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CONTRIBUTION TO THE ANALYSIS OF THE BEHAVIOR OF INNOVATION WITHIN FIRMS OF THE FOOD INDUSTRY IN MOROCCO

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ABSTRACT

Innovation today means above all as the ability to change or transform a product, a process or a management system, whether it is a radical change or a slight improvement in incremental type, as a result leads to a successful final operation. Our paper proposes to collect and study the various factors that may explain the innovation behavior in companies engaged in the food industry branch in Morocco. To do this, we considered the perception of innovation in companies by analyzing the peculiarities of this industrial branch. The most important result that describes the innovation behavior of firms is that the incremental and diversified level of innovation and continuous improvement especially with conservative and demanding consumer.

INTRODUCTION

Among the major policy concerns of organizations, alongside the various issues of sustainable development, the rise of international competition and the imperatives of the global crisis appears management innovation that has now become an important catalyst for the organization allowing it to create, preserve and develop the value added. Admittedly, the commitment of organizations in innovation activities bring innovative solutions to the challenges and needs of the latter it is the organizational side, the marketing side, the process side or the product side.

Our research is exploratory inserted into a constructivist epistemology, proposes to collect and study the different characteristics and factors that may explain the corporate innovation behavior engaged in the food industry branch in Morocco. If we assume that the food industry branch in Morocco is sufficiently developed to engage in innovation activities, and that it requires continuous investment in innovation to ensure survival in the market, we can analyze behavior through two important assumptions: H1 firms have a passive innovation comportment explained by low financial means, or by creating a monopolistic position entry barriers, H2: firms have a reactive and proactive behavior translates the factors that influence the ability to innovate.

Beginning with the innovative approaches, and having the features of the sector, we will gather the different behaviors in a summary table before discussing the innovation opportunities in any industry branch confused.

THE INNOVATIVE APPROACHES

In the literature, the concept of innovation is defined as the economic enhancement of the invention within the company and distinguishes innovation product innovation processes (Acs and Audretsch, 1990). If the first is to bring to market new products or offer better products than those on the market (more on efficient features), the second rests in turn on the technical improvement of production processes (automation, flexible manufacturing systems), or methods of production managements.

Other studies have adopted different approaches to the definition of innovation that is the functional approach (based technical, commercial, financial, administrative, human and innovating to find the most effective involvement of employees). The second approach relies more on action to innovate. We can distinguish breakthrough innovations that completely change a previous situation of adaptation that has innovation as enhancing effects of a technique, a product.

It also opposes the reactive innovation and proactive innovation as the company launches an innovative action responding to immediate threats and by stimulating innovation to provide superior margin of initiative.



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THE CONVERGENCE OF THE SPECIFIC BRANCH OF ACTIVITIES TO THE COMPONENTS OF THE SWOT MATRIX

The food industry branch occupies a strategic place in the national economy and has more than 2,000 companies representing 25% of total industrial establishments primarily comprising PMI up to 95% (2013).

The branch includes industries related to drinks, fruit and vegetables, meat, fish, milk, fats, flours and grits, cereals, pet food, tobacco and other food products. It is clear that the sector composition is quite disparate in terms of size (small sizes like modern pastry) while others are relatively concentrated (sugar, seeds, milk oils)

Regarding the market, some industries are more outwardly oriented (fruits and vegetables, fish) while others are exclusively oriented towards the domestic market (fats branch, dairy, grain processing industry drinks, meat industry). The branch of fruit and vegetables is dominated by the activity of preserving vegetables and fruit, followed by juices and tomato-based preparations.

Major food companies are either national groups (ONA Group, Holmarcom, Ynna holding, etc.) or foreign companies (Coca Cola, Nestle, Danone, P & G, Savola, Unilever). The food industry on average employs over 104,000 people, nearly 76% are permanent (36% women). In addition, value added has averaged 22 billion dirhams (2013) and its contribution to exports reached more than MAD 17 billion in the last decade. Activity in the sector has specificities summarized in the following table:

Table 1: Specificity of the branch

Nature of business	17% of production is for export (which requires continuous innovation) However, much of the exported products are of low added value. A market served varied.
Production system	productive system fragile and structurally weak, particularly in terms of exports.
Level Opportunities	This sector has seen huge development capabilities agricultural and agro-industrial potential of the country. The sector also represents a predisposition to the introduction and the use of new methods in the production process, together with an exploration of new markets (US, European and Arabic ...).
Structure	Low productivity, insufficient standardization, and weakness of the supply chain. For the olive oil business (crushing): existence of industrialized sector, semi industrialized and traditional sector.
Difficulties	The supply and diversification problem (upstream of the food chain) A slowdown in the sector of fruits and vegetables processed. a lack of dynamic demand. Insufficient supply of agricultural raw materials

According to the cited specific we built components of the SWOT matrix as follows:

Table 2: SWOT matrix of the food industry

<p>Structural strengths: namely proven experience, a favorable climate, a domestic market to absorb discrepancies between production and exports.</p> <p>Specific competitive advantages: a good production discipline, good professionalism, a management system quality and high qualification of large firms, vertical integration between large greenhouse operation and large exporters an opportunity to grow over a long period of year in the south.</p>	<p>Constraints of the sector:</p> <p>Climatic disturbances that can upset the production and thus the business, high costs of incoming (plastic and cardboard), the obsolescence of part of the park and greenhouse monthly paid quotas limiting exports.</p> <p>Logistics is also a handicap for the export of fruits and vegetables because of high costs (30% of the cost).</p> <p>- Aging orchards in parts of Morocco, low level of supervision of small and medium producers, low efficiency in the use of irrigation water (sometimes scarcity), the increase in production costs including the energy and pesticides.</p> <p>- Low level of technology coupled with the depreciation of the quality of a commodity due to the poor conditions of handling.</p> <p>The low investment rates mainly intangible asset, technological backwardness, under the qualification of human capital, the predominance of precarious work, and the shortcomings of the management structure of companies.</p> <p>A low level of research and development (less than 1% of the</p>
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<p>Opportunities A stable economy. Proximity to European markets. Important industrial sectors to develop. A key to play in the international situation facing the increasing demand (strengthening export). The opportunity to play an important role in sustainable development.</p>	<p>2013 turnover);</p> <p>Threats A weakening of the distribution with a heavier logistic cost and energy A financial crisis reducing the granting of credit Volatility of commodity prices difficult to predict. Fierce competition from countries like Tunisia, Egypt and Türkiye. Barriers to the entry of European and US markets for exports.</p>
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SITUATION OF THE SECTOR INNOVATION

WHAT IS INNOVATION FOR THE SECTOR?

It is any activity which contributes to improving the competitiveness of enterprises, increases social welfare of citizens and promote sustainable growth. The technological process innovation is the adoption of new production methods or significantly improved (at least for now), enabling the production of new products, or simply improved, it would be impossible to get to using facilities or conventional methods. Alternatively, it allows increasing the yield in the production of existing products and bringing more flexibility to the production, lower costs or even reduces waste, environmental damage, product design costs or improves working conditions.

Some types of innovation are more appropriate to the nature of the activity and the structure of the food industry in Morocco and other differs from one classification to another as shown in the table:

Table 3: Line with the classification Schmpeter

Variant Classification	Adequate with the sector	Not adequate with the sector
The introduction of new goods -that is one with which consumers are not yet familiar- or of a new quality of goods.	*	
The introduction of a new method of production, which needs by no means be founded upon a discovery scientifically new, and can also exist in a new way of handling a commodity commercially		*
The opening of a new market that is a market into which the particular branch of manufacture of the country in question has not previously entered, whether or not this market has existed before.	*	
The conquest of a new source of supply of raw materials or half -manufactured goods, again irrespective of whether this source already exists or whether it has first to be created	*	
The carrying out of the new organization of any industry, like the creation of a monopoly position (for example through trustification) or the breaking up of a monopoly position."		*

According to the classification of Clark & Handerson distinguishes between innovations that impact the links between components and innovations influencing consumption patterns, we stress that innovation remains committed to an incremental level facing a conservative consumer.

Table 4: Classification of Clarck and Handerson

	Design of components		
		Enhanced	Modified
Impact on the links between components	Unchanged	incremental innovation	Modular innovation
	Modified	architectural innovation	radical innovation
	Technology		
		News	Old
Consumption habits	News	Disruptive Innovation	behavioral innovation
	Old	technological Innovation	incremental innovation



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For the canning industry and packaging, although organizations interested at the moment to increase their production capacity, but can also be part of the improvement of components and raw materials used for packaging canning and especially to meet the phytosanitary requirements that block their marketing. Faced with local consumption habits (difficult to change) organizations find themselves by excellence in incremental innovation especially if they are based on old technologies, as opposed to behavioral innovation regarding production for the export. On the other hand, and on the basis of the intersection between the variables of complexity and risk, we note that the industry's innovation activities engage in less risky projects with low complexity, something that their lets not exceed a level of development of existing and improving their learning.

Table 5: Classification according to risk and complexity

Innovation activities		
High Risk	opportunistic innovation	Radical innovation
Low Risk	incremental innovation	strategic innovation
	Low complexity	High complexity

The recommended types of innovation in the sector requires less investment in research and development, but includes very innovative market segments where technological opportunities can generate product innovation more radical and consumer research and developments. When the capacity for innovation in these companies, it actually depends on three parameters from the influence of the internal architecture of the firm in terms of structure and in terms of information flow patterns; the mode of coordination and cooperation with external partners (upstream and downstream); and finally the ability to capture the knowledge of its environment.

RESULTS AND DISCUSSION

With the characteristics and constraints of the food industry, innovation behaviors differ from one structure to another and from one sector to another. We present in table below summarizes the different behavior of firms all size and industry combined.

THE FIRMS' INNOVATION BEHAVIOR

The following table summarizes the various firms' innovation behavior:

Table 5: The firm's innovation behavior

Behavior	Explanation	Examples
Development of the learning process of the techniques already innovated.	Insufficient investment in research and development	Canning industry, packaging, dairy industry and derivatives, soft drinks, cold cuts of meat.
Firms innovate more fit products in process	Commercial innovation is less risky, less complex and more secure	Beverage industry, milk, olive oil mill.
Low business involvement in research and development	Less integrated structures, more fragile, less concentrated.	Sugar industry, fruit and vegetables, olive oil, argan
The importance of incremental innovation and cumulative	rather conservative behavior of consumers from dietary changes.	Beverage industry, juices, beverages and non alccolises tomato, olives, corn.
Improving the supply of agricultural products intended for processing in quantity and quality	The sector is largely constrained by the supply and diversification problematic. Strengthening and development of new high yielding varieties, while aiming to improve the health quality for all sectors.	Companies of fruits and vegetables, olive oil industry, mineral water industry
Looking for new opportunities and new markets	through geographic targeting (17 potential markets) targeting in terms of promotion and support for exporters.	Companies of fruits and vegetables, olive industry, fish, tobacco.
Collaboration with the Government through the	rationalize cultivation techniques in terms of efficient management of irrigation systems,	Cereals, olives, oil mills, fruit and vegetables.

Green Morocco Plan	integrated biological control, phytosanitary control and rationalization of fertilization.	
Firms seek to achieve several goals through the adoption of incremental innovation policies	They seek a high level of productivity (reducing the cost of labor, increase production capacity, reduce production time, increase the flexibility of production) in the product (extension of the product range, improving product quality, faster delivery, replacement of removed products, reduced consumption of materials, reduced environmental damage, reduced energy consumption, response to new regulations.	Industry fish, cereals, dairy, canning, packing

EMPIRICAL CASE

Innovation processes: CASE BELMA specializing in sardine canning industry (brine)

Pacemakers: Cost reduction and optimization of resources, improve productivity and increase profitability: reduced losses in brine during the production chain through the PDCA approach.

Action: Complete installation of the filtration pumps, improved lines and more ongoing maintenance.

Organizational innovation: CASE HSB Group specializes in the olive industry: the implementation of a GMAO application as a tool for improving maintenance management due to reliability, robustness, maneuverability and efficiency. The objective of improving by reducing losses caused by unscheduled downtime of technical facilities through a GMAO solution.

Business Innovation: CAS PAPELREGAL Group specialized in soft drinks industry: the personalization of packaging for a customer loyalty prompting purchases. The stimulator is lower sales to the PEPSI. The area knows the emergence of personalization practices (Marks Nestlé Chocolate, Kinder, M & M's, chocolate and Coca Cola).

THE OPPORTUNITIES FOR INNOVATION IN THE SECTOR

Possible innovations to improve the performance of IAA sector of Morocco can be summarized as:

- Innovation at the product level in the direction of its valuation by choosing a suitable packaging.
- Innovate in the sense of strengthening the chains of high value crop production for export;
- Innovating in the sense of a renovation upstream agricultural sectors.
- Innovate to better promote the agricultural heritage through the aggregation that allows the purchase of production, processing and marketing and the implementation of actions related to training and supervision of farmers.
- Innovating in partnerships between national and international retail chains.
- Innovating in the direction of the development of local products through the certification and development of geographical indications (GIs) and agricultural labels (LA).
- Innovate to improve the structural conditions such as the extension of the greenhouse area, equipment for drip irrigation system, increased packaging capacity through the upgrade of existing units and the creation of new units. Strengthen the acquisition and installation of greenhouses, equipment of farms in safety net against insects, water saving acquisition of agricultural equipment, realization of seawater desalination facilities;
- Innovate to improve the efficiency of the downstream value chain of food chains especially in terms of distribution and marketing mailons.

CONCLUSION

In conclusion, we can say that the food industry sector in Morocco is particularly characterized by the importance of incremental and cumulative innovation with low added value.

Protectionist practices in international markets, the weakness of the quality of products, the relatively high level of production costs and the inability of industrial firms to innovate in terms of diversification of products and markets were critical for reversing overall competitiveness.

It remains to emphasize that the very restrictive nature of the internal environment in which agribusinesses in turn explains, to a large proportion of their poor performance: the supply difficulties of agricultural raw material factories, weak solvent demand, problems of funding, particularly for small and medium enterprises, the high cost of transport, packaging and energy and the weakness of the search throughout the food sphere (at the agriculture and the processing industry). In sum, own accumulation process to branch suffers from failures and



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is confronted with significant constraints in the three phases of capital mobilization phase, the phase of development of the capital and finally the implementation phase.

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