
Exploring Organisational Culture in Higher Educational Institutions: a comparative study

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Abstract: The concept of organisational culture has been the object of increasing attention of the scientific community. In this study we analyse the organisational culture of two higher education institutions, one from Portugal and another from Spain, and how it has changed - or should be expected to have changed - following a modification in their legislative frameworks and mission definition, imposed coercively by their governments in the transposition of European directives. To achieve this study, the concept of Competing Values Framework (CVF) and Organisational Culture Assessment Instrument (OCAI) was used. The main conclusion of this study is that it is not clear that there has been a statutory change oriented towards the implementation of a market model and there has clearly not been a significant change in the pre-existing organisational culture in these two institutions, which may indicate weak levels of organisational effectiveness.

Keywords: higher education; organisational culture; institutional change; competing values framework; organisational culture assessment instrument; comparative study; Portugal; Spain.

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1. Introduction

One of the characteristics of the University is its resilience, namely the European one, which has always had the ability to adapt to the nature and successive transformation of the environment, and the thinking and orientations of its mentors, and the (successive transformation of the environment) (Kerr, 2001). This characteristic has made it one of the oldest and most conservative institutions in the world, always adapted to the requirements of the one that was, in each era, the "modern society" (Fumasoli and Stensaker, 2013). This remains to this day.

Today, world society is characterized by its liberal nature, global from the point of view of economic, financial and people and goods transactions, polarized regionally and of a strongly competitive nature, marginalizing the collaborative spirit akin to humanism. In short, adopting the so-called "market spirit" advocated, in its various aspects, among many others, by Friedman and Hayek (Jones, 2012).

The Universities analysed in this study, Portuguese, and Spanish, suffered changes to adapt to the social transformation. Regarding Portuguese and Spanish universities, this transformation was deeply influenced by the adoption of the common policies defined by the European Union, which they joined together in 1986.

The European Union (EU) does not have jurisdiction over national higher education systems. However, the definition of directives by European decision-making bodies, has defined a path and a common position towards society that are at the heart of the evolution of the European University as a whole and of each of them. These directives had the full acceptance and even participation of Governments and Rectors of European Universities (European Ministers of Education, 1999).

However, there are differences due to the culture of the respective peoples and of the governmental and institutional leaders in higher education in each country (Petersen, 2010).

To comply with EU directives, it was necessary to change the mission and culture of the European University. Such a change will necessarily imply a paradigm shift in its operation (Prado and García, 2017) and, essentially, alteration of the classical sense of its mission, guiding it to the labour market and making it competitive and international. For this purpose, a sensitive change of its institutional organisational culture becomes necessary.

To this end, the Portuguese and Spanish governments have promoted, albeit with different strategies, policy changes.

The Spanish government used an incremental strategy of successive approaches over a long period of time, which culminated in the approval of the Organic Law of Modification of the Organic Law of Universities (LOMLOU), in 2007.

The Portuguese government promoted the same transition in a single time, through the promulgation of the new Legal Regime of Higher Education Institutions (RJIES), also in 2007.

The main research question to answer in this study is whether, in the Portuguese and Spanish universities, the respective legislative and environmental transformation initiatives have determined the corresponding changes in the organisational culture of their institutions.

2. Theoretical framework

2.1 Organisational Culture

The concept of Organisational Culture (OC) has been accepted and widely used, since the last decades of the 20th century, as an instrument for interpreting various aspects of the behaviour of organisations, namely those of a business character, generally associated with their strategy, performance or leadership (Gordon, 1991, Ogbonna and Harris, 2000, Rizki et al., 2019, Schein, 1996).

With regard to the University, a particular case of a traditional strongly institutionalized organisation (Scott, 2008), this concept has been widely used for the understanding of multiple aspects of its nature, both internal and external (Devi, 2007), that is, the relationship between its stakeholders and those with the environment in which it operates (Folch and Ion, 2009, Köse and Korkmaz, 2019, Lacatus, 2013).

There are several general definitions of OC in the scientific literature, in a diversified approach that comes from the fact that, in concept, it is transversal to multiple disciplines, namely anthropology, sociology and psychology.

In this study, two types of definition are fixed. One of a descriptive nature: set of stories, rituals, organisational rites and symbolic manifestations (Schein, 1990), symbols, heroes, rituals, values and practices (Hofstede et al., 1990).

Another of a holistic nature: “a pattern of shared basic assumptions that was learned by a group as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems” (Schein, 2004).

This structure of fundamental assumptions consists of three differentiable layers: (i) *observable artifacts*, the built environment of the organisation (architecture, technology), the dress code, patterns of behaviour, regulations, standards, manuals of procedures, etc.; (ii) *values*, which support the rationale of behaviours; and (iii) *basic underlying assumptions*, values which, with experience, have become intrinsic to behaviours, having become unquestionable and unconsciously assumed (Schein, 1984).

More recently, Schein concluded that it was necessary to add a different way of defining the OC, which would make it possible to highlight how culture is formed and evolves in organizations: “the culture of a group can be defined as the accumulated shared learning of that group as it solves its problems of external adaptation and internal integration; which has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, feel, and behave in relation to those problems. This accumulated learning is a pattern or system of beliefs, values, and behavioural norms that come to be taken for granted as basic assumptions and eventually drop out of awareness”(Schein, 2017).

The culture of an organisation/institution is the result of the internal and external environment in which it operates. Internally, it is the result of its artifacts, values and assumptions; externally it is influenced by national policy and, if public, also by national policies for mission definition, financing and recruitment (Leland, 2017).

As organisational culture is a group characteristic. If the organisation/institution is understandable as a set of hierarchical, functional, departmental, or geographical subgroups, the organisation will host several cultures within itself, possibly in conflict. If the various subcultures are collaborative, one can speak of a strong organisational culture; if it is not possible, one cannot speak of a single corporate culture, the organisational culture will be weak (Schein, 1984, Madu, 2012, Maseko, 2017).

This is the case of the University, an institution composed of a wide variety of groups. These groups can be classified as internal and external stakeholders. Internal stakeholders are: management (with its various bodies at various levels, with its own composition and competencies), bureaucrats (administrative, technicians and auxiliaries), instructors (teachers, researchers, and technicians), and students (Jongbloed et al., 2008, Mainardes et al., 2010). External stakeholders are: the State (with normative and tutelage functions), the managers of the territory (with the power to influence), companies (in their relationship with research and influence on the curricular constructions of the formations), and the families of the students (with their requirements and expectations) (Amaral and Magalhães, 2002, Matlay, 2009).

It is therefore expected that the traditional University will host a set of subcultures, independent, collaborative or conflicting, which coexist without constituting a single, visible and understandable culture (Sporn, 1996).

However, this scenario may be changing. Nowadays, higher education institutions are viewed more and more as organizations rather than as institutions. Academic values of discovery and dissemination tend to be replaced by entrepreneurial and market values (Sporn, 2019). Leadership styles are aligned to those of private companies which can lead to a significant change in university culture and greater uniformity (Sporn, 2019).

Culture and leadership are strongly intertwined, one of the characteristics of leadership is the “creation and management of culture” (Schein, 2004).

2.2 Institutional Change

The legislative reforms of the Iberian Universities have accommodated the European Directives designed to implement the European political project (Amaral, 2001). Thus, in general, these reforms have led to the loss of power of academic elites - replaced by new organisations and new administrative structures, in general non-collegiate, and including elements external to institutions generally derived from society and the economy - and the adoption of policies identifiable with "academic capitalism" (Bleiklie and Kogan, 2007, Slaughter and Leslie, 2001). The loss of the hegemonic position on the part of academic elites involves not only organisational changes, but also significant changes in institutional identity and culture, linked to Humboldtian academic freedom, professional autonomy, and behaviours associated with humanism, tolerance, and equality.

These changes, organisational and cultural, need time to be accommodated by institutional actors (McRoy and Gibbs, 2009), which can give rise to situations of great uncertainty and conflict (Devi, 2007).

Using the McKay's classifier (McKay, 1995) for the organisational models of the University (Bureaucracy; Collegium; Enterprise; Corporation), Sousa (2018) studied the institutional autonomy, governance and financing factors of the Portuguese and Spanish university, noting that the Portuguese University presents a clearer transition from the collegium to the enterprise model than the Spanish University, which still remains very anchored in the collegium model.

It is therefore expected that there will also be differences in the organisational culture of universities in both countries due to the change in the organisational model imposed by the legislative reforms that have taken place.

2.3 Competing Values Framework (CVF)

One of the most widely used models to characterize the culture of an organisation is the Competing Values Framework (CVF), proposed by Quinn and Rohrbaugh (1983) which is a classifier of the key dimensions for analysing the effectiveness of an organisation (Devi, 2007).

The first dimension, which is represented on the horizontal axis of a Cartesian system of axes, reflects the difference in organisational focus, ranging from left to right, between the emphasis on the internal environment (person-oriented) and the emphasis on the external environment (organisation-oriented).

The second dimension, represented on the vertical axis, reflects the difference between organisational preference, ranging from the bottom up, between the emphasis on stability and control and the emphasis on flexibility and change.

Finally, the third dimension, internal to each of the four quadrants, represents the degree of proximity to the desired organisational results, placing emphasis on achieving the established ends or obtaining the necessary means.

Certainly, all organisational complexity cannot be described simply in three dimensions. The truth is that the construct proposed by Quinn and Rohrbaugh does not explore the detail of organisational culture but allows to establish a vision of organisational effectiveness by analysing the dimensions agreed upon for the definition of the concept. This allows covering a wide range of requirements, including those necessary for the modulation of an organisational change (Vilkinas and Cartan, 2006). This is the result of the construct being socially and not conceptually constructed (Quinn and Rohrbaugh, 1983).

Later on, Cameron and Quinn (2005) include the third dimension, "means *versus* ends" in the other two dimensions, "Internal Focus and Integration *versus* External Focus and Differentiation" and "Flexibility and Discretion *versus* Stability and Control".

Therefore, a classifier with four categories that differentiate organisational culture was built: *Clan*, which emphasizes cohesion, participation, and teamwork; *Adhocracy*, which emphasizes the values of entrepreneurship, creativity, and adaptability; *Hierarchy*, which highlights order, rules, and regulations; and *Market*, which emphasizes competitiveness and achievement of objective. Figure 1 succinctly qualifies each of the types of organisational culture, according to the attributes of Leadership, Values, and Organisational Effectiveness.

Figure - 1 - The models of organisational culture and their attributes for organisational effectiveness. Adapted from (Cameron and Quinn, 2005).

The rationale used for the representation of CVF implies that diagonally positioned quadrants represent cultures with competing or conflicting values. This statement should be used with caution since, if the intercorrelations between the four types of culture are calculated, results show that all of them are positively correlated with each other, thus indicating that they can coexist without a dominant type of culture in the organisation (Hartnell et al., 2011).

Moreover, reinforcing this understanding, Denison and Spreitzer (1991) state that "when one quadrant is overemphasized, an organisation may become dysfunctional and the strengths of the quadrant may even become weaknesses".

2.4 Organisational Culture Assessment Instrument (OCAI)

The Organizational Culture scale was constructed from the Organizational Culture Assessment Instrument (OCAI), by (Cameron and Quinn, 1999, Cameron and Quinn, 2005). This instrument allows diagnosing the dominant orientation of the organization, taking as reference the four culture types: clan, adhocracy, market, and hierarchical.

The OCAI allows the evaluation of six important dimensions of an organisation culture: (i) the dominant characteristics of the organisation; (ii) the style and type of approach of its leaders; (iii) human resource management models; (iv) the relational ties that build the organisation as a single whole; (v) the strategic guidelines that define the overall strategy of the organisation; and (vi) the criteria for evaluating success and the types of reward or celebration of success. Each dimension is specified by four questions and each identifies the strength of the culture type for that specification.

Leaders in the organisational areas – and in general, also their members – determine a classification of the organisation through the answers to the 24 questions on the questionnaire, thus providing a general cultural profile of the organisation. The OCAI thus allows the diagnosis and planning of changes in the organisational culture, adapting to the change determined by environmental changes, by changes in corporate strategy, or imposed externally by coercive regulatory changes.

CVF and the OCAI have already been extensively used by researchers in various fields of knowledge and these studies have tested the reliability and validity of the instrument in the applications in which they were used (Cameron and Quinn, 2005).

2.5 Culture and Organisational Model at the University

The CVF and the OCAI were also used to analyse organisational culture in universities, in their most different aspects (Alharbi and Abedelrahim, 2018, Caliskan and Zhu, 2019, Köse and Korkmaz, 2019, Vasyakin et al., 2016).

Universities are complex multi-structural entities, with various levels of hierarchy that coexist between managers, teachers, students, employees and sometimes external entities, internally organized in a governance structure that seeks to create a culture based on trust, competence, coordination and communication (Newton et al., 2010).

In this multiplicity of relatively undefined relationships, conflicts between the various bodies are common regarding the interpretation of organizational values and cultural differences. These differences are usually aggravated by the fact that teachers consider their professional competence as fundamental to the organisation. Teachers value academic autonomy and freedom, generally morally and statutorily recognized.

This attitude hinders the implementation of changes and innovations (Newton et al., 2010). This "conflicting" category of the University has accompanied its evolution throughout its millenary history.

The university model is related to its historical path: i) the Napoleonic model (bureaucratic), oriented to the formation of the bureaucracy, strongly dependent of the state and without connection to society; ii) the Humboldtian model (collegium), centred on the freedom to investigate and teach without utilitarian constraints, but strongly dependent on the state and without strong links with society; iii) the managerialist model

(enterprise), decentralized and anchored in the local community, weakly dependent of the state but strongly linked to society.

This historical connection has shaped the organizational culture prevalent in each of the university models, to the extent that the cultural approach and behaviour of the institutions is strongly related to the national culture of each epoch and to their educational policy (Lacatus, 2013). It is therefore acceptable to establish relationships between the university model and the predominant type of organisational culture.

The European University in general, and the Iberian University, was of an essentially Humboldtian nature, fulfilling its mission in the areas of teaching and research well. It did not have a utilitarian commitment to the economy, and it presented a chain of power based on the academic body, but framed by state legislation, alongside a collegial governance model (Nybom, 2003).

However, in the transition to the market model, this institution model is, in general, not compatible with the vision of external stakeholders who are part of a Council with strategy defining competencies. On the one hand, due to the variety of origins and views of stakeholders, and on the other hand, by the change of internal institutional balance, which poses a threat to traditional academic power. The loss of a hegemonic position on the part of academic power translates into significant changes in academic identity (McRoy and Gibbs, 2009). These changes require time to occur, and happen, in general, in the context of the existence of internal tensions between the various institutional stakeholders.

3. Research methodology and Data

3.1 Research methodology

In this study the Competing Values Framework (CVF), that uses the Organisational Culture Assessment Instrument (OCAI) (Cameron and Quinn, 1999), was used to assess organisational culture of two public institutions of higher education, one in Portugal (PT) and another one in Spain (SP).

The questionnaire was translated into Portuguese and Spanish by bilingual professionals using the conventional method of back-translation (Raposo, 2017, Brislin, 1990), having been made available in both languages simultaneously. The questionnaire was then posted online and tested by members of institutions of both countries. Their corrections and suggestions were considered for refining the questionnaire. The final version is composed of 24 questions, divided by the dimensions of organisational culture previously described.

Data collection was performed using an online tool, and the request for collaboration was done by e-mail. This email was written in a cover letter format, briefly explaining the purpose of the questionnaire, and highlighting the need for the respondents' collaboration. Confidentiality of responses was ensured.

After data collection and validation, it was released and processed in the Statistical Package for Social Sciences (SPSS) version 26.0 for Windows.

We performed a Principal Component Analysis (PCA) to assess the construct validities of the four types of Culture described above.

PCA was chosen for its wide use by behavioural science researchers to identify underlying components that are being measured by survey questions (Field, 2013). As one of the most popular multivariate statistical techniques is a dimension-reduction tool

which reduces a large set of variables into fewer components to provide an overview of interrelationships between these variables (Peña, 2002, Hair et al., 2010, Johnson and Wichern, 2013, Blbas and Kadir, 2021). This new set of variables still contains the most important information within the dataset (Abdi and Williams, 2010). This methodology has been used in other recent similar studies applied to universities (Visbal-Cadavid et al., 2020, Blbas and Kadir, 2021).

Descriptive statistics, means and standard deviation were calculated from the dimensions of organisational culture and t-tests for testing differences between the institutions.

3.2 Sample

The rectors gave permission to distribute the questionnaire to all staff through the available distribution lists. Once the email was sent the responses analysed in the study were obtained. In this sense, at the SP institution, 2691 employees were invited to complete the questionnaire. 147 responses were received, so the response rate was 5.5%. At the PT institution were received 163 responses from a universe of 2099 employees, corresponding a response rate of 7%. The samples sizes are in range of precision level approximately between 8% (SP) and 7% (PT) for a confidence level of 95% (Krejcie and Morgan, 1970).

Table 1 shows the global characteristics of the sample. It should be noted that the sample varied between the two institutions, but it comprised more teachers than non-teaching staff. This difference corresponds to the normal functioning of an HEI in terms of human resource distribution. It should also be noted that more than half of the sample is over 45 years old, as well as having a higher degree (Master or PhD) of education. We can see that the sample does not reveal considerable differences between the two institutions in terms of functions and gender. However, the SP sample has considerably fewer workers employed for over 10 years in HEI and younger workers (26 to 34 years old) than PT.

Table 1. Demographic composition of the sample, in percentage.

Number of respondents			Function			Gender		
	PT	SP		PT	SP		PT	SP
	52.6	47.4	Management	26.4	24.5	Male	49.7	40.5
			Teacher	57.7	45.6	Female	50.3	49.7
			Worker	16.0	29.9			
How long in HEI			Academic degree			Age		
	PT	SP		PT	SP		PT	SP
Up to 10 years	32.5	53.1	Secondary	7.4	12.9	From 26 to 34 years old	6.7	34.7
More than 10 years	67.5	46.9	Graduation	13.5	36.7	From 35 to 44 years old	38.7	19.0
			Master	33.1	16.3	45 to 54 years old	38.0	27.9
			PhD	46.0	34.0	55 or more	16.6	18.4

3.3 Instrument

Applying the analysis explained above, it was found that the group of variables analysed has obtained a Cronbach's alpha coefficient of (0.806 PT), (0.874 SP). The Cronbach's alpha coefficient of a scale should be above 0.7 (Taber, 2018, DeVellis, 2003). This shows that the reliability of the questionnaire is good to evaluate the latent variable, and the quality of services, as it had obtained a quite reasonable Cronbach's alpha value.

The quality of the correlations between the variables is verified using the Kaiser-Meyer-Olkin (KMO) Measure and the Bartlett's Test for Sphericity (BTS) (Table 2). The obtained values for KMO (PT, SP) and BTS (to significance level 0.000), are considered acceptable to proceed with the Factor Analysis (FA).

Table 2. KMO and Bartlett's Test.

	PT	SP
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.894	0.838
Approx. Chi-Square	1250.905	942.467
Sig.	0.000	0.000

To extract factors using PCA, as factor loadings, the values of ≥ 0.50 were adopted. Loadings of ≥ 0.50 are considered virtually significant (Hair et al., 2010). Eigenvalues (EV > 1) and cumulative percent values of the variance are also applied to simplify the factor solutions and produce unidimensional measures. There is a consensus on the value of EV greater than 1, though there is no indication as to the reasonable value of the cumulative percent variance values. We remark that orthogonal rotation varimax was applied here, which is believed to provide relevant and understandable factors with a smaller number of items. In Table 3 the results of the application of PCA to PT and SP responses are shown.

Table 3. Results of the application of Principal Component Analysis to PT and SP responses.

		Question 1(PT,SP)	2(PT,SP)	3(PT,SP)
1. Dominant Characteristics				
Clan	The organisation is a very personal place. It is like an extended family. People seem to share a lot of themselves.	CO11		
Adhocracy	The organisation is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.	CO20	(0.667, 0.817)	
Market	The organisation is very results oriented. A major concern is with getting the job done. People are very competitive and achievement oriented.	CO06	(0.751, 0.703)	
Hierarchy	The organisation is a very controlled and structured place. Formal procedures generally govern what people do.	CO22		(0.678,...)
2. Organisational Leadership				
Clan	The leadership in the organisation is generally considered to exemplify mentoring, facilitating, or nurturing.	CO10		(0.788, 0.639)
Adhocracy	The leadership in the organisation is generally considered to exemplify entrepreneurship, innovation, or risk taking.	CO24		
Market	The leadership in the organisation is generally considered to exemplify a no-nonsense, aggressive, results-oriented focus.	CO05	(...0.598)	
Hierarchy	The leadership in the organisation is generally considered to exemplify coordinating, organizing, or smooth-running efficiency.	CO15		
3. Management of Employees				
Clan	The management style in the organisation is characterized by teamwork, consensus, and participation.	CO04		(0.819, 0.738)
Adhocracy	The management style in the organisation is characterized by individual risk taking, innovation, freedom, and uniqueness.	CO13		
Market	The management style in the organisation is characterized by hard-driving competitiveness, high demands, and achievement.	CO18		
Hierarchy	The management style in the organisation is characterized by security of employment, conformity, predictability, and stability in relationships.	CO09		(0.774, 0.844)
4. Organisation Glue				
Clan	The glue that holds the organisation together is loyalty and mutual trust. Commitment to this organisation runs high.	CO08		
Adhocracy	The glue that holds the organisation together is the commitment to innovation and development. There is an emphasis on being on the cutting edge.	CO03	(0.877, 0.755)	

Market	The glue that holds the organisation together is the emphasis on achievement and goal accomplishment.	CO21	(0.715, 0.779)
Hierarchy	The glue that holds the organisation together is formal rules and policies. Maintaining a smooth-running organisation is important.	CO14	
5. Strategic Emphases			
Clan	The organisation emphasizes human development. High trust, openness, and participation persist.	CO07	(0.874, 0.726)
Adhocracy	The organisation emphasizes acquiring new resources and creating new challenges. Trying new things and prospecting for opportunities are valued.	CO16	(0.711, 0.647)
Market	The organisation emphasizes competitive actions and achievement. Hitting stretch targets and winning in the marketplace are dominant.	CO02	(0.853, 0.839)
Hierarchy	The organisation emphasizes permanence and stability. Efficiency, control, and smooth operations are important.	CO23	(0.696, 0.778)
6. Criteria of Success			
Clan	The organisation defines success based on the development of human resources, teamwork, employee commitment, and concern for people.	CO17	(0.761, 0.801)
Adhocracy	The organisation defines success based on having the most unique or newest products. It is a product leader and innovator.	CO19	(0.734, 0.777)
Market	The organisation defines success based on winning in the marketplace and outpacing the competition. Competitive market leadership is the key.	CO12	(0.839, 0.737)
Hierarchy	The organisation defines success based on efficiency. Dependable delivery, smooth scheduling, and low-cost production are critical.	CO01	(0.715, ...)

Under responses from PT, we found a first factor composed of several items from 4 of 6 dimensions of organisation culture. Two items related to Adhocracy and Market from Organization Glue, Strategic Emphases and Dominant Characteristics, and three items from the Criteria of Success related to Adhocracy, Market and Hierarchy, which explained 46.48% of the variance.

From SP responses there is a slightly difference where, instead of the previous Hierarchy of Criteria of Success, appears the item related to Market from Organizational Leadership and this first factor explained 35.45% of the variance. This factor is named as an *Open Systems Model* with internal consistency reliability coefficients (Cronbach's Alpha (PT, SP) = (0.934, 0.902)). The second factor explained 14.06% of the variance in PT responses and 15.12% for SP. This is composed by Clan items from Organizational Leadership, Management of Employees, Strategic Emphases and Criteria of Success. This factor was achieved by *Model of Human relations or Culture Clan* with internal consistency reliability coefficients (Cronbach's Alpha (PT, SP) = (0.843, 0.712)). The third factor explains 7.73% and 10.01% of the variance in PT and SP responses, respectively. This factor is composed of the Hierarchy items from Dominant Characteristics, Management of Employees and Strategic Emphases with internal consistency reliability coefficient (Cronbach's Alpha (PT, SP) = (0.682, 0.664)), however Hierarchy from Dominant Characteristics is not present in SP.

This analysis did not allow to observe a component structure corresponding to the 4 cultural typologies of the organisational culture, only 3 cultural typologies were identified: a mixture between cultures Adhocracy and Market, the culture Clan, and the culture Hierarchy.

It was observed that the Cronbach's alpha results for both institutions revealed different internal consistency. PT results were stronger than corresponding SP, all coefficients over 0.7 in PT (Table 4). A poor reliability for Adhocracy and Clan in SP was also observed. Such results may explain different types of dominant culture in the two institutions that we detailed in the following sections.

Table 4. Coefficients of Internal Consistency Using Cronbach's Alpha Methodology.

HEI	Adhocracy	Clan	Hierarchy	Market
PT	0.810	0.845	0.809	0.842
SP	0.579	0.639	0.773	0.841

4. Results

Table 5 shows the results according to the dimensions of organisational culture for the two higher education institutions. In each dimension, the culture with a higher mean value is analysed, interpreted as the predominant culture for this dimension. The results show that, for virtually all dimensions, there is a predominant culture.

Table 5. Mean Scores on the Organisational Culture Dimensions for the sample.

Dimensions	Question	PT			SP			
		Mean	SD	Dominant culture	Mean	SD	Dominant culture	
Dominant Characteristics	A (Clan)	CO11	2.72	1.018	Hierarchy	2.76	1.120	Hierarchy
	B (Adhocracy)	CO20	2.85	1.047		2.45	1.067	
	C (Market)	CO06	3.18	1.027		3.06	1.166	
	D (Hierarchy)	CO22	3.46	1.024		3.31	1.046	
Organisational Leadership	A (Clan)	CO10	3.33	1.182	Adhocracy/ Market	3.00	1.053	Market
	B (Adhocracy)	CO24	3.34	1.142		2.97	1.036	
	C (Market)	CO05	3.34	1.072		3.11	1.061	
	D (Hierarchy)	CO15	3.29	1.136		3.10	1.071	
Management of Employees	A (Clan)	CO04	3.15	1.266	Clan	3.18	1.205	Clan
	B (Adhocracy)	CO13	2.99	1.020		3.17	1.009	
	C (Market)	CO18	2.62	0.992		2.68	1.153	
	D (Hierarchy)	CO09	3.06	1.128		3.10	1.155	
Organisational Glue	A (Clan)	CO08	3.19	1.170	Hierarchy	2.98	0.996	Hierarchy
	B (Adhocracy)	CO03	3.44	1.091		2.90	1.100	
	C (Market)	CO21	3.24	0.987		2.71	1.047	
	D (Hierarchy)	CO14	3.51	1.035		3.37	1.022	
Strategic Emphases	A (Clan)	CO07	3.35	1.296	Adhocracy	3.24	1.224	Clan
	B (Adhocracy)	CO16	3.49	1.087		3.10	1.042	
	C (Market)	CO02	3.34	1.060		2.86	1.170	
	D (Hierarchy)	CO23	3.39	1.008		3.10	1.025	
Criteria Success	A (Clan)	CO17	3.21	1.280	Hierarchy	3.22	1.120	Clan
	B (Adhocracy)	CO19	3.24	1.045		2.61	1.017	
	C (Market)	CO12	3.26	1.031		2.64	1.085	
	D (Hierarchy)	CO01	3.58	0.995		3.17	1.069	

Regarding the Dominant Characteristics dimension, the results show that in both institutions respondents have the perception that their institutions are very structured, with high levels of control, and that their activity is generally regulated by formal procedures, such as laws and regulations. It should be noted that, overall, they value their institutions as non-entrepreneurial organisations, little risk-oriented and people-oriented.

Regarding the Organisational Leadership dimension, the results between the various types of culture are very approximate, which reveals a multiple perception in the evaluation of leadership behaviour, which highlights the characteristics of a business and innovation nature but maintaining the orientation to the coordination of activities.

However, the perception in the Management of Employee dimension is characterized by teamwork and by the achievement of consensus and promotion of participation in the life of the organisation.

Hierarchical culture is once again present in the Organisational Glue dimension, which reinforces the perception that institutions assess that their stability depends on the existence of formally established policies and regulations.

In the Strategic Emphasis dimension, institutions present different results. While in PT the perception is that the institution's strategy focuses mainly on innovation, in SP the focus of the institution's strategy is the development of people and the promotion of participation.

Finally, in the Criteria Success dimension, like the previous dimension, institutions present different results. In PT, the success of the institution is based on cost control and the guarantee of the fulfilment of tasks while in SP success is supported by the development of people.

Before exploring the four cultural types in more detail, it is interesting to analyse the premises for the definition and development of these cultural types. The CVF translates these premises into two dimensions: internal/external orientation and stability/flexibility.

Figure 3 shows that higher education institutions under study tend to have a stronger internal orientation in SP, which means that they are focused on development and collaboration, and on the coordination and integration of activities. However, the figures obtained in this dimension show that institutions, albeit not so strongly, also focus on the external environment, on what the other institutions are doing, and this competition between the two values can result in diversification and change in the mission of the institutions.

The results in the stability/flexibility dimension are consistent. The institutions favour stability, order, and control, but are faced with the need to be more flexible and dynamic to adapt to new circumstances, focusing more on people and functions than on structure, procedures, and regulations.

The interactions of these dimensions give rise to four types of culture, which are represented in four clusters (adhocratic, market, clan, and hierarchical culture), as can be seen in Figure 3.

The analysis of Figure 2 shows that, although in PT one can observe that the predominant culture is hierarchical, followed by adhocratic culture, the remaining cultures are present with significant values. In SP results show that hierarchical culture is predominant, followed by clan culture and, with more distant values, market and adhocratic cultures.

Figure 2. Cultural Profile of PT and SP in the Competing Values of Framework

T-tests were performed to evaluate the differences found. The test results reveal that there are statistically significant differences in the types of adhocratic culture ($t = 4.212$ and $p < 0.001$) and market ($t = 3.293$ and $p < 0.001$) between the two institutions. Both types are more dominant in PT than in SP.

According to the literature review, the different functions of its members may evidence different cultures. Table 6 shows the comparison between the mean values of the various culture types in each of the analysed functions.

Table 6. Comparisons between the various types of culture by function performed in the two institutions.

	PT			SP		
	Management	Teacher	Worker	Management	Teacher	Worker
Adhocratic	3.22	3.17	3.08	2.73	2.85	3.00
Clan	3.27	3.11	3.08	3.16	2.94	3.17
Hierarchical	3.41	3.23	3.35	3.23	3.24	3.09
Market	3.28	3.11	3.06	2.49	2.95	2.97

Although there are differences in the mean values for each type of culture, the tests carried out show that these are not statistically significant, neither for PT nor for SP, in the various functions performed.

5. Discussion

At PT and SP institutions, it is possible to perceive that its members share characteristics of the four cultural types, with greater or lesser force, a result that derives from a complex combination of attitudes, beliefs, assumptions, and shared behaviours of people.

In the Spanish institution, scores for hierarchical and clan cultures are clearly higher than scores for adhocratic and market cultures.

In the Portuguese institution, there is not such a sharp differentiation between the four types of culture. This may mean that there is a cultural incongruity between the various stakeholders, which may reflect the existence of a changing environment. However, scores for hierarchical and adhocratic cultures are higher than scores for clan and market cultures.

Another result worth to note is that the score obtained for each of the four types of culture is higher in the Portuguese institution than in the Spanish institution.

The score for the hierarchical organizational culture is the highest in both institutions. This means that they are based on adherence to rules, procedures, or directives. The environment in both institutions is a formal and structured work environment, in which the procedures decide what people should do and keep the institution together. The emphasis of its management is coordination based on efficiency and the definition of the long-lasting objectives give it stability.

Regarding clan culture, it is the second most scored for the Spanish institution and the third for the Portuguese institution. However, the score obtained is higher for the Portuguese institution. These results indicate that PT members have more perception of the existence of a friendly working environment, in which teamwork is promoted, than SP members. Clan culture represents a work environment that is more collaborative than competitive. Additionally, in the culture of clan there is a greater focus on the long-term development of its human resources.

The results also show the existence of an adhocratic culture, in both institutions, again stronger in PT than in SP, in which centralized relations of power or authority lose strength, giving rise to a dynamic and creative work environment. In this environment the ability of employees and managers to take risks and be creative and innovative emerges. Overall, it can be said that PT is an institution that promotes individual initiative and creative freedom more than SP does.

Finally, in both institutions the least strong culture is market culture, even less strong in SP than in PT. In the case of public higher education institutions, this result is not surprising. This type of culture is more common in large companies, where leaders hold

a lot of power over subordinates, thus getting them very focused on meeting the goals assigned to them. Particularly in Europe, the nature of higher education institutions is more collaborative than competitive.

Overall, PT shows a balanced outcome for the four types of culture, whereas SP obtains a result that shows that hierarchical and clan cultures are more dominant in the institution than adhocratic and market cultures.

This seems to mean that the Spanish institution is more reluctant to change from the Humboldtian model to the market model. Differently, the results indicate that in the Portuguese institution there is already a perception of a change to the market model. Although the highest score is still that of hierarchical culture, the scores of adhocratic and market cultures have similar scores.

It is now well established that national culture has a great impact on the values, attitudes and behaviours of institutions, organisations and individuals, in particular higher education institutions, which are complex social organisations with distinct cultures (Bartell, 2003, Sporn, 1996). The results obtained with the Competing Values Framework can also be interpreted in the light of the cultural identity of the two countries, which can be assessed through the well-known Hofstede classifier (Hofstede, 2001).

When using the classifier, we can see there are remarkable similarities and differences in the cultural identity of the two peoples. Spanish and Portuguese both have a high aversion to risk, and both accept the inequality in the distribution of power. They are also mediocly individualistic, although the Spanish shows a greater degree of individualism than the Portuguese, which brings them closer to Anglo-Saxon cultures. On the contrary, the Portuguese show greater ease of teamwork. Portugal and Spain are countries where the key word is consensus, not competition (both have low and similar levels of individualism). The prevailing values are equality, solidarity, and quality of life. Conflicts are resolved through compromise and negotiation.

Both Portugal and Spain are normative societies, which respect their traditions and norms, averse to social change and lacking in pragmatism. This culture, however, is much more pronounced in Portugal than in Spain. Finally, both countries have a weak culture of indulgence, Portugal being less so than Spain. This means that they are societies with many restrictions, whose people are pessimistic, and who have the perception that social norms impose restrictions on their actions.

The dimensions of Hofstede contribute to the understanding of the rationales that lead Portuguese and Spanish institutions to present hierarchical as the predominant culture, in the way they accept the hierarchical distance and avoid the risk associated with change.

6. Conclusion

This study evaluates the current state of the organisational culture of two public higher education institutions, in Portugal and Spain. Both have seen their external regulatory environment changed due to framework laws which, in transposing the EU Directives, sought to change the nature and mission of their university institutions in the direction of the transition from the existing classical, essentially collegium model to enterprise model.

Consequently, there have been statutory changes in both institutions. It would therefore be expected that, following these changes, the organisational culture of the two institutions would adapt to the new regulatory circumstances, moving towards a market culture.

That did not happen. From the outset, the statutory changes that have taken place highlight the resistance to the normative change by the academic actors of both institutions, more so in Spain than in Portugal. Thus, probably because they are obliged

to integrate elements of national identity and culture, they choose structures of governance with substantive differences, which determine that Portugal has already moved from the collegium to the enterprise model, whereas Spain only touches on this transition. And because this was the case, the organisational culture of both institutions maintained its initial characteristics - or were only subject to minor changes - that is, they essentially maintained their hierarchical and clan cultures, with minor developments in market culture. This result is compatible with the conclusions reported by Ferreira and Hill (2008) for a public Portuguese university, and it should be noted that this study is from the year 2008, that is, the year in which the statutory changes were introduced in Portugal and Spain.

After 12 years of legislative changes, the results of this study show that the culture of both institutions still do not favour the organizational change necessary to achieve the objectives set at the European level and promote their organisational effectiveness to appropriate levels.

7. Limitations, Contributions and Significance of this study

As with most empirical studies, this one has limitations. The sample is small because it is a voluntary questionnaire, but with the data obtained it is possible to have an approximation to the question posed in the study. However, it is larger than that obtained in previous studies (Ferreira and Hill, 2008).

The analysis of the organisational culture carried out in this study was limited to two specific institutions, one of each nationality, so its conclusions cannot be generalized in any form.

Despite its importance for the effective fulfilment of its mission, it is still not very common, at least in Portugal and Spain, for the strategic planning of higher education institutions to include specific guidelines for an effective change in their organisational culture. This is because it is usually modulated by the very perception of the institutional actors, who are progressively adapting to the permanent change in the external climate of the institution. This study thus contributes to a call for action on institutional culture as a tool for improving organisational effectiveness.

One option for continuing this study is therefore, of course, to generalise it to most Iberian or European institutions, which will make it possible to assess the efficiency of public policies defined at European level for their higher education institutions.

References

- Abdi, H. and Williams, L. J. (2010) *Wiley interdisciplinary reviews: computational statistics*, **2**, 433-459.
- Alharbi, S. and Abedelrahim, S. (2018) *International Journal of Business and Management*, **VI**, 1-16.
- Amaral, A. (2001) In *Higher Education and the Nation State*(Eds, Huisman, J. and Maassen, P.) Pergamon, London, pp. 119-145.
- Amaral, A. and Magalhães, A. (2002) In *Governing Higher Education: National Perspectives on Institutional Governance. Higher Education Dynamics, vol 2*(Eds, Amaral, A., Jones, G. A. and Karseth, B.) Springer, Dordrecht.
- Bartell, M. (2003) *Higher Education*, **45**, 43-70.
- Bibas, H. T. A. and Kadir, D. H. (2021) *International Journal of Innovation, Creativity and Change*, **6**, 251-264.
- Bleiklie, I. and Kogan, M. (2007) *Higher Education Policy*, **20**, 477-493.

- Brislin, R. W. (1990) *Applied Cross-Cultural Psychology*, SAGE Publications, Inc.
- Caliskan, A. and Zhu, C. (2019) *Journal of Education Culture and Society*, **10**, 270-292.
- Cameron, K. S. and Quinn, R. E. (1999) *Diagnosing and Changing Organizational Culture: based on the Competing Values Framework*, Addison-Wesley Publishing.
- Cameron, K. S. and Quinn, R. E. (2005) *Diagnosing and Changing Organizational Culture: Based on the Competing Values Framework*, Jossey-Bass, San Francisco, CA.
- Denison, D. R. and Spreitzer, G. M. (1991) *Research in Organizational Change and Development*, **5**, 1-21.
- DeVellis, R. (2003) *Scale Development: Theory and Applications (2nd Ed.)*, Sage, Thousand Oaks, California.
- Devi, R. S. (2007) *International Journal of Management in Education* **1**, 57-79.
- European Ministers of Education (1999)
https://www.eurashe.eu/library/bologna_1999_bologna-declaration-pdf/.
- Ferreira, A. I. and Hill, M. M. (2008) *Higher Education*, **55**, 637-650.
- Field, A. (2013) *Discovering statistics using IBM SPSS statistics*, Sage.
- Folch, M. T. and Ion, G. (2009) *Higher Education in Europe*, **34**, 143-154.
- Fumasoli, T. and Stensaker, B. (2013) *Higher Education Policy*, **26**, 479-496.
- Gordon, G. G. (1991) *The Academy of Management Review*, **16**, 396-415.
- Hair, J., Black, W., Babin, B. and Anderson, R. (2010) *Multivariate data analysis*, Prentice Hall, Upper Saddle River, NJ.
- Hartnell, C. A., Ou, A. Y. and Kinicki, A. (2011) *Journal of Applied Psychology*, **96**, 677-694.
- Hofstede, G. (2001) *Culture's Consequences - Comparing Values, Behaviors, Institutions and Organizations Across Nations*, SAGE Publications, Thousand Oaks, CA.
- Hofstede, G., Neuijen, B., Ohayv, D. D. and Sanders, G. (1990) *Administrative Science Quarterly*, **35**, 286-316.
- Johnson, R. A. and Wichern, D. W. (2013) *Applied Multivariate Statistical Analysis (6th Edition)*, Pearson, New Jersey.
- Jones, D. (2012) *Masters of the universe: Hayek, Friedman, and the birth of neoliberal politics*, Princeton University Press, Princeton, New Jersey.
- Jongbloed, B., Enders, J. and Salerno, C. (2008) *Higher Education*, **56**, 303-324.
- Kerr, C. (2001) *The Uses of the University*, Harvard University Press.
- Köse, M. F. and Korkmaz, M. (2019) *Higher Education Research & Development*, **38**, 1213-1226.
- Krejcie, R. V. and Morgan, D. W. (1970) *Educational and psychological measurement*, **30**, 607-610.
- Lacatus, M. L. (2013) *Procedia - Social and Behavioral Sciences*, **76**, 421-425.
- Leland, S. M. (2017) In *Public Administration and Public Policy - Volume 1* (Ed, Tummala, K. K.) EOLSS, pp. 92-97.
- Madu, B. C. (2012) *Journal of Academic and Business Ethics*, **5**, 1-9.
- Mainardes, E. W., Alves, H., Raposo, M. and Domingues, M. J. (2010) *Revista Ibero-Americana de Estratégia*, **9**, 5-40.
- Maseko, T. S. (2017) *Arabian Journal of Business and Management Review*, **7**, 1-5.
- Matlay, H. (2009) *Journal of Small Business and Enterprise Development*, **16**, 355-368.
- McKay, I. (1995) In *The Changing University?*(Ed, Schuller, T.) The Society for Research into Higher Education & Open University Press, pp. 105-115.
- McRoy, I. and Gibbs, P. (2009) *Educational Management Administration & Leadership*, **37**, 687-704.
- Newton, P., Burgess, D. and Burns, D. P. (2010) *Educational Management Administration & Leadership*, **38**, 578-590.
- Nybohm, T. (2003) *Higher Education Policy*, **16**, 141-159.
- Ogbonna, E. and Harris, L. C. (2000) *The International Journal of Human Resource Management*, **11**, 766-788.
- Peña, D. (2002) *Análisis de datos multivariante*, Mc Graw-Hill.

- Petersen, O. (2010) *International Public Management Review*, **11**, 1-21.
- Prado, M. M. and García, K. G. (2017) *International Journal of Management in Education* **11**, 405-423.
- Quinn, R. E. and Rohrbaugh, J. (1983) *Management Science*, **29**, 363-377.
- Raposo, M. J. (2017) Universidad de Cádiz.
- Rizki, M., Parashakti, R. D. and Saragih, L. (2019) *International Journal of Economics & Business Administration*, **7**, 227-239.
- Schein, E. H. (1984) *Sloan Management Review*, **25**, 3-16.
- Schein, E. H. (1990) *American Psychologist*, **45**, 109-119.
- Schein, E. H. (1996) *Administrative Science Quarterly*, **41**, 229-240.
- Schein, E. H. (2004) *Organizational Culture and Leadership*, 3rd Edition, Jossey-Bass, San Francisco.
- Schein, E. H. (2017) *Organizational Culture and Leadership*, 5rd Edition, John Wiley & Sons, Inc., Hoboken, New Jersey.
- Scott, R. (2008) *Institutions and Organizations: Ideas and interests*, Sage Publications, California.
- Slaughter, S. and Leslie, L. L. (2001) *Organization*, **8**, 154-161.
- Sousa, M. (2018) Universidade da Extremadura.
- Sporn, B. (1996) *Higher Education*, **32**, 41-61.
- Sporn, B. (2019) In *Under Pressure - HEIs Coping with Multiple Challenges*(Eds, Rosa, M. J., Magalhaes, A., Veiga, A. and Teixeira, P.) Brill Academic Publishers, pp. 37–54.
- Taber, K. S. (2018) *Research in Science Education*, **48**, 1273-1296.
- Vasyakin, B. S., Ivleva, M. I., Pozharskaya, Y. L. and Shcherbakova, O. I. (2016) *International Journal of Environmental and Science Education*, **11**, 11515-11528.
- Vilkinas, T. and Cartan, G. (2006) *Journal of Management Development*, **25**, 505-521.
- Visbal-Cadavid, D., Martínez-Gómez, M. and Escorcía-Caballero, R. (2020) *Sustainability*, **12**, 924.

Figure 1:

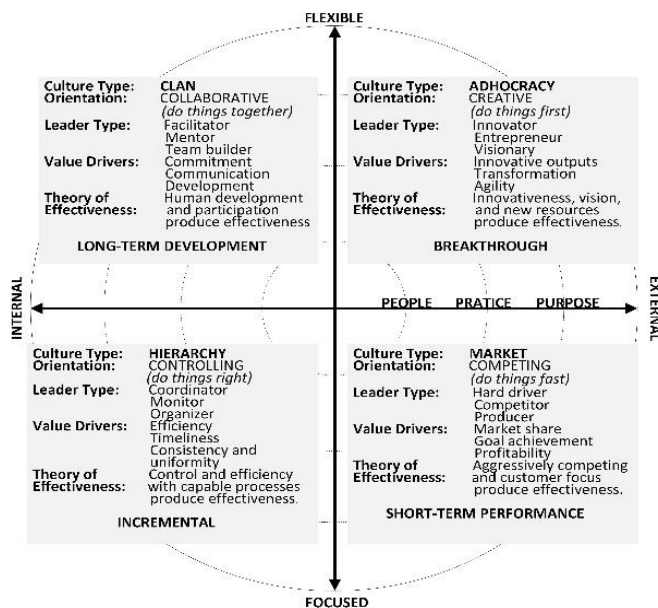


Figure 2:

