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*Artículos científicos*

## **Evaluación de la deserción a nivel superior: dimensiones que inciden en carreras universitarias**

***Evaluation of Dropout at the Higher Level: Dimensions that Affect  
University Careers***

***Avaliação da desercão em nível superior: dimensões que afetam as  
carreiras universitárias***

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## Resumen

El propósito de este trabajo es examinar las variables que prevalecen en la deserción universitaria de dos carreras de educación superior. Para lograr el objetivo se aplicó un instrumento confiable y validado. Esta investigación se llevó a cabo en tres etapas. La primera consistió en las bases teóricas; la segunda comprendía la aplicación del estudio, y la tercera abarcó el examen de los datos. Los hallazgos muestran que la herramienta utilizada es válida para medir el propósito del análisis. Destaca que las variables latentes en la deserción universitaria son: Gestión universitaria, Vocación y apoyo y Exigencia y compañerismo. Asimismo, se concluye que existe un contraste significativo entre las dos carreras universitarias.

**Palabras clave:** carrera universitaria, deserción escolar, gestión universitaria.

## Abstract

The purpose of this work is to examine the variables that prevail in university dropout in two higher education careers. In order to achieve this objective, a reliable and validated instrument was applied. This research was carried out in three stages. The first consisted of the theoretical bases; the second comprised the application of the study, and the third covered the examination of the data. The findings show that the tool used is valid for measuring the purpose of the analysis. It stands out that the latent variables in university desertion are: University management, Vocation and support, and Demand and companionship. Likewise, it is concluded that there is a significant contrast between the two university careers.

**Keywords:** university career, school dropout, university management.

## Resumo

O objetivo deste artigo é examinar as variáveis que prevalecem na evasão universitária de duas carreiras de ensino superior. Para atingir o objetivo, foi aplicado um instrumento confiável e validado. Esta pesquisa foi realizada em três etapas. A primeira consistiu nas bases teóricas; a segunda abordou a aplicação do estudo e a terceira abordou o exame dos dados. Os achados mostram que o instrumento utilizado é válido para mensurar o objetivo da análise. Destaca que as variáveis latentes na deserção universitária são: Gestão universitária, Vocação e apoio e Demanda e camaradagem. Da mesma forma, conclui-se que existe um contraste significativo entre as duas carreiras universitárias.



**Palabras-chave:** carrera universitaria, evasión escolar, gestión universitaria.

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## Introduction

Today, the issue of school dropout is of vital importance for all workplaces, given that, without students, a school cannot continue offering its services. Rué (2014) expresses that, on this subject, there is an inability in the results of the institutions from their diagnosis to their measurement. Authors such as Zapico (2019) and Himmel (2002) start from the fact that students can drop out of their studies both voluntarily and involuntarily. For his part, Ruiz (2020) alludes that desertion can occur in three classifications: early, definitive and internal. On the other hand, Bedregal, Aruquipa and Cornejo (2020) suggest evaluating students in their school performance from the family, work, social and cultural perspective. Likewise, Smulders (2018), Rodríguez (2019) and Miño de Gauto (2021) point out that dropout can be influenced by two types of variables: internal and external. De Oca (2021) alludes that desertion is an issue of vital importance for each university, and suggests promoting teamwork as a means to significantly reduce this problem that affects every educational institution.

Cortés, Álvarez, Llanos and Castillo (2019) mention that dropout is an influential topic in most Latin American university centers. Ávila (2019) argues that desertion is a topic that, if not dealt with by the institutions in an efficient and effective manner, will affect not only the economy of the workplace, but will also endanger the continuity of the academic programs offered. by the universities. In the Mexican context, according to the National Institute of Statistics and Geography [Inegi] (March 23, 2021), of the 33.6 million schoolchildren who were enrolled in the 2019-2020 cycle, whose age range was from 3 to 29 years, 740,000 interrupted their training. In addition, 5.2 million schoolchildren made the decision not to enroll. Worldwide, the United Nations (UN) announced in March 2021 that 198 million students had missed a year of school (Cáceres).

Taking into account the above, the decision was made to carry out a study within a university center in Mexico in order to evaluate school dropout. Tocora and García (2018) allude that institutions must create favorable environments to be able to detect this problem, at first, and then attack it. For this reason, the study has the purpose of evaluating school desertion in two university careers of a university center. For this, a literature review was used in order to understand and have an updated knowledge of the subject in question



(Guirao, 2015). Then, the instrument of Flores, Bahamondes, Maureira and González (2019) was applied to a sample of students from two careers of the institution addressed. For its application, the Google Form tool was used. For the evaluation of the results, the SPSS software was used, following the recommendation of Sánchez (2019), who mentions that this package has a friendly and intuitive interface for the user. The results obtained provide consistent information on the existence of a significant agreement between the experts.

## **Methodology**

### **Participants**

For the advancement of this research, the participants were chosen in a non-probabilistic and discretionary way, who responded anonymously to the instrument used for this study. The students belonged to the engineering careers in Business Management (IGE) and Biochemistry (IBQ).

In the present study, Google Forms was instituted as a means of communication. Leyva, Pérez and Pérez (2018) highlight that this tool is quite moldable and allows adaptation in any educational field.

### **Method**

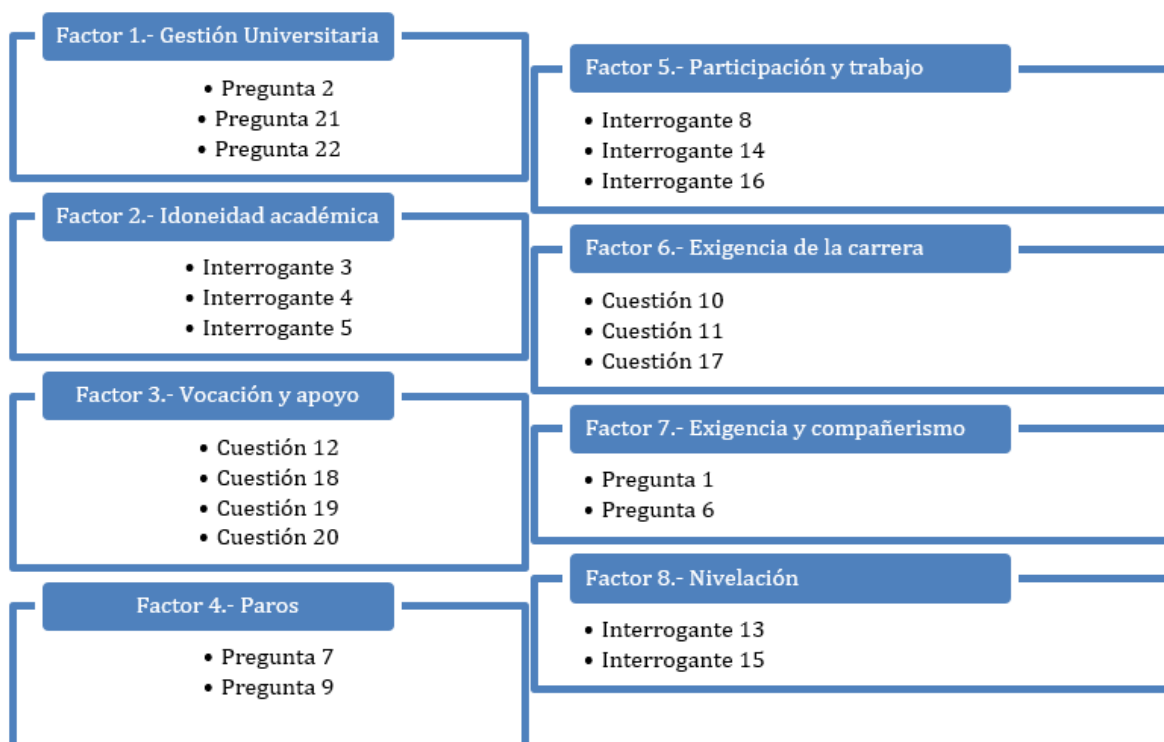
In the development of this study, the phases suggested by García, Poblano, Reyes, Cuamea and Juárez (2021) and Rodríguez, Poblano, Alvarado, González and Rodríguez (2021) were considered. This is a study with a quantitative approach, with a descriptive level and a non-experimental design. Quantitative approach since collected data and statistical analyzes are used to test hypotheses and obtain a better understanding of the phenomena (Malhorta, 2008). Descriptive because the problem is characterized to propose solution measures, and since it is aimed at describing in detail the parts, categories or classes of that object (Bernal, 2010). The design is non-experimental because the variables involved in the study were not manipulated, and cross-sectional since the data was collected over a period of time. (Hernández y Mendoza, 2018).

## Instrument

To carry out the study, the Flores et al. tool was used. (2019). This instrument is made up of 22 questions, which are distributed in eight factors. In relation to reliability, the aforementioned authors obtained a reliable result of 0.638.

Figure 1 represents the composition of the tool used for this research.

**Figure 1.** Instrument Composition



Source: Own elaboration based on Flores *et al.* (2019)

To answer the questionnaire, a Likert-type graduation was used that fluctuated between five options: from one (strongly disagree) to five (definitely agree), so the student could express his opinion.

## Process

This research was developed in three stages, which are described below.

In the first stage, the characterization of the study topic was developed. Next, the research problem was formulated, and then the study objectives were stipulated: general and specific. In this phase, a literature review was carried out. To carry out this work, the following databases were used: Redalyc, Scielo, Latindex and Google Scholar. The selection

criteria were: the year, recent research was used, not more than five years old; In addition, journals that were refereed and indexed were used, in order to take care of the quality of the content of each resource.

For the second stage, the evaluation instrument was built in the digital tool Google Forms. An informative talk was also held with the students, in order to explain the purpose of the study and carry out a demonstration of how the survey should be filled out. The approximate time it would take to answer the form was explained to them and, above all, greater objectivity was requested when answering the survey.

In the third stage, the SPSS software was used to perform the analysis of the data collected in the previous stage. Descriptive statistics were applied to know the parameters of each sample of students. As here, Ruz, Molina and Contreras (2020) use it mainly to organize the results of their research. Inferential statistics were also used in order to investigate the data collected. Reyes, Gutiérrez and Rosa (2019) clarify that statistical inference allows generalizing from a group of data that are part of a population.

Once the application of the study was completed and all the information was collected, it was analyzed with the IBM SPSS 22.0.0 package. Amat, Velázquez, and Cruz (2021) allude to the fact that SPSS contributes to the development of statistical exercises. Then, the calculation of the desertion factors between the two careers was carried out in an integral way: IGE and IBQ. Then, the Wilcoxon-Mann-Whitney test was applied in order to know if there was a difference between the engineering. To consummate, each career was examined individually to know the dimensions of desertion.

## Results

The first concentrates the results in an integral way regarding the predominant elements in the desertion of the two careers under examination; In addition, the Mann-Whitney-Wilcoxon test is presented in order to know if there are differences between engineering.

The second section outlines the results individually by university career of the dimensions that intervene in desertion.

Table 1 represents the distribution of the sample between gender and university degrees.

**Table 1.** Sample distribution

Género	IGE	IBQ
Mujeres	9	37
Hombres	7	15
Total	16	52

Source: self made

The table above shows that the IBQ has more students, both women and men. Next, the reliability test was performed. It began with the calculation of the data; subsequently, the study of the Cronbach's alpha parameter was carried out. Table 2 presents the summary of the case process.

**Table 2.** Data treatment

		N	%
Datos	Vigente	68	100.0
	Descartado	0	0.0
	Total	68	100.0

Source: self made

Table 3 represents the resulting reliability effects. According to Ramírez and Polack (2020), in Cronbach's alpha a limit greater than or equal to 0.70 gives evidence of an acceptable result. In the case of this study, an acceptable result was obtained, which was 0.786.

**Table 3.** Reliability statistics

Alfa de Cronbach	N de elementos
0.786	22

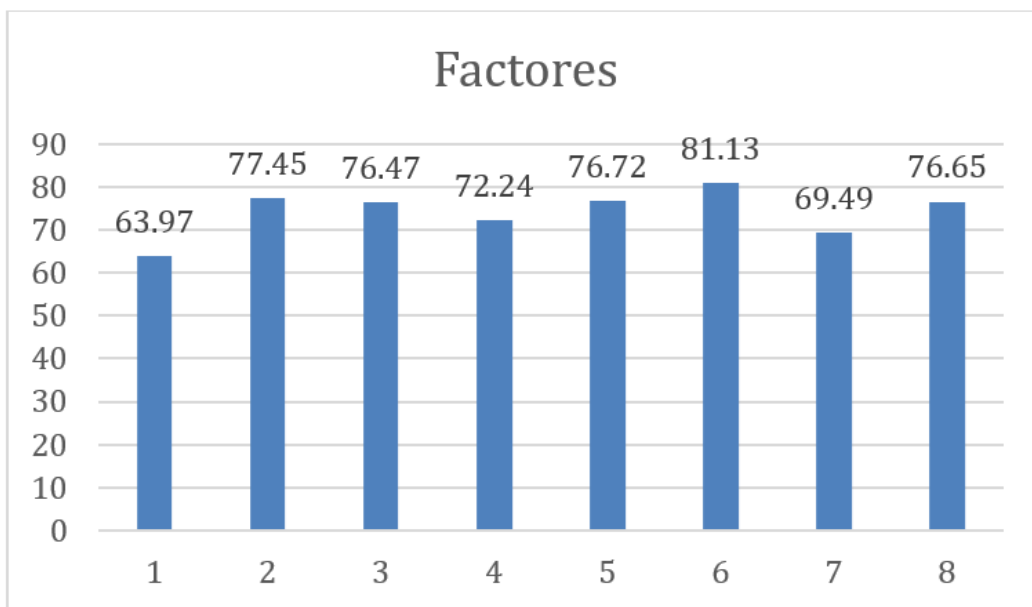
Source: self made

Once it is known that there is reliability in the answers, the dropout factors were calculated in an integral way in IBQ and IGE.

Figure 2 symbolizes the result obtained once the dimensions of the instrument have been analyzed.



**Figure 2.** Factor Results



Source: self made

From the previous figure, the factor called University management was the one that obtained the lowest rating, followed by Demand and camaraderie. Otherwise, the dimension that obtained the highest weight was called Academic Requirement, followed by Academic Suitability. Then, for each collection of responses from each engineering, the normality test was examined, this to find out if there were differences between these university careers. For this, the following hypotheses were specified, as suggested by Flores and Flores (2021):

## Discussion

Today, in the search to improve their processes, educational institutions have instructed the use of indicators year after year. Once the work is completed, it can be seen that the University management dimension was the one that gave the least weight for both careers, IGE and IBQ, results similar to those of Trzenko (2020), Alcarraz and Sánchez (2021), Sanhueza, King and Améstica (2021), Seminara (2021) and Tavico (2021).

Another dimension that stood out for the IGE career was that of Vocation and support; while for IBQ, the Demand and companionship stood out. For the first race, the finding resonates with the works Gallegos, Campos, Canales and González (2018), Fernández, Solís, Hernández and Moreira (2019), Chalela, Valencia, Ruiz and Cadavid (2020) and Pineda,



Moreno and Moreno (2020), since security and vocation are discussed in choosing a career, in addition to pointing out the topic of the economic factor to support the study.

In relation to IBQ, the resulting data is related to what was found by Bravo, Illescas, Larriva and Peña (2017), Peña (2017), Ortiz, Trujillo and Tello (2018) and Benoit, Jaramillo and Castro (2019), due to topics such as the academic requirement and the relationships that exist between classmates are touched upon.

## Conclusions

This study alludes to a notable topic for any higher education institution, given that, today more than ever, every university must monitor its users in order to keep them satisfied and also to meet their internal goals. The topic analyzed should not only be addressed as an incidence of the school, but it should be done in a holistic way, where all the actors involved should work in synergy in order to reduce student dropout.

The purpose of this work was to examine the variables that intervene in the dropout of university students from IGE and IBQ. The result suggested that, comprehensively, two dimensions are involved; In addition, it was shown that there are statistically significant differences between both races.

The information obtained from the analysis indicates that the Mann-Whitney U experiment contributes to the confrontation of two autonomous samples. The determination of these variables will allow the higher education institution to know the areas in which it must focus to mitigate the dropout rates.

Commented on this, it is advisable to use multivariate statistical tools, in order to be able to establish the effects in the study for the different variables that constitute this research.

## Future lines of research

The work attended in the first instance to examine the influential factors in the dropout of students from IGE and IQB. By virtue of this, the next stage will be to expand the sample with greater reliability, and compare the evidence of both investigations.

Another line of additional research would be to carry out a study on the missing university careers of the higher education institution with the intention of obtaining a complete panorama of the influential dimensions in the university students who study in it.

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