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Capacidades de Innovación de los estudiantes de ingeniería: Caso de una universidad pública del noreste de México

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Resumen
El objetivo de este estudio es identificar la relación entre las habilidades y conocimientos desarrollados en los futuros egresados y la capacidad de innovación. Se diseñó un instrumento en escala de Likert que cumplió con los criterios de confiabilidad, mediante un análisis de consistencia interna, obteniendo valores superiores a 0.7 en cada una de las variables. En cuanto la validez del instrumento, este se elaboró mediante una revisión exhaustiva y sistemática de la literatura, adaptando los ítems de cada variable y solicitando a expertos en el área la revisión de este. El instrumento se aplicó a una muestra aleatoria de 316 estudiantes del último año de estudios de ingeniería. El análisis de regresión lineal encontró que todas las variables tienen una relación significativa a excepción de la variable conocimientos técnicos en ingeniería, lo cual indica que la capacidad de innovación no es exclusiva de esta área.

Palabras clave: Capacidad de Innovación; Innovación; Instituciones de Educación Superior;

Programa Educativo; Regresión Lineal.

Abstract
The objective of this is to identify the relationship between the skills and knowledge developed in future graduates and the ability to study innovation. An instrument was designed on a Likert scale that met the reliability criteria, through an internal consistency analysis, obtaining values greater than 0.7 in each of the variables. Regarding the validity of the instrument, it was developed through an exhaustive and systematic review of the literature, adapting the elements of each variable, and requesting experts in the area to review it. The instrument was applied to a random sample of 316 students in their last year of engineering studies. The linear regression analysis found that all the variables have a significant relationship except for the technical knowledge in engineering variable, which indicates that the capacity for innovation is not exclusive to this area.

Keywords: Innovation; Innovation Capacity; Institutions of Higher Education; Educational program; Linear regression.

Introduction

Higher education institutions (HEIs) must design educational programs that adapt to the requirements of the business sector, which are in a constant process of change. For Adelstein and Clegg (2016), HEIs are a source of knowledge generation, whose purpose is to transmit it to their students with the intention that they apply it in the organizations of modern society. According to Davenport and Prusak (1998) knowledge is the most important intangible resource in organizations, which is generated through experience and must flow as information in the departments that comprise it without leaving aside vision and values of the company.

Problem Statement

This study of innovation capacity determines the factors that have a positive influence its development and implementation in the engineering area when applied in the industrial sector. This research pursues to expose engineering as an essential pillar for a better development of Innovation Capacity, that is, engineering goes beyond just providing technical solutions, but is also capable of implementing optimal methods and greater use in the industrial sector.

An engineer must be able to innovate successfully. The current situation is that many professional engineers are not involved in innovative work because they do not have a natural capacity for it; they have not been educated to work in these contexts, because many companies try to avoid innovation due to the risk of failure (MacLeod, 2010).

Background

In recent years, companies have tried to improve their competitive advantage over others that are in the same industrial sector, by using as their main weapon the improvement of their products and/or services through infrastructures or technologies obtained from other sectors. However, many of them do not take into account a factor that has an extreme importance for their growth and that is human and intellectual capital, since through them they are able to develop innovation capacities, a fundamental aspect to raise the economy and industry development. Therefore, will be describe each of the variables related to the capacity for innovation.

Innovation capacity (Y)

In a highly competitive world, a nation's economic success can be seen in increased creativity and innovation. Knowledge is the main source of creativity, innovation and competitiveness. Creativity implies proposing a new idea, while innovation implies the execution of new ideas (Harwiki & Choiron, 2018). However, innovation is a concept that goes beyond the initial creative idea phase. According to Bäckström & Bengtsson (2019), innovation is defined as the generation of ideas put into practice and developed to have social and economic impacts.

Innovation is essential to define the success and survival of organizations. The importance of innovation in the workplace is even more crucial if we consider the framework offered by Industry 4.0, in which the psychological aspect of innovation is configured as an essential strategic element to compete in the global market (Duradoni & Di Fabio, 2019).

In the same way, companies should strive to keep their products fresh and market-appealing, create more value from existing product lines, and encourage innovative work among staff by harnessing the creativity and unique skills of employees. (Thongsri & Chang, 2019).

Therefore, creativity can be defined as the generation of new concepts, while innovation infers the development of creative ideas into useful results, just having original ideas is not enough. The higher the degree of innovation, the higher the risk and therefore the greater the need to focus on processes to get the right results (MacLeod, 2010).

In short, a company can maintain its competitive advantage compared to other companies by using its resources and capabilities, but these must be unique, valuable, inimitable and difficult to replace. These company-specific resources can be presented as tangible assets, intangible assets, and capabilities (Thongsri & Chang, 2019).

Innovative behavior (X_1)

Leader support, human resource management support, and job autonomy demonstrate a positive influence on innovative work behavior. Employee participation in innovation is more effective when they are actively involved from the beginning of the innovation process (Bäckström & Bengtsson, 2019). To make use of employees' experience, knowledge and skills in their workplace, top management needs to create a supportive environment for employees to innovate.

Innovation is the process related to the implementation of a new or significantly improved product (good or service), process, marketing method, or organizational method in business practices, workplace organization, or external relations, involving employees who are not managers or R&D (Research and Development) employees. in a process supported by management, interactive and/or spontaneous (Bäckström & Bengtsson, 2019).

In addition, the innovative behavior of workers has multiple aspects that account for all the processes involved in innovation, from the generation of ideas to their subsequent implementation (Duradoni & Di Fabio, 2019). Dominant activities in the innovation process include: developing ideas, researching, assessing and balancing risks, evaluating requirements, validating and optimizing processes, verifying and interpreting results, developing and evaluating design concepts, controlling the use of analysis models, make judgments and/or decisions, write technical reports (MacLeod, 2010).

Judgment (X_2)

ABET (Accreditation Board of Engineering and Technology) has introduced a set of changes for the 2019-2020 accreditation cycle. Among the many proposed changes is the introduction of the term engineering judgement. Engineers have to be able to apply technical knowledge to solve problems, to act, test and explore; but they also have to reflect and learn from their actions (Weedon, 2019).

As stated by ABET (2016), judgment is the ability to recognize ethical and professional responsibilities in engineering situations and to make informed judgments, which must consider the impact of solutions in global, economic, environmental and social contexts.

Along with (Brito, 2021), judgment is the exercise of thinking clearly, logically and calmly about a problem, weighing known facts, assumptions, missing information and consequences to then make a decision, it is the ability to reach to sensible decisions about a problem in the presence of incomplete and contradictory information.

As Weedon (2019) states, judgment is a capacity that goes beyond mere calculation and that mainly tries to apply scientific data to uncertain circumstances. Judgment is almost always an individual and cognitive ability, strengthened through experience. It is essential in the practice of engineering, since it results from the use of intuition and reasoning, as well as a fragment of codes, practical rules, applied science and evaluation and management processes (Brito, 2021).

Technical knowledge in engineering (X_3)

Engineers often must solve problems based on information they collect and analyze through diagrams or technical reports, which they must know how to interpret to find the most viable solution to said problem. According to Ueki and Guaita (2020), problem solving is not just about that. Companies identify problems and then develop and apply new knowledge to solve them, in such a way that this new knowledge is transferred throughout the organization, so a problem can be considered a source of new knowledge and innovative skills.

Technical knowledge in engineering can stimulate innovation on the part of the company and its customers. Therefore, this knowledge is important because innovation promotes the development of new or improved products, processes and services, which generates value for customers and market positioning for organizations (Höflinger et al., 2018).

On the other hand, Rampersad (2020) considers problem solving as a fundamental skill for the future of work. It can be defined as the ability to analyze and transform information as a basis for decision making and move towards solving practical problems.

Also, problem formulation and resolution are important skills that human beings need when faced with uncertainty. In other words, for the next generation, problem solving has been considered an area of knowledge essential in the development of the future worker who needs to be innovative and develop solutions for global technological, economic and social challenges of the 21st century (Kirn & Benson, 2018).

In general, the problem formulation profoundly determines which problem is solved, as well as the quality of the solution. As such, engineering expertise influences problem solving through the process of drawing inferences, making judgments, and deciding between alternative courses of action (Shu, 2020).

Teamwork (X_4)

As said by Rampersad (2020), teamwork is defined as the ability to work constructively with others on a task. Likewise, it was found that the interaction time has a positive impact on the number of ideas implemented (Yang & Han, 2021).

Previous studies indicate that teamwork and innovation could be connected through organizational learning, because individual learning may not be as efficient as group learning in which knowledge is shared more efficiently and ease.

The collective learning process could be more effective because collaboration, cohesion, and cooperation are enhanced through teamwork (Khalil & Mehmood, 2018).

Citing Roy et al, (2018), the culture of teamwork in any organization helps to socialize the creativity of team members for technological innovations. This helps develop products that are fundamentally different to create a competitive advantage. Meeting desired cost, quality, and time targets of newly developed products delivers enriched team performance essential to product innovation.

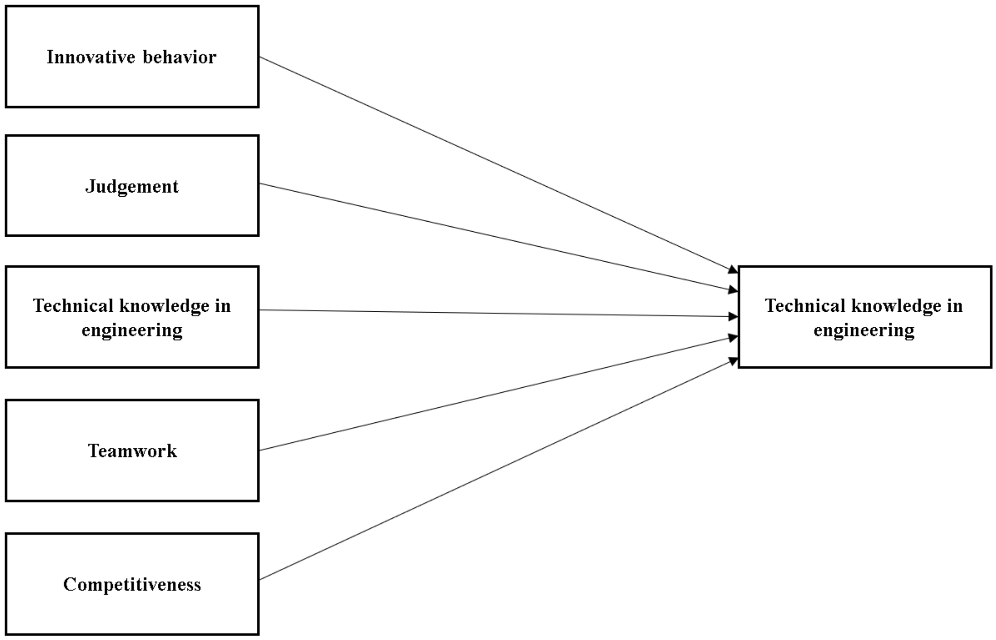
As Putra and Fibra (2016) point out, teamwork allows and helps people to develop their own creativity, which can lead to job satisfaction and reduce stress in the workplace. Nevertheless, maximum results can only be achieved when all members of a team work together to achieve the common goal.

Competitiveness (X_5)

The ability to innovate is considered a determining factor for the competitiveness of organizations. *The World Competitiveness Center* defines the concept of competitiveness as the ability of a country to maintain a prosperous environment, both for society and for companies, that is, it refers to the way in which a nation manages its resources and skills to maintain a socioeconomic balance (Capobianco-Uriarte *et al*., 2019). Competitiveness refers to the ability to maintain relatively high levels of income and employment, while remaining open to international competition (Dmitrieva & Guseva, 2019).

On the other hand, digital technology has become a modern global economic growth and innovation engine and has contributed to national competitiveness (Sepashvili, 2020). Being competitive, economic actors must make use of technological innovation applications, since it is one of the greatest challenges today and, in parallel, they must face the fifth industrial revolution (Manta, 2019). In general terms, competitiveness represents the characteristics and capabilities of any organization that seeks to survive within a business environment (Veiga *et al*., 2020).

Figure 1.
Graphic model of the hypotheses raised



Source: Own Elaboration

Figure 1 shows the hypothetical relationships of the variables considered to establish the theoretical model, which is validated with the empirical results of the field study.

Hypothesis

H1. Innovative behavior is related to the capacity for innovation.

H2. The judgment is related to the capacity for innovation.

H3. Technical knowledge in engineering is related to the capacity for innovation.

H4. Teamwork is related to the ability to innovate.

H5. Competitiveness is related to the capacity for innovation.

Objectives

Analyze whether the skills and knowledge developed in future graduates are related to the capacity for innovation.

Materials and method

This research has a non-experimental quantitative design, the data was collected in a specific period. Descriptive and correlational analyzes were carried out, the first to define the behavior of the variables in terms of their magnitude and the second to approve the hypotheses proposed. For the analysis of the data, the SPSS software for statistics in its version 25, from the company International Business Machines (for its acronym IBM), (2017) was used.

Participants

This research was aimed at students who were in their last year of engineering studies at a public university in northern Mexico, during the August-December 2021 semester. To calculate the size of the sample, was used the formula for populations of finite size (Rositas, 2014), as shown in Figure 2. Where the size of the total population is 1,497 students in the tenth semester of a faculty engineering and considering a level of significance of 95% with an estimated error of 5%, the minimum sample size was 306. It is worth mentioning that, for this study, 316 surveys were collected, which were applied randomly to avoid bias.

Figure 2

Formula for sample calculation

$$n = \frac{Ns^2}{(N-1)\left(\frac{d}{z}\right)^2 + s^2}$$

Note. Taken from Sample sizes in social science surveys and their impact on the generation of knowledge (p. 247), by J. Rositas Martínez, 2014, Business Innovations.

Technique and Instruments

The survey is made up of four items to measure demographic variables and 28 items on a five-point Likert scale, where one represents totally disagree and five totally agree. The values of Cronbach's alphas are shown in Table 1.

Table 1.

Internal consistency analysis

Variable or Construct	No. of ítems	Cronbach's Alpha
Innovative behavior	5	.772
Judgment	4	.770
Problem resolution	5	.768
Teamwork	4	.842
Competitiveness	5	.729
Innovation Capacity	5	.754

Note: Analysis prepared by the authors based on the pilot test.

Using SPSS, measures of central tendency and dispersion of the variables were obtained. Likewise, linear regression with the method of successive steps was used to calculate the betas and the significance levels of each of the independent variables with respect to the dependent variable. In addition, the variance inflation factor was calculated to verify the multicollinearity between the independent variables of the model.

Also, to comply with construct validity, the survey was adapted from various investigations found in the literature review (Bysted, 2013; MacLeod, 2010).

Procedure

For the data collection in this research, a random sampling was carried out. First, those students who met the characteristics and desired profile for the study were identified. Subsequently, via email, the survey was sent to those randomly selected students. It is important to mention that two reminders were scheduled to resend the instrument to those who had not yet answered the form three days after its delivery, and once the required sample size was obtained, the form was closed to stop receive responses.

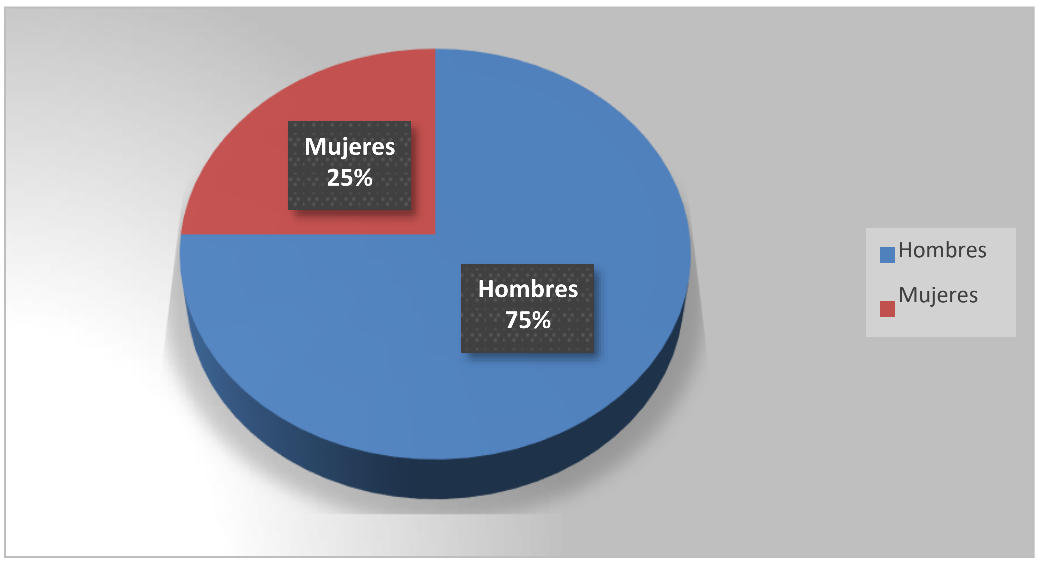
It is worth mentioning that in the first part of the survey, the students signed a privacy notice where they agreed to provide the requested information. As before, in the same survey, the instructions for the correct completion of the survey were integrated, as well as a summary of the impact and scope of the study so that the respondents knew the relevance of the research. Once the data collection was finished, the file with the information was downloaded and those incomplete answers were eliminated, leaving a total of 316 surveys.

Results and discussions

Once the analyzes of the instrument were finished, the demographic variables were analyzed descriptively. The results show that 75% of the students interviewed are male and 25% are female, as shown in figure 3. This is due to the fact that the proportion of the total population in the engineering school analyzed is 30% women and 70% men.

Figure 3

Proportion of participants by Men and Women.

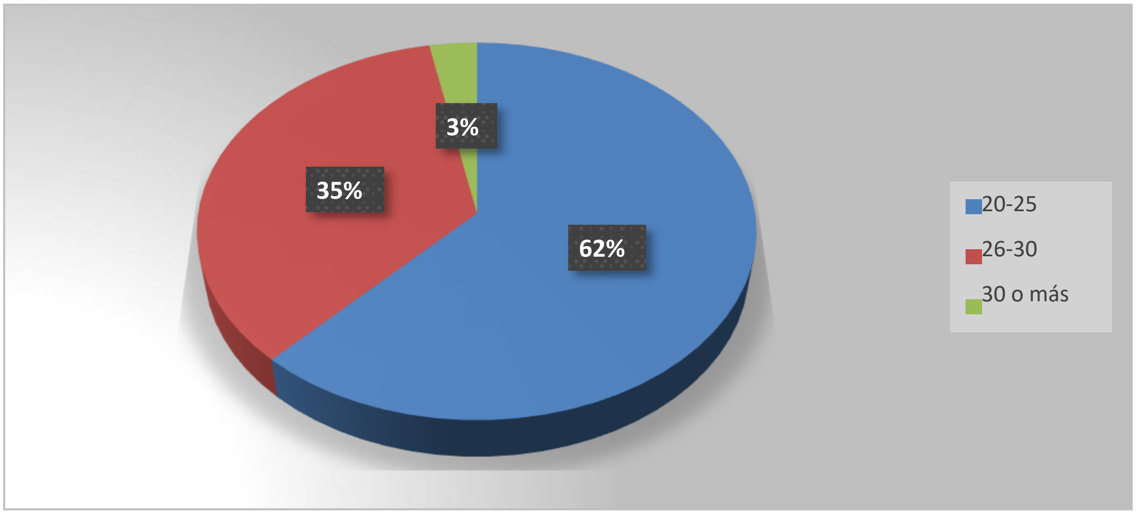


Note. Graph made by the authors.

Similarly, it was found that 62% are between 20 and 25 years old, 35% are between 26 and 30 years old and 3% are older than 30 years old, as shown in figure 4. Which means that a large part of surveyed participants are young adults.

Figure 4

Proportion of participants by age



Note. Graph made by the authors.

Linear regression analysis

The results obtained from the linear regression analysis are shown in figure 3, where an R2 of 0.458 is observed, which indicates that the variables largely explain the phenomenon studied. Likewise, the hypotheses were not rejected except for the problem-solving variable. On the other hand, the variance inflation factor obtained in the analysis shows values close to one, as shown in Table 2, which means that there is no multicollinearity between the independent variables (Hair *et al*., 2004).

Table 2.

Coefficients

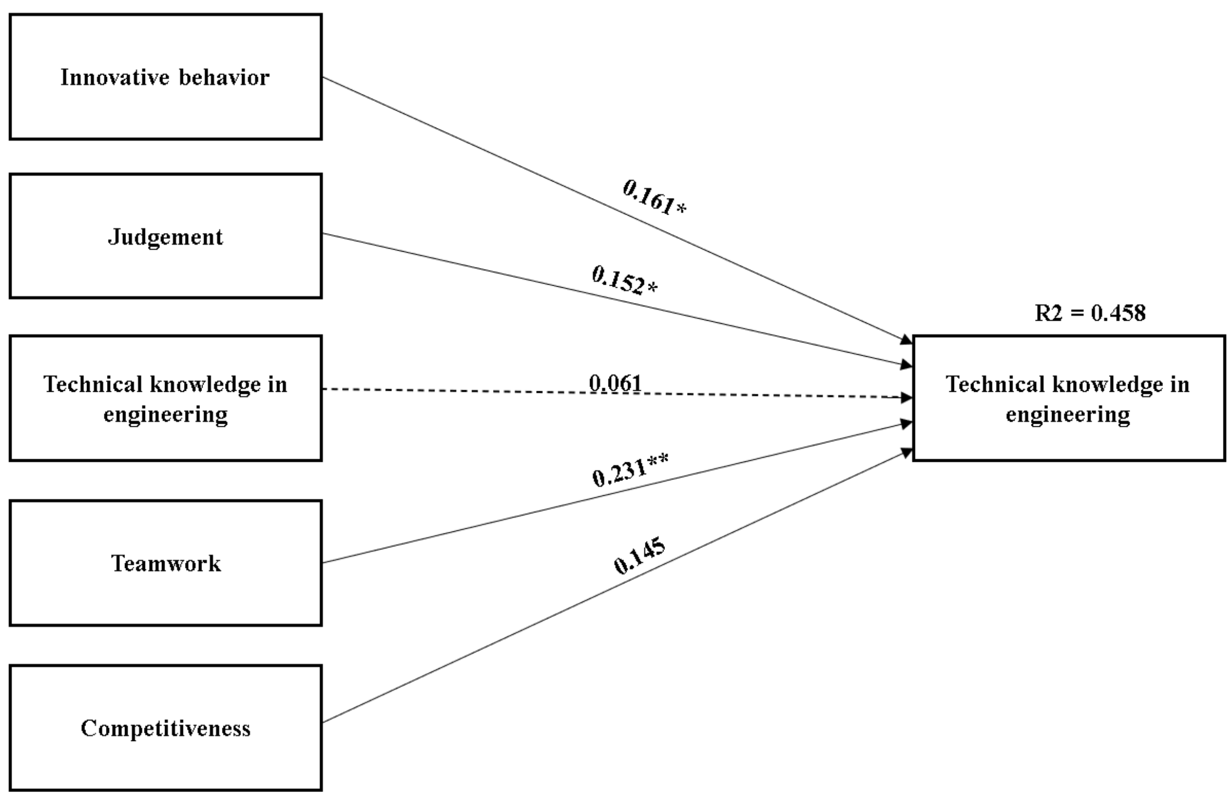
Model		Coefficients not standardized		Coefficients typified	T	Sig.	Statistics of collinearity	
		B	Error típ.	Beta			Tolerance	FIV
1	(Constant)	8.907	1.137		7.835	.000		
	X1	.161	.073	.187	2.214	.028	.410	2.438
	X2	.152	.072	.156	2.109	.036	.533	1.875
	X3	.061	.045	.090	1.337	.183	.643	1.554
	X4	.231	.058	.267	3.971	.000	.648	1.542
	X5	.145	.062	.163	2.317	.022	.593	1.686

Note: Own elaboration

Figure 2 shows the resulting model, in which the variable technical knowledge in engineering was rejected when obtaining a significance value very far from 0.0.

Figure 5.

Results of the research model



Note: *Demonstrates that the correlation is significant at the two-sided 0.05 level
**Demonstrates that the correlation is significant at the 0.01 two-sided level

It is important to mention that, in previous research (Rampersad, 2020), a correlation has been observed between the variable technical knowledge in engineering and the capacity for innovation. However, the results of this research did not present such a correlation, this is due to two reasons. The first is that the capacity for innovation is not exclusive to the area of engineering since it is possible to innovate in other disciplines. The second reason is because the context of the study was different in terms of study subjects and geographical area (Shu, 2020).

Conclusions

The purpose of this study was to identify the factors that influence the capacity for innovation, which was successfully completed. Factors such as innovative behavior, judgement, teamwork and competitiveness show a correlation with innovation capabilities, hence reinforcing the theories developed in previous studies.

Equally, the study carried out will contribute to the development of new and better educational programs that allow the development of engineering students from public universities, innovation capabilities with which they can provide sustainable competitive advantages to organizations and thus significantly improve their processes and products, and while these students are just as competitive as those who graduate from private universities.

It is important to mention that, within the limitations of this study, there is the demographic factor, since the analysis was carried out within the largest public university in the northeastern region of Mexico. Also, additional limitation was the methodological factor, since this study was carried out quantitatively due to its feasibility. Finally, another limitation was content, since it focused on identifying the factors that affect the development of innovation capabilities, so it would be of great value for future research to carry out a second study involving other public universities in the country, in order to a broader overview of the innovation capacity of engineering graduates.

Similarly, it is proposed to complement the data collected through a qualitative study in order to provide a mixed approach. Finally, it would be relevant to extend the study looking for the correlation between innovation capacities and soft skills developed by engineering students during their university education.

References

Accreditation Board for Engineering and Technology. (2016). *Engineering Accreditation Commission. In Criteria for accrediting engineering programs: Effective for Reviews During the 2017-2018 Accreditation Cycle*. http://www.abet.org/Linked Documents-UPDATE/Criteria and PP/C001 08-09 CAC Criteria 11-8-07.pdf

Adelstein, J., & Clegg, S. (2016). Code of Ethics: A Stratified Vehicle for Compliance. *Journal of Business Ethics*, 138(1), 53–66. https://doi.org/10.1007/s10551-015-2581-9

Bäckström, I., & Bengtsson, L. (2019). A mapping study of employee innovation: proposing a research agenda. *European Journal of Innovation Management*, 22(3), 468–492. https://doi.org/10.1108/EJIM-05-2018-0101

Brito, J. A. M. de. (2021). Judgement in geotechnical engineering practice. *Soils and Rocks*, 33(2), 81–93. https://doi.org/10.28927/SR.2021.063821

Bysted, R. (2013). Innovative employee behaviour: The moderating effects of mental involvement and job satisfaction on contextual variables. *European Journal of Innovation Management*, 16(3), 268–284. https://doi.org/10.1108/EJIM-09-2011-0069

Capobianco-Uriarte, M. de las M., Casado-Belmonte, M. del P., Marín-Carrillo, G. M., & Terán-Yépez, E. (2019). A bibliometric analysis of international competitiveness (1983-2017). *Sustainability*, 11(7), 1–22. https://doi.org/10.3390/su11071877

Davenport, T. H., & Prusak, L. (1998). *Working knowledge: How organizations manage what they know*. Harvard Business Press. https://cutt.ly/pPHdnBb

Dmitrieva, E. O., & Guseva, M. S. (2019). Accounting for the Digitalization Factor in Assessing Territorial Competitiveness. *SHS Web of Conferences*, 62, 13003. https://doi.org/10.1051/shsconf/20196213003

Duradoni, M., & Di Fabio, A. (2019). Intrapreneurial self-capital and sustainable innovative behavior within organizations. *Sustainability*, 11(2), 1–10. https://doi.org/10.3390/su11020322

Hair, J., Anderson, R., Tatham, R., & Black, W. (2004). *Análisis Multivariante* (1999 Madrid: Pearson Prentice Hall (ed.)). https://cutt.ly/XPHo4op

Harwiki, W., & Choiron, A. (2018). Batik creative industry: Creativity, innovation y competitiveness to encounter global market. *Journal of Business and Finance in Emerging Markets*, 1(2), 189–196. https://doi.org/10.32770 / jbfem.vol1189-196

Höflinger, P. J., Nagel, C., & Sandner, P. (2018). Reputation for technological innovation: Does it actually cohere with innovative activity? *Journal of Innovation and Knowledge*, 3(1), 26–39. https://doi.org/10.1016/j.jik.2017.08.002

IBM Corp. (2017). *IBM SPSS Statistics para Windows*, (versión 25.0). Armonk, Nueva York: IBM Corp. https://cutt.ly/cFJck8n

Khalil, S. R., & Mehmood, K. K. (2018). Knowledge Management, Emotional Capability, Teamwork, and Innovativeness: Mediating Role of Organizational Learning. *Review of Economics and Development Studies*, *4*(2), 227–235. https://doi.org/10.26710/reads.v4i2.407

Kirn, A., & Benson, L. (2018). Engineering Students' Perceptions of Problem Solving and Their Future. *Journal of Engineering Education*, *107*(1), 87–112. https://doi.org/10.1002/jee.20190

MacLeod, I. A. (2010). The education of innovative engineers. *Engineering, Construction and Architectural Management*, *17*(1), 21–34. https://doi.org/10.1108/09699981011011294

Manta, P. D. O. (2019). The role of competitiveness on the sustainability of the national real economy. *The Journal Contemporary Economy*, *4*, 138-46. https://www.academia.edu/download/63330300/article_Dr._Otilia_MANTA20200516-55850-xrsa4q.pdf

Putra, S., & Fibra, A. (2016). Teamwork as an innovation generator: An analysis of project hatchery at Binus university international. *Pertanika Journal of Social Sciences and Humanities*, 24(July), 139–154. https://cutt.ly/TPHpCok

Rampersad, G. (2020). Robot will take your job: Innovation for an era of artificial intelligence. *Journal of Business Research*, 116(May), 68–74. https://doi.org/10.1016/j.jbusres.2020.05.019

Rositas, J. (2014). Los tamaños de las muestras en encuestas de las ciencias sociales y su repercusion en la generacion del conocimiento (Sample sizes for social science surveys and impact on knowledge generation). *Innovaciones de Negocios*, 11(2), 235–268. http://www.web.facpya.uanl.mx/rev_in/Revistas/11_22/11.22 Art4 pp 235 - 268.pdf

Roy, S., Dan, P. K., & Modak, N. (2018). Effect of teamwork culture on NPD team's capability in Indian engineering manufacturing sector. *Management Science Letters*, 8(7), 767–784. https://doi.org/10.5267/j.msl.2018.5.009

Sepashvili, E. (2020). Supporting Digitalization: Key Goal for National Competitiveness in Digital Global Economy. *Economia Aziendale Online*, 11(2), 191–198. https://doi.org/10.13132/2038-5498/11.2.191-198

Shu, E. (Emily). (2020). A problem-solving process for developing capabilities: the case of an established firm. *European Journal of Innovation Management*, 23(4), 713–727. https://doi.org/10.1108/EJIM-12-2018-0262

Thongsri, N., & Chang, A. K. H. (2019). Interactions among factors influencing product innovation and innovation behaviour: Market orientation, managerial ties, and government support. *Sustainability*, *11*(10). 27-93 https://doi.org/10.3390/su11102793

Ueki, Y., & Guaita Martínez, J. M. (2020). The impact of engineers' skills and problem-solving abilities on process innovation. *Economic Research-Ekonomska Istrazivanja*, *33*(1), 2018–2037. https://doi.org/10.1080/1331677X.2019.1596826

Veiga, P. M., Teixeira, S. J., Figueiredo, R., & Fernandes, C. I. (2020). Entrepreneurship, innovation and competitiveness: A public institution love triangle. *Socio-Economic Planning Sciences*, 72(May), 1–12. https://doi.org/10.1016/j.seps.2020.100863

Weedon, S. (2019). The role of rhetoric in engineering judgment. *IEEE Transactions on Professional Communication*, 62(2), 165–177. https://doi.org/10.1109/TPC.2019.2900824

Yang, M., & Han, C. (2021). Stimulating innovation: Managing peer interaction for idea generation on digital innovation platforms. *Journal of Business Research*, 125(August), 456–465. https://doi.org/10.1016/j.jbusres.2019.08.005