WATER USE IN A PUBLIC UNIVERSITY IN CENTRAL MEXICO

Cruz García Lirios, Universidad Autónoma de la Ciudad de México
Julio E Crespo, Universidad de Los Lagos

ABSTRACT

Explanatory reflective model of knowledge management organizations tend to balance the opportunities and capabilities through motivational leadership processes are specified. A non - experimental and documentary study was carried out with a selection of sources indexed. From the theoretical, conceptual and empirical frameworks model dependency relationships between variables determining -rules, values, beliefs, perceptions- regarding knowledge management specified. Under the model explains the balance between power relations and influence between leader and followers, motivational order mediating variables -an participation, training and education- included. In connection with the proposals of the state of knowledge and the literature reviewed, the relevance of the model compared to other more diverse and comprehensive proposals discussed.

Keywords: Factor Analysis, Model Reflective, Knowledge Management, Formative Education, Participation.

INTRODUCTION

Broadly speaking human capital are paradigms from which knowledge networks acquire a training, assimilative, technological, detached, motivational and social mobility sense.

That is the rational choice instrument of human capital, is confined to a pervasive educational system where the individual generates its own opportunities and develops both skills and knowledge in terms of usefulness and profit of its decisions (Acar & Acar, 2014).

In this sense, knowledge networks burst human capital to give it legitimacy and transparency to discuss and agree on decisions that will benefit a group or community, academic, scientific and technological (Adewale & Anthonia, 2013).

Competition and cooperation that involves the formation of human capital determines knowledge networks, since it is these that outline strategies balance between demands and resources. Once established innovations, knowledge networks determine the symbols, meanings and relevant ways for collaboration and resolution of conflicts within the groups. Innovations such as intelligent systems and foster technological change organizations must adjust their entrepreneurship skills of new knowledge.

The opportunities arising from the dynamics of innovative networks will shape the development of skills and knowledge. It is a process of value creation of individual, group collaborative and innovative organization.

Citation Information: García Lirios, C., & Crespo, J.E. (2024). Water use in a public university in central mexico. *Journal of Management Information and Decision Sciences, 27* (1), 1-9.

Although human capital underlines the importance of individual decisions regarding innovation groups, the management culture goes beyond this synergy because it represents a balance between the values of the company and the leader's ability.

Therefore, the specification of a model for the study of the culture of knowledge management through collaborative networks explain such complexity (García et al., 2016).

The organizational culture is understood as a process of dependency relationships between external variables regarding internal variables to the organization. This is a scheme in which technology, structure, values, norms and needs determine the motivational variables - affiliation, power, utility - and these in turn affect the resulting variables -leadership, management, entrepreneurship, innovation, productivity, satisfaction, turnover, absenteeism, accidents, adaptation, innovation, reputation.

In this process, the theory argues that workplace culture are the values and standards consistent determinants of variables through mediating and moderating variables (Sales et al., 2016).

The moderating variables are those that reduce or increase the negative or positive effect of external variables to the organization. This is the case of knowledge while lower values when autocratic affect the commitment of workers or increase the influence of democratic values when an impact on cooperation between employees (Hernández & Valencia, 2016).

Mediating variables are those that transfer the effects of values and rules on the consequent variables only. This is the case of attitudes and intentions that not only link the norms and values to behaviors, but also give a cultural sense. IT autocratic behavior by linking with obedience and conformity values are mediated by unilateral attitudes.

Thus, the theory of organizational culture explains scenarios consequent variables from autocratic or democratic values and norms.

The work culture involves indicators correspond with the features of the consequent variables. In this regard, the management culture being indicated by the self-efficacy, hope, resilience and optimism involves a process of values and autocratic from emerging leadership and thus a specialist in management (Mendoza et al., 2016).

In the opposite case, the absence of leadership and management is determined by depersonalization, exhaustion or frustration concerning tasks, objectives and goals unilateral.

Therefore, the theory of labor culture explains the emergence of management only if the norms and values indicate an autocratic process from which decisions and strategies are focused on a specialized management leader (Sales et al., 2016).

However, organizational management is a more specific than those explained by the theory of labor culture process. As management is specific, labor culture, values and standards must be more specific in order to be linked with the objectives and goals of management.

Organizational management, unlike the work culture is a specific process, as it involves objectives and definable, measurable and comparable goals. In this sense, organizational management refers to a process of indicators linked to monitoring and systematic evaluation of processes, strategies and behaviors.

Citation Information: García Lirios, C., & Crespo, J.E. (2024). Water use in a public university in central mexico. *Journal of Management Information and Decision Sciences, 27* (1), 1-9.

Under the organizational management is guided by values and innovative standards, it is a process of systematic and constant change, according to the contingencies of the environment, and therefore contrary to the vertical and unilateral structure of autocratic culture where emerges dependence on a leader (Cruz et al., 2016).

However, organizational management resulting from the autocratic culture historically assumed different objectives and goals against innovations and specific changes.

As specified organizational management and intensifies, autocratic culture is reduced to a minimum and gives way to a more participatory culture. Accordingly, organizational management is a competition on proposals and monitoring and evaluation (Nongo & Ikyanyon, 2012).

It is for these differences between cultures and managements that the organizational management theory explains the advent of an innovation and a change from the interplay between unilateral power - decisions and vertical structures that produce obedience and conformity in the majority and influence -change from innovations minorities.

That is, decision makers are restricted to relationships of power and influence as the objectives and goals are more specific, but if both are not changed from achieving success, then it is an autocratic culture (Robles et al., 2016).

Thus, the transformational leadership is associated with variables related to the processes of influence rather than power, as motivation for effectiveness, satisfaction and effort mean traits of joint management between the leader and followers.

Or, when communication, cohesion and support negatively correlated with wear, depersonalization and dissatisfaction, but positively affect the commitment, then we are witnessing a scenario in which the autocratic culture of majorities interacts with minority participation.

The organizational management theory explains the advent of the relationship between power relations -leaderships deciding on the behavior of followers and influence -talents relations and knowledge- generating opportunities.

From both theories, work culture and organizational management, you can specify the logical paths consistent explanatory variables (Quintero et al., 2016).

Unlike the study on culture and labor management where fatalistic or optimistic scenarios based on correlations between external variables with respect to internal variables to the organization are anticipated, the specification of a model includes variables for their systematic study is possible to infer dependency relations paths.

The model specification is a revision of the dependency relationships established in studies predicting a process, strategy or behavior. It is assumed that the explanatory variables to predict the variables to form a logical system known as nomological network paths.

In this sense, the paths of dependency relationships explain nomological networks established based on a literature review for a period.

However, the specification of a model to rely on a enough studies on a process, strategy or behavior, is preponderant paths have not always been demonstrated by studies.

Citation Information: García Lirios, C., & Crespo, J.E. (2024). Water use in a public university in central mexico. *Journal of Management Information and Decision Sciences, 27* (1), 1-9.

It is therefore necessary to apply dependency relationships that have been established not logically or empirically, creativity or intuition can apply as feasible relations between the revised variables, or variables not apply conceptualized and weighted by the state of knowledge.

In the case of relations not established in the literature, inferring from studies in which variables were conceptualized and/or weighted in order to account for other processes, strategies or similar or different behaviors it is possible that intended to explain.

Finally, in the case of the variables used in studies of a process, strategy or organizational behavior, it is possible to infer from the correlations between indicators.

The specification of a model is made from 1) include empirical relationships demonstrated by the literature reviewed and 2) propose the variables and relationships are not established by the state of knowledge.

In this regard, studies of culture and labor management have shown that values and norms are external to the relations of power and influence in an organization variable.

However, the norms and values when interacting with the contingencies of the environment, association with processing information available known as beliefs and perceptions.

Thus, external variables or determinants would, values, norms, beliefs and perceptions that explain consequent variables such as; entrepreneurship, innovation, satisfaction, productivity, competitiveness and counter variables such as turnover, absenteeism, dissatisfaction, lack of productivity, compliance or obedience.

However, when the variables determining indicators of general processes that would affect specific variables, they must be mediated or moderated by variables such as attitudes, skills, opportunity, intent, knowledge or emotions.

Mediating and moderating variables allow you to specify and intensify the effect of key variables on the resulting variables.

Thus, the model of knowledge management culture includes six explanatory hypothesis paths logical relationships between variables determining and managing mediated motivation, attitude, intention, skills and knowledge.

The aim of this work is to establish a model to explain the incidence of workplace culture on organizational management. From a review of the theoretical, conceptual and empirical frameworks logical paths for management to predict demands that exceed the resources and optimization are encouraged settled (Janicijevic, 2013).

Hypothesis. It is studies on traditional styles and transformational leadership in which the difference between external demands and resources for talent tunable leader explained but reducing participation to a function of expectation. It is studies on knowledge networks because of the interplay between market demands and resource optimization based on information of possible scenarios. This is studies opportunities and capabilities as a result of a participatory and competitive culture, because every opportunity corresponds to a skill. In this research, the effects of the surrounding information regarding the culture and management are explained by the interplay of variables determinants with the styles of leadership, opportunities, capabilities, goals and objectives. The management proposed plausible scenarios is studied from the intentionality

Citation Information: García Lirios, C., & Crespo, J.E. (2024). Water use in a public university in central mexico. *Journal of Management Information and Decision Sciences, 27* (1), 1-9.

of its objectives and targets based on information in the balance between demands and resources. The formation of knowledge networks is explained from the norms, values, beliefs and perceptions talents, as well as the motivation of leaders, training of skills, knowledge and attitudes about planned and systematic decisions.

METHOD

A cross-sectional, exploratory and psychometric study was carried out with a sample of 100 students (M = 21.23 SD = 3.2 years and M = 8'903.00 SD = 324.34 monthly income) from a public university in central Mexico, selected by their affiliation. to the system of professional practices and social service in educational institutions.

The Water Use Scale was used, which includes dimensions related to Consumption *("My university has implemented water-free toilets"), Habits ("My university promotes water savings in its facilities") Awareness ("My university disseminates water problems in its academic events"), Experience ("My university has been recognized for saving water in its facilities") and Satisfaction (""My university is ranked among the most sustainable in the region"). All items include seven response options ranging from 0 = "not at all likely" to 7 = "fairly likely."*

Respondents were contacted via email to inform them about those responsible for the project, the objectives of the study, and their expected participation. The confidentiality and anonymity of the respondents' responses was guaranteed in writing. Focus groups were held to homogenize the concepts. The Delphi technique was used to evaluate the items in three phases: qualifying, comparative and reconsiderative or reiterative. The surveys will be administered at the public university facilities.

The data were processed in Excel and JASP version 17. The coefficients of reliability, sphericity, adequacy and validity were estimated in order to be able to contrast the hypothesis of significant differences between the theoretical structure with respect to the observed structure. Values close to unity were assumed as evidence of hypothesis testing.

RESULTS

Adequacy and sphericity $\lceil \chi 2 = 527.679$ (105 df) p = 0.001; KMO = 620$\rfloor$ reached the values required for factor analysis (see Table 1).

Table 1
KAISER-MEYER-OLKIN TEST

	MSA
Overall MSA	0.62
r1	0.545
r2	0.526
r3	0.539
r4	0.56
r5	0.472

Citation Information: García Lirios, C., & Crespo, J.E. (2024). Water use in a public university in central mexico. *Journal of Management Information and Decision Sciences, 27* (1), 1-9.

r6	0.716
r7	0.721
r8	0.672
r9	0.67
r10	0.712
r11	0.656
r12	0.66
r13	0.535
r14	0.603
r15	0.732

Three factors related to consumption, habitus and awareness of water saving were established, which explained the highest percentage of variance (Table 2). The first factor included items 2 and 3. The second factor included items 8, 10, 11, 12 and 15. The third factor included indicators 13 and 14.

Table 2
FACTOR LOADINGS

	Factor 1	**Factor 2**	**Factor 3**	**Uniqueness**
r3	0.953			0.181
r2	0.784			0.48
r8		0.511		0.764
r10		0.5		0.767
r15		0.495		0.736
r12		0.472		0.76
r11		0.419		0.829
r14			0.631	0.542
r13			0.459	0.763
r1				0.953
r4				0.984
r5				0.992
r6				0.866
r7				0.789
r9				0.895

Note: Applied rotation method is promax.

The first factor related to consumption (Table 3) explained the highest percentage of explained variance (0.112), followed by the second factor referring to habits (0.093) and the factor referring to experience (0.042).

Citation Information: García Lirios, C., & Crespo, J.E. (2024). Water use in a public university in central mexico. *Journal of Management Information and Decision Sciences, 27* (1), 1-9.

Table 3 FACTOR CHARACTERISTICS						
	SumSq. Loadings	**Proportion var.**	**Cumulative**	**SumSq. Loadings**	**Proportion var.**	**Cumulative**
Factor 1	1.679	0.112	0.112	1.496	0.1	0.1
Factor 2	1.39	0.093	0.205	1.403	0.094	0.193
Factor 3	0.63	0.042	0.247	0.8	0.053	0.247

The correlation between the factors was significant for factors 1 and 2 (0.351). The prevalence of low correlations suggests that the factors reflect water use (Table 4).

Table 4 FACTOR CORRELATIONS			
	Factor 1	**Factor 2**	**Factor 3**
Factor 1	1	0.351	-0.147
Factor 2	0.351	1	0.172
Factor 3	-0.147	0.172	1

The eigenvalues that indicate the concentration of the highest percentage of variance suggest that the explanation is reduced to the first twelve items (Figure 1).

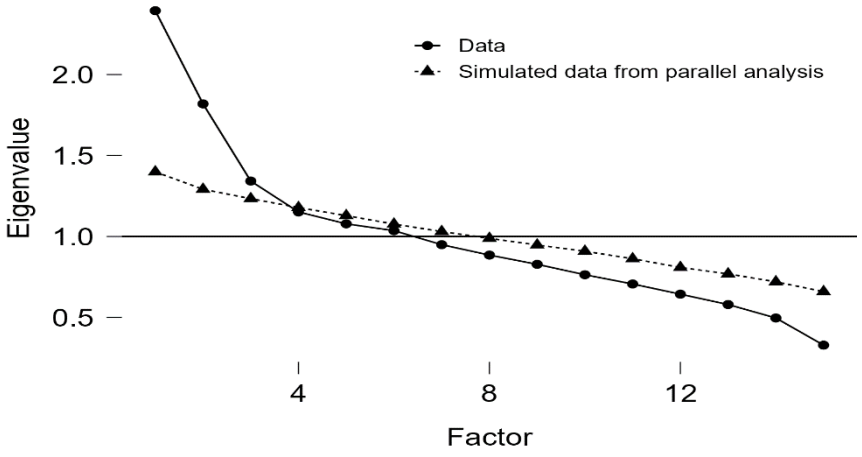

FIGURE 1
SCREE PLOT

The exploratory model indicates direct and positive relationships between the factors and indicators (Figure 2). The relationship between the first factor with items 2 and 3 stands out, as well as factor two with items 8, 10, 12 and 15. The third factor with items 13 and 14. Consequently, the model is reduced to eight indicators with the corresponding three factors

Citation Information: García Lirios, C., & Crespo, J.E. (2024). Water use in a public university in central mexico. *Journal of Management Information and Decision Sciences, 27* (1), 1-9.

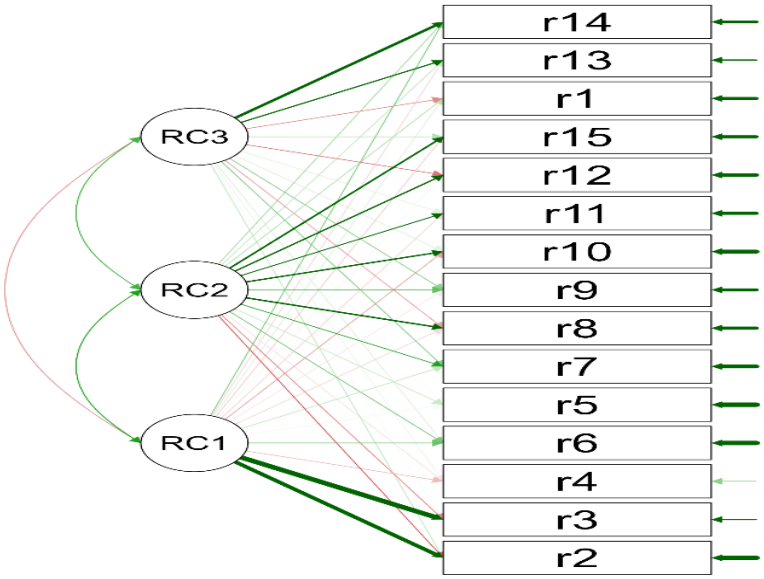

FIGURE 2
PLOT SCREEN

The adjustment and residual values ⌈χ2 = 554.692 (35 df) p = 0.001; CFI = 0.210; NNFI = -0.015; NFI = 0.211; RMSEA = 0.385; SRRM = 0.271; GFI =.948; MFI = 0.074⌋ suggest the non-rejection of the hypothesis related to the significant differences between the theoretical structure reported in the literature with respect to the observations of the present work (Vázquez et al., 2016).

DISCUSSION

The contribution of this work to the state of knowledge is the specification of relations and logical paths between cultures variables that determine knowledge management through mediating variables.

However, the possible relationships between the variables included in the model requires further explanation that can be compared with established. In this sense, the debate on the direct determination of management from the norms, values, beliefs and perceptions contrasts with the specification of this model, as mediating variables may be deleted and diversify autocratic organizations in participatory organizations.

Therefore, the model specification explains the culture and organizational management balanced between their demands and resources, opportunities and capabilities, power and influence.

In contexts of uncertainty, scarcity and risk, organizations tend to be more participatory and require culture and management models more diverse, specific and innovative.

However, organizations even if their environment is uncertain, have based their emergence and persistence from the balance between its processes. The objectives and goals of the organizations

Citation Information: García Lirios, C., & Crespo, J.E. (2024). Water use in a public university in central mexico. *Journal of Management Information and Decision Sciences, 27* (1), 1-9.

not only reflect their culture, but also base their human essence, as leaders and followers are the central elements of their intentions and products.

CONCLUSION

The objective of the present study lies in the establishment of a factorial model that explains the formation of intellectual capital in the face of the health, economic and environmental crisis. The results indicate the prevalence of three factors related to participation, training and education. In relation to the state of the art and which indicates the prevalence of three factors found in the present study, it is recommended to extend the model in order to increase the adjustment values and reduce the residual values to contrast the hypothesis of differences between the theoretical versus empirical structure.

REFERENCES

Acar, A.Z., & Acar, P. (2014). Organizational culture types and their effects on organizational performance in Turkish hospitals. *EMAJ: Emerging Markets Journal*, *3*(3), 18-31.

Adewale, O.O., & Anthonia, A.A. (2013). Impact of organizational culture on human resource practices: a study of selected Nigerian private universities. *Journal of competitiveness*, *5*(4), 115-133.

Cruz, O., Arroyo, P., & Marmolejo, J. (2016). Technological innovations in logistics: inventory management, information systems and outsourcing of operations. *Innovation and technology challenges for practical application in companies*, 165-178.

García, C., Carreon, J., Hernandez, J., & Salinas, R. (2016). Governance of the actors and networks of technological innovation. *Innovation and technology challenges for practical application in companies*, 79-94.

Hernández, A., & Valencia, R. (2016). Instruments of innovation: social networks in the internalization of Mexican micro, small and medium-sized companies. *M, Quintero., Sales, J. and Velázquez, E.(Coord.). Innovation and technology challenges for its practical application in companies*, 47-66.

Janicijevic, N. (2013). The mutual impact of organizational culture and structure. *Economic annals*, *58*(198), 35-60.

Mendoza, E., Ramírez, L., & Atriano, R. (2016). Use of media and technologies in the creation of an innovation system for the common good. *M, Quintero., Sales, J. and Velázquez, E.(Coord.). Innovation and technology challenges for its practical application in companies*, 95-114.

Nongo, E.S., & Ikyanyon, D.N. (2012). The influence of corporate culture on employee commitment to the organization. *International Journal of Business and Management*, *7*(22), 21-28.

Quintero, M., Velázquez, E., Sales, J., & Padilla, S. (2016). A review of the state of the art on SMEs. What innovation studies. *M, Quintero., Sales, J. and Velázquez, E.(Coord.). Innovation and technology challenges for its practical application in companies*, 31-43.

Robles, C., Alviter, L., Ortega, A., & Martinez, E. (2016). Culture of quality and innovation in small business. *Innovation and technology challenges for practical application in companies*, 11-30.

Sales, J., Quintero, M., & Velázquez, E. (2016). Adaptation versus innovation: the formation of industrial districts from peasant communities. *Innovation and technology challenges for its practical application in companies*, 181-199.

Vázquez, C., Barrientos, B., Quintero, M., & Velázquez, E. (2016). Government support for innovation, technology and training of small and medium-sized companies in Mexico. *M, Quintero., Sales, J. and Velázquez, E.(Coord.). Innovation and technology challenges for its practical application in companies*, 67-78.

Received: 04-Nov-2023, Manuscript No. JMIDS-23-14229; **Editor assigned:** 06-Nov-2023, Pre QC No. JMIDS-23-14229(PQ); **Reviewed:** 20-Nov-2023, QC No. JMIDS-23-14229; Revised: 22-Nov-2023, Manuscript No. JMIDS-23-14229(R); **Published:** 29-Nov-2023

Citation Information: García Lirios, C., & Crespo, J.E. (2024). Water use in a public university in central mexico. *Journal of Management Information and Decision Sciences, 27* (1), 1-9.