCA confirms the validity of our measurement scale. Regarding reliability, measured through Cronbach's alpha, the scale demonstrates good internal consistency with a value of 0.717.

The measurement scale for the "PM" (Managerial Performance) variable consists of four items. The correlation matrix shows positive and significant correlations between these items. The KMO measure is 0.862, and Bartlett's test is significant (p<5%), meeting the criteria for PCA.

For the validity of the "PM" scale, PCA results display a single factor in which the items explain 60.2% of the variance. The quality of item representation is above 0.5 for all items, and the factor loadings exceed 0.5 for all items. This PCA confirms the validity of our measurement scale. Regarding reliability, measured through Cronbach's alpha, the scale demonstrates good internal consistency with a value of 0.865.

3.4. Explanatory Analysis

The measurement model allows us to demonstrate the link between indicators and their corresponding constructs. The evaluation of the measurement model primarily focuses on assessing reliability, convergent validity, and discriminant validity. We will dedicate the following sections to presenting the tests we conducted in the context of evaluating our measurement model. The following figure illustrates our study model after executing the PLS algorithm in the SmartPLS software.

3.4.1. Assessment of Convergent Validity

Convergent validity is the degree to which a measurement demonstrates a positive correlation with other measurements of the same concept. Hair et al. (2017) propose evaluating convergent validity for reflective constructs by considering two indicators: the outer loadings of the indicators, often termed indicator reliability, and Average Variance Extracted (AVE). According to Hair et al. (2017) and Bagozzi and Yi (1988), the collectively explained total variance should surpass 0.5. For indicator reliability (loadings), it is advised to exceed the minimum threshold of 0.7. if an indicator has a value between 0.4 and 0.7, however, it should be

carefully looked at to see if leaving it out AVE and composite reliability (CR) above and beyond the recommended levels (Hair et al., 2017).

Table 2. Convergent validity of constructs.

Constructs	Items	Loadings	AVE
The contribution of managers in the management control process	CM1	0.830	0.651
	CM2	0.887	
	CM3	0.690	
Satisfaction with the relevance of information provided by the management controller	SM1	0.841	0.596
	SM2	0.865	
	SM3	0.863	
The use of information issued by management control	UI1	0.852	0.734
	UI2	0.765	
	UI3	0.807	
	UI4	0.855	
	UI5	0.768	
Managerial performance	MP1	0.839	0.657
	MP2	0.779	
	MP 3	0.786	
	MP 4	0.717	
	MP 5	0.799	
	MP 6	0.702	

Table 2 presents the convergent validity of our constructs. Based on the outer loadings, we observed that variable CM3 has outer loadings below 0.7. We decided to retain it based on the following justifications:

This item achieved a representation quality of 0.586 and a factor contribution of 0.766.

In social sciences research, including management science, it is commonly accepted that a minimum of three items is necessary for a proper measurement of a latent variable (Nunnally & Bernstein, 1994). Similarly, DeVellis (2017) recommends using at least three items to achieve an acceptable level of reliability when developing a scale. Hair, Black, Babin, and Anderson (2010) also consider three items or more as necessary to form a reliable scale. Finally, Streiner (2003) emphasizes that three items are the minimum recommended for calculating the reliability of a measure through internal consistency. These recommendations of a minimum of three items reflect the idea that to obtain a reliable and valid measure of a latent variable, it is important to have a sufficient number of indicators to capture the complexity of that variable.

3.4.2. Evaluation of Reliability

Table 3 presents the internal consistency reliability, which assesses the extent to which items within a measurement instrument consistently measure the same underlying construct, ensuring that the items are interrelated and contribute cohesively to the reliability of the measure.

Table 3. Internal consistency reliability.

Constructs	Cronbach's alpha	Composite reliability (rho_c)
The contribution of managers in the management control process	0.738	0.797
The use of information issued by management control	0.865	0.875
Managerial performance	0.819	0.821
Satisfaction with the relevance of information provided by the management controller	0.870	0.877

As indicated in the table above, all variables displayed a Cronbach's alpha ranging from 0.738 to 0.870 and a Composite Reliability (CR) ranging from 0.797 to 0.877. The reliability of the internal consistency of the constructs is therefore confirmed.

3.4.3. Discriminant Validity Assessment

There is a test called discriminant validity in Table 4 that can be used to see if a concept is unique and includes things that other concepts in the model don't (Hair et al., 2017). Evaluation of discriminant validity can be conducted through three techniques. The first method uses cross-loadings, which means that an indicator's outer loading on the related construct should be higher than all of its cross-loadings (also called correlations) on other constructs. As a result, Table 4 demonstrates that all indicators in the model follow this rule.

Table 4. Discriminant validity using the cross-loadings technique.

Variable	Contribution of the manager	Managerial performance	Manager's satisfaction	Use of information
CM1	0.830	0.407	0.337	0.291
CM2	0.887	0.471	0.392	0.356
CM3	0.690	0.492	0.202	0.438
MP 1	0.341	0.839	0.494	0.561
MP 2	0.462	0.779	0.569	0.507
MP 3	0.614	0.786	0.511	0.507
MP 4	0.384	0.717	0.218	0.248
MP 5	0.394	0.799	0.487	0.470
MP 6	0.344	0.702	0.366	0.464
SM1	0.402	0.492	0.841	0.422
SM2	0.359	0.576	0.865	0.530
SM3	0.271	0.459	0.863	0.527
UI1	0.363	0.519	0.385	0.852
UI2	0.436	0.536	0.635	0.765
UI3	0.316	0.439	0.387	0.807
UI4	0.305	0.502	0.512	0.855
UI5	0.269	0.489	0.346	0.768

Table 5. Discriminant validity through the Fornell-Larcker criterion.

Constructs	Contribution of the manager	Managerial performance	Manager's satisfaction	Use of information
Contribution of the manager	0.807			
Managerial performance	0.549	0.772		
Manager's satisfaction	0.402	0.596	0.857	
Use of information	0.425	0.619	0.577	0.810

Table 5 presents the second technique for assessing discriminant validity, which involves the Fornell and Larcker (1981). According to this criterion, the square roots of the AVE (Average Variance Extracted) for each construct should be greater than its highest correlation with other constructs. Table 5 demonstrates that Fornell and Larcker (1981) recommendation is met.

Table 6. Discriminant validity through the HTMT (Heterotrait-Monotrait) ratio criterion.

Constructs	Contribution of the manager	Managerial performance	Manager's satisfaction	Use of information
Contribution of the manager				
Managerial performance	0.703			
Manager's satisfaction	0.492	0.675		
Use of information	0.547	0.680	0.660	

Table 6 presents the discriminant validity assessment using the Heterotrait-Monotrait Ratio (HTMT), as proposed by Henseler, Ringle, and Sarstedt (2015). Unlike the Fornell-Larcker criterion, which may be less effective, especially when the outer loadings of indicators for the considered constructs exhibit slight differences, the HTMT approach addresses these limitations. According to this method, the highest HTMT ratio should not exceed 0.85, and a value closer to 1, following Kline (2011) recommendation, indicates a potential lack of discriminant validity. In our model, as shown in Table 6, all constructs demonstrated an HTMT ratio below 0.85, providing further support for the discriminant validity of our model.

To assess our structural model, we relied on the coefficient of determination (R^2), effect size (f^2), predictive relevance (Q^2), and the path coefficient for hypothesis testing. Before evaluating structural relationships, Hair et al. (2017) and Hair, Risher, Sarstedt, and Ringle (2019) recommend examining collinearity to ensure it does not bias regression results.

3.4.4. Variance Inflation Factor (VIF)

VIF values exceeding 5 may suggest potential collinearity issues among predictor constructs, but it's important to note that collinearity problems can arise even at values below 3 to 5 (Becker, Ringle, Sarstedt, & Völckner, 2015; Mason & Perreault Jr, 1991). Ideally, VIF values should be close to or below 3. In our model, all the variables under investigation exhibited Variance Inflation Factor (VIF) values below 3. Therefore, we can conclude that collinearity is not a concern in our analysis.

3.4.5. Coefficient of Determination R^2

Chin (1998) states that R^2 is a measure of a model's predictive power for dependent variables. According to Hair Jr, Sarstedt, Hopkins, and Kuppelwieser (2014), the coefficient of determination R^2 represents the most commonly applied assessment procedure for the structural model, expressing the combined effect of exogenous variables on the endogenous variable. Chin (1998) considers an R^2 value of 0.67, 0.33, and 0.19 to be substantial, moderate, and weak, respectively. In our model, executing the PLS algorithm yielded R^2 values ranging from 0.161 to 0.383, which are considered acceptable in accordance with Chin (1998) recommendations, except for managerial satisfaction. Our theory suggests that the variables we study are highly interrelated and challenging to model. Therefore, we considered Hair et al. (2010) recommendation that an R^2 level below 10% can be considered weak for regression models. However, given the complexity of our variables, we also considered other studies that have shown that for certain models, an R^2 level of 16% can be acceptable (Hair et al., 2010).

Table 7. Coefficient of determination R^2.

Constructs	R-square	R-square adjusted	Results
Use of information	0.333	0.325	Weak
Managerial performance	0.383	0.375	Moderated
Manager's satisfaction	0.161	0.150	Weak

Table 7 presents: The variables "Contribution of managers in the management control process," "Utilization of information issued by management control," and "Satisfaction with the relevance of information issued by the management controller" displayed values of 0.3862, 0.1173, 0.5703, and 0.2879, respectively. Thus, the effect size of these exogenous variables on the endogenous variable varies from low to moderate. The following table provides a summary of the estimation of the effect size of the exogenous variables in the model.

3.4.6. Effect Size (f^2).

In our model, the variables "Contribution of Managers in the Control Process," "Utilization of Information from Management Control," and "Satisfaction with the Relevance of Information from the Controller" displayed values of 0.3862, 0.1173, 0.5703, and 0.2879, respectively. Thus, the effect size of these exogenous variables on the endogenous variable varies from small to moderate. The following table provides a summary of the effect size estimation for the exogenous variables in the model.

Table 8. Estimation de la taille de l'effet en se basant sur la recommandation.

Constructs	Contribution of the manager	Managerial performance	Manager's satisfaction	Use of information	Effect size
Contribution of the manager			0.192		Moderate
Manager's satisfaction				0.500	Strong
Use of information		0.621			Strong

Source: Cohen (1988).

Table 8 presents the values for the variables in our model, namely, "Contribution of Managers in the Control Process,"Utilization of Information from Management Control," and "Satisfaction with the Relevance of Information from the Controller," which are 0.3862, 0.1173, 0.5703, and 0.2879, respectively. This indicates that the effect size of these exogenous variables on the endogenous variable ranges from small to moderate. A summary of the effect size estimation for the exogenous variables in the model is detailed in the subsequent table.

3.4.7. Predictive Relevance Q^2

The Stone-Geisser Q^2 index is employed to assess the predictive relevance of the model, obtained through the blindfolding procedure in SmartPLS software. When the resulting Q^2 values surpass 0, it signifies that the exogenous constructs within the model possess predictive relevance for the specified endogenous construct (Hair et al., 2017; Henseler, Ringle, & Sinkovics, 2009). Utilizing cross-validated redundancy of the construct (Cross-Validated Redundancy), the Q^2 index indicates values of 0.204, 0.095, and 0.180 for the PM, SM, and UI variables, respectively, all exceeding 0, signifying good predictive validity (relevance) for the model. A concise summary of the predictive relevance estimation is presented in the following Table 9.

Figure 1 visually represents the intricate web of our constructs through the path model, showcasing the interconnections, R-square values, the original sample denoted as (O), and the loadings.

Table 9. Predictive relevance of the model Q^2 (Cross-validated redundancy of the construct).

Constructs	SSO	SSE	Q^2 (= 1-SSE/BSP)
Contribution of the manager	234,000	234,000	
Managerial performance	468,000	372,682	0.204
Manager's satisfaction	234,000	211,761	0.095
Use of information	390,000	319,787	0.180

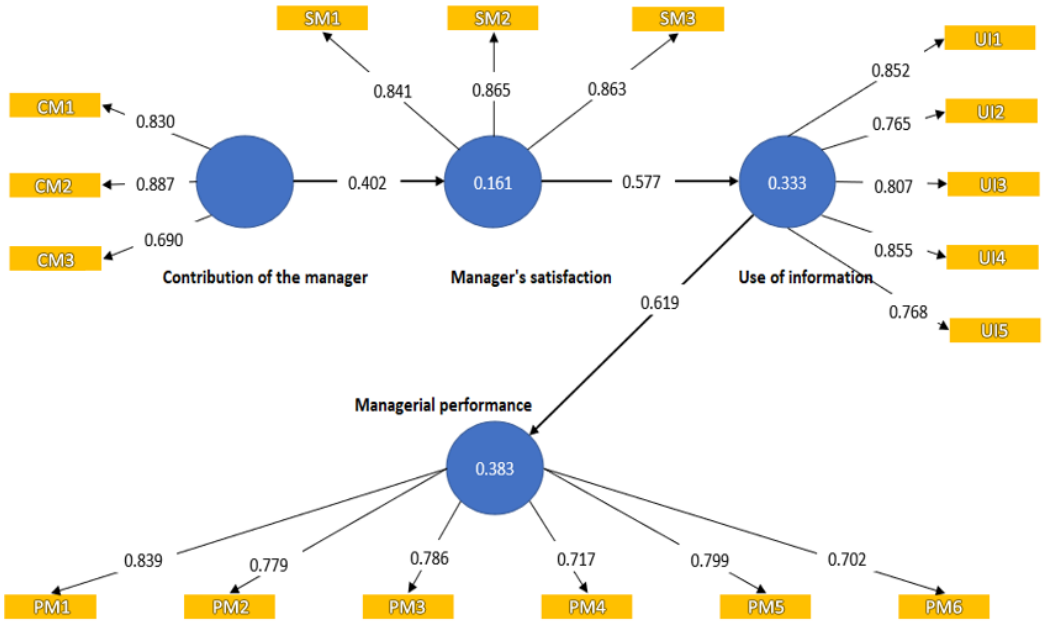

Figure 1. Path model for the final execution of the PLS algorithm.

4. Results

The coefficient of correlation close to +1 indicates a strong positive relationship; a coefficient close to -1 reflects a strong negative relationship between the two variables in question, while a coefficient close to 0 signifies a weak relationship. For our study, hypothesis testing was conducted based on the p-value, which should be less than 0.05 for a significance level of 5% (Hair et al., 2017). The table below presents the path coefficient of the structural model, including the hypothesis to be tested, the beta coefficient, the p-value, and the decision.

$H0_1$: The greater the contribution of managers to management control, the higher the satisfaction with the relevance of information provided by the management controller.

"The contribution of managers in the management control process" displayed a beta coefficient of 0.402 and a p-value of 0.000, which is lower than the 5% threshold, indicating a significant relationship between the contribution of managers and the relevance of information. Thus, hypothesis H01 is accepted.

$H0_2$: The higher the manager's satisfaction with the relevance of information provided by the management controller, the more important the manager's utilization of this information is.

"Satisfaction with the relevance of information provided by the management controller" showed a beta coefficient of 0.577 and a p-value of 0.000, which is lower than the 5% threshold, confirming hypothesis 02.

$H0_3$: The more the manager utilizes the information provided by management control, the stronger the managerial performance.

"The use of information issued by management control" displayed a beta coefficient of 0.619 and a p-value of 0.000, which is lower than the 5% threshold, confirming hypothesis 3.

$H0_4$: Manager's satisfaction with the information provided by the management controller and the manager's use of this information are two mediating variables in the impact of the manager's contribution on managerial performance.

Manager satisfaction and information use showed a beta coefficient of 0.143 and a p-value of 0.038, which is lower than the 5% threshold, confirming hypothesis 4.

After presenting all the descriptive and explanatory results of our study, this section allows us to provide an overall discussion of these findings.

5. Discussion

5.1. Hypothesis 01

According to our first research hypothesis, the manager's involvement in the management control determines how satisfied people are with the controller's information's relevance. This hypothesis aligns with

the relational perspective's call to give central importance to actors (Bollecker & Niglis, 2009; Oriot, 2004), considering not only the role of the manager but also that of the controller.

To substantiate our hypothesis, we reviewed relevant literature on the subject and found that several authors emphasized the importance of the manager's contribution to the management control process and the satisfaction of end-users with the management control system (Kaplan & Norton, 1996; Simons, 1994).

Our results are in line with studies conducted by Godener and Fornerino (2005b) and Godener and Fornerino (2017), which confirm the hypothesis that a greater contribution by the manager to management control is associated with greater satisfaction with the relevance of information provided by the controller. This study emphasizes the manager's crucial role in ensuring the accuracy of the controller's information and the necessity of effective cooperation between the two parties to ensure the management control system's success. These findings are of great importance for businesses, as they emphasize the active involvement of the manager in the management control process to ensure its effectiveness.

5.2. Hypothesis 02

According to our second research hypothesis, there is a correlation between the manager's satisfaction with the controller's provided information's relevance and the use of that information. This hypothesis is supported by several studies, including those by Godener and Fornerino (2017) as well as those conducted by Merchant and Van der Stede (2007), Otley (1999), and Kaplan and Norton (1996).

Indeed, these authors emphasized the importance of the quality and relevance of management control information for its effective use by managers. Specifically, Kaplan and Norton (1996) highlighted the importance of relevant management control information for strategic decision-making, while Otley (1999) underscored the importance of relevant information for an effective management control system.

Our findings support hypothesis H02 by showing that the manager's level of satisfaction with the controller's information's relevance affects how much of it they use. This emphasizes the importance of the quality of management control information for its effective use by managers.

In conclusion, our study highlights the importance of the quality and relevance of management control information for its effective use by managers. The results can help businesses optimize their management control system to provide high-quality and relevant information for strategic decision-making.

5.3. Hypothesis 03

Our third research hypothesis posits that the more the manager uses the information provided by management control, the stronger their managerial performance. This hypothesis is supported by the work of numerous researchers, such as Simons (1994) and Ittner and Larcker (1998).

Simons (1994) emphasized that the use of management control information is a key element for implementing a company's strategy and improving its overall performance. Highlighting the significance of using management control information for managerial performance, effective utilization of this information allows managers to make better decisions and manage their teams more effectively. Ittner and Larcker (1998) also emphasized the importance of using management control information to improve a company's financial performance.

Furthermore, many studies have shown that the use of management control information can have positive effects on managerial performance. For example, the work of Malmi and Brown (2008) demonstrated a positive correlation between the use of management control information and managerial performance. Similarly, research conducted by Chenhall and Langfield-Smith (2007) highlighted the importance of using management control information for decision-making and company performance.

In summary, the results of our study confirm hypothesis H03, which suggests that the manager's use of management control information is positively correlated with their managerial performance. This suggests that management control information is a valuable tool for managers seeking to improve their performance by helping them make informed decisions and manage their teams more effectively.

In conclusion, our study underscores the positive impact of the variables examined on managerial performance. The results can assist businesses in optimizing their management control system to provide high-quality and relevant information for strategic decision-making, which, in turn, can enhance managerial performance.

5.4. Hypothesis 04

Two significant meditating variables that significantly influence the impact of the manger's contribution on their managerial performance are manager satisfaction with the information the controller provides and their use of this information. According to Godener and Fornerino (2017), a manager's satisfaction with the information the controller provides is closely related to how well they use it, which in turn can enhance managerial performance.

Therefore, it is crucial for mangers to take into account how satisfied their team is with the information the controller has provided and to encourage them to use it effectively in order to achieve the best results.

However, it should be noted that the manager's contribution remains a key factor in the success of this tripartite relationship, as it can either strengthen or weaken the use of information and manager satisfaction

with it. In summary, the manager's contribution, manager satisfaction with the information provided by the controller, and their effective use of this information are interdependent elements that influence managerial performance.

6. Conclusions

Our discussion of the findings emphasizes how crucial managers' involvement in management control is to ensuring the accuracy of the information the management controller provides. Additionally, we discovered that the manager's satisfaction with the accuracy of management controller's information increased as their contribution did. Furthermore, manager satisfaction with the relevance of information is a key factor in its effective utilization. Lastly, our study confirmed that the more the manager uses information from management control, the stronger their managerial performance.

These results underscore the importance of the quality and relevance of management control information for its effective use by managers. Companies can use these findings to enhance their management control systems and provide high-quality, relevant information for strategic decision-making.

The results of our study have significant theoretical and managerial implications, as outlined below.

6.1. Managerial Implications

From a managerial perspective, our research emphasizes the significance of a managers' contribution to the management control process and the applicability of the data provided by the management controller. Our findings show a positive correlation, indicating that as the managers' contribution rises, so does their satisfaction with the information the management controller provides. Manager satisfaction with information relevance is also a key factor in its effective use. Lastly, our study demonstrated that the more the manager uses management control information, the stronger their managerial performance. These findings emphasize the importance of high-quality and relevant management control information for strategic decision-making.

In conclusion, our study provides important theoretical and managerial contributions for companies in the retail sector in Morocco. It offers a robust research model, validates hypotheses, and highlights key success factors for improving managerial performance. Companies can use these findings to improve their management control systems and their strategic decision-making.

6.2. Limitations and Future Research

This study aimed to analyze the impact of management control on managerial performance in the retail sector. However, our study revealed several significant limitations.

Firstly, the available literature on the link between management control and managerial performance, especially in the retail sector, is limited. To address this limitation, we plan to continue our research in this area to enrich the literature review and provide guidance to management professionals on performance optimization.

The second limitation concerns the sample size. We initially intended to include all companies in the retail sector but encountered difficulties in obtaining responses from other firms. Therefore, we chose to focus on the Label'vie Group, where we hold positions as management controllers. Although this sample is limited, we took precautions to minimize biases and limitations associated with this approach.

Finally, the validity of the measurement scale for the "PM" variable was questioned, as the results of the principal component analysis revealed a single factor explaining 60.2% of the variance. As a result, other variables not considered in our study could account for 39.8% of this variance. To address this limitation, future researchers could examine other variables or combine multiple theories to study the impact of management control on managerial performance more comprehensively.

In conclusion, while our study revealed significant limitations, we have taken measures to minimize biases and limitations associated with each constraint. We acknowledge these limitations in our study and suggest avenues for future research that could contribute to a deeper understanding of the impact of management control on managerial performance in the retail sector.

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