

Forum: Practical Perspectives

Evaluation of the organizational culture in public health centers of different complexity in Chile

Víctor Eduardo Cancino Cancino ¹

Carlos Salvador Mellado Yáñez ²

¹ Universidad Santo Tomás (UST) / Facultad de Economía y Negocios, Centro de Investigación y Modelamiento de Negocios, Santiago – Chile

² Universidad Santo Tomás (UST) / Facultad de Ciencias Sociales y Comunicaciones, Escuela de Psicología, Santiago – Chile

The article analyzes the organizational culture in public health institutions in Chile, establishing the relationship between the organizations' cultures and their level of complexity and coverage using the Denison Organizational Culture Scale. The scale was applied to a sample of 156 workers from four institutions. The results reveal that institutions with low complexity and coverage showed higher cultural levels in all dimensions: involvement, consistency, adaptability and mission; as well as in the perspectives of flexibility/stability and internal/external focus. Alternatively, responses from workers in institutions with high coverage but different complexity did not show significant differences regarding their understanding of the organizational culture. In addition, the findings highlight the relationship between the functional characteristics associated with the complexity of health organizations and their cultural features, evidencing particular differences according to the level of coverage or intensity of demand for the services they provide, as well as perspectives of flexibility and stability according to the Denison model.

Keywords: organizational culture; health organizations; health services coverage; health care levels; Denison model.

Avaliação da cultura organizacional em centros de saúde pública de diferente complexidade no Chile

O artigo analisa a cultura organizacional nas instituições de saúde pública no Chile, estabelecendo sua relação com o nível de complexidade e cobertura que apresentam, utilizando a escala de cultura organizacional de Denison, aplicada a uma amostra de 156 funcionários de quatro instituições. Assim, a instituição com menor nível de complexidade e cobertura apresentou níveis culturais mais elevados em todas as dimensões: envolvimento, consistência, adaptabilidade e missão; bem como nas perspectivas de flexibilidade/estabilidade e enfoques internos/externos. Alternativamente, as instituições com maior grau de cobertura, mas com um nível de complexidade diferente, não apresentam diferenças a nível cultural. Os resultados mostram a relação entre as características funcionais associadas à complexidade das organizações de saúde e as suas características culturais, demonstrando

DOI: <https://doi.org/10.1590/0034-761220230252x>

Article received on August 04, 2023 and accepted on April 26, 2024.

[Translated version] Note: All quotes in English translated by this article's translator.

Editor-in-chief:

Alketa Peci (Fundação Getulio Vargas, Rio de Janeiro / RJ – Brazil) 


Associate editor:

Mauricio Ivan Dussauge Laguna (Facultad Latinoamericana de Ciencias Sociales, Ciudad de México / CDMX – México) 

Reviewers:


Ana Carolina Pimentel Duarte da Pimentel Duarte da Fonseca (Universidade Federal do Rio de Janeiro, Rio de Janeiro / RJ – Brazil) 

Antonio Pires Barbosa (Universidade Nove de Julho, São Paulo / SP – Brazil) 

Américo da Costa Ramos Filho (Universidade Federal Fluminense, Niterói / RJ – Brazil) 

One of the reviewers did not authorize the disclosure of their identity.

Peer review report: the peer review report is available at this [URL](#).

ISSN: 1982-3134 

diferenças particulares consoante o nível de cobertura ou intensidade de procura dos serviços que prestam, bem como nas perspectivas de flexibilidade e estabilidade segundo o modelo de Denison.

Palavras-chave: cultura organizacional; organizações de saúde; níveis de atenção à saúde; cobertura dos serviços de saúde; modelo de Denison.

Evaluación de la cultura organizacional en centros públicos de salud de distinta complejidad en Chile

El artículo analiza la cultura organizacional en instituciones públicas de salud en Chile, estableciendo su relación con el nivel de complejidad y cobertura que presentan, utilizando la escala de cultura organizacional de Denison, aplicada en una muestra de 156 funcionarios de cuatro instituciones. Así, la institución con menor nivel de complejidad y cobertura mostró mayores niveles culturales en todas las dimensiones: implicación, consistencia, adaptabilidad y misión; así como en las perspectivas de flexibilidad/estabilidad y focos interno/externo. Alternativamente, las instituciones con mayor grado de cobertura, pero con distinto nivel de complejidad, no muestran diferencias a nivel cultura. Los resultados dan cuenta de la relación entre las características funcionales asociadas a la complejidad de las organizaciones de salud y sus rasgos culturales, demostrando diferencias particulares según el nivel de cobertura o intensidad de la demanda por las prestaciones que entregan, así como en las perspectivas de flexibilidad y estabilidad según el modelo de Denison.

Palabras clave: cultura organizacional; organizaciones de salud; niveles de atención en salud; cobertura de servicios de salud; modelo de Denison.

1. INTRODUCTION

Organizational culture (OC) is an area with an important development in the last five decades. Its initial studies focused on organizational conditions and human relations in educational (Blumberg & Amidon, 1964) and health (Cass, 1968; Selmanoff, 1968) institutions, and in the assessment of factors associated with organizational dynamics (Margulies, 1969), being a concept disseminated early in the specialized literature by Pettigrew (1979, p. 574), who defined it as “the system of such publicly and collectively accepted meanings operating for a given group at a given time”.

The OC is configured from a set of beliefs, values and rules accepted and shared by individuals and groups that make up an organization (Denison et al., 2014; Schein, 1990), with approaches from different perspectives and methodologies (Pettigrew, 1979; Schein, 1996), where qualitative approaches have traditionally predominated over those of a quantitative nature (Vertel et al., 2013). However, several authors highlight the practical advantages of the latter perspective because of the ease of its application, time optimization, use of data (Puppatz et al., 2017), and the comparability and replicability of this type of study in various organizations and contexts (Cooke & Rousseau, 1988).

Since the beginning, the assessment of the OC from a quantitative perspective has undergone a conceptual and empirical development that has significantly expanded the number of instruments available for its application (Denison et al., 2014). A systematic review identified more than 70 instruments, detecting 48 standardized scales that can be subjected to psychometric assessments (Jung et al., 2009). Among them, the instrument internationally known as Denison organizational culture survey (DOCS) stands out, as its model has been widely disseminated, with multiple publications about its use (Denison, 1990; Denison & Neale, 1996; Denison et al., 2003) and the application in various organizational contexts and countries (Bell et al., 2014; Zheng et al., 2010). This includes the validation of DOCS in Chile for its use in Health organizations (Cancino & Mellado, 2021), a field where there are several instruments (Gregory et al., 2009) and studies that report its application in organizations of this sector (Scott et al., 2003; Stock et al., 2007).

Beyond the diversity of OC definitions, there is a broad consensus on its relevance within any organization, being considered as the most relevant and complex attribute within them since it endures

over products, services, founders, leadership, and all other characteristics of an organization (Schein, 1990), directly influencing the improvement of the management and performance of organizations (Gregory et al. 2009; Schein, 2004).

For the analysis of the OC, there are widely spread models. Among them, the following models stand out: cultural orientation, three-dimensional culture, Schein's model and the competing values model (CVM). The latter is characterized by its simplicity and conceptual clarity (Hernández-Sampieri et al., 2014, p. 238) and is the most empirically supported (especially in Latin America).

It has also been recognized that both qualitative and quantitative instruments can be relevant and effective if the objectives and context of application are clear (Jung et al., 2009). DOCS is an OC assessment tool developed after an extensive review of the influence of the OC on organizational effectiveness (Denison, 1990). It allows the independent measurement of twelve OC indicators in a quick, simple and understandable way, which is a differentiating and value-added feature. Also, there are underlying tensions in the model, such as the competing demands of an external versus internal focus and between stability and flexibility. These features assessed by DOCS “provide a framework for understanding how (and to what extent) organizational cultures balance these seemingly contradictory demands” (Denison et al., 2014, p. 23). Denison's model allows for an analysis of the organizational profile including internal and external focuses, which are critical to the long-term effectiveness of an organization, while stability contributes to the development of efficient and productive systems, and flexibility allows the organization to change and grow along with market demands (Denison et al., 2014).

According to the above, the importance of assessing organizational culture as a strategic input for management can be seen. However, the systematic application of instruments for its assessment has been limited in Latin America, especially in public health organizations. Consequently, new studies are needed to deepen the analysis of culture profiles and their connection with organizational features. The article analyzes the organizational culture in public health institutions in Chile, establishing its relationship with their level of complexity and coverage.

2. MATERIALS AND METHODS

A quantitative study was conducted with a non-experimental cross-sectional design. A total of 156 staff members from four health organizations in the Maule Region, Chile, were surveyed during 2019 and early 2020, the period prior to the pandemic. These organizations were intentionally chosen to represent the different types of public health institutions existing in Chile. The sample is composed of a high-complexity hospital that provides health services for recovery, rehabilitation and palliative care, with a high technical and administrative complexity and a high number of services (coverage); two family health centers (from the Spanish Centro de Salud Familiar, CESFAM) that provide ambulatory care, focusing on the promotion and protection of the health of the families in the community under their care, with low technical and administrative complexity and high coverage of the population under their care. Finally, there was a community family health center (from the Spanish Centro Comunitario de Salud Familiar, CECOSF) that provides basic or low-complexity healthcare, assisting small populations, which means that it is closer to its users. Table 1 describes each of the participating institutions.

TABLE 1 POPULATION, BENEFICIARIES AND COVERAGE PERCENTAGE OF PARTICIPATING INSTITUTIONS

Health Center Name	User Population 2019	Beneficiaries 2019	Care Coverage
CECOSF ^a	4,895	181	3.7%
CESFAM 1 ^a	24,468	7,813	31.9%
CESFAM 2 ^a	13,337	3,497	26.2%
High-complexity Hospital ^b	1,100,000	430,440	39.1%

Source: Statistics from Servicio de Salud del Maule (2020a, 2020b).

All employees with a formal contractual relationship were included in the survey. The ethical application procedure respected the Helsinki Declaration, ensuring informed and voluntary participation and data confidentiality.

DOCS, translated into Spanish (Bonavia et al., 2009) and validated in Chile in health institutions, was used for the collection of data (Cancino & Mellado, 2021). The instrument describes the orientation of the organization in twelve OC indicators, with four focuses: flexibility vs. stability and internal vs. external focus (see Table 3).

Sociodemographic variables and DOCS dimensions were analyzed descriptively. In addition, an ANOVA was conducted to establish differences in the DOCS dimensions according to the type of institution, using a post-hoc analysis with Bonferroni correction. This type of analysis is useful to compare whether the averages obtained by three or more groups on a quantitative variable differ significantly (Sawyer, 2009).

3. ANALYSIS AND RESULTS

Table 2 reports the descriptive analyses of the sociodemographic variables. It can be observed that 80% of the participants are women and more than 66% are forty years old or younger. On average, participants report 11.62 years of work experience.

TABLE 2 SOCIO-DEMOGRAPHIC CHARACTERIZATION

Variable	N	%	M	SD
Gender				
Man	31	19.9		
Woman	125	80.1		

Continue

Variable	N	%	M	SD
Age				
< 30 years old	46	29.5		
31-40 years old	59	37.8		
41-51 years old	35	22.4		
> 51 years old	16	10.3		
Work Experience			11.62	9.91
< = 1 year	23	14.7		
1-5 years	33	21.2		
5,1-10 years	33	21.2		
10,1-15 years	23	14.7		
15,1-20 years	16	10.3		
> 20 years	28	17.9		

Source: Elaborated by the authors.

Subsequently, a descriptive analysis of the DOCS dimensions according to the type of health institution was conducted. Table 3 shows that CECOSF shows a higher level in each of the dimensions assessed. The hospital shows slightly higher averages than CESFAM in all DOCS dimensions, except for team orientation and agreement.

TABLE 3 DOCS MEANS AND STANDARD DEVIATIONS BY INSTITUTION TYPE

	Hospital (N = 76)		CESFAM (N = 60)		CECOSF N = 20)	
	M	SD	M	SD	M	SD
INVOLVEMENT	2.92	.57	2.84	.44	3.26	.39
Empowerment	3.05	.50	2.89	.33	3.45	.56
Team Orientation	2.95	.71	2.98	.62	3.25	.52
Capability Development	2.77	.61	2.65	.50	3.14	.49
CONSISTENCY	2.82	.49	2.73	.49	3.20	.36
Core Values	2.96	.55	2.80	.57	3.32	.48
Agreement	2.64	.64	2.67	.54	3.12	.44
Coordination and Integration	2.87	.51	2.72	.55	3.17	.43
ADAPTABILITY	2.80	.42	2.79	.39	3.20	.37
Creating Change	2.59	.51	2.58	.55	3.05	.48
Customer Focus	2.94	.45	2.94	.42	3.36	.47
Organizational Learning	2.89	.58	2.86	.51	3.21	.44

Continue

	Hospital (N = 76)		CESFAM (N = 60)		CECOSF (N = 20)	
	M	SD	M	SD	M	SD
MISSION	2.94	.55	2.83	.45	3.42	.29
Strategic Direction and Intent	3.07	.64	2.82	.50	3.65	.37
Goals and Objectives	2.99	.69	2.94	.66	3.50	.38
Vision	2.78	.55	2.73	.45	3.12	.29
INTERNAL FOCUS	2.87	.51	2.79	.42	3.23	.33
EXTERNAL FOCUS	2.88	.46	2.81	.40	3.31	.32
STABILITY	2.88	.49	2.78	.43	3.31	.30
FLEXIBILITY	2.86	.46	2.82	.37	3.23	.34

Source: Elaborated by the authors.

Also, an ANOVA was conducted to establish differences in the DOCS dimensions according to the type of institution. Table 4 shows that there are significant differences in each of the DOCS dimensions between these three types of health organizations.

In order to determine which specific institutions showed differences, a post-hoc analysis was performed with the Bonferroni correction. The hospital and CESFAM did not show significant differences between them regarding DOCS, except for the direction subdimension, where the hospital showed a significantly higher average than the CESFAM. On the other hand, both the hospital and the CESFAM showed significantly lower averages in the DOCS dimensions and subdimensions when compared to the CECOSF (see Table 4). This pattern had only four exceptions: no significant differences were found between the hospital and CECOSF in the team orientation, coordination and organizational learning subdimensions and no significant differences were found between CESFAM and CECOSF in the team orientation subdimension.

TABLE 4 ANALYSIS OF VARIANCE OF DOCS AMONG TYPES OF HEALTH CARE INSTITUTIONS

Dimensions and Sub-dimensions	F	FD	P	Post-hoc Analysis		
				CECOSF-Hospital (p)	CECOSF- CESFAM (p)	Hospital- CESFAM (p)
INVOLVEMENT	5.268	(2, 153)	.006	.025	.004	.999
Empowerment	7.833	(2, 153)	.001	.011	<.001	.310
Team Orientation	1.189	(2, 153)	.307	.390	.555	.999
Capability Development	5.531	(2, 153)	.005	.034	.003	.646
CONSISTENCY	7.155	(2, 153)	.001	.007	.001	.816
Core Values	6.532	(2, 153)	.002	.032	.001	.322
Agreement	5.352	(2, 153)	.006	.005	.012	.999
Coordination and Integration	5.483	(2, 153)	.005	.077	.004	.317

Continue

Dimensions and Sub-dimensions	F	FD	P	Post-hoc Analysis		
				CECOSF-Hospital (p)	CECOSF- Hospital- CESFAM (p)	CESFAM (p)
ADAPTABILITY	8.390	(2, 153)	<.001	.001	.001	.999
Creating Change	7.763	(2, 153)	.001	.001	.001	.999
Customer Focus	7.455	(2, 153)	.001	.001	.001	.999
Organizational Learning	3.294	(2, 153)	.040	.062	.043	.999
MISSION	10.78	(2, 153)	<.001	.001	<.001	.538
Strategic Direction and Intent	16.15	(2, 153)	<.001	<.001	<.001	.036
Goals and Objectives	5.825	(2, 153)	.004	.008	.003	.999
Vision	5.463	(2, 153)	.005	.011	.005	.999
INTERNAL FOCUS	6.931	(2, 153)	.001	.008	.001	.844
EXTERNAL FOCUS	10.584	(2, 153)	<.001	<.001	<.001	.999
STABILITY	10.376	(2, 153)	<.001	.001	<.001	.570
FLEXIBILITY	7.765	(2, 153)	.001	.002	.001	.999

Source: Elaborated by the authors.

Finally, the institutions were characterized descriptively according to flexibility/stability and internal/external focuses. Table 3 shows that all the institutions have a greater external focus, while, in terms of stability, this is predominant in the high-complexity hospital and the CECOSF, versus the flexibility that predominates in the CESFAM. When an ANOVA was conducted, it was observed that the CECOSF showed a higher average than the hospital and the CESFAM in every focus. The hospital and the CESFAM did not show significant differences in these focuses (see Table 4).

4. CONCLUSIONS

The objective of the study was to characterize the different types of health institutions in Chile, according to the organizational culture dimensions of the DOCS instrument. These health institutions were differentiated by their coverage and complexity levels.

The Hospital and the CESFAM, institutions with high coverage, but with different levels of complexity, showed no differences in their cultural features, with the sole exception of the degree of ‘direction’ they show. In this case, the hospital showed a higher level than the CESFAM. In this sense, it could be assumed that the level of complexity of a health institution has no impact on its cultural indicators, except for the level of strategic direction it must show in order to ensure adequate compliance with the processes associated with such complexity. In fact, it has been pointed out that hospitals are highly differentiated organizations, as they have different specialized departments and human resources with highly specific training. Therefore, to function properly, they need to increase their coordination mechanisms (Mintzberg & Glouberman, 2021). These mechanisms include direct direction or that generated through a high standardization of processes, results, or skills (Kumar, 2015). In this sense, the Strategic Direction of a health institution is a key cultural indicator that is characteristic of complex organizations, and this is empirically demonstrated in the present study.

Both the hospital and the CESFAM showed lower levels in all dimensions of DOCS when compared to the CECOSF, which, unlike the other two, shows low coverage in its care. These results showed only a few exceptions: no differences were observed between the hospital and the CECOSF in team orientation, coordination and organizational learning, and no differences were found between the CESFAM and the CECOSF in team orientation.

From these results, it can be concluded that a key factor impacting the culture of a health institution is its level of coverage. It seems that high levels of external demand for public care, in terms of the number of population or inhabitants to be treated, together with the number of services that the institutions actually provide, have a negative impact on the levels of the different cultural features that characterize them, especially when the health institution lacks the necessary resources to meet high demand of users, as it seems to be the case in Chile, which shows a deficit in infrastructure, technology, ambulances, beds, doctors, among others (Goic, 2015).

In addition, it seems that high-coverage health institutions have adopted as a strategy to face these deficiencies, some processes that depend mainly on the management of human resources, such as team orientation, coordination among them and learning in complex situations (Costello et al., 2021).

Finally, all institutions show a greater external focus, which could be explained by the competitive market conditions (adaptability) and the integration of objectives with periodic performance measurements in the national health system, with a focus on the assessment of service quality and accountability mechanisms (mission). In terms of stability, this is predominant in the high-complexity hospital, which would be linked to the high degree of specialization and greater standardization of processes due to the large volume of services, which require policies and quality assurance mechanisms that guide the objectives of the organization (consistency and mission). This is also true in the CECOSF, in which case, due to its low complexity and coverage, the number and quantity of services are limited. This allows simplifying management processes and achieving greater internal consistency and alignment with the objectives and mission of the institution. In addition, in the CESFAM, flexibility predominates, and this is associated with their intermediate role in terms of their low level of complexity and high coverage, which implies providing a high volume of services (high demand) with a greater degree of diversity, requiring a high degree of cohesion of the work teams (involvement), and the development of a more flexible management model to meet the dynamics of the environment (adaptability).

The study has some limitations, such as the exclusive use of self-report measures applied on a cross-sectional basis; the sample is focused on one region of Chile, and it is necessary to study whether the findings of this research can be generalized to other contexts. Also, future studies with qualitative-quantitative methodologies should be conducted in greater depth. However, the study manages to provide empirical information that deepens the knowledge about the characteristic culture of public health institutions, showing its relationship with their degree of complexity and coverage.

REFERENCES

- Bell, C., Chan, M., & Nel, P. (2014). The impact of participative and directive leadership on organisational culture: an organisational development perspective. *Mediterranean Journal of Social Sciences*, 5(23), 1970-1985.
- Blumberg, A., & Amidon, E. (1964). A comparison of teacher and principal attitudes toward faculty meetings. *The Bulletin of the National Association of Secondary School Principals*, 48(290), 45-55. <https://doi.org/10.1177/019263656404829007>
- Bonavia, T., Prado-Gasco, V., & Tomas, D. (2009). Adaptación al castellano y estructura factorial del Denison Organizational Culture Survey. *Psicothema*, 21(4), 633-638.
- Cancino, V.E., & Mellado, C.S. (2021). Organizational culture in health centers of the Maule Region, Chile: Psychometric evaluation of the Denison scale (DOCS). *Interciencia*, 46(7-8), 317-323.
- Cass, D. (1968). Expectations of the staff nurse in nursing practice. *Nursing Clinics of North America*, 3(1), 111-115. [https://doi.org/10.1016/S0029-6465\(22\)00951-3](https://doi.org/10.1016/S0029-6465(22)00951-3)
- Cooke, R. A., & Rousseau, D. M. (1988). Behavioral norms and expectations: a quantitative approach to the assessment of organizational culture. *Group & Organization Studies*, 13(3), 245-273. <https://doi.org/10.1177/105960118801300302>
- Costello, M., Russell, K., & Coventry, T. (2021). Examining the average scores of nursing teamwork subscales in an acute private medical ward. *BMC Nursing*, 20(1), 84. <https://doi.org/10.1186/s12912-021-00609-z>
- Denison, D. R. (1990). *Corporate culture and organizational effectiveness* (Wiley Series on organizational assessment and change). Wiley.
- Denison, D. R., Haaland, S., & Goelzer, P. (2003). Corporate culture and organizational effectiveness: is there a similar pattern around the world? In *Advances in Global Leadership* (Advances in Global Leadership, Vol. 3, pp. 205-227). Emerald Group Publishing Limited. [https://doi.org/10.1016/S1535-1203\(02\)03011-3](https://doi.org/10.1016/S1535-1203(02)03011-3)
- Denison, D. R., & Neale, W. (1996). *The Denison Organizational Culture Survey*. Aviat.
- Denison, D. R., Nieminen, L., & Kotrba, L. (2014). Diagnosing organizational cultures: A conceptual and empirical review of culture effectiveness surveys. *European Journal of Work and Organizational Psychology*, 23(1), 145-161. <https://doi.org/10.1080/1359432X.2012.713173>
- Goic, A. (2015). El Sistema de Salud de Chile: Una tarea pendiente. *Revista Médica de Chile*, 143(6), 774-786. <http://dx.doi.org/10.4067/S0034-98872015000600011>
- Gregory, B. T., Harris, S. G., Armenakis, A. A., & Shook, C. L. (2009). Organizational culture and effectiveness: A study of values, attitudes, and organizational outcomes. *Journal of Business Research*, 62(7), 673-679. <https://doi.org/10.1016/j.jbusres.2008.05.021>
- Hernández-Sampieri, R., Méndez, S., & Contreras, R. (2014). Construcción de un instrumento para medir el clima organizacional en función del modelo de los valores en competencia. *Contaduría y Administración*, 59(1), 229-257. [https://doi.org/10.1016/S0186-1042\(14\)71250-1](https://doi.org/10.1016/S0186-1042(14)71250-1)
- Jacobs, R., Mannion, R., Davies, H., Harrison, S., Konteh, F., & Walshe, K. (2013). The relationship between organizational culture and performance in acute hospitals. *Social Science & Medicine*, 76(1), 115-125. <https://doi.org/10.1016/j.socscimed.2012.10.014>
- Jung, T., Scott, T., Davies, H. T. O., Bower, P., Whalley, D., McNally, R., & Mannion, R. (2009). Instruments for exploring organizational culture: A review of the literature. *Public Administration Review*, 69(6), 1087-1096. <https://doi.org/10.1111/j.1540-6210.2009.02066.x>
- Kumar, P. (2015). An analytical study on Mintzberg's framework: managerial roles. *International Journal of Research in Management & Business Studies*, 2(3), 12-19.
- Margulies, N. (1969). Organizational culture and psychological growth. *The Journal of Applied Behavioral Science*, 5(4), 491-508. <https://doi.org/10.1177/002188636900500403>
- Mintzberg, H., & Glouberman, S. (2021). Managing the Care of Health and the Cure of Disease - Part II: Integration. *Health Care Management Review*, 26(1), 70-84. <https://doi.org/10.1097/00004010-200101000-00007>

- Pettigrew, A. (1979). On Studying Organizational Cultures. *Administrative Science Quarterly*, 24(4), 570-581. <https://doi.org/10.2307/2392363>
- Puppatz, M., Burmeister, A., & Deller, J. (2017). The assessment of organizational culture in cross-cultural settings: Investigating the psychometric quality and cultural equivalence of three quantitative instruments. *International Journal of Selection and Assessment*, 25(1), 43-60. <https://doi.org/10.1111/ijsa.12159>
- Sawyer, S. (2009). Analysis of variance: the fundamental concepts. *Journal of Manual & Manipulative Therapy*, 17(2), 27-38. <https://doi.org/10.1179/jmt.2009.17.2.27E>
- Schein, E. H. (1990). Organizational culture. *American Psychologist*, 45(2), 109-119. <https://doi.org/10.1037/0003-066X.45.2.109>
- Schein, E. H. (1996). Culture: The missing concept in organization studies. *Administrative Science Quarterly*, 41(2), 229-240. <https://doi.org/10.2307/2393715>
- Schein, E. H. (2004). *Organizational culture and leadership*. Jossey-Bass.
- Scott, T., Mannion, R., Davies, H., & Marshall, M. (2003). The quantitative measurement of organizational culture in health care: a review of the available instruments. *Health Services Research*, 38(3), 923-945. <https://doi.org/10.1111/1475-6773.00154>
- Selmanoff, E. D. (1968). Strains in the nurse-doctor relationship. *Nursing Clinics of North America*, 3(1), 117-127. [https://doi.org/10.1016/S0029-6465\(22\)00952-5](https://doi.org/10.1016/S0029-6465(22)00952-5)
- Servicio de Salud del Maule. (2020a). *Anuario 2020 Servicio Salud Maule*. <https://www.ssmaule.gob.cl/dig/bioestadistica/Anuario/2020/web/Anuario2020ServicioSaludMaule.pdf>
- Servicio de Salud del Maule. (2020b). *Anuarios Estadísticos 2020*. <https://www.ssmaule.gob.cl/dig/bioestadistica/Anuario/2021/ANUARIO%202021%20-%20Servicio%20Salud%20Maule.zip>
- Stock, G. N., McFadden, K. L., & Gowen III, C. R. (2007). Organizational culture, critical success factors, and the reduction of hospital errors. *International Journal of Production Economics*, 106(2), 368-392. <https://doi.org/10.1016/j.ijpe.2006.07.005>
- Vertel, A. del C. C., Paternina, C. D. R., Riaño, H. E. H., & Pereira, J. M. L. (2013). Cultura organizacional: evolución en la medición. *Estudios Gerenciales*, 29(128), 350-355. <https://doi.org/10.1016/j.estger.2013.09.009>
- Zheng, W., Yang, B., & McLean, G. N. (2010). Linking organizational culture, structure, strategy, and organizational effectiveness: Mediating role of knowledge management. *Journal of Business Research*, 63(7), 763-771. <https://doi.org/10.1016/j.jbusres.2009.06.005>

Víctor Eduardo Cancino Cancino 

Ph.D. in Business Management, UPC Barcelona; Master in Business Administration, U. de Chile; Bachelor of Science in Business Administration, U. de Talca; Professor, Faculty of Economics and Business, Center for Business Research and Modeling (CIMON), Universidad Santo Tomás. E-mail: vcancino@santotomas.cl

Carlos Salvador Mellado Yáñez 

Ph.D. in Psychology and Master in Educational Psychology, Pontifical Catholic University of Chile; Psychologist and Bachelor of Psychology, University of Chile; Professor at the School of Psychology, Santo Tomás University. E-mail: carlosmellado@santotomas.cl

AUTHORS' CONTRIBUTION

Víctor Eduardo Cancino Cancino: Conceptualization (Equal); Data curation (Lead); Investigation (Lead); Methodology (Supporting); Supervision (Lead); Software (Supporting); Validation (Supporting); Writing - original draft (Equal); Writing - review & editing (Equal).

Carlos Salvador Mellado Yáñez: Conceptualization (Equal); Investigation (Supporting); Methodology (Lead); Supervision (Supporting); Software (Lead); Validation (Lead); Writing - original draft (Equal); Writing - review & editing (Equal).

DATA AVAILABILITY

The entire dataset supporting the results of this study is available upon request to the corresponding author (Víctor Eduardo Cancino Cancino). The dataset is not publicly available due to being part of ongoing research.