

The Impact of Marketing Information Systems on the Competitive Environment: The Case of The GICA Group

Yasmine MOHAMMED AZIZI ¹, Samy FERGUEEN ²

¹ Lecturer, National Higher School of Management (ENSM), University Pole, Kolea, Algeria; LIMGE La-boratory, ENSM ; med.azizi.yasmine@gmail.com , ORCID ID: <https://orcid.org/0000-0002-6340-2117> .

² National Higher School of Management (ENSM), University Pole, Kolea, Algeria; fer-guen.samy@gmail.com .

ARTICLE INFO

Article history:

Received:28/07/2025

Accepted:07/10/2025

Online:22/11/2025

Keywords:

marketing information system
competitiveness internal reports
marketing research
marketing intelligence
JEL Code: M31;M15;
L21; L25 ; D83.

ABSTRACT

This study investigates the impact of the marketing information system (MIS) on the competitiveness of firms in an increasingly competitive environment, where businesses must constantly adapt their strategies and rely on reliable information to make effective decisions. The research adopts a quantitative approach to explore the relationships between key components of the MIS: internal reports, marketing research, and marketing intelligence and their influence on firms' ability to sustain a competitive advantage. Specific hypotheses were formulated to assess the links between these variables, and data were collected from managers across the GICA Group. The analysis reveals that each component of the MIS significantly contributes to enhancing strategic decision-making and improving organizational responsiveness to market dynamics. The findings underscore the strategic importance of a well-structured MIS in helping firms maintain their competitive positioning by providing timely, accurate, and relevant information. The study concludes that integrating internal reporting, research, and intelligence functions into a cohesive information system is essential for firms seeking to adapt to environmental changes and maintain long-term competitiveness.

1. Introduction

In an increasingly competitive and volatile economic landscape, organizations face significant challenges in maintaining and enhancing their market positions. The rapid emergence of new entrants, technological advancements, shifting consumer behaviors, and evolving regulatory frameworks compel firms to continuously adapt in order to survive and thrive (Barney, 1991; Gbolagade, 2013; Porter, 1985). In this context, the Marketing Information System (MIS) has emerged as a strategic instrument that enables the systematic collection, analysis, and dissemination of critical information to support evidence-based marketing decisions (Kotler & Armstrong, 2011).

This study investigates the role of the MIS in enhancing organizational responsiveness to environmental changes, with a focus on its impact on strategic marketing decisions. As market dynamics intensify, the ability of firms to anticipate shifts, adjust strategies, and react promptly becomes vital. The MIS facilitates this by equipping marketing managers with relevant, real time data necessary to interpret trends, evaluate opportunities and threats, and formulate effective responses (Vorhies et al., 2009).

The empirical focus of this research is the Algerian Cement Industrial Group “Groupe Industriel des Ciments d’Algérie” (GICA), a national leader in the cement industry. GICA operates in a highly competitive sector marked by emerging threats, evolving customer expectations, and increased regulatory scrutiny. These challenges necessitate the

continuous refinement of its marketing and commercial strategies. Against this backdrop, the study addresses the central research question: **To what extent does the Marketing Information System of GICA influence its ability to detect and respond to changes in its competitive environment?**

This research aims to provide a nuanced understanding of how MIS functions shape strategic responsiveness in industrial firms. Methodologically, it adopts a quantitative approach, integrating an extensive review of the literature with empirical data collected from GICA's marketing professionals. Statistical analyses are conducted to test the hypotheses and develop actionable recommendations to enhance the integration of MIS into decision-making processes.

From a theoretical standpoint, the study contributes to the literature by exploring the intersection of MIS, strategic marketing decision-making, and organizational adaptability, an area that remains underexplored in the Algerian context. On a managerial level, the findings are expected to inform GICA's efforts to optimize its MIS architecture and strengthen its competitiveness in a dynamic industrial environment.

2. Literature Review

2.1. Marketing information system

In an increasingly competitive environment, the Marketing Information System (MIS) plays a vital role in enhancing organizational performance. Defined as a structured interaction of people, equipment, and processes, it provides timely, accurate, and useful data for marketing decisions (Kotler et al., 2015). It comprises internal records, marketing research, intelligence, and decision support systems (Kotler et al., 2015; Kotler & Armstrong, 2011).

Research highlights MIS as essential for strategic diagnosis and gaining competitive advantage (Alshurideh et al., 2021; Taleghani & Almasi, 2011), helping firms anticipate change and meet customer needs (Gbolagade, 2013). It improves decision-making through efficient information flow (Kotler et al., 2015).

Several studies have highlighted a strong link between MIS use and improved performance, especially in innovation, satisfaction, and profitability (Nwokah & Maclayton, 2006; Vorhies et al., 2009), with effectiveness tied to firm-specific factors like size and digital maturity (Vorhies et al., 2009). Furthermore, MIS plays a central role in disseminating a marketing-oriented culture within the organization by facilitating strategic alignment and encouraging the flow of information between different departments (Kotler et al., 2015). This contributes to better coordination and more coherent decision-making (Song et al., 2005). The system also enables marketing departments to be more responsive and proactive in dealing with market changes by fostering data-driven decisions (Gbolagade, 2013; Nwokah & Maclayton, 2006).

Marketing intelligence, as a key MIS element, enables early detection of market changes (Gbolagade, 2013), supporting competitive positioning (Elenkov et al., 2005). Finally, digital tools: Big Data, AI, analytics, boost MIS agility and responsiveness, strengthening firms' decision-making capabilities (Gbolagade, 2013).

2.2. The competitive environment and strategic positioning

Understanding the competitive environment is key to strategic analysis. Traditionally seen as external forces: technological, political, economic, and social. This environment now appears more turbulent and complex due to globalization, innovation, and inter-organizational ties (Bruecker, 1995; Melbouci, 2008; Strategor, 2004; Ducreux & Abate, 2009). A multilevel approach is necessary:

- Macro level: The PESTEL model (Political, Economic, Sociocultural, Technological, Ecological, Legal) captures broad external factors influencing firms' strategies (Strategor, 2004; Melbouci, 2008).
- Micro level: Porter's Five Forces, plus a sixth (government influence), analyze industry competitiveness (Porter, 1980; Johnson et al., 2008; Garibaldi, 2008; Brühlhart, 2009).
- Meso level: Focuses on sectoral actors, stakeholders, unions, associations, affecting firm behavior (Melbouci, 2008), aligning with stakeholder theory.

Barriers to entry and mobility, structural or strategic (e.g., scale, regulation, differentiation), shape market access and positioning (Strategor, 2004; Brühlhart, 2009).

Competition theory distinguishes between perfect competition (price-based) and strategic competition (value creation) (Krafft, 1999; Magretta, 2012). Porter (1985) argues sustainable advantage stems from performing key activities better or cheaper. Two views on competitive advantage exist: the environmental approach (Lawless, 1991; Portnoff, 1990) sees advantage in external alignment and the resource-based view (RBV) (Barney, 1991; Hall, 1993) focuses on leveraging unique internal capabilities.

In sum, competition is multidimensional, firms must both adapt to external pressures and shape their environment through innovation and differentiation. Overall, competition is a multidimensional and evolving concept that demands firms not only respond to external pressures but also proactively shape their strategic environment through innovation and differentiated positioning.

2.3. The impact of marketing information systems on the competitive environment

The central issue of this section lies in identifying the levels of competition within firms that grant them a competitive advantage. Cohen & Levinthal (1990) highlight how ICTs reshape competition through three levels. At the industry level, ICTs alter product life cycles, distribution channels, and geographic boundaries, leading to industry wide transformations. At the competitive level, ICTs influence dynamics with competitors, customers, and markets, requiring firms to innovate continuously and improve quality, even at higher costs. At the organizational level, ICTs enhance value chain activities, improve practices, and foster performance by enabling integration and identifying cost and differentiation drivers.

Marketing's role in competitive advantage varies with firm capabilities. According to Pacitto & Tordjman (1999), a manager's perception of the organization and its environment shapes whether marketing is seen as strategic or not. Two propositions emerge: first, if the firm's competencies are strong, marketing communicates these capabilities to the market and supports integration. If capabilities are weak, marketing may become merely commercial. Second, if unmet demand is identified externally, marketing precedes capability-building and supports the commercialization process. These approaches are not exclusive; marketing's impact evolves with organizational context and time.

3. Hypothesis development and proposed analytical model

This research aims to examine how the structure of the Marketing Information System (MIS), along with managerial competencies, contributes to firms' ability to adapt to competitive environments. The model is based on the conceptual foundations laid by Montgomery & Urban (1969) and expanded upon by Lambin & Moerloose (1999), both of whom emphasized the importance of information systems in marketing decision-making.

The MIS is conceptualized as a set of subsystems that gather, process, and distribute information for marketing decisions. Specifically, we distinguish three components: the internal records system, the marketing research system, and the marketing intelligence system. While these systems provide data and insights, their impact depends significantly on the skills and competencies of marketing managers, especially in transforming information into actionable strategies. Therefore, marketing decision-making is considered a mediating variable that links information systems and human capital to organizational responsiveness in competitive environments.

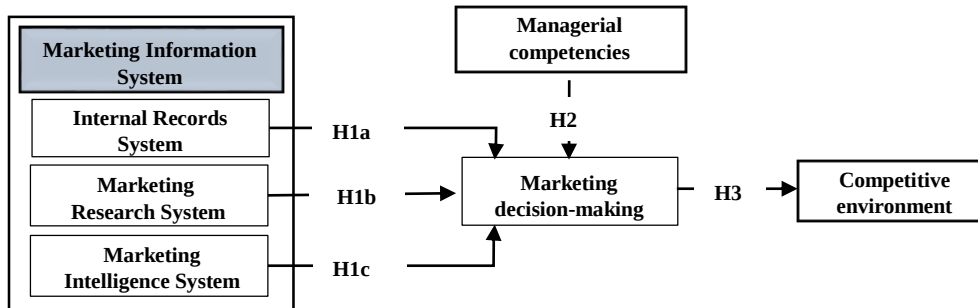


Figure 1. research model

3.1. Independent Variables

Based on the selected characteristics used to develop the proposed analytical model, two independent variables are identified: the Marketing Information System (MIS) and managerial competencies.

3.1.1. Marketing Information System (MIS): Internal reporting system (accounting and commercial statements)

The internal reporting system focused on accounting and commercial data represents the oldest and most foundational MIS subsystem. It is of high importance to marketing personnel, as the financial data it provides enables performance measurement and guides future strategic decisions. This system includes key data such as sales figures, inventory levels, customer orders, and historical cost information. However, internal reporting should not be confined to financial metrics alone, it also incorporates data on sales force performance, market share, profit margins, and profitability by product, customer, and region.

According to Pettigrew & Turgeon (1996), a robust accounting system should offer marketing decision-makers tailored financial statements that meet their informational needs. Hence, the following hypothesis is proposed:

Hypothesis H1a: The internal reporting system of the GICA Group significantly influences marketing decision-making.

3.1.2. Marketing Information System (MIS): Marketing Research System

As a subsystem of the MIS, the marketing research system is activated on a de-mand-driven basis, in contrast to the continuous data flow of accounting and intelligence systems. It identifies relevant information based on the firm's current strategic needs. Zaltman & Burger (1975) define marketing research as the process of diagnosing information requirements and selecting relevant variables for which reliable and valid data should be collected, recorded, and analyzed.

Marketing research plays a critical role in achieving customer satisfaction, the core objective of the marketing concept. Today, it holds a strategic dimension, bridging strategic and operational market orientation by leveraging interdisciplinary knowledge from fields such as psychology, sociology, statistics, and economics (Lambin & Moerloose, 1999). Accordingly, the hypothesis formulated is as follows:

Hypothesis H1b: The marketing research system of the GICA Group significantly influences marketing decision-making.

3.1.3. Marketing Information System (MIS): Marketing Intelligence System

Also referred to as the market intelligence system, this subsystem monitors environmental dynamics to keep managers informed of external market changes. It relies on various information sources such as trade fairs, economic

publications, financial analyst reports, competitor and client websites, social media, patents, government releases, and market studies (Kotler & Dubois, 2000). According to Lambin & Moerloose (1999), enhancing marketing intelligence requires:

- Leveraging the sales force as a key information source due to its proximity to customers and competitors.
- Establishing competitor monitoring systems, especially in larger firms.
- Using services of specialized research agencies with multi-client databases.

Hypothesis H1c: The marketing intelligence system of the GICA Group significantly influences marketing decision-making.

3.1.4. Managerial Competencies

Many scholars in business management emphasize the diversity of managerial profiles as central to organizational structures. The strategic influence of managers is key to understanding organizational behavior. Marchesnay (1988) argues that strategic actions cannot be studied without considering the decision-maker's personal traits, as these shape organizational choices.

While a manager is broadly defined as a strategic decision-maker, this role varies widely due to psychological, social, and cultural differences. As such, a universal managerial profile is unrealistic (Marchesnay, 1988), complicating the interpretation of organizational and marketing behavior. Longitudinal studies show that marketing behavior is closely tied to the executive's role as decision-maker. Marchesnay (1988) identifies key factors such as:

- Educational background and experience: Executives with management training prioritize market concerns.
- Founding motivations: Technically driven startups may initially neglect marketing.
- Strategic orientation: Entrepreneurs focused on growth or autonomy emphasize market trends, while others prioritize internal operations.

Based on these insights, this leads to the following hypothesis:

H2: The managerial competencies of the GICA Group's executives significantly influence marketing decision-making.

3.2. The Mediating Variable: Marketing Decisions

Within the proposed analytical model, marketing decisions serve as a mediating variable influencing the competitive environment. These decisions focus on target market selection and the marketing mix (Eldon, 1997). Unlike large firms using differentiated strategies, smaller businesses often target a single segment (Brisoux, 1995). The marketing mix: product, price, distribution, and communication, guides strategic and operational choices (Assael, 1998).

Product Decisions: Firms show strong product capabilities (Herrmann, 1995), often co-developing products with clients based on their input or anticipated needs (Rowntree & John, 1991), reflecting a sales-oriented logic.

Price Decisions: Most firms apply a cost-plus pricing strategy while considering objectives and competitor prices (Jolibert, 1991). Price is rarely a main competitive tool (Herrmann, 1995; Marchesnay, 1988), often resulting from negotiations and lacking precise cost data upfront (Marchesnay, 1988).

Distribution Decisions: Distribution typically involves direct sales and personal client contact (Herrmann, 1995). In early-stage high-tech SMEs, close customer monitoring is key (Crick & Jones, 2000). Mature firms often lack formal sales departments, with leaders playing a central sales role (Herrmann, 1995).

Communication Decisions: Communication is limited (Herrmann, 1995), mainly using trade shows and brochures (Marchesnay, 1988). While firms that endure adopt more tools like flyers and catalogs (Jolibert, 1991), communication remains the weakest element of the mix.

Hypothesis: H3: The marketing decisions made by the managers of the GICA Group, based on their Marketing Information System (MIS), have a significant impact on the company's competitive environment.

3.3. The Dependent Variable: Competitive Environment

In the field of business management, understanding the competitive environment is crucial for strategic decision-making. It is often described by its dynamism, uncertainty, and complexity.

Duncan (1972) defined environmental dynamism as the degree of change in decision-making factors, emphasizing the unpredictability of such changes. Miller & Friesen (1983) linked dynamism to uncertainty, noting rapid industry changes and unpredictable behavior from customers and competitors.

Uncertainty arises from limited information about the environment (Morris et al., 1995), making it difficult to foresee the effects of decisions and leading to organizational "myopia." Addressing this requires gathering timely, relevant data.

Environmental complexity involves the many factors influencing decisions, posing challenges especially for small firms (Marchesnay, 1988). Yet, some view complexity as an opportunity for innovation (Luo, 1999).

In hyper-competitive markets, firms engage in constant strategic moves to gain temporary advantages (Aveni, 1995), sometimes cooperating to overcome high entry barriers and share resources.

Thus, understanding the environment's dynamic, uncertain, and complex nature is key to enabling agile and informed strategic responses.

4. Research Methodology

4.1. Epistemological Stance, Research Approach, Method and Population

This study explores the impact of the Marketing Information System (MIS) on the competitive environment, aiming to generate insights that support strategic decision-making. A positivist epistemological stance was adopted due to its emphasis on objectivity, causal relationships, and empirical validation. The research follows a hypothetico-deductive approach, which ensures clarity through the formulation and empirical testing of hypotheses. This framework enhances the robustness of the findings by allowing for the falsifiability of theoretical assumptions. A quantitative methodology was selected, employing statistical techniques for data collection, analysis, and interpretation. This approach enables precise measurement of variables and generalization of results to a broader population of firms.

The target population comprises all 56 subsidiary directors within the firm, given their key role in marketing decision-making and in assessing the MIS's influence on the company's competitive posture. Due to the manageable population size, a census approach was adopted instead of sampling, ensuring comprehensive and representative data collection.

4.1.1. Questionnaire Design and Measurement Instruments and reliability Analysis

A structured questionnaire was developed as the primary tool for data collection, informed by established instruments from the literature. It consists of five sections, each corresponding to one of the study's research variables. The first section examines the Marketing Information System (MIS) as an independent variable, addressing its three core components: the internal data system (data quality, timeliness, reliability, and alignment with marketing needs), the marketing intelligence system (market and competitor information, decision-making support), and the marketing research system (market studies, use of research in planning, competitor and environmental analysis) (Dhaoui, 2008; Djennas, 2003). The second section focuses on the second independent variable, Managers' Competencies, including indicators such as staff competency

evolution, skill promotion through motivation, critical skill diagnosis, and competency portfolio updates in response to environmental changes (Dhaoui, 2008). The third section covers the mediating variable, Marketing Decision-Making, with indicators like market segmentation, strategy development (product, price, distribution, promotion), new product development, and the use of past experience in current decisions (Azami, 1999). The fourth section measures the dependent variable, Competitive Environment, through items assessing openness to innovation, environmental scanning, reactive strategies, competitor monitoring, awareness of new entrants, and information collection frequency (Azami, 1999; Dhaoui, 2008). The fifth and final section evaluates the outcomes of MIS use, focusing on perceived benefits such as market share growth, product quality improvement, enhanced customer service, organizational visibility, information access, customer feedback, communication cost reduction, revenue increase, and profit growth (Djennas, 2003).

Reliability was assessed using Cronbach's Alpha and Pearson correlation coefficients via SPSS. Results demonstrated high internal consistency:

Table 1. Questionnaire Reliability (Cronbach's Alpha Coefficient)

Axis	Cronbach's Alpha	Numbre of Items
1. Marketing information system MIS	0,974	10
1.1. Internal reporting system	0,951	4
1.2. Marketing Research System	0,934	3
1.3. Marketing Intelligence System	0,895	3
2. Managerial Competencies	0,905	10
3. Marketing decision-making	0,926	7
4. Competitive Environment	0,904	10
Overall Reliability	0,966	37

Pearson correlations between each item and its respective construct were statistically significant ($p < 0.05$), confirming internal coherence. No item was removed as all met the required correlation thresholds.

5. Data analysis, results and discussion

5.1. Hypothesis Testing and discussion

5.1.1. Hypothesis H1a: The Effect of the Internal Reporting System on Marketing Decision-Making

To examine the effect of the internal reporting system on marketing decision-making, descriptive and inferential statistical analyses were conducted. Table 2 summarizes re-spondents' perceptions regarding the quality, update frequency, adequacy, and reliability of internal data used within the marketing function.

Table 2. Descriptive Statistics – Internal Reporting System

Indicator	N	Mean	Std. Deviation
Internal data quality issues	52	3.35	0.80
Timeliness of data updates	52	3.27	1.19
Data adequacy for marketing needs	52	3.31	1.23
Data reliability and accuracy	52	3.42	1.30

As shown in Table 2, participants reported occasional issues with the quality of in-ternal data ($M = 3.35$) and its updating ($M = 3.27$), suggesting that data are sometimes outdated or problematic. Similarly, the adequacy of data for marketing purposes was rat-ed modestly ($M = 3.31$), indicating that internal information occasionally meets marketing users' needs. On the other hand, reliability and accuracy were perceived more positively ($M = 3.42$), reflecting a generally favorable view on the trustworthiness of internal data. The standard deviations, ranging from 0.80 to 1.30, suggest a moderate level of dispersion in the responses, indicating some variability in perceptions across the sample.

To test Hypothesis H1a, a linear regression was conducted, with marketing deci-sion-making as the dependent variable and the internal reporting system as the predictor. The results are presented in Table 3.

Table 3. Regression results – H1a: internal reporting system → marketing decision

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	15.999	1	15.999	26.541	0.000
Residual	30.140	50	0.603		
Total	46.139	51			

R = 0.589, R² = 0.347, Adjusted R² = 0.334

The regression analysis yielded a moderate positive correlation ($R = 0.589$) between the internal reporting system and marketing decision-making. The coefficient of determination ($R^2 = 0.347$) indicates that 34.7% of the variance in marketing decision-making can be explained by the internal reporting system. The adjusted R^2 of 0.334 confirms the model's relative stability when accounting for the number of predictors.

The F-test result ($F = 26.541$, $p < 0.001$) confirms that the model is statistically significant. Therefore, the internal reporting system exerts a significant influence on marketing decision-making.

These findings support Hypothesis H1a, demonstrating that the internal reporting system of the GICA Group significantly affects marketing decisions. Nevertheless, as the model explains only 34.7% of the variance, it is likely that other factors also contribute to marketing decision-making, warranting further investigation for a more comprehensive understanding.

5.1.2. Hypothesis h1b: the effect of the marketing research system on marketing decision-making

To investigate the impact of the marketing research system on marketing decision-making, descriptive statistics were first analyzed to assess the organization's practices in conducting and utilizing market studies. Table 4 presents the relevant indicators.

Table 4. Statistics – Research	Indicator	N	Mean	Std. Deviation	Descriptive Marketing System
	The company regularly conducts market research	52	3.52	1.32	
	Utilization of market research results	52	3.38	1.36	
	Market research includes competitive analysis	52	3.40	1.30	

The results in Table 4 reveal that participants perceive the organization as frequently conducting market research ($M = 3.52$) and often incorporating competitive and environmental analysis ($M = 3.40$). However, the use of research outcomes in guiding strategic marketing decisions appears less consistent ($M = 3.38$), suggesting occasional rather than systematic application. The standard deviations—ranging between 1.30 and 1.36—suggest moderate dispersion of responses, reflecting variability in research use and integration.

To test Hypothesis H1b, a linear regression analysis was performed using marketing decision-making as the dependent variable and the marketing research system as the independent variable. The results are summarized in Table 5.

Table 5. Regression Results – H1b: Marketing Research System → Marketing Decision

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	36.677	1	36.677	42.899	0.001
Residual	9.462	50	0.734		
Total	46.139	51			

R = 0.683, R² = 0.466, Adjusted R² = 0.453

The regression results reveal a strong and statistically significant relationship between the marketing research system and marketing decision-making ($R = 0.683$, $p < 0.001$). The R^2 value of 0.466 indicates that the model explains 46.6% of the variance in marketing decisions, while the adjusted R^2 of 0.453 confirms the model's robustness and explanatory power.

These findings support Hypothesis H1b, indicating that the marketing research system significantly influences decision-making within the GICA Group. The model's high explanatory value highlights the importance of structured market research and analysis in informing strategic marketing actions.

5.1.3. Hypothesis H1c: the effect of marketing intelligence system on marketing decision-making

To test hypothesis H1c, the relationship between the use of marketing intelligence systems and marketing decision-making within the GICA Group is examined. This analysis assesses whether the systematic collection and use of market and competitor information significantly influence marketing decisions. The following descriptive statistics offer an overview of respondents' perceptions regarding the extent and usefulness of marketing intelligence practices within the organization.

Table 6: Descriptive Statistics – Marketing Intelligence System

Items	N	Mean	Std. Deviation
Collection of information on the market and competitors	52	3.04	1.30
Usefulness of collected market and competitor information	52	3.35	1.28
Information supports marketing decision-making	52	3.67	1.29

The results in Table 6 show that respondents perceive the organization as occasionally collecting market and competitor information ($M = 3.04$). However, once collected, such information is seen as somewhat useful for informing marketing decisions ($M = 3.35$). More notably, participants indicate that the use of market intelligence often enables the company to make better-informed marketing decisions ($M = 3.67$). Standard deviations range from 1.28 to 1.30, indicating moderate variability in the responses.

To test Hypothesis H1c, a linear regression analysis was conducted, with marketing decision-making as the dependent variable and the marketing intelligence system as the independent variable. The results are summarized in Table 7.

Table 7. Regression Results – H1c: Marketing Intelligence System → Marketing Decision-Making

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	33.054	1	33.054	79.793	0.000
Residual	13.085	50	0.661		
Total	46.139	51			

$R = 0.844$, $R^2 = 0.712$, Adjusted $R^2 = 0.706$

The regression analysis reveals a strong and statistically significant relationship between the marketing intelligence system and marketing decision-making ($R = 0.844$, $p < 0.001$). The R^2 value of 0.712 indicates that the model explains 71.2% of the variance in marketing decisions. The adjusted R^2 (0.706) confirms the robustness and explanatory power of the model.

The F-statistic of 79.793, with a significance value well below the 0.05 threshold ($p = 0.000$), provides further evidence of the model's significance. Therefore, the null hypothesis can be rejected in favor of the alternative, supporting Hypothesis H1c.

These findings indicate that the marketing intelligence system within the GICA Group has a significant and substantial influence on marketing decision-making. The high explanatory power of the model underscores the critical role that structured intelligence gathering and analysis play in shaping strategic marketing decisions within the organization.

5.1.4. Hypothesis H2: the effect of managerial competence on marketing decision-making

To assess the impact of managerial competence on marketing decision-making, descriptive statistics were first analyzed. Table 8 summarizes the indicators related to the evolution, motivation, and strategic management of competencies within the organization.

Table 8. Descriptive Statistics – Managerial Competence

Indicator	N	Mean	Std. Deviation
Evolution of employee competencies	52	3.31	1.02
Motivation and mobilization of staff	52	3.65	1.20
Diagnosis of key competency needs	52	3.56	1.30
Regular updating of the competency portfolio	52	3.40	1.29

Indicator	N	Mean	Std. Deviation
Anticipation of future competency requirements based on environmental factors	52	3.12	1.35

The results indicate that the organization occasionally works on developing employ-ee competencies ($M = 3.31$). The motivation and mobilization of personnel receive more consistent attention ($M = 3.65$), suggesting that these elements are often emphasized. The diagnosis of key competency needs ($M = 3.56$) and the regular updating of the competency portfolio ($M = 3.40$) are also frequently undertaken. However, anticipation of future skill requirements in light of environmental changes is less systematic ($M = 3.12$). Overall, the results suggest that while some competency management practices are regularly implemented, others—especially anticipatory strategies—are less consistent, highlighting the need for a more proactive and integrated competency development approach.

To test Hypothesis H2, a linear regression analysis was performed with marketing decision-making as the dependent variable and managerial competence as the independent variable. The results are presented in Table 9.

Table 9. Regression Results – H2: Managerial Competence → Marketing Decision-Making

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	27.003	1	27.003	70.554	0.000
Residual	19.136	50	0.383		
Total	46.139	51			

$$R = 0.765, R^2 = 0.585, \text{Adjusted } R^2 = 0.577$$

The regression analysis indicates a strong and statistically significant relationship between managerial competence and marketing decision-making ($R = 0.765$, $p < 0.001$). The R^2 value of 0.585 suggests that 58.5% of the variance in marketing decisions can be explained by the competence of managers. The adjusted R^2 of 0.577 confirms the model's reliability and robustness, accounting for potential bias due to the number of predictors.

The F-statistic of 70.554, with a significance level of 0.000, further supports the statistical validity of the model. Therefore, the null hypothesis can be rejected in favor of the alternative.

In conclusion, the results strongly support Hypothesis H2, indicating that the managerial competence within the GICA Group significantly influences marketing decision-making. This underscores the critical importance of talent development, strategic competency management, and staff motivation in enhancing marketing effectiveness.

5.1.5. Hypothesis H3: The Effect of Marketing Decision-Making on the Competitive Environment

To assess the influence of marketing decisions on the competitive environment, descriptive statistics were analyzed to evaluate key marketing decision-making practices within the organization. Table 10 summarizes the results.

Table 10. Descriptive Statistics – Marketing Decision-Making

Indicator	N	Mean	Std. Deviation
Market segmentation practices	52	3.52	1.18
Market positioning strategies	52	3.62	1.14
New product development	52	3.29	1.33
Evaluation of pricing strategies	52	3.54	1.23
Assessment of distribution performance	52	3.46	1.18
Assessment of communication strategy effectiveness	52	3.83	1.10
Use of past experience to resolve current marketing decision problems	52	3.69	1.23

The findings suggest that the company often engages in market segmentation ($M = 3.52$) and positioning strategy development ($M = 3.62$). New product development occurs less frequently ($M = 3.29$), while the evaluation of pricing ($M = 3.54$), distribution ($M = 3.46$), and communication strategies ($M = 3.83$) are perceived as commonly practiced. Additionally, the organization is reported to frequently draw on past experiences to inform current decision-making ($M = 3.69$). These results reflect a generally proactive and structured marketing decision-making process.

To test Hypothesis H3, a linear regression was performed with the competitive environment as the dependent variable and marketing decision-making as the independent variable. Table 11 summarizes the findings.

Table 11. Regression Results – H3: Marketing Decision-Making → Competitive Environment

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	22.963	1	22.963	72.896	0.000
Residual	15.751	50	0.315		
Total	38.714	51			

R = 0.770, R² = 0.593, Adjusted R² = 0.585

The regression results indicate a strong and statistically significant relationship between marketing decision-making and the competitive environment ($R = 0.770$, $p < 0.001$). The coefficient of determination (R^2) of 0.593 shows that 59.3% of the variance in the competitive environment can be explained by the model. The adjusted R^2 (0.585) confirms the stability of the model.

The F-statistic of 72.896 and the associated p-value of 0.000 (< 0.05) confirm that the model is highly significant. Thus, the null hypothesis can be rejected in favor of the alternative.

The findings strongly support Hypothesis H3, suggesting that marketing decisions—particularly those informed by the organization's marketing information system (MIS)—have a significant influence on the firm's competitive environment. The results underscore the pivotal role of strategic marketing actions in enhancing the company's market competitiveness and positioning.

5.2. Combined effect of SIM, managerial competence, and marketing decision-making on the competitive environment

A multiple linear regression analysis was conducted to assess the simultaneous impact of three independent variables: managerial competence, marketing decision-making, and the marketing information system (MIS) on the competitive environment. The results provide several meaningful insights.

The variable managerial competence yielded a positive and statistically significant effect on the competitive environment, with an unstandardized coefficient (B) of 0.273 and a significance level of $p = 0.041$. This suggests that improvements in managerial skills within the organization are associated with enhanced competitive advantage. The collinearity statistics for this variable (tolerance = 0.340, VIF = 1.937) indicate that multicollinearity is not a concern.

Marketing decision-making had the strongest positive and significant impact, with a B value of 0.535 and a p-value of 0.004. This finding highlights the critical role of effective marketing decisions in improving the firm's competitive positioning. Collinearity diagnostics (tolerance = 0.400, VIF = 1.502) further support the reliability of the result.

The marketing information system (MIS) also showed a significant and positive effect on the competitive environment ($B = 0.317$, $p = 0.004$). This confirms the strategic role of marketing intelligence systems in enhancing business competitiveness. Again, the tolerance (0.512) and VIF (1.953) values are within acceptable ranges, ruling out multicollinearity.

The overall model demonstrates a strong correlation with the competitive environment ($R = 0.852$), and the coefficient of determination ($R^2 = 0.725$) indicates that 72.5% of the variance in the competitive environment is explained by the combined predictors. The adjusted $R^2 = 0.708$, confirming the robustness and generalizability of the model. The standard error of the estimate is 0.47073, and the Durbin-Watson statistic = 1.622 suggests an acceptable level of autocorrelation in the residuals.

Table 12. Multiple Regression Summary – Competence, Marketing Decision, and MIS → Competitive Environment

Predictor	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	0.334	0.291	—	1.148	0.257	—	—
Managerial Competence	0.273	0.130	0.272	2.100	0.041	0.340	1.937
Marketing Decision	0.535	0.110	0.366	3.055	0.004	0.400	1.502

Marketing Information System MIS	0.317	0.105	0.320	3.026	0.004	0.512	1.953
-------------------------------------	-------	-------	-------	-------	-------	-------	-------

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	28.078	3	9.359	42.239	.000
Residual	10.636	48	0.222		
Total	38.714	51			

R	R ²	Adjusted R ²	Std. Error of Estimate	Durbin-Watson
0.852	0.725	0.708	0.47073	1.622

In summary, the findings of this multiple regression analysis reveal that managerial competence, marketing decision-making, and marketing information systems all play significant roles in shaping the competitive environment. Among the predictors, marketing decision-making exerts the strongest influence, followed by SIM, and then managerial competence. These results underscore the importance of well-informed strategic market-ing actions and robust information systems as key levers for enhancing a firm's competi-tive position. The absence of significant multicollinearity and the strength of the model provide further validation of the robustness and reliability of the results.

6. Conclusion

This study contributes to the existing literature on Marketing Information Systems (MIS) by empirically validating their strategic role in enhancing various dimensions of organizational performance. The findings confirm that internal data management, mar-keting intelligence, and marketing research significantly influence decision-making pro-cesses and the competitive environment. The research reinforces the theoretical framework suggesting that MIS is not merely a support tool but a core element of strategic marketing management. It also highlights the importance of organizational adaptability and a pro-active market orientation, both of which are underpinned by effective use of MIS.

From a managerial perspective, the results underscore the vital importance of inte-grating MIS into daily operations. The organization has demonstrated frequent and effec-tive use of market segmentation and positioning strategies, supported by robust competi-tive monitoring and marketing research. These practices enable timely and informed deci-sion-making, improved responsiveness to market changes, and enhanced customer feed-back mechanisms. The use of MIS has clearly boosted information accessibility, competi-tive intelligence, and financial performance. Although areas such as product improve-ment and communication cost reduction show more modest benefits, the overall impact of MIS on operational and strategic performance is substantial. Managers are therefore en-couraged to further institutionalize and expand MIS capabilities across all departments to maximize value creation.

Despite its valuable insights, the study has certain limitations. First, the scope was limited to a single company, which may affect the generalizability of the findings. Second, the study focused on self-reported data, which may carry the risk of response bias. Third, the cross-sectional design does not allow for a dynamic assessment of how MIS impacts performance over time.

Future research could address these limitations by conducting longitudinal studies across multiple organizations and industries to assess the long-term effects of MIS im-plementation. Additionally, investigating the integration of emerging technologies such as artificial intelligence, big data analytics, and customer relationship management systems into MIS

could provide a more comprehensive view of their potential in driving marketing innovation. Further exploration into the role of organizational culture and digital skills in facilitating effective MIS usage would also offer valuable insights.

References

- [1] Alshurideh, M., Aboul Ella, H., & Masa'deh, R. (2021). The Effect of Coronavirus Disease (COVID-19) on Business Intelligence. <https://doi.org/10.1007/978-3-030-67151-8>
- [2] Assael, H. (1998). Consumer Behavior and Marketing Action. South-Western College Pub.
- [3] Aveni, R. (1995). Hypercompétition (Éditions Vuibert). <https://www.eyrolles.com/Entreprise/Livre/hyper-competition-9782711779703/>
- [4] Azami, A. (1999). Les pratiques en matière de système d'information marketing: Une étude empirique des PME manufacturières [Masters, Université du Québec à Trois-Rivières]. <https://depot-e.uqtr.ca/id/eprint/3348/>
- [5] Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99–120. <https://doi.org/10.1177/014920639101700108>
- [6] Brisoux, J. (1995). Image et positionnement: Une approche basée sur la catégorisation des marques. 128–151. <http://pascal-francis.inist.fr/vibad/index.php?action=getRecordDetail&idt=6290303>
- [7] Bruecker, R. D. (1995). Stratégies organisationnelles. *Economica*.
- [8] Brühlhart, M. (2009). An Account of Global Intra-industry Trade, 1962–2006. *The World Economy*, 32(3), 401–459. <https://doi.org/10.1111/j.1467-9701.2009.01164.x>
- [9] Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35(1), 128–152. <https://doi.org/10.2307/2393553>
- [10] Crick, D., & Jones, M. V. (2000). Small High-Technology Firms and International High-Technology Markets. *Journal of International Marketing*, 8(2), 63–85. <https://doi.org/10.1509/jimk.8.2.63.19623>
- [11] Dhaoui, C. (2008). Les critères de réussite d'un système d'intelligence économique pour un meilleur pilotage stratégique: Proposition d'un Modèle d'Évaluation de la Réussite d'un Système d'Intelligence Économique MERSIE [Phdthesis, Université Nancy 2]. <https://hal.univ-lorraine.fr/tel-01752721>
- [12] Djennas, M. (2003). Impact de l'utilisation du système d'information marketing sur la performance organisationnelle (Cas des entreprises de la wilaya de Tlemcen) [Thesis, university of tlemcen]. <http://dspace1.univ-tlemcen.dz/handle/112/3373>
- [13] Ducreux, Jean-M., & Abate, R. (2009). Le grand livre de la stratégie (Boston Consulting Group, Eyrolles). <https://www.eyrolles.com/Entreprise/Livre/le-grand-livre-de-la-strategie-9782212542462/>
- [14] Duncan, R. B. (1972). Characteristics of Organizational Environments and Perceived Environmental Uncertainty. *Administrative Science Quarterly*, 17(3), 313–327. <https://doi.org/10.2307/2392145>
- [15] Eldon, Y. L. (1997). Marketing Information Systems in Small Companies. *Information Resources Management Journal (IRMJ)*, 10(1), 27–35.
- [16] Elenkov, D. S., Judge, W., & Wright, P. (2005). Strategic leadership and executive innovation influence: An international multi-cluster comparative study. *Strategic Management Journal*, 26(7), 665–682. <https://doi.org/10.1002/smj.469>
- [17] Garibaldi, G. (2008). Analyse stratégique (3ème édition Éditions d'organisation). <https://www.eyrolles.com/Entreprise/Livre/analyse-strategique-9782212540130/>
- [18] Gbolagade, A. (2013). Impact of Marketing Strategy on Business Performance A Study of Selected Small and Medium Enterprises (Smes) In Oluyole Local Government, Ibadan, Nigeria. *IOSR Journal of Business and Management*, 11, 59–66. <https://doi.org/10.9790/487X-1145966>
- [19] George, D., & Mallery, P. (2010). SPSS for Windows Step by Step: A Simple Guide and Reference, 17.0 Update. Allyn & Bacon.
- [20] Hall, R. (1993). A Framework Linking Intangible Resources and Capabilities to Sustainable Competitive Advantage. *Strategic Management Journal*, 14(8), 607–618.
- [21] Herrmann, J.-L. (1995). Contribution à la connaissance de la mise en oeuvre du concept marketing en PME manufacturières: Le cas du développement de produits [These de doctorat, Nancy 2]. <https://theses.fr/1995NAN22018>
- [22] Johnson, G., Scholes, K., Whittington, R., & Fréry, F. (2008). Stratégique (PEARSON). <https://www.librairie-gallimard.com/livre/9782744074981-strategie-8e-edition-gerry-johnson-kevan-scholes-richard-whittington-frederic-frery/>
- [23] Jolibert, A. (1991). «The role of marketing in the survival of small industrial firms in a developing region», dans G.E. Hills et R.W. Laforge, *Research at the Marketing / Entrepreneurship Interface, Proceedings of the University of Illinois at Chicago Symposium on Marketing and Entrepreneurship*, p. 126.
- [24] Kotler, P., & Dubois, B. (2000). *Marketing Management - (10ème Publi Union)*. <https://www.eyrolles.com/Entreprise/Livre/marketing-management-9782857901235/>
- [25] Kotler, P., Keller, K. L., Manceau, D., & Hémonnet-Goujot, A. (2015). *Marketing management (15th edn)*. Pearson Education.
- [26] Kotler, P. T., & Armstrong, G. (2011). *Principles of Marketing*. Pearson Education.
- [27] Krafft, J. (1999). Le Processus de Concurrence. *Economica*. <https://hal.science/hal-00463575>
- [28] Lambin, J.-J., & Moerloose, C. de. (1999). *Marketing stratégique et opérationnel - 8e éd.: Du marketing à l'orientation-marché*. Dunod.
- [29] Lawless, M. W. (1991). Commodity Bundling For Competitive Advantage: Strategic Implications. *Journal of Management Studies*, 28(3), 267–280.
- [30] Luo, Y. (1999). Environment-strategy-performance relations in small businesses in China: A case of township and village enterprises in southern China. *Journal of Small Business Management; Milwaukee*, 37(1).
- [31] Magretta, J. (2012). *Comprendre michael porter*. édition Eyrolles. <https://www.eyrolles.com/Entreprise/Livre/comprendre-michael-porter-9782212554502/>
- [32] Marchesnay, M. (1988). De la veille technologique au pilotage stratégique. *Revue Internationale P.M.E Sainte-Foy*, 1(3–4), 335–340.
- [33] Melbouci, L. (2008). L'entreprise algérienne face à quel genre d'environnement? *La Revue des Sciences de Gestion*, 234(6), 75–83. <https://doi.org/10.3917/rsg.234.0075>

- [34] Miller, D., & Friesen, P. H. (1983). Strategy-Making and Environment: The Third Link. *Strategic Management Journal*, 4(3), 221–235.
- [35] Montgomery, D. B., & Urban, G. L. (1969). Management science in marketing. https://ink.library.smu.edu.sg/lkcsb_research/2331/
- [36] Morris, M. H., Hansen, S. D., & Pitt, L. F. (1995). Environmental turbulence and organizational buying: The case of health benefits in South Africa. *Industrial Marketing Management*, 24(4), 305–315. [https://doi.org/10.1016/0019-8501\(95\)00014-2](https://doi.org/10.1016/0019-8501(95)00014-2)
- [37] Nwokah, N., & Macclayton, D. W. (2006). Customer-focus and business performance: The study of food and beverages organizations in Nigeria. *Measuring Business Excellence*, 10(4), 65–76. <https://doi.org/10.1108/13683040610719281>
- [38] Oliver, R. L. (1993). Cognitive, Affective, and Attribute Bases of the Satisfaction Response. *Journal of Consumer Research*, 20(3), 418–430.
- [39] Pacitto, J. C., & Tordjman, F. (1999). Peut-on parler de marketing dans la tres petite entreprise? *Papers*, Article 99.01. <https://ideas.repec.org/p/fth/inrege/99.01.html>
- [40] Pettigrew, D., & Turgeon, N. (1996). *Marketing*. 3eme Edition. Chenelière/McGraw-Hill.
- [41] Porter, M. E. (1980). How Competitive Forces Shape Strategy. *Harvard Business Review*, 57(2), 137–145.
- [42] Porter, M. E. (1985). Competitive advantage: Creating and sustaining superior performance. New York [u.a.] : Free Pr. [u.a.].
- [43] Portnoff, A.-Y. (1990). Produire sur mesure, le client roi. *Futurible*, 148, 67–73.
- [44] Rowntree, S., & John, A. (1991). High technology product development in small firms a challenge for marketing specialists. *Technovation*, 4, 247–259.
- [45] Song, S., Sjöström, P. J., Reigl, M., Nelson, S., & Chklovskii, D. B. (2005). Highly Nonrandom Features of Synaptic Connectivity in Local Cortical Circuits. *PLOS Biology*, 3(3), e68. <https://doi.org/10.1371/journal.pbio.0030068>
- [46] Strategor. (2004). *Strategor: Politique générale de l'entreprise*. Dunod.
- [47] Taleghani, M., & Almasi, M. (2011). Evaluate the Factors Affecting Brand Equity from the Perspective of Customers Using Aaker's Model (SSRN Scholarly Paper No. 1944550). Social Science Research Network. <https://doi.org/10.2139/ssrn.1944550>
- [48] Vorhies, D. W., Morgan, R. E., & Autry, C. W. (2009). Product-Market Strategy and the Marketing Capabilities of the Firm: Impact on Market Effectiveness and Cash Flow Performance. *Strategic Management Journal*, 30(12), 1310–1334.
- [49] Zaltman, G., & Burger, P. (1975). *Marketing Research: Fundamentals and Dynamics*. Dryden Press.