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TITULACIÓN DE LOS EGRESADOS DEL TECNМ – ITVH**

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Analysis of the Factors that Influence the Non-Graduation of TecNM Graduates - ITVH

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ABSTRACT

The graduation rate of a Higher Education Institution (HEI) in Mexico is used as an indicator of the institution's capacity to grant degrees to its graduates. In the present research, the factors that affect the non-graduation of graduates from the Tecnológico Nacional de México - Instituto Tecnológico de Villahermosa (TecNM - ITVH) are analyzed. Personal, socioeconomic and institutional elements are explored to determine which are those that may hinder the completion of the graduation process. To this end, a survey was conducted among graduates who applied for the degree process during the period between November 2024 and January 2025, with a population of 87 surveys carried out. SPSS statistical software was used to proceed with the analysis of the data collected. The results showed a tendency to apply for the degree process within a short period of time after completing their studies, as well as a balance between graduates who are working at the time of applying for the process and those who are not employed. In addition to the above, the predominant factor affecting non-degree completion is the lack of time available. It is recommended that new strategies be implemented to improve the dissemination of the graduation process.

Keywords: degree, higher education, graduates

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Análisis de los Factores que Inciden en la no Titulación de los Egresados del TecNM – ITVH

RESUMEN

El índice de titulación de una Institución de Educación Superior (IES) en México se emplea como un indicador de la capacidad de dicha institución para otorgar títulos a sus egresados. En la presente investigación, se analizan los factores que afectan la no titulación de los egresados del Tecnológico Nacional de México - Instituto Tecnológico de Villahermosa (TecNM – ITVH). Se exploran elementos de índole personal, socioeconómica e institucional para determinar cuáles son aquellos que pueden llegar a dificultar la finalización del proceso de titulación. Para tal fin, se llevó a cabo una encuesta a los egresados que solicitaron trámite de titulación durante el período comprendido entre noviembre de 2024 y enero de 2025, con una población de 87 encuestas realizadas. Se utilizó el software estadístico SPSS para proceder con el análisis de los datos recolectados. Los resultados mostraron una tendencia a solicitar el trámite de titulación en un período corto tras la conclusión de los estudios, así como un equilibrio entre egresados que se encuentran laborando al momento de solicitar dicho trámite y aquellos que no están empleados. Aunado a lo anterior el factor predominante que incide en la no titulación es la falta de tiempo disponible. Se recomienda la implementación de nuevas estrategias orientadas a mejorar la difusión del proceso de titulación.

Palabras Clave: titulación, educación superior, egresados

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INTRODUCTION

For Higher Education Institutions (HEIs) in Mexico, one of the most significant indicators of educational quality is the graduation rate (Limón & Hernández, 2012). According to research by Vargas & Muñoz (2014), this indicator assesses the effectiveness of the educational institution by measuring the number of graduates who successfully obtain their professional degree. It is essential to clarify that a student officially completes their academic program upon obtaining the professional degree, which serves as the official document validating their academic training (Regulatory Law of Article 5 of the Constitution, Regarding the Practice of Professions in Mexico City, 2018). After fulfilling the academic requirements of the degree program, graduates must complete the corresponding administrative procedure with the institution in order to receive their degree and professional license.

The lack of degree completion among undergraduate graduates at the Tecnológico Nacional de México – Instituto Tecnológico de Villahermosa- TecNM – ITVH (National Technological Institute of Mexico – Technological Institute of Villahermosa) represents a complex phenomenon influenced by a variety of interrelated factors. This study aims to explore how personal, socioeconomic, and institutional elements converge to hinder the completion of the degree certification process.

At TecNM – ITVH, there is no established time limit for initiating this procedure, nor is it mandatory, which often leads graduates to downplay its importance. As a result, a considerable percentage of graduates do not pursue this process immediately after completing their academic program. This research analyzes the factors contributing to the lack of degree completion among ITVH graduates. By identifying the main elements that delay the initiation of this administrative process, it will be possible to examine and identify areas of opportunity for implementing improvements that help reduce the incidence of this issue and, consequently, increase the graduation rate at the institution.

Background

In Mexico, educational institutions at all levels have undertaken efforts to improve the overall quality of education through training programs, curriculum development, and investment in



educational infrastructure (Reyes et al., 2025). National-level studies have documented the low graduation rates and have identified several determining factors, such as lack of motivation, difficulties in conducting research projects, and bureaucratic barriers. Similarly, Rodríguez Betanzos (2015) points out that the lack of studies on the reasons why graduates do not obtain their degrees contributes to the low graduation rates, as appropriate attention is not given to tracking and monitoring these cases.

In the study by Olguín-Ramírez (2018), factors influencing the graduation rate are examined from the students' perspective. Various variables are analyzed, including degree requirements, social service, the comprehensive knowledge exam (EXCI), personal interest, the perceived value of obtaining the degree, economic cost, and family pride. Surveys were conducted using a quantitative approach to identify the most significant contributing factors. Additionally, the study proposes strategies and recommendations aimed at increasing this indicator, with the goal of facilitating student graduation and degree attainment.

Similarly, Toscano (2016) investigates graduation rates among university graduates, with the aim of identifying the elements that influence the completion of the degree process and developing strategies to improve this indicator. Data mining methods were employed to identify student characteristics and determine the factors affecting degree completion. The findings reveal specific patterns that m

Theoretical Framework

The Tecnológico Nacional de México-TecNM (National Technological Institute of Mexico) is a decentralized administrative body under the Secretariat of Public Education (SEP), possessing technical, academic, and administrative autonomy. The *Manual of Academic-Administrative Guidelines of the Tecnológico Nacional de México* (National Technological Institute of Mexico) (2015) was issued to support the Institutes, Units, and Centers affiliated with TecNM in the implementation and operation of academic plans and programs. These programs are designed to foster the development of professional competencies and to ensure full compliance with institutional goals and objectives. Within this context, Chapter 14 of the manual outlines the necessary guidelines to ensure the successful completion of the final phase of students' academic



training within these Institutes, Units, and Centers. This chapter evaluates the students' ability to integrate theoretical and practical knowledge required in professional practice, thereby qualifying them to obtain the professional degree necessary to work in the goods and/or services sectors. The *Requirements for the Undergraduate Degree Process (2025)* can also be consulted for further information regarding the degree pathways and procedures.

Definition and Characterization

Comprehensive degree certification refers to the validation of competencies—defined as the knowledge, skills, and attitudes acquired and developed by students throughout their academic training.

Requirements

In order to obtain comprehensive degree certification, graduates must fulfill the following:

- Completion of 100% of the academic credits in their study plan;
- Certification of a foreign language program, by submitting an official certificate or proof issued by:
 - a) a national or international institution or organization with official recognition, or
 - b) the Foreign Language Departments of the Technological Institutes officially registered with the Academic, Research, and Innovation Secretariat of TecNM;
 - Documentation proving there are no outstanding financial obligations or unreturned materials or equipment from institutional offices, laboratories, or the information center;
 - Formal submission of a request for comprehensive degree certification;
 - Completion and submission of the required documentation to the School Services Department.

The *2025 Annual Work Program of TecNM* outlines three strategic pillars, one cross-cutting axis, six objectives, twenty-seven lines of action, and a series of projects, actions, indicators, and key performance goals. All of these are aimed at consolidating TecNM as the leading institution in technological higher education in Latin America.



Project No. 6 of the 2025 Annual Work Program specifically aims to increase the number of undergraduate degree recipients. In this regard, the graduation rate for 2024 was 78.81%, with a target of reaching 85.40% by 2025.

METHODOLOGY

This study is based on a quantitative research methodology. A survey consisting of 20 questions was administered to a population of 87 students who initiated their degree certification process between November 2024 and January 2025. The primary objective of this study is to identify the underlying causes contributing to the graduation rate falling below the target set by the *2025 Annual Work Program of TecNM (2025)*. Accordingly, the central research question is: *What are the factors that influence the lack of degree completion among graduates of TecNM – ITVH?*

For the analysis of the collected responses, the statistical software package SPSS was employed, given its effectiveness, ease of use, and comprehensive features. As noted by Rivadeneira Pacheco et al. (2020), SPSS is characterized by:

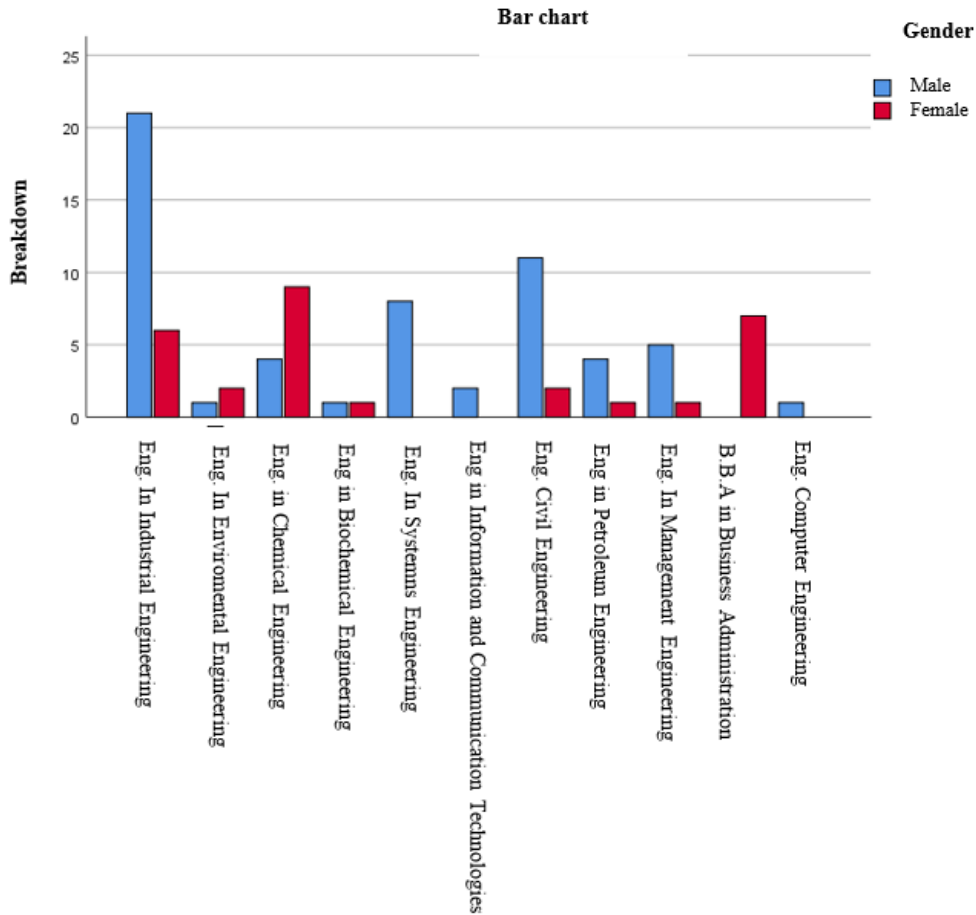
“its utility, ease of handling, and straightforward comprehension, offering a wide range of statistical topics primarily geared toward the social sciences, and meeting all the statistical calculation needs of researchers and professionals in the relevant field” (p. 1).

RESULTS

Data analysis reveals that 66.7% of the graduates who applied for the degree certification process are male, while the remaining 33.3% are female.



Figure 1. Gender Distribution by Degree Program



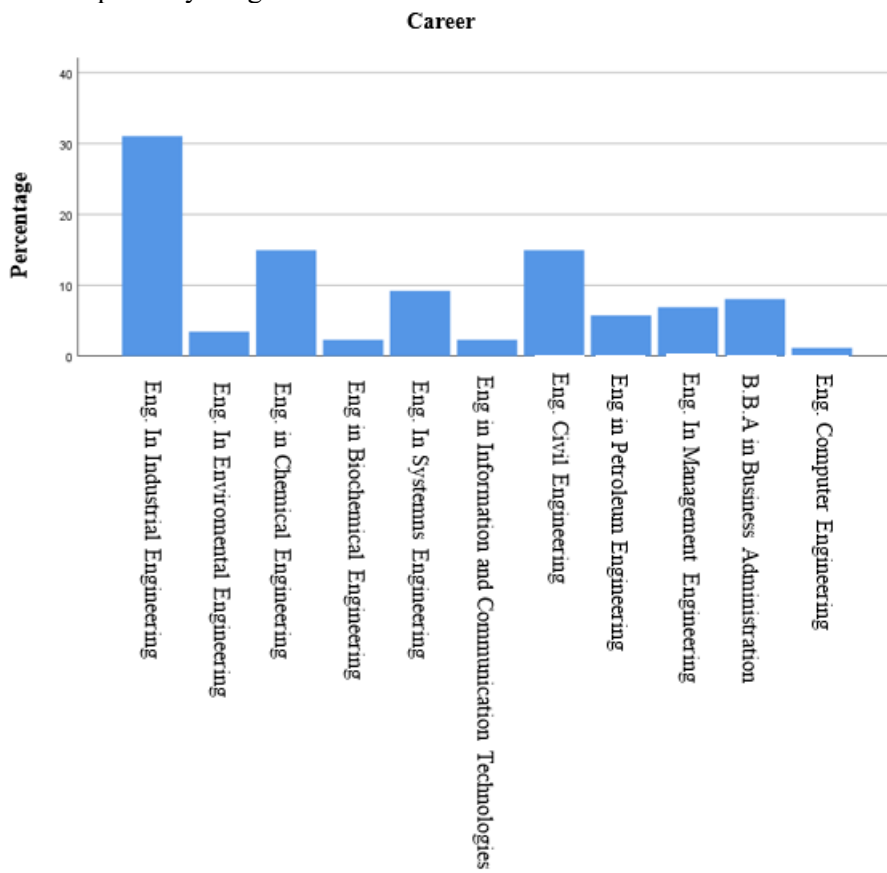
As shown in Figure 1, the degree programs in Industrial Engineering, Systems Engineering, Civil Engineering, Petroleum Engineering, Business Management Engineering, and Computer Engineering have a significantly higher percentage of male graduates. In contrast, the degree programs in Environmental Engineering, Chemical Engineering, and the Bachelor's in Business Administration are predominantly composed of female graduates. As Ortega Ortega et al. (2021) note:

“It is a well-known fact that women’s participation in engineering programs has improved, but it is also true that more can be done to encourage women to pursue engineering studies.”

The majority of applicants fall within the 23 to 27 age group, which suggests a tendency to obtain the professional degree relatively soon after completing their academic program. Given their young age, it is more common for these individuals to be single.

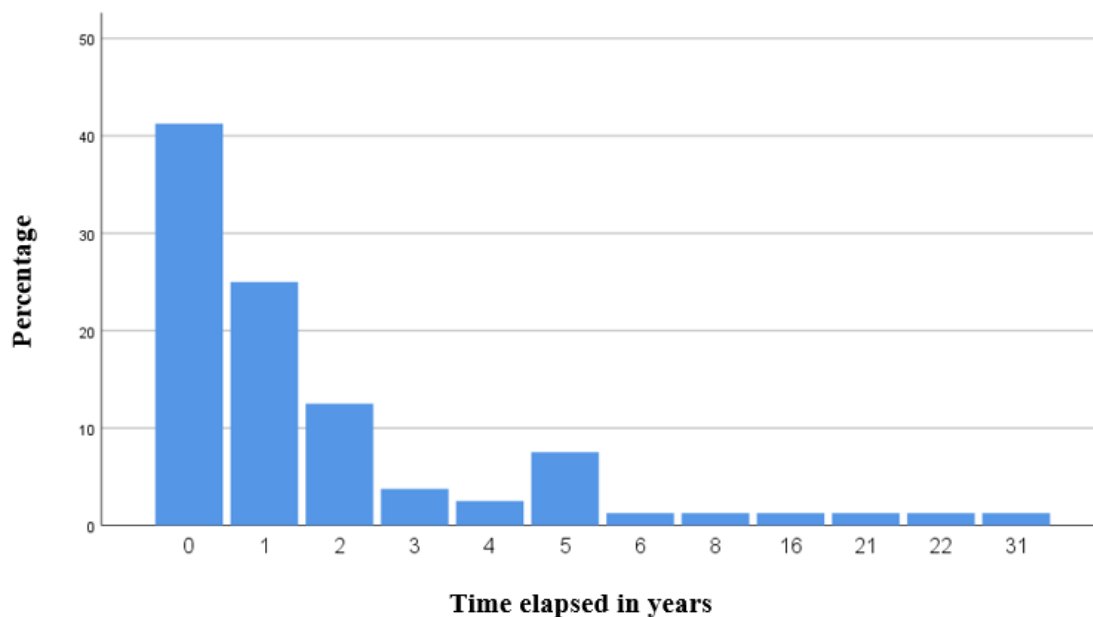


Figure 2. Percentage of Degree Certification Requests by Program



The Industrial Engineering program received the highest number of degree certification requests. This phenomenon is attributed to the fact that, during the data collection period, this program produced the largest number of graduates, followed by Chemical Engineering and Civil Engineering.

Figure 3. Years Elapsed Between Graduation Date and Degree Certification Request
Time elapsed in years



An analysis of the temporal distribution of the collected data reveals a pattern that closely resembles the Pareto Principle (Gómez, 2007). Specifically, 78.8% of graduates submitted their degree certification request within the first two years following graduation. In contrast, the remaining 21.2% of requests were made from the third year onward. This distribution indicates that a minority of the elapsed time (the first two years) accounted for the majority of the relevant data for this study.

Given that ITVH is located in Villahermosa, the capital city of the state of Tabasco, the data analysis shows that most applicants reside in this same city. It is therefore reasonable to infer that graduates likely have family members in Villahermosa who can provide support and facilitate the completion of the degree certification process.

Socio-familial and relational factors play a role in shaping how support is defined and provided to sons and daughters during their educational journey. This support is not limited to parents; other family members—though not always visible to the educational institution—are often involved and interact with the university context (Sánchez Arias & Callejas Callejas, 2020, p. 1).

Figure 4. Percentage of Graduates Who Are Employed vs. Unemployed
Current working

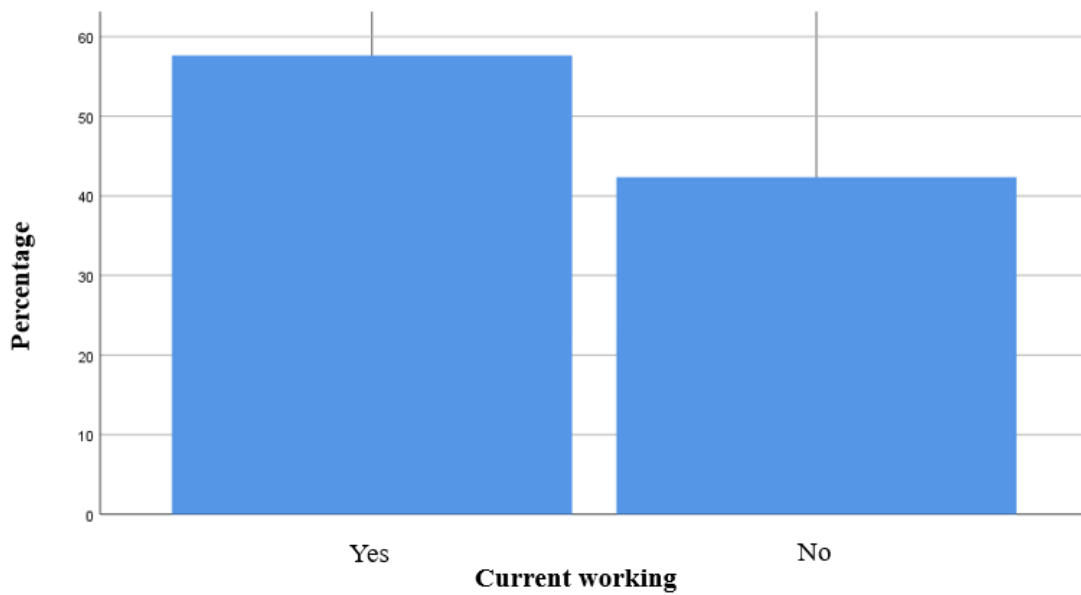
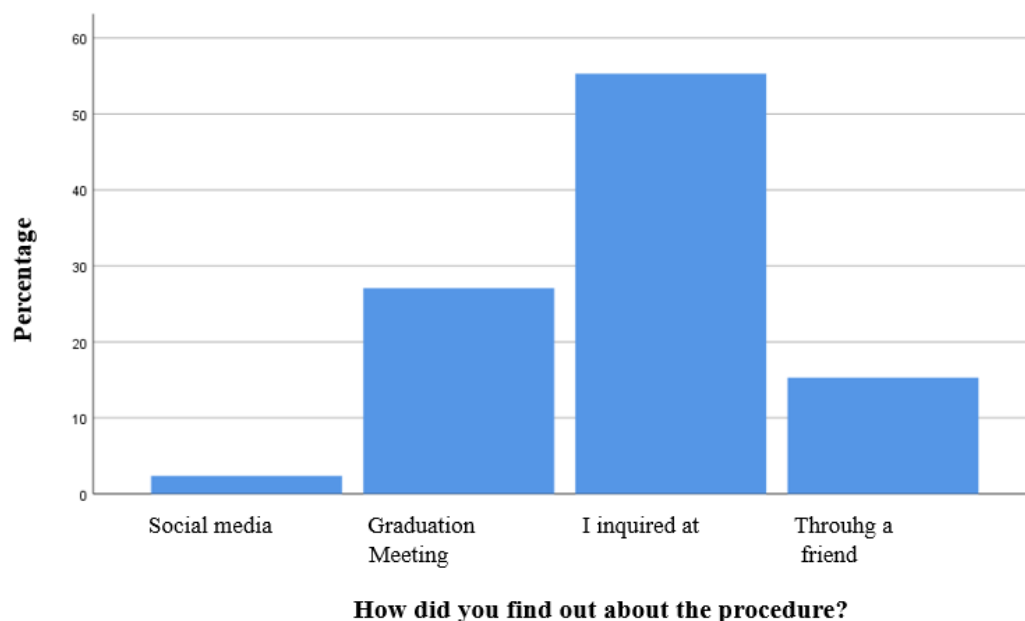


Figure 4 shows that 56.3% of respondents were employed at the time they submitted their degree certification request, while the remaining 41.4% were not employed. Among those who reported being employed, 44% start their workday at 8:00 a.m., followed by 27.7% who begin at 7:00 a.m. Regarding end-of-day schedules, 44% finish work at 5:00 p.m., while 10.3% reported a tie in their workday ending at either 4:00 p.m. or 6:00 p.m. Additionally, 77% of respondents indicated that they use public transportation.

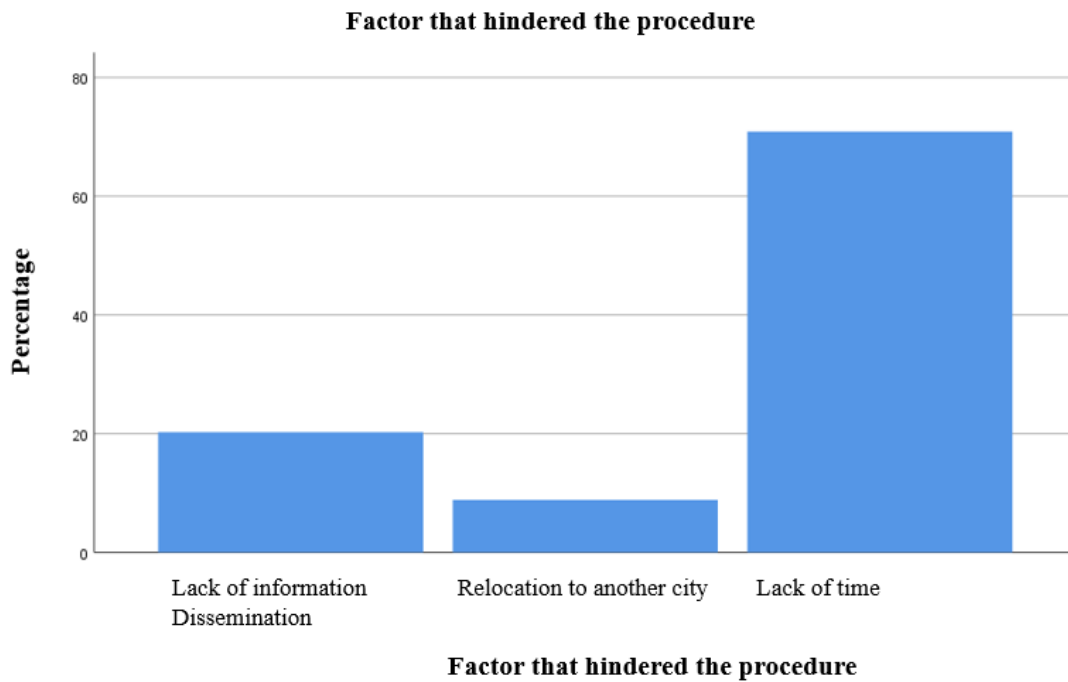
Figure 5. How Graduates Learned About the Degree Certification Process
How did you find out about the procedure?



According to the data presented in Figure 5, 54% of respondents learned about the degree certification process through in-person inquiries at the offices of the Instituto Tecnológico de Villahermosa (Technological Institute of Villahermosa). An additional 26.4% received the information during the graduation meeting, 14.9% were informed by a friend, and the remaining 2.3% through social media platforms.

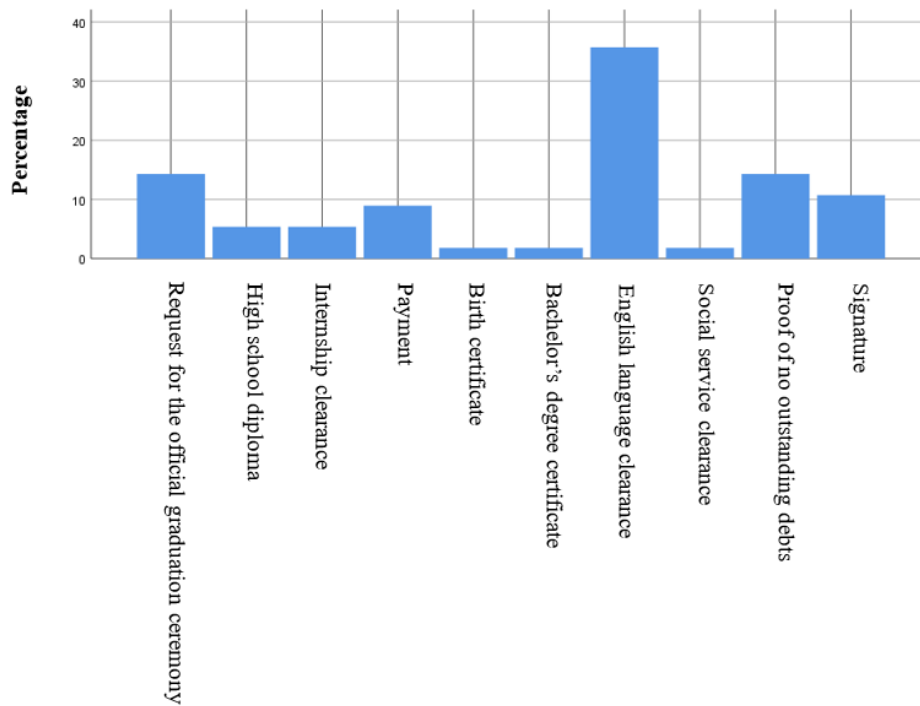
Furthermore, 65.5% of participants expressed full satisfaction with the clarity of the information provided. In addition, 73.6% reported being completely satisfied with the courtesy of the service received. Lastly, 77% indicated full agreement that they were attended to at the previously scheduled time.

Figure 6. Reasons that made it difficult to apply for a title application



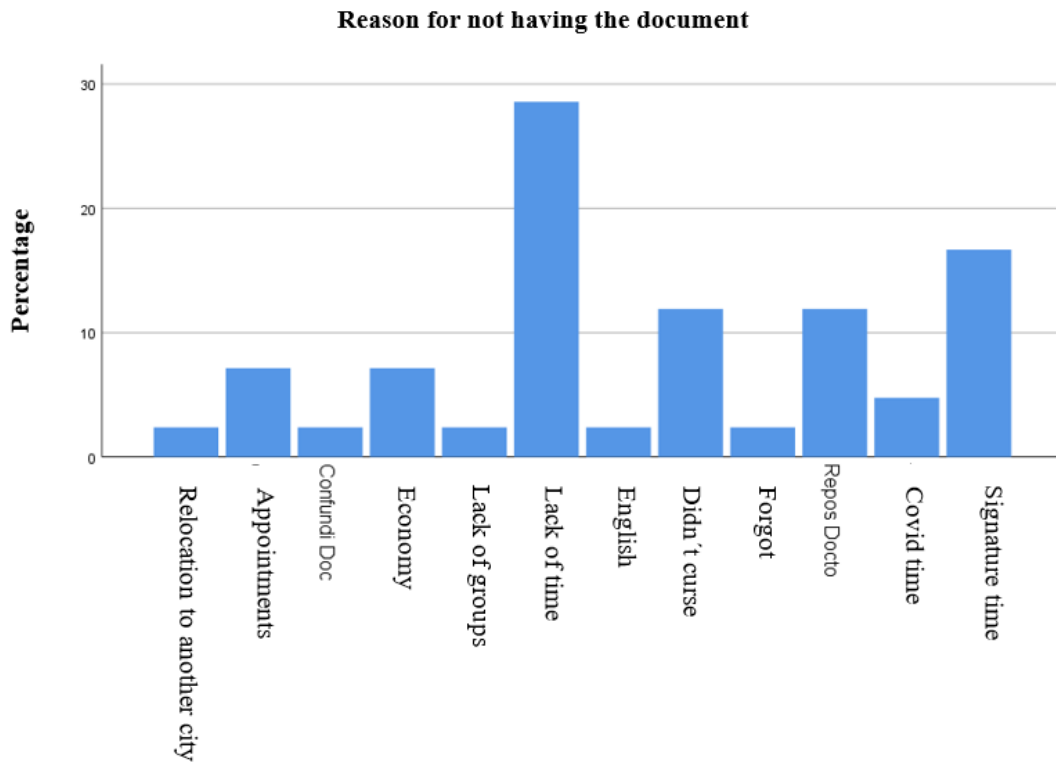
According to Figure 6, 64.4% of respondents reported having encountered difficulties in completing their degree certification process, primarily due to a lack of available time. Additionally, 18.4% indicated that insufficient dissemination of information was an obstacle, while 8% stated that relocating to another city negatively affected their ability to complete the process.

Figure 7. Documents That Were Difficult to Obtain
It was difficult to obtain the document



According to the data presented in Figure 7, 23% of respondents reported difficulties in obtaining the English language clearance. Additionally, 9.2% experienced challenges in acquiring the formal ceremony request form and the clearance of financial obligations. Furthermore, 6.9% faced obstacles in obtaining their electronic signature, while 5.7% were unable to complete the required payment.

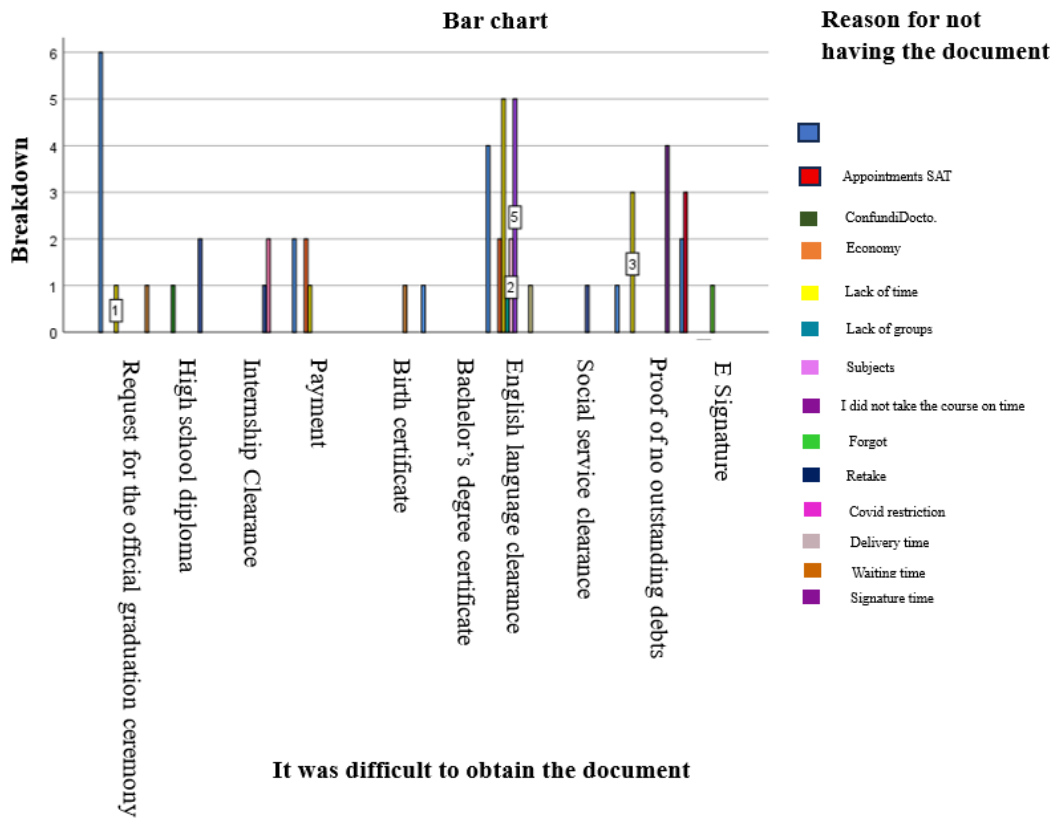
Figure 8. Reasons for Difficulty in Obtaining Required Documents



Among the 48.3% of cases in which respondents experienced difficulty obtaining required documents, 28.6% were attributed to a lack of available time. Additionally, 16.7% cited prolonged waiting periods for obtaining necessary signatures, while 11.9% reported delays due to the untimely completion of English language modules and requests for document replacement. The remaining percentage was distributed among eight other causes.



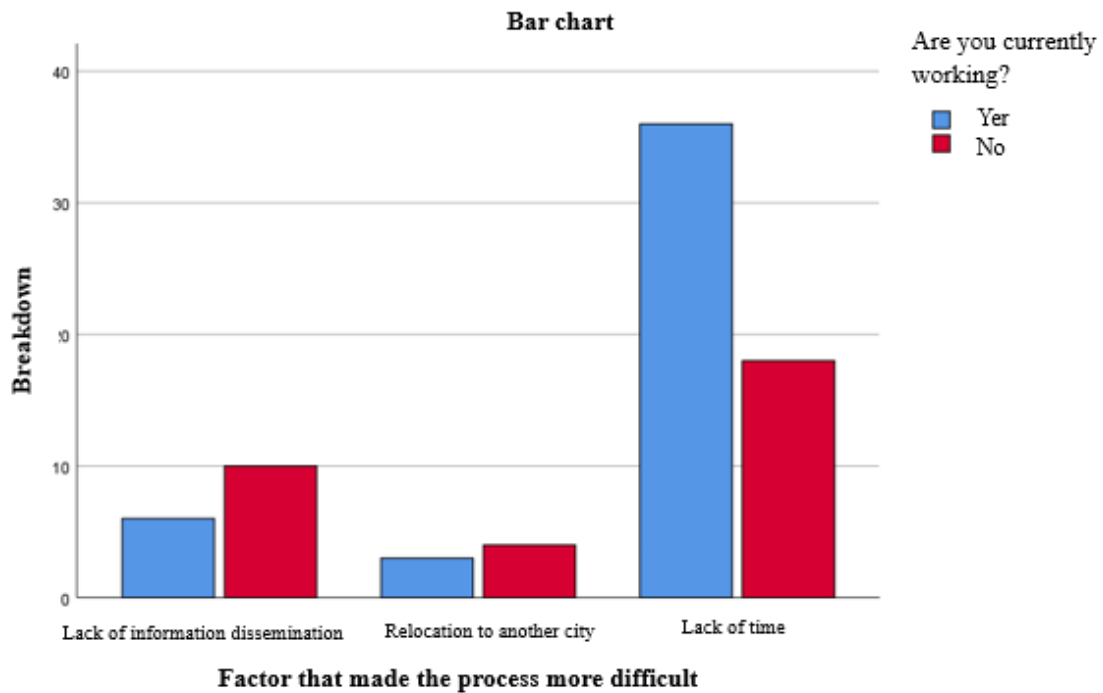
Figure 9. Relationship Between Documents and Reasons for Not Obtaining Them



It was found that the main reasons hindering the acquisition of the English language clearance certificate were a lack of available time and the failure to complete the required language modules within the designated period.



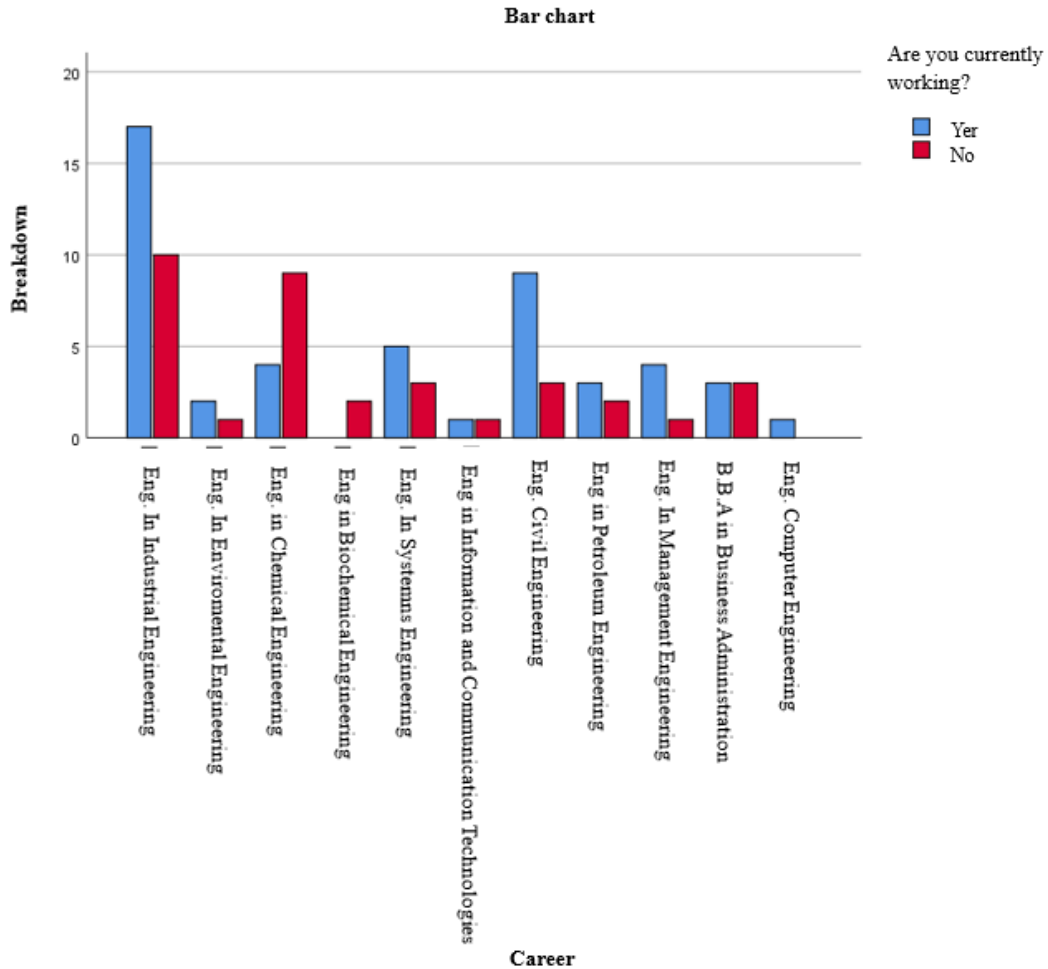
Figure 10. Relationship between the reason that made the procedure difficult and whether the person is working.



It was found that for 70.9% of respondents, the primary difficulty in completing the certification process was a lack of time. Of this group, 66% were currently employed, while the remaining 34% were not engaged in any employment at the time. This finding aligns with the study by Solís Carcaño et al. (2006), which states:

“The ease with which graduates enter the workforce can, for some, become a disadvantage, as they prioritize earning income over dedicating time and effort to obtaining their professional degree.”

Figure 11. Relationship Between Degree Program and Employment Status



This figure displays the percentage of graduates, by degree program, who are currently employed compared to those who are not currently working.

CONCLUSION

Following a thorough analysis of the survey results from graduates who applied for degree certification between November 2024 and January 2025, it can be concluded that there is a notable tendency among graduates to initiate the certification process as soon as possible—either immediately after completing their academic programs or after participating in the graduation ceremony. Additionally, the majority of respondents reside in the city of Villahermosa, which facilitates their travel to ITVH to complete the process. This proximity also increases the likelihood of receiving assistance from family members living in the same city, thereby enhancing their ability to manage the administrative procedures involved.



Despite the fact that we are in the year 2025, and considering the significant social and cultural changes that have taken place, a male predominance in engineering programs remains evident.

The difference in employment status among those who submitted their certification requests—whether employed or unemployed—is minimal. However, it is notable that those who are employed tend to work between 8 and 10 hours per day, primarily during morning shifts. Interestingly, some unemployed applicants also report delays in completing the certification process, raising questions about the factors that prevent them from dedicating time to these procedures. This suggests the need for further research to explore the causes of such delays.

Most applicants became aware of the degree certification process through interpersonal, primarily verbal, communication, while digital channels (such as social media) were used to a much lesser extent. This reflects a weakness in the dissemination strategy. It is therefore recommended to enhance and maintain consistent outreach efforts through digital communication channels in order to improve visibility and accessibility.

The document that presented the greatest difficulty in obtaining was the English language clearance certificate. The main barriers identified were lack of time and failure to complete the required modules within the designated period. It is recommended to increase the number and variety of available class groups and schedules to encourage greater enrollment in the required English modules. Additionally, it is advisable to improve the dissemination of information regarding the importance of fulfilling the English language clearance requirement, as it is essential for obtaining the professional degree.

Overall, the most commonly cited reason for difficulties in completing the degree certification process was lack of available time, followed by delays in obtaining required signatures.

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