The impact of human capital in determining cooperative strategies - the case of cooperatives in the Souss-Massa region, Morocco

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Référence

Abstract

The question of the importance of the social and solidarity economy is important, not only in Morocco, but everywhere in the world. It is within this framework that we have tried to determine the impact of human capital on social and solidarity economy organizations, and more precisely on the strategies adopted by cooperatives, indeed, human capital plays an essential role, by improving innovation, by creating the preconditions for the growth of organizations, and above all by tackling good strategic planning. In this perspective, the objective of this research and to emphasize the link between the level of education and the strategy adopted by the cooperative.

In this work, we have tried to statistically analyze the data collected from cooperatives in order to answer our problem, using several tools, such as: factor analysis and discriminant analysis.

**Keywords:** Human capital; education; strategy; cooperative; decisions.

**JEL Classification:** E24 ; L1 ; P13 ; M51

Résumé

La question de l’importance de l’économie sociale et solidaire est en vogue, non seulement au Maroc, mais partout au monde. C’est dans ce cadre que nous avons essayé de déterminer l’impact du capital humain sur les organisations de l’économie sociale et solidaire, et plus précisément sur les stratégies adoptées par les coopératives, en effet, le capital humain joue un rôle essentiel en améliorant l’innovation, en créant les conditions préalables à la croissance des organisations, et surtout en abordant une bonne planification stratégique. Dans cette perspective, l’objectif de cette recherche est de mettre l’accent sur le lien existant entre le niveau d’éducation et la stratégie adoptée par la coopérative.

Dans ce travail, nous avons tenté d’analyser statistiquement les données collectées auprès des coopératives afin de répondre à notre problématique, en utilisant plusieurs outils, tels que : l’analyse factorielle et l’analyse discriminante.

**Mots clés :** Capital humain ; éducation ; stratégie ; coopérative ; décisions.
Introduction

Human capital can be defined in two dimensions; the first considers human capital as an interacting system, in other words, the set of skills, knowledge and know-how of interacting groups and individuals, while the second treats it as a potential for innovation and development for the territory, subject to a capacity for collective action, and an efficient resource transformation process.

With regard to the cooperative’s strategy, Desforges and Vienney (1996) defined the strategy as the analysis and modelling of the content and process of forming the cooperative’s emergence, growth and development plan, within the framework of its own purpose, and it must take up the double challenge of satisfying the associative criteria and the conditions of insertion in a market economy as an effective agent.

Therefore, our problematic revolves around the relationship between human capital and the cooperative’s strategy, in other words, the link between the level of education of the members and the objectives set by the cooperatives, in between the main question of our research is the following: what is the impact of the level of human capital on the strategic decisions of cooperatives?

To answer this question, we adopted a quantitative approach; indeed, we tried to collect data from cooperatives in the Souss-Massa region, via a questionnaire, then we analysed the collected results based on several methods statistics.

1. Conceptual framework

The concept of human capital got its start mainly thanks to the work of Harry Stanley Becker in the 60s. The founding principle of this theory is simple: education and training, for individuals, represent investments. In this perspective, human capital can be defined as the set of skills, capacities, and aptitudes of the individual, whatever the origin of their acquisition.

More recently, an OECD report (1998) defines human capital as: the knowledge, skills, competences and other qualities that an individual possesses and that affects economic activity. In addition, some authors have linked human capital to training. As a result, this capital can be accumulated through the training that workers receive in companies and which helps to promote their qualities and skills. Overall, the key aspect of human capital relates to the knowledge and skills possessed by individuals and accumulated during education, training and experiences that are useful for the production of goods, services and new knowledge, it can bring a new vision of the production process (Claude Jessua, et al., 2001, p. 104).
However, health and food are also an important aspect of this investment (N. Zuinen and S. Varlez, 2004).

In another context, Camagni (2007) considered human capital as a territorial resource, while emphasizing the notion of territorial human capital, and he added that the concept of territorial capital, once it has been duly developed and analytically structured, could become the attractor and the interlocking element between the two theoretical trajectories – endogenous growth and endogenous development theories.

For cooperative, it is defined as a legal person bringing together natural persons who have economic, social or cultural common needs. and who, in order to meet them, join together to operate a business in accordance with the cooperative action rules. The term “cooperative” refers to an autonomous association of people willingly united to meet their common economic, social and cultural aspirations and needs through an enterprise which is collectively owned and where power is exercised democratically. According to article 1 of law 24-83, the cooperative is a group of natural persons, which agrees to meet and create a company responsible for providing, for their exclusive satisfaction, the product or service they need and to operate and manage by applying the fundamental principles governing cooperatives, seeking to achieve the determined goals.

For the company, we can distinguish 3 types of human capital, namely: general human capital which corresponds to the generic knowledge and skills accumulated by professional experiences and education, the specific human capital to the firm which corresponds to knowledge and skills accumulated collectively within a company, and the specific human capital to a task constituted by experiences and professional training oriented towards a position (Gibbons, 2004).

In addition, According to Pascal Bello, PDG of ESG Score, human capital also creates a competitive advantage. In fact, a cooperative endowed with quality human capital has greater means of action than another cooperative that does not have these same assets, all other things being equal. Human capital is a pillar of the social attractiveness of a cooperative, that is to say its ability to attract and above all keep its talents and its members within it, which ensures its development. These skills are linked in particular to health and knowledge.

Human capital is also the element that optimises the articulation of all the assets of a cooperative. Consequently, the managerial act and the management capacity will be more fruitful for the cooperative if the social body is mobilized effectively.
On the other hand, you can define a company’s strategy as how it intends to achieve its long-term goal. The strategy therefore focuses on decisions about how to do it in the long term. In fact, the choice of strategy to be followed is made in two stages. First, the company chooses what to do to achieve the ends, and then it decides how to achieve the desired results (Mertens, 2010).

Cooperative managers are faced with a challenge since they pursue a priority societal purpose and do not seek to maximise the return on capital. Even if they develop an economic activity like traditional businesses, their social priority purpose brings differences in their management. Most theories in strategic management have been designed for cooperatives.

The managers of the cooperatives are therefore in a delicate situation. On the one hand, they cannot ignore classical theories, especially when they are the source of the most effective management practices. On the other hand, by applying these theories, they risk neglecting the social goals of their business and the specific management that results from it. Each company determines its strategic objectives according to its means and priorities to achieve its social goals and ensure its economic viability.

Ideally, action strategies should follow the definition of strategic objectives. It is not uncommon, however, for companies to embark on action strategies before having explained their objectives.

In addition, there are two tools invented by R. Kaplan and D. Norton to describe a company’s strategy in a synthetic and structured way. These are: the strategy map, which summarises the strategic objectives of a company, and the balanced scorecard, which links these to the action strategies of the company.

For the strategy map, is a diagram that allows you to check the consistency of a company’s strategic objectives. Designed by R. Kaplan and D. Norton for conventional businesses, it must be adapted to the specifics of cooperatives.

In addition, even if cooperatives aim primarily to resolve societal issues, these are not the only determinants of their strategy. Private companies, autonomous in their management, they must also ensure their economic viability to carry out their societal purpose. Economic constraints therefore also determine their strategy, in addition to societal challenges.
Indeed, the activities of a cooperative produce both social and economic results. The former advance social goals. The second aims to ensure the level of income and profitability necessary for achieving social results.

The four levels of formulation of social and economic objectives: The strategic objectives of a company are defined in the following four levels:

1. The "final results" that the company should have achieved within a certain time horizon, both economically (turnover or target cost level) and social (number of suitable workstations targeted in the long term for example).
2. The "targets" that must be reached to achieve the targeted results.
3. The "activities" to be developed to meet all the targets.
4. The "internal processes", that is to say the tasks and resources of the company, to be implemented to ensure the efficiency of the activities.

Consequently, for cooperatives, the social and economic strategic objectives must be separated at each level.

Regarding the link between human capital and cooperatives, several studies have shown the strong relationship between these two variables, indeed, Ait Rayss (2018) has shown the important role of human capital of members in innovation. Likewise, Lucie, Patrick and Jean-Robert (2016) have observed that the level of qualification of members and the continuing training of workers within social and solidarity economy organisations, including cooperatives, can impact decisions of these organisations. In the same vein, a paper by Valérie and al. has shown that the individual characteristics of members of French agricultural cooperatives can influence their participation in decision-making.

2. The analysis model

2.1. Research issues and hypotheses and variables:

The objective of this study is to highlight the existing relationship between human capital and the strategies adopted by cooperatives. Therefore, our problematic revolves around the following question: what is the impact of the level of human capital on the strategic decisions of cooperatives?

It is mainly a question of establishing a causal- link between human capital and more particularly, the level of education (general human capital) and the determination of the strategic objectives of cooperatives, in other words, it is a question of putting the emphasis on
a study to determine the effects of human capital, more precisely the level of education, within the cooperatives of the Souss-Massa region on the determination of cooperative strategies.

Indeed, to measure the level of human capital, we opted for general human capital. that is to say, the level of education of the members of these cooperatives but also of the presidents. On the other hand, we have chosen three strategies for cooperatives, either a strategy oriented towards objectives promoting economic results, a strategy intended to achieve social objectives, or a strategy focused on the simultaneous achievement of the two objectives, social and economic.

This means that the independent variables are the level of education of the presidents of the cooperatives and also of their members, and the dependent variable is the strategy adopted by the cooperative.

Therefore, the main question of this research revolves around two hypotheses, to know:

- The first hypothesis \([H1]\): The level of the members’ diplomas have a positive effect on the cooperative’s strategy ;
- The second hypothesis \([H2]\): the effect exerted by the diploma of the cooperative’s president is very significant compared to the effect exerted by the members’ diplomas.

### 2.2. Methodology and sample

In order to assess the effects of human capital, in this case the level of the diploma on the strategy adopted by the cooperative, we adopted a quantitative approach. As a result, we tried to collect, firstly, data from cooperatives in the Souss-Massa region, via a questionnaire. In a second step, we opted for a bivariate analysis of the collected data, using the chi-square test. In a third step, we used the factorial correspondence analysis to deepen our bivariate analysis. Fourth, we adopted discriminant analysis to classify cooperatives based on the level of the diploma.

There are several methods for determining the sample size, for this work we have adopted the random method which is based on a principle according to which the elements of the sample are chosen at random. Whatever the element of the target population, it can belong to the sample with a probability known in advance and which is the same for all the elements. More specifically, we used the simple random method because it is easy to implement.

Indeed, we can calculate the sample size using the following formula:
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\[ n = \frac{t^2 \times pq}{m^2} \]

Where: \( n \): the sample size. \( t \): the 93% confidence level (typical value of 1.8119). \( p \): the percentage of individuals with the observed characteristic. \( q = 1-p \) and \( m \): the margin of error 7%.

In our case, to determine the percentage of individuals with the observed characteristic, we assigned 0.5 to \( p \), because we have no information concerning the observed value.

So we can calculate the sample size as follows:

\[ n = \frac{(18,119^2 \times 0.5 \times 0.5)}{0.07^2} = 168 \]

And since we have a finite population (according to the development cooperation office of the Souss-Massa region, the number of cooperatives in this region is 1334), we will apply the following formula:

\[ n^2 = n \times \frac{(N-n)}{(N-1)} \]

Where: \( N \): The mother population. And \( n^2 \): The corrected sample. That is to say:

\[ n^2 = 168 \times \frac{(1334-168)}{(1334-1)} = 147. \]

The sample is determined at the threshold of 93%, and then a margin of 7%, which makes it possible to analyze each result obtained by the survey, with 7% of risk.

3. Results obtained

3.1. Descriptive statistics and independence tests

- The link between the strategy adopted by the cooperative and the diploma obtained by the president of the cooperative.
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Table 1: The distribution of cooperatives according to the strategy adopted is the diploma obtained by the president of the cooperative.

<table>
<thead>
<tr>
<th>the type of strategy</th>
<th>without a diploma</th>
<th>level bac</th>
<th>Bac</th>
<th>bac +2</th>
<th>bac+3</th>
<th>bac+5 or more</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>economic</td>
<td>6</td>
<td>3</td>
<td>8</td>
<td>12</td>
<td>5</td>
<td>3</td>
<td>37</td>
</tr>
<tr>
<td>Social</td>
<td>4</td>
<td>13</td>
<td>18</td>
<td>9</td>
<td>7</td>
<td>0</td>
<td>51</td>
</tr>
<tr>
<td>Mixed</td>
<td>3</td>
<td>19</td>
<td>14</td>
<td>14</td>
<td>7</td>
<td>2</td>
<td>59</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>35</td>
<td>40</td>
<td>35</td>
<td>19</td>
<td>5</td>
<td>147</td>
</tr>
</tbody>
</table>

Source: ourselves

From the table above, we notice that most of the cooperatives adopt a mixed strategy, with a percentage of 40.13%, on the other hand 34.69% of the cooperatives opt for a strategy whose objectives are social, while only 25.17% of cooperatives set objectives that are purely economic.

In another context, the presidents of 13 cooperatives have no diploma, 35 cooperatives are chaired by people with a bac level, 40 cooperative presidents have a baccalaureate, 35 cooperatives are managed by people with a bac + diploma 2, 19 presidents have a bac + 3 diploma and only 5 presidents with a diploma equivalent to bac + 5.

To test the independence between these two variables, it is essential to adopt a chi-square test, because both variables are qualitative.

Table 2: Chi-square test of the relationship between cooperative strategy and the diploma obtained by the president.

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>ddl</th>
<th>Asymptotic significance (bilateral)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson’s chi-square</td>
<td>17,025</td>
<td>10</td>
<td>.074</td>
</tr>
<tr>
<td>Likelihood ratio</td>
<td>18,849</td>
<td>10</td>
<td>.042</td>
</tr>
<tr>
<td>Linear by linear assoc.</td>
<td>.806</td>
<td>1</td>
<td>.369</td>
</tr>
<tr>
<td>Number of valid obs.</td>
<td>147</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: ourselves

From this table, we can confirm that at the 7.4% threshold the two variables are dependent, that is to say that the level of the diploma obtained by the president of the cooperative can
have an effect on the strategy. Adopted by the latter. The degree of this relationship is displayed in the following table:

**Table 3: Symmetrical measures of the relationship between the level of the president’s diploma and the strategy of cooperatives**

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Approximate meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal by Nominal</td>
<td>Phi</td>
<td>.340</td>
</tr>
<tr>
<td></td>
<td>V of Cramer</td>
<td>.241</td>
</tr>
<tr>
<td></td>
<td>Contingency coefficient</td>
<td>.322</td>
</tr>
<tr>
<td>Number of valid observations</td>
<td>147</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** ourselves

Based on the value of Phi, the degree of the relation is 34%, while it is 24.1% when it comes to the value of V of Cramer, on the other hand, the contingency coefficient shows that the degree of this link is 32.2%.

To go further in our analysis we opted for a factorial analysis of correspondences.

**Figure 1: row and column points of the factor analysis of the link between the diploma obtained by the president and the strategy adopted**

![Row and Column Points](image)

**Source:** ourselves

We can divide the modalities of two variables studied into 3 groups:
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The first group contains the presidents having no diploma, indeed, these adopt a strategy which favour the economic objectives, the second group constituted by the cooperatives of which their presidents a diploma bac + 3 and a baccalaureate, in addition these cooperatives tend to adopt a strategy promoting social objectives, and the third group, including presidents with a baccalaureate level. This group promotes the adoption of a mixed strategy which aims to achieve social and economic objectives simultaneously.

It remains to note that the presidents having a bac + 2, tend to adopt, sometimes, a mixed strategy, and, sometimes, an economic strategy, as well as the presidents having a diploma bac + 5 or more, are out of classification, because there are only 5.

➢ The link between strategy and members’ modal diploma

Table 4: Distribution of cooperatives according to the members’ modal diploma and the strategy adopted

<table>
<thead>
<tr>
<th>type of strategy</th>
<th>the modal diploma of members</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>without diploma</td>
<td>bac level</td>
</tr>
<tr>
<td>economic</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Social</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Mixed</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>17</td>
</tr>
</tbody>
</table>

Source: ourselves

We can notice, according to the table above, that the cooperatives which adopt a strategy whose objectives are economic, are those which are created by members having a bac level or having no diploma, on the other hand, the cooperatives which have opted for a social strategy are created by people who have a baccalaureate or a diploma equivalent to bac + 2, while the cooperatives, the majority of whose members have a bac + 3 or a bac + 5, are those adopting a mixed strategy.

So we can conclude that the modal diploma has an effect on the choice of strategy, which confirmed by the chi-square test in the following table:
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Table 5: Chi-square test of the link between the modal diploma of members and the strategy of cooperatives

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Ddl</th>
<th>Asymptotic significance (bilateral)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson’s Chi-square</td>
<td>240.810</td>
<td>10</td>
<td>.000</td>
</tr>
<tr>
<td>Likelihood ratio</td>
<td>260.189</td>
<td>10</td>
<td>.000</td>
</tr>
<tr>
<td>Linear by linear association</td>
<td>124.145</td>
<td>1</td>
<td>.000</td>
</tr>
<tr>
<td>Number of valid observations</td>
<td>147</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: ourselves

From this table, the value of chi-square is 240.81, with a meaning of 0%, so we can conclude that the two variables are dependent. It therefore remains to specify the degree of this dependence.

Table 6: Symmetrical measures of the link between the modal qualifications of members and the strategy of cooperatives.

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Approximate meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal by Nominal Phi</td>
<td>1.280</td>
<td>.000</td>
</tr>
<tr>
<td>V of Cramer</td>
<td>.905</td>
<td>.000</td>
</tr>
<tr>
<td>Contingency factor</td>
<td>.788</td>
<td>.000</td>
</tr>
<tr>
<td>Number of valid observations</td>
<td>147</td>
<td></td>
</tr>
</tbody>
</table>

Source: ourselves

Based on Cramer’s value of 90.5%, we can conclude that the link is very strong between the strategy of cooperatives and the level of education of members. In addition, the same results are obtained when we read the value of the contingency coefficient which is 78.8%.

To better analyse this dependence, we are based on the factorial analysis of correspondences, in fact, the results obtained are as follows:
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Figure 2: row and column points of the factor analysis of the link between the modal diploma of members and the strategy adopted

We can divide our sample into three groups, in fact, cooperatives with members who have a diploma equivalent to bac + 3 or bac + 5, tend to adopt a mixed strategy which aims to achieve economic and social objectives simultaneously, by against cooperatives, whose members have a baccalauréate or a diploma equivalent to bac + 2, are those who have opted for a strategy that aims to achieve social objectives, while the third group is made up of cooperatives, whose members do “have no diploma or having a bac level, and who tend to adopt an economic strategy.

- The link between the strategy adopted and the sector of activity

Source: Ourselves
The impact of human capital in determining cooperative strategies - the case of cooperatives in the Souss-Massa region, Morocco

Table 7: Distribution of cooperatives according to the strategy adopted and the sector of activity

<table>
<thead>
<tr>
<th>the type of strategy</th>
<th>agriculture</th>
<th>food industry</th>
<th>Literacy</th>
<th>craft</th>
<th>Fishing</th>
<th>habitat</th>
<th>other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>economic</td>
<td>9</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>3</td>
<td>37</td>
</tr>
<tr>
<td>social</td>
<td>16</td>
<td>4</td>
<td>9</td>
<td>8</td>
<td>5</td>
<td>6</td>
<td>3</td>
<td>51</td>
</tr>
<tr>
<td>mixed</td>
<td>22</td>
<td>6</td>
<td>6</td>
<td>8</td>
<td>5</td>
<td>4</td>
<td>8</td>
<td>59</td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>15</td>
<td>19</td>
<td>20</td>
<td>14</td>
<td>18</td>
<td>14</td>
<td>147</td>
</tr>
</tbody>
</table>

Source: ourselves

According to the table above, 47 cooperatives operate in the agricultural sector, with a percentage of 31.9%, 15 work in the food industry, with a percentage of 10.2%, 19 cooperatives are active whose field of reading and literacy, 20 cooperatives operate in the craft industry, with a percentage of 13.6%, in contrast, 14 cooperatives work in the fishing sector, and 18 in housing.

Table 8: The Chi-square test of the link between the business sector and the strategy adopted

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Ddl</th>
<th>Asymptotic significance (bilateral)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson’s chi-square</td>
<td>9,648</td>
<td>12</td>
<td>.647</td>
</tr>
<tr>
<td>Likelihood ratio</td>
<td>9,404</td>
<td>12</td>
<td>.668</td>
</tr>
<tr>
<td>Linear by linear association</td>
<td>1,004</td>
<td>1</td>
<td>.316</td>
</tr>
<tr>
<td>Number of valid observations</td>
<td>147</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: ourselves

From the table above, we can confirm that the industry and the strategy adopted are independent variables, since the significance of the chi-square value is 64.7%.

3.2. Discriminant analysis

After processing the data collected by our questionnaire, the SPSS software provided us with the following results:

The first table presents the eigenvalues, the percentage of the explained variance and the canonical correlation.
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Table 9: Table of eigenvalues

<table>
<thead>
<tr>
<th>Function</th>
<th>Eigenvalue</th>
<th>% of variance</th>
<th>% cumulative</th>
<th>Canonical correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5.749</td>
<td>99.9</td>
<td>99.9</td>
<td>0.923</td>
</tr>
<tr>
<td>2</td>
<td>0.008</td>
<td>1</td>
<td>100.0</td>
<td>0.091</td>
</tr>
</tbody>
</table>

Source: ourselves

From the table above, we can emphasize that 99.9% of the discriminating power of the two explanatory variables is attributable to the first discriminating function, while the second function explains only 10%.

In addition, SPSS also gives at the same table the canonical correlations, indeed, we find 0.923, so there is a strong correlation, therefore the usefulness of the first discriminating function is very important, on the other hand, the correlation of the second function is only 9.1%.

Indeed, it is necessary to test the significance of Wilks lambda:

Table 10: Wilks Lambda painting

<table>
<thead>
<tr>
<th>Test of the function (s)</th>
<th>Wilks Lambda</th>
<th>Chi-square</th>
<th>dof</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>de 1 à 2</td>
<td>0.147</td>
<td>275 185</td>
<td>4</td>
<td>0.000</td>
</tr>
<tr>
<td>2</td>
<td>0.992</td>
<td>1,192</td>
<td>1</td>
<td>0.275</td>
</tr>
</tbody>
</table>

Source: ourselves

According to the discriminant function is significant at a level of 0%, indeed the value of chi is 275,185 this statistic obeys a chi-square law with 4 degrees of freedom. We can conclude that the discriminant function is useful in explaining the differences observed between the groups since the associated probability is less than the 5% threshold.

For the second function is significant at the threshold of 27.5%, and since this probability is greater than 5%, we can therefore confirm that this function is not useful for discrimination.

In addition, the following table presents the coefficients associated with the explanatory variables in the discriminant functions:
Table 11: Coefficients of standardized canonical discriminant functions

<table>
<thead>
<tr>
<th></th>
<th>Function 1</th>
<th>Function 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>the diploma obtained by the president</td>
<td>-0.020</td>
<td>1.000</td>
</tr>
<tr>
<td>the modal diploma of members</td>
<td>1.000</td>
<td>0.033</td>
</tr>
</tbody>
</table>

**Source:** ourselves

From the table above, we can write the standardized discriminant functions as follows:

**Function 1:** Strategy = -0.02 diploma of the president + 1 diploma of the members

**Function 2:** strategy = 1 diploma of the president + 0.03 diploma of members

And based on these functions, we can classify the individuals in our sample, so the SPSS software, as shown in the table below, was able to correctly classify 93.2% of the cooperatives.

Table 12: Ranking results

<table>
<thead>
<tr>
<th></th>
<th>Intended assignment class (es)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Economic</td>
<td>Social</td>
</tr>
<tr>
<td>Original</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic</td>
<td>32</td>
<td>5</td>
</tr>
<tr>
<td>Social</td>
<td>1</td>
<td>50</td>
</tr>
<tr>
<td>Mixed</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>%</td>
<td>86.5</td>
<td>13.5</td>
</tr>
<tr>
<td>Economic</td>
<td>2.0</td>
<td>98.0</td>
</tr>
<tr>
<td>Social</td>
<td>0</td>
<td>6.8</td>
</tr>
</tbody>
</table>

**Source:** ourselves

According to the table above, 93.2% of the original observations classified correctly. This confirms the solvency of our discriminating function.

4. Discussion

From the results of the chi-square tests, which allow us to detect the nature of the relationship between the level of human capital and the strategy of the cooperative, we can emphasise that these two variables are not independent. That is, the level of human capital can have a positive and significant impact on the choice of strategy adopted by the cooperative. In other words, and based on the factorial correspondence analysis, the higher the level of the diploma, the more the cooperative tends to adopt a mixed strategy and the lower the level of the diploma, the more the cooperative tends to opt for a strategy which aims at setting economic
objectives, whereas, if the level of the diploma is medium, the cooperative is moving towards a strategy aiming at achieving social objectives. However, the level of the modal diploma (the diploma obtained by the majority of members) has a more significant effect compared to the level of the diploma of the president of the cooperative, this may be due to the structure of the cooperative, because the decision is taken in a democratic and participative way, this means that the decisions of the cooperative are taken by the majority of members.

These results show the important place that human capital takes in cooperatives. This place is justified by not only the role of human capital in the performance of the latter, but also in their choices of strategy. Indeed, if the members have higher degrees (such as license or master), the cooperative seeks to achieve social and economic objectives simultaneously, because these members are aware of the main objective of the cooperative which combines economic and social results, on the other hand, when cooperative members hold diplomas equivalent to baccalaureate or bac + 2 degree, the cooperative aims only at social objectives, and these members do not take into account economic objectives, which ensures extension of the cooperative’s activity. Whereas, if the members have no diploma, their cooperatives seek to achieve only economic objectives, because the main objective of precarious people is to ensure a stable income, for this reason these cooperatives favour the fixing of economic objectives instead of social purposes.

Furthermore, and in accordance with the above, we can:

- Validate the first hypothesis [H1]: The level of the members’ diplomas have a positive effect on the cooperative’s strategy;
- Reject the second hypothesis [H2]: the effect exerted by the diploma of the cooperative’s president is very significant compared to the effect exerted by the members’ diplomas.

**Conclusion**

The objective of this study is to highlight the existing relationship between the level of human capital, in particular, general human capital (such as the diploma) and the strategy adopted by the cooperative. The latter can favour the setting of economic or social objectives, or both.

Indeed, we tried to adopt several quantitative methods in order to validate or reject the announced hypotheses, these methods are: the chi-square test, the factorial analysis of correspondences and the discriminant analysis.
Moreover, this study accepts critics like the rest of studies. In fact, works in economic science are open to comments, suggestions and critics that aim to improve the quality of research. Indeed, we identify some limits and gaps which have represented obstacles which alter the quality of this study:

- We have evaluated the effect of general human capital, whereas, specific human capital can play a role, over time, on the strategy of the cooperative;
- The cooperative strategy is a subjective variable, which can bias the results.

However, we present some extensions and perspectives of this research which relate essentially to:

- Specific human capital and its impact on the performance of the cooperative;
- Research in relation to continuing education within the cooperative and sustainable development.
The impact of human capital in determining cooperative strategies - the case of cooperatives in the Souss-Massa region, Morocco

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