

Research paper

Moroccan automotive companies and the crucial importance of customer integration for their operational performance*

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PAPER INFO

Paper History

Received 17 October
2023

Accepted 11 August 2024

Automotive companies
customer integration
operational performance
impact of customer
integration on operational
performance

ABSTRACT

In a dynamic industrial context in Morocco, the automotive sector holds a predominant position in the national economy but faces intense global competition where operational performance is crucial. Thus, customer integration emerges as a major strategic imperative to maintain the competitiveness of Moroccan automotive companies. This integration, encompassing all interactions with customers throughout the product lifecycle, is a critical lever to optimize operational continuity and enhance service quality. This article closely examines the strategic importance of customer integration in this sector, analyzing its impact on business continuity and competitiveness while offering strategies and recommendations to strengthen customer engagement and optimize operational performance. The research methodology includes a literature review, implementation of research methods, data collection, statistical analysis of data, and writing and discussion of results, followed by a final synthesis.

1. Introduction

In the dynamic industrial environment of Morocco, the automotive sector plays a vital role as a cornerstone of the national economy. Companies operating in this field face fierce global competition where operational performance is of paramount importance for their success. In this context, customer integration emerges as a crucial strategic imperative to maintain the competitiveness of Moroccan automotive companies. This integration, covering all interactions with customers throughout the product lifecycle, constitutes a critical lever to optimize operational continuity and enhance the quality of services offered. This article closely examines the strategic importance of customer integration in this specific sector, analyzing its impacts on business continuity and competitiveness, while addressing the following research question: What is the impact of customer integration on the operational performance of automotive companies in Morocco? By highlighting the challenges and

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opportunities associated with this integration, this article also proposes strategies and recommendations aimed at strengthening customer engagement and thus optimizing the operational performance of automotive companies in Morocco. The approach of this research begins with a literature review, the implementation of research methods, data collection, analysis using appropriate statistical application, as well as the writing and discussion of results. Finally, this study concludes with a synthesis of the obtained results.

2. Conceptual Framework

2.1 The strategic importance of customer integration

The strategic importance of customer integration in businesses is widely recognized in academic and professional literature. According to a study conducted by [1], customer integration has become a crucial element of corporate strategy, with an increasing focus on customization and long-term customer engagement. The authors emphasize that companies that successfully integrate customer feedback into their operational processes experience improved customer loyalty, increased revenue, and reduced costs associated with customer service. Furthermore, a study conducted by [2] highlights the positive impact of customer integration on companies' competitive differentiation. The authors emphasize that companies offering unique and personalized customer experiences are better positioned to stand out from the competition and retain their customer base. Additionally, an analysis by [3] underscores the growing importance of artificial intelligence (AI) and data analytics in customer integration. The authors point out that companies effectively utilizing AI and data analytics technologies can enhance personalization, operational efficiency, and customer satisfaction. In conclusion, this review of recent literature underscores the strategic importance of customer integration in the current competitive landscape, highlighting its impacts on customer retention, competitive differentiation, and the utilization of emerging technologies [4].

2.2 Operational performance

The recent study on operational performance highlights several important trends and perspectives in the field. According to a study by [5], operational performance has become a critical factor for the competitiveness of businesses in an ever-evolving commercial environment. The authors emphasize the importance of effective operations management, productivity, and product/service quality to achieve high levels of operational performance. Additionally, an analysis by [6] underscores the growing importance of environmental sustainability in companies' operational performance. The authors highlight that integrating sustainable practices into operations can not only reduce costs and improve efficiency but also enhance the long-term reputation and competitiveness of businesses. Based on these definitions, it is clear that operational performance is an essential and indispensable element of many performance measurement frameworks observed in the current literature, and operational performances have been measured across the following dimensions: flexibility, time, quality, and cost.

2.3 The impact of the strategic importance of customer integration on operational performance

Existing literature highlights the strategic importance of customer integration on companies' operational performance. According to a study by [5], effective customer relationship management (CRM) directly contributes to a significant improvement in operational performance by enhancing customer loyalty, reducing service costs, and boosting revenue growth. Additionally, research conducted by [2] underscores the crucial role of customer integration in competitive differentiation. Companies that successfully integrate customer feedback into their operational processes are better positioned to offer personalized products and services, enabling them to stand out from the competition and strengthen their market position. Furthermore, a study by [7] emphasizes the positive impact of customer integration on companies' operational flexibility. Taking into account the needs and preferences of customers, companies can better adapt to fluctuations in demand and market changes, thus enhancing their ability to maintain effective operations and meet the changing needs of their customers. In summary, these literature studies converge towards the conclusion that customer integration is a key element in optimizing companies' operational performance, positively influencing their customer loyalty, competitive differentiation, and operational flexibility [8].

2.4 Theoretical framework and hypothesis development

The objective of this study is to establish a structural model explaining the relationship between customer integration and operational performance in the Moroccan automotive sector, based on the formulated hypotheses. The independent variable of customer integration was measured by a set of items (IC1, IC2, IC3, IC4, IC5, IC6, IC7, IC8, IC9, IC10). Concurrently, the dependent variable of operational performance was operationalized across four dimensions, namely flexibility (PF), quality (PQ), cost (PC), and lead time (PT), and each dimension was measured by a set of items from 1 to 6.

The present study is based on the framework proposed in Figure 1. This framework has been established based on the Dynamic Capabilities Theory (DCT), which is an extension of the Resource-based View theory. In the context of this study, the application of DCT is based on the assumption that companies must be responsive by reconfiguring their customer integration practices, thereby evolving their operational performance.

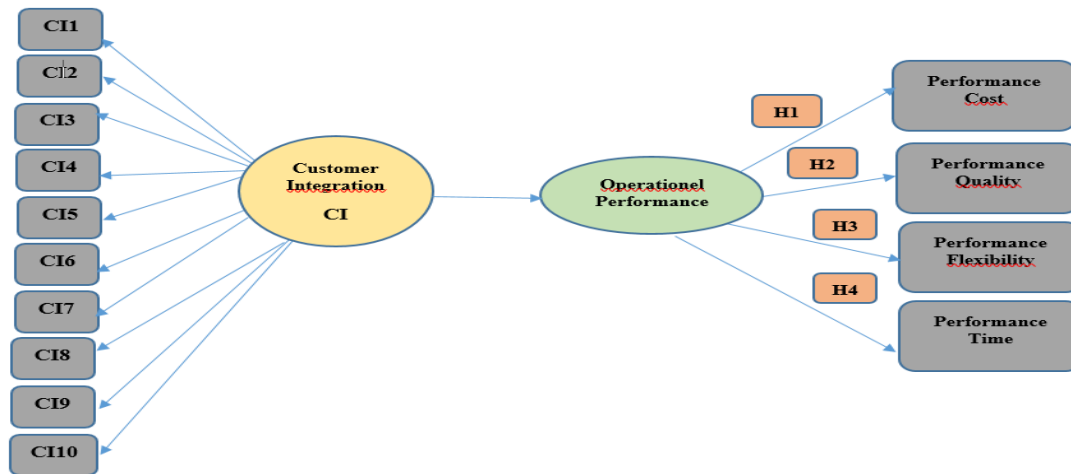


Fig. 1. Hypothetical Research Model

Based on the aforementioned arguments, the hypotheses have been formulated as follows:

- Ha: Customer integration has a positive influence on Cost Efficiency Performance.
- Hb: Customer integration has a positive influence on Customer Service Performance (quality).
- Hc: Customer integration has a positive influence on Flexibility Performance.
- Hd: Customer integration has a positive influence on Time Performance.

3. Research methodology

A structured questionnaire will be developed to collect quantitative data from selected automotive companies. The questionnaire will include questions on various aspects of customer integration. We contacted companies directly or indirectly involved in the Moroccan automotive sector located throughout the country, which allowed us to collect data from 253 companies that agreed to participate. Among these companies, 4 dropped out of completing the questionnaire until the end. Since our questionnaire must be fully completed by the respondent for it to be valid, we were able to utilize data from a total of 249 companies out of the initial 253 companies consulted at the beginning of the operation. Data will be collected through in-person or telephone interviews with automotive company representatives. The quantitative data collected will be analyzed using statistical software such as SPSS. Descriptive analyses such as means, standard deviations, and percentages will be used to describe the characteristics of customer integration and operational performance of Moroccan automotive companies.

Correlation and regression analyses will also be conducted to assess the relationship between customer integration and operational performance. The results of the analysis will be interpreted to address the research objectives. Conclusions drawn from the study will be discussed in terms of their practical significance and relevance for automotive companies.

4. Result

The main objective of this study is to analyze the impact of customer integration on the operational performance of automotive companies in Morocco using quantitative data. We will explain how the relevance of survey response data was established and address the steps taken to transform raw data into a suitable format for quantitative analysis. The resulting dataset was pre-tested to ensure suitability for multivariate statistical analysis. The average values of all manifest variables were higher than the mean (3), except for variables IC8 and CO5, which produced averages lower than 3 (all the results given in the following tables are compiled by myself).

Table 1. Descriptive Statistics of Items.

	N	Minimum	Maximum	Mean	Variance	Skewness	Kurtosis
CI1	249	1	5	4.04	1.099	-1.025	.616
CI2	249	1	5	3.96	1.148	-.761	.003
CI3	249	1	5	3.65	1.244	-.436	-.995
CI4	249	1	5	3.75	1.472	-.856	-.079
CI5	249	1	5	4.20	1.034	-1.255	.994
CI6	249	1	5	3.00	1.185	.057	-.797
CI7	249	1	5	3.80	.938	-.707	.602
CI8	249	1	5	2.75	1.230	.085	-.831
CI9	249	1	5	3.96	.930	-.906	.670
CI10	249	1	5	3.47	.976	-.371	-.444

	N	Minimum	Maximum	Mean	Variance	Skewness	Kurtosis
FLEX1	249	1	5	3.37	.767	-.588	.936
FLEX2	249	1	5	3.66	.999	-.455	-.250
FLEX3	249	1	5	3.33	1.236	-.511	-.409
FLEX4	249	1	5	3.95	1.014	-1.050	.941
FLEX5	249	1	5	3.76	1.272	-.585	-.505
FLEX6	249	1	5	3.88	1.050	-1.184	1.214

	N	Minimum	Maximum	Mean	Variance	Skewness	Kurtosis
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TIM1	249	1	5	3.96	.954	-.634	-.269
TIM2	249	1	5	3.96	.833	-.986	1.238
TIM3	249	1	5	3.48	.759	-.221	.347
TIM4	249	1	5	3.98	.919	-.949	.797
TIM5	249	1	5	3.14	1.092	.092	-.753
TIM6	249	1	5	3.63	.767	-.392	-.004

	N	Minimum	Maximum	Mean	Variance	Skewness	Kurtosis
QUAL1	249	1	5	3.30	1.034	-.145	-.244
QUAL2	249	1	5	4.06	.686	-1.015	1.578
QUAL3	249	1	5	3.95	.772	-.877	1.326
QUAL4	249	1	5	4.16	1.004	-1.265	1.173
QUAL5	249	1	5	4.13	.793	-.989	.875

	N	Minimum	Maximum	Mean	Variance	Skewness	Kurtosis
CO1	249	1	5	3.93	.769	-.618	.319
CO2	249	1	5	4.10	1.152	-1.259	1.184
CO3	249	1	5	3.46	1.048	-.602	.129
CO4	249	1	5	3.90	.886	-.947	1.274
CO5	249	1	5	2.36	1.949	.678	-.945
CO6	249	1	5	3.55	1.022	-.857	.515

(Source: Compiled by myself)

The majority of mean values are above the midpoint of (3) on the measurement scale, indicating the presence of characteristics measured by the manifest variables. The values distributed around the mean indicate that the sample is suitable for further analysis.

Table 2. Factor Analysis of Customer Integration Items

Items	Items Nbre	Factor Contribution	Reliability
IC1	10	.685	KMO = .825 Chi-Square=1471.642 Df=45 P= 0.000
IC2		.562	
IC3		.588	
IC4		.664	
IC5		.754	
IC6		.834	
IC7		.553	
IC8		.633	
IC9		.721	
IC10		.484	
Eigen value		5.294	
Bartlett test: Significant		Varimax	
Variance explained in %		52.942%	

Source: Compiled by myself

The results indicated that all correlations were above 10%. Additionally, the Kaiser-Meyer-Olkin (KMO) test of sampling adequacy was 0.825, while the Bartlett's test of sphericity was found to be significant ($\chi^2 = 1471.642$, $p < 0.001$), demonstrating that the data were suitable for conducting a Factor Analysis.

Table 3. Factor Analysis of Flexibility Items

Items	Items Nbre	Factor Contribution	Reliability
FLEX1	6	.493	KMO = .831 Chi-Square=848.660 Df=15 P= 0.000
FLEX2		.759	
FLEX3		.656	
FLEX4		.823	
FLEX5		.709	
FLEX6		.338	
Eigen value		3.778	
Bartlett test: Significant		Varimax	
Variance explained in %		62.963%	

Source: Compiled by myself

The factor loadings are above the weight of 0.5. The results indicated that all correlations were above 10%. Additionally, all partial correlations were also below 0.7. Furthermore, the Kaiser-Meyer-Olkin (KMO) test of sampling adequacy was 0.831, during which the Bartlett's test of sphericity was significant ($\chi^2 = 848.660$, $Df=15$, $p < 0.001$).

Table 4. Factor Analysis of Time Items

Items	Items Nbre	Factor Contribution	Reliability
TIM1	6	.735	KMO = .843 Chi-Square=716.177 Df=15 P= 0.000
TIM2		.658	
TIM3		.584	
TIM4		.590	
TIM5		.454	
TIM6		.652	
Eigen value		3.673	
Bartlett test: Significant		Varimax	
Variance explained in %		61.212%	

Source: Compiled by myself

The factor loadings are above 0.5. The results indicated that all correlations were above 10%. Additionally, all partial correlations were also below 0.7. Furthermore, the Kaiser-Meyer-Olkin (KMO) test of sampling adequacy was 0.843, during which the Bartlett's test of sphericity was significant ($\chi^2 = 716.17$, $p < 0.001$).

Table 5. Factor Analysis of Quality Items

Items	Items Nbre	Factor Contribution	Reliability
QUAL1	5	.563	KMO = .828 Chi-Square=575.436 Df=10 P= 0.000
QUAL2		.690	
QUAL3		.728	
QUAL4		.544	
QUAL5		.720	
Eigen value		3.246	
Bartlett test: Significant		Varimax	
Variance explained in %		64.914%	

Source: Compiled by myself

Les contributions factorielles sont supérieures à 0,5. Les résultats ont indiqué aussi que toutes les corrélations étaient supérieures à 10 %. 0,3 et toutes les corrélations partielles étaient également inférieures à 0,7. En outre, le test Kaiser-Meyer-Olkin (KMO) d'adéquation de l'échantillonnage était de 0.828, au cours duquel le test de sphéricité de Bartlett était significatif ($\chi^2 = 575.436$, $p < 0,001$).

Table 6. Factor Analysis of Cost Items

Items	Items Nbre	Factor Contribution	Reliability
CO1	6	.511	KMO = .773 Chi-Square=590.679 Df=15 P= 0.000
CO2		.736	
CO3		.689	
CO4		.763	
CO5		.875	
CO6		.761	
Eigen value		3.138	
Bartlett test: Significant		Varimax	
Variance explained in %		52.294%	

Source: Compiled by myself

The factor loadings are above 0.5. The results also indicated that all correlations were above 10%. Additionally, all partial correlations were also below 0.7. Furthermore, the Kaiser-Meyer-Olkin (KMO) test of sampling adequacy was 0.773, during which the Bartlett's test of sphericity was significant ($\chi^2 = 590.679$, $p < 0.001$).

Table 7. Structural Analysis Results

Hypothesis				Estimate	S.E.	C.R.	P	Results
Ha	CO	<---	IC	.358	.045	7.934	***	Supported
Hb	QUAL	<---	IC	.412	.044	9.272	***	Supported
Hc	FLEX	<---	IC	1.036	.073	14.280	***	Supported
Hd	TIM	<---	IC	.661	.059	11.190	***	Supported

Source: Compiled by myself

From the table above, it can be said that the results indicate that all four hypotheses are significant and validated.

The results of this study emphasize the crucial importance of customer integration in enhancing the operational performance of automotive companies. By analyzing the aspects of cost, quality, flexibility, and time, it is clear that companies that effectively integrate customer feedback into their operational processes benefit significantly. Firstly, in terms of costs, successful customer integration helps to reduce expenses related to product recalls and post-sale repairs by quickly identifying issues and implementing appropriate solutions [9]. In terms of quality, customer integration translates into continuous product improvement through customer feedback, thereby ensuring high quality standards and increased customer satisfaction. Additionally, greater flexibility is observed in companies that integrate customer needs and preferences into the design and production of their products, allowing them to adapt more effectively to fluctuations in demand and market trends. Finally, in terms of time, smooth communication with customers throughout the sales and service process reduces response and problem resolution times, facilitating more efficient operations management. In summary, these results highlight the strategic importance of customer integration for optimizing the operational performance of automotive companies, thus offering a significant competitive advantage in a dynamic and competitive business environment.

5. Discussion of the Results

The results of the study will be presented and discussed in light of previous studies as follows:

The discussion of the results highlights the strategic importance of customer integration in improving the operational performance of Moroccan automotive companies. The analyzed data reveal that companies

effectively integrating customer feedback into their operational processes benefit significantly. Firstly, successful customer integration helps to reduce costs associated with product recalls and post-sale repairs, thereby improving profitability and competitiveness [8]. Additionally, the continuous improvement of products through customer feedback ensures high-quality standards and increased customer satisfaction, which contributes to strengthening brand reputation and customer loyalty [7]. By integrating customer needs and preferences into the design and production process, companies can also better adapt to fluctuations in demand and market trends, thereby enhancing their operational flexibility [4]. Finally, smooth communication with customers throughout the sales and service process reduces response and problem resolution times, thus optimizing operational efficiency and customer satisfaction [10]. These results underline the crucial importance of customer integration for optimizing the operational performance of automotive companies in Morocco, thereby offering a significant competitive advantage in a dynamic and competitive business environment.

6. Conclusion

In conclusion, the analysis of the crucial importance of customer integration for the operational performance of Moroccan automotive companies highlights a fundamental strategic aspect in an ever-evolving competitive context. The results of this study underscore that companies successfully integrating customer feedback into their operational processes benefit significantly. By reducing costs, improving quality, strengthening operational flexibility, and optimizing time management, these companies can not only meet changing customer expectations but also anticipate and adapt to market dynamics [11]. Thus, in a country like Morocco where the automotive industry plays a major economic role, it is imperative for companies in the sector to recognize the strategic importance of customer integration and effectively incorporate it into their daily operations. This approach not only strengthens the competitiveness of Moroccan automotive companies in the national and international markets but also contributes to supporting the sustainable growth of the automotive industry in the country. Ultimately, customer integration emerges as an essential pillar to ensure the sustainability and prosperity of Moroccan automotive companies in an increasingly demanding business landscape.

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