Cyberbullying Analysis in Intercultural Educational Environments Using Binary Logistic Regressions

José Manuel Ortiz-Marcos 1, María Tomé-Fernández 2.*, and Christian Fernández-Leyva 1*

1 Department of Research Methods and Diagnosis in Education, Faculty of Education Sciences, University of Granada, 18071 Granada, Spain; jmanuel30@correo.ugr.es (J.M.O.-M.); swarleyva@gmail.com (C.F.-L.)
2 Department of Research Methods and Diagnosis in Education, Faculty of Education and Sports Sciences, University of Granada, 52071 Melilla, Spain
* Correspondence: mariatf@ugr.es

Abstract: The goal of this study is to analyze how religion, ethnic group, and race influence the likelihood of becoming either a cybervictim or cyberbully in intercultural educational environments. In the research, 755 students in secondary education were analyzed in the south of Spain through the Cyberbullying Scale for students with Cultural and Religious Diversity (CSCRD). The analyses were carried out using the Statistical Package SPSS and the STATA software. The results obtained from the Kruskal–Wallis H test showed significant differences according to these aspects, for both the cybervictim and cyberbully parameters. The results stemming from binary logistic regressions confirmed such differences and regarded those students who belong to the Muslim religion, the gypsy ethnic group and the Asian race as being more likely to become cybervictims. Furthermore, these analyses showed that Gypsy and Asian students were also more likely to be cyberbullies than other groups. The main conclusions state that minority groups are more likely to suffer cyberbullying in intercultural educational environments, and that students from these groups are also more likely to become cyberbullies.

Keywords: cyberbully; cybervictim; intercultural educational environments; binary logistic regressions

1. Introduction

Migratory movements and cultural diversities in the country mean that Spain, especially in the south, enjoys a diverse social reality made up of citizens of different ethnic, religious, and racial backgrounds.

This reality is reflected in educational institutions. They are immersed in a constant evolution of traditions and customs. Therefore, many experts in the field require that they be inclusive, tolerant, and integrating in order to guarantee positive relations between the members of the educational community, and particularly between the students.

In addition, the rise of new technologies and the Internet among students, along with the need for containment promoted by the Covid-19 pandemic situation, has recently encouraged online relationships. These relationships are characterized by overcoming the spatial and temporal limitations of traditional relationships. This has many advantages, but also the disadvantage of the considerable increase in bullying through this channel, especially in the adolescent stage corresponding to secondary education. This includes, of course, the increase in cyberbullying promoted by xenophobia and racial, ethnic, and religious intolerance in intercultural educational contexts.

The current intercultural relations justify the need for an answer to the following research question, which we tackle in this paper: How does the religion, ethnic group or race of students influence the probability of becoming cyberbullies or cybervictims?

To answer this question, a quasi-experimental research of expo-fact type was carried out, in which, through a questionnaire divided into two subscales (cyberbully and cyber-
victim) [1], the probability of respondents to suffer or emit cyberbullying in intercultural contexts was measured taking into account their ethnicity, race, and religion.

To do this, intentionally and through non-probabilistic sampling, different secondary schools in southern Spain were selected. This is the area with the largest concentration of intercultural students in the country because it is an area with constant migratory flow due to its proximity to the African continent and because its good climate attracts the arrival of immigrants from northern Europe.

In the study, data collection was carried out taking into account the Declaration of Helsinki and the protocol approved by the Ethics Committee of the University of Granada. The data were analyzed using the SPSS statistical package for the Kruskal–Wallis H test and the STATA software for the statistical test of binary logistic regressions.

Both tests demonstrated significant differences in the probability of being a cybervictim or cyber bully among the different races, ethnicities, and religions of the students analyzed. In addition, logistic regression analysis highlighted that students who belonged to the Muslim religion, the Gypsy ethnic group, and the Asian race had the highest probability of becoming cybervictims. Moreover, students from the Jewish religion, Roma ethnic group, and the Asian race were more likely to be cyberbullies.

Finally, it is worth mentioning that, in order to know in depth the relevant aspects of this research, the study will start with a review of the literature where the state of the matter is specified, as well as the main differences between the present study and the previous ones. This is followed by the methods section divided into the sub-sections of sample, instrument, data collection, and analysis process.

Then, Section 4 is developed, differentiating between results obtained by the Kruskal–Wallis H test and those obtained by the analysis by binary logistic regression. Section 5 describes the controversy and similarity of the results of our study with those of existing research. In Section 6, the final reflections of the research are developed. In Section 7, caution is specified regarding the treatment of the results obtained.

2. Literature Review

In today’s globalized world, the use of Information and Communication Technologies (ICT) has caused a revolution in the way people communicate and relate to one another [2]. However, an intensive use of such technologies also may hinder social interactions [3]. For instance, in an academic setting, adolescents can feel either accepted and integrated within the group or, by contrast, rejected or harassed, and be subject to any kind of virtual violence [4], even affecting their social interactions [5]. This situation is termed cyberbullying [6].

Traditionally, bullying has been defined as either an aggressive behavior or one leading to willful damage, which is prolonged in time by means of an interpersonal relationship characterized by an imbalance of power [7]. By the same token, cyberbullying assumes these features [8] but is inflicted through computers, phones, and other electronic devices [9]. Adolescence is the stage of development where the impact of such bullying has increased in schools [10]. Specifically, in Spain, the National Statistics Institute [11] states that 98.1% of boys and 97.7% of girls between 12 and 18 make use of their mobile phones, the Internet, and social networks regularly and excessively, which positions them as the population at the greatest risk of suffering cyberbullying [12].

Additionally, school settings are becoming increasingly more diverse because large numbers of students are from different ethnic, cultural, or religious backgrounds [13]. In this sense, authors like Harris and Johns [14] claim that this situation has been identified as one of the major trends causing youngsters to quarrel in their digital interactions. This leads to a type of cyberbullying caused by intolerance and lack of empathy towards students of different cultures and religions [15]. According to Micó-Cebrián et al. [16], this type of cyberbullying is characterized by a series of beliefs, stereotypes, and prejudices against those who are different from the majority of the population. This is related with harmful consequences on a psychosocial [17] and behavioral [18] level, as well as in educative
inclusion [19] of the students who suffer it, which hinders their future integration in the host society [20]. This cyberbullying also consists of a series of threats and mockery aimed at the culture and traditions of one person or group and takes shape in identity theft and/or in the sending of racist material through social networks [21]. This does not require the victim to be physically present to feel humiliated or cause social alarm to the detriment of their culture and tradition [22].

In this sense, there also exists research [23] that establishes how victims who go through these experiences can turn to electronic tools to adopt violent behaviors and to take revenge, shifting to be the aggressor in the interactions. This is caused by the psychological pressure suffered as a result of stress for insults or humiliation online, which leads to social anxiety problems and depression [24].

The complexity of cyberbullying caused by religious or cultural intolerance, together with the constant increase in intercultural classrooms [25], show the importance of this research. This attempts to respond to the knowledge gaps detected in the few studies on this type of cyberbullying [26]. Specifically, this research aims to ascertain the probability of being a cybervictim or cyberbully in intercultural environments, identifying the predominant culture, ethnicity, or religion in each profile.

Regarding the cybervictim profile, recent research reveals that there has been an increase in violent physical and cybernetic attitudes towards Muslims [27] following the 11 September terrorist attacks. Similarly, other research concluded that people with African heritage are vulnerable to cyberbullying in host countries in which they are considered as groups of less value that threaten finance, culture, national identity, or civil insecurity [28]. On the other hand, Heaslip et al. [29] observed that gypsies are usually rejected and hated not only on the Internet, but also in the real world, given they constitute a minority group which has long been perceived as marginal and violent [30]. Kamp et al. [31] described how young people of a Celtic origin experienced racism through cyberbullying. These situations tally with Sripokangkul et al.’s assertions [32], which point out that cultures holding collective values, high morals, a high level of egalitarian commitment, and where Confucian values are cherished, show lower levels of cyberbullying.

Furthermore, as already mentioned, on some occasions, cyberbullying due to racism or religious intolerance can trigger violent attitudes in the victims, which are typical of cyberbullies [33]. This is the case of the Asian population in European countries. According to Trieu and Lee [34], the Asian race is regarded as a vulnerable group to cyberbullying. Existing numerous negative prejudices toward their customs and traditions, and toward their integration, as they are considered a financial risk for the host society. This is later linked to insults and violent actions as a method of defense [35].

This same phenomenon occurs with indigenous youth, who are often cybervictims in the context of intolerance toward their cultural heritage [36]. In this sense, Carlsson [37] claims that, due to the attacks suffered, the group fights the structural racism they face, which extrapolates the conflicts in the network, where they act as cyberbullies [38]. The phenomenon repeats itself with young people of Jewish religion [39]. When youngsters sense danger or a threat towards their family or community culture in intercultural digital interactions, they get involved in brawls where they become cyberbullies [40].

In the context of the above, to reduce cross-cultural conflicts online, some researchers [41] highlight the need to develop security strategies on the Internet, such as the creation of inclusive learning online platforms or advisory programs about the correct use of social networks [42]. The inexistence of strategies of this type is reflected in greater cyberbullying situations in the educational contexts towards minority cultural groups [43]. In addition, the lack of training in inclusive education for teachers, the need to adapt strictly to the curriculum, or the shortage of time and resources, make this situation common in educational institutions in southern Spain, which is the setting where this research takes place [44].

Previous research results show that students from ethnic, racial, and religious minorities are the most likely to suffer from cyberbullying, and in greater proportions than
other minority groups [45], and that, in some situations, as a result of the resentment and revenge they experience, they are also likely to become cyberbullies [46]. This justifies the need for this study and lays the basis of the hypothesis. The first hypothesis is that students belonging to ethnic, religious, or cultural minority groups will be more likely than other students to suffer from cyberbullying. The second hypothesis is as follows: ethnic, religious, and cultural minority groups that have experienced cyberbullying will have a high likelihood of becoming cyberbullies.

Finally, we should mention the value and novelty of the research, since it measures for the first time the phenomenon of cyberbullying promoted by students’ racial, ethnic, or religious intolerance. This aspect, as has been mentioned, is especially important in today’s digital learning environments that represent the cultural diversity of society [47]. To this end, the study uses an adapted and validated instrument, composed of items that present anti-values such as intolerance, xenophobia, or lack of empathy towards cultural diversity [1]. This is in contrast to previous research [48,49], in which cyberbullying is measured as a generalized construct of the relationships that students present when they are online. Even if they occur in intercultural contexts, this type of motivation for cyberbullying is obvious. Furthermore, the research takes into account the race, ethnicity, and culture of the original intercultural sample. Therefore, the results allow us to clearly outline which of the evaluated groups are more likely to be cybervictims or cyberbullies due to the non-acceptance of the culture, habits, or physical traits of the other.

3. Methods
3.1. Population and Sample

The selection of the sample was carried out through a non-probabilistic sampling process, following an intentional approach, in which \( n = 755 \) students participated in the study. They were registered in secondary education in the 2018/2019 academic year.

The number of research participants was calculated through the statistical formula that stipulates the representative percentage of the total number of students registered in secondary education centers in Andalusia, Ceuta, and Melilla (\( N = 386.821 \)). This formula is indicated with a confidence level of 95% and a maximum estimation error of 2.1%, which makes the selected sample statistically acceptable [50]. The age of the sample ranges from 12 to 16 years (M = 13.97 years; DT = 1.410), with 376 (49.8%) males and 379 (50.2%) females.

Regarding their race, 506 (67%) students belong to the white race, 155 (20.05%) are Latinos, 37 (4.9%) are black, 11 (1.5%) Asian, and 46 (6.9%) did not know how to answer when asked this question. Regarding their ethnicity, 27 (3.6%) students are gypsies, 4 (0.5%) have a Celtic origin, 10 (1.3%) Armenian, 99 (13.1%) Mongols, and 615 (81.46%) did not know what to answer. Finally, concerning religion, 518 (68.6%) are Christians, 40 (5.3%) Jewish, 35 (4.6%) Muslims, 9 (1.2%) Taoists, and 3 (0.4%) are Buddhists. The rest of the students, 150 (19.9%), do not practice a religion.

The research has been carried out in the educational environments in the cities of Ceuta, Melilla, and the Region of Andalusia (Table 1). These locations constitute border cities in the south of Spain, which boast a great diversity of culture, ethnicity, and religion reflected in their classrooms [51].

3.2. Instrument

The instrument used to carry out this research was the Cyberbullying Scale for students with Cultural and Religious Diversity (CSCRD) [1]. This instrument has two parts: the first part assesses the sociodemographic variables of age, gender, city, institution, course, nationality, ethnicity, culture, and religion; and the second part evaluates the cybervictim and cyberbully profile of the subjects surveyed. This part is a Likert scale made up of 38 items with five response options, ranging from 1 = never to 5 = always.
Table 1. Participants from the province of Andalusia, Ceuta, and Melilla.

| Province | N  | %    |
|----------|----|------|
| Granada  | 59 | 7.8% |
| Málaga   | 70 | 9.3% |
| Almería  | 54 | 7.2% |
| Jaén     | 76 | 10.01% |
| Córdoba  | 102| 13.5%|
| Sevilla  | 99 | 13.1%|
| Cádiz    | 62 | 8.2% |
| Huelva   | 47 | 6.2% |
| Melilla  | 108| 14.3%|
| Ceuta    | 78 | 10.3%|

The second part is subdivided into two subscales (cybervictims and cyberbullies), both grouped in three dimensions: “Intercultural cyberbullying” defined as the lack of respect or aggressive intentional behavior among participants of an intercultural cybernetic interaction [52]. “Digital racist threats” related to the sending and spreading of offensive, vulgar, and threatening messages, intended to either create false rumors or infringe someone’s privacy on the net [53]. “Usurpation of the identity” linked to cybernetic identity theft acts where the victim’s reputation is undermined and racist hatred is fostered towards the group the person belongs to [54].

Both subscales consist of eight items in the “Intercultural cyberbullying” dimension, seven items in “Digital racist threats”, and four items in “Usurpation of the identity”. The range of scores varied from 8 to 40 for the first dimension, 7 to 35 for the second dimension, and 4 to 20 for the third dimension.

In addition, the instrument presents a reliability rate of 0.98, and the confirmatory factorial analysis showed an optimal fit to the model ($\chi^2 = 2414.536, p = 0.00$, NNFI = 0.80, CFI = 0.83, IFI = 0.80 and RMSEA = 0.05) [55].

3.3. Data Collection and Analysis Process

The administration of the questionnaire in secondary schools was primarily authorized by the people in charge of the educative institutions. They were first informed about the aim of the study and then asked to complete an online form to participate.

Secondly, an online authorization was requested from the legal guardians and parents of all participating students, insisting on the voluntarily nature of their participation and in the anonymity of the responses.

Once consent was obtained, the application of the instrument began in the classrooms with the presence of the teachers. The completion of the questionnaire lasted between 12 and 20 min.

Throughout this procedure, the ethical guidelines established in the Declaration of Helsinki and the protocol approved by the Ethics Committee of the University of Granada were followed.

For the analysis of the data, the statistical software products SPSS and STATA version 25 were used. In order to verify the probability of students being cybervictims or cyberbullies from different ethnicities, cultures, or religions, the binary logistic regression analysis was used. This created a model that defines the relationship between the outcome or dependent variables (profile of cybervictims or cyberbullies) and the independent or explanatory variables (religion, ethnicity, and race) [56].

In previous work, to do this, the dependent variables were converted to dichotomous, and were grouped in the following way: 1 = being a cybervictim and 0 = not being a cybervictim; 1 = being a cyberbully, 0 = not being a cyberbully. The analysis of one-hot encoding in R was used [57].
In the logistic analysis, the maximum likelihood method was used in order to choose the estimated value of the parameter, namely the one with the highest probability of occurring [58].

In this analysis, the probabilities and the odds ratio are used to interpret the coefficients. The probability ratio $\Omega$ is the correlation of the probability value calculated for $x = 1$, between the probability value calculated for $x = 0$ [59]. According to this, the odds ratio can be written as follows:

$$\Omega (1,0) = \frac{P (1)/[1 - P (1)]}{P (0)/[1 - P (0)]}$$ (1)

In the binary logistic regression analysis, the resulting variable is coded dichotomously (0/1). The odds ratio is as follows:

$$\Omega = e^{\beta_1}$$ (2)

4. Results

Firstly, the Kruskal–Wallis test was performed to determine whether there are meaningful differences between the study groups and the dimensions of the two subscales. The results revealed that significant differences exist in both subscales ($p \leq 0.05$) [60] (Table 2).

Table 2. H Kruskal–Wallis Test for independent samples.

| Variables    | Cybervictims | Cyberbullies |
|--------------|--------------|--------------|
| Sig. Asymptotic H test | 0.01 | 0.01 |
| Religion     | 0.01         | 0.01         |
| Ethnicity    | 0.00         | 0.00         |
| Race         | 0.00         | 0.00         |

After detecting significant differences, it was decided to identify those who are more likely to become cybervictims or cyberbullies through the use of binary logistic regression. We took into account the grouping variables of religion, ethnicity, race, and the total number of the questionnaire answers as dependent variables, which included the three dimensions assessed. In this analysis, the differences obtained in the Kruskal–Wallis H test were confirmed.

The odds ratios pointed to students of the Muslim religion having a higher chance of becoming cybervictims (aOR 2.423529; 95% CI 0.2–26.8), followed by those of the Buddhist religion (aOR 1.864486; 95% CI 0.9–3.7), and those who did not practice any religion (aOR 1.446902; 95% CI 1.0–2.1).

On the other hand, the students of Jewish religion were more likely to be cyberbullies (aOR 3.804348; 95% CI 1.0–14.3), followed by those who did not practice any religion (aOR 1.422808; 95% CI 1.0–2.1), and Taoists (aOR 1.297821; 95% CI 0.7–2.6) (Table 3).

Table 3. Analysis of the Binary Logistic Regression showing the association between religions and the profile of cybervictims and cyberbullies.

| Religions  | Cybervictims | Cyberbullies |
|------------|--------------|--------------|
| aOR (95% CI) | aOR (95% CI) |
| Judaism    | 0.4400458 (0.2–0.9) | 3.804348 (1.0–14.3) |
| Christian  | 0.8073335 (0.6–1.1)  | 0.7378129 (0.5–1.0) |
| Islam      | 2.423529 (0.2–26.8) | 0.6048615 (0.3–1.48) |
| Buddhism   | 1.864486 (0.9–3.7)  | 0.3368984 (0.3–0.4) |
| Taoism     | 0.6002950 (0.2–2.4) | 1.297821 (0.7–2.6) |
| Any Religion | 1.446902 (1.0–2.1) | 4.422808 (1.0–2.1) |

Concerning the ethnic variable, the results reveal that the Gypsy ethnic students have a higher chance of becoming cybervictims (aOR 1.532874; 95% CI 0.7–3.3), followed by those
from an Armenian ethnicity (aOR 1.210682; 95% CI 0.4–4.2), those from a Celtic ethnicity (aOR 1.208824; 95% CI 0.2–8.6), and those from a Mongolian ethnicity (aOR 1.106063; 95% CI 0.7–1.7). As for the cyberbullies scale, it is the Gypsy ethnicity (aOR 2.116573; 95% CI 1.0–4.6) followed by the Mongolian ethnicity (aOR 1.009394; 95% CI 0.6–1.6) which are the ones with the highest odds (Table 4).

Table 4. Analysis of the Binary Logistic Regression showing the association between ethnicities and the profile of cybervictims and cyberbullies.

| Ethnicities | Cybervictims      | Cyberbullies          |
|-------------|-------------------|-----------------------|
|             | aOR (95% CI)      | aOR (95% CI)          |
| Gypsy       | 1.532874 (0.7–3.3)| 2.116573 (1.0–4.6)    |
| Celtic      | 1.208824 (0.2–8.6)| 0.0283916 (0.3–0.4)   |
| Armenian    | 1.210682 (0.4–4.2)| 0.7433155 (0.2–3.5)   |
| Mongolian   | 1.106063 (0.7–1.7)| 1.009394 (0.6–1.6)    |

Regarding the analysis of the race variable, the results reveal a greater probability of becoming cybervictims for students of Asian origin (aOR 3.273453; 95% CI 0.9–12.4), followed by students of African origin (aOR 2.054859; 95% CI 1.0–4.0) and those of indigenous origin (aOR 1.331949; 95% CI 0.9–1.9). Regarding the cyberbullies scale, the results indicated that the probability was higher for the Asian race (aOR 4.043243; 95% CI 0.9–18.2), followed by the indigenous race (aOR 1.093528; 95% CI 0.7–1.6) (Table 5).

Table 5. Analysis of the Binary Logistic Regression showing the association between races and the profile of cybervictims and cyberbullies.

| Race       | Cybervictims      | Cyberbullies          |
|------------|-------------------|-----------------------|
|            | aOR (95% CI)      | aOR (95% CI)          |
| African    | 2.054859 (1.0–4.0)| 0.6846154 (0.3–1.6)   |
| Asian      | 3.273453 (0.9–12.4)| 4.043243 (0.9–18.2)   |
| Indigenous | 1.331949 (0.9–1.9)| 1.093528 (0.7–1.6)    |
| White      | 0.5846154 (0.4–0.8)| 0.7903896 (0.6–1.1)   |

The analyses were carried out on the joint sample of the autonomous community of Andalusia. The results obtained are presented below, with the application of binary logistic regressions in each of the samples selected for each province (Tables 6–8) in order to deepen the probabilities of acquiring the role of cybervictim or cyberbully in each religion, ethnicity, and race of the ten provinces analyzed.

The aORs show greater probabilities of being cybervictims in students who do not profess any religion in the provinces of Jaén (aOR 1.6457; 95% CI 0.7–3.6), Seville (aOR 2.0588; 95% CI 0.1–23.6), and Huelva (aOR 1.1428; 95% CI 0.8–2.6). Highest odds among Muslim students in the provinces of Granada (aOR 1.5918; 95% CI 1.0–4.0), Malaga (aOR 1.2121; 95% CI 0.9–1.9), Córdoba (aOR 2.5762; 95% CI 1.2–14.1), Cádiz (aOR 0.2361; 95% CI 0.2–0.3), Melilla (aOR 1.1666; 95% CI 0.9–1.9), and Ceuta (aOR 4.3333; 95% CI 0.9–18.3). In Almeria, the students of Buddhist religion present the highest rate of probability of being a cybervictim (aOR 1.6500; 95% CI 0.4–1.2).

As for the probabilities of being cyberbullies, the aOR are presented at higher rates for the students of the Jewish religion in the province of Malaga (aOR 0.18885; 95% CI 0.2–0.3), Jaén (aOR 1.3963; 95% CI 1.1–3.0), Córdoba (aOR 3.5213; 95% CI 1.4–18.2), and Melilla (aOR 2.812; 95% CI 1.0–5.7) and in students who do not profess any religion in the provinces of Granada (aOR 1.3618; 95% CI 0.9–3.6), Almeria (aOR 1.0526; 95% CI 0.2–0.3), Seville (aOR 1.3214; 95% CI 0.5–4.3), Huelva (aOR 1.5213; 95% CI 0.6–3.2), and Ceuta (aOR 2.2361; 95% CI 0.9–14.3). In Cádiz, the probability of being a cyberbully is highest among students of the Taoist religion (aOR 3.2857; 95% CI 1.5–24.8).
Table 6. Analysis of the Binary Logistic Regression showing the association between religion and the profile of cybervictims and cyberbullies of the differentiated sample in provinces.

| Provinces | Cybervictims | Cyberbullies |
|-----------|--------------|--------------|
|           | Judaism      | Christian    | Islam | Buddhism | Taoism | Any Religion | Judaism | Christian | Islam | Buddhism | Taoism | Any Religion |
| Granada   | 0.10000      | 0.14736      | 1.5918 | 0.10000  | 0.33653 | 1.0294      | 0.41463 | 0.23041  | 0.23985 | 0.02941  | 0.71102 | 1.3618       |
| Málaga    | 0.52380      | 0.44444      | 1.2121 | 0.45833  | 0.46808 | 1.9111      | 0.18885 | 0.03921  | 0.20985 | 0.02941  | 0.02985 | 0.03389      |
| Almeria   | 0.48706      | 0.42857      | 1.4285 | 0.6500   | 0.27216 | 1.1428      | 0.41666 | 0.63636  | 0.63636 | 0.79310  | 0.76666 | 1.0526       |
| Jaén      | 0.16071      | 0.96551      | 0.72093| 0.76744  | 0.76744 | 1.6457      | 1.3963  | 0.74074  | 0.27442 | 0.28497  | 0.78595 | 1.2727       |
| Córdoba   | 0.50596      | 0.51612      | 2.5762 | 0.32913  | 0.32490 | 1.4285      | 3.5213  | 0.50241  | 0.79166 | 0.07368  | 0.06315 | 0.08974      |
| Sevilla   | 0.58333      | 0.51179      | 0.43434| 0.97273  | 0.13369 | 2.0588      | 0.40144| 0.52941  | 0.22222 | 0.22752  | 0.13334 | 1.3214       |
| Cádiz     | 0.09200      | 0.13207      | 0.23611| 0.17307  | 0.15384 | 0.13953     | 0.38181| 0.35294  | 0.38323 | 0.18207  | 3.2857  | 2.2564       |
| Huelva    | 0.26122      | 0.57971      | 0.53333| 0.28231  | 0.26212 | 1.1428      | 0.21052| 0.44642  | 0.24324 | 0.23684  | 0.11740 | 1.5213       |
| Melilla   | 0.57142      | 1.15713      | 1.1666 | 0.86206  | 0.89285 | 1.0811      | 2.2812  | 0.64814  | 1.1250  | 0.44594  | 0.73988 | 1.6071       |
| Ceuta     | 0.84902      | 0.13227      | 4.3333 | 0.29024  | 0.31945 | 0.38157     | 0.92500| 0.80294  | 0.52272 | 0.24396  | 0.26151 | 2.2361       |

Table 7. Analysis of the Binary Logistic Regression showing the association between ethnicities and the profile of cybervictims and cyberbullies of the differentiated sample in provinces.

| Provinces | Cybervictims | Cyberbullies |
|-----------|--------------|--------------|
|           | Gypsy        | Celtic       | Armenian | Mongolian | Gypsy | Celtic       | Armenian | Mongolian |
| Granada   | 3.0909       | 0.21028      | 0.21458  | 0.65625  | 5.4666 | 0.40476      | 0.71102  | 1.2857    |
| Málaga    | 0.45833      | 0.45833      | 0.73060  | 0.55555  | 0.02941| 0.02985      | 0.00720  | 0.00903   |
| Almeria   | 1.7047       | 1.1026       | 1.6500   | 1.0146   | 0.40078| 0.76666      | 0.79310  | 2.0132    |
| Jaén      | 1.3225       | 0.76744      | 1.2079   | 0.41666  | 1.1176 | 0.28497      | 0.78995  | 1.9897    |
| Córdoba   | 1.5641       | 1.6153       | 1.2459   | 2.3148   | 3.2083 | 0.07368      | 0.06451  | 0.07526   |
| Sevilla   | 0.76315      | 1.8545       | 1.5526   | 1.1818   | 2.3325 | 0.22784      | 0.70588  | 2.0285    |
| Cádiz     | 0.15384      | 0.16981      | 0.82142  | 0.08376  | 3.2857 | 0.31914      | 0.45684  | 0.60816   |
| Huelva    | 3.3461       | 0.28231      | 0.51612  | 0.97837  | 0.24324| 0.11452      | 0.23684  | 0.99999   |
| Melilla   | 0.87719      | 0.59057      | 0.14868  | 0.52758  | 0.45833| 0.44594      | 0.45205  | 0.29910   |
| Ceuta     | 4.1142       | 0.84902      | 0.37209  | 0.22222  | 0.44230| 0.26851      | 0.42592  | 0.31168   |
Table 8. Analysis of the Binary Logistic Regression showing the association between race and the profile of cybervictims and cyberbullies of the differentiated sample in provinces.

| Provinces | Cybervictims aOR | Cyberbullies aOR |
|-----------|-----------------|------------------|
|           | African | Asian | Indigenous | White | African | Asian | Indigenous | White |
| Granada   | 0.12548 | 4.1562 | 2.3225      | 0.43137 | 0.12179 | 0.41463 | 1.0714 | 0.17586 |
| Málaga    | 0.39583 | 0.45833 | 1.1318      | 0.95967 | 0.03076 | 0.02941 | 0.04081 | 0.94545 |
| Almería   | 2.6132  | 1.6500 | 0.71875     | 0.53452 | 0.63636 | 0.73333 | 1.8947 | 0.69565 |
| Jaén      | 1.1440  | 1.1759 | 1.6425      | 1.1428  | 0.74477 | 1.2058  | 1.1532 | 0.45833 |
| Córdoba   | 0.29947 | 0.31644 | 0.77840     | 0.17241 | 0.03076 | 0.02941 | 0.04081 | 0.94545 |
| Sevilla   | 0.66101 | 2.2261 | 0.43434     | 0.49392 | 0.20987 | 0.37033 | 1.1607 | 0.28571 |
| Cádiz     | 0.97619 | 0.17307 | 0.11320     | 0.46153 | 0.34090 | 0.09695 | 0.81818 | 0.28906 |
| Huelva    | 0.57142 | 0.45161 | 0.34666     | 0.04761 | 0.25714 | 2.4285  | 0.18421 | 0.50925 |
| Melilla   | 1.1632  | 1.8448 | 0.26779     | 0.80952 | 0.43243 | 2.2812  | 1.2633 | 0.64814 |
| Ceuta     | 0.07558 | 0.94736 | 0.14516     | 0.84902 | 0.12768 | 1.8080  | 1.4117 | 0.42592 |

The analyses reveal that the gypsy ethnic group presents higher rates of probability for the acquisition of the role of cybervictim in the provinces of Granada (aOR 3.0909; 95% CI 12.9–28.8), Almería (aOR 1.7047; 95% CI 0.8–0.7), Jaén (aOR 1.3225; 95% CI 0.9–1.7), Huelva (aOR 3.3461; 95% CI 0.9–12.7), Melilla (aOR 8.7719 95% CI 0.2–1.7), and Ceuta (aOR 4.1142; 95% CI 0.8–18.7). Ethnic Armenian students score the highest in the provinces of Malaga (aOR 0.73060; 95% CI 0.2–1.4) and Cadiz (aOR 0.82142; 95% CI 0.3–0.8). Ethnic Mongolian students in the province of Córdoba (aOR 0.3148; 95% CI 0.2–25.8). Finally, the students of Celtic ethnicity present a greater probability of being cybervictims in the province of Seville (aOR 1.8545; 95% CI 1.2–2.7).

As for the probability of being cyberaggressors, the analyses show a higher rate in the students of gypsy ethnicity in the provinces of Granada (aOR 5.4666; 95% CI 0.9–19.7), Cordoba (aOR 3.2083; 95% CI 1.3–11.4), Seville (aOR 2.3235; 95% CI 1.0–4.0), Cadiz (aOR 3.2857; 95% CI 0.9–12.4), Melilla (aOR 0.45833; 95% CI 0.1–3.1), and Ceuta (aOR 0.44230; 95% CI 0.2–1.4). Students of Mongolian ethnicity present high probabilities of being cyberaggressors in the provinces of Almería (aOR 0.213206; 95% CI 0.9–2.7), Jaén (aOR 0.1989712; 95% CI 0.3–3.7) and Huelva (aOR 0.999999; 95% CI 0.8–1.2). Malaga is the only province where the highest probability rate is found in Celtic students (aOR 0.02985; 95% CI 0.2–1.2).

Regarding the analysis of the race variable, the results indicate that the students with the highest probability of becoming cybervictims are of African race in the province of Almería (aOR 2.6132; 95% CI 1.8–11.3), Cadiz (aOR 0.97619; 95% CI 0.8–1.2), and Huelva (aOR 0.57142; 95% CI 0.1–2.3), of the Asian race in the provinces of Granada (aOR 4.1562; 95% CI 0.7–16.3), Seville (aOR 2.2261; 95% CI 1.8–11.2), Melilla (aOR 1.8448; 95% CI 1.1–2.7), and Ceuta (aOR 0.94736; 95% CI 1.5–1.1), and of indigenous race in the provinces of Malaga (aOR 1.0714; 95% CI 1.2–10.7), Jaén (aOR 1.6425; 95% CI 1.0–4.6), and Córdoba (aOR 0.77840; 95% CI 0.2–0.5).

With regard to the scale of cyberaggressors, the results showed that the probability rates for the Asian race were greater in the provinces of Jaén (aOR 1.2058; CI 95% 0.3–16.4), Córdoba (aOR 2.4722; 95% CI 0.4–5.6), Huelva (aOR 2.4285; 95% CI 0.6–16.1), Ceuta (aOR 1.8080; 95% CI 1.2–2.8), and Melilla (aOR 2.2812; 95% CI 0.4–15.3). The highest probability rates for the indigenous race are in the provinces of Granada (aOR 1.0714; 95% CI 1.2–10.7), Almería (aOR 1.8947; 95% CI 0.2–25.7), Seville (aOR 1.1607; 95% CI 0.2–25.7), and Cadiz (aOR 0.81818; 95% CI 0.6–16.1). Malaga is the city with the highest probability of being cyberaggressors was seen among white students (aOR 0.94545; 95% CI 0.5–14.0).
5. Discussion

The objective of this study was to determine the influence that the variables of religion, ethnicity, and race exert on cyberbullying within intercultural educational environments.

In order to confirm the two initial hypotheses of the research, it was considered that student groups of ethnic, religious, or racial minorities would be more likely to suffer cyberbullying, and that groups that have been victims will be more likely to become cyberbullies. On this matter, and according to previous research [61], the obtained results confirm the first hypothesis raised, namely that the minority groups belonging to the Muslim religion, the gypsy ethnic group, and the Asian race, are the most likely to become cybervictims.

The results of this study refute those obtained in others [62], where Muslim students were revealed to be the religion most vulnerable to suffering cyberbullying, and where their cybersecurity was violated. Cheng, Pagano and Shariff [63], and Giuliani et al. [64] revealed religious discrimination against this group, alleging they are subject to experiencing significantly more religious micro-aggressions than other groups. This may be influenced by the increase in fear and hatred towards this group after the events of September 11, and other terrorist actions in Europe [65]. On another note, the results also indicate that gypsy students have a higher probability of becoming cybervictims. This fact is in line with other pieces of research [66], where they are identified as having been victims of terrible social and financial injustices, as well as institutional and structural discrimination. In this sense, Ansen and Meer [67] argue that this digital problem is caused by the majority group, when cultural minorities are regarded as internal or external enemies [68].

Finally, the results indicated higher probability of the Asian students becoming cybervictims. These findings tally with other research [69] where Asian students are described as having less self-control and being less monitored by their parents, which results in them taking part in and accessing online activities more often, a situation that leads to a higher likelihood of adopting the role of cybervictim on the net. The cyberbullying occurs in the current educational scenario that is characterized by clear cultural diversity [70]. This race, ethnic, and religious diversity results in differences in terms of values, standards of conduct, and social roles [71]. This, on some occasions, results in intercultural cyberbullying [72]. In fact, in accordance with the results revealed by this research, these do not affect the assessed minority groups of students in the same way. Several authors [73,74] assert that this situation is mainly due to the racial disparities and the hierarchy of ethnicities found in society, reflected in schools, which have the consequence of rejection biases linked to physical appearance, dress, and skin color. These situations most of all affect first generation students of cultural minorities, who are perceived as social groups of less value [75].

The most common types of cyberbullying arising from cultural reasons correspond with abusive and cruel insults, degrading language, or threatening words addressed at either the person or the cultural group [76]. This occurs in social networks to which the student population has access [77], thus creating prejudices, and encouraging racist and discriminatory remarks against customs and traditions different from those ingrained in society, with the intention of inciting hatred [78].

However, in some situations, frustration and revenge cause cybervictims to take on the role of cyberbullies [79], which happens in two of the three groups of cybervictims in this study. This confirms the second initial hypothesis of the investigation and agrees with what was raised in previous investigations in this regard [80]. In this direction, the results of the research show that Asian students can take on both roles. As in other investigations [81], it is indicated that the Asian students who used social networking to carry out bullying behavior acknowledged having been victims of cyberbullying previously at the hands of the participants. This may be because this is a group that feels unable to find social support in some situations, causing them to act as cyberbullies, and create conflicts online [82].

On the other hand, this change of roles also occurs in the gypsy ethnicity. In connection with this, Calmaestra et al. [83] assert they are a minority cultural group in Spain, which is characterized by a feeling of cultural identity, which makes them feel different from
other such groups. This situation is perceived as an incentive, which causes conflicts among their peers and characterizes them as a minority group, which is further linked to cyberbullying, both in terms of being cybervictims and cyberbullies [84,85]. They adopt the role of cyberbullies when they are attacked and rejected on social networks [86,87].

6. Conclusions

Among the main findings of the study, it is necessary to make a distinction between findings stemming from the research itself, and the findings that the researchers ascertained during the research process.

The conclusions obtained confirm the initial two hypotheses. Students from minority groups belonging to the Muslim religion, the gypsy ethnic group, and the Asian race showed greater probability of being cybervictims. Secondly, of these minority groups, two showed greater probability of being cyberbullies, assuming both roles. These were the students of gypsy ethnicity and the Asian race.

With regard to the conclusions derived from the research process, it is worth noting the existence of few studies in which the construct is evaluated with specific tools that measure the two profiles: the cybervictims and the cyberbullies, especially with items related to cyberbullying caused by racial, ethnic, or religious intolerance. Therefore, the findings obtained regarding the relationships of both profiles in minority student groups, since they are regular internet users, can be taken as the basis for the creation of a software that serves to prevent and intervene online in the cyberbullying of Asian and gypsy students in the south of Spain. This would create a fundamental didactic resource to educate in a peaceful and conflict-free environment, and therefore significantly reduce cyberbullying in secondary schools in this part of Spain, which is characterized by a constant increase in interculturality in their classrooms.

7. Limitations

It is important to consider the data from this research with caution, as some of the ethnic, religious, or cultural groups analyzed do not constitute a representative sample number of the Spanish educational context. This is due to the uniqueness of the analyzed region, where there are few settlements of students of the Buddhist religion, for instance. Despite this, the sample is representative of the southern part of the country, and it provides a solid first approach to the phenomenon of cyberbullying on the account of racial, ethnic, and religious intolerance. This turns out to be valuable and necessary for the existing scientific gap in research in Spain regarding this type of cyberbullying, and the rise of the cybersecurity problem that surrounds intercultural educational environments, which has increased with the boom in online education caused by the COVID-19 virus.

Author Contributions: J.M.O.-M., M.T.-F. and C.F.-L. conceived the hypothesis of this study. J.M.O.-M. participated in data collection. All authors analyzed the data. All authors contributed to data interpretation of the statistical analysis and wrote the paper with significant input. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the I + D + I Project: “The Role of Personal Learning Environments in the Social Integration of Unaccompanied Foreign Minors (MENAS)”.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.
References

1. Tomé-Fernández, M.; Ortiz-Marcos, J.M.; Olmedo-Moreno, E.M. Educational environments with cultural and religious diversity: Psychometric analysis of the cyberbullying scale. Religions 2019, 10, 443. [CrossRef]

2. Kowalski, R.; Limber, S.; McCord, A. A developmental approach to cyberbullying: Prevalence and protective factors. Aggress. Violent Behav. 2019, 45, 20–32. [CrossRef]

3. Li, D.-J.; Chang, Y.-P.; Chen, Y.-L.; Yen, C.-F. Mediating effects of emotional symptoms on the association between homophobic bullying victimization and problematic internet/smartphone use among gay and bisexual men in Taiwan. Int. J. Environ. Res. Public Health 2020, 17, 3386. [CrossRef] [PubMed]

4. Kenny, K.S.; Merry, L.; Brownbridge, D.A.; Urquia, M.L. Factors associated with cyber-victimization among immigrants and non-immigrants in Canada: A cross-sectional nationally-representative study. BMC Public Health 2020, 20, 1–13. [CrossRef] [PubMed]

5. Bareither, C. “That was so mean: D”—Playful virtual violence and the pleasure of transgressing intersecting emotional spaces. Emot. Space Soc. 2017, 25, 111–118. [CrossRef]

6. Guazzini, A.; Guidi, E.; Cecchini, C.; Yoneki, E. Collaborative facilitation and collaborative inhibition in virtual environments. Future Internet 2020, 12, 118. [CrossRef]

7. Martínez, I.; Murgui, S.; García, O.; García, F. Parenting in the digital era: Protective and risk parenting styles for traditional bullying and cyberbullying victimization. Comput. Hum. Behav. 2019, 90, 84–92. [CrossRef]

8. Veiga, F.; García, F.; Reeve, J.; Wentzel, K.; García, O. When adolescents with high self-concept lose their engagement in school. Rev. Psicodidáctica 2015, 20, 305–320. [CrossRef]

9. Ferreira, R.C.; Frota, M.A.; De Vasconcelos, J.E.; Bastos, A.N.P.F.; Luna, G.L.M.; Rolim, K.M.C. Comparison of features of a mobile application to report school bullying through benchmarking. J. Sch. Health 2020, 90, 295–300. [CrossRef]

10. Horner, S.; Asher, Y.; Fireman, G. The impact and response to electronic bullying and traditional bullying among adolescents. Future Internet 2020, 12, 112. [CrossRef]

11. INE (Instituto Nacional de Estadística, Statistics National Institute). Demography and Population. 2019. Available online: http://www.ine.es/inebmenu/mnu_migrac.htm (accessed on 17 May 2020).

12. Diaz-López, A.; Maquilión-Sánchez, J.J.; Mirete-Ruiz, A.B. Maladaptive use of ICT in adolescence: Profiles, supervision and technological stress. Comunicar 2020, 64, 29–38. [CrossRef]

13. Anwar, F.; Fry, D.P.; Grigaityté, I. Aggression prevention and reduction in diverse cultures and contexts. Curr. Opin. Psychol. 2018, 19, 49–54. [CrossRef] [PubMed]

14. Harris, A.; Johns, A. Youth, social cohesion and digital life: From risk and resilience to a global digital citizenship approach. J. Sociol. 2020, 1–18. [CrossRef]

15. Mendez, J.J.; Bauman, S.; Sulkowski, M.L.; Davis, S.; Nixon, C. Racially-focused peer victimization: Prevalence, psychosocial impacts, and the influence of coping strategies. Psychol. Violence 2016, 6, 103–111. [CrossRef]

16. Micó-Cebrián, P.; Cava, M.; Buelga, S. Intercultural sensitivity and satisfaction with life in native and immigrant students. Educac 2019, 55, 39–57. [CrossRef]

17. Strom, I.F.; Hjemdal, O.K.; Myhre, M.C.; Wentzel-Larsen, T.; Thoresen, S. The Social context of violence: A study of repeated victimization in adolescents and young adults. J. Interpers. Violence 2020, 35, 2210–2235. [CrossRef]

18. Bayram Özdemir, S.; Özdemir, M.; Stattin, H. Ethnic harassment and immigrant youth’s engagement in violent behaviors: Understanding the risk factors. Child Dev. 2019, 90, 808–824. [CrossRef]

19. Fernández, O.; Ramos, E.; Goñi, E.; Rodríguez, A. The role of social support in school adjustment during secondary education. Psicothema 2020, 32, 100–107.

20. Van Noorden, T.; Haselager, G.; Cillessen, A.; Bukowski, W. Empathy and involvement in bullying in children and adolescents: A systematic review. J. Youth Adolesc. 2015, 44, 637–657. [CrossRef]

21. Sabater, C.; López-Hernáez, L. Risk factors in cyberbullying. frequency and exposition of personal data on the internet. Int. J. Sociol. Educ. 2015, 4, 1–25.

22. Duradoni, M.; Paolucci, M.; Bagnoli, F; Guazzini, A. Fairness and trust in virtual environments: The effects of reputation. Future Internet 2018, 10, 50. [CrossRef]

23. Donoso, T.; Rubio, M.; Vilà, R. Factors associated with the cibervictimization in Spanish adolescents of 12–14 years. Health Addict. 2019, 19, 11–21.

24. Begotti, T.; Bello, M.; Acquando Maran, D. Coping strategies and anxiety and depressive symptoms in young adult victims of cyberstalking: A questionnaire survey in an Italian sample. Future Internet 2020, 12, 136. [CrossRef]

25. Tomé-Fernández, M.; Curriel-Marín, E.; Carballo, E. Use of mobile technologies in personal learning environments of intercultural contexts: Individual and group tasks. Electronics 2020, 9, 1–27.

26. Turluc, M.N.; Mairean, C.; Boca-Zamfir, M. The relation between cyberbullying and depressive symptoms in adolescence. The moderating role of emotion regulation strategies. Comput. Hum. Behav. 2020, 109, 1–10. [CrossRef]

27. Jones, S.H.; Catto, R.; Kaden, T.; Elsdon-Baker, F. “That’s how Muslims are required to view the world”: Race, culture and belief in non-Muslims’ descriptions of Islam and science. Sociol. Rev. 2018, 67, 161–177. [CrossRef]

28. Rodríguez-Hidalgo, A.J.; Solera, E.; Calmaestra, J. Psychological predictors of cyberbullying according to ethnic-cultural origin in adolescents: A national study in spain. J. Cross Cult. Psychol. 2018, 49, 1506–1522. [CrossRef]
86. Muneer, A.; Fati, S.M. A Comparative Analysis of Machine Learning Techniques for Cyberbullying Detection on Twitter. *Future Internet* **2020**, *12*, 187. [CrossRef]

87. Lozano-Blasco, R.; Cortés-Pascual, A.; Latorre-Martínez, P. Being a cybervictim and a cyberbully—The duality of cyberbullying: A meta-analysis. *Comput. Hum. Behav.* **2020**, *1*, 1–10. [CrossRef]