

## The competitive positioning of Moroccan automotive industry: A diagnosis attempt

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**ABSTRACT:** The contemporary economic history of Morocco shows a strong aspiration to convert towards industry as a growth catalyst. Since it gained its independence, considerable efforts were made by the ambitious governments of the country to embark on this adventurous path. The automotive industry has been part of this vision since the very beginning. This paper suggests to trace back in time the path taken by the kingdom in the development of its automotive activity. The main aim is to evaluate the competitive position of Morocco based on Porter's diamond model which allows the identification of competitive advantages as well as obstacles that still hinder the industry's progress. First, through a methodological approach mainly based on an in depth documentary research and an analysis following a chronological timeline, this contribution provides a historical overview of the Moroccan experience. Then, the diagnosis made using the diamond's parameters offers a clear vision of the present situation and therefore spontaneously suggests reflection about the potential evolution perspectives to be considered. In fact, efforts made by Moroccan authorities to promote the country as an investment destination are undeniable. However, they are still not enough to build strong competitive advantages which cannot be easily imitated by competitors.

**KEYWORDS:** Porter's diamond, automotive sector, competitive advantage, industry, strategy.

### 1 INTRODUCTION

The automotive value chain is known to be among the most fragmented ones in the world. Nowadays a vehicle is a combination of inputs produced in different countries throughout the globe, in accordance with optimization strategies of automobile manufacturers. As for other countries of the MENA region, Morocco has been working on getting a role in this new globalized configuration of production. The early 2000s mark the outset of a major economic reform in which the industrial sector has a prominent place, and is intended to become a pillar of development.

The debate over industrialization in Morocco dates back to the early years of independence. The first strategies established by the newly emancipated government were highly ambitious given the sparse economic fabric of the country at the time. The voluntary action of the state through industrial policy aimed initially, to create a core for the Moroccan economy, set up on basic industries around which will be constituted a set of processing industries [1] (Jaidi, 1992). This strategy faced several economic difficulties and political tensions and hence the state abandoned its industrial projects in 1965 in favor of other sectors such as agriculture and tourism. From 1965 to 1972 two five-year strategies followed, with no particular interest for industry except for the change of course in 1968 to focus on downstream industries [2] (L'institut Royal des Etudes Stratégiques, 2014).

Moroccan government renewed its commitment to industry in 1973 through numerous public investments, particularly in the chemical and cement sectors. Acquisitions of shares by state holdings in the manufacturing fields such as textiles and dairy products were also a manifestation of this interest revival. However, the flourishing economic conjuncture behind these decisions (oil shock and the rise in phosphate prices) did not last long, surrendering to an economic slump beginning 1975. Drought and indebtedness caused the delay of economic projects and priority was given to the preservation of budgetary balances.

In 1983, Morocco joined the Structural Adjustment Program following the recommendations of the International Monetary Fund in order to reduce the public deficit, and adopt an effective industrial and trade policy. The choice of opening up to the world at this time was made along with the decision of focusing on sectors in which the country had a competitive advantage. Choosing to have

an open economy has since then confronted Morocco to the necessity of adjusting to the international production standards, especially after joining the General Agreement on Tariffs and Trade (GATT) in 1987.

In the early 2000s, industrialization has become more than ever a priority for the state, which implemented the Emergence plan I and II, establishing the concept of “the world crafts of Morocco” (Métiers Mondiaux du Maroc) which are six industrial sectors targeted by the government for a further development. These sectors were the aeronautic and automotive industries, textiles and leather, agri-food industry, electronics and offshoring. However, the path was strewn with pitfalls and the expected results were not forthcoming. The state then adopted the National Industrial Acceleration Plan in 2014 which established a new industrial business organization.

The aim of this research paper is to analyze the strengths and limitations of the Moroccan automotive sector on the basis of Porter's diamond model, which identifies a country's competitive advantages through very specific parameters. The adopted methodological approach starts with reconstructing the history of the development of the sector in a chronological way allowing us to recognize the importance given to the sector in each of the country's industrial strategies. This contextualization effort which relies on an in-depth documentary analysis is crucial to the understanding of the way some competitive advantages were built up over time. It is at least as important to put the light on aspects that were neglected and still represent obstacles to the sector's development today. We will then present Porter's diamond model mainly based on his book “The competitive advantage of nations”. And finally, we will apply this model to the Moroccan automotive sector by analyzing the four attributes of the diamond in the light of the Moroccan experience.

## 2 THE MOROCCAN AUTOMOTIVE SECTOR: HISTORICAL OVERVIEW

The automotive industry has interested the Moroccan government long before the recent industrial strategies of the last two decades. It was back in 1959, shortly after its independence, that the kingdom created by Dahir the Moroccan Automobile Construction Company (Société Marocaine de la Construction Automobile, SOMACA). This milestone step was the fruit of the collaboration between the government on the one hand, and Fiat Company and its French subsidiary Simca on the other. Located in the northern Casablanca suburbs, this new structure was involved in the assembly of mechanical parts and bodywork for vehicles produced in Morocco. The capital of SOMACA was distributed as follows: 20% held by Fiat, 20% by Simca, 38% by the Moroccan State, 8% by Renault and 14% by various Moroccan shareholders [3] (Direction des Etudes et des Prévisions Financières, DEPF 2015). The factory occupied an area of 90,000 m<sup>2</sup> for a production capacity of no more than 30,000 vehicles per year.

If the creation of SOMACA historically marks Morocco's entry into the automotive world, several key stages have punctuated this adventure. Initially, the industry's objective was to limit the brands and models produced in order to build a strong local know-how. Thus, any creation, sale, assembly or transfer of an assembly line had to be subject to an authorization. The brands assembled in the SOMACA factory at this point are FIAT and SIMCA. Moroccan authorities subsequently began authorizing the manufacture of other brands by SOMACA, including Renault, Opel and Austin, as an effort to encourage investment. This is how the first Renault 4 and 16 came out of the Moroccan assembly lines [3] (Direction des Etudes et des Prévisions Financières 2015). This openness to new brands and new models was not without consequences on the local added value, which was starting to be affected.

As a reaction to this situation, the state issued the decree of October 1970 establishing two main measures. First, it temporarily prohibits the import from abroad of parts that are made in Morocco with an acceptable level of competitiveness. Then, it requires 40% of the components of vehicles assembled in Morocco to be produced in the kingdom in order to encourage the establishment of suppliers on the national territory, but also to expand the offer of vehicles on the Moroccan market.

As the goal of local added value turned out to be clearly unachievable, a new law (10.81) was enacted in 1982 to adjust the situation. Known as the Integration-Compensation Law, it was intended to introduce the concept of industrial compensation in the negotiations of major public contracts. The supplier commits, in application of this new approach, to carry out economic activities in the host country. The Moroccan state thus requires car manufacturers to promote exports and create new units of production in the country. The Law 10-81 sets the compensation integration rate at a threshold of 40% for passenger cars and light commercial vehicles, and 50% for heavy vehicles. This rate will then increase to 60% for all assembly lines as of 1994 [4] ([www.adala.justice.gov.ma](http://www.adala.justice.gov.ma)).

The year 1995 was a major turning point in the history of the Moroccan automotive industry since it was the year the Moroccan state signed an agreement with Fiat Company for the production of an “economic car” by SOMACA. The objective was twofold, first to orient Moroccan demand, until then preferring used cars, towards the new car segment by offering the Moroccan citizen an affordable car making him change his consumption habits and his purchasing decisions. A second objective was to increase the production of the industry's inputs by manufacturing a higher volume. This first step was then reinforced by the signature in 1996 of a second agreement between the Moroccan state, Renault and Sopriam, for the manufacture of a light economic utility vehicle with an integration-compensation rate of 100%: 25% of integration and 75% of compensation [3] (Direction des Etudes Economiques et Financières, DEPF, 2015).

The automotive sector was denationalized in 2003 with the takeover of the 38% owned by the Moroccan state by Renault for 95 million Dirhams. In fact, Renault won the tender thanks to its project for a new economic car "Dacia Logan" intended mainly for export [5] (Organisation internationale du Travail, 2019). The company became a majority shareholder in 2005 when it bought parts from Fiat Auto Spa. It then worked on expanding the plant in order to meet future demand from European countries as well as Morocco's Arabic trade partners.

The launch of the economic car was accompanied by a series of fiscal measures, including exemption from the import duty for completely knocked down (CKD) collections, and a reduced valued-added tax (VAT) rate of 7%. The initial production volume was set at 30,000 units per year, including 15,000 intended for export [3] (Direction des Etudes Economiques et Financières, DEPF 2015). Dacia Logan was thus exported for the first time to France in 2007 and the success it encountered encouraged Renault to develop a whole range around the same concept. This was the Entry range composed of five models: Logan, Sandero, Duster, Lodgy and Dokker, and whose production volume has grown steadily since its launch (more than 1.1 million in 2015 against 400,000 in 2007).

In 2007, a new agreement was signed between the Moroccan government and Renault-Nissan group to allocate a budget of more than 6.6 billion Dirhams to the creation of a new production site in Tangier with a capacity of 400,000 vehicles. The new plant, considered to be the largest but also the "cleanest" in Africa and the Southern Mediterranean, started producing in 2012 with 90% of the production intended for export. It reached the peak of its production capacity with the assembly of its 400,000th vehicle in 2015.

### 3 THE EMERGENCE PLAN: THE RIGHT PATH TO INDUSTRIALIZATION?

The first Emergence plan launched in 2005 defines the automotive sector as one of the world's crafts of Morocco intended to reconcile the kingdom with its industrialization process enduring chronic deficiencies. According to the directives of the consulting firm McKinsey, which laid the foundations of this new industrial strategy, the automotive sector had to start implementing tier 1 and 2 suppliers initially, and then work on attracting a manufacturer. The president of the industry college of the Moroccan Association of Industry and Automotive Trade (Association Marocaine de l'Industrie et du Commerce Automobile, AMICA) explained in a 2014 interview that things happened in an opposite way with the establishment of Renault which led to the development of a whole network of suppliers having direct contractual relations with the manufacturer, or exercising in activities such as electronics or mechanics oriented towards the automotive sector [6] (Rouaud, 2014).

Tremendous logistical resources have been invested in this project, especially a terminal dedicated to Renault at Tanger Med port, as well as a rail and highway network. Furthermore, the implementation in a free zone was source of numerous tax advantages, including total exemption from corporate tax for the first five years and the benefit of a rate of 8.75 % during the following twenty years. The Moroccan state has solidly supported the project from a financial point of view with a subsidy of 200 million Euros granted by the Hassan II fund, as well as a financing line of 105 million Euros guaranteed by three Moroccan banks [7] (Benabdejilil et al., 2016).

Appraisal of the Emergence plan: The illusion of an industrial take-off.

As it came to an end, the achievements of the Emergence plan turned out to be more or less meagre. At this point, Morocco still has a long way to go to catch up with emerging economies. In fact, the added value created locally remains relatively low and the sector is hardly integrated. Furthermore, Morocco's exportable offer lacking competitiveness and diversification has made it difficult for the country to take full advantage of its trade openness. As a matter of fact, free trade agreements were signed without much involvement of the private sector in the negotiation process.

This situation affected the performance of some industrial fields in which imported inputs are not the most competitive (Asian products are in fact more interesting than European products benefiting from the exemption from customs duties). The same thing can be said about certain categories of products whose inputs are subject to customs duties while the final version of the imported product is admitted into the Moroccan market free of these duties. Moroccan production using taxable inputs is thus disadvantaged compared to foreign competition, benefiting from cheaper sourcing and exemption from customs duties.

A report of the General Confederation of Moroccan Enterprises (Confédération Générale des Entreprises du Maroc, CGEM) which dates back to March 2014 identifies various obstacles that hinder the industrialization process in Morocco [8] (CGEM, 2014). These are mainly related to the competitiveness of the Moroccan company. A benchmark with countries which had the same gross domestic product (GDP) level as Morocco during the 1970s was thus carried out. These countries are Malaysia, South Korea and Turkey, and a common point in their economic history is the existence of a long-term industrial policy combined with a strong willingness of public authorities to successfully convert the country's development model to one based on industry. A few recommendations have been suggested in the report to overcome the difficulties facing Moroccan economy, and they are mainly about levers to be operated by the government on the one hand and by the private sector on the other.

Regarding the government's role, the report emphasized the importance of having a clear development model while enhancing the efforts already made in identifying and promoting the world crafts of Morocco. Aspects to be developed are mainly related to industrial compensation, which should take on more importance in negotiations for public contracts. Compensation is a highly valued tool in countries that have succeeded in stimulating their industrialization as it provides essential actions to upgrade the local productive fabric. It allows, among other things, skills and technologies transfer and the creation of new production units. The report also states the government's responsibility in optimizing the various costs borne by the Moroccan company through the facilitation of access to land, the improvement of logistics and action on the cost of inputs. Corporate taxation cannot be excluded as an essential tool to improve the competitiveness of Moroccan companies, alongside customs regulations which strongly condition the import / export modalities and play a major role in the fight against under-billing on imports and consequently unfair competition.

As for the private sector, greater involvement upstream of the various public policies is required as well as a new partnership approach for the relationship between large companies and small and medium-sized ones. Investing in training is also a crucial aspect as the "cost advantage" of Moroccan labor, often used to promote the country as an investment destination, is getting obsolete especially within an analysis that takes account of the productivity of this workforce. Moreover, research and development are an essential vector of competitiveness which allows companies to discover new paths to success other than costs optimization. Finally, it is important to realize the power of marketing in promoting a country's offer. Morocco does not use this tool enough to present its products, which affects negatively its domestic market sales and exports.

#### 4 THE NATIONAL INDUSTRIAL ACCELERATION PLAN: A NEW VISION OF INDUSTRY

As the observed results of the Emergence Plan hadn't reached the level of expectations of public authorities, Morocco established a new industrial strategy covering the period 2014-2020 under the name of "The National Industrial Acceleration Plan" (NIAP). This new strategy is based on the concept of "industrial ecosystems" inspired by a business culture of deal making where international firms established in Morocco are considered to be the locomotive of an ecosystem of firms federated around them. Among these firms, there are SMEs that have strong relationships with the hard core of the ecosystem, going beyond mere subcontracting in its passive perception. The approach adopted by the Ministry of Industry as explained on its official website consists of four steps:

1. Structuring actors into ecosystems: this is about organizing the existing actors into ecosystem projects by identifying potential relationships.
2. The development of specific levers: this includes all supporting measures taken to implement the plan in terms of financing, land supply, training, etc.
3. Performance contracts: agreements are signed between the state and ecosystem sectors relating to performance objectives in terms of employment, added value and exports.
4. Operational deployment: the development of an implementation schedule defining the key stages with their objectives, as well as the terms of ecosystem animation and monitoring [9] ([www.mcinet.gov.ma](http://www.mcinet.gov.ma)).

In consistency with the strategic vision of previous industrial plans, the NIAP places a lot of emphasis on the automotive sector. The start-up of Renault Tangier plant in 2012 was a major turning point in the Moroccan experience. In fact, as part of its cost control strategy, it's more convenient for a manufacturer to ensure the presence of its supply sources at the local level. By the same token, Renault prospected its own suppliers' network to convince them to settle in Morocco. The manufacturer also approached Moroccan companies with national capital in order to make them part of the process and thereby achieve the local integration target concluded with the Moroccan state. Besides, some car manufacturers are not yet considering the establishment option, and prefer to create purchasing offices in low cost countries located near their factories. This is the case of the American Ford, which created a purchasing office in the Tangier Free Zone (TFZ) in order to supply its factory in Spain.

The new configuration of the industrial acceleration plan begins with the identification of four ecosystems which are: interior and seats, metal and stamping, batteries and wiring. This primary framework was later reinforced by the creation of four more ecosystems that are: Heavy vehicles and bodywork, engines and transmissions and the two ecosystems of Renault and PSA (Peugeot Société Anonyme). The intended goals for the Renault ecosystem by 2023 have had an upward revision two years after their setting given the early signs of success. The local sourcing initially meant to reach 1.5 billion Euros per year was revaluated to 2 billion Euros, and the local integration rate set at 50% was revised to 65%. These revisions were presented by the minister of industry during the Renault ecosystem progress report in March 2018.

The PSA plant launched in 2019 in Kenitra following the signing of an agreement between the car manufacturer and the Moroccan state in June 2015. This establishment gave rise to a new ecosystem which attracted 27 suppliers [10] (Direction des Etudes Economiques et Financières, 2020). The local integration rate of the ecosystem is set at 60%, which corresponds to one billion Euros of local sourcing. Morocco's production capacity is thus increased to 700,000 vehicles per year by 2023 divided between Renault

Tangier, SOMACA and PSA with a respective contribution of 340,000, 160,000 and 200,000 units. In December 2017, a memorandum of understanding was signed with the Chinese electric vehicle specialist BYD for the construction of three factories in Morocco.

### 5 PORTER'S DIAMOND APPLIED TO THE MOROCCAN AUTOMOTIVE INDUSTRY

Currently in Morocco, a headline topic of great concern to the political and economic sphere is the new development model. A special commission was established by the country's highest authorities to collect various contributions that could enrich the debate on the subject. In fact, as the current development model came to maturity, it has become a high priority to reflect on a new one that would make the country progress further. This willingness of growth and development cannot be dissociated from the problematic of a successful industrial "take-off" based on the development of strong competitive advantages enabling Morocco to become a real emerging economy.

Porter's interest for the competitive advantage of nations dates back to 1990. He thus conducted a study on the competitiveness models of ten leading nations in international trade, and published the results in his article "The competitive advantage of nations" considered today as a scientific contribution which undeniably marked public strategies. Porter explains in his article that a nation's prosperity is created and not inherited. It is not due to its natural resources, its labor market, its currency's value or its interest rates as commonly argued in classical economic theory. A nation's competitiveness depends on its ability to innovate and keep pace with technological advances [11] (Porter, 1990). It is by playing in the big leagues that firms excel themselves and boost their performance. The pressure of an exacting demand, fierce competition and aggressive suppliers are all factors which force the firm to fight for survival.

Why are some firms capable of continuous innovation? Why do they manage to overcome resistance to change that often comes with success? To answer these questions, Porter designed what is known today as Porter's Diamond. It is in fact a model of four attributes which, taken individually or as a system, constitute the diamond of a nation's competitive advantage. These attributes are as follows:

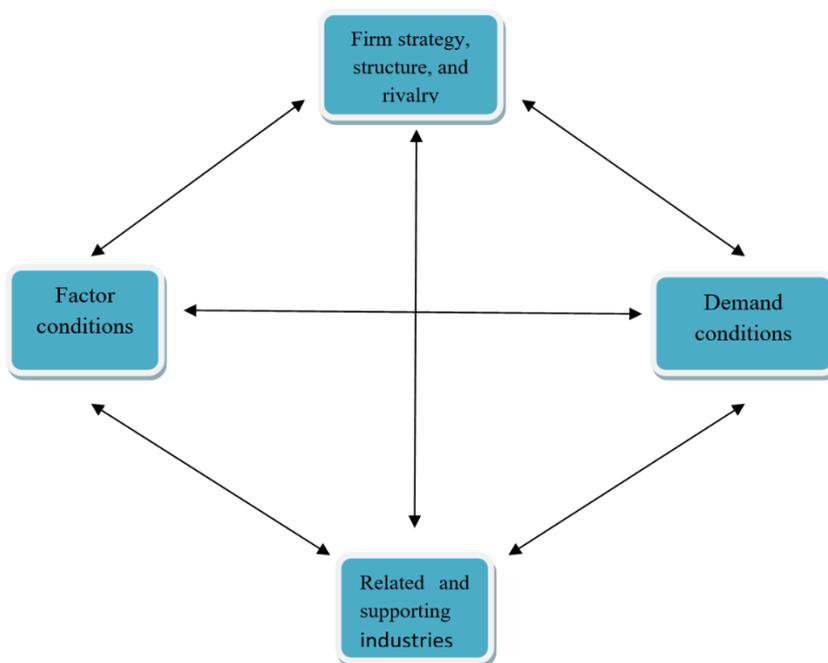


Fig. 1. Porter's Diamond of national competitive advantage

Source: Porter, 1990.

#### 5.1 FACTOR CONDITIONS

In classical economics, factors of production (labor, capital, cultivable land, natural resources, infrastructure, etc) are decisive in a country's trade flows. A nation will thus export goods which require factors of production abundantly available. This assumption is

mainly inspired of the work of Adam Smith and David Ricardo, and is therefore rooted in the conventional economic thinking. However, it is described as incomplete and even erroneous by Porter. The author distinguishes two categories of factors of production; primary factors that do not require investment or only a minimal one, such as low-skilled labor force, natural resource endowments or even climate. The second category is that of so-called "advanced" factors which, unlike the first category, require significant investments, including in human capital. This could be specific infrastructures in a particular sector, scientific research centers or any highly specialized investment [11] (Porter, 1990).

A second classification of production factors divides them into general and specialized factors. General factors can be used by several industries such as a certain category of university graduates, a motorway network, etc. Specialized factors are, as their name suggests, specific to one or a few industries such as research organizations. It goes without saying that a nation's strong and sustainable competitive advantage stems from advanced and specialized factors, and that an advantage based on general and / or primary factors will tend to disappear as it is not difficult to imitate it [12] (Leymarie and Tripier, 1992).

In today's world, sophisticated industries are the mainstay of a developed economy. Such economies do not just passively use the factors of production available to all. They create instead their own production factors including highly qualified human capital and up-to-date scientific research centers. Porter (1990) [11] explains that the stock of production factors that a nation has at its disposal in a precise moment matters less than the way it makes use of these factors to improve its industries in terms of performance and efficiency. In other words, a nation succeeds in industries where it is able to create factors of production. The competitive advantage comes from creating such factors first and improving and refining them later.

Regarding the Moroccan automotive ecosystem, the first primary factor is clearly Morocco's geographical position a few kilometers away from Europe, with ports providing connections with twenty-one cities of this continent. Furthermore, Morocco is considered to be a gateway to Africa. This advantage, offered randomly by nature, has been decisive for car manufacturers who have decided to locate their activity in Morocco, but also for those who have made it a supply center for their factories located in Europe. Moreover, Morocco's geographical position makes it particularly interesting for the industry's actors as a key to the African market, which holds a significant growth potential in the medium and long term.

The second primary factor is the low-skilled workforce. In fact, if it is true today that Moroccan labor costs much less than that of Central Europe or emerging countries like Turkey (half the cost of Turkish workforce), this does not make it more attractive, because it is actually less productive. It can even be more expensive for equivalent production [8] (Confédération Générale des Entreprises du Maroc, 2014). Morocco is promoted to car manufacturers as a low cost destination, especially in terms of human capital. This marketing approach based on cost control, known to be highly important for manufacturers, has been effective so far. However, by and large it does not really serve the host country to keep passively exploiting this "asset" to the detriment of a real investment in human capital, making it possible to provide the national industry with highly qualified profiles capable of innovating and transferring knowledge from foreign companies to local firms, with the perspective of building a strong and self-sufficient national industry.

As for the advanced factors, Morocco has made notable progress in terms of infrastructure in recent years. Industrial land supply has evolved thanks to rental industrial parks reaching 1000 hectares and integrated industrial platforms (P2I), some of which have the status of free zones with all the tax, customs and administrative advantages that it implies. The automotive sector benefits from two export free zones: Tangier Free Zone in Tangier and Atlantic Free Zone in Kenitra [9] ([www.mcinet.gov.ma](http://www.mcinet.gov.ma)). Government actions under this heading often follow a logic of "availability". However, the investor generally has to deal with the complexity of the system counting several actors with different managing rules making the overall functioning cumbersome.

Besides, Morocco ranked 81st in the world in terms of land registration [13] (La Banque Mondiale, 2019). The country lacks transparency on the conditions of land access, which is a fundamental element of the investment decision. Measures taken by the state regarding land access do not sufficiently benefit Moroccan companies with national capital for whom this essential component of their "cost competitiveness" remains out of reach. This is all the more problematic in an ecosystemic industrial organization which supposes proximity between actors and aims to integrate even more the local industrial fabric. Moroccan exporting companies are also at a disadvantage when they are located outside the free export zones since they do not benefit from the advantages that these offer, which limits their involvement in industrial investments.

The ranking in 2018 by the World Bank of Morocco at the 109th position out of 160 countries for the logistics performance index [14] (La Banque Mondiale, 2018) is also revealing, as it reflects the deterioration of services' quality (96th place in 2016), jeopardizing the country's position on the international trade scene. This index consists, among other things, of the quality of customs service and the cost of international shipments. Morocco's ranking exposed it to severe criticism, mainly relating to the slowness of import and export operations, despite the efforts made to dematerialize procedures and reduce customs clearance times.

Morocco's connectivity has made a qualitative leap in the 2018 ranking of the United Nations Conference on Trade and Development (UNCTAD). Thanks to the launch of Tangier Med transshipment hub, the country was ranked first across the African continent [15] (UNCTAD, 2018). This position hasn't been consolidated in 2019, as Morocco retreated in front of Egypt to occupy the

second position in Africa [16] (UNCTAD, 2019). The Maritime Connectivity Index informs on the degree to which a country is connected to the international maritime transport network and therefore its involvement in the world trade. Although 98% of Moroccan foreign trade is carried out by sea [17] ([www.equiemment.gov.ma](http://www.equiemment.gov.ma)), the maritime supply of the country does not follow the development of port logistics, due to the minimal number of vessels flying the Moroccan flag.

Another advanced factor developed by Morocco is training. In the automotive sector, four training institutes for automotive professions (IFMIA) have been created in the cities of Casablanca, Kenitra and Tangier as part of a proactive government policy willing to provide the industry with qualified profiles. This vocational training model is designed as part of a public-private partnership where funding is public and management is private, in order to best meet the specific needs of the sector. This formula ensures access to the practical aspects of the business especially, the contact with production chains. A training aid of 6,000 Euros per employee is also envisaged. Agreements have been signed between the Moroccan state, the Office for Vocational Training and Work Promotion (OFPPT) and car manufacturers (Renault and PSA) in order to prepare training formulas adapted to the industry's requirements. A technical center for vehicle equipment industries (CETIEV) was also created in 2005 with several areas of intervention including training.

The training efforts deployed to support the development of the automotive sector are undeniably remarkable. However, what is the proportion of highly qualified profiles in the field compared to that of low-skilled workers? Can a country aspire to an industrial take-off with an overall mediocre education system? Can local integration take place with poorly trained SME managers? These pressing questions call for answers and above all for real awareness. A survey published by the International Labor Organization (ILO) shows that the estimated share of "highly skilled" profiles does not exceed 7% [5] (Organisation Internationale de Travail, 2019) and that of medium-skilled workers is around 32%. The major proportion is therefore covered by low-skilled workforce, which represents 60.4%. In France, in 2016, the automotive industry counted 10.9% of highly qualified employees and 78.4% of workers with average qualifications [18] (<https://www.services-automobile.fr>). The latter category thus represents the overwhelming share in the structure of employment in the sector.

It seems therefore necessary to bring a serious reflection on the quality of the Moroccan education system and on its capacity to create profiles matching the country's needs. The 2019 ranking of the Program for International Student Assessment (PISA) held by the Organization for Economic Cooperation and Development (OECD), places Morocco at the 75th position out of 79 countries [19] (OECD, 2019). A scarcely gratifying score for a country with great ambitions. Reforming the Moroccan training system to make it an effective support for the development model will necessarily imply the involvement of companies in academic training and the organization of training courses for SMEs managers, ensuring them the necessary upgrading for their integration into the value chain taking shape in the country.

## 5.2 DEMAND CONDITIONS

In Porter's model, demand refers to local demand. Contrary to what one might think, the globalization of competition has had little impact on the importance of local demand. In fact, the characteristics and composition of the local market impact the way national firms perceive interpret and respond to consumer needs. Countries gain a competitive advantage in industries where local demand allows firms to have a clear and early view of consumer needs, and where buyers put pressure on firms to continuously innovate and improve their competitive advantage.

In fact, the more demanding and subtle buyers are, the more firms are obliged to anticipate their needs, and to create products with advanced standards to meet them. This perpetual quest for improvement sharpens the competitive advantage of firms. It is thus possible to say that as with factors of production, demand conditions are a source of competitive advantage when they challenge firms to innovate. Special requirements may arise from the environment and local values of a country. In Japan, for example, people live in small houses, the summers are hot and electric power is expensive. To adapt to these living conditions, Japanese firms have innovated in air conditioning. Other Japanese industries have also had to create small and light products appropriate to the population's needs and that are required today on a global scale [11] (Porter, 1990).

From a slightly different perspective than Porter's, the Moroccan automotive industry is mainly confronted with foreign demand since 90% of production is intended for export, 80% of which for Europe [10] (Direction des Etudes et des Prévisions Financières, 2020). That being said, it has become mandatory to meet the strict normative requirements of destination countries, and to bring good quality products to the market. This market expansion, owed to free trade agreements signed by Morocco, forces it to remain attentive to the evolution of customers' needs and preferences like digitization and electrification trends. In a developed country, this market awareness will allow actors on the national market to set up a strategy to meet the new customers' needs. However, in an emerging country like Morocco, which concentrates its efforts on attracting foreign investors, practicing market awareness is synonym of attracting new foreign specialists to the Moroccan soil to follow market trends, and the more it is a high value-added activity, the more difficult marketing the "Morocco" destination becomes.

Furthermore, Morocco's orientation towards foreign markets, within the global organization of production, exposes the country as part of the global value chain, to changes in economic circumstances of its partners. The economic situation of a country does not only concern it, as it actually impacts most of its partners as proved by crisis situations. The Covid-19 crisis for instance has severely tested the automotive sector worldwide due to the fragmentation of the value chain.

### 5.3 RELATED AND SUPPORTING INDUSTRIES

The third determinant of national competitive advantage is the presence in the country of internationally competitive related industries. In fact, internationally competitive domestic suppliers bring advantages to downstream industries. First, they provide the most profitable inputs quickly and efficiently. Porter (1990) [11] explains that if Italian jewelry firms are world leaders, it is partly because other Italian firms supply most of the jewelry making and precious metal recycling machinery globally. Besides the ease of access to machines, related industries impact firms in innovation and modernization through close working relationships. When a firm and its supplier are based close to each other, they benefit from effective communication, rapid and continuous information flows, and an effective exchange of innovative ideas. The firm can even help evolve the supplier's research and development work by serving as an evaluation and testing site for it.

As the Moroccan automotive sector is organized into ecosystems, this concept of related industries is already part of its functioning. In fact, a business ecosystem is above all a new conception of the company as part of a whole. According to Moore (1993) [20], in a business ecosystem, firms work in cooperation and competition to create new products, meet costumers' needs and innovate. Actually, to approach the matter of related industries in the Moroccan automotive sector, it is important to start by understanding the functioning of the supply chain, organized around manufacturers (Renault and PSA), equipment manufacturers and suppliers of different ranks. Original equipment manufacturers (OEMs) are in direct contact with manufacturers. Tier 1 suppliers supply OEMs and Tier 2 suppliers do the same with those of Tier 1, etc. The more we go up in the supply chain the more products are elaborated.

In the Moroccan automotive sector, related industries are mainly suppliers of automotive interior and seats, bodywork, batteries, wiring, power train, etc. This automatically brings up the issue of local integration. It should first be noted that local sourcing corresponds to sourcing from companies based in Morocco whether they are nationally owned or not. Therefore, a local integration rate tells very little about the involvement of Moroccan companies with national capital in the sector's value chain. Furthermore, local sourcing in the automotive industry is still far from what is reached in other emerging countries (56% in Morocco against 81% in Indonesia according to the latest study by the Department of Studies and Financial Forecasts dating from January 2020), and this inevitably impacts the competitiveness of the entire ecosystem which still imports inputs and hence has to deal with transport, labor and logistic costs as well as the risks of fluctuation monetary policy [13] (La Banque Mondiale, 2019). The credibility of the formula for calculating the local integration rate is also questionable given that it excludes (at least for Renault) the engines that the manufacturer obtains in Spain [21] (Sidiguitiebe, 2016). Since the engine is the central organ of the vehicle, it goes without saying that a formula that excludes it is controversial as it skews reality.

Regarding the involvement of Moroccan companies with a national capital in the automotive value chain, it remains quite fragile. Few companies have managed to join the established ecosystems, which could be explained on the one hand by their production standards that do not meet the required ones and on the other hand by the lack of supportive measures and funding. In fact, the Moroccan automotive industry could gain a lot from developing a network of tier 2 and 3 suppliers whose activity is labor intensive, in order to provide first tier suppliers and therefore manufacturers, with competitive products that can replace Asian inputs, with an advantage of just-in-time supply.

### 5.4 FIRM STRATEGY, STRUCTURE AND RIVALRY

The existence of national rivals is a motivation for creating and maintaining competitive advantage. In classical theory, local competition is considered to be a source of "waste", as it is about doubling efforts and therefore hinders the achievement of economies of scale [11] (Porter, 1990). Accordingly, the solution would be to have a few "champion firms" supported by the government and able to face foreign competition. However, most of the national champions created this way are not competitive despite government support and protection.

In fact, local competition puts pressure on firms to innovate and modernize. Competitors force themselves to cut costs, improve production quality and innovate both in products and processes. On the other hand, international competition tends to be distant compared to local competition which goes beyond the purely economic aspect to acquire a "personal" character. National rivals engage in real battles not only for market share, but also for technical distinction and national reputation. The success of a national firm proves to others that anything is possible and attracts new rivals to the industry. Firms tend to ascribe the success of their foreign competitors to "unfair" advantages. But with local competitors, this excuse is banned [11] (Porter, 1990).

In Morocco, the competitive culture is not very developed. The World Bank places the country at the bottom of the ranking compared to its regional counterparts, in terms of competitive policies [13] (La Banque Mondiale, 2019). As a matter of fact, government interventions often tend to distort competition, in particular by favoring a business field over others. This bias is all the more present in the automotive ecosystem which illustrates the effort deployed by the Moroccan government to attract foreign investors thanks to a meticulously designed incentive framework, but also its neglect of the national company and its integration in this new industrial landscape.

In an ecosystemic industrial configuration, it seems more judicious to approach competition from another angle: that of competition between ecosystems. This perspective of analysis makes it possible to stand back from the competition between individual firms and study things at a more centralized level. In Morocco, with the two automotive ecosystems Renault and PSA, local competition as developed by Porter remains limited. It is by expanding the geographic scope taken into account that the concept of competition takes on its full meaning. In fact, Moroccan automotive ecosystems are competing with those of Eastern Europe, Turkey, Mexico or even South Africa considered as bitter rivals, offering major advantages to manufacturers and for some, a historical know-how in the field.

Morocco will also be affected by the future challenges of the sector as a whole. The environmental constraint for example puts pressure on the conventional industry and causes new segments to emerge (the hybrid and electric field). Morocco has already signed a partnership in this sense with the Chinese BYD. Moreover, the industry is facing the emergence of new mobility solutions such as carpooling or car-sharing which are starting to find success among users and could therefore impact the performance of manufacturers in terms of sales.

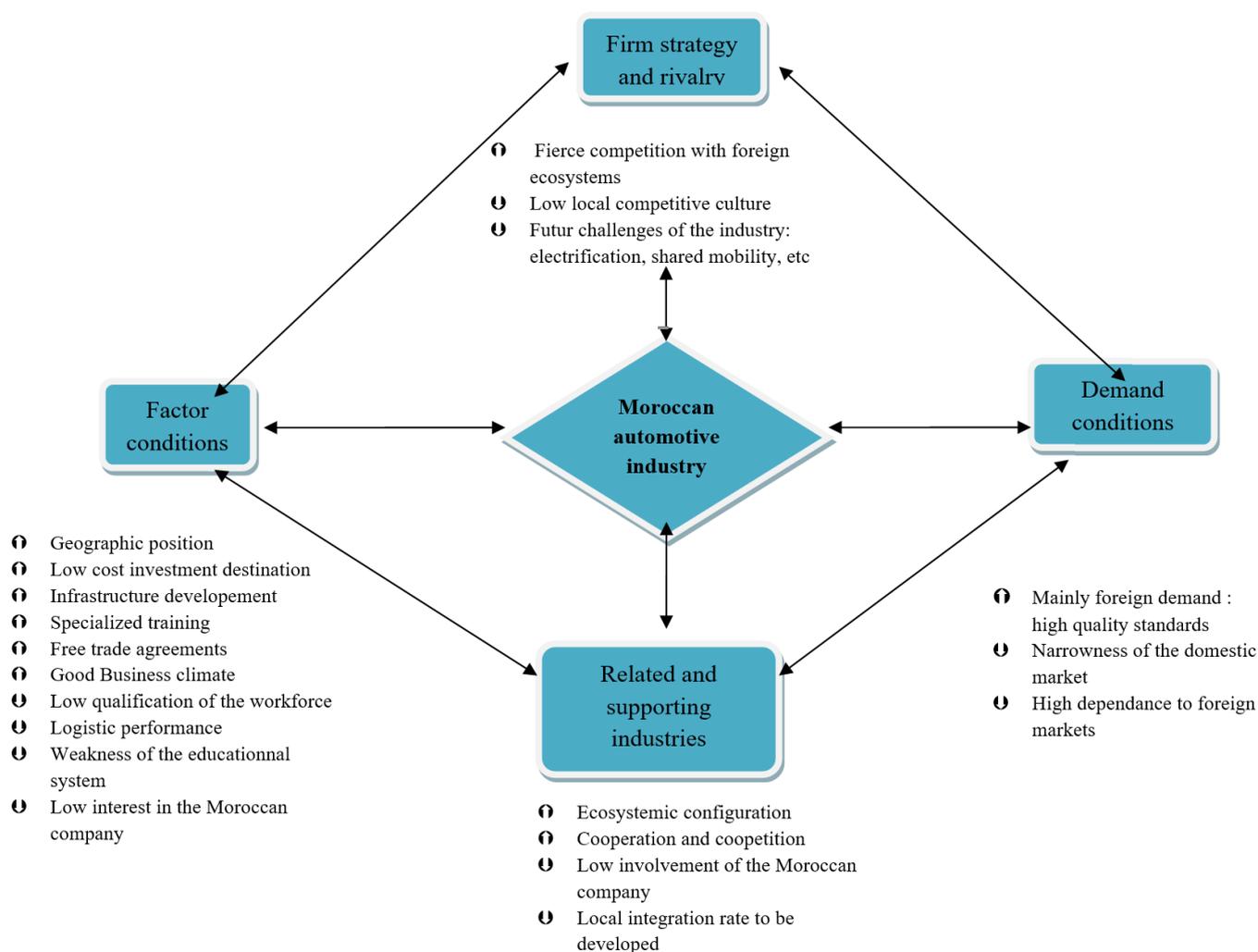


Fig. 2. Porter's Diamond applied to Moroccan automotive industry

Source: Author's elaboration.

## 6 CONCLUSION

The efforts deployed by Morocco to integrate the global value chain and join the club of emerging countries are the same conducted by many other countries in the region. The industrialization model put in place by Moroccan authorities has certainly highlighted the country's key strengths, in particular its geographical position and its low labor cost. However, it has not given enough importance to certain aspects which constitute sine qua non conditions for the development of a solid industry, such as the education system and its interaction with industry. Analysis of the Moroccan automotive sector in the light of Porter's model makes it possible to realize the great advances made in terms of infrastructure and business climate. Nevertheless, it is obvious that the country is struggling moving up the value chain and integrating the local economic fabric. Becoming an emerging country requires reconversion of the Moroccan competitive advantage to innovation and technological learning. It has become crucial to make the Moroccan company benefit from knowledge transfer that will reduce the country's technological dependence, by mobilizing tools like industrial compensation which is still poorly exploited. The spillover effects, which in theory should affect different economic sectors, cannot exist if the country continues to promote itself as a low-cost destination where investors transfer activities with lower added value.

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