

# **Characterization of the use of SolidWorks Standard Software in the 2022, two years after COVID-19 Year, by the students of Mechanical Engineering of the TECNM Campus, Instituto Tecnológico de Mexicali**

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## **ABSTRACT**

During the year 2022, the COVID-19 pandemic has prompted people to look for online communication tools such as SolidWorks Standar software. The objective of this quantitative research is to measure the impact on users of Mechanical Engineering career of the Institute Tecnológico de Mexicali with 127 enrolled students and make a diagnosis, based on the results of a survey applied to 79 students.

**Keywords:** TECNM, COVID-19, solidworks, software, mechanical engineering.

## **1 INTRODUCTION**

At the Tecnológico Nacional de México, Campus Instituto Tecnológico de Mexicali, since the beginning of the covid-19 pandemic, different strategies were implemented to continue with the teaching of online classes that search was exhaustive with the objective of designing a strategy that was efficient for students to learn during this difficult time, one of the various software studied was SolidWorks Standard, this is the root of why this research was carried out.

## 2 METHODOLOGY

The first step that we followed when writing this investigation, was to explain the research design and the conception of the research idea after the research problem. Later, we defined the research objectives, formulation of research questions; In addition and following the methodology, we explain the type of methodology to follow according to the proposed objectives.

Then we will focus on the specific description of our study population, indicating the main factors by which it has been delimited, also including the statistical formula used to determine the sample.

Once entering the survey, we will show the main variables that we have included in the research and the measures used to convert them into operations.

On the other hand, we dedicate a section to the analysis of the measurement scales, so that we characterize the different dimensions of competitiveness according to the model used, based on a factor analysis, as well as verify the reliability and validity of the previous ones. Scale of measurement with which we obtained the information, which we use, to finish we will review the hypothesis and analyze the results obtained to finally write the conclusion.

$$N = 127; Z_{\alpha} = 1.96; p = 0.16; q = 0.84; e = 0.05;$$

$$N \times Z_{\alpha}^2 \times p \times q$$

$$n = \frac{\dots}{\dots} \quad n=79$$

$$e^2 \times (N-1) + Z_{\alpha}^2 \times p \times q$$

### 2.1 SURVEY

During the year 2022, two years after COVID-19 pandemic, the SolidWorks Standard software is used in the subjects of the Mechanical Engineering career at the Instituto Tecnológico de Mexicali, or is known by students?

During the year 2022, two years after COVID-19 pandemic, SolidWorks Standard software that is used in the subjects of the Mechanical Engineering career at the Instituto Tecnológico de Mexicali is used regularly in classes?

During the year 2022, two years after COVID-19 pandemic, SolidWorks Standard software that is used in the subjects of the career of Mechanical Engineering at the Instituto Tecnológico de Mexicali will be recommended to other students?

During the year 2022, two years after COVID-19 pandemic, SolidWorks Standard software that is used in the subjects of the career of Mechanical Engineering at the Instituto Tecnológico de Mexicali, considers them necessary for a better learning?

During the year 2022, two years after COVID-19 pandemic, Standard software that is used in the subjects of the Mechanical Engineering career at the Instituto Tecnológico de Mexicali, Apart from the use in class you have seen being used in some other career?

During the year 2022, two years after COVID-19 pandemic, SolidWork Standard software that is used in the subjects of the Mechanical Engineering career at the Instituto Tecnológico de Mexicali, in the last 12 months you have used them?

During the year 2022, two years after COVID-19 pandemic, SolidWork Standard software that is used in the subjects of the career of Mechanical Engineering at the Instituto Tecnológico de Mexicali, if you had the opportunity to use this technology you would use it?

During the year 2022, two years after COVID-19 pandemic, SolidWork Standard software that is used in the subjects of the career of Mechanical Engineering at the Instituto Tecnológico de Mexicali, considers them reliable for use in the classroom?

With the following multiple choice answers:

Strongly Disagree

Disagree

I slightly Disagree

A Little Agreement

Agree

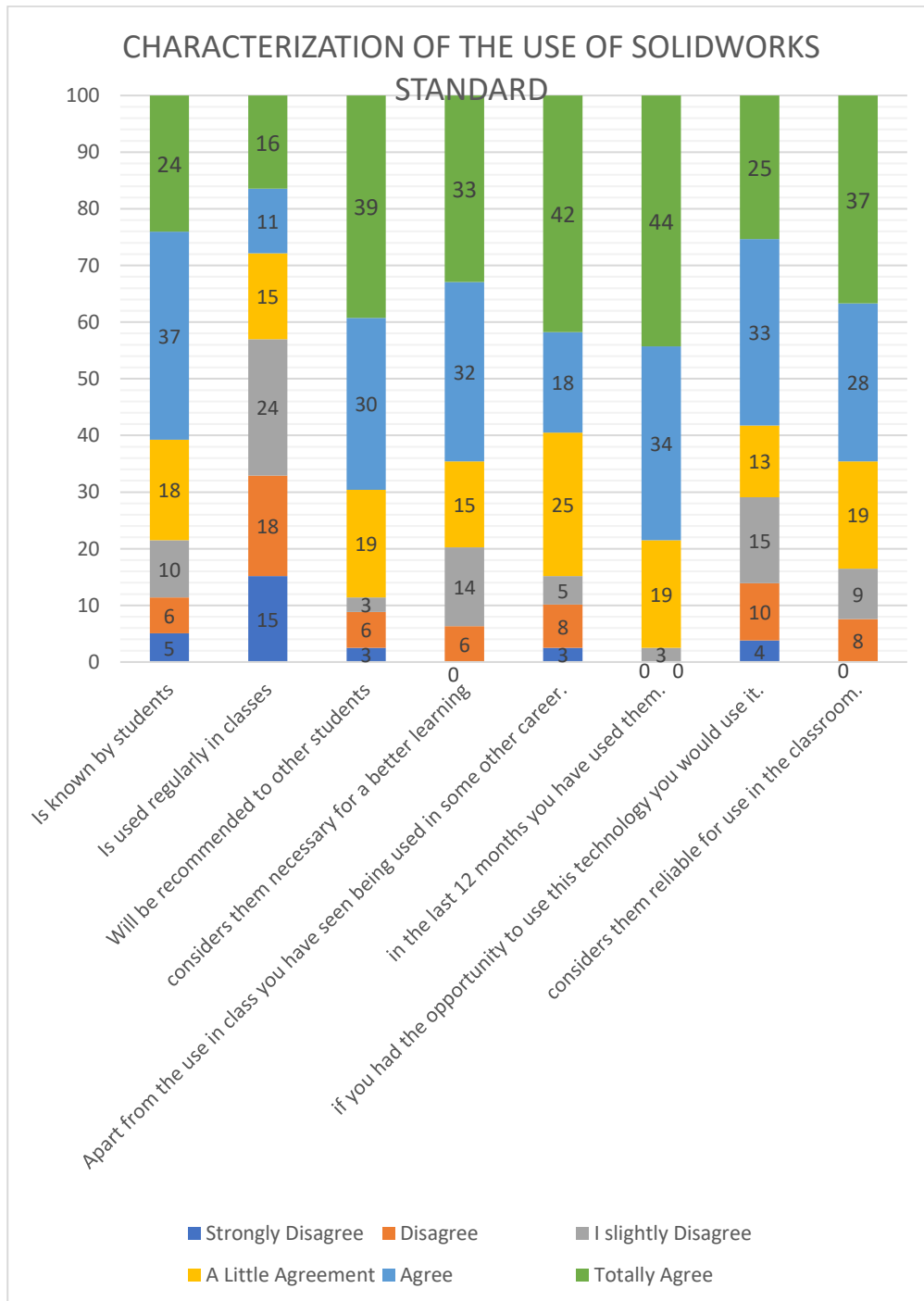
Totally Agree

### 3 CONCLUSION

	Is known by students	Is used regularly in classes	Will be recommended to other students	considers them necessary for a better learning	Apart from the use in class you have seen being used in some other career.	in the last 12 months you have used them.	if you had the opportunity to use this technology you would use it.	considers them reliable for use in the classroom.
Strongly Disagree	5	15	3	0	3	0	4	0
Disagree	6	18	6	6	8	0	10	8
I slightly Disagree	10	24	3	14	5	3	15	9
A Little Agreement	18	15	19	15	25	19	13	19
Agree	37	11	30	32	18	34	33	28
Totally Agree	24	16	39	33	42	44	25	37

Source: Author

Based on the answers obtained by the survey, SolidWorks Standard Software it is known by the students, besides being considered useful, and is regulary in classes, and students recommended it to other students, and consider them necessary for a good learning, it was detected that not all the students use the SolidWorks Standard, but more than 97% surveyed use it, 42% of the students surveyed want to use it, 84% of the student consider it a reliable tool, more than 70% of the students are considered technology enthusiasts.



Source: Author

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