

Econometric study of the impact of SMEs development on exports outside the hydrocarbon sector in 2010-2019

دراسة قياسية لأثر تطور المؤسسات الصغيرة والمتوسطة على الصادرات خارج قطاع المحروقات خلال
الفترة 2010-2019

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Abstract

Small and medium-sized enterprises (SMEs) are among the most important elements in achieving economic and social development in all nations of the world. Therefore, the State has allocated several supporting structures to it, helping it to internationalize its activity, which has become inevitable in order to escape from oil dependency. This is why our study aimed to identify the impact of SMEs development on exports outside the hydrocarbon sector in Algeria during 2010-2019 through an econometric study. Analysis of the results obtained has shown that exports outside the hydrocarbon sector are positively linked to the evolution of SMEs i.e., the impact of SMEs development on exports outside of hydrocarbons is positive.

Keywords : SMEs, exports outside the hydrocarbon sector, Algeria.

ملخص

تعتبر المؤسسات الصغيرة والمتوسطة من أهم العناصر الرئيسية في تحقيق التنمية الاقتصادية والاجتماعية في جميع دول العالم، لذا خصصت لها الدولة عدة هياكل داعمة لها، و مساعدتها من أجل تدويل نشاطها الذي أصبح أمرا حتميا من أجل الخروج من التبعية النفطية. من أجل ذلك جاءت دراستنا بهدف التعرف على أثر تطور المؤسسات الصغيرة و المتوسطة على الصادرات خارج قطاع المحروقات في الجزائر خلال الفترة 2010-2019، وكان ذلك بدراسة قياسية. ثبت من تحليل النتائج التي تم الوصول إليها أن الصادرات خارج المحروقات ترتبط ارتباطا موجبا بتطور تعداد المؤسسات الصغيرة و المتوسطة، أي إن أثر تطور المؤسسات الصغيرة و المتوسطة يكون إيجابيا على الصادرات خارج المحروقات.

الكلمات المفتاحية: المؤسسات الصغيرة والمتوسطة، الصادرات خارج قطاع المحروقات، الجزائر.

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1. INTRODUCTION

Small and medium-sized enterprises play an important role in the economic development of any state by contributing to the creation of new jobs, increasing the volume of investment and maximizing the value added, in addition to their effective development role by collaborating with large enterprises to achieve economic and social activities. They represent a significant percentage of the total number of enterprises operating in most countries of the world, with significant contributions to exports and access into regional and international markets (عبد العزيز & فايزة, 2019).

Algeria, as a country that had experienced a shift in its economic policy towards economic diversification, attached great importance to the SMEs sector as a strategic sector in expanding the national economic base. Algeria has undertaken several initiatives aimed to promote these enterprises, including the development of an arsenal of laws and legislation regulating the establishment of such enterprises, as well as the creation of several structures, mechanisms, and programs that support and encourage their growth in various sectors of economic activities, as it is a fundamental pillar in the delivery of various products that supply the national market. However, it has not achieved the expected contribution as a functioning economic sector due to numerous difficulties that intercept its way, particularly at the beginning of its establishment, which prevent its growth, development and sustainability (أمال & عبد الجبار, 2020).

This study aims to highlight the status of SMEs in Algeria in light of the challenges they face against their growth and sustainability, allowing for the activation of its development role in the national economy, especially in light of the impact of oil prices on the hydrocarbon sector, as well as emphasizing its importance in raising Algeria's exports outside the hydrocarbon sector.

Based on the above, we raise the following problem:

To what extent do SMEs contribute to the development of exports outside the hydrocarbon sector during 2010-2019?

Under this main question, there are two main sub-questions:

- What is the reality of SMEs sector in Algeria?
- What are the problems and obstacles facing SMEs in exporting?

In order for this work to be scientifically methodological, we have formulated the following hypothesis:

- The development of SMEs has a positive impact on export development outside the hydrocarbon sector.

In order to address the problem of research, we have adopted the analytical approach through an econometric study to determine the contribution of SMEs to exports outside the hydrocarbon sector using statistics provided by official Algerian institutions and bodies from the Ministry of Foreign Affairs.

2. SMEs sector in Algeria

Given the current economic conditions, SMEs have expanded and become the cornerstone of economic development, contributing to the expansion of the economic base and achieving economic integration between different sectors.

2.1 Definition of SMEs adopted in Algeria

Many of the definitions provided to SMEs are based on different criteria, including quantity of workers and turnover, quality and degree of independence, and simplicity of organization. The definition of these enterprises varies from country to country according to the criteria used to define them, and because economic indicators vary, so it is necessary to adapt these criteria to the specificities of the economic and social system prevailing in that country (محمد رضا & صدوقي, 2018).

The definition of SMEs in Algeria witnessed several stages in response to changes in the national economy. The Algerian legislator addressed the definition of SMEs through guideline laws for their promotion, most recently law No. 17/02 of 10 January 2017, which includes the prescriptive law on the Promotion of SMEs, which defined them and determined their support measures and mechanisms with regard to establishment, development, and sustainability. According to article 5, the legislator pointed out that SMEs, whatever their legal nature, are defined as producers of goods and/or services, in which:

- Employs 1 to 250 people.
- Its annual turnover does not exceed 4 billion Algerian dinars or its total annual share does not exceed 500 billion Algerian dinars.
- Meets independence criteria.

2.2. Problems and obstacles facing SMEs in exporting

The various statistics, studies, and reports show that the objectives pursued by the Algerian State in promoting non-hydrocarbon exports by supporting small and medium-sized enterprises (SMEs) have not been met. It continues to suffer from a number of problems and obstacles that have prevented it from reaching the expected form of export. Therefore, the most important and prominent problems are identified in this section (علام, 2018).

2.2.1 Organizational and administrative problems

Administrative corruption, bureaucracy, bribery and nepotism significantly affect the overall administrative and regulatory dealings in Algeria, discouraging investors and limiting the capacity of economic enterprises in general and SMEs in particular. This can be attributed to the difficulty of administrative and executive procedures, and the procrastination with regard to the acceptance of the project, further slowing down the inclusion of legal and legislative provisions governing export and competition mechanisms, as well as trade transactions and the conditions for exploitative activities despite the Government's actions in reducing the fiscal burden and revitalizing the Special Fund for Export Promotion, in addition to the absence of a long-run export strategy.

As a case in point, (Cardoza et al., 2016), on the basis of their study of Latin American SMEs, conclude that firms owned by larger institutions possess a much stronger position to develop globally. They indicate that Latin American SMEs face major obstacles related to domestic regulations, the business environment, and lack of information about foreign market opportunities.

2.2.2 Financial support problems

The financial aspect is the core of any project. As the majority of SMEs in Algeria are privately owned, the major problem is their access to finance, given the poor quality of banking services, the difficulty in obtaining loans, the high interest rates associated with loans, the bureaucratic functioning of public banks, the absence of bank escorts, and the lack of financial management experiences for SMEs owners, which requires greater risk. (Bellone et al., 2010) came to the conclusion that financial constraints can be a barrier for small firms engaged in exporting.

2.2.3 Logistics problems

The process of exporting a particular product requires flexibility between different stages of the export process (Chandra et al., 2020). This is contrary to the reality in terms of transport storage and handling services, where many exporters complain of limited cargo capacity. A good example of that is the Government's inability to export dates on an ongoing basis.

2.2.4 Problem of imported products

The Algerian market is familiar with a chaotic flow of foreign commodities, as well as a lack of protection for domestic products. It imports products that have a similar domestic counterpart, particularly industrial goods with global characteristics and at competitive prices. This hinders the success of small and medium-sized enterprises in marketing their own products and increases Algerian consumers' distrust of local products.

2.2.5 Absence of marketing experience:

Small and medium-sized enterprises in Algeria face a lack of understanding of various marketing principles. It also suffers from a lack of marketing awareness and competencies, a loss of experience in this field due to the absence of a board and effective marketers, a lack of marketing training courses, and a lack of export culture. These projects also lack market studies due to the difficulty and lack of an information network, which has prevented Algerian products from finding a place to be offered in international markets. Furthermore, (Jain, 1989) insists that technology and the intensity of price competition should also be taken into account as they are important determinants of the industry's marketing strategy.

2.2.6 Absence of competitive price policy

The success of an enterprise and its promotion of a particular product must be based on a competitive price policy. This is in contrast to Algerian reality, where Algerian products are known to be more expensive than their counterparts from other countries due to a lack of economies of scale and irrational use of production capacities. This is also due to their dependency on foreign inputs in terms of raw materials. Also and according to (Leonidou, 2004) SMEs in developing countries face greater risks in international expansion and are severely constrained by unfavorable market conditions in domestic and international markets.

2.2.7 Nonconformity of local product to global characteristics

The dependence of SMEs in Algeria on simple equipment and undeveloped technology, as well as their lack of mastery and quality, in addition to environmental constraints, significantly limits their competitive advantages in international markets. Moreover, most States dealing with Algeria under international sales conventions and contracts apply certain conditions and specifications, such as the European Union, where the non-availability of the conditions does not allow the import of such a product, which would be intended for the domestic market.

2.2.8 Lack of moral support and encouragement

The lack of intellectual support, protection, attention, encouragement for individual innovations and initiatives undertaken by young people, especially graduates and owners of small and medium-sized enterprises, affects and limits their success and, in many cases, exposes them to failure and migration.

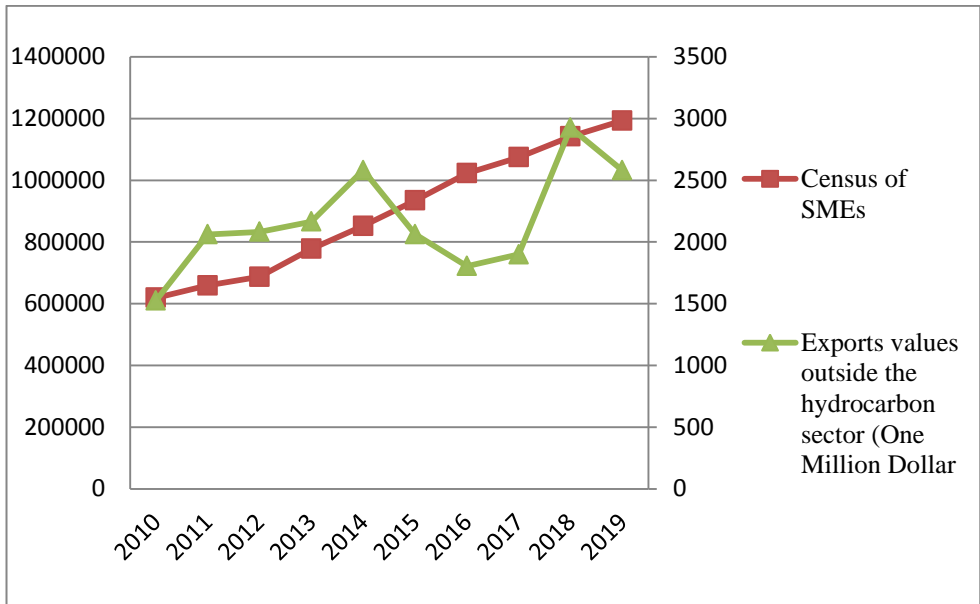
3. Contribution of SMEs to exports outside the hydrocarbon sector during the (2010-2019)

Diversification of wealth sources is one of the most important advantages of SMEs that seek to create excellence and addition, but its reality in Algeria is in sharp contrast to what is expected of it (نورالدين & سلمى) (مميمش, 2018).

3.1. Development of the census of SMEs and exports outside the Hydrocarbon sector during 2010-2019

The following figure illustrates the relationship between the development of SMEs and exports outside the hydrocarbon sector during 2010-2019.

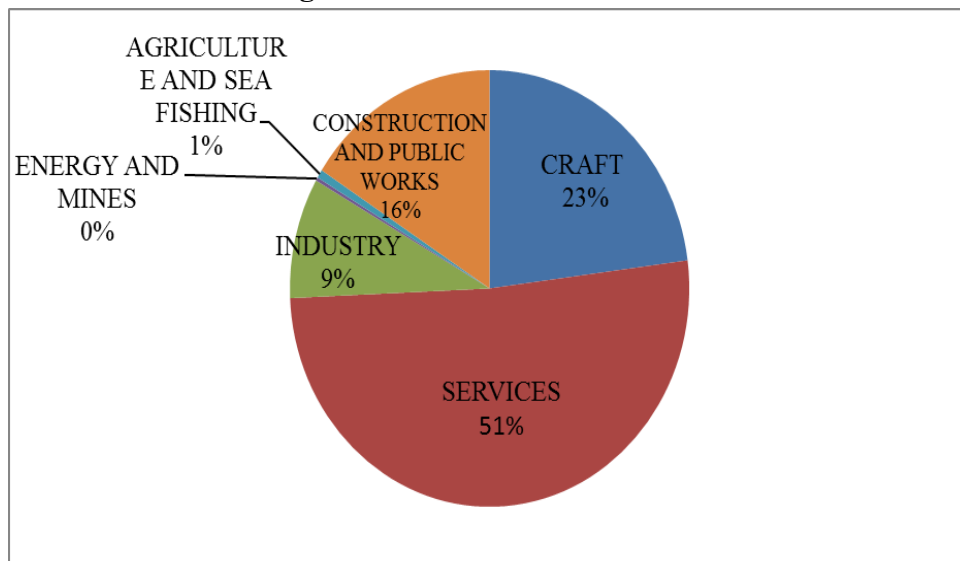
Fig.1. Development of the census of SMEs and exports outside of the hydrocarbon sector 2010-2019



Source: made by the researchers based on data provided by the ministry of industry's website

Regarding the developments in the above figure, it is noted that the evolution of the number of SMEs in comparison with the development of Algerian exports outside the hydrocarbon sector has a slight impact. Over the period 2010-2019, the number of SMEs increased by 574,267 enterprises. Algerian exports outside the hydrocarbon sector also experienced a development that could be described as positive over the same period by 69% without neglecting the decline between 2014 and 2016, reflecting a weak correlation between the development of the SME census and exports outside the hydrocarbon sector.

3.2. Orientations of SMEs and non-hydrocarbon sector exports in 2019

Fig.2. Sectors of activities of SMEs

Source: made by the researchers based on data provided by the ministry of industry's website

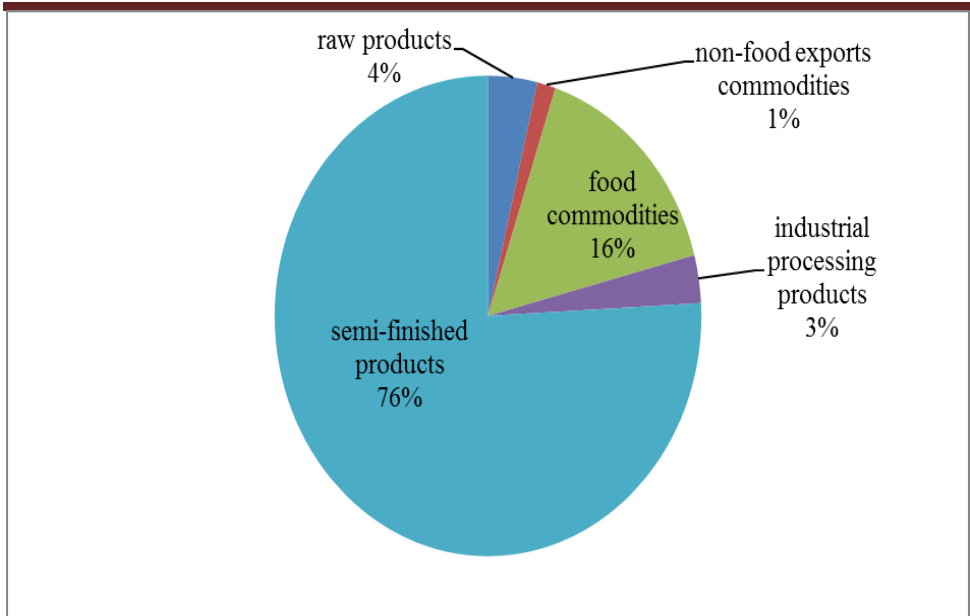
From the above figure showing the activity sectors dominated by SMEs in 2019, it can be said that they are headed largely towards services by 51%, followed by craftsmanship by 23%, and construction and public works by 16%. These sectors are far from export, which explains the vulnerability and marginal nature of exports outside the hydrocarbon sector in Algeria owing to the concentration of these projects in only active domestic sectors.

The contribution of SMEs to export remains confined to three sectors with almost non-existent ratios, namely, industrial sector, which in turn consists of the food industries embodied in pastries, juices, and beverages, as well as agricultural and fishing sector, including vegetables, fruits, and leather.

The other sector is energy and mines, where the role of SMEs is reflected in some extractive industries because of the dominance of large enterprises.

The following figure illustrates the distribution of exports outside of the hydrocarbon sector in 2019.

Fig.3. Distribution of exports outside the hydrocarbon sector



Source: made by the researchers based on data provided by the general directorate of customs' website

From the above figure illustrating commodity distribution of the most important non-hydrocarbon exports for 2019, the following can be observed:

- Semi-manufactured products account for 76% of all petroleum derivatives such as petroleum oil and petroleum distillation materials.
- Industrial processing products account for 03% of iron, lead, and copper conversion products.
- Food commodities account for a small percentage, with an estimated 16% export of agricultural goods such as cane or beet, dates, pastas and its derivatives, and some juices and soda.
- Non-food export commodities account for a very small percentage, estimated at 01%, namely some wiring and washing machines, while exports of raw products are phosphate and some leather.

As a result of this part, Algerian SMEs' contribution to export outside of the hydrocarbon sector is very low and limited, representing a microscopic ratio and concentrate on local sectors of activity such as services, construction and public works, leaving them out of foreign trade.

4. Econometric study of the impact of SMEs development on exports outside the hydrocarbon sector in 2010-2019

In order to strengthen our study, we chose the econometric study using a simple linear regression model to examine the relationship between the variables used in this research using the SPSS statistical program.

4.1. Identification of variables and the mathematical formula of the model

The formulation of the econometric model is one of the most important and difficult stages of model construction because it requires the identification of the variables that the model must contain or that must be excluded from it. The symbols of the various variables must therefore be indicated at the outset:

Dependent variable: represents Exports outside the hydrocarbon sector (XP).

Explanatory variable: represents the census of SMEs (PME).

After limiting the factors affecting the above variables, the mathematical form of the model must be determined. The simple linear regression method will be used to estimate the model for exports outside the hydrocarbon sector. The mathematical formula of the model is as follows:

$$XP_i = \beta_0 + \beta_1 PME_i + \varepsilon_i$$

(i): represents time, i.e., the variable value in the year (i).

PME: census of SMEs.

β_0 β_1 : represent the model information.

The econometric model is of a potential nature, thus the error limit ε_{it} has been included on behalf of certain variables that cannot be measured, or included, or for other reasons.

4.2. Model estimation:

Following the entry of the above-mentioned data into SPSS and the necessary operations, the following prototype was reached:

Table 1. Results of parameters' estimation of SMEs' Impact Model for Non-Hydrocarbon Exports in 2010-2019

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	R Square
	B	Std. Error	Beta			
1 (Constant)	1219,392	550,107		2,217	,057	,281
PME	,001	,001	,530	1,767	,115	

a. Dependent Variable: EXP

Source: Prepared by the researchers based on SPSS output

The model obtained can be illustrated as follows:

$$XP_i = 1219,39 + 0,001 PME$$

Noting the model presented, exports outside the hydrocarbon sector have a low nonsignificant positive relationship with the number of SMEs. This means a 01% increase in the number of Algerian SMEs will increase exports outside the hydrocarbon sector by 0.001%. We also note from the statistical point of view that there is a weak correlation between the explanatory variable and the dependent variable, which is shown by the value of the adjusted determination coefficient of 0.281, i.e., the number of SMEs contributes to the interpretation of 28.10% of export changes outside the hydrocarbon sector.

5. CONCLUSION

Through this study, we have tried to learn about small and medium-sized enterprises (SMEs) and their contribution to the promotion of Algerian exports outside the hydrocarbon sector, given the important role that they play in the economies of the world, as well as their great effectiveness and their ability to create excellence, additionality, and adaptation to the conditions and changes that are taking place, in addition to their international activity, in order to strengthen the export sector, which is the engine of economic growth.

From the econometric study, we found that the dependent variable (exports outside the hydrocarbon sector) is positively related to the explanatory variable (number of SMEs). We also found that the development of SMEs by 01% leads to an increase of 0.001% in exports outside of the hydrocarbon sector, which is considered to have little impact

on the dependent variable. Algerian SMEs face many problems that impede their export, the main ones being regulatory and legislative constraints, competition against imported products, lack of financial and logistical support, and lack of marketing expertise.

By examining the reality of small and medium-sized enterprises (SMEs) and non-hydrocarbon exports in Algeria, as well as the obstacles they face, we have chosen to conclude with a number of suggestions:

- The need to double the number of SMEs in Algeria, where they reach global standards and can play their role in the area of employment, value-added creation and export diversification.
- Strengthening bilateral and regional cooperation agreements and programs so that SMEs can enter into external markets and benefit from international experiences in this area.
- Strengthening the competitiveness of the national product in global markets by producing products that are cost-effective and of quality in accordance with the standards required in global markets.
- Opening branches of bodies supporting small and medium-sized enterprises (SMEs) in the area of exports across all regions of the country, especially border areas.
- The need for political and economic will and support for these types of enterprises, especially those exporting ones, that do not conflict with the rules of the global trade agreements through the removal of regulatory and legal barriers that restrict the ability of enterprises to export, as well as tax exemptions.

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