

# Perception of organisational culture and knowledge management in hospitals using different management models

Perceção de cultura organizacional e de gestão do conhecimento em hospitais com diferentes modelos de gestão

Percepción de la cultura organizativa y de la gestión del conocimiento en hospitales con diferentes modelos de gestión

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## Abstract

**Theoretical framework:** Organisational culture is a critical success factor in knowledge management projects, and it is becoming a new organisational paradigm.

**Objectives:** To analyse the relationship between the perception of organisational culture and knowledge management in hospitals using different management models.

**Methodology:** Study conducted with a sample of 634 staff members from six hospitals using different management models. Measurement instruments include a knowledge management perception scale (developed for this purpose) and a translated and adapted version of the Organizational Culture Assessment Instrument. Both instruments have been validated, showing good psychometric properties.

**Results:** Differences were found in the perceptions of the staff members from different hospitals regarding organisational culture and knowledge management. A statistically significant difference was found in knowledge management according to the type of organisational culture in all management models under analysis.

**Conclusion:** Some characteristics of the organisational culture should be reformulated due to their influence on the perception of knowledge management, which is a success factor for organisations.

**Keywords:** organizational culture; knowledge management; hospitals; health management.

## Resumo

**Enquadramento:** A cultura organizacional é considerada um fator crítico de sucesso de projetos de gestão do conhecimento, constituindo-se atualmente num novo paradigma organizacional.

**Objetivos:** Analisar a relação entre a perceção da cultura organizacional e da gestão do conhecimento em hospitais com diferentes modelos de gestão.

**Metodologia:** Estudo realizado numa amostra de 634 colaboradores de seis hospitais com diferentes modelos de gestão. Os instrumentos de medida incluem uma escala de perceção da gestão do conhecimento, que foi por nós construída, e o *Organizational Culture Assessment Instrument* que foi alvo de tradução e adaptação. Ambos os instrumentos foram validados, apresentando boas qualidades psicométricas.

**Resultados:** Evidenciam diferenças na perceção dos colaboradores dos diferentes hospitais em relação à cultura organizacional e à gestão do conhecimento, sendo estatisticamente significativa a diferença na gestão do conhecimento em função da cultura organizacional em qualquer um dos modelos de gestão analisados.

**Conclusão:** Determinadas características da cultura organizacional deverão ser objeto de reformulação pois esta influencia a perceção de gestão do conhecimento que é fator de sucesso das organizações.

**Palavras-chave:** cultura organizacional; gestão do conhecimento; hospitais; gestão em saúde.

## Resumen

**Marco contextual:** la cultura organizativa se considera un factor crítico de éxito de los proyectos de gestión del conocimiento, por lo que esta actualmente constituye un nuevo paradigma organizativo.

**Objetivo:** analizar la relación entre la percepción de la cultura organizativa y la gestión del conocimiento en los hospitales con diferentes modelos de gestión.

**Metodología:** estudio realizado con una muestra de 634 colaboradores de seis hospitales con diferentes modelos de gestión. Los instrumentos de medición incluyen una escala de percepción de la gestión del conocimiento, que nosotros construimos, y el *Organizational Culture Assessment Instrument*, que fue traducido y adaptado. Ambos instrumentos se validaron y presentaron buenas cualidades psicométricas.

**Resultados:** se observan diferencias en la percepción de los colaboradores de los diferentes hospitales en relación con la cultura organizativa y la gestión del conocimiento, con una diferencia estadísticamente significativa en la gestión del conocimiento en función de la cultura organizativa en cualquiera de los modelos de gestión que se analizan.

**Conclusión:** ciertas características de la cultura organizativa deberán ser objeto de reformulación, pues esta influye en la percepción de la gestión del conocimiento, que es un factor de éxito de las organizaciones.

**Palabras clave:** cultura organizativa; gestión del conocimiento; hospitales; gestión en la salud

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## Introduction

Knowledge management emerged in the early 1990s and has since then received substantial interest from the scientific and business communities. The relationship established between knowledge management and organisational performance, as means of creation and maintenance of sustainable competitive advantages, has been repeatedly invoked to justify such interest (Cardoso, 2003; Davenport & Prusak, 1998).

There is, however, a passive and hesitating attitude towards the effective implementation of knowledge management within the organisations. Indeed, despite the substantial theoretical profusion, there is a clear lack of empirical research to enable the organisations to implement knowledge management in a sustainable way.

The investigation on some possible factors influencing knowledge management has not yet reached an unequivocal clarification and systematisation, and it has been particularly scarce in some contexts. In this sense, this study focused on the health sector as context of analysis, particularly hospitals using different management models. To this contributes the scarcity of empirical research in this sector; the fact that healthcare institutions are knowledge-intensive, as well as the moment in which new management models are implemented in the public health sector, with the purpose of improving its efficiency.

Although the literature presents a wide range of factors considered critical to a successful implementation of knowledge management, this study will focus on organisational culture and analyse the relationship between the perception of organisational culture and knowledge management in hospitals using different management models.

Understanding the perceptions of hospital staff on the effects of organisational culture on knowledge management may guide organisational interventions and policies and support the managers' decision to enter this area, helping them to develop effective knowledge management projects.

## Background

### Knowledge management

Knowledge management has always received substantial interest from both the scientific and business fields. However, while some believed in the potential benefits of its implementation, others grew suspicious of another fad in the management area. It was only in the late 1990s that most organisations acknowledged knowledge management as a key aspect, rather than a mere fad (Al-Ghassani, Kamara, Anumba, & Carrillo, 2006).

Although an apparent acceptance or even familiarity is evident, knowledge management is still shrouded in opacity as regards its content and the effective nature of its meaning and potential applicability (Monteiro, 2007). It is common for experts and scholars to consider it as a developing concept that incorporates contributions from various authors and different models, and that does not have expression/reflexion in a dominant paradigm.

Given the substantial theoretical profusion, several definitions of knowledge management were found in the literature. Based on the major theoretical guidelines in the literature, Cardoso (2003) defines knowledge management as "the creation and development of internal organisational conditions that catalyse all the processes related to knowledge (its creation/acquisition, sharing/dissemination, storage, retrieval, use, among others), aiming to fulfil organisational objectives" (p. 186).

Despite the theoretically established association between knowledge management and organisational performance, an attitude of inertia/passivity towards the effective implementation of organisational knowledge management programmes is observed, a point of view that is shared by many authors.

In Portugal, few public or private organisations have organisational knowledge management programmes or are familiar with this concept (Neves, 2003). In general, the exception lies in the large or multinational organisations established in Portugal which have imported the programmes from the parent organisations. Although the percentage of organisations with knowledge management programmes is virtually zero, almost all of them have implemented initiatives that fall within its scope (Neves, 2003).

## **Knowledge management in the health sector**

In the health sector, and particularly in Portugal, knowledge management has emerged as a key issue of organisational management. To this contributes not only the healthcare organisations' need to reposition themselves given the new global economic order which is marked by competitiveness, resource scarcity and increased consumption of health care services, and requires flexibility and readiness to respond, but also the fact health is one of the most important economic sectors (Observatório Português dos Sistemas de Saúde, 2009). In addition, at a time when new reforms are being implemented across the institutions of the Portuguese National Health Service, with an emphasis on corporatisation, the adoption and implementation of knowledge management programmes look promising, given the fact that they may be a potential strategic option to help promote the reform measures and, therefore, the economic sustainability of the healthcare system. As argued by Frederico (2005), in a context of health reforms, it is particularly important to focus on variables of microeconomic efficiency.

Several advantages seem to arise from the implementation of knowledge management in healthcare institutions, including improved decision-making; more cooperation between different healthcare professionals; enhanced quality of care; medical error reduction; cost reduction; stimulus to innovation; increased efficiency in healthcare delivery; promotion of an evidence-based practice; dissemination of best practices; enhanced organisational performance; and greater responsibility in using public resources (El Morr & Subercaze, 2010).

However, the implementation and even the success of the knowledge management programmes within the organisations is not a peaceful process. They are conditioned by a wide range of factors, whose occurrence and strength are influenced by aspects such as the nature of the institution, type of business process, product, and client. This reinforces the need and importance of studying these factors in specific contexts, also given the scarce empirical evidence on how these factors influence knowledge management. Chen, Liu, and Hwang (2011) mentioned that many researchers in the health area have proposed applications or frameworks within the scope of

knowledge management, but few have explored the critical factors in the implementation of knowledge management programmes.

Although the literature presents a broad set of factors that are considered as critical to the successful implementation of knowledge management (Chong & Choi, 2005; Singh & Kant, 2008), this study will focus on a single factor that we consider to be the most relevant one for the implementation of knowledge management in Portuguese hospitals: organisational culture.

## **Organisational culture and knowledge management**

Over the past few years, organisational culture has been increasingly acknowledged as a highly important factor in management practices as a result of its recognition as a key aspect for successful organisational changes.

Similar to other processes of organisational change, knowledge management does not seem to be exempt from its impact, and organisational culture is considered as one of the key factors for successful knowledge management projects (Allame, Nouri, Tavakoli, & Shokrani, 2011; Chong & Choi, 2005; Davenport & Prusak, 1998). However, in order to contribute to the success of these projects, culture should be oriented towards knowledge, *i.e.* a knowledge-friendly culture (Chong & Choi, 2005; Davenport & Prusak, 1998). Otherwise, the lack of an organisational culture that supports, encourages, and rewards the creation, sharing, and use of knowledge will turn into one of the main barriers to an effective knowledge management (Singh & Kant, 2008).

Empirical studies on the relationship between organisational culture and knowledge management have shown that organisational culture impacts knowledge management (Asl, Goodarzi, Sajjadi, & Benesbordi, 2012; Jones, Mujtaba, Williams, & Greenwood, 2011; Kangas, 2009; Lawson, 2003; Shafei, Ghaderzadeh, Salavati, & Lavei, 2011).

However, and as Alavi, Kayworth, and Leidner (2005) argued, although many studies raise the issue of the influence of culture on the successful implementation and achievement of knowledge management projects within the organisations, few have investigated the types of cultural values that exist in the organisations and how they relate to knowledge management. In this context, the studies carried out by Jones, Mujtaba,

Williams, and Greenwood (2011), Kangas (2009), and Lawson (2003) on the influence of four types of organisational culture (hierarchy culture, market culture, adhocracy culture and clan culture) on the implementation of knowledge management practices should be highlighted.

In a study conducted in eight organisations in Jamaica, Lawson (2003) found a positive and significant correlation between organisational culture and knowledge management. The highest correlation coefficient was found between adhocracy culture and knowledge management, while the lowest correlation was found between market culture and knowledge management. The hierarchy culture was the dominant culture in the organisations studied by Lawson (2003), although in most cases they shared co-dominance with other types of culture. Kangas (2009), in turn, identified the market culture as being the dominant organisational culture type, followed by the hierarchy culture. With respect to the relationship between organisational culture and knowledge management, Kangas (2009) found positive and significant correlations between three culture types (market culture, adhocracy culture, and clan culture) and knowledge management, in which case the strongest correlation was found between market culture and knowledge management. As regards the correlation between hierarchy culture and knowledge management, the results revealed no significant correlation. Jones et al. (2011) found positive and significant correlations between the four types of organisational culture and knowledge management. The strongest correlation was found between the adhocracy culture and knowledge management, while the lowest correlation was found between the hierarchy culture and knowledge management.

## Research Question

In this study conducted in hospitals using different management models, the question formulated was as follows: Is the staff members' perception on knowledge management influenced by their own perception of organisational culture?

## Methodology

The knowledge management perception scale was built specifically for this study based on items that were extracted and adapted from measurement instruments available in the literature, particularly based on the knowledge management questionnaire of Cardoso (2003) and the questionnaire on knowledge management practices used by Almeida (2006) in a study conducted in Portuguese Small and Medium-Sized Businesses.

Using a 5-point Likert scale (1= strongly disagree; 5 = strongly agree), the respondents were asked to indicate their degree of agreement with a set of statements aimed at assessing their own perception of knowledge management in the hospital where they worked. The items were coded so that the highest scores would mean a higher perceived knowledge management in the hospital institution under analysis. To measure the perception of organisational culture, the *Organizational Culture Assessment Instrument* (OCAI) developed by Cameron and Quinn (2006) was used. The OCAI is a 24-item questionnaire used to identify the type of organisational culture prevailing in the organisation - clan culture, adhocracy culture, hierarchy culture, and market culture. Although this instrument had already been used in national studies, at the beginning of this research only references to its use in national settings or its adaptation to different realities were found in the literature. For this reason, the original version was directly applied. Its adaptation began with the translation of the items from English into Portuguese by two researchers and a translator with an English undergraduate degree. Both versions were then compared and analysed in order to reach a final version. Subsequently, an English teacher was asked to check the translation and correct any discrepancies.

The original version of the OCAI uses an ipsative rating scale. However, in an attempt to homogenise the rating scales, a 5-point Likert scale was used (1= strongly disagree; 5 = strongly agree), given that the authors of the OCAI considered it as a valid alternative. Thus, the respondents were asked to indicate their degree of agreement with a set of statements that portrayed four types of organisational culture. The items were coded so that the highest

scores represented a higher predominance of the culture type to which the item corresponded (clan culture, adhocracy culture, hierarchy culture, and market culture).

Both measurement instruments were pre-tested to assess their psychometric characteristics and test their suitability to the organisational reality under analysis. After the pre-test, some items were eliminated or reformulated.

In the final study, the knowledge management perception scale and the organisational culture perception scale showed internal consistency values of 0.962 and 0.952, respectively.

The need for data in a specific period of time makes it imperative to use a sample. Thus, hospital institutions that met the study objectives were selected based on criteria of accessibility/proximity by the researcher, and the current management model. These institutions were six public hospitals operating within two management models: the Administrative Public Sector (APS) model and the Public Enterprise Entity (PBE) model.

The final version of the questionnaire was distributed to all staff members who had been working at the institution for at least six months, as before that period the respondents would not have the information needed to contribute with an informed opinion. Data collection took place between the second half of September and mid-December 2009 and between mid-January and the end of March 2010.

The ethical-legal procedures were followed, namely the requests for formal authorisation for data collection to the chairmen of the administration boards of the hospitals where the study was conducted. The voluntary collaboration and anonymity of the participants were also respected.

The researcher distributed the data collection tools – questionnaires – in envelopes to team leaders. In general, the established period of time between the distribution and collection of the questionnaires was two to three weeks.

## Results

### Respondent characterisation

The sample was composed of 634 staff members of six hospitals: 374 (59%) worked in an APS hospital and 260 (41%) worked in a PBE hospital. As regards the

professional group, most respondents were nurses (62.90%), 13.40% were operational assistants, 10.10% were administrative staff members, 9.10% were diagnosis and therapeutic technicians, and 0.50% were physicians. As regards gender, a female predominance was observed (72.60%). With regard to age, the mean age was 37.72 years (sd = 9.52), with a minimum of 22 and a maximum of 62 years. In terms of years of professional experience and seniority in the hospital, the sample showed a mean value of 14.14 years (sd = 9.58) and 12.20 years (sd = 9.23), respectively.

As regards the respondents' characterisation based on the management model, it was found that 63.10% of nurses, 12.30% of operational assistants, 12.00% of administrative staff members, 7.50% of diagnosis and therapeutic technicians, and 0.50% physicians worked in a hospital with an APS model. In relation to gender, most individuals were female (76.20%). With regards to age, the mean value was 38.10 years (sd = 9.59), with a minimum of 22 and a maximum of 60 years. As regards the years of professional experience and seniority in the hospital, the mean age was 14.33 years (sd = 9.46) and 12.55 years (sd = 9.36), respectively. In the hospital with the PBE model, the female gender also prevailed (67.30%). As regards the professional group, nurses predominated (62.70%), followed by operational assistants (15.00%), diagnosis and therapeutic technicians (11.50%), administrative staff members (7.30%), and physicians (0.40%). The respondents' age ranged from 23 to 62 years, with a mean age of 37.15 years (sd = 9.41). Regarding professional experience, the mean value was 13.86 years (sd = 9.77), whereas the seniority in the hospital had a mean value of 11.68 years (sd = 9.01).

### **Analysis of the influence of the perception of organisational culture on the perception of knowledge management in hospitals using different management models**

In order to determine any differences in the participants' perception of knowledge management in their institutions based on their perception of the organisational culture, a one-way ANOVA was performed. The dependent variable was knowledge management and the independent variable was the organisational culture as perceived by the respondents. This analysis was performed for the total sample and the samples of the APS and PBE management models.



As can be seen in Table 1, the results of the test showed statistically significant differences in the mean values of perception of knowledge management according to the perception of organisational culture in all samples. In the total sample, the staff members perceived the clan culture as the predominant culture and perceived a higher level of knowledge management in the hospitals where they worked than those who perceived other types of organisational culture as predominant.

In the sample regarding the PBE hospitals, the group of participants who perceived organisational culture essentially as a clan culture showed a higher mean value ( $3.54 \pm 0.48$ ) in the perception of knowledge

management than the groups that perceived another type of culture as predominant. In turn, the staff members who perceived the hierarchy culture as the predominant type in their institutions showed the lowest mean value in the perception of knowledge management ( $3.24 \pm 0.52$ ; Table 1).

In the sample of the APS model, the highest mean value of perception of knowledge management ( $3.44 \pm 0.67$ ) was found when organisational culture was perceived as predominantly of the clan type. In turn, the lowest mean value of perception of knowledge management ( $3.09 \pm 0.60$ ) was observed when the market culture was perceived as the predominant organisational culture.

Table 1

*Results of the one-way ANOVA on a knowledge management perception scale according to the perception of organisational culture, in the total sample and in the samples of the PBE and APS models*

		Type of organisational culture	n	Mean	SD	F	p
Knowledge Management	Total sample (n = 634) Valid answers: 543	Clan culture	137	3.48	0.60	7.300	0.000
		Adhocracy culture	91	3.31	0.53		
		Market culture	92	3.24	0.59		
		Hierarchy culture	223	3.19	0.57		
	PBE Model (n = 260) Valid answers: 230	Clan culture	51	3.54	0.48	4.961	0.002
		Adhocracy culture	46	3.41	0.53		
		Market culture	34	3.50	0.48		
		Hierarchy culture	99	3.24	0.52		
	APS Model (n = 374) Valid answers: 313	Clan culture	86	3.44	0.67	5.066	0.002
		Adhocracy culture	45	3.21	0.52		
		Market culture	58	3.09	0.60		
		Hierarchy culture	124	3.15	0.61		

Note. The difference between the n value in the sample and the valid answers results from the exclusion of incomplete questionnaires.

## Discussion

Knowledge management is currently an innovative model for the sustained success of any organisation. There is, however, a passive and hesitating attitude towards its effective implementation within the organisations which must be overcome.

Despite the substantial theoretical profusion on this issue, there is a clear lack of empirical research to enable the organisations to implement knowledge management in a sustainable way.

The literature mentions several critical success factors of knowledge management which should be carefully analysed to avoid feelings of discouragement towards knowledge management, as it happened with previous

organisational projects of knowledge management. Among the several critical success factors of knowledge management, organisational culture has been considered as one of the most important factors. Its impact on knowledge management has been studied in different organisational contexts; however, there are practically no studies in healthcare settings. The results obtained in this study point to significant differences in the mean values of perception of knowledge management according to the perception of organisational culture, both in the total sample and in the samples of PBE and PSA models. Like in other sectors of activity, organisational culture also influences knowledge management in the health sector.

In all of the samples, the highest mean value of perception of knowledge management was found in the group of staff members who perceived the clan culture to be the predominant culture, as compared to the other groups perceiving another type of culture as predominant. In turn, the lowest mean value of perception of knowledge management was found among the staff members who perceived the hierarchy culture to be the dominant culture, both in the total sample and in the PBE model sample, and the staff members who perceived the market culture to be the dominant culture, in the APS model sample. Based on the results, the conclusion may be drawn that the type of culture that seems to influence the most the occurrence of knowledge management in public hospitals is the clan culture. Specific characteristics of the clan culture may indeed facilitate knowledge-related organisational processes, particularly those related to their creation, acquisition and sharing. One of the characteristics that should be highlighted is the fact that people share a lot about themselves, which may indicate that knowledge is widely shared, and that it is not exactly seen as synonymous with power. Both teamwork, from a perspective of knowledge creation and sharing, and individual development, from a perspective of knowledge acquisition, are also important characteristics in knowledge management. The concern about people and the high commitment to the organisation seem to be equally relevant aspects as they are considered to foster staff commitment and motivation and, consequently, innovation and value creation.

The results obtained in this study corroborate the ones found in the studies of Jones et al. (2011), Kang (2009) and Lawson (2003) regarding statistically significant differences in the mean values of perception of knowledge management according to the perception of organisational culture. Although the empirical evidence reveals some inconsistencies, the results obtained in the total sample and in the PBE model sample are somehow consistent with the results obtained by Jones et al. (2011) with regard to the lowest mean value of perception of knowledge management found in the hierarchy culture. In turn, the results obtained in the APS model sample are in line with the results obtained by Lawson (2003) in which the lowest mean value of perception of knowledge management was found in the market culture.

Although the highest mean value of perception of knowledge management was found in the clan culture, the type of culture perceived as predominant in all samples was the hierarchy culture. This culture type is characterised by a formalised and structured workplace, where procedures determine what people do. The formal rules and policies bind the organisation together, and long-term concerns focus on stability, predictability, and efficiency (Cameron & Quinn, 2006).

Thus, specific characteristics of the organisational culture should be reformulated in order to achieve a type of culture that tends to facilitate implementation and execution of knowledge management projects in hospitals.

## Conclusion

Both theoretical and empirical data which acknowledge organisational culture as a critical success factor of knowledge management are corroborated in this study, as statistically significant differences are evident in the perception of knowledge management according to the perception of organisational culture. Although the highest mean value of perception of knowledge management was found in the clan culture, the hierarchy culture was perceived as predominant in the hospitals under analysis, regardless of the management model in force. In addition, it was precisely in the hierarchy culture in the total sample and in the PBE model sample that the lowest mean value of perception of knowledge management was found.

In view of the results obtained and despite the difficulties in changing the organisational culture, managers should try to reformulate the organisational culture, by optimising/enhancing clan culture characteristics, while trying to minimise the hierarchy culture characteristics, which was the culture type with the lowest mean values among staff members.

Despite the fact that a convenience sample was used, the results make inform organisational measures and support management decision-making regarding the implementation of knowledge management projects in hospitals using different management models. This study is also relevant from a theoretical point of view, as it contributes to promote scientific knowledge within an area in which empirical studies are still

scarce. However, longitudinal studies should be carried out to confirm (or not) the conclusions drawn from this study, and complementary measures should be used so as to enhance the results of this study.

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