International journal of applied management and economics
Vol : 2 , N° 05 , November 2023
ISSN : 2509-0720

Investment opportunities in the FES-MEKNES region: an econometric modeling trial.

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Conflict of interest: **The author reports no conflict of interest.**

To quote this article: **LABOUCH .L & MANSOURI .Z (2023) « Investment opportunities in the FES-MEKNES region: an econometric modeling trial »,**

IJAME : Volume 02, N° 05 | Pp: 131 – 145.

Submission date: November 2023
Publication date: December 2023

DOI : 10.5281/zenodo.10442564

ABSTRACT

The objective of this article is to provide the main factors of attractiveness for foreign investors in the manufacturing and logistics sectors of the region of FES-MKNES in Morocco. The conceptual model was developed from literature review and interviews with a sample of the leaders of foreign small and medium enterprises (SMEs). The empirical analysis is carried out using data from a survey of executives of these foreign (manufacturing and logistics) companies based in the region of FES-MKNES. The use of the Partial Least Squares (PLS) approach allowed us to test the causal links between the various political, economic, social, technological, legal and environmental (PESTEL) factors. The scientific interest of the model is to provide decision makers of the region of FES-MKNES with the recommendations to improve the development and attractiveness of foreign investments in both logistics and manufacturing sectors.

KEYWORDS

Territorial attractiveness; PESTEL; PLS; manufacturing and logistics activities

1- Introduction

Economic development and the distribution of economic activities across are at the heart of today's economic policy considerations.

Economic activity is not randomly distributed across space. Territories are competing to attract foreign capital.

Reflection on territorial attractiveness is the result of a series of questions posed by local players about the location of economic activities: "Why do certain companies locate in one area rather than another?

"What distinguishes a region others and makes it attractive? These players have ambitions, in terms of attracting and retaining companies, comparable to those of to their customers.

In recent years, the attractiveness of territories has become a crucial issue in economic theory. Identifying the factors and determinants of Direct Foreign Investment FDI location and attractiveness has attracted the interest of a number of authors from different disciplines (classical economics, urban economics, international economics, new economics, etc.). This interest has led to the development of heterogeneous works. A distinction has been made between theoretical models of location and empirical research and empirical studies on the determinants of Direct Foreign Investment FDI.

2- THE CONCEPT OF TERRITORIAL ATTRACTIVENESS

An attractive area is one that has more “capacity to provide, through their resources, more attractive settling conditions than those of competing areas for mobile projects” (Hatem 2004). In fact, the notion of territorial attractiveness becomes more and more a topic of local elected officials and public stakeholders working in the framework of local development agencies to improve the attractiveness of territories to productive and residential activities. In this context, we have seen the creation and development of a number of organizations which evaluate the attractiveness of countries towards companies such as the World Economic Forum, AT Kearney, the United Nations (UN) and the annual Doing Business report of the group of the World Bank that provides an assessment of the business climate by analysing the favourable and unfavourable regulations of business activities of the country. The reports of these organizations have helped to classify the countries in terms of attractiveness compared with other competing countries. Moreover, these reports influence the decision-making of business location within and outside the countries. If territories are in need of multinational firms,

companies in turn want territories (Hatem 2004). Companies seek to enjoy various offers worldwide by optimizing their organizations and by being established where there are the best comparative advantages. There are various research works on the theoretical foundations of the firms' investment decisions abroad.

3- EMPIRICAL WORK

Parallel to the above theoretical works, there are several empirical studies that attempt to measure the territorial attractiveness based on panel data or opinion survey. In fact, the concepts of attractiveness depend on what the user seeks to apprehend: measure of economic performance, observation of establishment decisions or, further upstream of the decision process, their determinants (improve translation - incomprehensible) (Coeuré, Rabaud, and Madiès 2003). In the works of Fabrice Hatem (2005, 43), there are five categories of attractiveness:

• The "**macro"** approach, by global indicators, which is usually interested in the attractiveness of a country or a region. This approach, too, has led to the econometric approach and opinion approaches among investors. The most publicized barometers are: Ernst and Young, Business Competitiveness Index (World Economic Forum);

• The **«meso»** approach which is interested in studying the attractiveness factors of a particular area within a particular branch of industry;

• The **«micro»** approach which is based on the comparative analysis of the benefits of open multiple sites in the same area;

• The approach in **«terms of image»** which studies the effect of the image or reputation of a territory on the decision making of the leaders at the time of the decision making on the location;

• The **«decision making»** approach which is based on academic and empirical research to study processes of decision-making.

4- PROXIMITY FACTORS

Originally, the space in economic theory is not thick, only generating transportation costs. According to Marshall, territory emerges when the interactions between activities make location decisions become interdependent. The role of space as a generator of economic benefits

is then analyzed according to whether geographical proximity may or may not be combined with other forms of proximity between economic agents to facilitate coordination (Zimmermann 2008). Several current empirical situations show that geographical proximity is a component of the strategy of economic actors (Talbot 2009). Leaders of foreign companies stated that proximity to the poles of competitiveness and to customer demand was seen as a business location factor.

5- DEFINITION OF THE METHOD OF STATISTICAL ANALYSIS

There are several methods for estimating panel data. The choice of method depends on the assumptions made about the parameters and the disturbances. When considering a sample of panel data, the very first thing to check first thing to check is whether the data-generating process is homogeneous or heterogeneous. Econometrically speaking, this means testing the equality of the coefficients of the model studied in the individual dimension. From an economic point of view, specification testing is a matter of determining whether we are entitled to assume that the theoretical model under study is valid.

To assume that the theoretical model under study is perfectly identical for all or, on the contrary, whether there is country-specific features. Three estimation methods can be considered1 :

- **Ordinary least squares estimation;**
- **Estimation with fixed effects;**
- **Estimation with random effects.**

The PLS approach is a regression analysis method of latent variables with their indicators and latent variables among themselves. It was developed by Herman Wold (M. Tenenhaus 1999) and mainly used for the analysis of small samples (observations) and several variables. It became operational with the development of PLS 1.8 software (Fernandes 2012). We have chosen for our exploratory research the PLS approach because it is adapted to the development of theories and prediction, and to predictive causal analyses in complex situations and with weak theoretical information (Zaied and Ramzi 2012). With the PLS approach, the construct is

[1]Khedhiri S., 2005, cours d'économétrie, Centre de Publication Universitaire, Tunis, 2005.pp 85-95.

defined as a composite variable (CV) and does not include the measurement error (Tensaout 2016).

The measurement model (or external model) connecting the manifest (observed) variables with the latent variables associated with them.

The structural model (or internal model) connecting the endogenous-called latent variables to other latent variables.

6- METHODOLOGICAL FRAMEWORK OF RESEARCH

To measure our assumptions, we have developed a questionnaire using Likert scale. Indeed, the questionnaire is considered as a tool for collecting quantitative data and mechanism of instrumentation of the assumptions (Giordano and Alain 2012). In the first page of our questionnaire, we have devoted a few lines to the explanation of the aim of the survey before proceeding to the various questions thereof.

The mathematical form of the explanatory model of the entry of FDI into Morocco retained is the following:

$$\mathbf{IDE=C+\sum \alpha_{t-1} * X_{t-1} + \mu_{t-1}}$$

C: THE CONSTANT
X_T: EXPLANATORY VARIABLES
A_T: COEFFICIENTS
μ_T: THE ERROR TERM

It is the most used model in empirical studies due to its simplicity and data availability. The attractiveness of FDI can be expressed, taking into account given the dimensions of the attractiveness triangle in the following linear form. From this mathematical formalization of FDI attraction, the values numerical coefficients of the estimation model will be determined.

They will be compared to expected signs (see following table):

The table below summarizes the variables retained and the expected signs.

Variable /scale of analysis	Abbreviation	**Sign expected**
Contact with the Municipality	CM	+
Contact with the regional investment center CRI	CCRI	+
Contact with the Chamber of Commerce	CCHC	+
Contact with the Chambre ofC industry	CCHI	-
Contact with the Agricultural Chamber	CCHA	+ -
Contact with the the regional council	CRC	+
Contact with the administrations (taxes, local authorities, etc.)	CAD	+
Availability workforce	AWO	+
Availability workforce qualified	AWOQ	+
Proximity to educational establishment	PED	-
Research and development	RD	+
workforce local cost	WOL	-
Aid for establishment (tax exemptions, subsidies, etc.) granted by public authorities	AE	+
SIAM INTERNATIO	SIAM	+
Proximity to agricultural raw materials	PAMA	+
Proximity to suppliers	PSUP	+-
Proximity to subcontractors	PSUB	-
Proximity to local customers	PC	+
The presence of tourists	PT	+-
Ability to export	AEXP	+

Proximity to an airport	PA	-
Proximity to railway infrastructure	PRI	+-
Proximity to a seaport	PSEA	-+
Quality of road infrastructure	QI	+
Access to motorways	AMO	+
Accessibility of the site by public transport	ATRS	+-
Telecommunications infrastructure	TI	+-
Existence of building land adapted to the needs of the site	EBUI	+-
Real costs (rent level, land acquisition costs, building construction costs)	RC	+
landscape and climate	LC	+
Cultural and/or sporting leisure facilities	CSL	+
Quality of life	CLIF	+-

7- RESEARCH HYPOTHESES

The main aim of this project is to build on previous work by examining the impact of certain determinants on the attractiveness and location of foreign investments in developing countries and in Morocco. To achieve these objectives, we formulate the following four central hypotheses (hypotheses H1 and H2 include sub-hypotheses):

- **H1: A sound macroeconomic framework is conducive to increasing the attractiveness of foreign capital.**
  - H11: The degree of openness to trade has a positive influence on the attraction of Direct Foreign Investment FDI.
  - H12: The development of the financial sector favors the inflow of Direct Foreign Investment FDI.
  - H13: investment attracts investment**.**

- **H2. Political stability has a positive effect on the attractiveness of foreign capital.**
  - H21: political freedoms have a positive effect on attracting Direct Foreign Investment FDI.
  - H22: economic freedoms have a positive effect on attracting foreign investment.
- **H3: Urbanization and the level of infrastructure have a positive influence on Direct Foreign Investment FDI.**
- **H4: Human capital has a positive influence on Direct Foreign Investment FDI.**

Data analysis details:

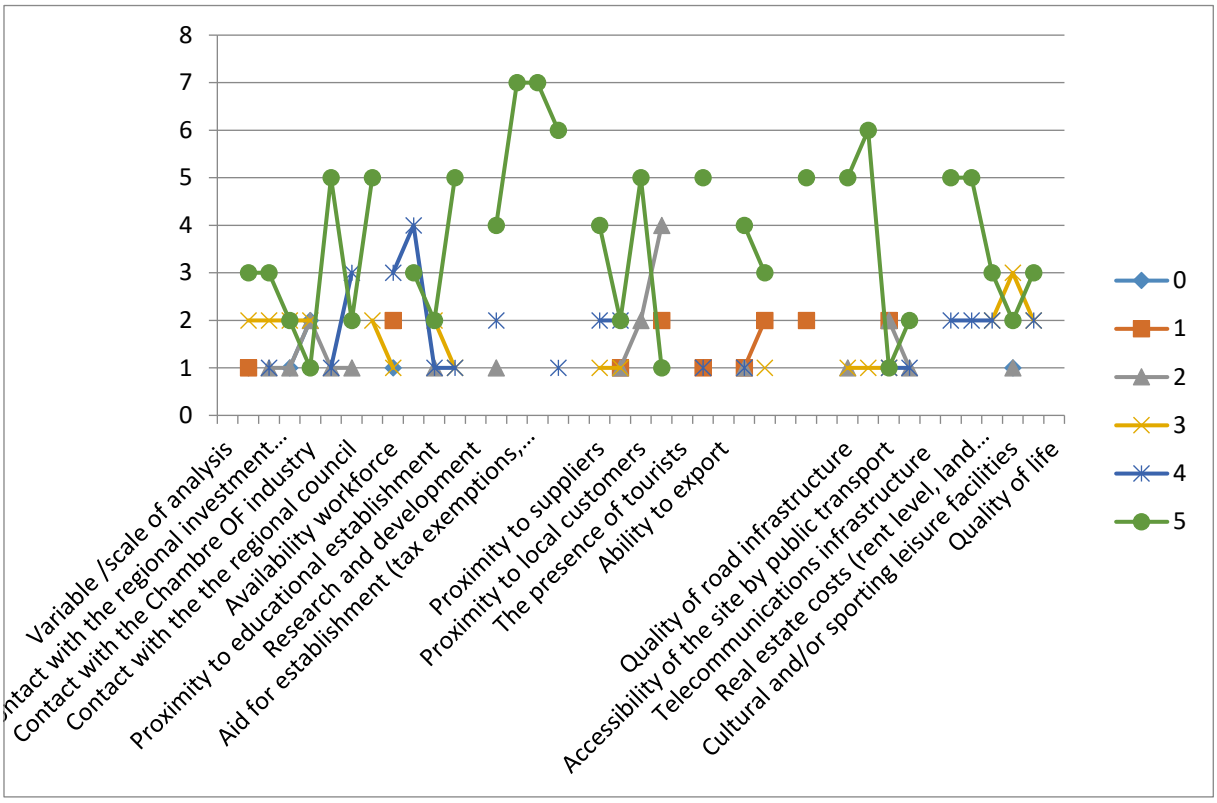
The details of the questionnaire responses in the Annex

RAMSEY RESET TEST:

F-STATISTIC	**43.18723**	**PROBABILITY**	**0.106981**
LOG LIKELIHOOD RATIO	**102.8147**	**PROBABILITY**	**0.000000**

The probability of F-statistic is greater than 5%, so the coefficients of model are stable.

Graph: questionnaire result



First, we assume that all parameters are identical for all countries. In other words, the equation for the triangle of attractiveness was estimated by the ordinary least squares (OLS) method.

Then, given that this technique (OLS) can be biased if the inherent heterogeneityof countries is neglected, tests have shown that fixed or random effects models or random effects models provide a better fit.

Finally, the Haussmann specification test enabled us to discriminate between fixed and random effects; the fixed-effect model seems to be the most appropriate for study of the determinants of Direct Foreign Investment FDI location.

8- Survey results “SWOT of the Fès - Meknès region”

Strengths	Weaknesses
Privilegedgeographical position; - Agricultural vocation, enabling the development of the agri-foodindustry - AGROPOLIS, a major agricultural and agri-industrial hub; - Improvedconnectivity of AGROPOLIS (motorwayinterchange); - Possibility of processing a large quantity of miningproducts and rawmaterials of agricultural origin (fruit products, etc.); - Presence of industrialestates (facilitating the establishment of new units); - Presence of infrastructure (communication and transport);	Insufficientdevelopment and under-exploitation of local industrialpotential; - Insufficient infrastructure dedicated to industry; - Sectoral atomisation: fragmented and polarisedindustrialfabric. - Lack of certain rawmaterials; - Financingproblems; - Lack of skilled labour in certain specialities;
Opportunities	**Threats**
-Sectoral strategies to promote industry; - SIAM in Meknes; - AGROPOLIS platform; - Projects to create refrigeration units to preserve agricultural produce; - Local produce; - Logisticsplatformunderdevelopment.	- High land prices; - Competition from the informal sector; - Difficultaccess to land for industrial use; - Complex administrative procedures.

Source: author

9- CONCLUSION

The attractiveness of investments depends on the existence of a product and a price on which it is possible to act. It has been shown that the existence of a competitive market for investments means that the region can be considered as a product. The essential characteristic of this "regional product" is that it is an "enhanced" product, combining physical elements and associated services, the overall performance of which depends on several players. It is perceived by investors as a component of their competitiveness and described by them in terms of a series of main and peripheral advantages. The price of the "region al product" has been defined as the sum of the costs of acquiring the advantages that make up the desired product, weighted by their relative importance to the project and reduced by the various subsidies allocated by the regional players. The application of "yield management" therefore takes on its full meaning, considering that the marketing of the "regional product" present sun certainties, The perish ability of sales opportunities, a different perception of the value of the product depending on the investors, but also the systematic use of discounts to keep up with the competition.

The use of basic yield management techniques, such as multi-criteria analysis, highlights the significant potential it offers in terms of regional attractiveness and optimization of public finances. Yield management" then becomes a particularly useful decision-making tool for orchestrating strategies to attract visitors to the region by segmenting the market and applying a differentiated marketing mix to investments projects. It provides access to "hidden demand", helps to understand the relationship between the area's attributes and their price, and significantly increases "future Direct Investment Abroad" IDE revenues without compromising the resources needed to capture them. The creation of an IDE demand forecasting model is a relatively untapped area of academic research of the utmost importance. From an operational point of view, the key to the success of yield management in the IDE market lies in the quality of the segmentation of investors established on the basis of their sensitivity to the price stimulus of the 'territorial product'.

Reference to a journal publication:

- Carluer F., ManagingConflict in Economic Convergence of Regions in Greater Europe, Elsevier, North Holland, 2007a.
- CHAKRABATI A., 2001, « The determinants of Foreign Direct Investment: Sensitivity of Cross-Country Regression », Kyklos, n° 54, pp. 89-114.
- Cross R., Yield Management, hard-coretactics for market domination, The Broadway Books, New York, 1997.
- El ammari, Y., Harmouzi, A., Chaouch, A., El hadiri, H., & El ammari. S. (2015). Relationship between certification and export in Moroccan food industry. Der Pharma Lettre. 7(1): 14-20.
- Foss N., "The BoundarySchool: Strategy as a BoundaryDecision", RethinkingStrategy, Sage, H. Volderba, T. Elfring, London, 2001.
- HAYTER R., 1997, The dynamics of industrial location: The factory, the firm and theproduction system, Wiley, Chichester, NY.
- Rose, G. 2016. 'Visual Methodologies: An Introduction to Researchingwith Visual Materials.' Thousand Oaks, California: Sage.
- Pecqueur B., Peyrache-Gadeau V. (2010), « Fondements interdisciplinaires et systémiques de l'approche territoriale », Revue d'Economie Régionale & Urbaine, N°4, pp. 613-623.
- Samuels, J. 2016. 'Attracting the Heart: Social Relations and the Aesthetics of Emotion in Sri Lankan Monastic Culture.' Honolulu: University of Hawaii Press.
- SEKKAT K., et MEON P.G., 2004, "Does the quality of institutions limit the Mena's integration in the world economy?", Annual Bank conference on development economics-Europe, Belgium, May 10-11, 2004
- Suire R., Vicente J. (2008), « Théorie économique des clusters et management des réseaux d'entreprises innovante », Revue française de gestion N°184, pp. 119-136.
- Svensson G., "Globalization of Business Activities: a 'Glocal Strategy' Approach", Management Decision, vol. 39, 2001, p. 6-18.
- SEVESTRE P., 2002, Econométrie des données de Panel, Dunod, Paris.
- Zimmermann J.B. (2001), "The firm/territory relationships in the globalization: towards a new rationale", European Journal of Economic and Social Systems,N°15, pp. 57-76.

Reference to a book:

- Guide méthodologique pour l'élaboration des stratégies de développement urbain, Centre de Communication et de Publication/DGCL, 2013.
- Ministère de l'économie et des finances (2016), « Foncier publique au Maroc mobilisé pour l'investissement », Edition ministère de l'économie et des finances, 2016

Reference to a web source:

- ***http://www.agriculture.gov.ma/ consulté le 20-05-2023***
- ***http://www.hcp.ma/region-meknes/PRESENTATION-DE-LA-REGION-FES-MEKNES_a34.html consulté le 10-04-2023***
- ***Agro-pôle Olivier Meknès (AOM) : www.agropoleolivier.com. consulté le 10-09-2023***
- ***Ministère de l'Agriculture et de la Pêche Maritime (MAMP) : www.agriculture.gov.ma consulté le 10-09-2023***

Annex

TABLE: ANSWERS FROM QUESTIONNAIRE FOR COMPANIES ESTABLISHED IN THE FES-MEKNES REGION

Variable /scale of analysis	0	1	2	3	4	5
Contact with the Municipality	1	1		2		3
Contact with the regional investment center CRI			1	2	1	3
Contact with the Chamber of Commerce	1		1	2		2
Contact with the Chambre OF industry	2		2	2		1
Contact with the Agricultural Chamber			1		1	5
Contact with the the regional council	2		1		3	2
Contact with the administrations (taxes, local authorities, etc.)				2		5
Availability workforce	1	2		1	3	
Availability workforce qualified					4	3
Proximity to educational establishment			1	2	1	2
Research and development				1	1	5
workforce local cost			1		2	4
Aid for establishment (tax exemptions, subsidies, etc.) granted by public authorities						7
SIAM						7
Proximity to agricultural raw materials					1	6
Proximity to suppliers				1	2	4
Proximity to subcontractors		1	1	1	2	2

Proximity to local customers			2			5
The presence of tourists		2	4			1
Ability to export		1			1	5
Proximity to an airport		1	1		1	4
Proximity to railway infrastructure		2		1		3
Proximity to a seaport		2				5
Quality of road infrastructure			1	1		5
Access to motorways				1		6
Accessibility of the site by public transport		2	2	1	1	1
Telecommunications infrastructure			1		1	2
Existence of building land adapted to the needs of the site					2	5
Real estate costs (rent level, land acquisition costs, building construction costs)					2	5
landscape and climate				2	2	3
Cultural and/or sporting leisure facilities	1		1	3		2
Quality of life				2	2	3

Source: author