Modeling Integible Organizational Capital and Value Creation: The Case of Large Unlisted Moroccan Companies

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Research Article

Abstract

Purpose: *Aim of this study is to investigate the relationships between the components of intangible organizational capital and value creation for unlisted Moroccan firms.*

Methods: *A conceptual model was used to establish the relationship between the components of organizational capital and value creation for large Moroccan firms. The study used a structured questionnaire to collect data from managers of 176 large firms. We used structural equation modeling through AMOS software to test the relationships between the different variables in our model.*

Results*: The study shows that organizational capital has a non-significant positive effect on value creation. This demonstrates that the efforts of the large firm have not been able to codify tacit knowledge and further improve organizational capital.*

Implications*: The lack of organizational influence on value creation may signal that many firms prefer to invest heavily in physical capital without providing an adequate organizational structure. As a result, organizational capital deteriorates and leads to a lowering of the overall performance of intangible capital in addition to the value created for the company. The development of strong organizational capital can help to build an organizational culture to ensure that employees are able to innovate and deploy their know-how and experience for the benefit of the organization.*

Limitations: *We still do not know how organizational capital changes over time. Therefore, a qualitative longitudinal study is recommended or a content analysis of companies' annual reports.*

Keywords: Intengible organizational capital, Intellectual capital, unlisted Moroccan firms, value creation

1. Introduction

Nowadays, the traditional rules of competitiveness are gradually giving way to new rules and innovative competitive weapons. The company is facing increasingly fierce competition based on new strategic capabilities and distinctive skills. In order to stand out from the crowd, the continuous search for creativity, innovation, anticipation, reactivity, and better product quality is becoming a requirement.

With the development of the productive system and the rise in power of the new information and communication techniques "NTIC", companies are engaged in a very aggressive competition, where the companies that manage to evaluate these intangible resources can afford a good market share. Conversely, companies with poor resource management are destined to become marginalized or even disappear. In other words, the survival of a company, in an increasingly turbulent environment, is conditioned by its flexibility, which translates into the ability of a company to react, with new products and new

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technologies, more quickly to changes in the environment. This implies continuous investment efforts in process and product innovation, as well as in production processes through a strategy based on research and development (R&D) since innovation is a major condition for the growth and sustainability of any company. From there, human and organizational factors substitute for technical and industrial capital. In other words, organizational capital can be seen as a platform and support for the improvement of the company's values.

The objective of this article is to study the extent to which the components of intangible capital of the large unlisted Moroccan company can impact value creation. To this end, the general question of our research is the following.

To what extent does organizational capital impact the value creation of the large Moroccan firms?

In other words, the article aims to answer the following sub-questions.

1. What are the components of the intangible organizational capital of the firm?
2. Do the components of organizational capital impact the creation of value for the large Moroccan companies?

2. Theoretical framework

The general theoretical framework of our study remains the dynamic capabilities approach. The latter is an extension of the resource-based approach. Originally, proponents of the resource-based approach tried to explain value creation by the possession of scarce resources (specific resources), which are difficult to imitate and imperfectly mobile. Indeed, this approach provides the theoretical basis for the problem of valuing intangible assets insofar as they are value-creating resources (Bonfour, 2009).

For the dynamic capabilities approach, the key assumption is the ability of the company to operate processes that allow for the development, reorganization, exploitation, replication, and sharing of the company's strategic resources. From there, the more the company can react in real-time and in the best way to the increasingly evolving demands of the market, the more competitive it will be compared to its competitors. Otherwise, regular investments in organizational capability enable the company to maintain its competitive advantage and strengthen its position relative to competitors.

The advances of the dynamic capabilities approach are in line with those of the resource-based approach and the competency movement in terms of the importance of the resources and competencies deployed to achieve sustainable competitive advantage. However, the dynamic capabilities movement views these resources and competencies as a consequence of all the investments made in the past to increase and maintain the firm's strategic position in the market.

In sum, proponents of dynamic capabilities thinking support the idea that the accumulations of intangible resources and organizational and other competencies have a positive impact on the development of the firm's knowledge and learning capacity. This approach provides an explanatory framework for understanding the possibilities of acquiring and maintaining a competitive advantage in an unstable competitive environment. To achieve these development objectives, the company must have the necessary capabilities to deploy its strategic resources and competencies in the right way. Thus, for this movement, the right mix and combination of specific assets allow the birth of a sustainable competitive advantage. Hence, the organizational capital of the company includes the investments made to develop the technical and organizational design and the management and communication modes of the company to facilitate the circulation and operationalization of knowledge.

2.1. The components of organizational capital

An organization having weak systems and processes for tracking its activities may not achieve the targeted potential or goal in its performance (Sladjana et al. 2018). Conversely, an organization with a strong structural capital with compassionate culture can encourage its employees to discover state-of-the-art knowledge, thereby moving many steps ahead towards improved performance (Xu & Wang 2018).

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Our problem consists in evaluating the value created by the organizational capital of firms in the Moroccan context. To do this, we need to choose a typology that can serve as a reference for this work and ensure optimal internal validity of the results.
Recently, there has been a growing demand to conduct empirical studies for gaining in-depth knowledge about intellectual capital components due to their multi-dimensional traits (Cabrilo & Dahms 2020). However, organizational capital includes aspects such as corporate culture, management methods, databases, procedure manuals, information systems (Brooking, 1997), patents, ideas, and software (Edvinsson & Malone, 1999; Sveiby, 2000; Roos et al., 2007; Bounfour, 2009; Bontis et al., 2009). It can also be interpreted as the knowledge that the firm has been able to internalize and that remains in the organization. Or in other words, it is "knowing that you don't go home at night..." (Stewart, 1997); that is, organizational capital belongs to the company and serves as a vehicle for converting employees' personal knowledge into something valuable (Martínez-Torres, 2006). Between these different classifications, we retained the typology of Roos et al (1997) for the rest of our research work. This is for two considerations: (1) Roos' typology (innovation capital, and process capital) remains the best known in the academic world and the most adopted by professionals. (2) It is worth mentioning that the reference typology used in the majority of research works on the subject of organizational capital is that of Roos.

2.1.1 Innovation capital

Innovation capital includes technology, processes, and methods, as well as the company's ability to develop new products and innovative ideas (Tseng & Goo, 2005), as well as the ability to generate new knowledge (Maditinos et al., 2010). Hence, innovation capital reflects the ability of the firm to produce, to improve its stock of knowledge, individual and collective, technical and social. Otherwise, this capital combines the efforts of the company through new products, licenses, and patents through, mainly, investments in research and development.
In this sense, innovation capital allows companies to anticipate, invest in real-time and respond to market demands. Consequently, it ensures the flexibility of the company's strategic management and the maintenance of its advantage over competitors.
In addition, the ability to innovate consists in implementing new ideas that create value. It is a necessity dictated by the fierce competition and the change in the economic paradigm. Thus, to create and maintain a long-term competitive advantage, the company is invited to seize opportunities to develop new products and/or processes.

2.1.2 Process capital

The continuous development of technology has been accompanied in the company by changes in the process and the means of production by integrating new techniques such as the use of robots and computers. The process capital, therefore, illustrates the operational techniques used to continuously adapt the provision of goods and services to the requirements of the market.
In other words, process capital reflects the process implemented to improve the delivery of goods and services. It illustrates the practical knowledge that enables the continuous creation of value. For Wang and Chang (2005), process capital represents the ability of a company to formalize its processes and activities, the functions and responsibilities of each employee, and the flow of information.
Furthermore, the operation, procedure, and method of knowledge administration that propel the value-creative actions of the organizations have positive effects on the performances (Haris et al. 2019).
Previous studies indicated that an organization having weak procedures and systems for tracking its actions often fails to achieve competence regarding performance (De Luca et al. 2020). Conversely, an organization with a strong structural capital is expected to possess an encouraging work culture for

employees that helps them to learn innovative knowledge with refined and improved performances (Asiaei et al. 2020).

2.2 Organizational capital: an explanatory factor in value creation

In today's knowledge economy, there is no commonly accepted framework for describing and analyzing the growing magnitude of organizational capital. Organizational capital refers to investments in the development of the technical system of tools and modes of organization, operation, and communication of the entity to accelerate the flow of knowledge. Hence, the importance of organizational capital as a significant source of value for organizations is now recognized by both researchers and professionals. However, organizational capital provides supporting tools for human capital to strive for new opportunities (Chowdhury et al. 2018).

In the same vein and through the figure below, Bontis (1999) show the determining role of the organizational factor in the creation of value. Organizational capital is considered important in the new market rules, as it allows the company to form and develop new products while adequately meeting the expectations of customers, new organizational structures, and new processes leading to future revenues for the company.

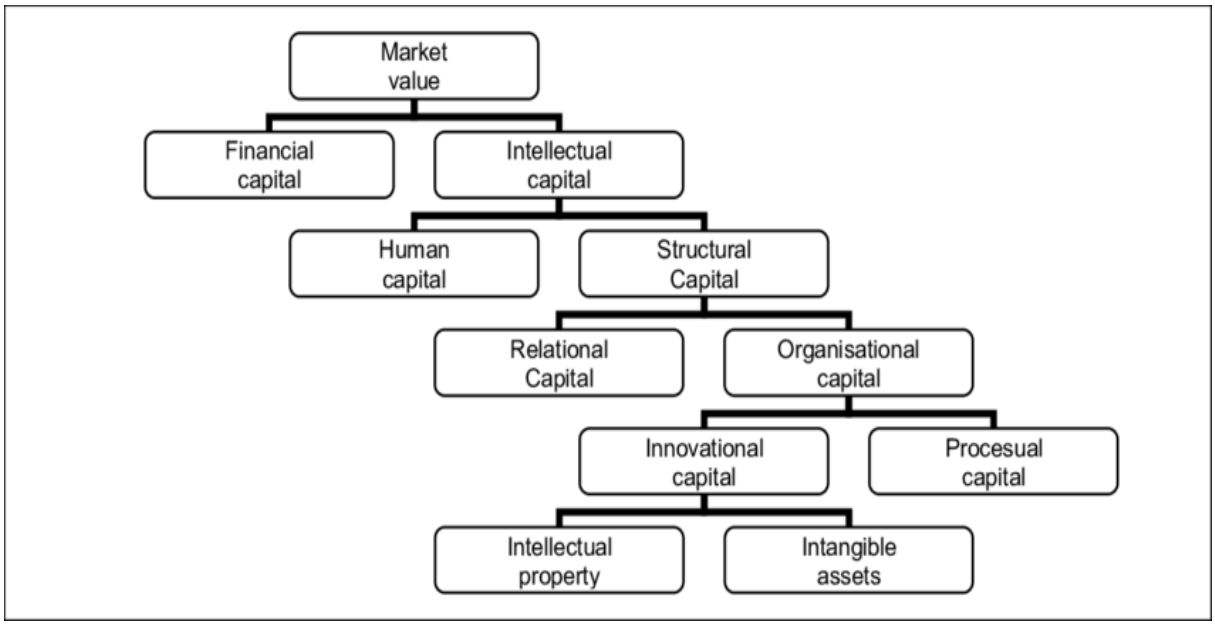

Fig. 1: The Value Distinction Tree

Sources: Edvinsson and Malone, 1997

3. Research Hypotheses

Let us recall that the objective of our present research is to explain in the Moroccan context the possible relations between the two components of organizational capital and the creation of value for large Moroccan companies. We support the thesis that there is a relationship between the components of organizational capital (innovation capital, process capital) and value creation.

Our ambition is to test the possible effects of organizational capital on value creation. Indeed, innovation capabilities, organization modes, knowledge management techniques, information processing, and organizational culture within the company can help to obtain sustainable competitive advantages and consequently improve the value created.

Since the present work is part of a deductive approach, we have formulated the following hypotheses following the literature review, and we will test them through the field study:

Hypothesis 1: Innovation capital has a significant and positive influence on value creation.

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Hypothesis 2: Process capital has a significant and positive influence on value creation.

4. Methodology

This section will discuss the selection and description of our target sample, the construction of the questionnaire, and the modality of analysis of the data collected.

4.1. Choice of the sample

To test our hypothesis and achieve our objectives, we surveyed a sample of 176 large Moroccan companies from different sectors of activity. The unit of data collection is the company. We contacted more than 800 companies and collected 209 responses, of which 176 were valid. For our research, we used the purposive sampling method.

The table below shows the contribution of the sectors of activity in the formation of the 176 responses retained for the operationalization of our research.

Table.1: Summary table of the number of large companies surveyed by sector of activity

Sector of activity	Sample size	Percentage (%)
Agri-food, consumer goods, and distribution	36	20
Transport, automotive, and courier	22	12.5
Banking, insurance, and finance	8	4.5
Construction and infrastructure	23	13
Electricity, electronics, NTIC, telecommunication, and call center	16	9
Mining, hydrocarbons, chemicals, and plastics	18	10
Audiovisual production	2	1
Textile	15	8.5
Tourism, hotels, and restaurants	3	1.7
Other	33	18.8
Total	176	100

4.2. Measurement scales

The present survey was conducted through a questionnaire. A pre-test was carried out with professionals (company managers). Each expert was asked to provide comments on the degree of understanding of the items and the relevance in the choice of these items. These items were developed from the literature on organizational capital. (Roos et al., 1997).

4.2.1. Independent variables

The definitions given to the concept of intangible capital are different from one author to another, but all refer to the same notion. Thus, the existing typologies of organizational capital in the literature are also numerous, but we have taken up the classic typology of Roos et al (1997), which seemed to us to be the most relevant and which received the majority of opinions.

Innovation capital: We used a three-item scale assessing the organizational capital of the company, which was used in research by Bontis (1999). For each statement, the respondent is asked to position him/herself on a scale from 1 to 5 (from Strongly disagree to Strongly agree) and to express his/her degree of agreement.

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Process capital: To evaluate this construct we used a 7-item scale. These were developed by Bontis (1999). Thus, the respondent is asked to express his or her degree of agreement on a scale ranging from 1 to 5 (from Not at all in agreement to Totally in agreement).

4.2.2. Dependent variable

For the value creation variable, previous research has exploited a variety of financial measures; these indicators are necessary, but not sufficient to capture the overall value of the firm. Thus, some studies have suggested combining financial and non-financial measures to ensure a more complete assessment of the value created for the firm. (Haber et al., 2005). These non-financial measures include subjective indicators such as market reputation and customer satisfaction. For this purpose, we developed a 7-item measure from the literature (ICM Gathering, 1999)[1].

Respondents were asked to express, on a scale of 1 to 5, their perception of the relative value created by their company compared to that of their competitors.

5. Data analysis and presentation of results

Once the data were produced, we proceeded to enter and code the responses to our items in the SPSS. The statistical analysis was carried out to evaluate the quality of the measurement scales used, i.e. the validity and reliability of all the variables of the research model resulting from the literature review and the exploratory survey. It also included the purging of the questionnaire of items contributing to the degradation of the quality of the factorial structure. The data analysis was also done to test the hypotheses of our research model through the structural equations (MES) via AMOS 21.

5.1. Exploratory factor analysis of variables

We performed, successively, a principal component analysis (PCA) and a normality test on the different items of each variable to extract the most significant factors.

The results of the exploratory factor analysis and the normality test are shown in the following table:

Table.2: Results of the exploratory factor analysis and the normality test

	Item code	Total explained variance	Alpha de Cronbach
Innovation capital	IN1	65.361	0.732
	IN2		
	IN3		
Process capital	P2	51.718	0.812
	P3		
	P4		
	P5		
	P6		
	P7		
Value creation	V1	73.753	0.875
	V2		
	V3		
	V6		

5.2. Analysis of the hypotheses and the general model

Conducting CFA is a relevant extension of PCA. Exploratory factor analysis is mainly used to describe dimensions via data. Confirmatory factor analysis, on the other hand, takes the opposite approach:

[1] Intellectual Capital Management (ICM) was introduced by Tom Stewart through an article on Intellectual Capital published in Fortune magazine in October 1994, after it was first mentioned in discussions in his presence. The main creators of the term ICM are Leif Edvinsson (Sweden), Gordon Petrash (U.S.), Hubert St. Onge (Canada), and Patrick Sullivan (U.S.). The first company to adopt a full ICM approach was Skandia (a Swedish insurance company) in the 1990s under the leadership of Leif Edvinsson. The early pioneers (seven companies that include Dow Chemical, DuPont, Hewlett-Packard, Hughes Space and Communication, Hoffman LaRoche, and Skandia) also met in January 1995 to exchange notes and formed the first ICM Gathering in Berkeley, Calif.

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starting from an initial structure of the data, a model, we can verify the degree of fit of the latter to the data. It offers the possibility of confronting hypotheses on the nature of the relationships between the measured variables or items and the latent variables or factors with the collected data.

After having performed partial confirmatory analyses, we proceed to the confirmatory factor analysis of the global measurement model.

5.2.1. Verification of factorial models of organizational capital

The "organizational capital" construct is a second-order latent dimension because it is supposed to be formed by two variables that are themselves latent. These are innovation capital and process capital. The following figure shows the measurement model for the latent variable "organizational capital".

The values of the fit indices of the model are quite satisfactory to the standard criteria. They lead us to accept the hypothesis that the theoretical model is globally adjusted to the empirical data.

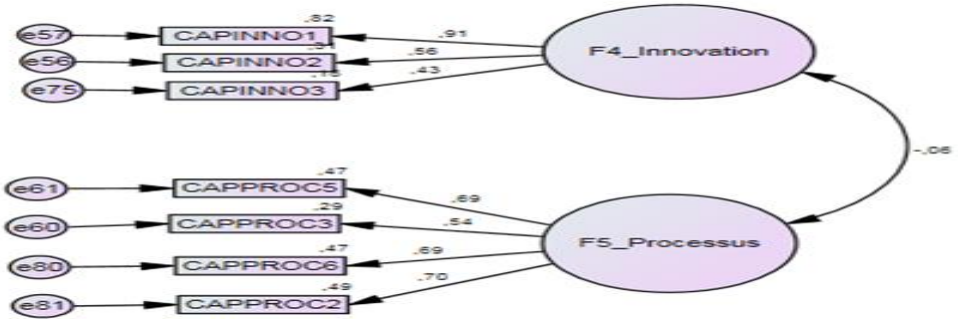

Fig. 2: First order CFA results on the three latent organizational capital variables

Table.2: Evaluation of the overall fit indices of the first CFA of the organizational capital dimension

χ^2	ddl	χ^2/ddl	GFI	AGFI	RMSEA	NFI	CFI	TLI
25,575	14	1,827*	0,961	0,923	0,069	0,912	0,957	0,935

Note : χ^2 : Chi-square, ddl: degree of freedom
(*) : 1.827 is the Chi-square value with the degree of freedom ddl = 14 and the risk threshold p=0.029

Convergent validity is respected since each indicator shares more variance with its construct than with its measurement error: the T-test is greater than 1.96 and the parameters are all greater than 0.4 (significant at the 0.000 level).

Table. 3: Estimation of the regression coefficients of the organizational capital construct

	Coefficient Standardized	S.E.	C.R.	Pvalue
CAPINNO2 <--- F4_Innovation	1,000			
CAPINNO1 <--- F4_Innovation	1,517	,190	7,993	***
CAPPROC3 <--- F5_ Process	,777	,136	5,731	***
CAPINNO3 <--- F4_Innovation	,757	,146	5,181	***
CAPPROC5 <--- F5_ Process	,997	,148	6,720	***
CAPPROC6 <--- F5_ Process	1,000			
CAPPROC2 <--- F5_ Process	1,065	,157	6,767	***

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From the results of the confirmatory factor analysis, we obtain a final organizational capital construct as follows:

Table.4: Summary of variables and synthetic measures of the organizational capital construct

Construct	variable	α	Items	Total item
Innovation capital	F1_Innovation	0,7319	*	3
Process capital	F2_ Process	0,7481	*	4

We can see that the FCA results do not produce any changes in the indicators of this dimension compared to the results of the factorial analyses.

5.2.2. Verification of the factorial model of value creation

The construct "value creation" is a first-order latent dimension because it is supposed to be formed by a variable that is itself latent.

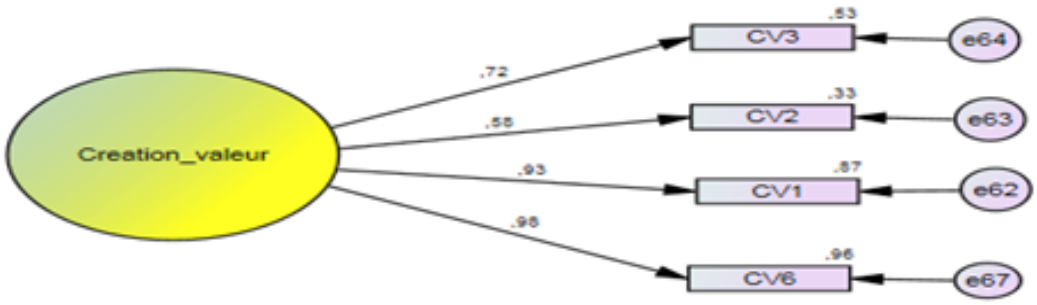

Fig.3: First order CFA results in the value creation

The values of the fit indices of the model are very satisfactory to the standard criteria. They lead us to accept the hypothesis that the theoretical model is globally adjusted to the empirical data.

Table.5: Evaluation of the overall adjustment indices of value creation

χ2	ddl	χ2/ddl	GFI	AGFI	RMSEA	NFI	CFI	TLI
1,966	2	0,983	0,994	0,972	0,000	0,996	1	1
Note : χ2 : Chi-square, ddl: degree of freedom								

Convergent validity is respected since each indicator shares more variance with its construct than with its measurement error: the T-test is greater than 1.96 and the parameters are all greater than 0.4 (the significance level of 0.000).

Table.6: Estimation of the regression coefficients of the value creation construct

	Coefficient Standardized	*S.E.*	*C.R.*	*P- value*
CV1 <--- Value-creation	,937	,158	7,652	***
CV2 <--- Value-creation	,578	,101	7,662	***
CV3 <--- Value-creation	1,000			
CV6 <--- Value-creation	,984	,164	7,884	***

The CFA on the latent variable "value creation" confirms the factor structure from the PCA. The reliability index for the dimension 'value creation' is judged to be correct (0.888) since it exceeds the recommended threshold of 0.7.

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6. Confirmatory Factor Analysis (CFA) of the overall measurement model

Having performed partial confirmatory analyses, we now proceed to the confirmatory factor analysis of the overall measurement model shown below.

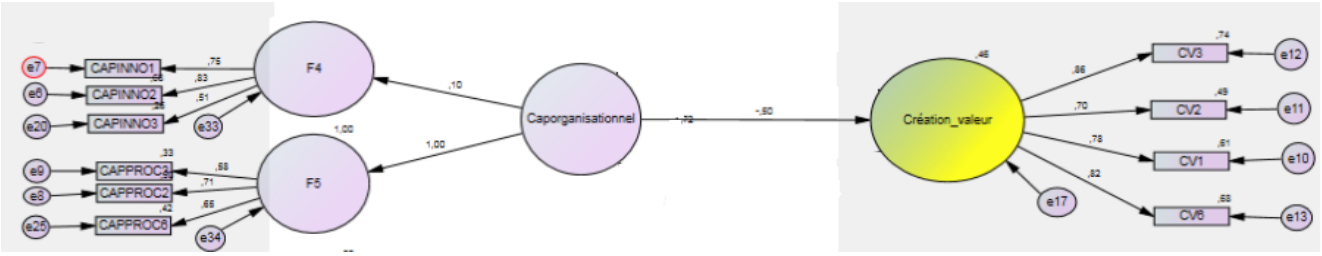

Fig.4: The global measurement model

Examination of the various indices shows that the model is acceptable and fits the empirical data well enough that the parameter estimates are reliable.

6.1. Relationships between the constructs of the model: Hypothesis testing

Structural equation models deal with a set of theoretically based causal relationships between independent and dependent variables. To confirm that the model correctly reproduces the data, it is necessary to complete this analysis by checking the significance of the relationships between the latent variables. Thus, we choose a significance level of 10%. The value of the associated t-test must then be greater than 1.64. In addition, we examined the standardized coefficients of the regressions, which vary between -1 and + 1 to estimate the strength of the linear relationship. We also studied the proportion of the variance explained (R2), i.e. the percentage of the variable to be explained that is returned by the model.

6.2. Validation tests of the hypotheses

The figure below presents the test of the relationship between first-order explanatory variables and value creation (explained variable).

Table.7: Tests of the hypotheses related to the first-order variables

	Coefficient standardized	structural link	S.E.	Test of Student t	P-value	Status of the hypothesis
Value-creation <--- F(Innovation)	0,144	0,257	0,19	1,828	0,030	**accepted**
Value-creation <--- F5(Process)	-0,045	-0,046	-0,571	0,566	0,571	**Rejected**

The results obtained by the test of the model make it possible to partially justify the relations between organizational capital and the creation of value. We notice that the innovation capital positively affects the value creation of the company by 3% (ß=0.144). Nevertheless, the creation of value is not significantly related to the process capital of the company.

We, thus, validate hypothesis H1 and we reject hypothesis H2.

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7. Discussion

Contrary to expectations, organizational capital does not have a significant effect on value creation for the large firm in the Moroccan context. These results contradict the results of the research conducted by Bontis et al. (1998), which confirmed that there is a positive and significant relationship between structural capital and firm performance. Furthermore, this demonstrates that the efforts of the large firm have not been able to codify tacit knowledge and further improve organizational capital by implementing new ideas and developing new products in comparison to competitors.

Thus, the lack of organizational influence on value creation may signal that the managers of the large Moroccan firm do not pay sufficient attention to organizational capital. However, the latter integrates internal specificities such as culture, knowledge deployment modes, and information systems.

The reason may be that many firms in developing countries prefer to invest heavily in physical capital without providing an adequate organizational structure. As a result, organizational capital deteriorates and leads to a lowering of the overall performance of intangible capital in addition to the value created for the firm.

To increase the competitive advantage, it is suggested that the company should increase the elements of organizational capital by developing the organizational modes, information technology infrastructure, expanding the innovation processes, and developing new products to have a greater impact on the value created for the company. In addition, the development of strong organizational capital can help build an organizational culture that ensures that employees can innovate and deploy their know-how and experience for the benefit of the company.

Companies are often criticized for their tendency to understand the resource management problems they face without having a transversal vision. As a result, they have difficulty in breaking out of the traditional economic framework based on the management of material assets and give their multidimensional strategic objectives management models determined by the predominance of the tangible character.

Thus, our managerial contribution lies in the fact that the proposed links between the components of intangible capital and the creation of corporate value suggest a new way of understanding the management of intangible resources and their role in the future development of the company. It is seen as one of the concerns of managers of the same importance as the management of other tangible and financial resources.

Also, our research presents the interest to put at the disposal of the company a tested framework of analysis allowing the managers to feel and evaluate the state of their efforts in terms of management of the intangible capital as well as its effects on the creation of the value of the company.

8. Contributions of the research

This research has both methodological and managerial contributions. On the methodological level, our research provides a conceptual determination of the creation of value by a company through its organizational potential. Thus, in a combination of literature and the pooled comments of the respondents, we have succeeded in presenting a conceptual framework linking the two components of intangible capital (innovation capital and process capital) with the creation of corporate value. The operationalization of our variables allowed us to contribute to the validation of the scales retained in the Moroccan context. This allowed us to arrive at scales with satisfactory psychometric characteristics by exploiting, exploratory analysis and a confirmatory analysis based on structural equations.

In terms of management implications, this research proposes to make the management of intangibles for strengthening the organizational potential of the company. Companies are often criticized for their tendency to approach the problems of managing their organizational resources without having a transversal vision. Therefore, our managerial contribution lies in the fact that the proposed links between the components of organizational capital and the creation of corporate value suggest a new way of understanding the management of organizational resources and their role in the future development of the

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organization. It should be seen as one of the concerns of the same importance as the management of other tangible and financial resources.

9. Conclusion

The study aims to investigate the impact of the components of organizational capital on the creation of value for large Moroccan companies. To do this, we have defined the main concepts used in the theoretical framework of this research. We first presented the concept of organizational potential and its different constructs. Then, we sought to determine the existing relationship between the organizational components with the creation of value for the company.

We have identified two components of the organizational potential of the company, namely innovation capital and process capital. Following deductive reasoning, we succeeded in building our conceptual model. The investigation of a sample was carried out by administering a research questionnaire through different channels (face to face, internet, telephone...). The data collected in this way were subjected to various analyses: the first level of exploratory analysis using SPSS 21.0 software, then the second level of confirmatory analysis using AMOS 21 software. These two stages of statistical analysis consisted in validating our measurement scales and testing the hypotheses of the structural model. The results show that organizational capital has a non-significant positive effect on value creation. We notice that the innovation capital positively affects the value creation of the companies. However, the creation of value is not significantly related to the process capital of the company.

In conclusion, it can be said that value creation remains the central concern for firms in the current economic circumstances. While the synergy between intangible resources has demonstrated its contribution, it deserves more in-depth study.

10. Limitations and new avenues of research

The main limitations of this study fall into two categories: (1) the theoretical limitations inherent to the very nature of the subject, and (2) the more general methodological limitations concerning the empirical approach adopted. In the present work, we have been confronted with a conceptual limit, which lies in our attempt to conceptualize the variables introduced in the model. It would be more appropriate to adopt objective measures for the different constructs, notably for value creation. Indeed, the difficulty of conceptualization constitutes a real challenge for any researcher who embarks on an emerging research topic.

Thus future research on the association of organizational components and value creation may use more objective measures, especially for the value creation variable, such as market-based variables.

The first methodological limitation is related to the method of data collection. In our case, this is a questionnaire survey. This method of data collection has a number of limitations. The most important is that the answers obtained reflect the perception or opinion of the individual respondents. In this sense, there can be a considerable gap between what is said and what is actually done. The static nature of the data collected in this research limits conclusions about causal effects between the set of constructs. It would be interesting to conduct longitudinal research that takes into consideration the time variable. This would allow for the integration of dynamics and synergies between the elements of organizational capital.

Authors' Contribution: Faissal ALLOUCH developed the concept, and wrote the draft paper. Mohammed Amine HAFIANE improved the concept and developed the methodology. Faissal ALLOUCH and Mohammed Amine HAFIANE collected and analyzed the data and wrote the final version of the paper. Both authors read and approved the work.

Conflict of Interest: The authors declare no conflict of interest.

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