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The Mediating Role of Knowledge Acquisition in the Influence of Entrepreneurial Orientation on the Competitiveness of SMEs Integrated in the Value Chain: the Case of Agricultural SMEs in the Fes-Meknes Region

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Abstract

The aim of this study is to investigate how knowledge acquisition mediates the relationship between the dimensions of entrepreneurial orientation and the competitiveness of agricultural SMEs in the Fez-Meknes region (RFM) of Morocco. The study utilized a quantitative approach and employed a questionnaire as the data collection instrument. The target sample size was 330, which represents a subset of the total population of 2150 SMEs operating in the agricultural sector in the RFM. The relationship between the variables was analyzed using structural equation modeling. The statistical analysis revealed that knowledge acquisition played a mediating role in the relationship between the dimensions of entrepreneurial orientation and the competitiveness of agricultural SMEs that are integrated in the value chain.

Keywords: small and medium enterprises, entrepreneurial orientation, knowledge acquisition, competitiveness, cost control, differentiation

Introduction

Our research seeks to uncover the intricate connections between the dimensions of entrepreneurial orientation and the competitiveness of agricultural SMEs that are integrated into the value chain. To achieve

this objective, we will develop a conceptual model that synthesizes these complex relationships. We contend that the three components of EO - innovation, proactivity, and risk-taking - are closely linked to a firm's competitiveness, and that knowledge acquisition acts as a mediating variable in this relationship. Previous studies (references [1]-[9]) have consistently demonstrated that the interplay between the dimensions of EO leads to improved firm performance.

Therefore, we have chosen to investigate this interaction in the specific context of the Fez-Meknes region in Morocco. To this end, we will answer the central question: **Does the acquisition of knowledge in the value chain mediate the relationship between the dimensions of EO and the competitiveness of agricultural SMEs that are integrated into the value chain of the Fez-Meknes region?** By exploring this question, we hope to deepen our understanding of the factors that influence the competitiveness of agricultural SMEs in this region.

Formulating Hypotheses and Developing a Conceptual Framework:

Definitions of research concepts:

1) Entrepreneurial orientation

Table 1 showcases a selection of definitions of entrepreneurial orientation (EO) utilized in prior studies, along with definitions of linked constructs that form the basis of the EO concept.

Table 1: definitions of entrepreneurial orientation

Auteurs	Définitions
[10]	«*An entrepreneurial company is one that engages in product market innovation, undertakes somewhat risky projects and is the first to come up with 'proactive' innovations, beating its competitors to the punch*» (p. 771).
Covin et Slevin (1998)	«*Entrepreneurial firms are those in which senior management have entrepreneurial management styles, as reflected in the strategic decisions and operational management philosophies of the firms. Non-entrepreneurial or conservative firms are those in which the management style is decidedly risk averse, non-innovative and passive or reactive*» (p. 218).
Lumpkin et Dess (1996)	«*OE refers to the decision-making processes, practices and activities that lead to new entry", characterised by one or more of the following dimensions: "a propensity to act autonomously, a willingness to innovate and take risks, and a tendency to be aggressive towards competitors and proactive about market opportunitie*» (pp. 136–137).
Zahra et Neubaum (1998)	EO is «*the sum total of a company's radical innovation, proactive strategic action and risk-taking activities that occur in support of projects with uncertain outcomes*» (p. 124)

Auteurs	Définitions
Voss et Moorman (2005)	« . . . *we define EOs as a disposition at the firm level to adopt behaviours [reflecting risk-taking, innovation, proactivity, autonomy and competitive aggressiveness] that lead to changes in the organisation or the market* » (p. 1134).
Rauch et al (2009)	« *Entrepreneurial orientation as the processes of developing entrepreneurial strategies that firms adopt to gain competitive advantage; entrepreneurial orientation is the operational basis for entrepreneurial decisions and actions*». (p.763)
Pearce, Fritz et Davis (2010)	«*An EO is conceptualised as a set of distinct but related behaviours that have the qualities of innovation, proactivity, competitive aggressiveness, risk taking and autonomy*» (p. 219).
Covin et Slevin (1989)	« *The extent to which senior managers are willing to take business risks, drive change and innovation to gain competitive advantage for their company, and be aggressive with other companies*». (p.77)
Smart et Conant (1994)	« *a dynamic, goal-oriented process in which an individual combines creative thinking to identify market needs and new opportunities with the ability to manage, secure resources and adapt to the environment to achieve desired results while assuming a certain amount of risk for the company*. (p.2)

Sources : Adapted from [11]

2) Value chain

- *Definition:*

For the past three decades, the concept and tool of the value chain have been utilized to analyze and comprehend industries [13], [14]. It has emerged as a valuable mechanism to delineate the interrelated activities within industries, especially in the manufacturing sector [12].

Kaplinsky (2004 p: 7) defines the value chain as « *The value chain describes the full range of activities which are required to bring a product or service from conception, through the intermediary phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final consumers, and final disposal after use* ». Agricultural value chains encompass a series of operations that convert raw agricultural produce from farms into final products that are consumed by customers while enhancing the product's worth at every stage of the chain [15, p. 195]. As per Sausman et al. (2015), "The value chain portrays the input-output configuration of supply chains as a structure consisting of specific value-generating activities" [16, p. 199].

According to [17, p. 97], the value chain can be defined as a series of activities that add value to a product as it moves from production to processing, marketing, and consumption. In agriculture, value or supply chains comprise a set of processes and movements from farm to table, encompassing inputs, production, processing, marketing, and consumer. In essence, a product must undergo multiple processes or stages to reach the end-user, and each step must be efficiently connected to the next to ensure a functional chain. At each stage, the product undergoes further enhancements or modifications to augment its value.

When designed to function as a single entity that promotes and enhances customer perceived value through inter-firm collaboration, business value chains evolve into integrated value systems [18, p. 234]. The integrated value system is characterized by several companies in a shared market segment jointly planning, executing, and controlling the flow of goods, services, and information along the value system to maximize chain efficiency and augment customer value [18, p. 234], as defined by J.H. Dobbs in 1998.

- *Benefits of integrating businesses into the value chain*

Farmers encounter significant expenses and unpredictability while procuring agricultural chemicals, machinery, financial, and informational services, as well as when marketing their produce, particularly if buyers insist on strict quality and food safety regulations [19]. These market limitations frequently reinforce each other. Scarce access to one agricultural input may diminish the motivation to adopt other inputs due to interdependence [20].

Limited access to agricultural inputs may, in turn, curtail entry to production markets by restricting productivity and preventing adherence to public and private standards [21]. Moreover, new product development is an expensive, resource-intensive, and notoriously precarious undertaking (Page, 1993, cited in [22, p. 235]). Thus, it has become increasingly imperative to seek means of reducing the risk and cost of product development. Collaborating with two or more organizations has been identified as a means of curbing product development costs and mitigating the risk of failure [22].The subsequent table illustrates some of the advantages of integrating businesses into the value chain.

Table 1: Benefits of integrating businesses into the value chain

Authors	Benefits of integration	Explanations
[23] .	Efficiency/ Cost reduction	Research indicates that partnering with suppliers lowers procurement risks and enables companies to attain a competitive edge by reducing transaction costs (Handfield and Bechtel, 2002; Sheu et al., 2006)."

Authors	Benefits of integration	Explanations
[23].	Risk management and allocation	Collaborative partnerships assist companies in mitigating risk by means of resource sharing (Kogut, 1988), while also granting access to supplementary resources (Park et al., 2004), thereby bolstering profitability and performance via competitive advantage development over time. A notable risk involves input or product pricing. Several firms address price-related risks by vertically integrating into input supply or product distribution channels
[24] et (Santacoloma et al., 2004)	Source of competitive-ness for companies	To mitigate risk, acquire resources, streamline logistics, minimize inventories, and increase control over competitive elements that extend beyond their purview, agribusinesses are increasingly seeking business partnerships and affiliated agreements.
[17]	Financing	Chain linkages also enable financial transactions to traverse the value chain. For instance, processors or exporters can furnish inputs to farmers, which can be reimbursed directly from the proceeds of the product sale, bypassing conventional lending protocols.

Source: Compiled by us from the literature review

The advantages of collaborative arrangements are validated by Yoshino and Rangan (1995), who state that alliances enable enterprises to respond promptly to market demands, a crucial factor in time-based competition [22, p. 255]. One of the primary drivers for firms to establish collaborative links is to mitigate and distribute the risks and expenses of product development.

3) Competitiveness of the company

The concept of competitiveness is complex and involves multiple dimensions, such as long-term orientation, controllability, and dynamism. It is commonly defined as a company's ability to effectively utilize its resources and capabilities to create value-added competencies. The table below presents various definitions of enterprise competitiveness.

Table 2: Definitions of company competitiveness

Definition of competitiveness	Authors
The competitiveness of a company relies on its ability to adjust its products to meet market demands and competitive pressures, including product variety, quality, pricing, and effective sales and promotional channels.	Adamkiewicz-Drwiłło (2002)

Definition of competitiveness	Authors
Competitiveness refers to a company's capacity to offer high-quality products and services at a lower cost than its domestic and global rivals. It encompasses the long-term performance of the company, its capability to remunerate its employees, and provide superior returns to its stakeholders	Buckley et al. (1988)
The economic strength of a company compared to its rivals in the global marketplace, where products, services, people, and innovations can move freely, regardless of geographical boundaries, defines its competitiveness	Chao-Hung, Li-Chang (2010)

Source : According to [25]

Theoretical connections between concepts: the mediating function of knowledge acquisition in the association between (EO) and competitiveness.

Research has shown that to improve competitiveness and gain sustainable competitive advantage, coordination and integration with suppliers and customers are necessary, which cannot be achieved through traditional buyer-seller transactional relationships. This is where the concept of value chain comes into play. By establishing closer strategic relationships with customers and suppliers, companies are able to learn and adapt better, rather than operating in isolation.

Impact of knowledge acquisition on the competitiveness of agricultural SMEs

Knowledge has been recognized as a crucial resource for gaining competitive advantage (Grant, 1996), and the sharing of knowledge within value chains has been extensively studied (references 26 and 27). To achieve competitive advantage, actors in value chains need to collectively develop knowledge management capabilities (Gold et al., 2001 cited in reference 28).

Various types of knowledge can be obtained through value chain partnerships, including technological, organizational, manufacturing, and marketing knowledge (Almuiet and Salim, 2013 cited in reference 28). Knowledge acquisition through value chain partnerships can be achieved through action learning (i.e., learning by doing), systematic problem-solving (e.g., learning by thinking at the system level), and experiential learning (e.g., learning from partners' successes and failures) (Raisinghani and Meade, 2005 cited in reference 28).

Effective knowledge acquisition can enhance chain performance by improving traceability, quality assurance (Doluschitz et al., 2010), and logistics performance (Marcus and Anderson, 2006 cited in reference

28). The first-mover advantage motivates proactive firms to leverage newly acquired knowledge to increase the value of their exchange (Kreiser, 2011). Therefore, we hypothesize in this study that:

H1: Knowledge acquisition in agricultural product chains is positively related to the competitiveness of agricultural SMEs.

The Mediating Role of Knowledge Acquisition in the Relationship between Entrepreneurial Orientation and Enterprise Competitiveness:

The theory of dynamic capabilities can be applied to the relationship between EO and knowledge acquisition. Dynamic capabilities are not only developed in response to external challenges but also as a result of internal motivations to improve existing business practices [29]. Firms with strong dynamic capabilities are highly entrepreneurial and have a strong inclination to modify and enhance their ordinary capabilities. As they set the parameters for change, firms with a high level of EO are always seeking knowledge-based resources [29].

Value chain partners are considered one of the most significant sources of knowledge, and entrepreneurs play a vital role in facilitating knowledge transfer within these chains [28].

Additionally, companies involved in entrepreneurial activities value knowledge obtained from external sources, as it helps them address any resource gaps [31].

For instance, suppliers can provide technical expertise for innovations, such as the introduction of new materials, while distributors can help evaluate the marketability of new products or services [32]. By seeking untapped information and swiftly integrating potentially useful knowledge, entrepreneurial firms can enhance their chances of acquiring additional knowledge [28], [32].

According to previous research [28], all three components of EO have a positive impact on knowledge acquisition within value chains. The innovation component of EO creates an environment that fosters openness to new information, benefitting all actors within the chain (Bouncken et al., 2016). The risk-taking component of EO increases the willingness to allocate time, effort, and resources to learning activities (Kreiser, 2011).

Proactivity, which is a crucial element of EO, plays an essential role in establishing and maintaining knowledge transfer relationships between value chain actors. Proactive value chain actors anticipate the future, thereby increasing their demand for external knowledge (Wang, 2008). Thus, they are motivated to place themselves in situations that offer the most learning opportunities. Additionally, the search for first-mover advantage encourages proactive firms to utilize newly acquired knowledge to increase the exchange's value (Kreiser, 2011). Based on these findings, we hypothesize that:

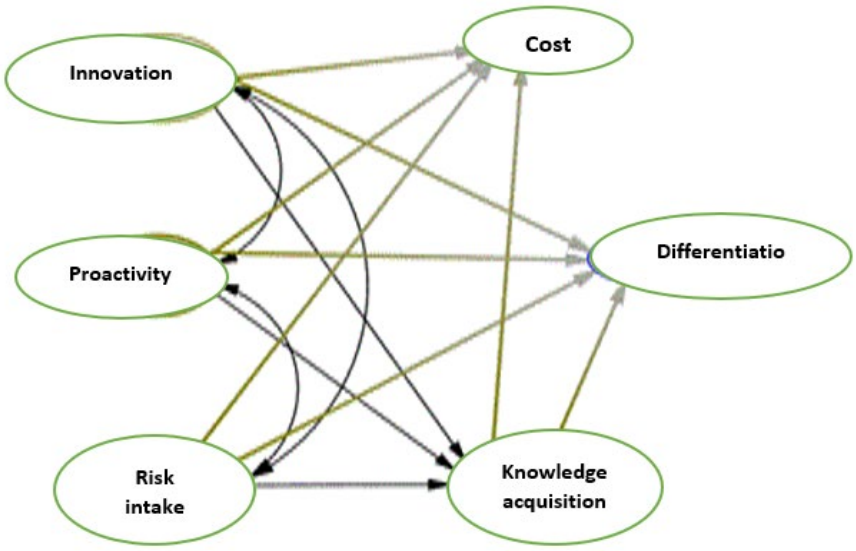
H2: Knowledge acquisition mediates the relationship between entrepreneurial orientation and firm competitiveness

Modelling the mediating role of knowledge acquisition in the impact of EO dimensions on competitiveness dimensions:

This section presents a conceptual model that examines how entrepreneurial orientation affects the competitiveness of SMEs integrated in the value chain. While previous research indicates that all dimensions of entrepreneurial orientation have a positive effect on firm performance and growth, it remains an ongoing area of study to determine the specific impact of each dimension and their combined effect on dependent variables. To the best of our knowledge, no empirical research has explored the impact of entrepreneurial orientation dimensions on the competitiveness of agricultural SMEs integrated in the value chain, either in general or specific to this context.

The following model depicts the links between the various research constructs (concepts) we have analyzed:

Figure 1: Modelling the relationship between the dimensions of EO and those of competitiveness of SMEs integrated in the value



Source: Elaboration by us under the AMOS23 software

Eleven hypotheses have been developed for testing, six of which postulate a positive relationship between the dimensions of entrepreneurial orientation and those of competitiveness. Additionally, it is hypothesized that knowledge acquisition in the value chain plays a mediating role in the relationship between entrepreneurial orientation and competitiveness.

Working Methodology:

The study followed a research design that included constructing a questionnaire, conducting a pilot test, collecting and analyzing quantitative data. The pilot test was performed to ensure that the questionnaire was clear, accurate, and easily understood by the respondents. Feedback was obtained to improve the format, design, and comprehensibility of the survey. Based on the feedback, several modifications were made to refine the questionnaire before distributing it to potential respondents. Once the required number of respondents was obtained, data entry and cleaning were carried out using SPSS.25 software, followed by quantitative analysis to test the hypotheses. AMOS.23 software was used to conduct exploratory factor analysis (EFA) and structural equation modelling (SEM) to examine the proposed relationships.

Measurement of variables

-The dependent variable : For our research, we chose the measure of [13], [33], [34].

-Independent variables : EO dimensions

In our research we focused on the three most frequently cited dimensions of entrepreneurial orientation: innovation, risk-taking and proactivity. To measure the dimensions of entrepreneurial orientation, we used a scale developed by [35] with five points.

Mediating variables: Knowledge acquisition in the value chain: The measurement items for this variable were drawn from [28] Li et al (2011) and Tsang et al (2004) encompassing six different types of knowledge - technical, new product development, management, marketing, manufacturing and problem solving.

Population and sample:

The population under study comprised of 2510 agricultural businesses that were registered in the trade register and with OMPIC. The OMPIC 2018 database reported a total of 127,345 businesses in the region, out of which 39,950 were legal entities.

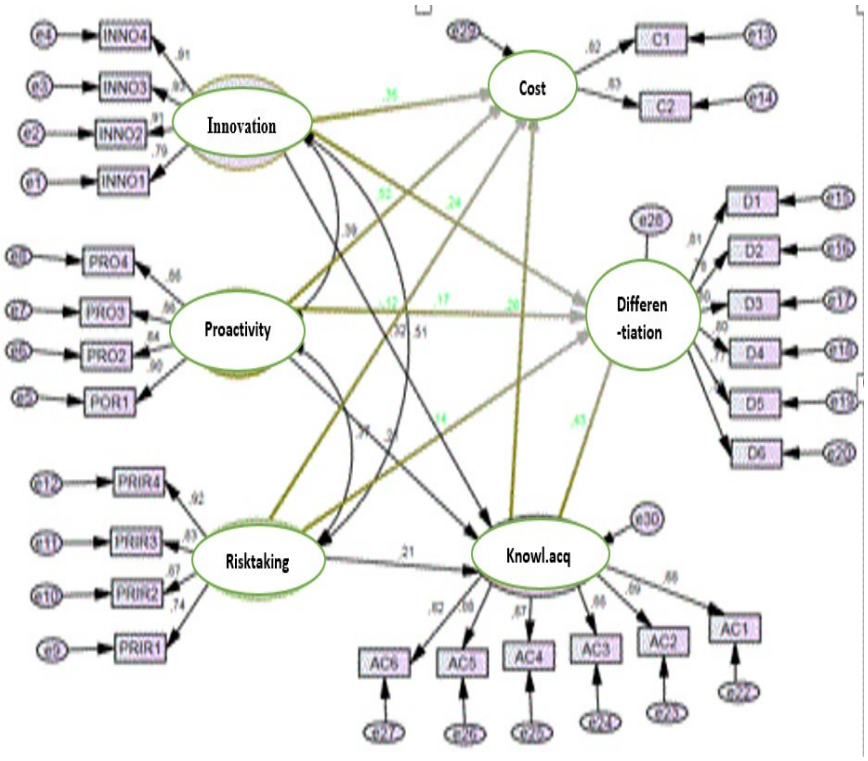
The sample size was determined based on various factors, including the level of significance, desired precision, variance of the population, sampling technique, population size, effect size, power of the test, and number of parameters to estimate. In addition, tables proposed by [37] were used to determine the necessary sample size for achieving a desired global fit in structural equation models. For this study, the sample size of 330 was determined using the formula provided by Kothari (2004), while also considering the requirements of the data analysis techniques and the need for representativeness of the population.

Results and Discussion: Mediating Effects of Knowledge Acquisition

A pathway model was developed and examined to test the mediating effect of knowledge acquisition on the relationship between EO and SME competitiveness and to address the hypotheses proposed in this research. Knowledge acquisition was treated as a one-dimensional concept, following the suggestion of [28]. The final pathway model of the mediating effect of knowledge acquisition on the relationship between EO and SME competitiveness is presented in Figure 2. The model fit the data well, and the majority of the indices achieved a very satisfactory level of fit, all falling within the range of acceptability (Appendix 1). The fit indices of the model are as follows:

CMN/DF = 1.078, RMSEA = 0.015, GFI = 0.933, AGFI = 0.918, CFI = 0.997, TLI = 0.996.

Figure 2 :The final model of the mediating effect of knowledge acquisition on the relationship between EO and SME competitiveness



Source: Elaboration by us under the AMOS23 software

In our study, we posited that knowledge acquisition partially mediates the relationship between the three dimensions of EO and the two measures of SME competitiveness. To verify our hypotheses, we adopted the approach recommended by [38] for testing mediation in a relationship:

- The initial stage in establishing a mediating effect is to demonstrate that each of the independent variables (innovation, proactivity, and risk-taking) is significantly related to the dependent variables (cost and differentiation).

- The second step involves verifying that there is a significant correlation between the independent variables and the mediator variable.

- Based on the findings illustrated in Figure (60), the three independent variables (innovation β = 0.32, proactivity β = 0.21, and risk-taking β = 0.21) exhibit a significant relationship with knowledge acquisition, satisfying the first and second steps. In addition, knowledge acquisition demonstrates a significant association with both dimensions of competitiveness (cost β = 0.25 and differentiation β = 0.43), fulfilling the third step. These results are summarized in the table below:

Table 3: the correlation between the three dimensions of EO and knowledge acquisition

Relationship			ß Estimated	S.E.	C.R	P
Knowledge acquisition	⭐	Proactivity	0.211	0.052	3.805	***
Knowledge acquisition	⭐	Risk-taking	0.208	0.071	3.431	***
Knowledge acquisition	⭐	Innovation	0.316	0.062	5.132	***
Differentiation	⭐	Knowledge acquisition	0.433	0.057	7.789	***
Cost	⭐	Knowledge acquisition	0.255	0.048	4.616	***

Source: Compiled by us using SPSS AMOS.23 software

Note: *** = P< 0,001

The research proposes mediating hypotheses based on the suggestions made by Baron and Kenny (1986) and Hair et al. (2010). According to them, a variable mediates a relationship when it reduces the path coefficient of a direct relationship after being introduced into the model. Complete mediation occurs when the path between the independent and dependent variables becomes insignificant, and partial mediation occurs when the relationship between the independent and dependent variables is reduced but remains significant when the mediating variable is included as an additional predictor. If the relationship between the independent and dependent variables is reduced to a point where it is not significant after the inclusion of the mediation variable, full mediation occurs [39]. The following paragraphs discuss each of the proposed mediating hypotheses in detail.

The results of the direct analysis between the dimensions of EO and competitiveness revealed that innovation is significantly related to differentiation ($\beta = 0.38$, $p < 0.001$). The mediation model (Figure 2) showed that innovation is also significantly related to knowledge acquisition ($\beta = 0.32$, $p < 0.001$) and knowledge acquisition is significantly related to differentiation ($\beta = 0.43$, $p < 0.001$). However, the path coefficient between innovation and differentiation remained significant but reduced in the mediation model ($\beta = 0.24$, $p < 0.001$), indicating that knowledge acquisition partially mediates the effect of innovation on differentiation.

Similarly, the direct model showed that innovation is significantly related to cost control ($\beta = 0.42$, $p<0.01$). The mediation model (Figure 2) revealed that innovation is significantly related to knowledge acquisition ($\beta = 0.32$, $p<0.000$) and knowledge acquisition is significantly related to cost control ($\beta = 0.26$, $p<0.05$). In this case, the path coefficient between innovation and cost containment becomes significant but reduced in the mediation model ($\beta = 0.35$, $p<0.05$), indicating partial mediation of the effect of knowledge acquisition on cost containment.

Regarding proactivity, the direct model showed a significant relationship with differentiation ($\beta = 0.27$, $p<0.05$). The mediation model (Figure 2) showed that proactivity is significantly related to knowledge acquisition ($\beta = 0.37$, $p<0.05$) and knowledge acquisition is significantly related to differentiation ($\beta = 0.43$, $p<0.05$). In this case, the path coefficient between proactivity and differentiation becomes significant but reduced in the mediation model ($\beta = 0.17$, $p<0.05$), indicating partial mediation of the effect of knowledge acquisition on differentiation.

The results demonstrated in the direct model show that proactivity is significantly related to cost control ($\beta = 0.57$, $p<0.05$). Based on the mediation model (Figure 2), significant relationships are found between proactivity and knowledge acquisition ($\beta = 0.37$, $p<0.05$) and between knowledge acquisition and cost containment ($\beta = 0.26$, $p<0.05$) and the path coefficient between proactivity and cost containment becomes significant and reduced in the mediation model ($\beta = 0.52$, $p<0.05$). These results indicate that knowledge acquisition partially mediates the effect of proactivity on cost containment.

The results presented in the direct model show that risk taking is not significantly related to cost containment ($\beta = -0.06$, $p>0.05$). Since this relationship is not significant, no mediation occurs between risk taking and cost containment through knowledge acquisition.

However, the results shown in the mediation model (Figure 2) confirmed that risk taking is significantly related to knowledge acquisition ($\beta = 0.21$, $p<0.05$) and that knowledge acquisition is significantly related to cost containment ($\beta = 0.26$, $p<0.05$). Therefore, it can only be concluded that risk taking has an indirect effect on cost

control through knowledge acquisition. Table 5 summarizes the results of the path model, the standardized coefficients, the standard error and the respective CR values between the research variables.

Table 4 : the results of the path model, the standardized coefficients, the standard error and the respective CR values between the research variables

			Estimate	S.E.	C.R.	P
knowleacquisit	<---	Innovation	0,316	0,062	5,125	***
knowleacquisit	<---	Proactivité	0,211	0,053	3,795	***
knowleacquisit	<---	Risk taking	0,208	0,071	3,425	***
Cost	<---	Innovation	0,346	0,054	5,697	***
Differentiation	<---	Innovation	0,236	0,057	4,268	***
Cost	<---	Proactivity	0,516	0,045	9,535	***
Differentiation	<---	Risk taking	0,138	0,063	2,604	0,009
Differentiation	<---	Proactivity	0,17	0,047	3,488	***
Cost	<---	Risk taking	-0,119	0,058	-2,093	0,036
Differentiation	<---	knowleacquisit	0,433	0,057	7,777	***
Cost	<---	knowleacquisit	0,255	0,049	4,549	***

Source: Prepared by us using SPPSS AMOS.23 software

Conclusion

The study utilized structural equation modeling to evaluate the mediating influence of knowledge acquisition in the value chain. The findings reveal that knowledge acquisition functions as a mediator in the connection between the aspects of entrepreneurial orientation (EO) and competitiveness. Additionally, it was discovered that risk-taking is the only variable that does not have an impact on cost control through knowledge acquisition. The study employed MES and AMOS.23 software to process and analyze the quantitative data, and numerous conclusions were derived from the results analysis.

The study discovered a noteworthy and favorable influence of entrepreneurial orientation dimensions on competitiveness dimensions. Nonetheless, risk-taking was observed to be the sole dimension of entrepreneurial orientation with an insignificant and adverse impact on cost control. The investigation also revealed that knowledge acquisition in the value chain partially mediates the connection between entrepreneurial orientation and competitiveness dimensions.

Additionally, risk-taking was identified as the only dimension of entrepreneurial orientation with a negative correlation with cost containment. The use of small and medium-sized enterprises (SMEs) in the research proved that the entrepreneurial orientation concept is applicable and relevant in the organizational context of both small and

large firms. This implies that the entrepreneurial orientation concept is not solely for large firms, as has been widely reported in the literature.

Furthermore, this is the first empirical research on agricultural SMEs integrated into the value chain that assesses the independent impact of the three dimensions of entrepreneurial orientation (innovation, risk-taking, and proactivity) on firm competitiveness dimensions, to the best of our knowledge.

- Recommendations for SMEs

For agricultural SME managers, it is crucial to maintain high levels of innovation and proactivity. They should be constantly searching for new business opportunities and be adaptable to changing market conditions. The utilization of information technology, particularly the internet, is imperative to obtain the latest information. Moreover, integrating into value chains can enhance competitiveness, while joining clusters can foster a cooperative environment and establish networks with other companies. This can increase their innovation capabilities, diminish risks, and provide access to external resources, ultimately promoting their competitiveness.

- Recommendations for policy makers

During the interviews with owners and managers, it was evident that the programs and support structures were inadequate due to the lack of follow-up, market research, poor training quality, insufficient communication, and irrelevant information. Therefore, local authorities such as DRA and INRA, and other interested stakeholders such as large companies and aggregators, should develop strategies to disseminate their programs to SMEs and assist them in utilizing them. Additionally, it is essential to obtain feedback from SMEs to tailor programs that address their needs.

Hence, educational institutions such as universities and institutes, along with other support structures, should be involved to provide appropriate training and education to SMEs. Collaboration between universities, professional bodies such as ADA, Agency Morocco SME, ONSSA, and agricultural SME owners/managers in the region could create a collaborative framework that would enhance access to information and knowledge, and promote SME innovation and proactivity.

- Limitations of the research

When using perceptual (subjective) data for research variables such as innovation, proactivity, risk-taking, knowledge acquisition, and enterprise competitiveness, the results may not accurately reflect the reality of the situation, as respondents may attempt to please the researcher. Furthermore, in the evaluation of value chain integration, only the "knowledge acquisition" dimension is considered.

- Research perspective

The research was limited to the dimension of knowledge acquisition in the value chain. Future research could broaden its scope by incorporating other dimensions.

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