

## Chapter 15

# Deep Learning Implementation for Pattern and Incidences Identification of Gender Violence in Mexican Contexts

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### ABSTRACT

*This research has as its central theme gender violence in the Mexican context. It is based on the application of two data collection instruments whose objective is, in the first instance, to identify factors and essential elements that characterize cases of gender violence in higher education institutions and as a second point to obtain information from students who are victims of gender violence. The implementation of deep learning techniques is a key point in the research because thanks to it, it has been possible to identify the percentage in which emotions are presented in the texts collected with the second data collection instrument. Among the data obtained, it stands out that the female gender is the most violent, but at the same time, it is considered the most violent, a fact that gives the opportunity to continue with this research in future works, or the fact that 91.9% of the women surveyed have suffered at least one case of violence in their lives. In addition to this, it was found that anger is the most influential emotion in the texts collected with a presence of 56.3%.*

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## **INTRODUCTION**

Gender violence has been a problem that has haunted the world for as long as anyone can remember, if not in history, it is estimated that more than 133,000 women throughout the country and 95,000 in different urban regions of the world, was subjected to violence in 2006 (Arce, 2006), however, in recent years it has become more relevant thanks to various factors such as the increased need to respect human rights in society in general, the mobilization of civic groups sought a revolution of opportunity and the new law emerged as a result of the two previous laws.

Quantitatively, gender violence can become numbers that are not only alarming in the country but leave much to be desired worldwide. There are a number of studies in which, based on censuses carried out year after year, interesting and compelling data can be obtained in the thematic area discussed here.

One of the main scenarios in which cases of gender-based violence can be experienced are educational institutions, which according to studies by (Ruiz Ramírez & Ayala Carillo, 2016), are considered “porous institutions” due to the impact of social life in them, where violence can be “imported” from the community to the educational space and reciprocally, thus being able to experience a mixture of gender-based violence and other forms of violence in the social sphere.

Educational institutions, besides being the ideal setting for the development of these events, are one of the main means to initiate awareness and training for the prevention of these cases. This research aims to identify characteristic patterns of gender violence in the public-school environment and to experiment with computational models that highlight the importance of timely detection of violent behaviors as a means for the prevention and/or reduction of incidences of gender violence, based on the application of a data collection instrument applied to students from two institutions of higher education.

The hypothesis proposed for this research is that the convolutional neural network has the potential to identify emotions related to gender violence in texts written in the Spanish language with an accuracy higher than 90%. For this reason, it is intended to implement this artificial intelligence technique in future work, for the development of software applicable to various fields, in order to prevent and reduce the incidence of gender violence.

## **BACKGROUND**

Gender violence in the world is an underlying problem that has had several consequences in different countries from a bilateral perspective. The first is related to the havoc caused in society that is reflected in the poor position of countries in international rankings in terms of quality of life, mainly for women. The second is related to the initiatives taken by governments to eradicate it.

Mexico has seen an increasing number of victims of gender-based violence because of its social, economic, and political background. In addition, the recent outbreak of the new coronavirus disease (COVID-19) has exposed significant inequality in the social, economic and medical environment that is adversely affecting Gender-based violence (GBV) problem (Castorena et al., 2021).

According to various studies conducted in 2019, Mexico was positioned within the last places (out of a total of 80) within the ranking called “Best countries to be a woman”(Forbes Mexico, 2019). In 2021, the magazine US News & World Report (2021) published the same ranking in which 78 countries were considered within which, the nation was positioned in 48th place.

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