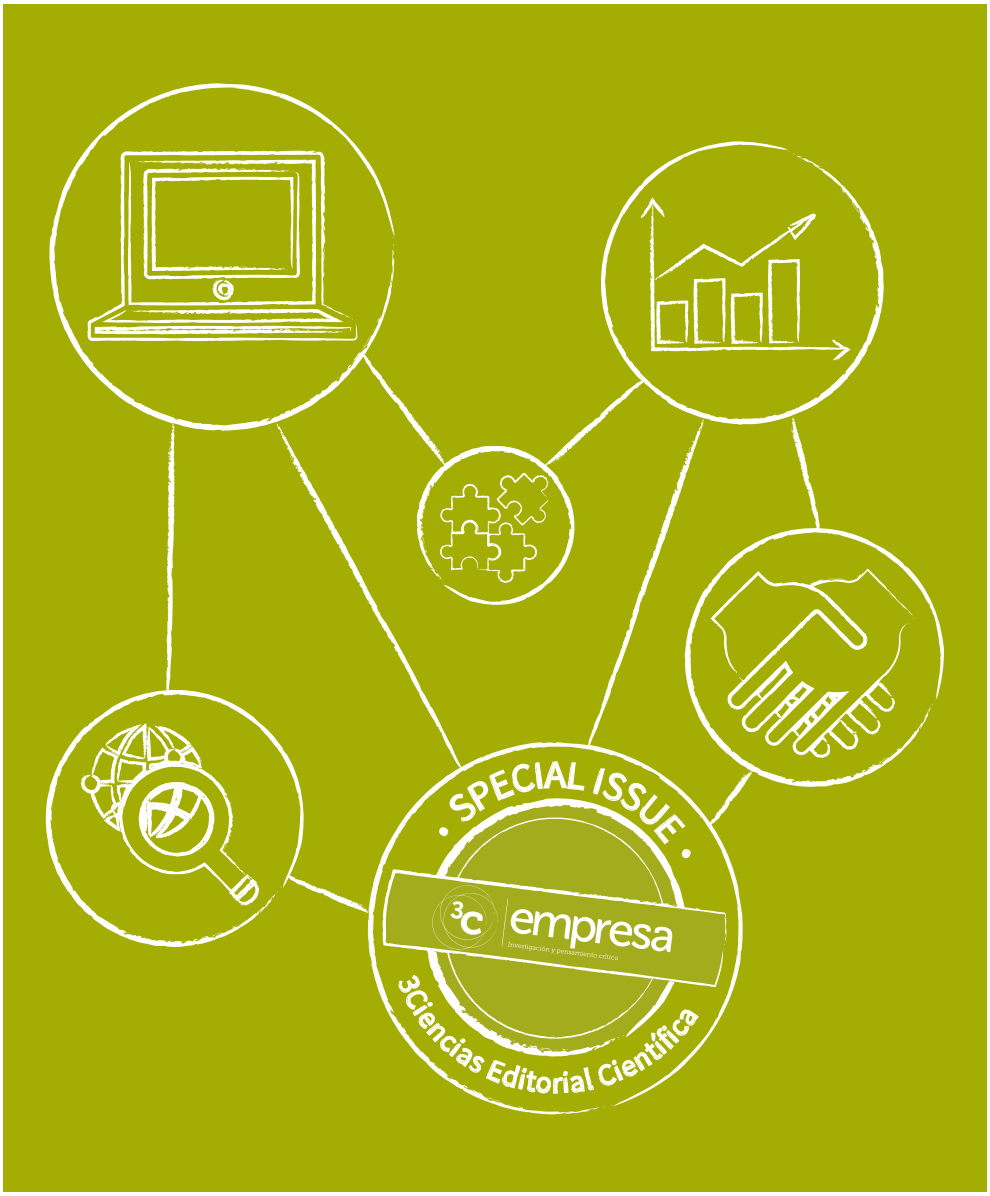
empresa
Investigación y pensamiento crítico

Edición Especial
Enero 2021
Special Issue - January 2021
ISSN: 2254 – 3376

TOURISM AND UNIVERSITY: BACKBONE OF PERUVIAN ECONOMY



3C Empresa. Investigación y pensamiento crítico.

Edición Especial. Enero 2021. *Special Issue. January 2021.*

Tirada nacional e internacional. *National and internacional circulation.*

Artículos revisados por el método de evaluación de pares de doble ciego.
Articles reviewed by the double blind peer evaluation method.

Special issue on "Tourism and University: Backbone of Peruvian Economy"

Guest Editors:

Geetam S. Tomar
Birla Institute of Applied Sciences, Bhimtal, (India).
E-mail: gstomar@ieee.org

Bishwajeet Pandey
Gyancity Research Consultancy, (India).
E-mail: dr.pandey@ieee.org

Ciro Rodriguez Rodriguez
Universidad Nacional Mayor de San Marcos, Lima, (Perú).
E-mail: crodriguezro@unmsm.edu.pe

ISSN: 2254 - 3376
Nº de Depósito Legal: A 268 - 2012
DOI: https://doi.org/10.17993/3cemp.2021.specialissue1

Edita:
Área de Innovación y Desarrollo, S.L.
C/ Alzamora 17, Alcoy, Alicante (España)
Tel: 965030572
info@3ciencias.com _ www.3ciencias.com

https://doi.org/10.17993/3cemp.2021.specialissue1

CONSEJO EDITORIAL EDITORIAL BOARD

CONSEJO DE REDACCIÓN DRAFTING BOARD

CONSEJO ASESOR ADVISORY BOARD

https://doi.org/10.17993/3cemp.2021.specialissue1

CONSEJO EDITORIAL EDITORIAL BOARD

https://doi.org/10.17993/3cemp.2021.specialissue1

POLÍTICA EDITORIAL

OBJETIVO EDITORIAL

La Editorial científica 3Ciencias pretende transmitir a la sociedad ideas y proyectos innovadores, plasmados, o bien en artículos originales sometidos a revisión por expertos, o bien en los libros publicados con la más alta calidad científica y técnica.

COBERTURA TEMÁTICA

3C Empresa es una revista de carácter científico - social, donde se difunden trabajos originales, escritos en español o inglés, para su divulgación con análisis empíricos y teóricos sobre los mercados financieros, liderazgo, recursos humanos, microestructura de mercado, contabilidad pública y gestión empresarial.

NUESTRO PÚBLICO

- Personal investigador.
- Doctorandos.
- Profesores de universidad.
- Oficinas de transferencia de resultados de investigación (OTRI).
- Empresas que desarrollan labor investigadora y quieran publicar alguno de sus estudios.

https://doi.org/10.17993/3cemp.2021.specialissue1

AIMS AND SCOPE

PUBLISHING GOAL

3Ciencias wants to transmit to society innovative projects and ideas. This goal is reached thought the publication of original articles which are subdue to peer review or thorough the publication of scientific books.

TEMATIC COVERAGE

3C Empresa is a scientific - social journal, where original works are spread, written in Spanish and English, for dissemination with empirical and theoretical analyzes on financial markets, leadership, human resources, market microestructure, public accounting and bussines management.

OUR TARGET

- Research staff.
- PhD students.
- Professors.
- Research Results Transfer Office.
- Companies that develop research and want to publish some of their works.

https://doi.org/10.17993/3cemp.2021.specialissue1

NORMAS DE PUBLICACIÓN

3C Empresa es una revista arbitrada que utiliza el sistema de revisión por pares de doble ciego (double-blind peer review), donde expertos externos en la materia sobre la que trata un trabajo lo evalúan, siempre manteniendo el anonimato, tanto de los autores como de los revisores. La revista sigue las normas de publicación de la APA (American Psychological Association) para su indización en las principales bases de datos internacionales.

Cada número de la revista se edita en versión electrónica (e-ISSN: 2254 – 3376), identificándose cada trabajo con su respectivo código DOI (Digital Object Identifier System).

PRESENTACIÓN TRABAJOS

Los artículos se presentarán en tipo de letra Baskerville, cuerpo 11, justificados y sin tabuladores. Han de tener formato Word. La extensión será de no más de 6.000 palabras de texto, incluidas referencias.

Los trabajos deben ser enviados exclusivamente por plataforma de gestión de manuscritos OJS:
https://ojs.3ciencias.com/

Toda la información, así como las plantillas a las que deben ceñirse los trabajos se encuentran en:
https://www.3ciencias.com/normas-de-publicacion/
https://www.3ciencias.com/normas-de-publicacion/plantillas/

https://doi.org/10.17993/3cemp.2021.specialissue1

SUBMISSION GUIDELINES

3C Empresa is an arbitrated journal that uses the double-blind peer review system, where external experts in the field on which a paper deals evaluate it, always maintaining the anonymity of both the authors and of the reviewers. The journal follows the standards of publication of the APA (American Psychological Association) for indexing in the main international databases.

Each issue of the journal is published in electronic version (e-ISSN: 2254-3376), each work being identified with its respective DOI (Digital Object Identifier System) code.

PRESENTATION WORK

The papers will be presented in Baskerville typeface, body 11, justified and without tabs. They must have Word format. The extension will be no more than 6.000 words of text, including references.

Papers must be submitted exclusively by OJS manuscript management platform:
https://ojs.3ciencias.com/

All the information, as well as the templates to which the works must adhere, can be found at:
https://www.3ciencias.com/en/regulations/
https://www.3ciencias.com/en/regulations/templates/

https://doi.org/10.17993/3cemp.2021.specialissue1

ESTRUCTURA

Los trabajos originales tenderán a respetar la siguiente estructura: introducción, métodos, resultados, discusión/conclusiones, notas, agradecimientos y referencias bibliográficas.

Es obligatoria la inclusión de referencias, mientras que notas y agradecimientos son opcionales. Se valorará la correcta citación conforme a la 7.ª edición de las normas APA.

RESPONSABILIDADES ÉTICAS

No se acepta material previamente publicado (deben ser trabajos inéditos). En la lista de autores firmantes deben figurar única y exclusivamente aquellas personas que hayan contribuido intelectualmente (autoría), con un máximo de 4 autores por trabajo. No se aceptan artículos que no cumplan estrictamente las normas.

INFORMACIÓN ESTADÍSTICA SOBRE TASAS DE ACEPTACIÓN E INTERNACIONALIZACIÓN

- Número de trabajos aceptados publicados: 4.
- Nivel de aceptación de manuscritos en este número: 83,34%.
- Nivel de rechazo de manuscritos: 16,66%.
- Internacionalización de autores: 1 país (Perú).

Normas de publicación: https://www.3ciencias.com/normas-de-publicacion/instrucciones/

https://doi.org/10.17993/3cemp.2021.specialissue1

STRUCTURE

The original works will tend to respect the following structure: introduction, methods, results, discussion/conclusions, notes, acknowledgments and bibliographical references.

The inclusion of references is mandatory, while notes and acknowledgments are optional. The correct citation will be assessed according to the 7th edition of the APA standards.

ETHICAL RESPONSIBILITIES

Previously published material is not accepted (they must be unpublished works). The list of signatory authors should include only and exclusively those who have contributed intellectually (authorship), with a maximum of 4 authors per work. Articles that do not strictly comply with the standards are not accepted.

STATISTICAL INFORMATION ON ACCEPTANCE AND INTERNATIONALIZATION FEES

- Number of accepted papers published: 4.
- Level of acceptance of manuscripts in this number: 83,34%.
- Level of rejection of manuscripts: 16,66%.
- Internationalization of authors: 1 country (Perú).

Guidelines for authors: https://www.3ciencias.com/en/regulations/instructions/

https://doi.org/10.17993/3cemp.2021.specialissue1

INDEXACIONES INDEXATIONS

https://doi.org/10.17993/3cemp.2021.specialissue1

INDEXACIONES INDEXATIONS

https://doi.org/10.17993/3cemp.2021.specialissue1

/SUMARIO/
/SUMMARY/

https://doi.org/10.17993/3cemp.2021.specialissue1

https://doi.org/10.17993/3cemp.2021.specialissue1

/01/

https://doi.org/10.17993/3cemp.2021.specialissue1

STRATEGIC MANAGEMENT MODEL TO PROMOTE COMPETITIVENESS IN TOURISM COMPANIES IN CAÑETE

Alex Abelardo Pacheco Pumaleque
Universidad Nacional de Cañete - UNDC, Lima, (Perú).
E-mail: apacheco@undc.edu.pe ORCID: https://orcid.org/0000-0001-9721-0730

Nestor Cuba Carbajal
Universidad Nacional de Cañete - UNDC, Lima, (Perú).
E-mail: ncuba@undc.edu.pe ORCID: https://orcid.org/0000-0002-7767-3751

Miriam Viviana Ñañez Silva
Universidad Nacional de Cañete - UNDC, Lima, (Perú).
E-mail: mnanez@undc.edu.pe ORCID: https://orcid.org/0000-0001-8929-2916

Liz Beni Pacheco Pumaleque
Universidad Nacional Mayor de San Marcos - UNMSM, Lima, (Perú).
E-mail: liz.pacheco@unmsm.edu.pe ORCID: https://orcid.org/0000-0002-4323-1293

Recepción: 07/10/2020 **Aceptación:** 04/12/2020 **Publicación:** 08/01/2021

Citación sugerida Suggested citation
Pacheco, A. A., Cuba, N., Ñañez, M. V., y Pacheco, L. B. (2021). Strategic management model to promote competitiveness in tourism companies in Cañete. *3C Empresa. Investigación y pensamiento crítico. Edición Especial Tourism and University: Backbone of Peruvian Economy*, 17-31. https://doi.org/10.17993/3cemp.2021.specialissue1.17-31

ABSTRACT

Today's tourism environment is increasingly competitive, so strategic management is a fundamental process that every company must implement to evaluate the business, define goals, develop strategies and identify resources for their realization. Due to the pandemic, the tourism sector is facing new challenges to stay in the market. Therefore, we propose a strategic management model to improve the competitiveness of tourism companies. We used the survey technique to collect information regarding the variables strategic management and competitiveness with its dimensions change management, staff training, service quality, differentiation and technology management, which was addressed to 20 managers in the sector resulting in a Cronbach's alpha coefficient of 0.823. The results show that 60% of managers indicate that the change management capacity of their companies is regular. The results show that 60% of managers indicate that the change management capacity of their companies is regular. 55% indicate that the training of tourism personnel is regular, 60% express that the differentiation strategy of their company is bad. These results reflect that Cañete tourism companies must implement strategic management for the development of productive capacities for their organizations, improving competitiveness through new products, services and processes.

KEYWORDS

Strategic Management, Competitiveness, Tourism companies, Model.

https://doi.org/10.17993/3cemp.2021.specialissue1.17-31

1. INTRODUCTION

Strategic management is an essential tool for the analysis and assessment of the company since it allows managers to develop, formulate and evaluate strategies for the optimization of the resources of each area in the company (Eliécer & Herrera, 2011). One must have the ability to interpret information, make decisions to remain in a competitive market and lead the company on the path to success benefiting partners, staff and customers. To make a company grow and succeed requires a long-term vision with goals and objectives that can be achieved over time. Strategic management directs the actions of the company towards success by promoting the necessary changes and overcoming obstacles reflecting the growth of competitiveness and productivity in the company (Stratec, 2019). The tourism sector is affected by constant changes and lack of knowledge about what the future of tourism destinations holds. In order to achieve good management, the competitive position of tourism destinations must be guaranteed in relation to their management and planning (Quintana, 2019). For tourism management, statistical information and economic reports reduce uncertainty and help in decision-making for the proper management of tourism destinations.

Competition among companies that promote tourist attractions in the province of Cañete is constantly increasing, which requires strategic management that includes change management, personnel training, service quality and differentiation, and technological innovation management (Baharudin *et al.*, 2020; Wetli, 2018; Holis *et al.*, 2018; Angel *et al.*, 2016; Tavera, 2017). Without strategic management, opportunities to achieve goals and expand the company are lost, resources are inadequately managed, and processes are not efficient. In this context, there are many challenges for companies in the tourism sector that are trying to achieve better results in their performance and from this perspective this research seeks to propose a strategic management model to promote competitiveness in tourism companies in Cañete, contributing directly as a tool that allows increasing productivity, improving service quality, differentiation and undertaking change management obtaining new products, services and processes.

https://doi.org/10.17993/3cemp.2021.specialissue1.17-31

2. THEORETICAL BASES

The increase in competition between organizations led to the origin of strategic management based on long-term planning, due to the relationship between technological innovation activity and business management that is increasing every day (Fanyoujun, 2019). Strategic management is a continuous process that reviews strategies and develops them in a forward-looking manner, allowing organizations to achieve their objectives, considering their limitations and capacities in the operating environment. Companies use tools to strengthen their internal capacity, improve their competitive performance, meet the requirements of the environment and reflect on the medium and long term future (Gimbert, 2010). In addition, it serves as a support for decision making, and it manages to coordinate and reach consensus on organizational decisions. For organizations, traditional strategic management acquires new characteristics due to the implementation of foresight mechanisms such as change management (Merzlikina & Kozhanova, 2020). Foresight focuses on the importance of strategic vision, which serves as a fundamental part of the vision of the future of the company.

The importance of strategic management in tourism focuses on devoting more attention to the analysis of the environment by formulating strategies that are directly related to the environment. Today's tourism environment is increasingly complex and competitive as most tourism companies are intensifying their promotional efforts aimed at tourists. Nature is the raison d'être of the tourism business and therefore the tourism organization at the national, state and local levels must make estimates about what can happen in the future, adapt to these changes and incorporate the strategic planning process into the structure of their operation (Chon & Olsen, 1990). A sustainable tourism sector must be planned with respect for the quality of life of local people and the carrying capacity of the environment, so that tourism remains a sector with an extraordinary capacity to generate wealth in the medium and long term (Lozano *et al.*, 2019). Otherwise, we would face saturated destinations where part of the local population would reject tourists. Therefore management policies are of great importance since they focus on preserving the environment in conjunction with local values, improving tourism productivity, competitiveness, and performance.

https://doi.org/10.17993/3cemp.2021.specialissue1.17-31

To achieve good strategic management, change management, which are processes and sets of tools to help people and companies achieve the desired objectives, must be considered; it is based largely on the factor of leadership and communication skills. Change management is successful when the organization's objectives are being met through the collaboration of people and successful execution of the program itself (Baharudin *et al.*, 2020). To maintain and be competent in a volatile environment, it is vitally important to develop change management through good leadership and communication.

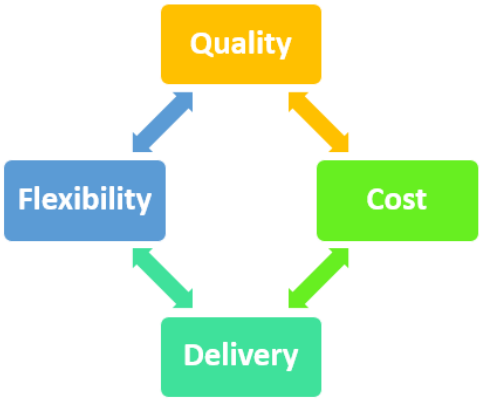
The goal of implementing change is to increase the effectiveness of the organization's performance and evaluate it. Business management must have opportunities to quantitatively assess the benefits of the changes made and staff must be clear about the objectives on which to focus to develop the changes (Merzlikina & Kozhanova, 2020). This implies new technologies and methods that adjust to business performance and market demand by taking advantage of opportunities. Staff training, programs should consider the knowledge required of staff preparing them to provide referral and support services. In addition, training must be continuous and sensitive to staff limitations, roles and responsibilities (Wetli, 2018). This training must be comprehensive in order to prepare staff who do not have complete knowledge to provide general referral assistance, and it must be sensitive to the limitations and needs of workers.

A study in Eastern Siberia states that often workers in tourism enterprises do not have elementary or basic professional education. The East Siberian State Institute of Culture mentions that at present the system of training personnel for the tourism industry must implement educational tourism programs by providing training to tourism personnel in compliance with educational standards. Tourism development is impossible without tour guides, entertainers, artisans and other specialists who contribute to the expansion of the range of culture and education, ethnocultural and environmental tourism programs and itineraries (Perova *et al.*, 2018). It is precisely the implementation of educational tourism programs that defines the priority role of the East Siberian State Institute of Culture in training personnel for tourism, the economy and the management of hotel services in the social and cultural sphere.

https://doi.org/10.17993/3cemp.2021.specialissue1.17-31

Competitiveness is the ability to innovate in order to achieve or maintain a favorable situation and compared to other companies in a number of key sectors; it has positive effects on organizational performance. One study found that performance increases when firms strengthen their competitiveness through improvements in four factors: quality, cost, delivery and flexibility (Holis *et al.*, 2018). The ability to innovate is the most important factor in improving business performance. Sustainable competitiveness must be applied to all businesses; resource-based strategy theory points out the importance of dynamic resource capacity such as flexibility, agility, speed and adaptability to improve business performance and develop competitive advantage in organizations, with innovation being a key factor leading to this advantage (Rauf *et al.*, 2019).

Figure 1. Factors for increasing competitiveness.



Source: (Holis *et al.*, 2018).

Quality of service is the delivery of an excellent good or service in comparison to customer expectations; it is very important nowadays as customers are increasingly more informed due to technology and are more demanding (Idat *et al.*, 2018). Quality of service is increasingly important and is measured from the point of view of customers, their perception of other companies and their expectations before purchasing the good or service. When an organization creates a high quality product, it can improve competitiveness and increase organizational performance both directly and indirectly (Lakhal, 2009). Quality guarantees satisfaction so that clients continue to consume the product or service offered. This is achieved by making an internal diagnosis, training staff, and continuously improving the organizational climate.

https://doi.org/10.17993/3cemp.2021.specialissue1.17-31

Differentiation, the success of a company that implements differentiation is based on developing unique attributes in the product and in the performance of processes, giving a clear focus on service. In order to implement differentiating strategies in the company's value chain, the product must be of high quality, focusing on innovation, exceeding customer expectations and thus improving service (Chirinos & Samaniego, 2016). Successful differentiation means greater process flexibility, improved product performance, optimized engineering design and improved ease of use. One way to differentiate oneself from the competition is to have products or services in the market that meet the needs of each specific client through flexible and rapid responses that offer the capacity for customization that the competition cannot match, in which technological competencies are key factors that the company must incorporate (Angel *et al.*, 2016).

Technology management is the direction and organization of human and economic resources to create new knowledge, generate technical ideas that will enable the company to obtain new products, services and processes. It has three levels: strategic management, technological innovation and technology transfer (Tavera, 2017). Technology management creates, maintains and improves the competitive advantage in organizations from technological foundations.

3. METHOD

The present research study is of a descriptive-correlational type with a transversal design. It is made up of 50 managers from companies in the tourism sector in southern Lima. The sample is made up of 20 managers. As an instrument, a questionnaire was used about the independent variable strategic management model through the indicators that are: change management and personnel training, with a total of 8 questions and the dependent variable competitiveness that contains the indicators: service quality, differentiation and technological management with a total of 12 questions. The scale used is from Likert, validated by expert judgment and the questionnaire is reliable with a Cronbach's alpha coefficient of 0.823.

https://doi.org/10.17993/3cemp.2021.specialissue1.17-31

4. RESULTS

The questionnaire was applied to a total of 20 managers in the tourism sector in Cañete, based on which it was possible to obtain and analyze the following results:

Table 1 shows the results of the change management dimension regarding the strategic management model variable. 60% of the managers surveyed maintain that the capacity to manage change in their companies is regular, and 40% consider it to be good.

Table 1. How do you consider the change management capacity of your company?

Levels	Quantity	Percentage
Very Good	0	0%
Good	8	40%
Regular	12	60%
Bad	0	0%
Deficient	0	0%
Total	20	100%

Source: Own elaboration.

Table 2 shows the answers to the training dimension of the same variable. 55% of managers consider staff training to be regular, 40% say that the level of training is good and 5% very good.

Table 2. How do you consider the training of personnel in tourism?

Levels	Quantity	Percentage
Very Good	1	5%
Good	8	40%
Regular	11	55%
Bad	0	0%
Deficient	0	0%
Total	20	100%

Source: Own elaboration.

Table 3 shows the results of the quality of service dimension of the competitiveness dependent variable. 70% say that the way to provide a better quality of service in tourism enterprises is regulated, 30% say that the way to promote the quality of service is good.

https://doi.org/10.17993/3cemp.2021.specialissue1.17-31

Table 3. How do you evaluate the quality of the tourist service?

Levels	Quantity	Percentage
Very Good	0	0%
Good	6	30%
Regular	14	70%
Bad	0	0%
Deficient	0	0%
Total	20	100%

Source: Own elaboration.

Table 4 expresses the results of the differentiation dimension of the competitiveness variable. 60% consider their company's differentiation strategy to be poor, 30% fair and 10% very good.

Table 4. How do you consider the differentiation strategy in your company?

Levels	Quantity	Percentage
Very Good	2	10%
Good	0	0%
Regular	6	30%
Bad	12	60%
Deficient	0	0%
Total	20	100%

Source: Own elaboration.

Table 5 shows the answers to the technological management dimension of the same variable. 75% of managers consider the implementation of technological management to be poor and 25% maintain that it is regular.

Table 5. How do you consider the implementation of technology management in your company?

Levels	Quantity	Percentage
Very Good	0	0%
Good	0	0%
Regular	5	25%
Bad	15	75%
Deficient	0	0%
Total	20	100%

Source: Own elaboration.

https://doi.org/10.17993/3cemp.2021.specialissue1.17-31

5. PROPOSAL

According to the results of the survey, the following strategic management model is proposed to promote competitiveness in tourism companies that allows us to evaluate the real state of tourism companies in Cañete and then apply the model and achieve ideal results.

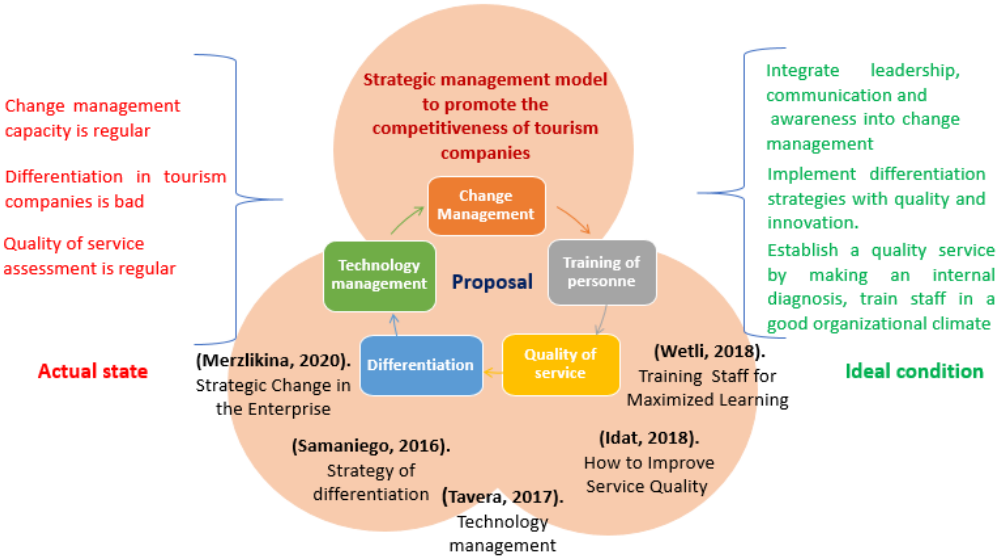


Figure 2. strategic management proposal to promote competitiveness
Source: own elaboration.

6. DISCUSSION

This research proposes the application of a strategic management model to improve the competitiveness of tourism enterprises.

In Table 1, 60% of managers indicate that the change management capacity of their companies is regular. Therefore, for the change management capacity to be successful, the company's objective must be met, which will allow for the improvement of administrative, technical and social performance. This is in line with Baharudin *et al.* (2020) and Merzlikina & Kozhanova (2020) emphasizing that change should increase the effectiveness of the company's performance, change management is of vital importance to maintain and be competent in a volatile environment; leadership, communication and awareness are essential factors in preparing the integrity of change management.

https://doi.org/10.17993/3cemp.2021.specialissue1.17-31

In Table 2, 55% indicate that training of tourism personnel is regular, so the skills, knowledge, attitudes and behaviors of your company's staff should be improved so that they can have new tools and knowledge. This is in line with Wetli (2018) and Perova *et al.* (2018) who consider that training should be comprehensive enough to prepare staff by providing them with general reference assistance and sensitivity to conflicting time constraints.

In Table 3, 70% consider that the quality of the tourism service should be regulated, so due to the demand of the client, strategies should be proposed to improve the quality in order to exceed their expectations. This is in line with Idat *et al.* (2018) and Lakhal (2009) who emphasize that an organization with a high quality product or service will be able to improve competitiveness and increase the performance of organizations both directly and indirectly, guaranteeing satisfaction so that clients continue to consume the product or service offered.

In the Table 4, 60% express that the differentiation strategy of their company is bad, the results show that for tourism companies to implement the differentiation strategy, the value chain has to be of quality, innovative and exceed customer expectations by improving service. Chirinos & Samaniego (2016) and Angel *et al.* (2016) express that the success of a business lies in differentiation by developing exceptional product attributes and performing service-focused processes, successful differentiation means greater process flexibility, improved product performance, optimized engineering design and improved ease of use.

In Table 5, 75% of managers consider the implementation of technology management to be poor. The results indicate that tourism companies have not adopted technology to increase their competitiveness. Tavera (2017) states that technology management is the direction and organization of human and economic resources to create new knowledge, generate technical ideas that will allow the company to obtain new products, services and processes.

https://doi.org/10.17993/3cemp.2021.specialissue1.17-31

REFERENCES

Angel, L. E. A. Del, Maldonado-Radillo, S. E., Martinez-Guaderrama, A. I., Angel, L. E. A. Del, Maldonado-Radillo, S. E., & Martinez-Guaderrama, A. I. (2016). Competitive advantage from resource theory and capabilities, la ventaja competitiva, desde la teoria de recursos y capacidades. *Revista Internacional Administracion & Finanzas*, *9*(1), 69–80. https://econpapers.repec.org/RePEc:ibf:riafin:v:9:y:2016:i:1:p:69-80

Baharudin, I. S., Abdullah, B., Mohd Salleh, N. A., & Shariffudin, P. (2020). A case study on change management readiness for an oil & Gas SME Company in Malaysia. *IOP Conference Series: Materials Science and Engineering*, *834*(1). https://doi.org/10.1088/1757-899X/834/1/012048

Chirinos-Cuadros, C. R., & Rosado-Samaniego, J. F. (2016). Estrategia de diferenciación: el caso de las empresas industriales. *Ingeniería Industrial*, *034*, 165. https://doi.org/10.26439/ing.ind2016.n034.1342

Chon, K. S., & Olsen, M. D. (1990). Applying the strategic management process in the management of tourism organizations. *Tourism Management*, *11*(3), 206–213. https://doi.org/10.1016/0261-5177(90)90043-9

Eliécer, J., & Herrera, P. (2011). *Gestión estratégica organizacional*. https://www.ecoeediciones.com/wp-content/uploads/2017/05/Gestión-estratégica-organizacional-5ta-Edición.pdf

Fanyoujun. (2019). Visualization of the Frontier Evolution of Strategic Management Based on Knowledge Map. *Journal of Physics: Conference Series*, *1314*(1). https://doi.org/10.1088/1742-6596/1314/1/012136

Gimbert, X. (2010). *Pensar estratégicamente: Modelos, conceptos y reflexiones MANAGEMENT*.

Holis, Y. M., Syabri, I., & Prabatmojo, H. (2018). An Examination of Regional Competitiveness: Early Findings from Banten, Indonesia. *IOP Conference Series: Earth and Environmental Science*, *158*(1). https://doi.org/10.1088/1755-1315/158/1/012050

https://doi.org/10.17993/3cemp.2021.specialissue1.17-31

Idat, M., Gina, A. S., & Ardi, M. N. (2018). How to Improve Service Quality in School Counselling Services? *IOP Conference Series: Materials Science and Engineering*, *288*(1). https://doi.org/10.1088/1757-899X/288/1/012083

Lakhal, L. (2009). Impact of quality on competitive advantage and organizational performance. *Journal of the Operational Research Society*, *60*(5), 637–645. https://doi.org/10.1057/palgrave.jors.2602601

Lozano-Oyola, M., Blancas, F. J., González, M., & Caballero, R. (2019). Sustainable tourism tags to reward destination management. *Journal of Environmental Management*, *250*, 109458. https://doi.org/10.1016/j.jenvman.2019.109458

Merzlikina, G. S., & Kozhanova, T. E. (2020). Strategic Change in the Enterprise: Foresight and Management. *IOP Conference Series: Earth and Environmental Science*, *459*(6). https://doi.org/10.1088/1755-1315/459/6/062059

Perova, E. Y., Budaeva, S. B., & Kondrashova, E. V. (2018). From the Experience of Staff Training for Tourism Industry (A Case of the East Siberian State Institute of Culture). *IOP Conference Series: Earth and Environmental Science*, *204*(1). https://doi.org/10.1088/1755-1315/204/1/012037

Quintana, L. (2019). *Gestión del Destino Turístico y su Planificación Estratégica*. Gestiopolis. https://www.gestiopolis.com/gestion-del-destino-turistico-y-su-planificacion-estrategica/

Rauf, A., Kadir, A. R., & Kamariah, N. (2019). The Role of Firm's Unique Resource in Developing Sustainable Competitive Advantage from Strategy Inimitability and its Effect on Firm Performance of Mining Companies in Indonesia. *Journal of Physics: Conference Series*, *1341*(9), 092022. https://doi.org/10.1088/1742-6596/1341/9/092022

Stratec. (2019). *La importancia de la Gestión Estratégica en las empresas*. https://www.stratecsoluciones.com/blog/la-importancia-de-la-gestion-estrategica-en-las-empresas/

Tavera, J. (2017). La gestión de la innovación tecnológica en las empresas. *Pensamiento Crítico*, *21*(2), 145. https://doi.org/10.15381/pc.v21i2.13266

Wetli, A. (2018). Training Temporary Reference Staff for Maximized Learning: A Case Study. *Journal of Academic Librarianship*, *45*(5), 102032. https://doi.org/10.1016/j.acalib.2019.04.009

https://doi.org/10.17993/3cemp.2021.specialissue1.17-31

/02/

https://doi.org/10.17993/3cemp.2021.specialissue1

DIRECTIVE MANAGEMENT AND PEDAGOGICAL INNOVATION MODEL FOR PUBLIC UNIVERSITIES

Miriam Viviana Ñañez Silva
Universidad Nacional de Cañete - UNDC, Lima, (Perú).
E-mail: mnanez@undc.edu.pe ORCID: https://orcid.org/0000-0001-8929-2916

Rosario Blanca Pariona Luque
Universidad Nacional Autónoma de Huanta - UNAH, Ayacucho, (Perú).
E-mail: rpariona@unah.edu.pe ORCID: https://orcid.org/0000-0002-8468-7801

Julio Cesar Quispe Calderón
Universidad Nacional de Cañete - UNDC, Lima, (Perú).
E-mail: jquispe@undc.edu.pe ORCID: https://orcid.org/0000-0003-2352-5670

Hernan Diaz Rengifo
Universidad Nacional San Luis Gonzaga - UNICA, Ica, (Perú).
E-mail: hernan.diaz@unica.edu.pe ORCID: https://orcid.org/0000-0003-1099-1074

Recepción: 09/10/2020 **Aceptación:** 24/11/2020 **Publicación:** 08/01/2021

Citación sugerida Suggested citation
Ñañez, M. V., Pariona, R. B., Quispe, J. C., y Diaz, H. (2021). Directive management and pedagogical innovation model for public universities. *3C Empresa. Investigación y pensamiento crítico. Edición Especial Tourism and University: Backbone of Peruvian Economy,* 33-45. https://doi.org/10.17993/3cemp.2021.specialissue1.33-45

ABSTRACT

To achieve success and achieve quality learning, the integral functioning of the processes of educational institutions must be developed, organized and evaluated, but there is a significant gap where the directive management is out of focus with the fulfillment of objectives and lack of pedagogical innovation in their Teaching and learning processes. Therefore, this research presents a model of directive management and pedagogical innovation for public universities in the Province of Cañete. The research approach is quantitative with a non-experimental, correlational and cross-sectional design, the technique used was the survey which was applied to 20 university professors with respect to the managerial management variable with its indicators promoting pedagogical changes, decision making, teacher communication and the dependent variable pedagogical innovation with its indicators teacher training and technological perspective, with a Cronbach's alpha coefficient of 0.909. The results indicate that 40% of teachers show regular pedagogical changes, 45% indicate that the use of technology is low in their learning session to achieve competencies and 60% express that the benefit of their decisions for their students is regular. These results reflect that the public universities of Cañete must implement a managerial management model and technological innovation to improve educational quality based on institutional development, the fulfillment of objectives, be at the forefront of social progress and favor teaching and learning processes.

KEYWORDS

Directive Management, Pedagogical Innovation, Model, Public Universities, Cañete.

https://doi.org/10.17993/3cemp.2021.specialissue1.33-45

1. INTRODUCTION

In recent years, the demand for teaching directors to be in line with the imposition of globalization generates many problems to be able to manage their institutions, including school violence, advances in society and the increase in technology (Reynoso, 2018). For this reason, teaching directors are in charge of meeting the multiple challenges and demands of society to achieve institutional development. The directive management is of great importance in the educational institutions since it allows to improve collectively from the work in conjunction with the directive teams that must ensure the fulfillment of the mission, vision and objectives of the institution (López, García & Martínez, 2019).

Pedagogical leadership is an essential aspect in directive processes and in the activities that are carried out daily in institutions, in the same way, pedagogical innovation is a process in which situations are transformed in a meaningful, pertinent and deliberate way by other different situations. that are functional, aimed at improving educational quality and equity, adapting to the introduction of new innovative methods (Medina, 2019). Innovation is a process that requires reflection and participation of the directors of the institutions, in which it is defined, built and socially participates. In teaching, innovation serves as a transformation generating knowledge and new technologies; involving changes with new methodologies, teaching techniques to develop knowledge and meaningful learning in students (Mejía, 2018). Said meaningful learning implies the use of strategies, teaching resources and methods, thus achieving institutional development. Innovation in teacher training must be continuous and must point towards the capacities and virtues of teachers so that they perceive the necessary changes in organizations (Martínez & Ibarra, 2017).

Education implies the appropriation and application of changes for them it is necessary to do research that promotes teaching techniques and methodologies developing the knowledge of students. In the province of Cañete, directive management is a complex function since it requires institutional development, the fulfillment of objectives and being at the forefront of social progress. Optimization is required the organization of institutions and enhance their teaching and learning processes (Rodríguez, 2018).

The lack of adequate directive management generates that the institutions do not have a good administration of their resources and therefore the institutional objectives and goals

https://doi.org/10.17993/3cemp.2021.specialissue1.33-45

cannot be met, damaging the teaching and learning of students. Executive management and pedagogical innovation seek to guide the management team to reestablish institutional processes in search of continuous improvement. For this reason, the objective of the research is to propose a model of directive management and pedagogical innovation in public universities of Cañete that improve institutional results, teaching processes through pedagogical changes, decision-making for the benefit of students; For this, the teacher must train constantly and permanently, as well as be at the forefront of technological advances to achieve an education for all.

2. THEORETICAL BASES

2.1. DIRECTIVE MANAGEMENT

Focuses on the strategic direction, the institutional culture, the organizational climate, the relations with the environment and the governance of the educational institution. In this way, the highest authority or rector and the management team organize, develop and evaluate the general operation of the institution. All organizations currently require leadership, which is an essential characteristic for management teams who must combine leadership within their management processes in which competence, skill and attitude serve to develop the ability to direct, motivate and influence the work team, meeting shared goals and continually improving (Miranda, 2016). Directive management in educational organizations implies defining the scope of management and administration based on the understandings, perspectives and experiences of the directive personnel (Reynoso, 2018). In this way, to manage in an educational institution, administrative actions must be carried out, but also train and train the educational team representing its nature and responsibility in society.

2.2. PROMOTION OF PEDAGOGICAL CHANGES

The promotion of pedagogical changes in the direction and organization of the teaching process has made them become transmitters of information to leaders of the same; the teaching authority that imposed inferiority on students has to be changed by the cooperation between students and teachers so that communication skills can be developed with students, interaction and direction of their activities, which improves the role of teacher leader (Miña

https://doi.org/10.17993/3cemp.2021.specialissue1.33-45

et al., 2018). To develop the change in pedagogy, teachers are needed who are prepared and updated with capacities to respond to the demands in their professional performance, who are willing and committed to actively participate in the changes, to achieve their self-improvement and improve educational quality (Aguiar *et al.*, 2016). Management, attitude and teacher training are related to change, new learning styles and pedagogical approaches change the educational mechanism.

2.3. THE DECISION-MAKING PROCESS

Decision-making process in institutions allows defining problems, collecting data, generating alternatives and selecting courses of action (Bustos & Vicuña, 2016). Teachers constantly make decisions to conceive, apply and design assessment instruments in the classroom that improve teaching. Teachers must also make decisions for the benefit of students by creating assessment strategies to improve their academic performance (Gallardo *et al.*, 2012).

For this reason, it is essential that the teacher work to strengthen their evaluation skills specifically in the formative type, which will allow them to closely monitor the student's teaching and learning process, achieving the proposed goals and objectives. Another aspect to achieve good directive management is teacher communication, which is the basis for learning, being a tool that the teacher must handle in order to achieve good relationships with students (Abraham, Donoso & Guzmán, 2017). The relationship between the student and the teacher strengthens the teaching and learning processes; Through dialogue that transmits, transfers and builds knowledge, forming independence, which allows developing the reflective and critical sense, skills and abilities to develop in society (Escobar, 2015).

2.4. PEDAGOGICAL INNOVATION

Refers to a systemic and complex process that helps to reflect and intervene in the learning process of students (González & Cruzat, 2019). This educational innovation promotes pedagogical development so that an educational institution faces the rapid obsolescence of knowledge, constant transformation of society and problems associated with higher university education. Another function of pedagogical innovation is to solve learning problems by seeking new ideas, proposals and contributions to create a change in the context and in teaching practice, being essential for the organizational culture and the

https://doi.org/10.17993/3cemp.2021.specialissue1.33-45

improvement of educational quality (Macanchí, Orozco & Campoverde, 2020); being an alternative of great value to make decisions about educational, pedagogical and didactic changes.

2.5. TEACHER TRAINING

Has to be continuous and permanent so that there is truly a change in society; it is necessary for development and social transformation that require the teacher to be an active agent of learning to transform social reality (Nieva & Orietta, 2016). The permanent training of teachers is understood as an updating process that makes it possible to carry out pedagogical and professional practices in a meaningful, appropriate and pertinent way in social contexts and populations that the teacher serves. Therefore, stimulating professional updating and constant training allows responding to the socioeconomic development of a country and its specific environment (Vergara *et al.*, 2004). Said teacher training must be comprehensive, adopting technology as a tool to teach and generate new knowledge in the student, in addition to training teachers with constructivist, reflective and evaluative practices. Technology in society presents limitations, including technical, security, cultural and economic problems, but this should not limit teacher training that seeks new learning alternatives with technological resources (Hernández, Orrego & Quiñones, 2018).

Another aspect to improve pedagogical innovation is the technological perspective that takes advantage of technology to contribute to the achievement of an education for all. The trend in the use of technology has been aimed at developing models of distance education and incorporating new innovative educational practices in teachers and students; Teachers must have technical knowledge in technology through a positive attitude towards these resources that are necessary for effective learning (Pedraza *et al.*, 2013). Therefore, teachers must develop skills to incorporate these new technologies since the quality of learning and teaching of students is largely related to teacher training. Among the educational changes generated by technology is the use of platforms where classes can be offered to many users, which benefits students who due to their geographical location are far from being able to carry out face-to-face training and those who do not have time and prefer to learn from home in their spare time (Buzón-García, 2005).

https://doi.org/10.17993/3cemp.2021.specialissue1.33-45

3. METHOD

The present research is of a quantitative approach with a non-experimental, correlational and cross-sectional design, it is made up of 100 teachers from public universities in the province of Cañete. The sample consisted of 20 teachers, the instrument used was a questionnaire about the independent variable directive management with the indicators promoting pedagogical changes, decision-making and teacher communication with a total of 12 questions and the dependent variable pedagogical innovation that contains the indicators teacher training and technological perspective with a total of 8 questions. The Likert scale was used, validated by the judgment of experts with a reliable questionnaire with a Cronbach's alpha coefficient of 0.909.

4. RESULTS

The questionnaire was applied to a total of 20 teachers from public universities in Cañete, based on this, the following results could be obtained and analyzed:

Table 1 shows the results of the indicator promoting pedagogical changes regarding the directive management variable, 40% of teachers indicate that the pedagogical changes they carry out are regular, while 35% consider it high and 25% low.

Table 1. Do you make pedagogical changes by putting your personal experience into practice professional?

Levels	Frequency	Percentage
Low	5	25%
Regular	8	40%
High	7	35%
Total	20	100%

Source: own elaboration.

Table 2 indicates the results of the decision-making indicator about the same variable, 60% express that the benefit of their decisions for their students is regular, while 40% indicate that it is high.

Table 2. Do you make decisions for the benefit of your students considering their needs?

Levels	Frequency	Percentage
Low	0	0%
Regular	12	60%

https://doi.org/10.17993/3cemp.2021.specialissue1.33-45

Levels	Frequency	Percentage
High	8	40%
Total	20	100%

Source: own elaboration.

Table 3 indicates the results of the teacher communication indicator on the same variable. 80% indicate that the strengthening of the teaching and learning process thanks to communication is high and 20% consider it regular.

Table 3. Do you consider that teacher communication strengthens the teaching and learning process in students?

Levels	Frequency	Percentage
Low	0	0%
Regular	4	20%
High	16	80%
Total	20	100%

Source: own elaboration.

Table 4 indicates the results of the teacher training indicator on the pedagogical innovation variable. 80% indicate that their participation in updating workshops and trainings is regular and 20% indicate that it is high.

Table 4. Do you participate in the refresher training or workshops proposed by your university?

Levels	Frequency	Percentage
Low	0	0%
Regular	16	80%
High	4	20%
Total	20	100%

Source: own elaboration.

Table 5 indicates the results of the technological perspective indicator on the dependent variable. 45% indicate that the use of technology in their learning session to achieve competencies is low, while 35% consider it regular and 20% high.

Table 5. Do the activities planned in your learning session promote the use of technology to achieve competencies?

Levels	Frequency	Percentage
Low	9	45%
Regular	7	35%
High	4	20%
Total	20	100%

Source: own elaboration.

https://doi.org/10.17993/3cemp.2021.specialissue1.33-45

5. PROPOSAL

Based on the results of the survey, the following model of directive management and pedagogical innovation in public universities is proposed, which helps us to evaluate the current state of the national universities of Cañete and then apply the model and obtain ideal results.

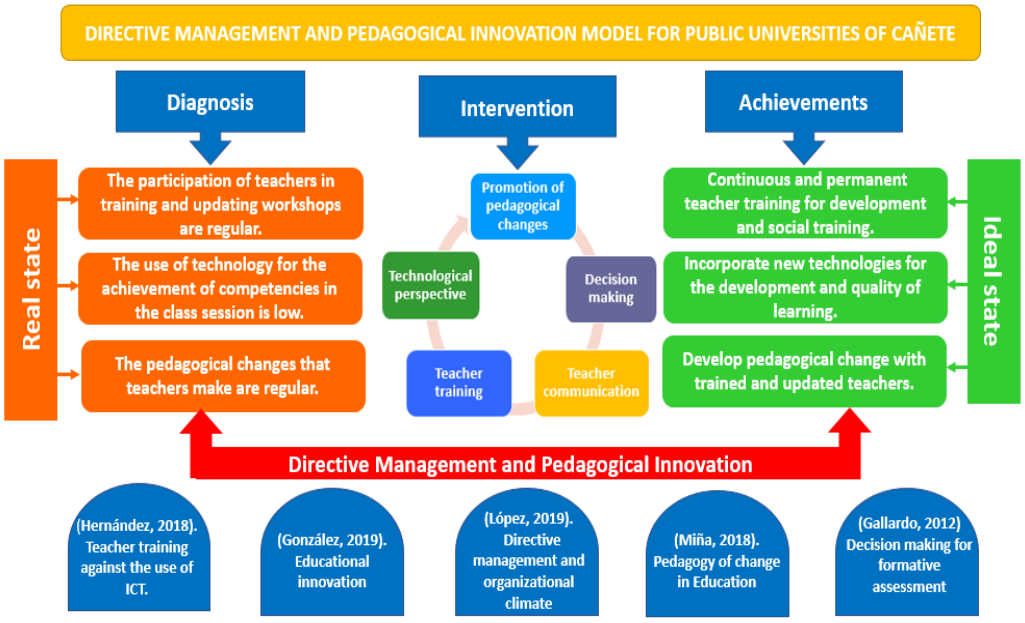


Figure 1: Directive management model and pedagogical innovation.
Source: own elaboration.

6. DISCUSSION

This research proposes the application of a model of directive management and pedagogical innovation in teachers of public universities in Cañete.

In Table 1, 40% of teachers indicate that the pedagogical changes they make are regular, so that the pedagogical change is high, the teacher's attitude must be changed and made into a good leader who develops skills to communicate with their students. This agrees with Miña *et al.* (2018) and Aguiar *et al.* (2016) highlighting that to develop this change in pedagogy, there is a need for trained and updated teachers who can respond to the demands they have

https://doi.org/10.17993/3cemp.2021.specialissue1.33-45

on their professional performance, who are willing and committed to actively participate in the changes seeking to achieve self-improvement and improvement of educational quality.

In Table 2, 60% of teachers express that the benefit of the decisions they make is regular according to the needs of their students, so they must improve the decision-making process by collecting data, generating alternatives and selecting a course of action. This agrees with Bustos and Vicuña (2016) and Gallardo *et al.* (2012) who consider that it is essential for the teacher to work on strengthening their assessment skills, specifically those of a formative nature, which allow a close monitoring of the student's teaching and learning process to achieve the goals and proposed objectives.

In Table 3, 80% of teachers indicate that their participation in updating workshops and training is regular, teacher training must be permanent and continuous so that there can be a change in the way of teaching the teacher and student learning. This agrees with Nieva and Orietta (2016) and Hernández *et al.* (2018) who consider that teacher training has to be continuous and permanent for there to truly be a change in society. Teacher training is necessary for development and social transformation that require a change in which priority is given to the teacher as an active agent of learning transforming society.

In Table 4, 45% of teachers indicate that the use of technology in their learning session for the achievement of competences is low, technology should be used in the training of both the teacher and the student using technological trends in education. Which agrees with Pedraza *et al.* (2013) and Buzón-García (2005) that teachers have to develop skills to incorporate these new technologies since the quality of student learning and teaching is largely related to teacher training.

In Table 5, 80% of teachers indicate that the strengthening of the teaching and learning process thanks to communication is high, the results indicate that teacher communication is the basis for learning and for the achievement of good relationships with the student. This agrees with Abraham *et al.* (2017) and Escobar (2015) who consider that communication in the relationship between the student and the teacher is of great importance to strengthen the teaching and learning processes in students. At the same time, dialogue develops freedom, personality, self-confidence and the expression of thought, forming autonomous people with abilities and skills to function in society.

https://doi.org/10.17993/3cemp.2021.specialissue1.33-45

ACKNOWLEDGMENT

Special thanks to the National University of Cañete, the Research Group on Entrepreneurship and Innovation **C@ñeteLab**, its great professors, valuable students and collaborators for carrying out this scientific article throughout these years of study. Specially to Miss Diana Pamela

REFERENCES

Abraham, M., Donoso, P., & Guzmán, I. (2017). Los Procesos de Cambios en los Saberes Pedagógicos de Alumnas y Alumnos de Pedagogía en Educación Básica. *Paulo Freire*, *1*, 109. https://doi.org/10.25074/07195532.1.534

Aguiar, D., Capuano, A., Diez, M., Foures, C., & Silin, I. (2016). Cambios y permanencias en las prácticas de enseñanza con TIC, Neuquén, Argentina. *Ciencia, Docencia y Tecnología*, *27*(53), 315–341. https://dialnet.unirioja.es/servlet/articulo?codigo=5752772

Bustos, E. S., & Vicuña, S. D. (2016). Decision making and adaptation processes to climate change. *Ambiente e Sociedade*, *19*(4), 215–234. https://doi.org/10.1590/1809-4422ASOCEx0004V1942016

Buzón-García, O. (2005). La incorporación de plataformas virtuales a la enseñanza: una experiencia de formación on-line basada en competencias. *RELATEC: Revista Latinoamericana de Tecnología Educativa*, *4*(1), 77–100. https://dialnet.unirioja.es/servlet/articulo?codigo=1303698

Escobar, M. (2015). Influencia de la interacción alumno-docente en el proceso enseñanza-aprendizaje. *PAAKAT: Revista de Tecnología y Sociedad, 8*(5), 1–8. http://www.udgvirtual.udg.mx/paakat/index.php/paakat/article/view/230/347

Gallardo, E. K., Gil, M. E., Contreras, B., Evelyn, G. H., Lázaro, R. A., & Ocaña, L. (2012). Toma de decisiones para la evaluación formativa: El proceso de planeación y determinación de sus mecanismos. *Sinéctica*, *39*. http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S1665-109X2012000200011

González, C., & Cruzat, M. (2019). Innovación educativa: La experiencia de las carreras pedagógicas en la Universidad de Los Lagos, Chile. *Educación*, *28*(55), 103–122. https://doi.org/10.18800/educacion.201902.005

Hernández, R. M., Orrego, R., & Quiñones, S. (2018). Nuevas formas de aprender: La formación docente frente al uso de las TIC. *Propósitos y Representaciones*, *6*(2), 671. https://doi.org/10.20511/pyr2018.v6n2.248

López, E., García, L. F., & Martínez, J. E. (2019). La gestión directiva como potenciadora de la mejora del clima organizacional y la convivencia en las instituciones de educación media superior. *RIDE Revista Iberoamericana Para La Investigación y El Desarrollo Educativo*, *9*(18), 792–812. https://doi.org/10.23913/ride.v9i18.471

Macanchí, M. L., Orozco, B. M., & Campoverde, M. A. (2020). Innovación educativa, pedagógica y didáctica. Concepciones para la práctica en la educación superior. *Revista Universidad y Sociedad*, *12*(1), 396–403. http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S2218-36202020000100396&lng=es&nrm=iso&tlng=es

Martínez, D. Y., & Ibarra A. R. (2017). La importancia de la innovación en la formación pedagógica. *La Innovación y El Humanismo. Perspectiva Desde y Para La Educación Superior*, *6*(18). http://www.revistacoepesgto.mx/revistacoepes18/la-importancia-de-la-innovacion-en-la-formacion-pedagogica

Medina, Y. (2019). *Las innovaciones pedagógicas y su relación con la vicerrectorado de investigación*. http://repositorio.unfv.edu.pe/bitstream/handle/UNFV/3677/ASTULLA MEDINA YTZIA - MAESTRIA.pdf?sequence=1&isAllowed=y

Mejía, M. (2018). *La importancia de la internacionalización*. Amec. https://innovacioneducativa959245204.wordpress.com/2018/08/14/la-importancia-de-la-innovacion-educativa/

Miña, L., ORelly, D., García, C., Pérez, Z., & Moreno, L. E. (2018). Papel de la Pedagogía del cambio en la Educación de Postgrado. *Revista Médica Electrónica*, *40*(2), 445–453. http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1684-18242018000200019

Miranda, S. (2016). La gestión directiva: un concepto construido desde las comprensiones de los directivos docentes de las escuelas públicas bogotanas. *RIDE Revista Iberoamericana Para La Investigación y El Desarrollo Educativo*, *7*(13). https://doi.org/10.23913/ride.v7i13.245

Nieva, J. A., & Orietta, C. (2016). Una nueva mirada sobre la formación docente. *Revista Universidad y Sociedad*, *8*(4), 14–21. http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S2218-36202016000400002

Pedraza, N., Farías, G., Lavín, J., & Torres, A. (2013). Ict teaching skills in the areas of business and accounting an exploratory study in higher education. *Perfiles Educativos*, *35*(139), 8–24. https://doi.org/10.1016/s0185-2698(13)71806-3

Reynoso, J. (2018). Un diagnóstico de la universidad mexicana en la obra El libro de la universidad imaginada. *RIDE Revista Iberoamericana Para La Investigación y El Desarrollo Educativo*, *9*(18), 952–978. https://doi.org/10.23913/ride.v9i18.485

Rodríguez, E. (2018). El ejercicio de la función directiva en contextos complejos: su profesionalización. *Perspectiva Educacional*, *57*(3), 131–152. https://doi.org/10.4151/07189729-vol.57-iss.3-art.775

Vergara, M., Calvo, G., Franco, M., Garavito, C., Londoño, S., Zapata, F., & Camargo, M. (2004). Las necesidades de formación permanente del docente. *Educación y Educadores*, *7*(7), 79–112. https://www.researchgate.net/publication/28121400_Las_necesidades_de_formacion_permanente_del_docente

/03/

https://doi.org/10.17993/3cemp.2021.specialissue1

DIGITAL TRANSFORMATION MODEL FOR THE DEVELOPMENT OF TOURISM COMPANIES

Alex Abelardo Pacheco Pumaleque
Universidad Nacional de Cañete - UNDC, Lima, (Perú).
E-mail: apacheco@undc.edu.pe ORCID: https://orcid.org/0000-0001-9721-0730

Ivan Robles Fernandez
Universidad Tecnológica del Perú - UTP, Lima, (Perú).
E-mail: c19255@utp.edu.pe ORCID: https://orcid.org/0000-0002-2510-8312

Dany Dorian Isuiza Perez
Universidad Nacional Amazónica de Madre de Dios – UNAMAD, (Perú).
E-mail: disuiza@unamad.edu.pe ORCID: https://orcid.org/0000-0002-6132-088X

Marco Antonio Añaños Bedriñana
Universidad Nacional de Cañete - UNDC, Lima, (Perú).
E-mail: mananos@undc.edu.pe ORCID: https://orcid.org/0000-0002-4737-4443

Recepción: 13/10/2020 **Aceptación:** 14/12/2020 **Publicación:** 08/01/2021

Citación sugerida Suggested citation
Pacheco, A. A., Robles, I., Isuiza, D. D., y Añaños, M. A. (2021). Digital transformation model for the development of tourism companies. *3C Empresa. Investigación y pensamiento crítico. Edición Especial Tourism and University: Backbone of Peruvian Economy,* 47-61. https://doi.org/10.17993/3cemp.2021.specialissue1.47-61

ABSTRACT

The way of consuming information and the way we communicate is evolving thanks to advances in technology, the digital transformation breaks new ground in the tourism sector when communicating its services, offers and messages to customers. One of the challenges facing tourism professionals is understanding technological trends to innovate and reinvent their services towards clients. For which we propose a model to adopt the digital transformation in the development of tourist companies. A questionnaire was carried out with 20 managers from the sector with 95% reliability related to customer management, competition and innovation strategy regarding digital transformation; organizational culture and change management regarding business development. The results show that 45% indicate that they rarely keep a record with updated customer data. 35% indicate that they sometimes evaluate business models to anticipate their competition. 35% rarely use any methodology to develop a business model. This reflects that companies must manage data for later use, invest resources in innovating the business model, and have technological professionals who reinvent business processes.

KEYWORDS

Digital Transformation, Tourism Companies, Development, Model.

https://doi.org/10.17993/3cemp.2021.specialissue1.47-61

1. INTRODUCTION

Today, companies struggle to survive and execute technology to face the new challenges that the market demands, it is related to digital transformation with devising and transforming culture to make changes in processes, customs and the way of acting of companies and persons; it acts as an indispensable tool for survival in the market (Ametic, 2017). Digital transformation helps companies meet multiple and changing consumer needs, focusing on the importance of data analytics and integrating technology across the business, revamping the way they work to deliver value to customers. This transformation should redirect the entire company towards a digital model that is effective in improving the relationship with the customer (Sánchez, 2019).

Companies are changing the way they do business by creating opportunities to have a competitive advantage, they generate a very important activity since they contribute to the growth of GDP, which allows a series of changes linked to economic aspects, including industrialization processes, communications, commerce and means of transport (Vashi, 2018). The tourism sector has a large and diverse offer, the demand in this sector is potential since there are many clients who are served by mediation systems physically but due to the arrival of technology it was radically transformed (Fundación Orange, 2016).

In tourism, in order to be competitive, the company must have differentiation, reputation and online presence in order to create value for the user and exceed their expectations. Digitization in tourism companies is a long and complicated process, it is related to the cost of implementation, to meet customer expectations, some companies use technology to innovate and provide new products, services and provide information on the business model to their clients, other companies use technology to reinvent themselves by improving their processes and the quality of their products, but there is a high level of ignorance and inappropriate use of new technologies such as cloud computing, big data or business intelligence in the tourism sector, all this added to the high costs of technology implementation, the lack of organization and structure within the company means that they are not at the forefront and available to the customer.

https://doi.org/10.17993/3cemp.2021.specialissue1.47-61

For this reason, the objective of this research is to propose a model to adopt digital transformation in the development of tourism companies that allows competition in a changing economic environment and prioritizes a roadmap towards digital transformation.

2. THEORETICAL BASES

2.1. DIGITAL TRANSFORMATION

Companies use new trends in technology such as social networks, mobility, smart devices and improved use of Enterprise Resource Planning ERP to transform processes, customer relationships and the value proposition (Westerman, Bonnet & McAfee, 2014). In this way, organizations improve their performance and reach through digital technology. It is a great cultural and technological change that all companies must implement to meet the needs of Generation Z customers. A real digital transformation is obtained when the company becomes aware of the meaning of digital culture applied to all areas of the company (Peña, 2015). This new management model must be adopted by the people and organizational structures.

For Fenwick *et al.* (2014) all business sectors are obliged to have a change caused by digitization, some will drastically change the business model, leaving the traditional for the modern, which in most cases will be disruptive. A dynamic ecosystem for the organization should be considered, linking the internal and external digital resources of the company as appropriate to promote speed, operational efficiency and achieve a competitive advantage. The advantages of digital transformation make it possible to improve, streamline operations and processes with customers (Sánchez, 2019). Activities such as withdrawing money, depositing money, buying and selling products or services are currently performed virtually, making the economic system quick and easy.

According to a study carried out by Stibo Systems (2016), digitization changes the way of doing business, becoming opportunities to obtain a competitive advantage in this new global digital economy, allowing an organization to be modern, structured and specific that improves the customer experience, increases revenue, fosters a culture of innovation throughout the company, improves internal processes for greater efficiency in the value

https://doi.org/10.17993/3cemp.2021.specialissue1.47-61

chain and deepens data analysis in all areas of the company. In Figure 1, the barriers to digital transformation are shown.

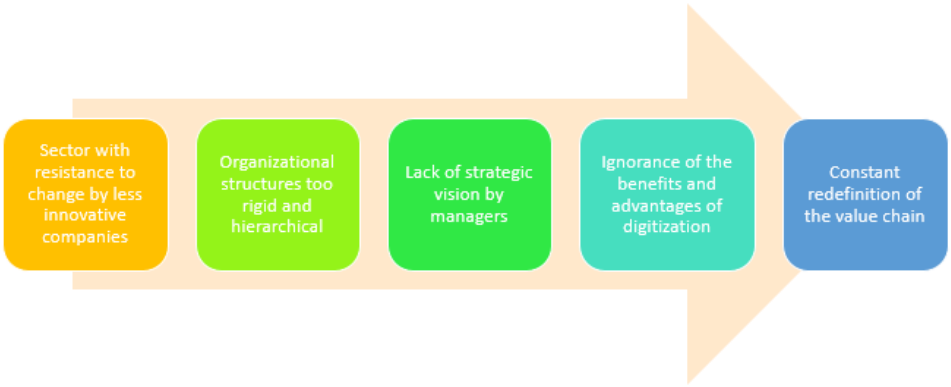


Figure 1. Barriers to digital transformation in companies.
Source: adapted from (Stibo Systems, 2016).

There are information systems for decision-making, from transactional ones that make automatic operational processes saving labor, to strategic ones that provide relevant information that is used in the decision-making process (Bonilla & Briceño, 2014). They are intended to assist top corporate executives with relevant information and the use of visual resources for easy interpretation. With data analysis, the increase in products and smart systems on the market, companies and factories will have a large number of information.

Analyzing these data will allow finding patterns and interdependencies, studying the processes and finding inefficiencies, including future events (Val, 2016; Pop, 2020). Thanks to data analysis, new opportunities will be found, improving efficiency and discovering services for the client, of which they will have more information. Organizational culture represents a strategic option by interfering with the culture that influences teamwork within the company. The values of each person within a company and the different customs make organizational culture fundamental in all organizations (Knein *et al.*, 2020).

The digital culture influences a change of mentality suggesting changes for the good of the company, with new routine customs of organization and leadership, it is essential for this reason that all companies adopt digitization. The organizational culture intervenes in all the internal relations of the company such as coordination, communication, teamwork, conflict management, authority and autonomy (Runtu *et al.*, 2019).

https://doi.org/10.17993/3cemp.2021.specialissue1.47-61

The steps to building a strong organizational culture for companies to be successful are: building committed teams, allowing staff to design the culture, hiring qualified staff aligned to the company culture. Customer management is a growing business method, useful for companies to interact with their current and future consumers (Soltani *et al.*, 2018).

The purpose is to analyze historical information on consumers, focusing on retaining customers and increasing sales to improve the customer-company relationship. The management of the customer experience helps us to order the cultural mentality towards the user experience, they are strategies and organizational capacities to maintain loyalty (Holmlund *et al.*, 2020). It is the response of consumers to the interrelationships with a company before, during and after making the purchase that produces a competitive differentiation.

To start with a change management process, companies must practice dialogue and communication with a leader who has an integrating vision for the effective growth of the work of the staff that promotes innovation and creativity for making good decisions in business (Valderrama, 2013). For an organizational change to be carried out with good results, management must keep in mind the global vision of these aspects: elements for change management, factors of change and phases of change, these phases of organizational change are shown in Figure 2 (Ruiz *et al.*, 2012).

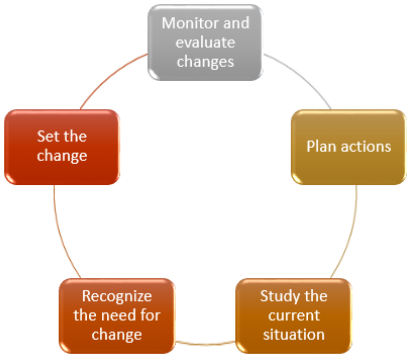


Figure 2. Phases of change.
Source: own elaboration from Ruiz *et al.* (2012).

The ability of a company to offer products and services but also innovative solutions to meet the expectations and needs of the market is competitiveness (Chiavenato, 2011). Today companies seek to be competitive in order to have an advantage over other organizations seeking the same market and resources, in which consumers demand price, quality, respect

https://doi.org/10.17993/3cemp.2021.specialissue1.47-61

for ecology and response time. Competition is the situation in which companies are constantly in disputes to sell more products and services in a market (Medina- Quintero *et al.*, 2011), therefore technology positively influences generating competitive advantage, the influence of competition generates opportunities as it increases the intensity of the demand. Companies must choose the innovation strategy they must apply to succeed in the market or only to survive (Kotler *et al.*, 2010).

The most convenient innovation strategy is adapted to the external and internal environment of the company to improve its profitability. Business innovation improves the organization's activities through changes in business models, products, and marketing processes so that the company is more efficient and positions itself in the market. Innovation depends on various aspects such as the tastes and preferences of customers, the globalization of markets and the arrival of new technologies.

3. METHODOLOGY

To carry out this research, the quasi-experimental type design applied to 20 MYPES in the tourism sector of Cañete was used. The instrument used was a questionnaire on the digital transformation variable with three indicators: clients, competition, innovation with a total of 15 questions and the business development variable with two indicators: organizational culture, change management with a total of 12 questions. The questionnaire was validated by expert judgment and has a 95% reliability. The research work was based on four stages: Evaluation of the MYPE, Evaluation Report, proposal and evaluation of results for continuous improvement as shown in Figure 3.

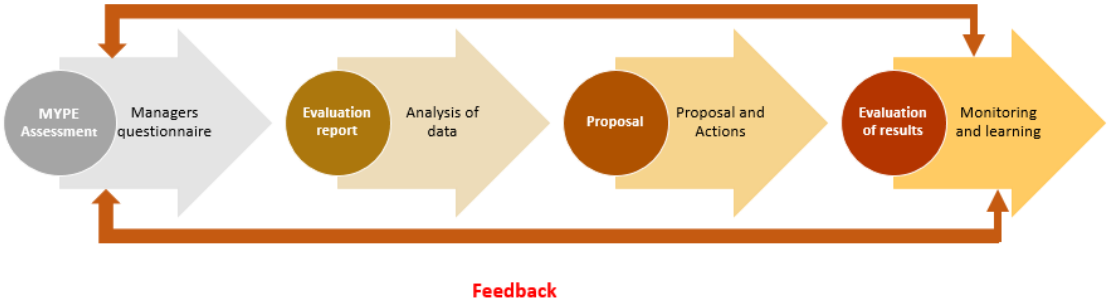


Figure 3. Stages of research development.
Source: own elaboration.

https://doi.org/10.17993/3cemp.2021.specialissue1.47-61

4. RESULTS

The questionnaire was carried out to 20 managers of the tourism sector MYPES in Cañete. In Table 1, the customer management dimension of the digital transformation variable indicates that 45% rarely keep a record with the updated data of their customers, a 25% sometimes keep track, 15% never, 10% often, and 5% always.

Table 1. Do you keep a record with the updated data of your customers?

Levels	Frequency	Percentage
Never	3	15%
Rarely	9	45%
Sometimes	5	25%
Often	2	10%
Always	1	5%
Total	20	100%

Source: Survey of MYPES in the tourism sector.

In Table 2 in the competition dimension of the same variable, 35% indicate that they sometimes evaluate business models to anticipate their competition, 30% rarely, 20% often, 10% never and 5 % forever.

Table 2. Do you periodically evaluate business models to stay ahead of the competition?

Levels	Frequency	Percentage
Never	2	10%
Rarely	6	30%
Sometimes	7	35%
Often	4	20%
Always	1	5%
Total	20	100%

Source: Survey of MYPES in the tourism sector.

In Table 3 in the innovation strategy dimension of the same variable, 35% rarely make use of any methodology to develop a business model, 30% sometimes, 15% always, 10% a often and another 10% never.

https://doi.org/10.17993/3cemp.2021.specialissue1.47-61

Table 3. Do you use any methodology for the development of new business models?

Levels	Frequency	Percentage
Never	2	10%
Rarely	7	35%
Sometimes	6	30%
Often	2	10%
Always	3	15%
Total	20	100%

Source: Survey of MYPES in the tourism sector.

In Table 4 in the organizational culture dimension of the business development variable, 40% express that sometimes the key personnel of the organization have an adequate level of digital knowledge, 35% rarely, 15% often and 10% always.

Table 4. Are ICT used to promote the organizational culture in your company?

Levels	Frequency	Percentage
Never	0	0%
Rarely	7	35%
Sometimes	8	40%
Often	3	15%
Always	2	10%
Total	20	100%

Source: Survey of MYPES in the tourism sector.

In Table 5 change management dimension of the business development variable, 40% indicate that they rarely use technological tools to support change management, 25% sometimes, 15% often, 10% never and 10% always.

Table 5. Do you use technological tools to support change management?

Levels	Frequency	Percentage
Never	2	10%
Rarely	8	40%
Sometimes	5	25%
Often	3	15%
Always	2	10%
Total	20	100%

Source: Survey of MYPES in the tourism sector.

https://doi.org/10.17993/3cemp.2021.specialissue1.47-61

5. PROPOSAL

Based on the results of the survey, the following implementation model for digital transformation is proposed, which helps us to assess the current state of tourism companies, then apply the principles of digital transformation to obtain ideal results.

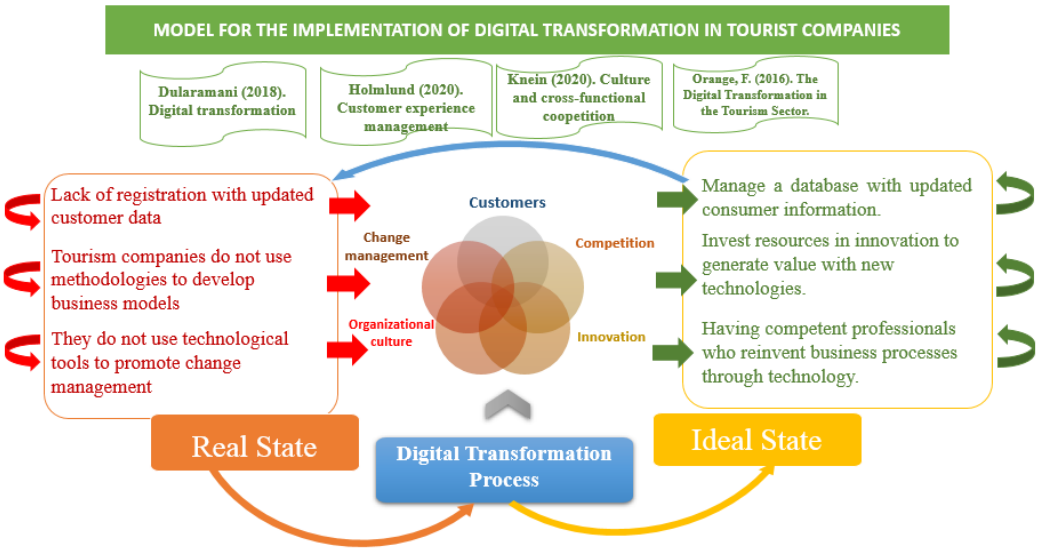


Figure 4. Model for digital transformation.
Source: own elaboration.

6. CONCLUSIONS

This research work proposes the application of a digital transformation model for the development of tourist companies based on instruments and techniques carried out in the field work. In Table 1, 45% of companies in the tourism sector indicate that they rarely keep a record with the updated data of their customers, so they must manage a database that includes demographic and historical information on consumer interests, giving them a higher-level personalization to retain them. This agrees with del Val (2016) and Pop (2020) highlighting the analysis of the data to find patterns and interdependencies, studying the processes and finding inefficiencies to predict future events.

In Table 2, 35% indicates that they sometimes evaluate business models to anticipate the competition. For this reason, tourist MYPES, in order to know what services their clients want, must carry out surveys to analyze the market; make the necessary changes to the

https://doi.org/10.17993/3cemp.2021.specialissue1.47-61

service through pilot tests to obtain customer feedback; develop strategies through a SWOT analysis to reduce potential problems. This agrees with Chiavenato (2011) and Medina-Quintero *et al.* (2011) highlighting that competition is the situation in which companies are constantly in dispute to sell more products and services in a market.

In Table 3, 35% express that they rarely use any methodology for the development of any business model, tourism companies must invest their resources in innovating the business model generating value with new technologies. This agrees with Kotler et al. (2010), expressing that business innovation is an organizational improvement due to changes in the business model, in the organization, in the processes, products and marketing to position itself in the market.

In Table 4, 40% express that ICTs are sometimes used to promote organizational culture, the results show that Cañete tourism companies must improve the management of information technologies to increase cultural productivity and achieve a new level of improvement. This agrees with Knein *et al.* (2020) and Runtu *et al.* (2019), explain that the organizational culture intervenes in all the internal relations of the company such as communication, teamwork, conflict management, authority, autonomy and coordination.

In Table 5, 40% indicate that they rarely use technological tools to support change management, the data shown shows that companies in the Cañete tourism sector must have professionals with skills and competencies to introduce new technologies that they develop and reinvent the business processes. This agrees with Valderrama (2013) and Ruiz *et al.* (2012) express that to start a process of change companies must have a dedicated direction to practice dialogue and communication and must also have a leader who has an integrative vision for the growth of the organization through innovation, creativity and use of technology.

ACKNOWLEDGMENT

Special thanks to the National University of Cañete, the Research Group on Entrepreneurship and Innovation **C@ñeteLab**, its great professors, valuable students and collaborators for carrying out this scientific article throughout these years of study. Specially to Miss DPMT.

https://doi.org/10.17993/3cemp.2021.specialissue1.47-61

REFERENCES

Ametic. (2017). *Transformación Digital: Visión y Propuesta de AMETIC.* https://www.thinktur.org/media/TD-Vision-y-Propuesta.-AMETIC.pdf

Bonilla, L., & Briceño, F. A. (2014). Sistemas de Información como apoyo a la toma de decisiones. *Prospectiva, 4*(1), 53-57. https://www.redalyc.org/pdf/4962/496251107008.pdf

Chiavenato, I. (2011). *Introducción a la Teoria General de la Administración*. https://esmirnasite.files.wordpress.com/2017/07/i-admon-chiavenato.pdf

Fenwick, N., Gill, M., Bernoff, J., Ryckewaert, E., & Wang, N. (2014). *The Future Of Business Is Digital: The Powerful Advantages Of Embracing Dynamic Ecosystems Of Value*. CMO Professionals. https://www.forrester.com/report/The+Future+Of+Business+Is+Digital/-/E-RES115520#

Fundación Orange. (2016). *La Transformación Digital en el Sector Turístico*. http://www.fundacionorange.es/wp-content/uploads/2016/05/eE_La_transformacion_digital_del_sector_turistico.pdf

Holmlund, M., Van Vaerenbergh, Y., Ciuchita, R., Ravald, A., Sarantopoulos, P., Ordenes, F. V., & Zaki, M. (2020). Customer experience management in the age of big data analytics: A strategic framework. *Journal of Business Research*, *116*, 356–365. https://doi.org/10.1016/j.jbusres.2020.01.022

Knein, E., Greven, A., Bendig, D., & Brettel, M. (2020). Culture and cross-functional coopetition: The interplay of organizational and national culture. *Journal of International Management*, *26*(2), 100731. https://doi.org/10.1016/j.intman.2019.100731

Kotler, P., Berger, R., Bickhoff, N., Kotler, P., Berger, R., & Bickhoff, N. (2010). Strategy and Strategic Management: A First Basic Understanding. In *The Quintessence of Strategic Management* (pp. 5–26). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-14544-5_1

https://doi.org/10.17993/3cemp.2021.specialissue1.47-61

Medina-Quintero, J., Garza, M. I. de la, & Giménez, K. P. (2011). Competencia empresarial con el uso de la información y la tecnología. *Investigación Administrativa*, (108). http://www.redalyc.org/articulo.oa?id=456045339001

Peña, J. de la. (2015). *Todo lo que necesitas saber para adaptarte y sobrevivir a un mundo ya digital*. https://www.planetadelibros.com/libros_contenido_extra/31/30114_La_gran_oportunidad.pdf

Pop, L. D. (2020). Digitalization of the System of Data Analysis and Collection in an Automotive Company. *Procedia Manufacturing*, *46*, 238–243. https://doi.org/10.1016/j.promfg.2020.03.035

Ruiz, J., Ruiz, C., Martínez, I., & Peláez, J. J. (2012). *Modelo para la gestión del cambio organizacional en las PYMES*. https://www.upct.es/~economia/PUBLI-INO/MODELO%20PARA%20LA%20GESTION%20DEL%20CAMBIO.pdf

Runtu, T. M., Novieastari, E., & Handayani, H. (2019). How does organizational culture influence care coordination in hospitals? A systematic review. *Enfermeria Clinica*, *29*, 785–802. https://doi.org/10.1016/j.enfcli.2019.04.119

Sánchez, J. (2019). *Transformación e innovación digital*. https://www.incipy.com/ebooks/transformacion-digital.pdf

Soltani, Z., Zareie, B., Milani, F. S., & Navimipour, N. J. (2018). The impact of the customer relationship management on the organization performance. *Journal of High Technology Management Research*, *29*(2), 237–246. https://doi.org/10.1016/j.hitech.2018.10.001

Stibo Systems. (2016). *Los beneficios y desafíos de la transformación digital*. http://cdn2.hubspot.net/hubfs/659257/es_site/resources/white-paper/white-paper_digital-disruption_es.pdf

Val, J. L. del (2016). *Industria 4.0: la transformación digital de la industria*. Coddiinforme. http://coddii.org/wp-content/uploads/2016/10/Informe-CODDII-Industria-4.0.pdf

https://doi.org/10.17993/3cemp.2021.specialissue1.47-61

Valderrama, B. (2013). *Herramientas para la gestión del cambio*. http://www.altacapacidad.com/repositorio/pdf/Herramientas para la gestion del cambio.pdf

Vashi, S. (2018). *La transformación digital en el sector turístico: las redes sociales* [final degree project]. https://repositorio.comillas.edu/xmlui/handle/11531/18598

Westerman, G., Bonnet, D., & McAfee, A. (2014). *The Nine Elements of Digital Transformation.* MITSloan Management Review. https://sloanreview.mit.edu/article/the-nine-elements-of-digital-transformation/

https://doi.org/10.17993/3cemp.2021.specialissue1.47-61

https://doi.org/10.17993/3cemp.2021.specialissue1.47-61

/04/

https://doi.org/10.17993/3cemp.2021.specialissue1

THE UNIFIED ENTERPRISE ARCHITECTURE (AEU) AS A STRATEGIC TOOL ORGANIZATIONAL MODELING FOR THE FUNTIONAL COMPETITIVENESS OF UNIVERSITIES

Oswaldo Alfaro Bernedo
National University Federico Villarreal, (Perú).
E-mail: oalfaro@unfv.edu.pe ORCID: https://orcid.org/0000-0002-9803-5986

Doris Esenarro
National University Federico Villarreal, (Perú).
E-mail: desenarro@unfv.edu.pe ORCID: https://orcid.org/0000-0002-7186-9614

Ciro Rodriguez
National University Mayor de San Marcos, (Perú).
E-mail: crodriguezro@unmsm.edu.pe ORCID: https://orcid.org/0000-0003-2112-1349

Maria René Alfaro
National University Federico Villarreal, (Perú).
E-mail: mralfaro@unfv.edu.pe ORCID: https://orcid.org/0000-0003-4601-6748

Recepción: 21/10/2020 **Aceptación:** 29/12/2020 **Publicación:** 08/01/2021

Citación sugerida Suggested citation
Alfaro, O., Esenarro, D., Rodriguez, C., y Alfaro, M. R. (2021). The Unified Enterprise Architecture (AEU) as a strategic tool organizational modeling for the funtional competitiveness of universities. *3C Empresa. Investigación y pensamiento crítico. Edición Especial Tourism and University: Backbone of Peruvian Economy*, 63-79. https://doi.org/10.17993/3cemp.2021.specialissue1.63-79

ABSTRACT

This research work proposes the design and application of an organizational model based on two very important and well-known precedents: On the one hand, the so-called Enterprise Architecture (EA), as a powerful methodology of business modeling based on Zachaman's Framework and, on the other hand, the Unified Process of Rational (UPR), so that together they achieve a synergistic merger, giving rise to the so-called Unified Enterprise Architecture (UEA), in order to articulate all the perspectives and aspects that are part of the original EA with a third dimension formed by the phases and iterative dynamics of the UPR. In this way, the systemic organizational modeling of universities is very useful; however, its application is valid for all types of organizations. The design of the experimental research of the pre-test and post-test type with a control group is defined, a computer application is developed as a prototype and the empirical test is carried out through direct observation for the control group and simulation for the experimental group; results are evaluated based on the management indicators Efficiency, effectiveness and productivity.

KEYWORDS

Information technologies, Enterprise architecture, Unified Enterprise Architecture, Unified process of Rational, Simulation.

https://doi.org/10.17993/3cemp.2021.specialissue1.63-79

1. INTRODUCTION

The scenarios in which organizations operate are increasingly complex, demanding greater management capacity to achieve or maintain adequate levels of competitiveness. In this regard, there are evident scientific and technological advances aimed at generating new knowledge, management tools and technological tools; however, such efforts are not articulated in a systemic way, achieving isolated results and, in many cases, contributing to increase the existing complexity. Management methods focused on the organized alignment between business plans, information systems plan and information technology plans are still incipient. In this context, the organizations solve in an incomplete and ineffective way the immediate problems that are manifested in their future, but it is still not considered an integral solution of all the agents that are part of the socio-technical system (Reyes, Rodriguez, & Esenarro, 2019).

One of the main manifestations of the deficiencies and restrictions derived from the framework of action indicated for the Peruvian public university system in general and, in the UNFV in particular, is the scarce use of modern management tools supported by information technologies to improve the performance of its business processes. The indicators in which the low performance of such processes becomes tangible are efficiency, effectiveness and productivity. Ultimately, the result of this problematic situation is manifested in the provision of administrative services with a low level of competitiveness, even in the national context. Another cause of the low level of performance of administrative processes is the lack of knowledge of management methodologies and tools supported by information technology, which allow the integration of all the functionality of the organization (Bastidas, Helfert, & Bezbradica, 2018).

Consequently, the objective of this research work is to "establish the degree of influence that the design and application of an organizational model based on the Unified Enterprise Architecture, in the functional competitiveness of universities," understood the Unified Enterprise Architecture as a manifestation of modern business engineering, which aims to integrate all management tools with a coherent technological support, as well as the dynamic and iterative component that gives the third dimension of phases provided by the RUP (Kitsios & Kamariotou, 2019).

https://doi.org/10.17993/3cemp.2021.specialissue1.63-79

To prove that the functional competitiveness of the universities improves as a result of this proposed organizational model, the corresponding hypothesis is formulated in the following terms: "If an organizational model based on the Unified Enterprise Architecture is designed and used, then the functional competitiveness of the universities improves". The related independent and dependent variables for this purpose are Organizational model based on the Unified Enterprise Architecture and the functional competitiveness of the universities, respectively; for each of them, indicators have been identified to which a specific metric is applied. In the case of the dependent variable, the indicators are constituted by efficiency, effectiveness and productivity.

2. METHODOLOGY

The present research is based on the specific scientific method because of the perfection and effectiveness it has achieved [SIE96] and because its development and improvement are closely linked to the development of technology, since the validity of the hypothesis formulated after data collection is tested (Bastidas *et al.*, 2018).

This research method is framed in the typology of field research thesis, that is, the appropriate method for researches in which information has been collected framed by the specific environment in which the study phenomenon is presented. In the realization of these theses, an exclusive research method is used and certain tools are designed to collect information that are only applied in the environment in which the phenomenon of study acts; for the tabulation and analysis of the information obtained, statistical and mathematical methods and techniques are used that help to obtain formal, scientifically proven conclusions. As specific orientations used, we have the deductive method, the inductive method and the experimental method [CAB99] (Huapaya, Rodriguez, & Esenarro, 2020).

Consequently, the thesis follows a proven method of collection, tabulation and analysis of the antecedents that have been obtained and proven to be valid directly in the field in which the research fact has been presented.

2.1. SAMPLE

The sample selected is of the probabilistic type because any transaction corresponding to the business processes involved has the same opportunity to form the control and

https://doi.org/10.17993/3cemp.2021.specialissue1.63-79

experimental group. Likewise, this sample is considered to be of the probabilistic type because the execution of such processes can occur at any time, according to the demand of users or the organization itself when faced with environmental requirements.

2.2. PRESENTATION AND FUNCTIONAL METAMODEL OF THE AEU

The metamodel of the Unified Enterprise Architecture (AEU) is presented in detail; the same that has been conceived and designed on the basis of the Enterprise Architecture, complementing it with the framework of the Rational Unified Process (RUP). Regarding the latter, the so-called disciplines have been ignored, taking into account that the perspectives contained in the Business Architecture cover these disciplines fairly closely; furthermore, they exceed the breadth of scope, since they cover a greater spectrum of conceptualization of the organizational model to be represented. In this way, the constituent phases of the RUP framework have been associated with the Enterprise Architecture framework, maintaining their iterative nature, a fact that gives a perception of a dynamic process to the construction of such a metamodel. Next, in Figure 1, the metamodel of the Unified Enterprise Architecture (AEU) is presented.

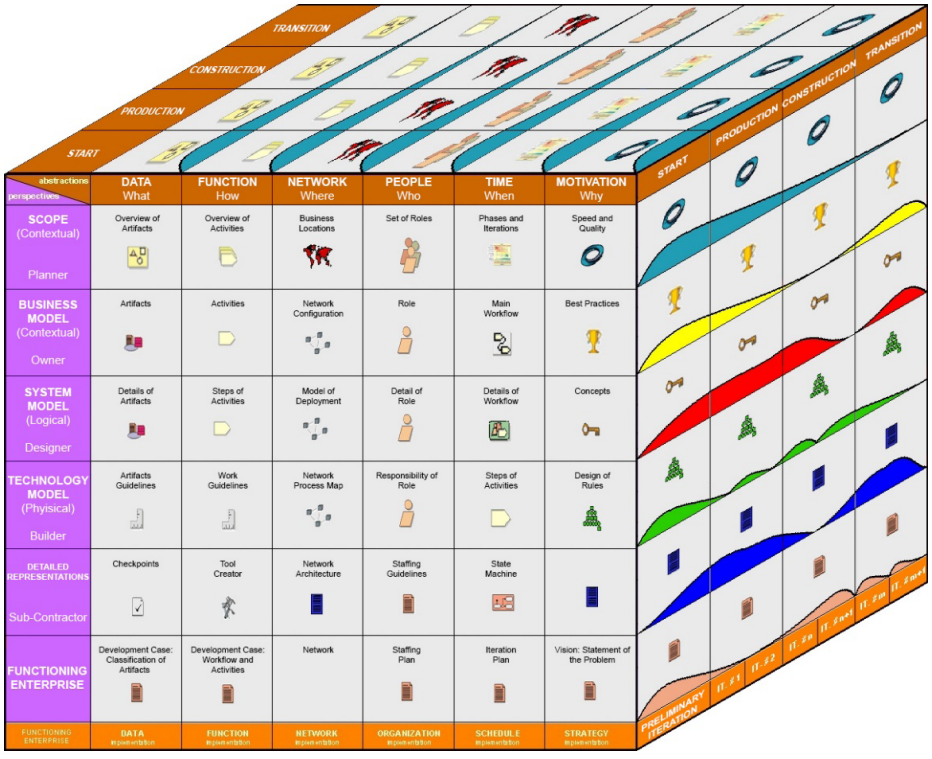


Figure 1. The Unified Enterprise Architecture Metamodel (AEU).

https://doi.org/10.17993/3cemp.2021.specialissue1.63-79

As can be seen Figure 1, the three dimensions of this metamodel constitute it: six Perspectives, six Aspects and four Phases; the iterative component of the model suggests that the artifacts to be built in each cube should be carried out in as many steps as necessary, depending on the combination of the three dimensions. Therefore, this metacube is made up of 144 finished cubes; however, taking into consideration that the corresponding artifacts (models) resulting from each cube require at least two iterations, it is clear the extent of the functional scope and effort required to achieve the full development of this systemic organizational model.

Once the functional metamodel of the AEU has been represented, the next step is to build the corresponding functional model, that is, following the pattern of the perspectives (for each one of them), to elaborate the corresponding use case diagrams, in such a way that the whole functional scope of the Unified Enterprise Architecture is covered at the highest level of abstraction (Reyes *et al.*, 2019).

2.2.1. ITERATED OPERATIONAL PERSPECTIVE – 3D

Figure 2 presents the diagram of business use cases corresponding to the operational perspective, or also called system functionality. This is a view of the system functionality in its operational environment. The business use cases stand out: use data, execute functionality, use the network, implement programming, etc.

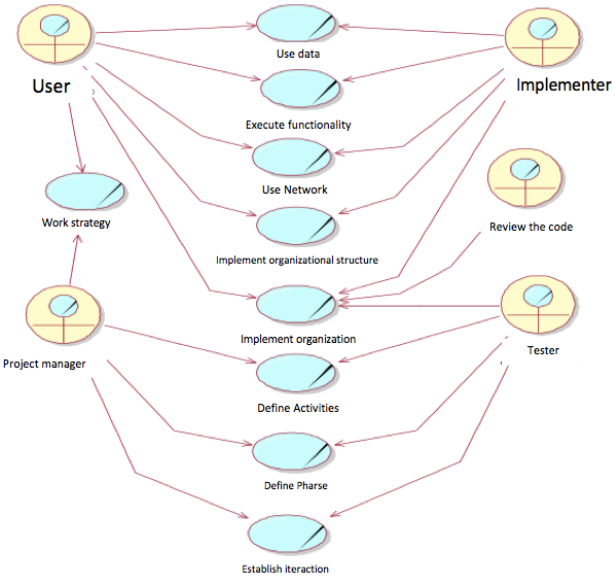


Figure 2. DCU of the Operational perspective Iterada-3D of the AEU.

https://doi.org/10.17993/3cemp.2021.specialissue1.63-79

Regarding the business actors involved in this perspective, as is obvious, it obeys the need to operationalize all the functionality and details of the system; in addition to the project manager, the user, the implementer, the code reviewer and the tester intervene. (Langermeier, Saad, & Bauer, 2014).

2.2.2. AEU METAMODEL LOGIC

As it can be seen, in this metamodel, it is possible to interpret in an abstract way all the possible models, diagrams, artifacts, activities, etc, that can be derived through the corresponding instantiation process. Such a metamodel covers the whole scope of the AEU (Petar *et al.*, 2019).

The purpose of presenting this model is to map in a holistic way the main objects that are derived from the functionality developed in the previous chapters, as well as the relationships, both in the form of associations, aggregations, generalizations, etc., that are established by the interaction between them.

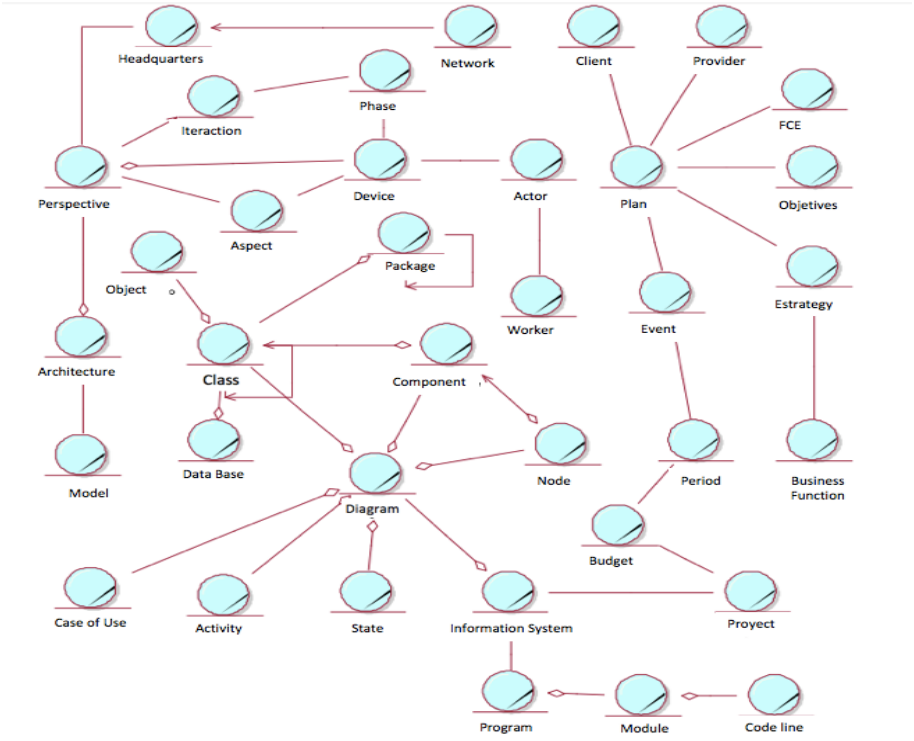


Figure 3. AEU's Logical Metamodel.

https://doi.org/10.17993/3cemp.2021.specialissue1.63-79

In the Figure 3 appear the main artifacts, models, roles, etc., of the AEU metamodel using Zachaman's framework and in RUP.

3. RESULTS

Technically speaking, the experimental test has consisted of applying the performance indicators to randomly selected business processes. First, for the control group, the corresponding metrics were applied through direct observation.

To evaluate the results of the experimental group, an organizational model based on the Unified Enterprise Architecture has been designed. With this tool, it has been possible to integrate all the business processes of an administrative nature, eliminating all the pre-existing deficiencies and redundancies. A fundamental aspect that has been established is the articulation of the functionality of the organization with the strategy, that is, the institutional strategic planning (Huapaya *et al.*, 2020). Under these new organizational conditions, the corresponding metrics have been applied to the same selected business processes; for this purpose, the logical model of each process has been built and then its behavior has been simulated by means of the simulation software called Service Model.

3.1. GROUP CONTROL

Below is the performance of the process of Preparation of Payrolls, one of the most significant processes of university administrative management. For this purpose, we have observed the duration of each of the activities that make up the process, the errors made, as well as the number of people involved in carrying them out.

3.1.1. FOR THE EFFICIENCY INDICATOR

The appropriate index to evaluate the performance of the efficiency indicator is the metric referred to the response time to transactions. In this specific case, it is the duration (in equivalent days) of the execution of the selected processes.

https://doi.org/10.17993/3cemp.2021.specialissue1.63-79

Table 1. Efficiency in the execution of processes.

N°	PROCESS	DURATION (days)		EFFICIENCY
		OBSERVED	EXPECTED	(%)
1	Training Staff	85	45	52.94
2	Staff Attendance Control	16	8	50.00
3	Assessing Staff Performance	20	9	45.00
4	Service Time Recognition	45	20	44.44
5	Select Staff	20	10	50.00
6	Make payments	15	8	53.33
7	Granting Benefits	35	17	48.57
8	Issuance of Bonus Certificate	21	11	52.38
9	Elaborate Consolidated Remuneration	12	6	50.00
10	Granting refunds	30	13	43.33
11	Update Staffing Pattern	12	6	50.00
12	Issue work certificates	10	5	50.00
13	Elaborate Payroll	14	8	57.14

Average (%) = 49.78
Std. deviation = 3.85
N´= 9.6

As shown in Table 1, the control group is made up of 13 randomly selected processes, which have been measured for the observed duration and the expected duration for the current conditions, i.e. without the application of the IT model based on the enterprise architecture. From the relationship between these two durations, the efficiency of each process has been calculated.

In this regard, the values range between 43.33% and 57.14%, resulting in an average of 49.78% that reveals a low system performance. Applying the formula to determine the size of the representative sample, it is established that the number of processes selected for this group is greater (13) than the number required in statistical terms (10).

https://doi.org/10.17993/3cemp.2021.specialissue1.63-79

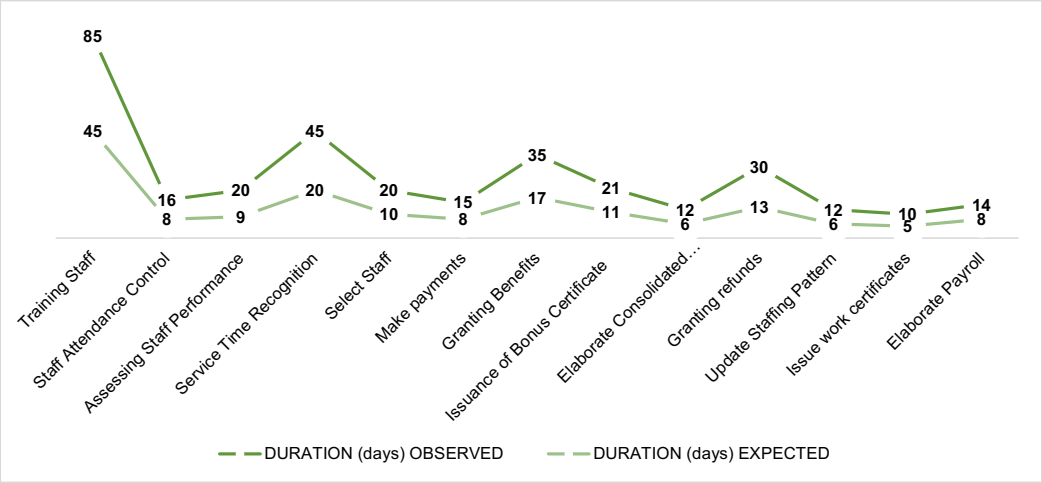


Figure 4. The trend of the results of what is observed and what is expected.

In the Figure 4 show results adequately represent the behavior of the rest of the processes with the observed and expected.

3.1.2. FOR THE PRODUCTIVITY INDICATOR

The appropriate index to evaluate the performance of the productivity indicator is the metric referred to the degree of utilization of one of the main resources in the performance of the system's processes, that is, human resources (expressed in the number of transactions carried out per equivalent person-day). In this specific case, for the execution of the processes involved (considering the number of transactions), the number of people involved has been identified, as well as the degree of participation. In this way, the relationship between the number of person-days and the number of transactions carried out by each process is determined.

Table 2 shows the total number of transactions produced for each process. These are the same as those used to evaluate the effectiveness indicator; in terms of the number of people and the degree of participation in carrying out the processes, these have been extracted from the current staff allocation.

https://doi.org/10.17993/3cemp.2021.specialissue1.63-79

Table 2. Human Resource Productivity for the Control Group.

N°	PROCESS	PRODUCTION	RESOURCES USED			PRODUCTIVITY
		N of transact.	People	Participation	People-days	Transac/ People-days
1	Training Staff	200	4	20%	68	0.7
2	Staff Attendance Control	800	5	40%	120	6.7
3	Assessing Staff Performance	50	3	30%	27	1.9
4	Service Time Recognition	20	2	50%	15	1.3
5	Select Staff	20	2	25%	10	2
6	Make payments	200	6	30%	27	7.4
7	Granting Benefits	30	2	20%	14	2.1
8	Issuance of Bonus Certificate	25	2	60%	25.2	1
9	Elaborate Consolidated Remuneration	20	2	20%	4.8	4.2
10	Granting refunds	40	3	40%	18	44.4
11	Update Staffing Pattern	60	2	40%	11.2	5.4
12	Issue work certificates	50	2	40%	48	1
13	Elaborate Payroll	550	8	50%	56	9.8

Average (%) = 64.8

Std. deviation = 11.69

However, these processes are different in nature, size, frequency, volume and resource requirements; however, in order to evaluate the performance of human resources, it is pertinent to calculate the average productivity of this resource.

Table 2 shows a high variability in personnel productivity, ranging from 0.7 to 44.4 transactions/day_person. The average staff productivity for the system is 6.8 transactions/ day-person.

3.2. GROUP CONTROL

For the experimental group, the same procedure applied for the control group has been followed; after having designed the IT model based on the business architecture, the

https://doi.org/10.17993/3cemp.2021.specialissue1.63-79

duration of each of the activities that make up the payroll process, the errors made, as well as the number of people involved in carrying them out have been observed.

3.2.1. FOR THE EFFICIENCY INDICATOR

As for the control group, for the experimental group the appropriate index to evaluate the behavior of the efficiency indicator is the metric referred to the response time to transactions. In this specific case, it is the duration (in equivalent days) of the execution of the selected processes after having applied the enterprise architecture supported by information technology (Ubalde *et al.*, 2020).

The behavior of the selected processes has been simulated (prior modeling). For the purposes of the analysis, the existing gap between the simulated duration and the expected duration under the new conditions has been determined.

Table 3. Efficiency in the execution of the processes Experimental Group.

N°	PROCESS	DURATION (days)		EFFICIENCY
		THEORICAL	SIMULATED	(%)
1	Training Staff	7	6	85.71
2	Staff Attendance Control	5	5	100
3	Assessing Staff Performance	10	8	80
4	Service Time Recognition	7	6	85.71
5	Select Staff	7	6	85.71
6	Make payments	8	7	87.50
7	Granting Benefits	9	8	88.89
8	Issuance of Bonus Certificate	8	7	87.50
9	Elaborate Consolidated Remuneration	6	5	83.33
10	Granting refunds	6	5	83.33
11	Update Staffing Pattern	2	2	100
12	Issue work certificates	15	14	93.33
13	Elaborate Payroll	3.104	3.1	99.87

Average (%) = 89.30
Std. deviation = 6.83
N´= 10

As shown in Table 3, the experimental group also consists of 13 randomly selected processes, for which the duration under the conditions of functional redesign, derived from the application of Enterprise Architecture, has been simulated. Likewise, the theoretical

https://doi.org/10.17993/3cemp.2021.specialissue1.63-79

duration resulting from the assumption of zero interruptions of these processes has been determined. From the relationship between these two durations, the efficiency of each process has been calculated. In this regard, the values range between 80% and 100%, resulting in an average of 89.30% that reveals a high performance of the system. Applying the formula for determining the size of the representative sample, it is established that the number of processes selected for this group is greater (13) than the number required in statistical terms (10), which is why these results adequately represent the behavior of the rest of the system's processes.

3.2.2. FOR THE PRODUCTIVITY INDICATOR

The appropriate index to evaluate the performance of the productivity indicator is the metric referred to the degree of utilization of one of the main resources in the performance of the system's processes, that is, human resources (expressed in Number of transactions carried out per equivalent person-day). In this specific case, for the execution of the processes involved (considering the number of transactions), the number of people involved has been identified, as well as the degree of participation. In this way, the relationship between the number of person-days and the number of transactions carried out by each process is determined (Pourzolfaghar, Bastidas, & Helfert, 2019).

Table 4 shows information on the total number of transactions produced for each process, in terms of the number of people involved and the degree of participation in the processes. These have been recalculated based on the impact caused by the functional redesign based on the business architecture supported by information technology.

Table 4. Human resource productivity for the Experimental Group.

N°	PROCESS	PRODUCTION	RESOURCES USED			PRODUCTIVITY
		N of transact.	People	Participation	People-days	Transac/ People-days
1	Training Staff	48	2	50%	17	2.82
2	Staff Attendance Control	800	2	40%	12	66.67
3	Assessing Staff Performance	50	2	30%	6	8.33
4	Service Time Recognition	20	1	50%	3.5	5.71
5	Select Staff	20	2	25%	3.5	5.71

https://doi.org/10.17993/3cemp.2021.specialissue1.63-79

N°	PROCESS	PRODUCTION	RESOURCES USED			PRODUCTIVITY
		N of transact.	People	Participation	People-days	Transac/ People-days
6	Make payments	200	3	30%	7.2	27.78
7	Granting Benefits	30	2	20%	3.6	8.33
8	Issuance of Bonus Certificate	25	1	60%	4.8	5.21
9	Elaborate Consolidated Remuneration	20	2	20%	2.4	8.33
10	Granting refunds	40	2	80%	9.6	83.33
11	Update Staffing Pattern	60	1	40%	2.8	21.43
12	Issue work certificates	50	1	40%	6	8.33
13	Elaborate Payroll	550	3	40%	3.7248	147.66

Std. deviation = 43.32

However, these processes are different in nature, size, frequency, volume and resource requirements; however, in order to evaluate the performance of human resources, it is pertinent to calculate the average productivity of this resource.

Table 4 shows a high variability in personnel productivity, ranging from 2.82 to 147.66 transactions/day_person. The average staff productivity for the system is 30.74 transactions/ day-person.

4. CONCLUSIONS

Peruvian universities operate in adverse conditions caused by budgetary limitations, a situation that is evident in low levels of performance, both in the academic and administrative aspects, despite having potentially competitive human resources. One of the main repercussions of these budgetary restrictions is the deficient management of one of the critical success factors, which is information technology in its role as a strategic tool for organizational management. Likewise, an evidence of the deficient handling of the information technology is translated in the nonexistence of some coherent organizational model, that is aligned to the institutional objectives (Massana *et al.*, 2017).

The organizational model based on the Unified Enterprise Architecture (AEU) proposed

https://doi.org/10.17993/3cemp.2021.specialissue1.63-79

at the prototype level constitutes a valuable alternative for improving the functional competitiveness of the universities that apply it, since it allows such management to harmonize in a systemic manner the business logic with the technical language. AEU is a powerful tool to support the management of organizations. This methodology, when applied in an appropriate way, contributes to improve the performance of the same; on the other hand, it is a valuable support to optimize the performance of the business processes (Yin, 2017).

In relation to the studied reality, the tests carried out have demonstrated that the Unified Enterprise Architecture is an adequate methodology to achieve the objectives set out in this research work, that is, to design a holistic organizational model to influence the administrative and academic functionality of universities. It has been demonstrated that, to complement in a synergic way the capacity and scope of the Zachman framework as an Enterprise Architecture platform, it is possible to apply the Unified Process methodology (UPM). In this way, a valuable combination of object-oriented technology and the systemic approach to organizational management is achieved (Singh, Van Sinderen, & Wieringa, 2017).

In summary, it is stated that the Unified Enterprise Architecture contributes to improving the functional competitiveness of universities and, in general, to the administrative management of all institutions that apply it. This work has confirmed once again that information technologies, when used with rationality criteria, play a leading role in consistently supporting business plans, becoming one of the main critical factors of success and competitiveness of organizations (Reyes *et al.,* 2019).

REFERENCES

Bastidas, V., Helfert, M., & Bezbradica, M. (2018). A requirements framework for the design of smart city reference architectures. In *Proceedings of the 51st Hawaii International Conference on System Sciences (HICCS).* http://mural.maynoothuniversity.ie/13344/1/MH_school%20of%20business_a%20requirements.pdf

https://doi.org/10.17993/3cemp.2021.specialissue1.63-79

Denicolai, S., & Previtali, P. (2020) Precision Medicine: Implications for value chains and business models in life sciences. *Technological Forecasting and Social Change, 151,* 119767. https://doi.org/10.1016/j.techfore.2019.119767

Huapaya, H. D., Rodriguez, C., & Esenarro, D. (2020). Comparative analysis of supervised machine learning algorithms for heart disease detection. *3C Tecnología. Glosas de innovación aplicadas a la pyme. Edición Especial Tourism and University: Backbone of Peruvian Economy , Abril 2020,* 233-247. http://doi.org/10.17993/3ctecno.2020.specialissue5.233-247

Kitsios, F., & Kamariotou, M. (2019). Business strategy modelling based on enterprise architecture: a state of the art review. *Business Process Management Journal, 25*, 606-624. https://doi.org/10.1108/BPMJ-05-2017-0122

Langermeier, M., Saad, C., & Bauer, B. (2014). A Unified Framework for Enterprise Architecture Analysis. In *Proceedings - IEEE International Enterprise Distributed Object Computing Workshop, EDOCW.* 227-236. https://doi.org/10.1109/EDOCW.2014.42

Massana, J., Pous, C., Burgas, L., Melendez, J., & Colomer, J. (2017). Identifying services for short-term load forecasting using data driven models in a Smart City platform. *Sustainable Cities and Society, 28*, 108–117. https://doi.org/10.1016/j.scs.2016.09.001

Petar, S., Misita, M., Zoran, J., Mladen, M., Vasilije, M., & Vladimir, B. (2019). Organizational design based on simulation modeling. *The International Journal of Advanced Manufacturing Technology, 104.* https://doi.org/10.1007/s00170-017-1453-0

Pourzolfaghar, Z., Bastidas, V., & Helfert, M. (2019), Standardisation of enterprise architecture development for smart cities. *Journal of the Knowledge Economy.* https://doi.org/10.1007/s13132-019-00601-8

Reyes, A., Rodriguez, C., & Esenarro, D. (2019). Hyper Converged Systems Applied (HSA) Methodology to Optimize the Process of Technological Renewal in Data Centers. *International Journal of Recent Technology and Engineering (IJRTE), 8*(2S11), 4052-4056. https://www.ijrte.org/wp-content/uploads/papers/v8i2S11/B15920982S1119.pdf

Singh, P. M., Van Sinderen, M., & Wieringa, R. (2017). Reference architecture for integration platforms.In *2017 IEEE 21st International Enterprise Distributed Object Computing Conference (EDOC)*, Quebec City, QC, Canada, pp. 113-122. https://doi.org/10.1109/EDOC.2017.24

Ubalde, R., Rodriguez, C., Petrlik, I., Esenarro, D., Lezama, P., & Sotomayor, J. (2020). Quality model for Peruvian microenterprises of a software product Factory. *Test Engineering and Management, 83*, 13434. http://testmagzine.biz/index.php/testmagzine/article/view/6062

Yin, R. K. (2017). *Case study research and applications: design and methods.* Sage publications.

https://doi.org/10.17993/3cemp.2021.specialissue1.63-79

https://doi.org/10.17993/3cemp.2021.specialissue1.63-79