Improving Performance in Manufacturing Companies: The Impact of the Balanced Scorecard

ORIGINAL RESEARCH PAPER
UDC 658.5(64)

DOI: 10.46793/Rev24108015H

Hind Hammouch[1]

Summary: *Based on a sample of 118 businesses, this study investigates the effects of implementing the Balanced Scorecard (henceforth: BSC) on the overall performance of Moroccan manufacturing organizations. Based on a quantitative analytical approach that employs correlation and linear regression techniques, the analysis evaluates the potential effects of BSC adoption on different facets of overall performance. The findings clearly show that BSC is essential to raising Moroccan businesses' overall performance. This study adds to our understanding of creative management techniques in a dynamic economic environment and provides practitioners and scholars with insightful information about the competitiveness and sustainability of Moroccan manufacturing companies.*

Received: 27.09.2024.
Accepted: 25.11.2024.
Published: 27.12.2024.

Keywords: *Balanced Scorecard, overall performance, economic performance, social performance, environmental performance*

[1] Faculty of Legal, Economic, and Social Sciences (FSJES), University Sidi Mohamed Ben Abdellah, Fez 30000, Morocco.
E-mail: elmalali.hind@gmail.com

INTRODUCTION

A company's overall performance needs to be improved in light of the constantly changing environmental and economic conditions. Since its introduction by Kaplan and Norton in 1992, the Balanced Scorecard (BSC) has become a crucial strategic tool for businesses all over the world. It enables them to take strategy and turn it into concrete actions while evaluating performance in many areas, such as internal processes, learning and development, financial results, and customer satisfaction.

Though widely used, not much research has explicitly looked into how it affects overall business performance, especially in the context of Moroccan manufacturing companies. This raises the subsequent inquiry for research: To what degree may Moroccan manufacturing enterprises' overall performance be enhanced by the use of the Balanced Scorecard? Given the difficulties Moroccan businesses experience from the inside and outside, which try their competitiveness and sustainability, this subject is extremely important.

Hristov and Searcy (2024) and Kumar et al. (2024) are two recent studies that have demonstrated how well the BSC aligns with sustainability objectives and improves organizational performance. The integration of financial and non-financial indicators is emphasized by Martinez and Jaradat (2022) as a critical function of the BSC in the current sustainability-driven business climate. Furthermore, Kaplan and Norton (2021) have reexamined the BSC structure and offered modifications to improve its usefulness in a variety of industries, including manufacturing.

However, a significant gap remains in the literature regarding its specific application and effectiveness within Moroccan manufacturing companies. Addressing this gap, this study aims to provide fresh insights and actionable recommendations for Moroccan companies looking to enhance their overall performance through strategic management tools like the BSC.

To answer our research question, we employed a quantitative methodology involving correlation and simple linear regression analyses. Our research sample consisted of 118 Moroccan manufacturing companies, providing a robust representation of this sector. Data were gathered through structured surveys, with subsequent analyses conducted to uncover the relationships between BSC implementation and the various performance dimensions of these companies.

The structure of our paper is as follows: Initially, we examine the literature on the fundamental ideas pertaining to the BSC and overall performance, as well as the theories elucidating how they are related. After that, we develop our research hypotheses and describe the operationalization of the variables. The empirical confirmation of our findings in the Moroccan setting is then presented, and a thorough discussion of the study's findings follows.

CONCEPTUAL FOUNDATIONS: BALANCED SCORECARD – – OVERALL PERFORMANCE

Balanced Scorecard

In literature, dashboards are defined as "*a small number of indicators (five to ten) designed to enable managers to take cognizance of the state of evolution of the systems they control and to identify the trends that will influence them over a horizon consistent with the nature of their functions*" (Bouquin, 2001). This definition underscores the dashboard's capacity to deliver a concise and relevant set of performance indicators essential for effective managerial decision-making. Researchers have increasingly emphasized the importance of complementing financial metrics with a Balanced Scorecard approach, which incorporates non-financial indicators such as quality measures, social indicators (e.g., absenteeism rates), customer-oriented metrics (e.g., satisfaction rates), and process-oriented measures (e.g., production cycle time) (Kaplan & Norton, 1996; Kumar et al, 2024). Non-financial indicators ensure organizational responsiveness and provide a more nuanced understanding of organizational complexity than financial data alone, while also promoting cross-functionality within organizations (De Montgolfier, 1994).

The Balanced Scorecard, originally introduced by Kaplan and Norton (1996), integrates both financial and non-financial dimensions to capture not only past performance but also key drivers of future success. Financial indicators reflect historical performance, while non-financial indicators - such as those related to customers, internal processes, and learning and growth - are forward-looking, assessing a company's potential for future growth and competitiveness. Recent studies by Suárez-Gargallo and Zaragoza-Sáez, (2023) further validated the Balanced Scorecard's effectiveness in providing a comprehensive view of organizational performance, facilitating better alignment of strategy and operations across diverse sectors.

The Balanced Scorecard must ensure coherence between four main areas:

- **Financial perspective :**
  This perspective focuses on the company's financial results. It aims to measure and evaluate financial performance using indicators such as revenues, costs, profitability, shareholder value, etc.
- **The customer perspective :**
  This point of view centers on the demands and expectations of the consumer. It aims to assess how well the business is performing in relation to market share, customer happiness, loyalty, and acquisition of new customers, among other metrics. This enables the measurement of the value that customers perceive and the efficacy of the company's customer satisfaction tactics..
- **The internal processes perspective :**
  This perspective evaluates a company's internal processes. It focuses on the effectiveness and efficiency of key processes such as production, logistics, innovation,

quality management and so on. The aim is to identify areas for process improvement to enhance the company's overall performance.

- **The learning and growth perspective:**
  This perspective examines the company's internal capabilities to innovate, develop skills and adapt to change. It encompasses aspects such as employee training and development, knowledge management, corporate culture, technology and information systems. The aim is to measure the company's ability to learn, develop and adapt in order to maintain long-term competitiveness.

Overall Performance

The concern for overall performance and its evaluation arises when a company is not only subject to financial reporting by its owners but must also account for its social and environmental behavior to a multitude of stakeholders. Marcel Lepetit defines overall performance "*as a multidimensional objective (or goal) - economic, social and societal, financial and environmental - that concerns companies as much as human societies, employees as much as citizens*" (Lepetit, 2002). Rather than relying just on one metric, this performance is distinguished by multiple criteria and multiple actors. According to recent studies, performance evaluations should take into account a variety of factors to accurately reflect the complexity of contemporary corporate operations. For example, Kılıç et al. (2022) point out that businesses are realizing more and more how important it is to gauge non-financial results as essential elements of total success, like social effect and environmental sustainability. Furthermore, Buertey et al. (2020) contend that a more comprehensive approach to performance evaluation is required by stakeholder theory, one that incorporates a variety of viewpoints and measures that appeal to a broad spectrum of stakeholders. With this multifaceted strategy, businesses may improve their responsiveness and responsibility in a setting that is changing quickly.

- **The financial approach to performance**
  The financial approach to performance, according to Bouquin (2001), places a strong emphasis on using financial indicators to assess a company's performance. Operational effectiveness and resource management are critical to obtaining good financial results, and measurements of profitability and shareholder value creation are commonly used to evaluate financial performance. Current research indicates that generating cash flow and cutting expenses are critical tactics for guaranteeing an organization's long-term viability. Nohong et al. (2024), for instance, go over how better financial management techniques enhance operational effectiveness and profitability. Similarly, Rompotis (2024) emphasizes that improving organizational resilience in erratic economic circumstances requires giving priority to cash creation and expense control measures. These results support the assertions of Zakhidov (2024) that financial indicators drive strategic decision-making for sustainable growth and assist in performance assessment.

- **The social approach to performance**
  The foundational work of the human relations school, which highlighted the importance of human elements within businesses, has influenced the development of the social approach to performance. This approach's basic tenet is that reaching social goals at work immediately contributes to reaching financial and economic objectives (Bruna & Chauvetet, 2013). Through emphasising team leadership and personal development, companies can improve worker productivity, which in turn boosts community performance. Nowadays, it's common knowledge that values like morals, ethics, and cohesiveness are crucial for a business to succeed and are prioritized (Story et al., 2022). These ideas are supported by recent research, which emphasizes the vital roles that employee well-being and corporate social responsibility (CSR) play in enhancing company performance. For example, Alkhodary (2023) examines how socially conscious actions promote long-term financial stability, and Cabrera-Luján et al. (2023) talk about how corporate ethics are crucial for raising employee engagement and productivity levels.
- **The environmental approach to performance**
  A company's environmental policy, which takes into account its goals, objectives, unique local and regional circumstances, and stakeholder expectations, has a big impact on its environmental performance (Dohou-Renaud, 2009). This comprehensive strategy is necessary to match business goals with environmental sustainability. According to Henri and Giasson (2006), while measuring environmental performance, it is crucial to take into account four key factors: stakeholder relations; regulatory compliance and financial consequences; product and process improvement; and effects on business image.

Furthermore, in today's linked corporate world, it is imperative to assess the connections between businesses. Recent literature emphasizes that overall performance encompasses how effectively companies adopt sustainable development practices. The definition of global corporate performance is becoming more and more inclusive, encompassing economic, social, and environmental measures that represent a comprehensive perspective of financial, social, and societal consequences (Mengistu and Panizzolo, 2023). This comprehensive approach allows organizations to better assess their contributions to sustainability and their impact on various stakeholder groups.

Theoretical Framework Explaining the Relationship: Balanced Scorecard – – Overall Performance

- **Agency theory**
  The prevailing theoretical perspective in the microeconomic analysis of the company was developed by the neoclassical school (Jensen and Meckling, 1976). The agency connection has been extended to all stakeholders, beginning with the realization that

other parties may experience harm as a result of the company's operations in addition to shareholders. Then, the duty of the business is examined as that of its managers, who have formal or implicit contractual relationships with a variety of social actors, including suppliers, employees, creditors, local government agencies, non-governmental organizations, and shareholders. It is their responsibility to manage these diverse expectations. These stakeholders will keep an eye on, or even audit, management to make sure that deceptive communications are avoided and that company initiatives are aligned with their goals rather than serving as a way for management to save face. Reports on "sustainable development" are released as part of this agency partnership.

- **Contingency theory**
  The foundation of the contingency theory is the idea that no matter what the situation, not all organizations can use the same control mechanism. The core principle of the contingency approach to organizational performance measurement is that these systems and the indicators they include need to be customized to, or even reflect, the environment in which they operate.
  In fact, it emphasizes how important it is to modify management control procedures to fit the unique internal and external circumstances of every business. This method, according to Burns and Scapens (2000), highlights how control systems must be flexible and adaptive in order to consider organizational and environmental changes. Because of its flexibility, a company's performance can be optimized while taking into account factors like its size, the industry it operates in, organizational culture, and the difficulties it has faced.

Otley (1980) highlights in this framework the significance of understanding behavioral and structural contingencies in order to create a management control system that effectively promotes organizational performance.

- **Organizational learning theory**
  Senge (1990) defined organizational learning as a continuous process by which businesses improve their ability to create, obtain, and share knowledge. They are able to innovate and adjust to changes in their surroundings because of this. This theory, which falls under the category of management control, contends that businesses can improve their decision-making abilities by gathering, evaluating, and using both financial and non-financial data. In the end, this maximizes the performance of their entire organization.

The relationship between corporate performance and organizational learning has been widely studied by many writers. Over time, a company that successfully implements learning activities typically outperforms its rivals. Productivity is usually emphasized by industrial economists as the main goal of organizational learning.

As a result, improving organizational performance greatly depends on organizational learning. It makes it easier to create management control procedures that are more successful and give priority to adaptation and innovation.

METHODOLOGY

Theoretical Model and Operationalization of Variables

In this research, we have three dependent variables: Economic Performance " **PE** ", Social Performance " **PS** " and Environmental Performance " **PEV** "and one independent variable: Balanced Scorecard " **BSC** ".

A model is a representation of a set of hypotheses used to explain a phenomenon. Given the objectives of our study, we will present a model of the relationship between BSC and Overall Performance. Thus, we have:

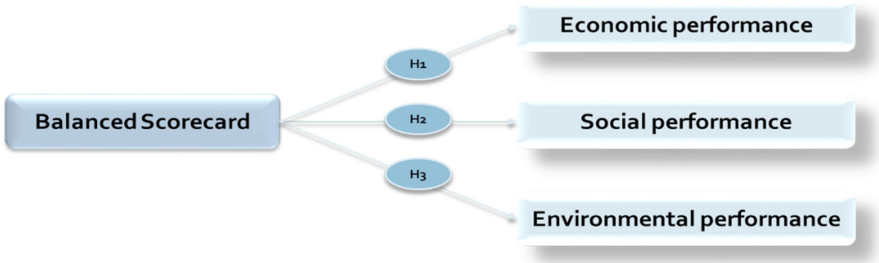

Figure 1 : Study conceptual model

Source: Compiled by author from literature

- **Independent variable**
  In this study, we used a single independent variable, the Balanced scorecard**.**

- **The "Balanced scorecard" construct**

Table 2: The "Balanced scorecard" construct

Variable	Items
Balanced scorecard	Utilization of financial indicators.
	Utilization of customer performance indicators.
	Utilization of internal process indicators.
	Utilization of innovation and organizational learning indicators.

- **Dependent variables**
  Three dependent variables—economic, social, and environmental performance—that are related to the aspects of overall performance were used in this study.

- **The "Economic Performance" construct**

Table 3: The "Economic performance" construct

Variable	Items
Economic performance	Economic return on capital employed (ROI)
	Financial return on capital employed (ROE)
	Profitability through earnings as a percentage of sales

We therefore make the following assumption:

H1: The implementation of the Balanced Scorecard in Moroccan manufacturing companies significantly enhances their economic performance.

- **The "Social Performance" construct**

Table 4: The "Social Performance" construct

Variable	Items
Social performance	Equal treatment
	Good working conditions
	Respect for human rights

We therefore make the following assumption:

H2: The implementation of the Balanced Scorecard in Moroccan manufacturing companies significantly enhances their social performance.

- The "Environmental Performance" construct

Table 5: The "Environmental performance" construct

Variable	Items
Environmental performance	Reducing pollution
	Plant safety
	Product safety
	Resource depletion

We therefore make the following assumption:

H3: The implementation of the Balanced Scorecard in Moroccan manufacturing companies significantly enhances their environmental performance.

Data Collection

A selection of Moroccan manufacturing enterprises that operate between December 2023 and February 2024 was selected. We took a hypothetical-deductive approach and embraced a positivist worldview. In this regard, we chose to use a quantitative approach to collect the data and build the knowledge required to address our issue.

In our research, we sent questionnaires to 160 manufacturing companies in Morocco. In the last stage, 118 questionnaires were gathered. A pre-test was necessary during the questionnaire's creation. This allowed us to project our survey's future (Van der Stede et al., 2005). Pre-testing is evaluating the questionnaire on a small, representative sample of people to enhance its quality (Malhotra, 2004). This method seeks to identify any mistakes that have been made, guarantee that the questions are understandable, and determine the typical answer time (Converse and Presser, 1986; McLaughlin, 1999; Evrard et al., 2003; Jolibert and Jourdan, 2006).

Following the collection of data from 118 Moroccan manufacturing enterprises, SPSS software was used to conduct an exploratory study on the data. The information thus gathered was examined using a few methods: a confirmatory factorial analysis comes after an exploratory one.

Following the validation of our measurement scales, these statistical studies tested the research model's hypotheses regarding the impact of the Balanced Scorecard (an independent variable) on overall performance (a dependent variable).

PRESENTATION OF RESULTS

Testing the Reliability of the Scale

- **Results of validation tests on " Economic Performance" measurement scales**

Table 1: Presentation of the KMO index and the Bartlett test

Precision measurement of Kaiser-Meyer-Olkin sampling.		,739
Bartlett's sphericity test	**Approximate chi-square**	625,430
	ddl	1
	Meaning of Bartlett	,000

Source: Results of the author's survey

Bartlett's sphericity test and the Kaiser-Meyer-Olkin (KMO) measure show a high KMO index of 0.739, with significance near 0. Sig: 0.000. This suggests that the relationships between the variables can be represented by a factorial solution that is statistically acceptable. Because of this, both indices are adequate, which supports the application of principal component factor analysis.

Table 2: Total variance explained

Component matrix	Representation quality		
	Axis 1 component	Initial	Extraction
PE1	0.999	1	0.979
PE2	0.994	1	0.988
PE3	0.997	1	0.994
Eigenvalues	2.961		
Total variance explained	99.69		
Cronbach's Alpha	99.3		

Source: Results of the author's survey

This table's analysis demonstrates that removing any item would not increase the measurement device's dependability. The economic performance's acceptable criteria are exceeded by Cronbach's Alpha (99.3%). These findings suggest that the measuring scales have strong internal consistency. We made the decision to keep all the elements that presented the scale at this phase.

- **Results of validation tests on "Social Performance" measurement scales**

Table 3: The KMO index and Bartlett test

Precision measurement of Kaiser-Meyer-Olkin sampling.		**,767**
Bartlett's sphericity test	**Approximate chi-square**	602,412
	ddl	1
	Meaning of Bartlett	,000

Source: Results of the author's survey

According to the study done on the "Social Performance" variable's items, the KMO index is 0.767 and the Bartlett significance is 0. The scale satisfies the requirements to apply the sub-variable's exploratory factorial analysis.

Table 4: Total variance explained

Component matrix	Representation quality		
	Axis 1 component	Initial	Extraction
PS1	0.983	1	0.965
PS2	0.983	1	0.986
PS3	0.991	1	0.983
Eigenvalues	2.934		
Total variance explained	97.793		
Cronbach's Alpha	98.9		

Source: Results of the author's survey

This table's analysis demonstrates that removing any item would not increase the measurement device's dependability. Cronbach's Alpha (98.9%) is higher than the social performance acceptable criterion. These findings suggest that the measuring scales have strong internal consistency. We made the decision to keep all the elements that presented the scale at this phase.

- **Results of validation tests on "Environmental Performance" measurement scales**

Table 5: The KMO index and Bartlett test

Precision measurement of Kaiser-Meyer-Olkin sampling.		,770
Bartlett's sphericity test	**Approximate chi-square**	629,500
	ddl	1
	Meaning of Bartlett	,000

Source: Results of the author's survey

According to the analysis done on the "Environmental Performance" variable's elements, the KMO index is 0.770 and the Bartlett significance is 0. The scale satisfies the requirements to apply the sub-variable's exploratory factorial analysis.

Table 6 : Total variance explained

Component matrix	**Representation quality**		
	Axis 1 component	**Initial**	**Extraction**
PEV1	0.987	1	0.974
PEV2	0.976	1	0.953
PEV3	0.990	1	0.980
PEV4	0.992	1	0.984
Eigenvalues	4.891		
Total variance explained	97.274		
Cronbach's Alpha	99.1		

Source: Results of the author's survey

This table's analysis demonstrates that removing any item would not increase the measurement device's dependability. The environmental performance requirement for acceptability is exceeded by Cronbach's Alpha (99.10%). These findings suggest that the measuring scales have strong internal consistency. We made the decision to keep all the elements that presented the scale at this phase.

To summarise, the reliability analysis conducted on the measurement scale that comprises the "Overall Performance" variable yielded highly satisfying Cronbach's alpha values and noteworthy explanatory power.

Table 7: Measurement of the "Overall Performance" variable

Variable	Number of items selected	Variance restored after factorization	Cronbach's Alpha
Economic Performance	3	98.69	99.3
Social Performance	3	97.793	98.9
Environmental Performance	4	97.274	99.1

Source : Compiled by us

Testing the Validity of Scale

- **CFA of the "Balanced Scorecard" and "Economic Performance" variables**

Table 8: Correlation test presentation

		P. Economic	Balanced.Scorecard
P.Economic	**Pearson correlation**	1	,711**
	Sig. (bilateral)		,000
Balanced.Scorecard	**Pearson correlation**	,711**	1
	Sig. (bilateral)	,000	

**. Correlation is significant at the 0.01 level (two-tailed).

Source: Results of the author's survey

"Economic Performance" and "Balanced Scorecard" have a strong positive association, as evidenced by the highly significant findings of the correlation test.

It is evident that the correlation coefficient between "Balanced Scorecard" and "Economic Performance" is greater than 70%. This indicates that two variables have a very strong positive correlation, meaning that any rise in one will inevitably result in an increase in the other.

These findings support our research hypothesis, which states that there is a strong correlation between the "Balanced Scorecard" and the "Economic Performance" variables.

We performed a linear regression analysis between the variables to ascertain the direction of the link and test our hypothesis.

The analysis produced the following results:

Table 9: Summary of models

Model	R	R-two	R-two adjusted	Standard error of the estimate
1	,711a	,506	,502	1,46854

a. Predicted values: (constants), The Balanced Scorecard.

Source: Results of the author's survey

The adjusted R-two value of 50.2% in the model summary table indicates that the "Balanced Scorecard" variable has a substantial advantage over the "Economic Performance" variable.

Table 10: ANOVA presentation[a]

Model		Sum of squares	ddl	Average square	D	Sig.
1	**Regression**	253,816	1	253,816	143,090	,000b
	Residue	271,314	123	2,302		
	Total	525,130	124			

a. Dependent variable : Economic performance b. Predicted values: (constants), Balanced Scorecard.

Source: Results of the author's survey

Since the accepted error barrier is smaller than 0.05 in our instance, the significance level of 0.00 indicates that the "Balanced Scorecard" variable influences the "Economic Performance" variable.

Table 11: Presentation of model coefficients[a]

Model A		Non-standardized coefficients		Standardized coefficients	t	Sig.
		Standard error	Beta			
1	**(Constant)**	1,615	,172	,711	9,415	,000
	Balanced Scorecard.	,656	,058		11,229	,000

a. Dependent variable : Economic performance

Source: Results of the author's survey

The table indicates a statistically significant influence association with a coefficient of 0.711 at a significance level of 0.000, indicating a direct relationship between the "Balanced Scorecard" variable and the "Economic Performance" variable.

This finding indicates that the "Economic Performance" variable is significantly impacted by the "Balanced Scorecard" variable.

- **CFA of the "Balanced Scorecard" and "Social Performance" variables**

Table 12: Correlation test presentation

		P. Social	Balanced.Scorecard
P.Sociale	**Pearson correlation**	1	,802**
	Sig. (bilateral)		,000
Balanced.Scorecard	**Pearson correlation**	,802**	1
	Sig. (bilateral)	,000	

**. Correlation is significant at the 0.01 level (two-tailed).

Source: Results of the author's survey

"Social Performance" and "Balanced Scorecard" have a strong positive association, as indicated by the highly significant findings of the correlation test.

The correlation coefficient between "Social Performance" and "Balanced Scorecard" is evidently more than 80%. This indicates that two variables have a very strong positive correlation, meaning that any rise in one will inevitably result in an increase in the other.

These findings support our research hypothesis, which states that there is a strong correlation between the "Social Performance" and "Balanced Scorecard" variables.

We performed a linear regression analysis between the variables to ascertain the direction of the link and test our hypothesis.

The analysis produced the following results:

Table 13: Summary of models

Model	R	R-two	R-two adjusted	Standard error of the estimate
1	,662a	,438	,834	1,59935

a. Predicted values: (constants), The Balanced Scorecard.

Source: Results of the author's survey

According to the model's summary table, the "Balanced Scorecard" variable has a large advantage over the "Social Performance" variable, with an adjusted R-two value of 83.4%.

Table 14: ANOVA presentation[a]

Model		Sum of squares	ddl	Average square	D	Sig.
1	**Regression**	245,570	1	245,570	96,004	,000[b]
	Residue	314,622	123	2,558		
	Total	560,192	124			

a. Dependent variable : Economic performance b. Predicted values: (constants), Balanced Scorecard.

Source: Results of the author's survey

Since the accepted error barrier is smaller than 0.05 in our instance, the significance level of 0.00 indicates that the "Balanced Scorecard" variable influences the "Social Performance" variable.

Table 15: Presentation of model coefficients[a]

Model A		Non-standardized coefficients		Standardized coefficients	t	Sig.
		Standard error	Beta			
1	**(Constant)**	1,747	,187	,812	9,352	,000
	Balanced Scorecard.	,624	,064		9,798	,000

a. Dependent variable : Economic performance

Source: Results of the author's survey

The table indicates a statistically significant influence association with a coefficient of 0.812 at a significance level of 0.000, indicating a direct relationship between the "Balanced Scorecard" variable and the "Social Performance" variable.

This finding indicates that there appears to be a substantial relationship between the "Balanced Scorecard" variable and the "Social Performance" variable.

- **CFA of the "Balanced Scorecard" and "Environmental Performance" variables**

Table 16: Correlation test presentation

		P. Social	Balanced.Scorecard
P.Sociale	**Pearson correlation**	1	,813**
	Sig. (bilateral)		,000
Balanced.Scorecard	**Pearson correlation**	,813**	1
	Sig. (bilateral)	,000	

**. Correlation is significant at the 0.01 level (two-tailed).

Source: Results of the author's survey

"Environmental Performance" and "Balanced Scorecard" have a strong positive association, as indicated by the highly significant findings of the correlation test.

The correlation coefficient between "Environmental Performance" and "Balanced Scorecard" is definitely greater than 80%, as can be seen. This indicates that two variables have a very strong positive correlation, meaning that any rise in one will inevitably result in an increase in the other.

We are making progress toward validating our research hypothesis, which states that there is a close relationship between the "Environmental Performance" and the "Balanced Scorecard" variables.

We performed a linear regression analysis between the variables to ascertain the direction of the link and test our hypothesis.

The following were the analysis's findings:

Table 13: Summary of models

Model	R	R-two	R-two adjusted	Standard error of the estimate
1	,593a	,351	,796	1,74736

a. Predicted values: (constants), The Balanced Scorecard.

Source: Results of the author's survey

According to the model's summary table, the "Balanced Scorecard" variable has a large advantage over the "Environmental Performance" variable, with an adjusted R-two value of 79.6%

Table 18: ANOVA presentation[a]

Model		Sum of squares	ddl	Average square	D	Sig.
1	**Regression**	203,427	1	203,427	66,626	,000[b]
	Residue	375,550	123	3,053		
	Total	578,977	124			

a. Dependent variable : Economic performance b. Predicted values: (constants), Balanced Scorecard.

Source: Results of the author's survey

Since the accepted error barrier is smaller than 0.05 in our instance, the significance level of 0.00 indicates that the "Balanced Scorecard" variable influences the "Environmental Performance" variable.

Table 19: Presentation of model coefficients[a]

Model A		Non-standardized coefficients		Standardized coefficients	t	Sig.
		Standard error	Beta			
1	**(Constant)**	2,000	,204	,803	9,797	,000
	Balanced Scorecard.	,568	,070		8,163	,000

a. Dependent variable : Economic performance

Source: Results of the author's survey

The table indicates a statistically significant influence association with a coefficient of 0.803 at a significance level of 0.000, indicating a direct relationship between the "Balanced Scorecard" variable and the "Environmental Performance" variable.

This finding indicates that there appears to be a substantial relationship between the "Environmental Performance" variable and the "Balanced Scorecard" variable.

All things considered, this part has concluded the research project by evaluating the connections among the various variables in our research model, applying the correlation and basic linear regression techniques, and pinpointing the numerous significant correlations that are there.

DISCUSSION OF RESULTS

Impact of the Balanced Scorecard on Economic Performance

The application of BSC significantly affects the financial performance of businesses, according to the findings of a simple linear regression analysis and correlation study. In particular, a high correlation coefficient (r = 0.711) suggests a strong positive relationship between BSC adoption and improvements in economic performance indicators such as sales and net profits.

According to the empirical study, Moroccan manufacturing enterprises that implemented the BSC saw a notable increase in their financial performance when compared to those that did not. BSC makes it possible to see organizational goals and resource management from a more strategic and balanced perspective. The findings demonstrate that applying the BSC improves decision-making, increases objective transparency, and better aligns activities with business goals. Because of this, Moroccan manufacturing enterprises that use BSC typically report better economic results, especially when it comes to profitability, revenue growth, and return on investment. This suggests that BSC is a useful instrument for enhancing economic performance.

These results are consistent with recent research by Kaplan and Norton (2021), who emphasized the value of BSC in changing managerial techniques and enhancing organizational performance. A more comprehensive approach to performance management is facilitated by the integration of BSC's financial and non-financial viewpoints, which also results in observable financial improvements.

These findings highlight the important influence that business sustainability can have on an organization's financial performance.

*Thus, hypothesis **H1** is confirmed.*

Impact of Balanced Scorecard on Social Performance

Our correlation and basic linear regression analysis results indicate a strong relationship between Moroccan manufacturing businesses' social performance and their adoption of BSC. The correlation value of 0.802 suggests a robust and affirmative association.

Our empirical study shows that Moroccan manufacturing companies can better align their strategies with social objectives and enhance their social acceptability by implementing a BSC that integrates social performance indicators like employee satisfaction and well-being, social responsibility, equal opportunities policies, and community involvement. This integrated approach to performance management supports the sustainable expansion of Moroccan manufacturing enterprises while assisting them in meeting the increasing social responsibility requirements of stakeholders.

The findings align with the initial conceptualization of BSC as an integrative performance tool by Kaplan and Norton (1996). The adoption of BSC has been shown to enhance company performance in social as well as financial domains. Additionally, Casadesus-Masanell and Ricart's (2010) analysis confirms our findings about the efficacy of BSC in promoting corporate social responsibility by highlighting the significance of strategy and management tools in optimizing social and economic advantages.

To summarize, this research provides significant perspectives for practitioners and decision-makers who aim to maximize corporate social responsibility in Morocco and other regions.

*Thus, hypothesis **H2** is confirmed.*

Impact of the Balanced Scorecard on Environmental Performance

Correlation study and simple linear regression results indicate a strong association between corporate environmental performance and BSC implementation. The coefficient of 0.813 found by Pearson's correlation indicates a strong positive link.

Our analysis has shown how the BSC helps Moroccan manufacturing enterprises better connect their operations and strategy with sustainable development goals by adding certain metrics related to the environment. Manufacturing businesses in Morocco that implement BSC gain access to a more comprehensive performance picture that takes into account both environmental and financial factors. BSC assists Moroccan manufacturing companies in monitoring and continuously improving their environmental impacts through the implementation of strategies like waste management, energy efficiency, and reduction of CO2 emissions. This leads to increased brand image and competitiveness in the market, as well as better compliance with environmental regulations and lower costs associated with energy and raw materials.

The latest research by Kaplan and Norton (2021), which demonstrated how well BSC integrates environmental indicators into strategic business management, lends credence to these conclusions. Furthermore, BSC encourages more sustainable practices and improved decision-making, which improves overall environmental performance. In conclusion, quantitative evidence and current scholarly research show how important BSC adoption is for improving business environmental performance.

Therefore, we may conclude that utilizing BSC significantly improves the Moroccan manufacturing company's environmental performance.

*Thus, hypothesis **H3** is confirmed.*

Additionally, the BSC is a suitable instrument for incorporating the economic, social, and environmental aspects of total performance into a company's core management system, according to the comparison of theory and practice.

Indeed, once managers have formulated a strategy that includes these concerns, this tool seems appropriate for building the necessary support for taking social and environmental aspects into account within the company. There are many reasons for this:

- Firstly, it is a tool that starts from the strategy and translates it into action through specific objectives, indicators and performance measures. The BSC provides a link between the strategic and operational levels. This feature makes sure that social and environmental issues are not only a tactical or operational marketing gimmick but rather a fundamental component of the company's strategy.
- Secondly, BSC is an open and adaptable management control tool. As such, it can easily be used to integrate social and environmental dimensions with traditional aspects of corporate performance.

- Thirdly, the underlying logic of BSC is compatible with the integration of economic, social and environmental concerns. On the one hand, this tool is based on both qualitative and non-financial aspects (like most environmental and social elements). Secondly, it explicitly makes the link between the short-term (economic vision) and the long-term (overall performance).

Finally, in the literature, this management control system is often considered to be the benchmark tool for steering and controlling corporate performance.

Thus, if we retain the underlying logic of the BSC while making a few modifications to turn it into a "sustainable/overall" management control tool, this tool seems particularly appropriate for steering, measuring and improving, in an integrated way, the company's overall performance and, more specifically, its societal footprint.

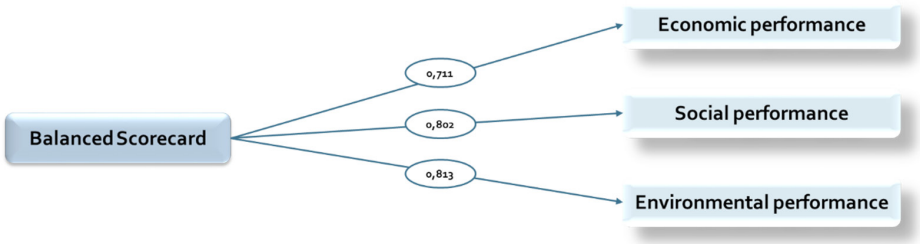

Figure 2: Final validated research model (The impact of BSC on overall performance)
Source: Compiled by author

CONCLUSION

To sum up, our study's objective was to investigate how the BSC affects Moroccan manufacturing enterprises' overall performance, highlighting the critical role it plays in directing and enhancing this performance.

Through the incorporation of both financial and non-financial performance metrics, the BSC allows companies to align their strategies more effectively with economic, social, and environmental goals. Organizations that implement the BSC experience more balanced management practices and make more informed decisions, resulting in improved financial performance along with notable advancements in employee satisfaction, community engagement, and environmental stewardship.

Our research has thoroughly examined the various management control tools from a theoretical perspective. These include the balanced scorecard, which provides an overall and balanced view of performance through various key indicators, budgetary control, which guarantees strict management of expenditure and investment, and the costing method, which allows for better allocation of financial resources.

Our empirical study has supported our theoretical analysis by showing that Moroccan manufacturing companies that apply a BSC in a way that makes sense for them typically see a significant improvement in their overall performance. This includes the ability to better allocate resources, anticipate risks, and regularly assess performance in relation to the established goals.

It should also be stressed that the successful implementation of a BSC depends largely on its harmonious integration into the organizational culture, the involvement of stakeholders and the quality of the data used. Companies that are able to judiciously combine this tool with a clearly defined strategy and solid governance will be better equipped to face economic and competitive challenges, and thus ensure their long-term survival and growth in the Moroccan market and beyond.

There are some restrictions on this research, though. First off, even if the sample size is substantial, it might be increased to encompass a wider range of industries and businesses. Second, the study's exclusive emphasis on Moroccan businesses restricts the applicability of its findings to other regions and cultural circumstances. Thirdly, to obtain a deeper comprehension of the underlying mechanisms, qualitative approaches could be added to the quantitative methods, despite their robustness.

In terms of future prospects, future research could focus on longitudinal studies to examine changes in overall performance over time following the adoption of BSC. It would also be relevant to explore a cross-sectoral and international comparison to better understand the cultural and structural specificities that influence the effectiveness of BSC in different contexts. These avenues of research would help to enrich the existing literature and offer practical recommendations for companies wishing to strengthen their commitment to sustainable development.

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Unapređenje performansi u proizvodnim kompanijama: Uticaj Balanced Scorecard

Rezime: Ova studija istražuje efekte primene Balanced Scorecard (u daljem tekstu: BSC) na ukupne performanse marokanskih proizvodnih organizacija na osnovu uzorka od 118 preduzeća. Primenom kvantitativnog analitičkog pristupa koji koristi tehnike korelacije i linearne regresije, analiza procenjuje potencijalne efekte usvajanja BSC na različite aspekte ukupnog učinka. Nalazi jasno pokazuju da je primena BSC od suštinskog značaja za podizanje ukupnih performansi marokanskih preduzeća. Ova studija doprinosi našem razumevanju tehnika kreativnog upravljanja u dinamičnom ekonomskom okruženju i pruža praktičarima i naučnicima pronicljive informacije o konkurentnosti i održivosti marokanskih proizvodnih kompanija.

Ključne reči: Balanced Scorecard, ukupni učinak, ekonomski učinak, društveni učinak, performanse zaštite životne sredine