EXTRINSIC AND INTRINSIC VARIABLES AS PREDICTORS OF THE PRESENCE OF TYPES OF ORGANISATIONAL CULTURE: IMPLICATIONS FOR ORGANIZATIONAL DEVELOPMENT

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ABSTRACT

In this research, we analyze the capacity of eight extrinsic and thirteen intrinsic variables to predict the presence of Clan, Market and Hierarchy cultures (Cameron & Quinn, 1999), on one subsample of Spanish managers (n_1 = 362) and another of Peruvian managers (n_2 = 1,317). We found, contrary to what most of the literature suggest, that the extrinsic variables show very little predictive capacity. On the other hand, intrinsic variables do have a significant predictive capacity, specific for each culture. Unexpectedly, the results for the Market culture are very different in the two subsamples, suggesting that this archetype have a high variability in its internal configuration. We discuss the implications of these findings.

Keywords: Organizational culture - Predictive study – OCAI - Intrinsic variables - Extrinsic variables

1 - INTRODUCTION

Organizational culture is a central concept in research, due to its importance in the organizational functioning and survival, as is reflected in the growing literature on the subject since the 1970s (Giorgi, Lockwood & Glynn, 2015). Organizational culture, according to Schein (2010), is a pattern of basic values and presuppositions that are shared and learned by a group during the resolution of problems of external adaptation and internal integration. A well-established framework to study culture is the Cameron and Quinn's (1999) model, which defines four archetypes of culture, namely Clan, Adhocracy, Market and Hierarchy. Each one represents a different set of values and presuppositions. All organizations have all four types, but in different proportions. This is a typological model because it aims to identify archetypes using different effectiveness criteria. As shown in Figure 1, the cultures are represented in four quadrants and ordered into two dimensions. The vertical

dimension moves from flexibility, discretion and dynamism to stability, order and control. The horizontal dimension moves from internal orientation and integration to external orientation and differentiation.

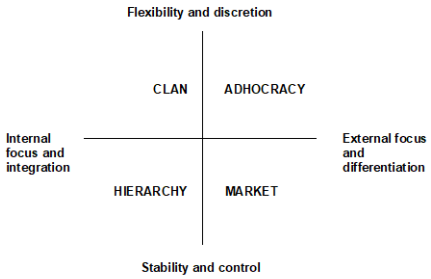

Figure 1. Cameron & Quinn's culture model (1999)

There is a wide agreement in academia that the culture, to help the company to survive, needs to be adapted to the environment (Bayraktar, Hancerliogullari, Cetinguc & Calisir, 2017; De Clercq, Thongpapanl & Voronov, 2018; Denison, Haaland & Goelzer, 2003; Dewanger & Bauer, 2019; Schein, 2010). The environment can be measured with extrinsic variables such as market turbulence, technological turbulence and competitive intensity, and all can move from a stable to a turbulent and aggressive state. Quinn and Cameron (1983) and Schein (2010), point out that the literature that develops the contingent model of organizational adaptation notes that companies in changing environments need to have organic and adaptable cultures and structures. Nevertheless, to date the relationships between the culture and the environment remain unclear.

Another field that needs more research is the internal configuration of each culture, which can be measured with intrinsic variables. These variables are mainly the business strategy and the organizational competencies. Both are developed by the founders and leaders (Berson, Oreg & Dvir, 2008; O'Reilly, Caldwell, Chatman & Doerr, 2014), trying to make the organization more competitive. What leaders pay attention to, reward, monitor and talk about focuses their followers' attention and efforts (Braunscheidel, & Suresh, 2018; Schein, 2010). These intrinsic variables have embedded the presuppositions and values of the company and make robust the culture (Denison, Nieminen & Kotrba, 2014; Schein, 2010; Zohar & Polachek, 2014).

A company's business strategy refers to the decisions taken by its leaders to achieve a competitive advantage in its market. Mintzberg and Quinn (1995) say that there must be a plan that defines the action to be taken in different situations for the purposes of achieving defined objectives. The business strategy must be proactively articulated with a pattern of actions and behaviors that must be aligned with company values and reflect the company's ideology and philosophy. It must also position the organization in a context and in relation to its environment and its stakeholders (Prajogo, 2016). The strategy is therefore one of the most important decisions made by the founders and leaders, who will

aim to align the culture with it (Barros & Fischmann, 2020; Madero Gómez & Barboza, 2015; Marshall, 2018; Slater, Olson & Hult, 2010). to get an increase in the organisation's performance (Salehzadeh et al., 2017).

On the other hand, Organizational competencies are certain capacities of the company that combine knowledge and skills and are necessary for obtaining competitive advantage. They include market orientation, competitor orientation and type of innovation. Barney (1991) refer to them as a set of internal knowledge-based resources and capabilities and notes that they have to be valuable, rare, difficult to imitate and difficult to be replaced by others. Some researchers have empirically shown some relationships between cultures, strategies and competences (Olson, Slater, Hult & Tomas, 2005; Slater, Olson & Hult, 2010), but to date, what are the intrinsic characteristics of each culture remain unclear.

In summary, what cultures are better adapted to each environment and what are the intrinsic characteristics of each culture is not well documented in the literature and raised concerns for practitioners and academics alike.

2 - STUDY

2.1. Objectives and hypothesis

Our goal in this research is to find which extrinsic and intrinsic variables can predict the presence of the Clan, Market and Hierarchy organizational cultures (Cameron & Quinn, 1999). The links between each culture and the extrinsic variables could help us to understand what cultures are better adapted to each environment, while the links with the intrinsic variables could give us information about the business strategies and organizational competencies that characterizes each culture. Additionally, we compare the results of a Spanish and a Peruvian sample to find differences that could enrich our understanding of the cultures. We analyze some hypothesis that arise from the scientific literature, but the study is also exploratory and try to find unexplored links between each culture and the extrinsic and intrinsic variables.

Extrinsic variables

Quinn and Cameron (1983) and Schein (2010), point out that the literature that develops the contingent model of organizational adaptation, notes that companies in changing environments need to have organic and adaptable cultures. In a more specific way, Cameron et al. (2006) used their model to explain how culture adapts to the environment. In a research with responses from over 80,000 professionals from more than 3,000 companies in the US, they suggested that the Market culture, because is externally oriented, is the most capable of survive in an ever-changing environment. Meanwhile the Clan culture and Hierarchy culture, which are internally oriented, are better adapted to stable environments.

- Hypothesis C1: the presence of the Clan culture can be predicted by a state of stability in the extrinsic variables

- Hypothesis M1: the presence of the Market culture can be predicted by a state of turbulence in the extrinsic variables.
- Hypothesis H1: the presence of the Hierarchy culture can be predicted by a state of stability in the extrinsic variables

Intrinsic variables

Slater, Olson and Hult (2010), in an empirical research done mainly in United States with marketing managers, suggested some links between the cultures and the business strategy. Firstly, Clan culture base their competitiveness in a very competent and motivated human capital, which differentiates the company from competitors. Secondly, Market culture focus on getting results. To do so they analyze the leaders in the market and try to aggressively compete with them. Thirdly, Hierarchy culture competes with excellent systems and processes trying to lower the costs and positioning their offer according to competitors. These links were also suggested by Cameron et al. (2006).

- Hypothesis C2: the presence of the Clan culture can be predicted by the Differentiated defender strategy
- Hypothesis M2: the presence of the Market culture can be predicted by the Analyzer defender strategy
- Hypothesis H2: the presence of the Hierarchy culture can be predicted by the Low-cost defender strategy
- Hypothesis H3: the presence of the Hierarchy culture can be predicted by the Analyzer defender strategy

The same research done by Slater, Olson and Hult (2010), also suggested some links between the cultures and different organizational competences. Firstly, Clan culture can be very close to the market and deliver an excellent service, thanks to a motivated human capital. It's also an adaptable and flexible organization. Secondly, Market culture is externally oriented and to get results try to focus on clients and competitors. Thirdly, Hierarchy culture uses their systems and processes to offer better prices and service than competitors. Thus, needs to continuously benchmark their position. Again, these links had previously been suggested by Cameron et al. (2006).

- Hypothesis C3: the presence of the Clan culture can be predicted by Market orientation
- Hypothesis C4: the presence of the Clan culture can be predicted by the Speed of organizational change
- Hypothesis M3: the presence of the Market culture can be predicted by Market orientation
- Hypothesis M4: the presence of the Market culture can be predicted by Competitor orientation
- Hypothesis H4: the presence of the Hierarchy culture can be predicted by Competitor orientation

2.2. Method

2.2.1. Participants

The participants were 1,679 managers. The study has two differentiated subsamples: one Spanish (n_1 = 362; 69.9% men and 30.1% women; average age 42.2 years) and one Peruvian (n_2 = 1,317; 67.5% men and 32.5% women; average age 35.3 years).

2.2.2. Measures

Table 1 provides a summary of all the instruments along with the number of items and reliabilities.

Organizational culture

We assessed culture using the Organizational Culture Assessment Instrument (OCAI; Cameron et al., 2006). The questionnaire was translated and adapted into Spanish (Assens, 2018) through exploratory factor analysis (EFA) with a Spanish sample (n_1 = 246) and confirmatory factor analysis (CFA) with a Latin-American sample (n_2 = 510). The result reduced the four-factor internal structure to a three-factor structure that retains the Clan, Market and Hierarchy factors (reducing the number of items in each from six to four) but fully excludes the Adhocracy factor. The study gave rise to a three-factor instrument in Spanish called OCAI-12. CFA shows acceptable indicators (TLI = .93, CFI = .94, RMSEA = .07). Reliabilities are also good (α = .74 for Clan, α = .79 for Market and α = .71 for Hierarchy).

The Clan factor measures the assumption that the company will succeed on the basis of its human capital (sample item: “The management style in the organization is characterized by teamwork, consensus, and participation”). The Market factor measures the assumption that there is a need to compete aggressively to get business results (sample item: “The organization is very results-oriented. A major concern is with getting the job done. People are very competitive and achievement-oriented”). The Hierarchy factor measures the assumption that success comes with stable, predictable and efficient formal rules and policies (sample item: “The management style in the organization is characterized by security of employment, conformity, predictability, and stability in relationships”).

Responses were made on a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Extrinsic variables

This study used eight instruments for measuring the organizational environment: Market turbulence (Narver, Slater & MacLachlan, 2004), measures the changes in the customer’s preferences and needs. Technological turbulence (Olson et al., 2005), measures the impact of new technologies. Competitive intensity (Jaworski & Kohli, 1993), measures the strength of competitors. Four scales of Competitive environment (based on Porter, 2008), measures Power of suppliers, Power of customers, Threat of new entrants and Threat of substitute products. Lastly, Speed of the environmental change (based on Porter, 2008) measures how fast the above seven extrinsic variables are changing.

Intrinsic variables

Organizational strategy was measured using the strategy-type instrument (Slater & Olson, 2000), which enables five different strategies to be identified: the Prospector strategy measures the behavior of been first-to-market with new product or service concepts. The Analyzer strategy measures the behavior of been early-followers, monitoring Prospector's actions and customer responses to them. The Differentiating defender strategy focuses on providing different and superior levels of service and/or product quality. The Low-cost defender strategy focuses on producing goods or services as efficiently as possible and at the best prices. Lastly, the Reactor strategy do not appear to have a consistent product–market orientation and only respond to competitive pressures in the short term.

We also used the following eight instruments to measure organizational competencies: Responsive market orientation (MORTN; Deshpandé & Farley, 1998), measures the activities of the company to discover and satisfy the expressed needs of the clients. Proactive market orientation (MOPRO; Narver, Slater & MacLachlan, 2004), measures the activities of the company to discover and satisfy the hidden and unconscious needs of the clients. Competitor orientation (Olson, Slater, Hult & Tomas, 2005), measures organizational behaviors aimed at beating competitors. Speed of organizational change (based on Porter, 2008), measures how quickly the organization adapts and is able to change based on movements in the environment. Lastly, we used four scales to measure Types of innovation (Cameron et al., 2006): radical innovation, incremental innovation, innovation in internal processes and innovation in products and services.

All the instruments used a five-point Likert scale.

Table 1 provides a summary of all the instruments along with the number of items and reliabilities.

Table 1. Summary of the instruments

Scale	**Nº items and version**	**Subscale (items)**	**Alpha C.**
CULTURE SCALES			
OCAI. Organizational Culture Assessment Instrument. (Cameron, Quinn, DeGraff & Thakor, 2006)	English (24 items)	F1.- Clan (6 items)	.74
		F2.- Adhocracy (6 items)	.79
		F3.- Market (6 items)	.71
		F4.- Hierarchy (6 items)	.73
	Spanish (12 items)	F1.- *Clan* (4 items)	.74
		F2.- *Mercado* (4 items)	.79
		F3.- *Jerarquía* (4 items)	.71
INTRINSIC SCALES (Strategy and organizational variables)			
	English	F1.- Prospector (1 item)	

Strategy Type. (Slater & Olson, 2000)	(5 items)	F2.- Analyzer (1 item) F3.- Low-cost defender (1 item) F4.- Differentiated defender (1 item) F5.- Reactor (1 item)	
	Spanish (5 items)	F1.- *Prospectora* (1 item) F2.- *Analizadora* (1 item) F3.- *Defensiva* low-cost (1 item) F4.- *Defensiva diferenciadora* (1 item) F5.- *Reactiva* (1 item)	---

(Cont.)

MORTN. Responsive Market Orientation. (Deshpandé & Farley, 1998)	English (10 items)	F1.- Responsive Market Orientation	.88
	Spanish (10 items)	F1.- *Orientación a Mercado* Responsive	.88
MOPRO. Proactive Market Orientation. (Narver, Slater & MacLachlan, 2004)	English (8 items)	F1.- Proactive Market Orientation	.88
	Spanish (7 items)	F1.- *Orientación a Mercado Proactiva*	.86
Competitor Orientation (Olson, Slater, Hult & Tomas, 2005)	English (8 items)	F1.- Competitor Orientation	.90
	Spanish (8 items)	F1.- *Orientación a Competidores*	.90
Velocidad de Cambio de la Organización	Spanish (4 items)	F1.- *Velocidad de Cambio de la Organización*	.87
Tipo de Innovación	Spanish (4 items)	F1.- *Radical en Productos* F2.- *Incremental en Productos* F3.- *Radical en Procesos* F4.- *Incremental en Procesos*	---
EXTRINSIC SCALES (environment variables)			
Market Turbulence. (Narver, Slater & MacLachlan, 2004)	English (8 items)	F1.- Market Turbulence	.69

	Spanish (7 items)	F1.- *Turbulencia de Mercado*	.69
Technological Turbulence. (Olson, Slater, Hult & Tomas, 2005)	English (8 items)	F1.- Technological Turbulence	.94
	Spanish (7 items)	F1.- *Turbulencia Tecnológica*	.72
Competitive Intensity. (Jaworski & Kohli, 1993)	English (8 items)	F1.- Competitive Intensity	.81
	Spanish (6 items)	F1.- *Intensidad competitiva*	.73
(Cont.)			
Entorno Competitivo	Spanish (4 items)	F1.- *Poder de negociación de proveedores* F2.- *Poder de negociación de clientes* F3.- *Amenaza entrada nuevos competidores* F4.- *Amenaza de productos o servicios substitutivos*	---
Velocidad de Evolución del Entorno	Spanish (7 items)	F1.- *Velocidad de Evolución del Entorno*	.72

2.2.3. Procedure

Participants were obtained through non-probabilistic sampling (Hernández, Fernández & Baptista, 2000). The data were collected between December 2016 and May 2019 via an online questionnaire. The response rate was 81% for the Spanish subsample and 87% for the Peruvian.

2.2.4. Data analysis

We used the SPSS program (23.0) to do the stepwise multiple regressions and to calculate the reliabilities.

2.3. Results

The predictive study for the Clan culture with the Spanish subsample (n_1 = 362) can explain 34% of the variance with the following six predictive variables and percentages of explained variance: Speed of organizational change (22%), MORTN (7%), MOPRO (2%), Reactor strategy (1%), Analyzer strategy (1%) and Incremental innovation in internal processes (1%). The study with the Peruvian subsample (n_2 = 1,317) can also explain 34% of the variance with the following seven predictive variables: MORTN (24%), Speed of change (6%),

Incremental innovation in products and services (2%), Prospector strategy (1%), Analyzer strategy (1%), Reactor strategy (less than 1% and negative sign) and Market turbulence (less than 1%).

The results show that the Clan culture, both in the Spanish and the Peruvian subsamples, is mainly characterized by its capacity to change and adapt quickly (Speed of organizational change) and its competence to respond to the present desires of the clients (MORTN). There is one extrinsic variable in the Peruvian subsample with a small predictive capacity, which is Market turbulence, but with a positive correlation. Thus, there is no indication that Clan culture is more common in stable environments.

Tables 2 and 3 show the models and the coefficients of the stepwise multiple regressions.

Table 2. Multiple regression: Clan culture (Spanish subsample n_1=362). Model 6.

Models and Variables	Models						Coefficients				
	R	R^2	R^2 Adjusted	R Change	F	sig.	B	SE	β	t	sig.
Model-6	.59	.35	.34	.01	32.03	.000					
Speed of org. change							.20	.06	.20	3.61	.000
MORTN							.08	.03	.17	2.86	.004
MOPRO							.10	.04	.15	2.61	.009
Reactor strategy							-.43	.13	-.15	-3.21	.001
Analyzer strategy							.34	.14	.10	2.37	.019
Incremental innovation internal processes							.39	.18	.11	2.11	.035

Table 3. Multiple regression: Clan culture (Peruvian subsample n_2=1,317). Model 7.

Models and variables	Models						Coefficients				
	R	R2	R^2 Adjusted	R Change	F	sig.	B	SE	β	t	sig.
Model-7	.58	.34	.34	.00	97.06	.000					
MORTN							.10	.01	.22	7.24	.000
Speed of org. change							.20	.03	.19	6.11	.000
Incremental innovation products-services							.41	.10	.13	4.07	.000
Prospector strategy							.35	.09	.10	3.80	.000
Analyzer strategy							.32	.07	.11	4.39	.000
Reactor strategy							-.25	.07	-.09	-3.66	.000
Market turbulence							.09	.03	.07	2.63	.009

The predictive study for Market culture with the Spanish subsample (n_1 = 362) can explain 18% of the variance with the following three predictive variables: Competitor orientation (13%), Prospector strategy (4%) and Low-cost strategy (1%). The study with the Peruvian subsample (n_2 = 1,317) can explain 32% of the variance with the following eight predictive variables: MORTN (24%), Radical innovation in products and services (3%), Low-cost strategy (2%), Incremental innovation in products and services (1%), Competitive intensity (1%), Market turbulence (1% and negative sign), Speed of organizational change (less than 1%) and Reactor strategy (less than 1%).

The results show, unexpectedly, that the predictors in the Market culture are very different in the two subsamples. In the Spanish one, the Market culture is mainly characterized by Competitor orientation and the Prospector strategy, while in the Peruvian culture by its Responsive client orientation (MORTN). Only the Low-cost strategy is shared in a small percentage, suggesting that this culture have a high variability in its internal characteristics. On the other hand, and contrary to what most of the literature suggest, no extrinsic variable appears as predictor in the Spanish subsample. In the Peruvian subsample, however, there is a 1% of predictive capacity due to Competitive intensity and another 1%, but with negative sign, due to Market turbulence. This result suggests that Market culture could be something common in Peru when competition increases, but less common when the customer preferences are changing.

Tables 4 and 5 show the models and the coefficients of the stepwise multiple regressions.

Table 4. Multiple regression: Market culture (Spanish subsample n_1=362). Model 3.

Models and variables	Models						Coefficients				
	R	R2	R2 Adjuste	R Change	F	sig.	B	SE	*β*	t	sig.
Model-3	.43	.18	.18	.01	27.03	.000					
Competitor orientation							.10	.02	.24	4.53	.000
Prospector strategy							.76	.16	.25	4.66	.000
Low-cost strategy							.35	.15	.11	2.25	.025

Table 5. Multiple regression: Market culture (Peruvian subsample n_2=1,317). Model 8.

Models and variables	Models						Coefficients				
	R	R2	R2 Adjusted	R Change	F	sig.	B	SE	*β*	t	sig.
Model-8	.57	.32	.32	.00	77.58	.000					
MORTN							.01	.01	.28	9.13	.000
Disruptive innovation in products and services							.30	.09	.12	3.47	.001

Low-cost strategy	.34	.06	.13	5.62	.000
Incremental innovation in products and services	.28	.09	.10	3.00	.003
Competitive intensity	.12	.02	.13	4.59	.000
Market turbulence	-.09	.03	-.08	-2.62	.009
Speed of organizational change	.08	.03	.09	2.73	.006
Strategy reactor	-.14	.06	-.06	-2.46	.014

Lastly, the predictive study for the Hierarchy culture with the Spanish subsample (n_1 = 362) can explain 12% of the variance with the following three predictive variables: Low-cost strategy (6%), MORTN (5%) and Incremental innovation in internal processes (1%). The study with the Peruvian subsample (n_2 = 1,317) can explain 23% of the variance with the following seven predictive variables: MORTN (17%), Incremental innovation in internal processes (2%), Low-cost strategy (2%), Competitor orientation (1%), Prospector strategy (1%), Threat of new entrants (less than 1%) and Radical innovation in internal processes (less than 1%).

The results show that the Hierarchy culture, both in the Spanish and the Peruvian subsamples, is mainly characterized by its interest in the present needs of the clients (MORTN), the Low-cost strategy and the Incremental innovation in internal processes. There is one extrinsic variable in the Peruvian subsample with a small predictive capacity, which is Threat of new entrants, but with a positive correlation. Thus, there is no indication that Clan culture is more common in stable environments.

Tables 6 and 7 show the models and the coefficients of the stepwise multiple regressions.

Table 6. Multiple regression: Spanish subsample n_1=362; Hierarchy culture. Model 3

Models and variables	Models						Coefficients				
	R	R2	R2 Adjusted	R Change	F	sig.	B	SE	β	t	sig.
Model-3	.35	.12	.12	.01	16.95	.000					
Low-cost strategy							.73	.14	.25	5.14	.000
MORTN							.07	.02	.18	3.23	.001
Incremental innovation internal processes							.34	.16	.11	2.07	.039

Table 7. Multiple regression: Peruvian subsample n_2=1,317; Hierarchy culture. Model 7

Models and variables	Models						Coefficients				
	R	R2	R2 Adjuste	R Change	F	sig.	B	SE	β	t	sig.
Model-7	.48	.23	.23	.00	56.50	.000					

MORTN	.07	.01	.20	5.25	.000
Incremental innovation internal processes	.31	.10	.11	3.19	.001
Low-cost strategy	.34	.07	.12	5.06	.000
Competitor orientation	.37	.01	.11	2.71	.007
Prospector strategy	.19	.08	.07	2.35	.019
Threat of new entrants	.14	.07	.05	2.19	.034
Radical innovation internal processes	.20	.09	.07	2.08	.038

Tables 8, 9 and 10 provide a summary of the predictive variables for each culture. They are sorted by the value of the R Change, from highest to lowest and comparing the two subsamples. The matching variables for the two subsamples in each table are highlighted in bold. This comparison of the results between the Spanish and the Peruvian subsamples shows a high level of agreement in the Clan and Hierarchy cultures. However, for the Market culture the results have only in common the variable Low-cost strategy, with little predictive capacity.

Table 8. Summary of the predictive variables for the Clan culture, sorted by the value of the R Change, from highest to lowest (matching variables are highlighted in bold).

SPAIN n_1=362	PERU n_2=1,317
Speed of org. change $\Delta\mathbf{R^2}$**=.22 (**$\boldsymbol{\beta}$**=.20)**	**MORTN** $\Delta\mathbf{R^2}$**=.24 (**$\boldsymbol{\beta}$**=.22)**
MORTN $\Delta\mathbf{R^2}$**=.07 (**$\boldsymbol{\beta}$**=.17)**	**Speed of org. change** Δ**R2=.06 (**$\boldsymbol{\beta}$**=.19)**
MOPRO ΔR^2=.02 (β=.15)	Incremental innovation in products and services ΔR2=.02 (β=.13)
Reactor strategy $\Delta\mathbf{R^2}$**=.01 (**$\boldsymbol{\beta}$**= -.15)**	Prospector strategy ΔR^2=.01 (β= .10)
Analyzer strategy $\Delta\mathbf{R^2}$**=.01 (**$\boldsymbol{\beta}$**=.10)**	**Analyzer strategy** $\Delta\mathbf{R^2}$**=.01 (**$\boldsymbol{\beta}$**=.11)**

Incremental innovation in internal processes **ΔR^2=.01 (β=.11)**	**Reactor strategy** **ΔR^2=.00 (β= -.09)** Market turbulence ΔR^2=.00 (β=.07)
Explained variance 34 %	Explained variance 34%

Table 9. Summary of the predictive variables for the Market culture, sorted by the value of the R Change, from highest to lowest (matching variables are highlighted in bold).

SPAIN n_1=362	PERU n_2=1,317
Competitor orientation ΔR^2= .13 (β=.24)	MORTN ΔR^2= .24 (β=.28)
Prospector strategy ΔR^2= .04 (β =.25)	Radical innovation in products and services ΔR^2= .03 (β =.12)
Low-cost strategy **ΔR^2= .01 (β =.11)**	**Low-cost strategy** **ΔR^2= .02 (β =.13)**
	Incremental innovation in products and services ΔR^2= .01 (β =.10)
	Competitive intensity ΔR^2= .01 (β =.13)
	Market turbulence ΔR^2= .01 (β = -.08)
	Speed of organizational change ΔR^2= .00 (β =.09)
	Reactor strategy ΔR^2= .00 (β = -.07)
Explained variance 18%	Explained variance 32%

Table 10. Summary of the predictive variables for the Hierarchy culture, sorted by the value of the R Change, from highest to lowest (matching variables are highlighted in bold).

SPAIN n_1=362	PERU n_2=1,317
Low-cost strategy ΔR^2**= .06 (**β**=.25)**	**MORTN** ΔR^2**= .17 (**β **=.20)**
MORTN ΔR^2**= .05 (**β **=.18)**	**Incremental innovation internal processes** ΔR^2**= .02 (**β **=.11)**
Incremental innovation internal processes ΔR^2**= .01 (**β **=.11)**	**Low-cost strategy** ΔR^2**= .02 (**β **=.12)**
	Competitor orientation ΔR^2= .01 (β =.11)
	Prospector strategy ΔR^2= .01 (β =.07)
	Threat of new entrants ΔR^2= .00 (β =.05)
	Radical innovation internal processes ΔR^2= .00 (β =.07)
Explained variance 12%	Explained variance 23%

3 - DISCUSSION

3.1. Summary and discussion of the results

Our objective in this research was to discover which extrinsic and intrinsic variables can predict the presence of the Clan, Market and Hierarchy organizational cultures (Cameron & Quinn, 1999). We also compared the results from a Spanish (n_1 = 362) and a Peruvian subsample (n_2 = 1,317). The links between the extrinsic variables and the cultures might help us to understand what cultures are better adapted to each environment. On the other hand, the links between the intrinsic variables and the cultures might give us information about what business strategies and organizational competencies are characteristic of each culture. Additionally, the differences between the results of the two subsamples could enrich our understanding of the characteristics of each culture.

Hypothesis C1, M1 and H1 were centered on relationships between cultures and the environment. Quinn and Cameron (1983), Cameron et al. (2006) and Schein (2010) suggested that Market culture is the most capable of survive in an ever-changing environment, and Clan culture and Hierarchy culture are better adapted to stable environments.

Hypothesis M1 is partially fulfilled in the Peruvian subsample. Our study demonstrates that Competitive intensity has some predictive capacity in the Peruvian subsample, regarding Market culture. This is coherent with Cameron et al. (2006). Unexpectedly, we also found that Market turbulence has some predictive capacity in the Peruvian subsample, but with negative sign. These results suggest that Market culture could be something common in Peru when competition is high, but less common when the customer preferences are changing. Nevertheless, both predictive capacities are small and doesn't appears in the Spanish subsample.

Hypotheses C1 and H1 are not fulfilled. Our research did not find any extrinsic variable with inverse relationship with either Clan culture or Hierarchy culture. Thus, we found no support to the idea that both cultures are more common in stable environments.

Hypothesis C2, M2, H2 and H3 were centered on relationships between cultures and Business strategy, based on an empirical research done by Slater, Olson and Hult (2010).

Hypothesis C2 is not fulfilled. We found no support to the idea that the presence of Clan culture can be predicted by Differentiated defender strategy. Thus, human capital doesn't appear as a source of strategic differentiation. Nevertheless, our results found some predictive capacity in Reactor and Analyzer strategies both in Spain and Peru, and also in Prospector strategy in Peru.

Hypothesis M2, that states that the presence of Market culture can be predicted by Analyzer defender strategy, is not fulfilled either. Nevertheless, our results found some predictive capacity in Low-cost strategy, both in Spain and Peru, and also in Prospector strategy in Spain and Reactor strategy in the Peruvian subsample. This suggests that Market culture can use a different mix of strategies to compete.

Hypothesis H2, that states that the presence of Hierarchy culture can be predicted by Low-cost defender strategy, is fulfilled. Our results found a relevant

predictive capacity in Low-cost strategy, both in the Spanish and the Peruvian subsamples, reinforcing the idea that Hierarchy culture uses the excellence in its processes to lower the costs.

Hypothesis H3 states that the presence of Hierarchy culture can be predicted by Analyzer defender strategy. This hypothesis is not fulfilled.

Hypothesis C3, C4, M3 and H4 were centered on relationships between cultures and Organizational competences, based also on the empirical research done by Slater, Olson and Hult (2010).

Hypothesis C3 stated that the presence of Clan culture can be predicted by Market orientation. Our results fulfill this hypothesis, founding that Responsive market orientation (MORTN) has a relevant predictive capacity in both subsamples. This is coherent with the findings of different researchers (Cameron et al., 2006; Iglesias, Sauquet & Montaña, 2011; Jaworski & Kohli, 1993).

Hypothesis C4 is also fulfilled. Indeed, the presence of Clan culture can be predicted by Speed of organizational change in both subsamples. Thus, we can support the idea that Clan culture is capable to change and adapt fast. This is coherent with the findings of Cameron et al. (2006)

Hypothesis M3 stated that the presence of Market culture can be predicted by Market orientation. This is fulfilled in the Peruvian subsample, where we found a relevant predictive capacity in Responsive market orientation (MORTN). Unexpectedly we could not find this link in the Spanish subsample, contrary to Cameron's et al. (2006) theory. This suggests that Market culture may have very different competencies depending on certain circumstances that are not known.

Hypothesis M4 stated that the presence of Market culture can be predicted by Competitor orientation. This is fulfilled only in the Spanish subsample, where our results show some predictive capacity. Unexpectedly, we could not find this link in the Peruvian subsample, which again shows the variability in Market culture competencies.

Lastly, hypothesis H4 stated that the presence of Hierarchy culture can be predicted by Competitor orientation. This is fulfilled in the Peruvian subsample and shows some capacity to observe competitors, to benchmark costs and prices. Unexpectedly, our results found a relevant predictive capacity in Responsive market orientation (MORTN) and in Incremental innovation in internal processes, in both subsamples. We also found in the Peruvian subsample a small predictive capacity in Radical innovation in internal processes. Thus, consistent with the theory (Slater, Olson & Hult, 2010), Hierarchy culture seems to be oriented to the present needs of the clients and also seems to be capable to improve internal processes. These competences are coherent with Low-cost strategy, mentioned before.

When we compare the Spanish and Peruvian subsamples in Clan culture, which is internally oriented (Cameron & Quinn, 1999), both show great agreement in their main predictive variables, which are Speed of organizational change and MORTN. Both subsamples also show great agreement in the predictors of Hierarchy culture, which are Low-cost strategy, Incremental innovation in internal processes and MORTN. This suggests that both cultural archetypes are robust and stable. In contrast, in Market culture we found very different predictors in the two subsamples. This suggests that companies could

develop many different configurations of business strategies and organizational competencies, while maintaining its characteristic external orientation and strong focus on results.

Finally, our research also allows us to consider the orthogonal graphical representation of the competing values framework (Cameron et al., 2006). Both Clan and Hierarchy cultures show Market orientation, which is an externally oriented competency. Hierarchy culture also shows Incremental innovation in internal processes, which indicates flexibility and discretion. Market culture, on the other hand, shows two innovative characteristics, these being Prospector strategy and Radical innovation in products and services. Both of these also indicate flexibility and discretion. In short, all three cultures are linked to some unexpected intrinsic variables. If we carry out an intellectual exercise by spatially repositioning the cultures according to these results, they move slightly out of their quadrants and this gives rise to some overlapping, as shown in Figure 2.

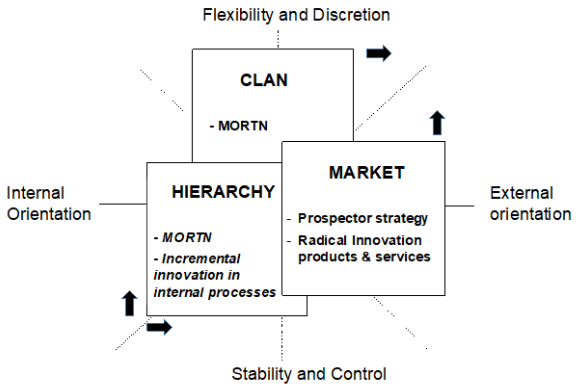

Figure 2. Modification of the spatial representation of Cameron, Quinn, DeGraff & Thakor's model (2006)

3.2. Limitations and suggestions for future research

This study has certain limitations. We would also like to make some suggestions for future research:

Firstly, our data were obtained using non-probabilistic sampling of Spanish and Peruvian managers. We recommend that the research should be extended to cover other employee profiles and other countries.

Secondly, our research could not include the Adhocracy culture (Cameron et al., 2006) in the regression analysis, because this factor was totally excluded from the translation and adaptation of the OCAI into Spanish. Future studies should design a new scale for measuring this culture, which is characterized by its capacity for innovation.

Thirdly, unlike Clan and Hierarchy cultures, the Market culture presented very different predictors when comparing Spain and Peru for reasons that we cannot know. New research is needed in order to discover how this

cultural archetype acquires different intrinsic factors in different countries. This new research could include the analysis of differences in the cultural context of each nation and also in the economic context.

Finally, complementary studies should extend the sample to specific industries. Isolating the particular characteristics of each business environment could help us to understand how culture adapts to its own specific extrinsic factors.

4 - CONCLUSIONS

The present research enables the following conclusions to be reached:

Firstly, the eight extrinsic variables investigated show very little predictive capacity regarding Clan, Market and Hierarchy cultures we have studied from the Cameron and Quinn (1999) model and measured using the OCAI-12. This is an important contribution of this research because, even though there is agreement in academia that the business environment has a decisive influence on company's survival, this study found no pattern to suggest that specific cultures are more likely to be found in particular environments.

Secondly, eleven of the intrinsic variables investigated have a relevant predictive capacity on Clan and Hierarchy cultures, both in the Spanish and the Peruvian subsamples. These results provide valuable information about the business strategy and the organizational competences of the three cultural archetypes, giving stronger empirical support to previous research. Specifically, the main characteristics found in Clan culture are Responsive market orientation and Speed of organizational change. Therefore, it is a culture committed with customers and can change and adapt quickly. On the other hand, the main characteristics in Hierarchy culture are Low-cost strategy, Incremental innovation in internal processes and the Responsive market orientation. Therefore, it is a culture that competes by lowering its costs and prices, that constantly improves its internal processes to achieve it, and that is also committed to customers.

Thirdly, ten of the intrinsic variables have a relevant predictive capacity on Market culture but, unexpectedly, are very different in the two subsamples. The main characteristics found in the Spanish subsample are Competitor orientation and Prospector strategy. In the Peruvian subsample are Responsive market orientation (MORTN) and Radical innovation in products and services. Only Low-cost strategy is shared in the two subsamples. This is another important contribution of this research, and suggests that Market culture may have different internal configurations while keeping its characteristic strong focus on results and aggressive competitiveness.

Lastly, due that some of the predictive intrinsic variables found are unexpected, enables us to reflect on the accuracy of the orthogonal graphical representation proposed in the competing values framework model (Cameron et al., 2006).

These findings are important contributions of this research and provide valuable guidance to researchers and professionals alike.

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