

ORIGINAL ARTICLE

Governance and quality management of production and research centers: Universidad Nacional Mayor de San Marcos

ABSTRACT

The purpose of this research was to determine to what extent governance influences the improvement of the functional dimension of quality management in the production and research centers of Universidad Nacional Mayor de San Marcos (UNMSM). It was conducted with an applied and non-experimental quantitative research approach. The sample included 50 managers, 3 academic areas, 14 faculties, 8 production centers, 3 research centers, 13 research institutes and 2 research units. The survey technique was applied and the instrument was a questionnaire. The results show that the majority of managers stated that governance has a positive impact on quality management in production and research centers (valuation criteria ranged from 76%, a lot, and 86%, greatly). This was statistically corroborated through Spearman's Rho correlation coefficient, which presents a normal level of significance (0.000) between the governance variable and quality management, thus demonstrating a moderate positive correlation with a value equal to 0.638. In conclusion, it is determined that governance influences the improvement of the functional dimension, personal development, internal organization, management capacity, operations and processes, use of resources, economic and financial management, internal directives and quality management regulations in the production and research centers of UNMSM academic areas and faculties.

Keywords: governance; quality management; university governance.

**Elmer Nieves Zanabria
Huisa**

ezanabriah1@unmsm.edu.pe

ORCID: <https://orcid.org/0000-0003-1597-9090>

Universidad Nacional Mayor de San Marcos, Facultad de Ciencias Contables, Lima, Peru

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INTRODUCTION

This research paper deals with governance and quality management in the Universidad Nacional Mayor de San Marcos (UNMSM) production and research centers.

The purpose of the project was to address problems concerning governance and management of productive activities of goods, services and research caused by the recent health, economic, financial, social and value crisis in Peru, which has adversely affected the management, administration and academic quality of public universities, including UNMSM, especially in training and research activities, production and knowledge transfer. Likewise, globalization and financial difficulties are forcing nations to condition the economic, financial and productive structures of companies and public institutions as a prerequisite for survival in a changing scenario (Meléndez *et al.*, 2010, p. 2). This has created circumstances that could lead to an organizational and operational management crisis, resulting in high levels of bureaucracy, erosion of moral values that prevent take-off in terms of quality management of production facilities, research facilities and university research institutes. In this environment, universities as a social system are forced to innovate their policies, processes and procedures in order to achieve their mission objectives, through the application of a normative governance perspective.

This research has been carried out with the aim of addressing the issues described above and determine the influence of governance on the quality management of the Universidad Nacional Mayor de San Marcos production and research centers. Also, to propose an alternative approach to the governance and management of public universities, which includes improving the quality management of the functional dimension, related to the organization, management, decision-making and participation of production and research centers stakeholders, given the drawbacks of a bureaucratic model. This takes into consideration production, productivity and competitiveness of their production processes, activities, organization, resources management and contribution to academic training and research, as

well as strengthening the governance applied to universities.

Although in the reality of Peruvian universities few people and academic institutions are familiar with the concept of governance in the management of public universities, this model presupposes democratic participation, governance capacity, leadership, stakeholder relations in government and institutional decision-making.

With this in mind, this research paper is a novel and original contribution to university management, which will enable to increase existing theories and methods in the government and university management of production and research centers, research institutes, and their management by senior management and university faculties. In addition, it will be of practical use for stakeholders involved in productive and research activities in terms of personal development, the techniques used in their processes and activities, policies and regulations in accordance with the social reality of the UNMSM.

In this perspective, the following research problem is formulated: To what extent does governance influence the improvement of functional dimension quality management in the production and research centers of UNMSM? The research hypothesis is as follows: Governance influences the improvement of the functional dimension quality management in the production and research centers of UNMSM. The proposed objective is to determine to what extent governance influences the improvement of the functional dimension quality management in the production and research centers of UNMSM.

Quality management

First of all, the concept of quality will be defined, and then quality management will be addressed together with the objective of quality management within the production and research centers of UNMSM, which are considered public organizations.

The term quality is an intrinsic value of products, services and research, and is the permanent development of productivity and

competitiveness within the research and academic training framework of students in various professional knowledge. In the same line, Deming (1986) (cited by Lizaraburo *et al.*, 2018) defines quality as the degree of uniformity and predictable reliability at low cost and appropriate to the needs of the market, which can be applied to university products and services.

Andía (2020) states that quality in public administration is a transformative culture that drives public administration towards continuous improvement in order to meet the needs and expectations of the public, with justice, equity, objectivity and efficiency in the use of public resources. Quality can be defined as “la característica intrínseca de un producto o de un servicio que logra la aceptación y satisfacción de un usuario, cliente o consumidor” [the intrinsic characteristic of a product or service that achieves the acceptance and satisfaction of a user, client or consumer] (Ramírez, 2012, p. 55).

Conversely, quality management refers to a connected set of rules that apply to both businesses and government institutions. By applying these standards, the company or organization in question can manage quality in an organized way (Lizaraburo *et al.*, 2018), a concept that can be applied to the management of universities.

Managing quality is extremely complex in many ways, and even if you start with an internal quality operational basis, which may or may not be appropriate from a quality perspective, it is in the client's hands (ECA Global Foundation, 2007, p. 51). Currently, attention is focused not only on product quality, but also on measuring, managing, and improving service, processes, and information quality (Juran, 2007, p. 10).

In turn, De la Hoz *et al.* (2012) claim that quality management used by organizations improve products and services, reduce costs, increase customer and employee satisfaction, improve financial results, and increase the company's competitiveness. To this end, Alvarado and Moreno (2017) suggest that strategic guidelines should be created towards

optimizing administrative and academic processes.

On the other hand, iso9001calidad.com (s.f.) specifies that quality control is a set of planned and systematic actions necessary to provide reasonable assurance that a product or service meets specified quality requirements.

The objective of quality management is the growth of productivity, competitiveness of goods and services provided by universities through their production centers, research and institute centers or academic institutions; they do not yet show evidence of quality management in their functional dimension.

UNMSM production and research centers are public organizations, and as such, their activities are governed and regulated by norms and/or quality standards and are implemented within a constant framework of changes in their governance and management. With that in mind, Senge (2009) points out that a learning organization is one in which people continuously expand their capabilities to achieve desired results, new and inclusive thinking patterns are cultivated, collective efforts are unleashed, and people learn to learn together. For Cardozo (2007), an organization is a system, a structured set of components and interactions, each of which has consciously distilled characteristics that cannot be found individually.

Therefore, public organizations perform a public service equivalent to the civil service, which is a priority in some countries in the Ibero-American region. The quality of the different national civil service systems in the Ibero-American region is diverse and heterogeneous (Barrios, 2015, p. 21) where public relations of the administration interact with each other. Through this, administrators have the necessary relationship with society; thus, society influences administrators in all their personal actions, the realization of which forms a common interest (Bonnin, 2017, p. 336). Managing stakeholder relations is difficult and takes longer than expected, but the cost of not involving stakeholders, especially senior management stakeholders, is significantly higher (Bourne, 2010, p. 22).

With regard to the relationship between knowledge, political power and bureaucracy, Pastor (2024) points out that both knowledge and power come into conflict in the decision-making processes in which public policies and government management are designed and implemented to meet society's demands for access to and quality of sanitation services.

Regarding Production Centers, Miranda (2014) emphasizes the need to provide them with a new legal and administrative framework that enables them to expand their activities in order to reach their maximum capacity to generate resources. In 2003, there were 21 production centers in the university, which have been reduced to 7 production centers registered by the university in 2018. As can be seen, between 2003-2018, there was no stability and continuity in some production centers. By 2022, 13 production centers have been identified, of which 69% (9) are located and dependent on the faculties, and 31% (4) production centers are under the management of the university's senior management. (see Table 1).

The statute outlines that the university will promote the implementation of production centers with economic and administrative

autonomy in each of its five academic areas (UNMSM, 2016, art. 136).

A legal entity created, organized and managed by the UNMSM is called Centers for the Production of Goods and Services. Its purpose is the development of high quality productive and self-financed activities for the university community and the general public, with the aim of obtaining economic resources that complement the budget granted by the Government to UNMSM, so that the university can achieve its objectives (UNMSM, 2022, title VI, section 6.1).

On the other hand, the university establishes that the Dirección General de Unidades Desconcentradas will be responsible for the promotion and development of research and technology transfer in collaboration with the Facultad de Medicina Veterinaria and the Estaciones Experimentales del Instituto de Investigación y Medicina Veterinaria del Altiplano Tropical (IVITA) in Iquitos, Maranganí, Mantaro, Pucallpa, and Huaral provinces (UNMSM, 2023, art. 251).

According to the Statute (UNMSM, 2016) and the Statistical Compendium (UNMSM,

Table 1
UNMSM Production centers as of 2022

No.	Production center	Dependency/Faculties
	Central Administration: 4	31%
1	Printing Production Center	VRIP
2	University Clinic	Rectorate
3	Information Technology Center	Rectorate
4	Resource Capture Center	DGA
	Faculties: 9	69%
1	Service and Investment Project Development Center	Economic Sciences
2	Pharmacy Production Center	Pharmacy and Biochemistry
3	Faculty Accounting Sciences Production Center	Accounting sciences
4	Consulting and Technology Transfer Service	industrial engineering
5	Excellence in Information Technologies Production Center	Systems and Computer Engineering
6	Strategic Solutions for Management Production Center	Administrative Sciences
7	Biology Faculty Production of Goods and Provision of Services Center	Biological Sciences
8	Mathematics Consulting Service	Mathematical Sciences
9	Geological and Environmental Studies Center	Geological, Mining, Metallurgical and Geographic Engineering
	Total: 13	100%

Note. Prepared by the author, 2024.

2019), the university had the following organic units engaged in research (see Table 2).

In conclusion, the approaches described by the cited authors that strengthen quality management are important and fully applicable in the management of public and private universities to improve the quality of their products, services, production processes and research.

Governance

Governance is a topic of current debate in academia. Its conceptualization and application in higher education has been increasingly strengthened from different perspectives by the following authors:

Labraña *et al.* (2023) point out:

Actualmente, la «gobernanza» se ha incluido también en las discusiones sobre la educación superior (Macheridis, 2017). La innovación ha generado dos tendencias distintas entre sí: en [sic] nivel macro, la gobernanza está relacionada con el análisis de la política pública y las definiciones de esta que influyen en la organización del sistema de educación superior. En nivel meso y micro, se relaciona con la estructura, administración y gestión institucional. [Currently, “governance” has also been included in the higher education discussion (Macheridis, 2017). This innovation has generated two distinct trends: at the macro level, governance is related to the public policies analysis and

its definitions that affect the organization of the higher education system. At the meso and micro level, it is related to institutional structure, administration and management]. (p. 517-518)

On the other hand, Zurbriggen (2011) states that as a consequence of reforms in the public sector, governance has gained importance as an academic and political debate topic and it requires a critical evaluation as an agenda proposed for the transformation of regional governments. For this purpose, it is necessary to adopt governance concepts in multilateral bodies. In the same line, Alvarado *et al.* (2017) state that it is crucial that these organisations achieve a new organizational paradigm and change from a closed and rigid management style to a more open style that is resourceful, agile and inclusive, with a greater degree of plurality that allows changes within the globalized work framework.

Within that framework, governance is defined as the art of leading by promoting a harmonious coexistence between government, citizens and the free market. Its aim is to achieve long-term economic, social and institutional development. The course of action and its effects are controlled (Real Academia Española [RAE], 2014). For the United Nations (UN, s.f.), governance refers to all governmental processes, institutions, procedures and practices through which matters affecting society as a whole are decided and regulated. From a human rights point of view, governance refers to the ways in which authorities regulate the

Table 2

Faculties, research centers, research institutes and research units as of 2019

Academic areas	Faculties	Research centers	Research institutes	Research units	Other	Total
Basic sciences	3	0	3	0	0	3
Health Sciences	5	2	13	2	0	14
Engineering	5	0	6	1	0	7
Economic and Management Sciences	3	0	3	0	0	3
Humanities, Legal and Social Sciences	4	2	7	1	0	8
Central Administration	0	1	1	0	5	7
Total	20	5	33	4	5	42

Note. Prepared by the author, 2024.

processes of managing and securing common resources and the realization of human rights. Moyado Estrada (2011) refers to changes in bureaucratic culture and the adoption of new management practices that emphasize results and the quality of services provided to citizens.

Tomassini (1993), Carnegie and Tuck (2010), cited by Valdés-Montecinos and Ganga-Contreras (2021), consider governance as a structure that requires consideration of different aspects of exercising power. The functioning of governance, that is, the way in which authority interacts with the interests of civil society, emerges as a prominent axis.

For Brunner (2011), governance in educational institutions is organized and operates internally from the perspective of government and management, and in terms of their relationships with external organizations and stakeholders, it organizes to ensure that higher education objectives are achieved. Governance applied as a method in successful universities enables them to change their ways of operating and management in order to adapt to changing needs and structural changes in their operating environment. Schmal and Cabrales (2018) relate governance to the management processes that control the behavior of an organization, not only in terms of the division of labor and distribution of authority, but also in terms of the values by which the organization is managed to achieve its purpose.

On the other hand, Ley N° 1412 defines digital governance as “el conjunto de procesos, estructuras, herramientas y normas que nos permiten dirigir, evaluar y supervisar el uso y adopción de las tecnologías digitales en la organización” [the set of processes, structures, tools and standards that allow us to direct, evaluate and supervise the use and adoption of digital technologies in the organization] (Legislative Decree 1412, 2018, art. 3, paragraph 6).

Carnegie and Tuck (2010) propose “un enfoque de gobernanza integrado holístico y relacionado con la misión para el sector universitario público australiano... implica un énfasis integrado en los tres componentes clave de la gobernanza: gobernanza académica, gobernanza empresarial y gobernanza corporativa,

con erudición” [a holistic, mission-related, integrated governance approach for the Australian public university sector... that includes an integrated emphasis on the three key components of governance: academic governance, business governance, and corporate governance, with scholarship] (p. 1). Villalobos Antúnez (2016) points out that when talking about university governance, it does not necessarily refer to the management of the university itself. It also refers to the type of training that students receive during their stay at the institution, among other elements that can constitute a philosophical structure.

Along the same lines, Virgili Lillo *et al.* (2015) addressed student participation in the governance of the Universidad de Concepción, Chile, specifying that this requires the development and assumption of an active position in the undergraduate program. Students are part of the university community as organized actors to “get involved in university” (p.187).

For their part, Fossatti *et al.* (2017) emphasize that:

Una mejor cobertura y formación de calidad para los sectores más pobres en su forma de gobierno, academia y administración; con gobernanza innovadora, creativa, responsable, autónoma que se muestra eficaz ante la sociedad y sector público, con desarrollo de su entorno. [Better coverage and quality training for the poorest sectors in their form of government, academia and administration; with innovative, creative, responsible, autonomous governance that is effective before society and the public sector, with development of its environment]. (p.1)

Maldonado *et al.* (2019) state that from a systemic approach, it associates governance with the government’s ability to define the tasks of higher education institutions and the forms of internal organization to fulfill the assigned role. For his part, Caldera Serrano (2020), after conducting a reflective analysis of the relationship between science and universities from the perspectives of research, education and governance, affirms that the hybridization of knowledge, disciplines and

academic fields is a social and scientific reality that has not yet been developed in academia.

Ganga-Contreras *et al.* (2019) pointed out that “en el entorno en el que operan las universidades coexisten muchos tomadores de decisiones y políticos públicos, la mayoría de los cuales carecen del conocimiento técnico mínimo y de los requisitos necesarios para adquirir la experiencia necesaria” [in the environment in which universities operate, many decision-makers and public politicians coexist, most of whom lack the minimum technical knowledge and the necessary requirements to acquire the necessary experience] (p. 435). This situation according to Ganga *et al.* (2019) requires “especial atención [de] la necesidad de profesionalización de las autoridades universitarias; la formación de directivos universitarios acorde a las exigencias de la realidad, cambios en la cultura organizacional y las competencias en la gestión universitaria” [special attention [to] the need for professionalization of university authorities; the training of university managers according to the demands of reality, changes in organizational culture and competencies in university management] (p.450).

Finally, Brunner (2011) classified university governance systems at the international level; its changing dynamics and evolving trends support the following university governance typologies: bureaucratic, collegial, stakeholder and entrepreneurial. For their part, Carnegie and Tuck (2010) argue that “la gobernanza universitaria es compleja y controvertida, debido al aumento inevitable de los valores comerciales dentro de las universidades públicas, esta contribución propugna una gobernanza integrada, holística y relacionada con la misión del sector universitario público de Australia” (p.1). [university governance is complex and controversial, due to the inevitable increase in commercial values within public universities; this contribution makes the case for integrated, holistic, mission-driven governance of Australia’s public university sector (p.1)]. Rodríguez-Ponce and Rodríguez-Ponce (2019) point out that there is a clearly bureaucratic system of governance, that the management process has a tactical rather than strategic perspective, and that it focuses on

immediate actions rather than long-term predictions. Manrique (2008) mentions that usually the government does not fulfill its primary obligation to generate adequate educational policies towards the economic and social development of the country.

METHODS

An applied, non-experimental quantitative research was carried out, where the data are not manipulated to describe and explain the governance and quality management of the production and research centers of UNMSM. The population considered 20 faculties, 23 production centers, 5 research centers, 33 research institutes, 4 research units, and 221 managers linked to productive activities and research. The sample is made up of the 5 academic areas, 14 faculties, 8 production centers, 3 research centers, 13 research institutes, 2 research units, and 50 managers.

The sample was selected by convenience (non-probabilistic) and included officials, managers and civil servants directly involved with the productive centers and academic research activities of the faculties and academic areas because there are productive centers that have the greatest amount of research published.

To collect data, the survey technique was used and the instrument was the questionnaire with 8 questions that allowed us to address the objective of the research. They were applied to the managers via the Google website with the help of the email directory of UNMSM to send the survey forms and receive their perception on the quality management of the functional dimension in relation to personnel, organization, processes, governance capacity, use of resources, economic and financial management, and the regulatory framework of the production and research centers of the university. Visits were made to the aforementioned organic units to carry out interviews with managers, as well as a review of specialized literature on institutional websites.

Then, the information obtained from specialized journals was analyzed. Regarding the data obtained in the survey, the results were analyzed, tabulated and interpreted including

testing of the hypothesis using the SPSS 23 statistical package.

RESULTS

The following tables describe and analyze the results of the development of the objective: determine to what extent governance influences the improvement of the quality management functional dimension in the production and research centers of UNMSM.

Table 3 shows the opinions of the managers with their respective assessments in relation to personnel, organization, processes, use of resources, and regulations, which corroborate and confirm the objective and/or hypothesis that governance influences the improvement of the quality management functional dimension of the Universidad Nacional Mayor de San Marcos production and research centers.

The main findings determined in the following components are described and explained below:

- Personnel (collaborators).** According to the opinions or responses received from 50 respondents (among officials, directors and civil servants), 54% would improve a lot; 28%, greatly; 16%, at an average level, and 2% would improve a little. In relation to the total number of respondents, the evaluation criteria a lot and greatly represent 82%. Good governance has an influence on improving the development of people linked to the management

and government of production and research centers; collaborators will have the option of having a better quality of life, training in the work they do, economic incentives, and open and democratic participation, protection and respect of their rights in the development of the institutional objectives of the university.

- The internal organization.** The opinions received from 50 respondents (among officials, directors and civil servants) confirm that 54% would improve a lot; 26, greatly; 16%, at an average level, and 4% would improve a little. In relation to the total number of respondents, the evaluation criteria a lot and greatly represent 80%. Therefore, governance influences the improvement of the internal organization of the university's production and research centers. This result has a positive impact on the planning and design actions of the internal organization in accordance with the social reality of the university for the administration of the production and research centers, and also on the most appropriate infrastructure, equipment and people, with a more open and democratic participation in the development of institutional purposes.
- Processes-operations.** According to the opinions received from 50 respondents (among officials, directors and civil servants), the hypothesis is

Table 3

How much would governance improve the functional dimension of personnel, organization, processes, use of resources, and regulations of the production and research centers of UNMSM?

	Staff		Organization		Processes		Use of resources		Normative	
	Answers	%	Answers	%	Answers	%	Answers	%	Answers	%
A little	1	2	2	4	0		3	6	3	6
Average	8	16	8	16	10	20	4	8	9	18
A lot	27	54	27	54	24	48	23	46	21	42
Greatly	14	28	13	26	16	32	20	40	17	34
Total	50	100	50	100	50	100	50	100	50	100

Note. Prepared by the authors, 2024.

confirmed since 48% indicated that it would improve considerably; 32% expressed a lot, and 20%, at an average level. In relation to the total number of respondents, the evaluation criteria a lot and greatly represent 80%. With this in mind, governance will contribute to the improvement of the processes and operations of productive and research actions, simplifying bureaucratic operations and processes, so that they are more flexible and efficient for the operation of the production and research centers of the university. Regarding the use of resources, according to the opinions received from 50 respondents, the hypothesis is confirmed since 46% would improve a lot; 40%, greatly; 8%, at an average level, and 6% state that they would improve a little. In relation to the total number of respondents, the evaluation criteria a lot and greatly represent 86%. In the production process of goods, services and knowledge, infrastructure, workers, public funds, material assets, and others, of the university are used. In this context, governance has influence on the productivity of products and the efficient use of resources assigned to the university's production and research processes to obtain quality products.

In relation to regulations

According to the opinions received from 50 respondents (among officials, directors

and civil servants), 42% would improve a lot; 34%, greatly; 18%, at an average level, and 6%, a little. In relation to the total number of respondents, the evaluation criteria a lot and greatly represent 76%. Therefore, the research hypothesis is confirmed.

Governance has influence on the continuous improvement of the internal directives and regulations of the production centers and research, through an adequate regulatory framework socialized at the level of workers and users for the operation and functioning of these agencies, in accordance with the Statute of the university and the new university act for the administration of its investment projects, budgets, public funds, personnel, infrastructure, equipment, among others.

It is noteworthy that when comparing responses, the assessment criteria between a lot and greatly are relevant and reflect the improvement of quality management of personnel (82%), internal organization (80%), processes and operations (80%), use of resources (86%), and regulatory framework (76%) in relation to the other assessment criteria.

Table 4 shows the need to implement a governance model to improve government or management capacity and economic and financial management. The findings obtained are described and explained below.

Implementation of the governance model

According to the opinions received from 50 respondents (among officials, directors and civil servants), the hypothesis is confirmed

Table 4

Would you agree that the university's senior management implements the governance model for the management of UNMSM?

	Implementation of the governance model		Managerial competence		Economic and financial management	
	Frequency	%	Frequency	%	Frequency	%
A little	1	2	1	2	3	6
Average	8	16	9	18	7	14
A lot	19	38	twenty-one	42	22	44
Greatly	22	44	19	38	18	36
Total	fifty	100	fifty	100	fifty	100

Note . Prepared by the authors, 2024.

since 44% stated a lot; 38%, greatly; 16%, at an average level, and 2%, a little. In relation to the total number of respondents, the evaluation criteria a lot and greatly represent 82%. The majority of the managers surveyed agree that the university's senior management implements the governance model to improve the management of production centers, research centers, research units and research institutes.

It should be noted that adequate governance undoubtedly improves the administration of the university's production and research centers, stimulating changes in its bureaucratic organization towards a more transparent, open, flexible and democratic organization and management in government, management capacity, management decision-making, more appropriate economic and financial management, involving internal and external interest groups.

Management capacity

According to the opinions received from 50 respondents (among officials, directors and civil servants), the hypothesis is confirmed since 42% would improve a lot; 38%, greatly; 18%, at an average level, and 2% would improve a little. In relation to the total number of respondents, the evaluation criteria a lot and greatly represent 80%. Good governance has

an influence on improving the management and administration capacity of productive and research centers, through a focus on university public management and leadership in the exercise of their functions and roles conferred on interested parties, promoting greater participation. open and democratic towards the achievement of institutional results and objectives.

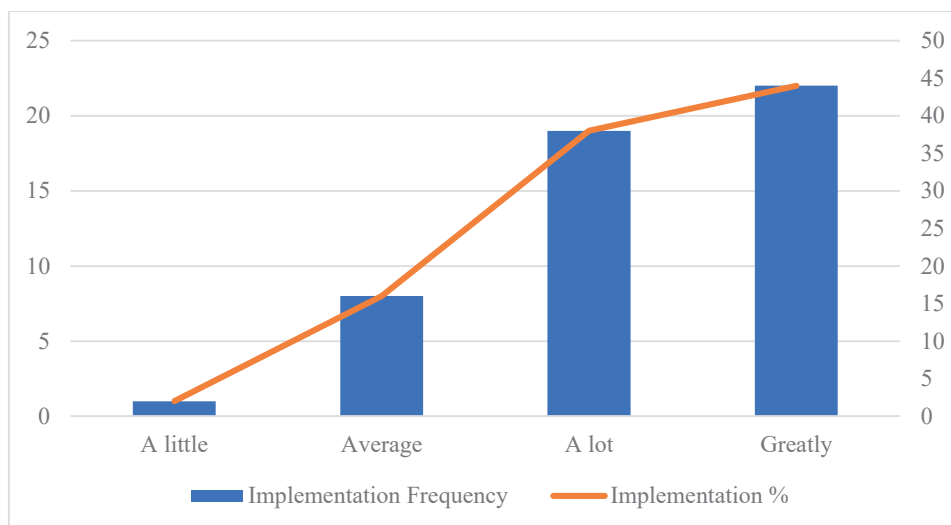
Economic and financial management

According to the opinions received from 50 respondents (among officials, directors and civil servants), the hypothesis is confirmed since 44% believe that they would improve a lot; 36%, greatly; 14%, at an average level, and 6% maintain that they would improve a little. In relation to the total number of respondents, the evaluation criteria a lot and greatly represent 80%. Therefore, governance influences the improvement of the economic and financial management of production and research centers, through appropriate investment projects, budgets and financial availability (funds) to self-finance their activities, which would contribute to the improvement of productive capacity and income collection, as well as obtaining mission results.

In Figure 1, a relevant trend was determined among the opinions of managers in favor

Figure 1

Would you agree that the university's senior management implements the governance model for the management of UNMSM?



Note. Prepared by the authors, 2024.

of the implementation of a governance model to improve the management of the Universidad Nacional Mayor de San Marcos production and research centers, with the assessment criteria being quite representative: a lot with 44%, and greatly, with 38%. In sum, 82% of respondents agree with the implementation of a governance model (see Table 4).

DISCUSSION

In this research, the majority of managers believed that the governance model influences the improvement of the quality management functional dimension in the production and research centers of the academic areas and faculties of UNMSM. This is evidenced by the results of the survey applied, where the assessment criteria a lot and greatly in personal development obtained 82%; internal organization, management capacity, operations and processes, and economic and financial management represent 80%; use of resources, 86%, and internal directives and regulations, 76%. Thus, a moderate positive correlation equal to 0.638 is statistically confirmed between the governance model and the quality management functional dimension, with a normal significance level (0.000). Thus, according to the managers' assessment, the influence of governance on the government and quality management of the UNMSM production and research centers is evident.

The results obtained are related to what was investigated by the United Nations (UN, s.f.) which indicates that governance "hace referencia a todos los procesos de gobierno, instituciones, procedimientos y prácticas mediante los cuales se deciden y regulan los asuntos que atañen al conjunto de la sociedad" [refers to all government processes, institutions, procedures and practices through which matters that concern society are decided and regulated] (pp.1-2). The UN specifies that governance refers to the process by which public institutions direct public affairs, manage common resources and ensure the realization of human rights. Valdés- Montecinos and Ganga-Contreras (2021) mention that "el proceso de toma de decisiones será otra variable a tomar en cuenta, puesto que cada una influirá en la sociedad y en el rumbo de las Instituciones de Educación Superior" [the decision-making process will

be another variable to take into account, since each one will influence society and the direction of Higher Education Institutions] (p. 435). For Brunner (2011), Governance is the way in which an educational institution is organized and operates internally, both from a governmental and administrative perspective and from the perspective of relationships with external organizations and stakeholders, in order to ensure the objectives of higher education. For Schmal and Cabrales (2018), governance is related to the management processes that control the behavior of an organization, not only in terms of the division of labor and the distribution of authority, but also in terms of the values through which the organization is managed to achieve its objective. Rodríguez-Ponce and Rodríguez-Ponce (2019) in their research indicate that there is a clearly bureaucratic government system, and that the management process has a tactical rather than strategic perspective, focused on immediate actions instead of long-term predictions. Fossatti *et al.* (2017) noted that "Los resultados apuntan en dirección a una mejor cobertura y retención del académico de los sectores más pobres y con mayor relevancia y formación de calidad" [The results point in the direction of better coverage and retention of academics from the poorest sectors and with greater relevance and quality training] (p. 1). Ganga-Contreras *et al.* (2019) point out that it is possible to manage in an innovative way based on competencies, transformational leadership, flexibility, permanent contextualization and development of capabilities to produce changes. Zurbriggen (2011) indicates that with public sector reforms, governance has gained importance as a topic of academic and political debate in universities. De la Hoz *et al.* (2012) argue that the use of quality management in organizations results in better products and services, reduced costs, greater customer and employee satisfaction, and improved financial results, all of which increase the competitiveness of an organization. Along the same lines, Alvarado *et al.* (2017) stated that strategic guidelines must be generated for the optimization of academic and administrative processes.

For this reason, the revealed results and coincidences confirm the influence of a governance model in the quality management of

the functional dimension related to personnel, organization, processes, use of resources and management capacity, which can be applied in the productive and research centers, and also in academic and administrative management, governance capacity, leadership, and linkage with the stakeholders of the university's endeavors.

Likewise, it was determined that among the evaluation criteria a lot and greatly, 82% of the managers (among officials, directors and civil servants) stated that they agreed with the implementation of the governance method in the production centers, research centers, research units, and research institutes. Governance influences the improvement of the administration of the productive and research centers of the university, stimulating changes in the bureaucratic organization so that it becomes an intelligent organization, whose actions are more transparent, open, flexible and democratic in government, leadership capacity and managerial decision-making, economic and financial management, involving internal and external stakeholders.

The results found are related and consistent with Moyado Estrada (2011), who mentions changes in the bureaucratic culture and the adoption of new management methods that emphasize the results and quality of the services received by citizens. In their research, Alvarado *et al.* (2017) determined that it is crucial for these organizations to create a new organizational paradigm and change from a closed and rigid management style to a more open, resourceful, agile and inclusive one, with a greater degree of plurality that allows changes in a globalized work. Maldonado Mera *et al.* (2019) point out, from a systems approach, that the term governance refers to the capacity of the government to define the operations of higher education institutions and the forms of internal governance to fulfill this granted role. Manrique (2008) mentions that usually the Government is not fulfilling its primary obligation to generate adequate educational policies for the economic and social development of the country. In this context, organizational innovation is essential through the implementation of the governance model in university government and management,

not only for productive and research activities, but also for the management of academic, administrative and extension processes and social projection towards society, which will improve governance capacity, appropriate decision-making, economic and financial management, and relations with internal and external stakeholders. With this in mind, the results revealed and the coincidences obtained confirm the influence of a governance model in the quality management of the functional dimension.

In relation to the implementation of the governance model, as a future agenda, it is suggested to continue with academic, productive, projection and extension research, and social responsibility of public and private universities in order to consolidate a theory of governance in the universities that are in accordance with the needs and demands of society. For example, a topic of research and discussion is academic management and university governance of public and private universities.

CONCLUSIONS

It is concluded that the governance model influences the improvement of the quality management functional dimension of UNMSM production and research centers. This was corroborated with the opinion of 50 managers among officials, managers and workers, since 82% chose improvements in personal development; 80% chose internal organization, management capacity, operations and processes, and economic and financial management; 86% chose the use of resources, and 76% chose norms and regulations. These results have been statistically corroborated with a moderate positive correlation equal to 0.638 with a p value equal to 0.000.

The implementation of the governance model in university government and management is viable, not only for productive and research activities, but also for the government and management of academic, administrative and extension processes and university social projection to improve the capacity of the government, decision-making, economic and financial management, and relations with internal and external stakeholders.

The results of this research paper are a contribution that will help proper management at UNMSM. Therefore, it is feasible to replicate and new research can emerge to extend the application of governance in the country's universities, to improve the management of their academic, administrative and research activities.

REFERENCES

- Alvarado, P.; Lisandro, J., and Moreno, F. (2017). Gobernanza y gestión de calidad en los centros de investigación universitarios. *Opción*. 33(84), 471-503. <http://www.redalyc.org/articulo.oa?id=31054991017>
- Andía V. (2020). *Manual de gestión pública, pautas para aplicación de los sistemas administrativos*. Novena edición. Ediciones Arte y Pluma.
- Barrios, I. (2015). *Gobernanza Pública: Cartas Iberoamericanas y declaraciones del CLAD*. Centro Latinoamericano de Administración para Desarrollo.
- Bonnin, C. (2017). Principios de administración pública, compilación y estudio introductorio de Omar Guerrero. Fondo de Cultura Económica.
- Bourne. L. (2010). Stakeholder Relationship Management. *Mosaic*. <https://mosaicprojects.com.au/PMKI-TPI-075.php>
- Brunner, J. (2011). Gobernanza universitaria: tipología, dinámicas y tendencias. *Revista de Educación*. (355), 137-157. <https://dialnet.unirioja.es/servlet/articulo?codigo=3638884>
- Caldera Serrano, J. (2020). Propuesta para la fusión de disciplinas científicas en la universidad: Estrategias desde la investigación, la docencia y la gobernanza. *Información, cultura y sociedad: revista del Instituto de Investigaciones Bibliotecológicas*. (43), 69-86. <https://www.redalyc.org/journal/2630/263064570011/html/>
- Cardozo, A. (2007). *Administración empresaria*. Grupo Editorial SRL.
- Carnegie, G., and Tuck, J. (2010). Understanding the ABC of University Governance. *Australian Journal of Public Administration*. (69), 431-441. <https://www.semanticscholar.org/paper/Understanding-the-ABC-of-University-Governance-Carnegie-Tuck/d8ee82216bf9bad02b2969aaceabd74968b597a4>
- De la Hoz, C.; Carrillo, A., and Gómez, B. (2012). Gestión de la calidad y del conocimiento: dos enfoques complementarios. *Ad-minister*. (21), 71-85. <https://www.redalyc.org/pdf/3223/322327351005.pdf>
- Decreto Legislativo N° 1412, Decreto Legislativo que aprueba la Ley de Gobierno Digital. (2018, 13 de setiembre). <https://www.gob.pe/institucion/pcm/normas-legales/289706-1412>
- Fossatti, P.; Ganga, F., and Jung, H. (2017). Reflexiones en torno a la gobernanza universitaria: Una mirada desde Latinoamérica. *Espacios*. 38(35), 1-14. https://www.researchgate.net/publication/359401363_Reflexiones_en_torno_a_la_gobernanza_universitaria_Una_mirada_desde_Latinoamerica.
- Fundación Eca Global (2007). *El auditor de calidad*. Fundación Confemetal.
- Ganga-Contreras, F.; Suárez-Amaya, W.; Calderón, A.; Wandercil da Silva, M., and Jung, H. (2019). Retos a la Gobernanza Universitaria: Acotaciones sobre la Cuestión de la Autoridad y la Profesionalización de la Gestión de las Universidades. *Fronteiras, Journal of Social, Technological and Environmental Science*. 8(3), setiembre-diciembre 2019, 435-456. <http://periodicos.unievangelica.edu.br/index.php/fronteiras/article/view/3723/2701>
- Iso9001calidad.com. (s.f.). Pero ¿qué es gestión de calidad? <http://iso9001calidad.com/que-es-la-gestion-de-la-calidad-23.html>
- Juran. J. (2007). *Método de Juran, análisis y planeación de la calidad*. Quinta edición. Editorial Mc Graw Hill Interamericana.
- Labraña, J.; Rodríguez-Ponce, E., and Pedraja-Rejas, E. (2023). Hacia una Teoría de la Gobernanza de la Educación Superior: Análisis de la literatura especializada. *Revista Mexicana de Investigación Educativa (RMIE)*. 2023, 28(97), pp. 515-533. <https://www.scielo.org.mx/pdf/rmie/v28n97/1405-6666-rmie-28-97-515.pdf>
- Lizarzaburo, E.; Chávez, M.; Barriga, G., and Castro, G. (2018). *Gestión de operaciones y calidad*. Pearson Educación de Perú, S.A.
- Maldonado Mera, B.; Buenaño Cabrera, J., and Benavides Espinoza, K. (2019). Aproximación a un modelo de gobernanza en universidades públicas de la provincia de Pichincha del Ecuador. *Visión de futuro*. 23(2), diciembre 2019. http://www.scielo.org.ar/scielo.php?pid=S1668-87082019000200004&script=sci_arttext
- Manrique, R. (2008). Evaluación de la gestión de los centros de producción y su incidencia en el presupuesto de las universidades públicas en las regiones Huánuco y Pasco (2003-2005). [Tesis

- para obtener el grado de Magíster, Universidad Nacional Mayor de San Marcos]. <https://cybertesis.unmsm.edu.pe/handle/20.500.12672/83>
- Meléndez, M.; Solís P., and Gómez, J. (2010). Gobernanza y gestión de la universidad pública. *Ciencias Sociales*. 16(2), 210-225. http://ve.scielo.org/scielo.php?script=sci_arttext&pid=S1315-95182010000200003&lng=es&tlng=es.
- Miranda, A. (2014). Propuesta de modelo de gestión de los centros de producción de la Universidad Nacional Mayor de San Marcos. *Gestión en el tercer milenio*. 6(12), 1-2. https://sisbib.unmsm.edu.pe/bibvirtualdata/publicaciones/administracion/N12_2003/a02.pdf
- Moyado Estrada, F. (2011). Gobernanza y calidad en la gestión pública. *Estudios Gerenciales*. 27(120), 1-9. Julio/Septiembre 2011. http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0123-59232011000300011
- Naciones Unidas (ONU). (s.f.). Acerca de la buena gobernanza y los derechos humanos. El ACNUDH y la buena gobernanza. <https://www.ohchr.org/es/good-governance/about-good-governance>
- Pastor, O. (2024). Influencia del conocimiento en el diseño y ejecución de las políticas y gestión pública del agua urbana en el Perú. [Tesis para obtener el grado de doctor, Universidad Nacional Mayor de San Marcos]. <https://cybertesis.unmsm.edu.pe/handle/20.500.12672/21396?show=full>
- Ramírez, C. (2012). *Fundamentos de Administración*. Ecoe Ediciones.
- Real Academia Española (RAE). (2014). Gobernanza. En: *Diccionario de la Lengua Española. Edición del Tricentenario*. RAE.
- Rodríguez-Ponce, E., and Rodríguez-Ponce, J. (2019). Gobernanza Universitaria: un estudio de caso desde una Facultad de Educación en Chile. *Utopía y Praxis Latinoamericana*. 24(4)- <https://www.redalyc.org/articulo.oa?id=27961579004>
- Schmal, R., and Cabrales, F. (2018). El desafío de la gobernanza universitaria: el caso chileno. *Revista Ensaio: aval. pol. públ. Educ.* 26(100), 822-848. <https://doi.org/10.1590/S0104-40362018002601309>
- Senge, P. (2009). *La Quinta Disciplina, el arte y la práctica de la organización abierta al aprendizaje*. Ediciones Granica S.A. Argentina.
- Universidad Nacional Mayor de San Marcos (UNMSM). (2016, 07 de junio). Resolución Rectoral N° 03013-R-16, Estatuto de la Universidad Nacional Mayor de San Marcos (UNMSM). https://campusindustrial.unmsm.edu.pe/industrialito/Files/estatuto-unmsm-ANEXO_RR_03013-R-16.pdf
- Universidad Nacional Mayor de San Marcos (UNMSM). (2019). *Compendio estadístico 2019*. Oficina de Estadística e Informática de la Oficina General de Planificación.
- Universidad Nacional Mayor de San Marcos (UNMSM). (2022, 17 de febrero). Resolución Rectoral N° 001779-2022-R/UNMSM, Reglamento General de los Centros de Producción de Bienes y Servicios de la Universidad Nacional Mayor de San Marcos. <https://cdn.www.gob.pe/uploads/document/file/2933733/REGLAMENTO%20CENTROS%20DE%20PRODUCCION%20RESOLUCION%20RECTORAL-001779-2022-R.pdf.pdf>
- Universidad Nacional Mayor de San Marcos (UNMSM). (2023, 15 de setiembre). Resolución Rectoral N° 010508-2023-R/ UNMSM, Reglamento de Organización y Funciones (ROF) de la UNMSM. <https://www.gob.pe/institucion/unmsm/normas-legales/4641606-010508-2023-r-unmsm>
- Valdés-Montecinos, M., and Ganga-Contreras, F. (2021). Gobernanza universitaria: Aproximaciones teóricas de los grupos de interés en Instituciones de Educación Superior. *Revista de Ciencias Sociales*. 27(3), 441-459. <https://doi.org/10.31876/rcs.v27i3.36781>
- Villalobos Antúnez, J. (2016). Bioética y gobernanza universitaria: Un nuevo paradigma para la educación del futuro. *Opción*. 32 (8), 11-13. <https://www.redalyc.org/articulo.oa?id=31048481001>
- Virgili Lillo, M.; Ganga Contreras, F., and Figueroa Aillanir, K. (2015). Gobernanza universitaria o cogobierno: El caso de la Universidad de Concepción de Chile. *Última década*. (42), junio 2015, 187-216. <https://www.scielo.cl/pdf/udecada/v23n42/art09.pdf>
- Zurbriggen, C. (2011). Gobernanza: una mira desde América Latina. *Scielo - Perfiles Latinoamericanos*. 19(38), 39-64. http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S0188-76532011000200002. En:cristinazurbriggen@gmail.com

Conflict of interests

The author has no conflicts of interest to declare.

Author contributions

Elmer Nieves Zanabria Huisa (lead author): formal analysis, research, methodology, writing (original draft, review and editing).