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Management training as a determinant of managerial performance: Empirical evidence from moroccan SMEs

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Abstract : In an economic environment characterized by uncertainty, complexity, and intensified competition, managerial skills constitute a determining factor of performance for SMEs. Management training thus appears as a strategic lever that enhances the individual and organizational capacities required for decision-making, innovation, internal coordination, and resilience. Based on the resource-based view, this study examines the influence of management training on managerial performance by considering six essential dimensions: decision-making skills, leadership, mastery of management tools, strategic vision, managerial innovation, and adaptability to change. The empirical analysis uses a Generalized Linear Model (GLM) with a Logit link function, appropriate for the bounded nature of the variable measuring performance. The survey is based on a sample of managers from Moroccan SMEs and makes it possible to assess the actual effect of the training received on their professional practices. The results show that training significantly improves decision-making, leadership, strategic vision, innovation, and adaptability, confirming its structuring role in the acquisition of distinctive competencies. However, the technical mastery of management tools does not appear to be a determining factor of performance, suggesting a gap between the content taught and its integration into daily practices. The study also highlights the positive influence of professional experience and education level, indicating that the impact of training depends partly on the individual characteristics of managers.

Keywords : Management training; Managerial skills; Organizational performance; SMEs; Managerial innovation; Resource-based view; Adaptability.

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1. Introduction

In a context marked by intensified competition, increasing complexity of economic environments, and the rapid transformation of management practices, managerial performance constitutes a major challenge for SMEs. These organizations, often characterized by flexible structures but limited resources, rely heavily on the skills and adaptability of their managers to ensure their sustainability. In this regard, management training appears as a strategic lever that helps improve decision quality, strengthen internal coordination, and enhance innovation capacity. The literature increasingly emphasizes that the development of managerial competencies relies on investments in education and training, considered essential intangible resources within organizations. Drawing on the resource-based view, these studies recall that firms improve their performance when they acquire, develop, and deploy capabilities that are difficult to imitate. However, despite the theoretical recognition of the importance of management training, its actual impact on managerial performance remains insufficiently explored empirically in the context of Moroccan SMEs. This lack of investigation raises the question of the extent to which the training received effectively contributes to strengthening key managerial skills and improving managerial practices. The objective of this paper is to provide an answer to this question by rigorously examining the influence of management training on different dimensions of managerial performance.

This research proposes to analyse the impact of management training through a model that mobilizes several essential dimensions of the managerial role, including decision-making, leadership, innovation, strategic vision, mastery of management tools, and adaptability. By simultaneously examining these different components, the study aims to better understand how training contributes to building distinctive capabilities likely to enhance overall managerial performance. The use of the resource-based view makes it possible to conceptualize training as a strategic investment, generating internal capabilities that are difficult to imitate and constitute sources of competitive advantage. Drawing on a sample of managers from Moroccan SMEs, the study provides new insights into the types of competencies that are effectively strengthened by training and the extent of their contribution to performance. It also aims to identify the dimensions for which training remains insufficiently impactful, thereby opening the way for recommendations tailored to the specific needs of SMEs. Through this approach, the paper offers a contribution that is both theoretical and practical to the literature on managerial training and organizational performance.

2. Literature review

Kitching and Blackburn (2002) show that the relationship between training and the performance of small firms is not direct, implying that potential effects depend on internal mechanisms that condition the transformation of learning into observable outcomes. Mabey and Gooderham (2005) extend this perspective by emphasizing that managerial development produces effects when it is embedded in coherent HR systems, suggesting that training must be integrated into a broader organizational logic to strengthen performance. Sankar et al. (1993) add that insufficient managerial skills reduce the effectiveness of information systems directors, implying that training can alter the quality of decisions and internal coordination. Training does not automatically generate visible changes, but it can strengthen managerial capabilities when internal environments allow genuine appropriation. Managerial performance thus results from a chain of conditions rather than simple exposure to training programs, highlighting the need to understand how managers mobilize learning in their daily practice and how the organization supports the application of acquired skills.

Bruhn et al. (2010) show that basic training improves the management practices of micro-enterprises, even though effects on sales and profits remain statistically fragile, implying that managers

must be able to apply the acquired tools consistently to extract their full benefit. Panagiotakopoulos (2020) explains that formal training enhances motivation, satisfaction and staff stability, suggesting that pedagogical inputs influence performance by improving the organizational climate. Chand and Katou (2007) confirm this orientation by demonstrating that training is a structuring component of HR systems contributing to organizational performance, suggesting that training serves as the foundation for more effective practices. Training first influences internal behaviors, work organization and coordination processes, and these transformations then produce gradual effects on overall performance. The findings imply that changes induced by training do not immediately appear in economic indicators, but take shape through a cumulative effect on attitudes, skills and team commitment.

Burke and Day (1986) note that the overall effectiveness of managerial training remains moderate, implying that programs do not automatically guarantee substantial performance improvements. Storey (2004) reinforces this idea by showing that the positive feedback expressed by participants does not always match the results of rigorous evaluations, suggesting that managers adopt a rational attitude when hesitating to invest in certain training programs. Boyatzis (2009) nonetheless indicates that emotional, social and cognitive competencies can be developed through structured mechanisms such as coaching or workshops, implying that the impact depends on the type of intervention and accompanying support. The effectiveness of training depends on the organization's ability to create conditions that facilitate the application of acquired competencies. Managers must be supported in transferring knowledge into concrete situations, implying that managerial learning must go beyond mere theoretical acquisition. The implications converge toward the idea that isolated training rarely produces lasting change, whereas integrated, practice-based systems strengthen managerial performance.

Khandekar and Sharma (2006) explain that organizational learning generated by training activities is positively associated with firm performance, implying that companies with a learning-oriented environment benefit more from managerial training. Al-Madhoun and Analoui (2003) show that managerial skills significantly influence SME development, suggesting that strengthening managerial capabilities can alter an organization's trajectory. Mano et al. (2012) observe that basic training improves the skills of managers and the productivity of micro and small enterprises, implying that acquiring fundamental competencies can reshape how activities are organized. Training acts as a lever for improving routines, decision-making and internal efficiency. Performance depends on how managers integrate these contributions into their daily functioning. Thus, training becomes truly effective when it is embedded in a dynamic environment where firms have the capacity to learn, experiment and progressively adapt the new practices acquired.

Collins and Holton (2004) show that significant progress is possible when programs are tailored to managers' needs, implying that the relevance of content determines its impact on performance. Ligon et al. (2007) demonstrate that managerial training for information systems directors improves their effectiveness as perceived by subordinates, suggesting that training influences legitimacy and the quality of interactions. Patton et al. (2000) explain that the difficulty of isolating the effect of training in small firms stems more from methodological constraints than from a lack of real impact, implying that evaluations must account for the complexity of organizational contexts. Training generates multiple transformations that are not always visible in classical quantitative models. Its impact depends on content relevance, alignment with managerial responsibilities and the capacity to measure effects accurately. The implications highlight that training can enhance confidence, perceived effectiveness and practical skills, even when financial indicators do not immediately reflect these improvements.

Storey and Westhead (1996) show that the claim that managerial training reduces small business failure remains difficult to demonstrate, implying that training effects do not always translate into

visible short-term results. Bruhn and Zia (2013) explain that training strengthens the managerial capital of young entrepreneurs by improving management practices and internal capacities, implying that benefits may emerge through more structured organizational systems. Homer (2001) argues that assessing competencies and identifying gaps allows for more targeted training, suggesting that performance improves when training corresponds precisely to identified needs. Training operates through the gradual adjustment of capabilities, improved routines and the structuring of internal competencies. Effects become more visible when organizations have tools to diagnose shortcomings and align programs with actual needs, thereby enhancing intervention relevance. El Hamidi and Ed-Dib (2020) show that supportive public policies, including training, contribute to economic empowerment, implying that acquiring managerial competencies strengthens action capacity and access to opportunities. Mano et al. (2012) note that the effects of basic training vary according to education level and individual abilities, suggesting that impact depends on appropriation and application capacities. Jennings and Beaver (1997) establish that managerial practices such as delegation influence financial performance, implying that training can strengthen managers' ability to adopt behaviors that improve competitiveness. Training enhances performance when it enables managers to acquire mobilizable competencies aligned with actual business needs. Its impact depends on the combination of individual abilities, institutional environment and managerial practices, highlighting the diversity of possible trajectories.

3. Methods

3.1. Research hypotheses

According to the Resource-Based View developed by Barney (1991), education appears as a central lever in building a sustainable competitive advantage, as it constitutes an intangible resource that is rare, difficult to imitate and non-transferable. Training and the accumulation of knowledge derived from education strengthen individual and collective competencies within organizations by improving managers' ability to make strategic decisions, mobilize available resources efficiently and coordinate teams in complex environments. Education thus contributes to developing distinctive organizational capabilities such as strategic planning, risk management, innovation capacity and transformational leadership. When these competencies are integrated into organizational routines, they become specific assets that enhance the company's overall performance by improving productivity, flexibility and resilience to competitive pressures. Moreover, education fosters the diffusion of shared knowledge and collective learning, thereby consolidating organizational capital and creating a culture of continuous improvement. From this perspective, investing in education and management training is not only an individual initiative but also an organizational strategy aimed at strengthening distinctive capabilities that support long-term performance. From this, the following levers emerge:

• **Decision-making skills and strategic vision:** Management training constitutes an essential lever for improving decision-making skills and developing a strategic vision. It provides managers with methods to analyze complex situations, assess risks and select the best options to optimize organizational performance. At the same time, it allows them to anticipate changes in the competitive environment and design strategies that fit market trends. By combining analytical rigor and strategic projection, trained managers are better prepared to seize opportunities, reduce uncertainty and ensure the long-term sustainability of their companies in an increasingly competitive and unstable context.

• **Leadership, innovation and team management:** The second lever lies in strengthening leadership and stimulating managerial innovation. Management training develops key skills in communication, motivation and conflict resolution, enabling managers to unite their teams and reinforce internal cohesion. It also fosters creativity and the adoption of new organizational practices, which are essential for improving collective efficiency. By combining leadership and innovation, such training helps establish a managerial culture open to change and

capable of leveraging employees' innovative ideas. As a result, it enables organizations to increase their agility and consolidate their competitive advantage through the effective mobilization of human capital.

• **Management tools, adaptability and resilience:** The third lever concerns the mastery of management tools and the capacity for adaptation. Training provides an in-depth understanding of financial, budgetary and operational management instruments, which are indispensable for optimizing resource allocation and controlling performance. It also strengthens managerial resilience by equipping leaders with the means to adjust rapidly to crises and changes. Through this combination of rigorous management and organizational flexibility, managers are able to maintain business continuity, secure outcomes and ensure the stability of the company, even in environments marked by uncertainty and turbulence.

Education, seen within the framework of the Resource-Based View, reinforces managers' decision-making skills and strategic vision by enabling them to analyze complex situations, assess risks and anticipate environmental developments. It also contributes to the development of leadership, the stimulation of innovation and the improvement of team management, thereby fostering organizational cohesion and managerial agility. Finally, the mastery of management tools, adaptability and resilience acquired through training constitute decisive assets for ensuring business continuity and stability in the face of uncertainty. In this sense, the research hypotheses are as follows:

- ***H1: Management training significantly improves managers' decision-making skills, which has a positive effect on their managerial performance.***
- ***H2: Management training strengthens leadership and team management capacities, which contributes positively to managerial performance.***
- ***H3: Management training increases the mastery of management and control tools, thereby improving managerial performance.***
- ***H4: Management training fosters the development of a strategic vision, which has a positive effect on managerial performance.***
- ***H5: Management training stimulates managerial innovation and creativity, which positively impacts managerial performance.***
- ***H6: Management training strengthens managers' adaptability and resilience to change, which improves their managerial performance.***

3.2. The model

The proposed model is based on the Resource-Based View in order to examine the effect of education as a strategic lever for organizational performance. It integrates three main dimensions: the development of decision-making skills and strategic vision, the reinforcement of leadership and innovation, and the mastery of management tools, adaptability and resilience. This conceptual framework makes it possible to articulate the explanatory variables and the dependent variable in order to empirically test their influence on business performance. In this sense, the model is presented as follows:

$$PERF = \beta 0 + \beta 1 \cdot DECI + \beta 2 \cdot LEAD + \beta 3 \cdot PILO + \beta 4 \cdot STRA + \beta 5 \cdot INNO + \beta 6 \cdot ADAP + \gamma 1 \cdot AGEE + \gamma 2 \cdot GENR + \gamma 3 \cdot EXPE + \gamma 4 \cdot EDUC + \varepsilon$$

The dependent variable PERF, which represents managerial performance, is measured using six items evaluated on a Likert scale from 1 to 5. The average of these items constitutes the final indicator, which is then normalized using a Max–Min scaling procedure. The main explanatory variables derived from management training are also measured through six items each on the same scale. The variable DECI corresponds to decision-making skills and reflects the manager's ability to analyze complex situations, assess risks, and select the best strategic options. The variable LEAD refers to leadership capacities and assesses the ability to motivate, mobilize, and inspire employees while establishing a climate of trust. The variable PILO designates mastery of management tools and encompasses budget management,

resource control, and the use of modern performance-monitoring instruments. The variable STRA relates to strategic vision and corresponds to the ability to anticipate environmental changes, identify opportunities and threats, and define clear orientations.

The variable INNO captures managerial innovation and measures the ability to generate new ideas, rethink work methods, and implement innovative solutions. Finally, the variable ADAP reflects managers' resilience and adaptability, that is, their ability to handle unforeseen events, adjust rapidly to change, and maintain performance in uncertain contexts. Control variables are included to account for individual characteristics of managers. The variable AGEE corresponds to the manager's age and makes it possible to assess the influence of life-cycle-related experience. The variable GENR indicates the manager's gender (male = 1 or female) in order to analyze the effect of gender differences on managerial performance. The variable EXPE measures professional experience in years, reflecting accumulated knowledge and exposure to diverse management contexts. The variable EDUC represents the highest level of education attained, expressed in years.

3.3. Choice of methodology

The use of a Generalized Linear Model (GLM) with a Logit link function is fully justified given the characteristics of the dependent variable measuring managerial performance. Indeed, this variable is constructed from an average of items assessed on a Likert scale from 1 to 5, and then normalized through a Max–Min scaling procedure to obtain a value strictly between 0 and 1. Such a variable therefore displays a bounded distribution, which makes the use of a classical linear regression inappropriate, since the latter assumes an unconstrained dependent variable, continuously distributed over the entire real line, and residuals that are normally distributed with constant variance. Applying an OLS model in this context would lead to predictions that could fall below 0 or above 1, and would thus be uninterpretable. In contrast, the GLM with a Logit link makes it possible to model a bounded variable by transforming its values between 0 and 1 into an unbounded scale through the Logit function, which ensures statistical and interpretative coherence of the predictions. Moreover, this approach is suitable for binomial or quasi-binomial distributions, which are frequently used when the dependent variable results from an aggregate of ordered or proportional items. The GLM-Logit also offers increased flexibility by relaxing the assumptions of normality of residuals and homoscedasticity that are often violated by variables constructed from Likert-type scales.

3.4. sample description

The sample used in this study is composed of 280 Moroccan SME managers who have benefited from management training. These respondents represent the usable portion of a total of 400 questionnaires distributed, the others having been excluded due to incomplete returns or missing responses. The use of a self-administered questionnaire made it possible to ensure a homogeneous data collection process while giving participants the necessary flexibility to respond at their own pace. The managers included in the sample operate in SMEs from various sectors, which provides a representativeness of the managerial realities of the Moroccan entrepreneurial fabric. The diversity of the respondents' profiles—in terms of age, professional experience, managerial responsibilities, and level of education—allows for an understanding of the effect of training on differentiated trajectories and practices. All surveyed managers had completed at least one management training program, whether from public schemes, private programs, capacity-building cycles, or specialized SME-oriented training. The questionnaire covered six essential dimensions of the managerial role—decision-making, leadership, innovation, strategic vision, performance steering, and adaptability—thus enabling a multidimensional assessment of the impact of the training received.

4. Results

4.1. Robustness analysis

Table 1 presents the results of the Ramsey RESET specification test applied to the model. This test examines whether the estimated equation may suffer from inadequate functional forms or omitted variables by introducing the squares of the fitted values. The three statistics produced—the t-statistic, F-statistic and Likelihood Ratio—show respective values of 0.8047, 0.6476 and 0.6758. Their associated probabilities, all above 0.41, indicate that the added terms do not provide any significant improvement to the quality of the model. The comparison between the Test SSR, the restricted SSR and the unrestricted SSR also shows small gaps, suggesting that the selected functional form remains appropriate. Thus, the model presents neither an inadequate structure nor any notable influence of non-linearities.

Table 1. Ramsey RESET Specification Test

Specification: PERF C DECI LEAD PILO STRA INNO ADAP AGEE GENR EXPE EDUC			
Omitted Variables: Squares of fitted values			
	Value	df	Probability
t-statistic	0.804731	268	0.4217
F-statistic	0.647592	(1, 268)	0.4217
Likelihood ratio	0.675772	1	0.4110
F-test summary:			
	Sum of Sq.	df	Mean Squares
Test SSR	1.311633	1	1.311633
Restricted SSR	544.1190	269	2.022747
Unrestricted SSR	542.8074	268	2.025401

Source: authors

Table 2 presents the Variance Inflation Factors (VIF) used to assess the possible presence of multicollinearity among the explanatory variables of the model. The variance coefficients associated with each variable show controlled dispersion, and the examination of the centered VIF highlights values ranging between 1.01 and 1.08 for all the model's dimensions. These very low levels indicate that the explanatory variables evolve largely independently and that no excessive correlation is likely to affect the stability of the estimations. The uncentered VIF appear higher, sometimes exceeding 4, but these only reflect the presence of the constant and do not constitute a relevant indicator for assessing actual multicollinearity. All the results suggest that the model does not suffer from multicollinearity.

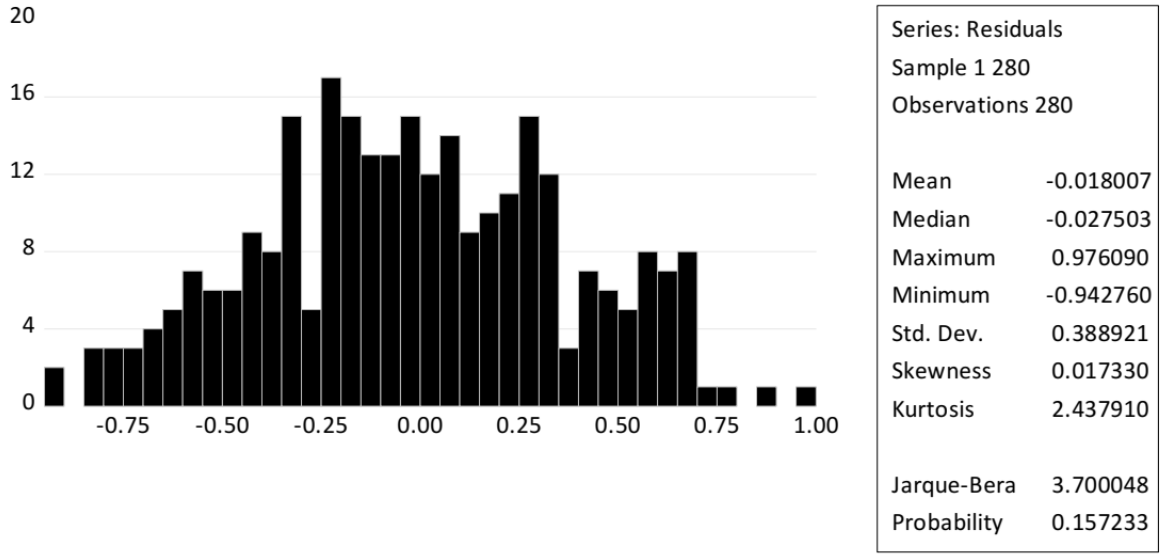
Table 2. Variance Inflation Factors (VIF)

Variance Inflation Factors Sample: 1 280 Included observations: 280			
Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.252045	34.88949	NA
DECI	0.094935	4.839500	1.054945
LEAD	0.082326	3.958472	1.043498
PILO	0.089794	4.060644	1.033397
STRA	0.099707	4.541295	1.078340
INNO	0.081163	4.108731	1.034629
ADAP	0.087945	3.665323	1.010744
AGEE	0.096905	4.119327	1.021240
GENR	0.082556	3.987140	1.029411
EXPE	0.094692	4.782037	1.054114
EDUC	0.093692	4.286075	1.019040

Source: authors

Figure 1 illustrates the distribution of the model's residuals, allowing a visual assessment of their behavior and their conformity with the assumption of normality. The histogram shows a dispersion centered around zero, with a mean very close to 0 (–0.018) and a median also close (–0.027), which indicates an absence of systematic bias in the predictions. The standard deviation of 0.388 reflects a moderate variability of the gaps between observed and estimated values. The shape indicators reveal a skewness of 0.017 suggesting an almost perfect symmetry, while the kurtosis of 2.437 remains close to the theoretical value of 3. The Jarque–Bera test, with a statistic of 3.70 and a probability of 0.157, confirms that the residuals do not deviate significantly from a normal distribution.

Figure 1. Distribution of Residuals and Jarque–Bera Normality Test



Source: authors

Table 3 presents the results of the Breusch–Pagan–Godfrey heteroskedasticity test, used to verify whether the variance of the residuals remains constant across all observations. Three statistics are reported: the F-statistic (0.9878), the Obs*R-squared (9.9177), and the Scaled Explained SS (3.6982). Each is associated with respective probabilities of 0.4543, 0.4477, and 0.9599, all well above the 5%

threshold. These values show that the variations in the variance explained by the auxiliary regressions remain small and do not display any systematic structure. The gap between the Chi-square–type statistics remains stable, indicating that any fluctuations in the residuals are random rather than induced by the explanatory variables. The results thus suggest a homogeneous variance.

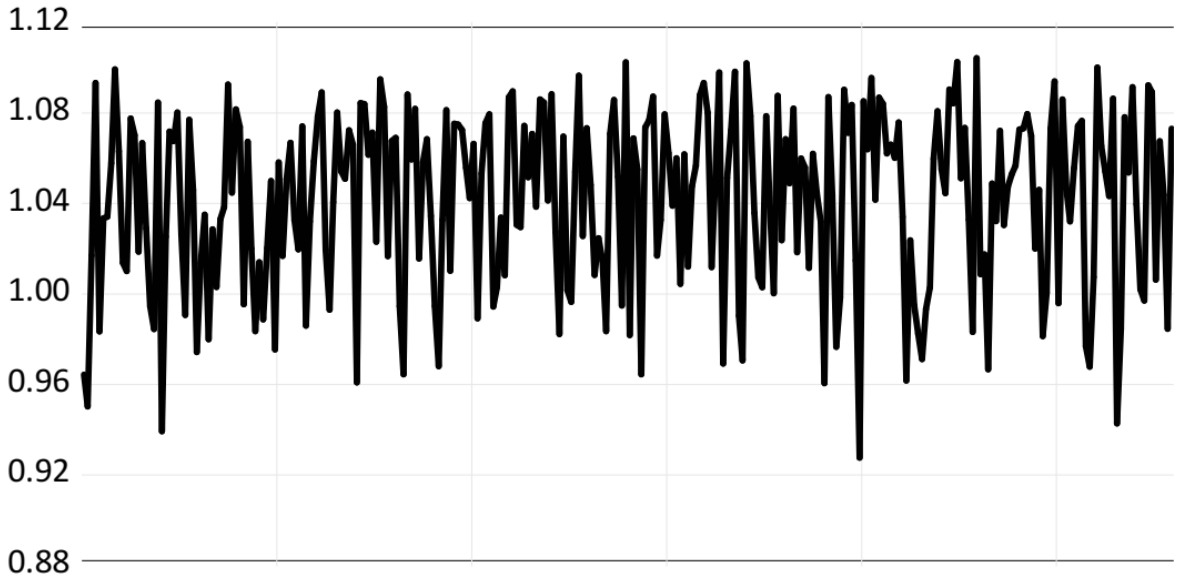
Table 3. Breusch–Pagan–Godfrey Heteroskedasticity Test

Statistic	Value	Associated Test	Probability
F-statistic	0.987797	F(10, 269)	0.4543
Obs*R-squared	9.917717	Chi-Square(10)	0.4477
Scaled explained SS	3.698199	Chi-Square(10)	0.9599

Source: authors

Figure 2 presents the evolution of the COVRATIO values for all observations, allowing the individual influence of each unit on the stability of the variance–covariance matrix of the estimated coefficients to be assessed. The graph illustrates a fluctuating series, but one that is generally contained within a narrow interval around the reference value equal to 1, which indicates that the variations observed remain modest. Most points lie between 0.96 and 1.08, showing that the inclusion or exclusion of each observation only weakly affects the estimation of the model parameters. A few occasional decreases appear, but they remain limited and do not reveal any observations exerting excessive distortion. This tight distribution around the expected threshold suggests a balanced influence of the units, reflecting a stable model free of strongly disruptive points.

Figure 2. Influence Statistics: COVRATIO Values



Source: authors

The Ramsey RESET test shows the absence of specification errors or omitted variables, confirming an adequate functional form. The Breusch–Pagan–Godfrey test indicates no heteroskedasticity, since the associated probabilities are well above 5%, which validates the homogeneity of the residual variance. The distribution of the residuals, examined through the histogram and the Jarque–Bera test, reveals a centered mean, correct symmetry, and a sufficient probability to retain the hypothesis of normality. The centered VIF values, all close to 1, show the absence of multicollinearity among the explanatory variables. Finally, the COVRATIO values oscillate around 1, with no major anomalies, indicating that

the observations do not exert excessive influence. These combined results confirm the stability, internal coherence, and statistical reliability of the model.

4.2. Regression results

Table 4 presents the results of the generalized linear model (GLM) applied to analyze managerial performance based on the different explanatory dimensions retained. The model is estimated using the Newton–Raphson algorithm with Marquardt steps, ensuring stable and rapid optimization, as indicated by convergence obtained after only three iterations. The selected family is the normal distribution, combined with a Logit link function, allowing a nonlinear relationship to be modeled between the explanatory variables and the dependent variable PERF. Dispersion is calculated via Pearson's chi-square, providing a robust measure of model adequacy. The covariance matrix of the coefficients is based on the observed Hessian, ensuring precise and reliable parameter estimation.

Table 4. Generalized Linear Model (GLM) Results

Dependent Variable: PERF Method: Generalized Linear Model (Newton-Raphson / Marquardt steps) Sample: 1 280 Included observations: 280 Family: Normal Link: Logit Dispersion computed using Pearson Chi-Square Convergence achieved after 3 iterations Coefficient covariance computed using observed Hessian				
Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-8.375056	2.464450	-3.398346	***0.0008
DECI	3.891406	1.454314	2.675768	***0.0079
LEAD	5.611107	2.715207	2.066549	**0.0397
PILO	-1.722122	2.401454	-0.717116	0.4739
STRA	2.569365	1.270480	2.022358	**0.0441
INNO	0.811317	0.338516	2.396686	**0.0172
ADAP	1.894803	0.696312	-2.721200	***0.0069
AGEE	-0.374919	0.906825	0.413441	0.6796
GENR	1.298854	0.482151	2.693877	***0.0075
EXPE	4.663572	1.879334	2.481502	**0.0137
EDUC	1.243380	0.505968	2.457427	**0.0146

Source: authors; *** significant at 1%; ** significant at 5%; * significant at 10%.

DECI shows a positive coefficient and is highly significant at the 1% level (p = 0.0079), which confirms H1 and shows that the strengthening of decision-making skills clearly improves managerial performance. This relationship implies that trained managers make better strategic decisions, which increases the overall effectiveness of their action. LEAD also displays a positive sign with significance at the 5% level (p = 0.0397), confirming H2 and indicating that leadership and team management truly contribute to performance. This implies that developing relational abilities and the capacity to mobilize collaborators constitutes an essential lever for strengthening internal coordination. PILO shows a negative and non-significant coefficient (p = 0.4739), which leads to the rejection of H3. The absence of effect suggests that mastery of management tools does not necessarily lead to better performance, possibly due to difficulties in application or a gap between the tools taught and the practices actually used. STRA, on the other hand, shows a positive coefficient significant at the 5% level (p = 0.0441),

validating H4 and revealing that a strategic vision strengthened through training improves managers' ability to anticipate and effectively orient organizational action.

INNO presents a positive and significant coefficient at the 5% level (p = 0.0172), which confirms H5 and highlights that managerial innovation plays an important role in improving performance. The main implication is that training fostering creativity and openness to change supports organizational dynamism. ADAP shows a positive and highly significant coefficient at the 1% level (p = 0.0069), leading to the acceptance of H6. Adaptability thus appears as a central determinant of performance, particularly in contexts of uncertainty where the capacity for adjustment supports managerial continuity and responsiveness. Regarding the control variables, AGEE shows a negative and non-significant sign (p = 0.6796), indicating that there is no age effect on performance. GENR is positive and significant at the 1% level (p = 0.0075), showing a statistical difference according to gender, which suggests that certain profiles benefit more from management training. EXPE is positive and significant at the 5% level (p = 0.0137), indicating that professional experience contributes to strengthening performance thanks to the knowledge accumulated over the years. Finally, EDUC is positive and significant at the 5% level (p = 0.0146), indicating that managers with a higher level of education make better use of training to improve their managerial practices.

5. Discussion

The results obtained confirm the decisive importance of management training in improving managerial performance. Decision-making skills appear as a central lever, showing that a manager equipped with analytical tools and discernment abilities is better prepared to handle complexity, reduce uncertainty, and effectively guide the company's actions. This influence is consistent with the literature, which highlights that decisions based on rigorous assessment of situations improve the quality of strategic orientations. Leadership is also a key factor, indicating that the ability to mobilize, motivate, and unite teams represents an essential competence in an environment characterized by increasing coordination and engagement requirements. Training strengthens these relational skills and promotes a more harmonious collective dynamic, which translates into greater managerial efficiency. Likewise, strategic vision contributes significantly to performance, confirming that trained managers are more capable of anticipating environmental developments and designing orientations consistent with identified opportunities. This ability to anticipate enhances the relevance of actions undertaken and strengthens the competitiveness of the company. Managerial innovation also emerges as an important lever, illustrating that training stimulates openness to change, the exploration of new practices, and the capacity to generate solutions in response to organizational challenges.

The results also highlight the decisive role of managerial adaptability and resilience, confirming that the capacity to absorb shocks, adjust practices quickly, and maintain continuity of operations constitutes a key performance factor in a context marked by instability and competitive pressure. Management training appears to reinforce these abilities by providing managers with conceptual and operational tools enabling them to react agilely to change. Conversely, mastery of management tools does not show a significant effect, suggesting that the mere technical knowledge of control instruments is insufficient if it is not accompanied by concrete integration into daily practices or adapted to the specific realities of SMEs. This lack of influence may be explained by difficulties in appropriation, a lack of operational transposition, or a gap between the tools taught and their actual use in companies. Finally, the analysis of individual variables provides additional insights into managerial behaviors. Professional experience and education level positively reinforce performance, confirming that managers with higher human capital derive greater benefit from the training they receive. Gender also shows a differentiated effect, suggesting that certain profiles place greater value on the skills acquired. All these results show that

managerial performance depends not only on the quality of training, but also on the ability of individuals to mobilize the acquired skills according to their personal characteristics, their professional environment, and the challenges they face.

6. Conclusion

The study conducted provides a contribution to the understanding of the impact of management training on managerial performance in Moroccan SMEs, relying on the resource-based view as an analytical framework. The results obtained show that training does not constitute merely a mechanism for individual development, but rather a strategic lever capable of strengthening the distinctive competencies that sustainably support organizational performance. The dimensions related to decision-making, leadership, innovation, strategic vision, and adaptability appear as central determinants, confirming that training shapes essential capabilities for dealing with complexity, anticipating environmental developments, and effectively mobilizing teams. These conclusions align with theoretical works that consider education as a rare resource, difficult to imitate and capable of creating competitive advantages. However, the study also reveals that certain dimensions, particularly the technical mastery of management tools, do not systematically produce the expected effects, suggesting that the value of training also depends on its alignment with actual practices and the operational needs of companies. Thus, managerial training emerges as a strategic investment whose effectiveness depends on its alignment with organizational specificities and individual capacities.

Beyond the empirical validation of the hypotheses, this research highlights several important practical implications. It emphasizes the need for SMEs to design more targeted training programs focused on high-impact competencies such as decision-making, transformational leadership, innovation, and resilience management. It also underscores the importance of strengthening the integration of management tools into daily practices, so that these instruments do not remain theoretical but become genuine supports for performance. Individual characteristics, such as experience and education level, show that the ability to mobilize acquired skills varies from one manager to another, which argues for differentiated training mechanisms adapted to participants' profiles. Through these results, the study also offers avenues for public policies and training institutions seeking to promote effective management within SMEs. By enhancing the quality, relevance, and operational anchoring of management training, it becomes possible to support the competitiveness of companies and foster more sustainable development. Finally, this research opens perspectives for future work, particularly by exploring the effect of innovative teaching practices, the impact of continuous training, or the way organizational contexts influence the appropriation of managerial competencies.

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