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The Perception of Academic Plagiarism in Industrial Engineering Students at a Public University in Lima

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Abstract: The objective of this research was to study the perception of academic plagiarism as a dishonest behavior and the factors that characterize it in industrial engineering students at a public university in Lima. This work corresponds to a basic type of study with a quantitative approach, non-experimental design and cross-sectional descriptive level. From the operational field, the study variable was the perception of academic plagiarism, and its dimensions were knowledge, motivations and practices. The population consisted of 2145 students, and intentional non-probabilistic sampling was carried out, resulting in a sample of 155 students in the 8th and 9th cycles of this public university. For data collection, a questionnaire was designed with 35 questions referring to the variable and its dimensions, with each question having five response options according to a Likert-type scale which were answered virtually by the students. The results from the descriptive point of view reflect that 56.1% of the students perceived plagiarism in a negative way and 43.9% perceived it in an irrelevant way. In the inferential field, the results did not show significant statistical differences ($p > 0.05$). In conclusion, most students believe that academic plagiarism is a behavior that affects their education and is unethical and dishonest.

Keywords: perception; academic plagiarism; knowledge; motivations; practices

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1. Introduction

The concept of plagiarism in the university environment involves different aspects inherent to the process of misappropriation of intellectual property, such as ethics, integrity, fraud, dishonesty and motivation, among others. There are different reasons that drive students to adopt this dishonest behavior, which is why most universities find it difficult to minimize this behavior, as it is common despite being unethical. In this sense, Perkins et al. [1] highlighted in their study on the reduction of academic plagiarism through education that of 12,937 manuscripts prepared by students, in their analysis, 448 incidents of plagiarism were detected between the months of April 2014 and October 2019. The percentage of manuscripts that included some aspect of plagiarism was between 2.25% and 7.08% per semester, with an average of 3.49% during the study period.

The study covered a number of years and included the incidents of plagiarism of students who had been practicing it for several semesters. It was also cognizant of the possibility that the magnitude of plagiarism was underestimated, since it would be naive to believe that a university institution would typically detect 100% of the cases of plagiarism. It also highlighted the fact that although the levels of plagiarism were low, they remained constant throughout the investigation.

It is important to note that the detection of academic plagiarism in Peru is a delicate issue, since in the last presidential elections, one of the candidates was sanctioned and removed from the election process for plagiarizing his doctoral thesis. This situation resulted in greater coverage by the media of plagiarism, enshrined in the Peruvian Penal Code as a crime, which has raised awareness of the issue in universities and in society [2]). In this regard, the Peruvian Penal Code specifies in article 219 that plagiarism is a crime

that involves the disclosure of a work of another author as one's own by means of a partial or total copy or reproduction, for which there is a sanction constituted by a penalty that ranges from 4 to 8 years in prison [3].

Currently, it is a challenge for universities to eradicate academic plagiarism from their classrooms, despite the fact that in a globalized world, there are tools or computer applications that can verify the percentage of coincidence with other texts, such as articles and research that have been published on the web. However, as stated by Nabee et al. [4], it is possible that the implementation of anti-plagiarism software does not solve the problem, since this type of tool can only identify the level of coincidence with open access resources on the internet, which are databases that in many cases can be evaded by students. The author's findings showed that the students were aware of the institution's plagiarism policy and highlighted that the use of anti-plagiarism software helped them improve their writing. Likewise, it was concluded that the existence of policies and programs, in addition to training in the area, can help promote an honest and ethical attitude toward academic plagiarism and greatly help minimize it.

A simple way to detect plagiarism is to determine whether two people use the same words to define the same thing. Therefore, it is valid to highlight how much of an overlap of words must be identified before determining that there is plagiarism [5]. In this sense, too much lexical overlap reflects compromised writing, considering that due to the similarity of the topic, a certain degree of overlap is expected. This is why anti-plagiarism software contains an algorithm in its programming for the identification of these overlaps.

Currently, universities seek to improve their educational processes in order to provide society with professionals with ethics, which is why it is necessary to determine the way in which students perceive academic plagiarism as dishonest behavior, since this would help to define strategies to strengthen values, integrity, good practices and respect for intellectual property. In this sense, Oviedo [6] defines perception as a process of capturing and choosing significant information that is responsible for producing a state of enlightenment and conscious lucidity, which facilitates the function of the highest possible level of sanity and coherence with the environment.

Within this framework, some governments, universities and organizations worldwide have created various regulations aimed at the promotion of academic integrity, professional ethics and plagiarism prevention. As a case in point, there is India, the government of which established the Policy on Education, Integrity and Prevention of Plagiarism in Higher Education, where they describe what dishonest behaviors correspond to plagiarism and how to combat it [7], although this regulation is limited only to the review of works in iThenticate® software (2021 Turnitin, LLC. Oakland, CA, USA) and to the determination of the percentage of coincidence to identify plagiarism.

Students have organized themselves through institutions, such as the European Student Union (ESU), the aim of which is to represent students across Europe, giving them a representative voice on various issues, including academic integrity, since said organization belongs to the European Network for Academic Integrity [8], which through the promotion of policies and procedures seeks to ensure integrity and eradicate scientific misconduct in universities and institutions. Likewise, there are currently different organizations and agreements worldwide that defend and promote academic and scientific integrity as well as responsible conduct in research, one of the most prominent being the Singapore Declaration [9], which was established at the 2nd World Conference on Research Integrity in 2010 in Singapore as a general guide to the principles and responsibilities that should prevail in the development of research [10].

According to López and Fernández [11], in most studies on academic plagiarism, the authors describe it as a multicausal behavior where a series of factors intervene, including motivation, vocation, academic load, ethics, integrity, values, the orientation of teachers and evaluation methods. Likewise, academic plagiarism is a phenomenon that involves sociological, psychological, ethical and legal aspects, among others. In this sense, they define it as the use of information extracted from other texts without explicitly describing

the author's credits. Plagiarism can be intentional when the author deliberately does not refer to the original work, or it can be unintentional, where the action is negligent due to not knowing the concepts of citation.

In general, plagiarism is committed when a person other than its author disseminates, transmits or reproduces a work in whole or in part, presenting it as their own [12]. Likewise, different concepts of plagiarism define it as the appropriation of ideas or documents of a third party without expressing having done so (i.e., presenting a work as an author without being partially or totally aware or paraphrasing) [13].

Just as there are different definitions of academic plagiarism, there are also different classifications of it, which in many cases have a behavioral approach, describing it according to the actions carried out. This includes the classification made by Turnitin, which defined the 10 main types of plagiarism, being identified through a survey of secondary and higher education teachers: presenting another's work as one's own, recycling one's own work without citing (self-plagiarism), rewriting another's work without citing the sources, using citations without citing the source, combining several sources without citing, citing some paragraphs but not all, combining quoted and unquoted paragraphs, citing correctly without changing the structure (paraphrasing), citing a source incorrectly and lack of creativity in developing a text to the point of relying on someone else's work [14].

Paraphrasing stands out from this previous classification, which Castro et al. [2] considered to be a valid option to describe the works of other authors by using appropriate language that explains in one's own words what the author meant without committing academic plagiarism. However, this alternative implies an intellectual requirement and specific knowledge of the subject matter, and it must also be cited in the text so that it is not seen as plagiarism.

On the other hand, the classification of academic plagiarism based on the magnitude of the fault committed reduces it to three categories: serious, real and minor. Serious plagiarism includes cloning, translation, copying and substitution. In this case, it is considered that the plagiarist is relentless or very innocent; that is, they claim innocence due to ignorance of the rules. Actual plagiarism includes remixes, hybrids, mashups and waste. In this case, it is difficult to determine the purpose of the plagiarist and detect plagiarism. Mild plagiarism encompasses self-plagiarism, aggregation and repetition. It is considered the least harmful, but it is still dishonest behavior. On the other hand, there is a classification according to linguistic origin that divides it into monolingual and by translation, which are born from the translations of documents in one or more languages [15].

The classification of academic plagiarism that best fits the present study is the one proposed by Turnitin [14], since it takes into account all the possible dishonest behaviors that can occur in the university environment. In this sense, the following dimensions are considered to measure academic plagiarism: knowledge, motivations and practices. The plagiarism knowledge dimension encompasses the information and data in general that the student has about this behavior, the ways of performing it and the implications, among others, considering that in some cases, due to ignorance, they incur in the inappropriate use of information, which can become academic plagiarism [11,16].

The plagiarism motivations dimension involves the various causes or motives that a person has to commit plagiarism. Among them, ignorance, ease and impotence stand out. Plagiarism is committed due to ignorance in the event that a person needs to perform a job and does not know the methodology to grant credit to an author or work. In the same way, when the person knows the methods to cite authors and give them credit but does not master the form, he or she prefers to not do so for convenience. In this case, the reason for plagiarism is easiness. In the event that the person feels blocked from developing ideas or transcribing them clearly and precisely but must carry out the work in the same way, he or she resorts to plagiarism many times due to the impotence of not being able to unblock the mind for creation [12].

Next, the practices are represented by repeated acts in daily life and reflect the participation of people in the social, cultural and political spheres. Within this concept, the

practical dimension of academic plagiarism is located, taking into account that students indicate that knowledge of citation methodologies is the primary way of not committing plagiarism. The students mainly use paraphrasing and the union of different authors instead of direct citation since they rarely copy and paste, as this practice leads them more easily toward plagiarism [11,17].

On the other hand, López et al. [18] stated that teachers play an essential role in identifying academic plagiarism, since they are in direct contact with students and are more likely to perceive a lack of integrity and honesty. However, this topic is rarely dealt with by them, and they only take corrective measures when they can no longer control the situation and it is in the public domain. In addition, many teachers prefer not to investigate this behavior, since it represents a long process of searching for evidence and usually implies additional effort. Likewise, the author concluded that tolerance of plagiarism means that students perceive that it is accepted and normal behavior. Therefore, students practice it continuously, knowing that they lack integrity.

Within this framework, Cebrián et al. [19] pointed out that due to the fact that educational processes are increasingly digitized, the internet becomes the largest source of information and knowledge used in universities, so free access to all this information can easily lead to academic plagiarism.

In another sense, Muñoz et al. [20] stated that originality, creativity and innovation must prevail in the academic environment, as indicated by the ethical and integrity principles of universities, where respect for the work of predecessor authors must prevail. Additionally, it should be taken into account that the acquisition of knowledge of a person is based on the interpretation of previous works and not on the plagiarism of the opinions of their authors. This is why plagiarism affects university education in such a way that people are diminished in their creativity and innovation, not to mention the academic and criminal sanctions to which they are exposed. On the other hand, if these criminal sanctions are applied with light periods, this would encourage the practice of this behavior and promote a culture of impunity.

From the previous evidence, the development of the following work is proposed, whose objective is to determine the perception of academic plagiarism as a dishonest behavior and the factors that characterize it in industrial engineering students at a public university in Lima.

2. Materials and Methods

Within the methodological framework, the general objective of this study was to determine the perception of academic plagiarism as dishonest behavior and the factors that characterize it in industrial engineering students from a public university in Lima. The work corresponded to a basic type of study, which according to Ñaupas et al. [21] is one that is carried out for the purpose of obtaining new knowledge and also serves as a basis for the development of science. According to its approach, the study was quantitative, which according to Palella and Martins [22] is one that requires the use of mathematical comparison models, the results of which must be studied through the use of statistical methods. The work was framed within the non-experimental design, considering that the variable perception of academic plagiarism and its dimensions were studied in its natural environment, and therefore, they were not manipulated [23]. The level of the study was descriptive, since its objective was to interpret the reality of a phenomenon, considering the characteristics, data, analysis and interpretation of the facts. Furthermore, the data were collected at a single point in time, and therefore, the study was considered to be cross-sectional [22].

The population was made up of, according to what was expressed by Hernández et al. [23], a group of individuals with similar characteristics. In this case, there were 2145 students from the school of industrial engineering of a public university in Lima. Considering that the population turned out to be very large, intentional non-probabilistic sampling was carried out, which according to Arias [24] is one where the study subjects

are selected based on criteria predetermined by the researcher. In this sense, 155 students were chosen from the 8th and 9th cycles of the industrial engineering school of a public university in Lima.

For the study technique, a survey was used. As an instrument for data collection, a questionnaire was used. The design of the questionnaire was carried out by including 35 questions related to the variable perception of academic plagiarism and its dimensions (knowledge of plagiarism, motivations of plagiarism and plagiarism practices) in addition to its construction, according the questionnaires designed by Castro et al. [2], Cebrian et al. [19] and Espiñeira et al. [25]. Subsequently, the questionnaire for data collection was sent virtually to the students who made up the sample, and all the questions had five (5) alternative answers through a Likert-type scale.

The questions of the questionnaire were configured according to the dimensions of the variable. In the case of the plagiarism knowledge dimension, items 1–12 were designed, each with 5 response options: totally disagree (TD), disagree (D), neutral (N), agree (A) and totally agree (TA). The responses were progressively evaluated with values from 1 to 5. The plagiarism motivation dimension ranged from items 13 to 24, with the same response options and values as those in the previous dimension. The practical dimension of plagiarism ranged from items 25 to 35 in the same way with 5 alternatives: never (N), very rarely (Vr), sometimes (St), almost always (Aa) and always (A). These answers were analyzed with values from 5 to 1, respectively.

On the other hand, the validity of the instrument was verified, being defined as the absence of bias and the link between what was measured and what was to be measured [22]. In this sense, the validity was verified through the judgment of three (3) experts, made up of two (2) researchers and one (1) methodologist who reviewed the questionnaire according to evaluation criteria, pertinence, relevance, coherence, construct and clarity, with the final opinion of each expert being that it was applicable, as shown in Table 1.

Table 1. Expert reviewers of the questionnaire.

No.	Name of Expert	Result
1	Mgtr. Eucaris del Carmen Agüero Corzo	Applicable
2	Dr. José Leonor Ruiz Nizama	Applicable
3	Dr. Carlos Enrique Guanilo Paredes	Applicable

In order to test the questionnaire, a pilot test was carried out with 46 students of the 8th and 9th cycle of another specialty at a public university in Lima. The findings achieved allowed us to estimate the reliability of the instrument, which determines the absence of random error in data collection [22] through the Cronbach's alpha coefficient. In the pilot test, a reliability coefficient of $\alpha = 0.85$ was obtained, thus confirming that the instrument was reliable. Likewise, according to the scale obtained, in the plagiarism knowledge dimension, a score between 11 and 44 would be considered low, and a score between 45 and 55 would be high. In the plagiarism dimension, a score between 14 and 42 would be considered not justifiable, and if it was between 43 and 70, then it would be justifiable. Finally, in the practical dimension of plagiarism, a score between 15 and 50 would be considered inadequate, and if it was between 51 and 75, then it will be adequate.

For the data collection, the questionnaire was explained through the Google Forms tool, whose link was sent by various means (e.g., email and WhatsApp) to the selected students at the industrial engineering school. Once the completed questionnaires were received, the data were tabulated using Microsoft Excel and SPSS version 26 software to perform the corresponding calculations and analyses.

The results were analyzed from a descriptive point of view through the absolute and relative frequencies of the variable and each of its dimensions. Likewise, the inferential analysis was carried out through analysis of variance (ANOVA) to compare the means according to each dimension of the variable, and finally, the respective conclusions were established.

3. Results

The level of perception of academic plagiarism in the industrial engineering students at a public university in Lima reflected that 56.1% of the students perceived academic plagiarism negatively (i.e., it affected their educational process), while 43.9% perceived it in an irrelevant way; that is, they considered it as not affecting their learning. These results reflect that the majority of the students conceived plagiarism as a harmful behavior that damages the learning process and the acquisition of educational skills, that it is dishonest behavior and that denotes the individual's lack of integrity, while the rest of the students thought that it is an unimportant practice or accepted as normal in the development of their education, as shown in Table 2. In this case, no significant statistical differences were found ($p > 0.05$).

Table 2. Level of perception of academic plagiarism in students at the school of industrial engineering of a public university in Lima.

Variable	n	%f
Perception of Academic Plagiarism		
Negative	87	56.1
Irrelevant	68	43.9
Total	**155**	**100**
$p > 0.05$		

In order to study the characteristics of the perception of academic plagiarism, each of its dimensions was studied separately. In the case of the knowledge dimension of academic plagiarism, 51.0% of the students perceived a low level, while 49.0% perceived a high level; that is, most students had little knowledge about academic plagiarism, its forms of commission and its consequences in general, while the rest of the students had a high level of knowledge about it.

In reference to the motivations dimension of academic plagiarism, 52.3% of the students perceived it as a non-justifiable behavior, while 47.7% justified it. In other words, the students accepted that they committed academic plagiarism for various reasons, such as the ease of doing so, not having enough time or feeling mentally blocked from developing new ideas, among other reasons. However, most thought it was an invalid behavior.

Finally, for the practical dimension of plagiarism, 43.2% of the students perceived an inadequate level, and 56.8% perceived an adequate level. These results reflect that the majority of the students accepted having committed academic plagiarism in some way through practices such as copying from papers, books, and web pages, among others, and using them in their own works without indicating references or citations of the authors, while the rest of the students consider plagiarism to be an inappropriate practice. Likewise, no statistically significant differences were found ($p > 0.05$). These results are presented in Table 3.

To study the behavior of the sample regarding academic plagiarism, according to certain characteristics, sociodemographic data were determined, considering age, gender and study cycle as shown in Table 4.

In relation to the level of perception of academic plagiarism, according to the age of the students at the industrial engineering school, 53.9% of the students between the ages of 16 and 19 declared that it is a behavior that is justified, while 45.2% did not justify it. This means that most of the students thought plagiarism is a valid behavior. Similarly, 50.0% of the students between the ages of 20 and 23 perceived it as an act that is justified. Similarly, 50.0% perceived that it is not justified. Finally, 45.5% of the students over 24 years of age declared that there is a non-justifiable level, while 54.5% affirmed that there is a justifiable level.

Table 3. Level of perception of the dimension's knowledge, motivations and practices of academic plagiarism in students at the school of industrial engineering of a public university in Lima.

Dimension	Level	n	%f
Knowledge	Low	79	51.0
	High	76	49.0
	Total	**155**	**100**
Motivations	Not justifiable	81	52.3
	Justifiable	74	47.7
	Total	**155**	**100**
Practices	Inadequate	67	43.2
	Adequate	88	56.8
	Total	**155**	**100**
$p > 0.05$			

Table 4. Sociodemographic information of the students at the industrial engineering school of a public university in Lima.

Characteristic		n	%f
Age	16–19 years old	65	41.9
	20–23 years old	68	43.9
	24 years and up	22	14.2
	Total	**155**	**100**
Gender	Male	40	25.8
	Female	115	74.2
	Total	**155**	**100**
Cycle	8th	70	45.2
	9th	85	54.8
	Total	**155**	**100**

These determinations, as shown in Table 5, reflect that in general, the majority of the students justified academic plagiarism and perceived it as acceptable behavior. On the other hand, the differences found were not statistically significant ($p > 0.05$).

Table 5. Level of perception of academic plagiarism in students at the industrial engineering school of a public university in Lima according to age.

	Perception of Academic Plagiarism					
Age	**Not Justifiable**		**Justifiable**		**Total**	
	n	**%f**	**n**	**%f**	**n**	**%f**
16–19 years old	30	45.2	35	53.9	65	100
20–23 years old	34	50.0	34	50.0	68	100
24 years and older	10	45.5	12	54.5	22	100
Total	**74**	**47.7**	**81**	**52.3**	**155**	**100**
$p > 0.05$						

In reference to the level of perception of academic plagiarism according to gender, it was observed that 60.0% of the male students perceived a non-justifiable level while 40.0% perceived a justifiable level. In other words, the majority of the men were aware that academic plagiarism is a dishonest attitude. On the contrary, 43.5% of the women affirmed that they perceived a non-justifiable level, and 56.5% perceived a justifiable level. As can be seen in Table 6, the results of the survey indicated that most men perceived plagiarism as unacceptable behavior, and most women thought it is valid. This reflects that the men were

aware that academic plagiarism is an improper act, while the women accepted it as normal. On the other hand, the differences found were statistically significant ($p < 0.05$).

Table 6. Level of perception of academic plagiarism in students at the school of industrial engineering of a public university in Lima according to gender.

	Perception of Academic Plagiarism					
Gender	**Not Justifiable**		**Justifiable**		**Total**	
	n	**%f**	**n**	**%f**	**n**	**%f**
Male	24	60.0	16	40.0	40	100
Female	50	43.5	65	56.5	115	100
Total	**74**	**47.7**	**81**	**52.3**	**155**	**100**
$p < 0.05$						

Regarding the perception of academic plagiarism by students according to their study cycle, 40.0% of the students in the 8th cycle perceived a non-justifiable level, and 60.0% perceived a justifiable level. In other words, the majority of the students of the eighth cycle recognized academic plagiarism as a normal and accepted behavior at the university. Likewise, 45.9% of the 9th cycle students perceived academic plagiarism at a non-justifiable level, while 54.1% perceived it at a justifiable level. As shown in Table 7, the majority of the students in both cycles perceived that committing academic plagiarism is justified, and they saw it as something normal at the university. The discrepancies found were not statistically significant ($p > 0.05$).

Table 7. Level of perception of academic plagiarism in students at the school of industrial engineering of a public university in Lima according to study cycle.

	Perception of Academic Plagiarism					
Cycle	**Not Justifiable**		**Justifiable**		**Total**	
	n	**%f**	**n**	**%f**	**n**	**%f**
8th	28	40.0	42	60.0	70	100
9th	39	45.9	46	54.1	85	100
Total	**67**	**43.2**	**88**	**56.8**	**155**	**100**
$p > 0.05$						

In summary, the findings of the level of perception of academic plagiarism in students according to age, gender and study cycle were estimated while considering the three dimensions of plagiarism: knowledge, motivations and practices. For the knowledge dimension of academic plagiarism, and according to the ages of the students, 53.9% of the students between the ages of 16 and 19 believed that there is a low level, while 54.4% of the students between the ages of 20 and 23 stated that there is a low level. Likewise, 59.1% of the students over 24 years of age perceived a low level. In the same knowledge dimension, but according to the gender of the students, 52.5% of the male students and 52.2% of the women perceived a low level of knowledge.

Finally, in the knowledge dimension, according to the study cycle, 51.4% of the 8th cycle students affirmed that they perceived a low level. Similarly, 50.6% of the 9th cycle students had the same opinion. In conclusion, most of the students thought that they had little knowledge about academic plagiarism, the ways to avoid it and when to avoid it.

In reference to the motivations dimension of academic plagiarism, according to age, 50.8% of the students aged between 16 and 19 years perceived a non-justifiable level, 51.5% of the students aged between 20 and 23 years also perceived a non-justifiable level, and 54.5% of the students over 24 perceived a non-justifiable level. For the motivations

dimension, according to gender, the results reflected that 55.0% of the men perceived an unjustifiable level, as well as 50.4% of the women. Regarding the motivations of plagiarism dimension, and according to the study cycle, 52.9% of the 8th-cycle students and 51.8% of the 9th-cycle students believed that there is an unjustifiable level. In summary, the majority of the students, considering age, gender and study cycle, perceived that the motivations to commit academic plagiarism are not justified.

Regarding the practical dimension of academic plagiarism, according to age, 50.8% of the students aged between 16 and 19 years believed that there is an adequate level, while 51.5% of the students aged between 20 and 23 years affirmed that there is an adequate level, and 54.5% of the students over 24 years of age perceived an adequate level. In the practical dimension, according to the gender of the students, 55.0% of the male students affirmed that there is an adequate level, as did 51.3% of the women. Finally, for the practical dimension of academic plagiarism considering the study cycle, 52.9% of the 8th-cycle students perceived an adequate level, in addition to 50.6% of the 9th-cycle students. In summary, most of the students believed that they perceived the practices of academic plagiarism adequately. These results are reflected in Table 8.

Table 8. Level of perception of the dimensions of academic plagiarism in students of the industrial engineering career at a public university in Lima according to the age, gender and cycle of studies.

	Knowledge					**Motivations**					**Practices**				
	Low		**High**			**Not Justifiable**		**Justifiable**			**Inadequate**		**Adequate**		
Age	**n**	**%f**	**N**	**%f**	**T**	**n**	**%f**	**n**	**%f**	**T**	**n**	**%f**	**n**	**%f**	**T**
16–19	35	53.9	30	46.2	65	33	50.8	32	49.2	65	32	49.2	33	50.8	65
20–23	37	54.4	31	45.6	68	35	51.5	33	48.5	68	33	48.5	35	51.5	68
24+	13	59.1	9	40.9	22	12	54.5	10	45.5	22	10	45.5	12	54.5	22
Total	85	54.8	70	45.2	155	80	51.6	75	48.4	155	75	48.4	80	51.6	155
Gender	**n**	**%f**	**n**	**%f**	**T**	**n**	**%f**	**n**	**%f**	**T**	**n**	**%f**	**n**	**%f**	**T**
M	21	52.5	19	47.5	40	22	55.0	18	45.0	40	18	45.0	22	55.0	40
F	60	52.2	55	47.8	115	58	50.4	57	49.6	115	56	48.7	59	51.3	115
Total	81	52.3	74	47.7	155	79	51.0	76	49.0	155	74	47.7	81	52.3	155
Cycle	**n**	**%f**	**n**	**%f**	**T**	**n**	**%f**	**n**	**%f**	**T**	**n**	**%f**	**n**	**%f**	**T**
8th	36	51.4	34	48.6	70	37	52.9	33	47.1	70	33	47.1	37	52.9	70
9th	43	50.6	42	49.4	85	44	51.8	41	48.2	85	42	49.4	43	50.6	85
Total	79	51.0	76	49.0	155	81	52.3	74	47.7	155	75	48.4	80	51.6	155

4. Discussion

The results of the descriptive analysis of this study indicate that 56.1% of the students perceived that academic plagiarism has a negative level, while 43.9% perceived it as irrelevant. This means that most students thought that academic plagiarism is a behavior that affects their education and is unethical and dishonest. These results are similar to those of Castro et al. [2], who in their study determined that 53.3% of students were aware of plagiarism while 23.4% were partially aware of it and 23.4% were completely unaware of it. In addition, 47.3% of the students indicated that they could use images and tables from the internet without requesting some type of permission, and only 1.6% admitted that they must ask the author for permission to use their resources.

On the other hand, the findings of this work differ from those in the study carried out by Perkins et al. [1] at the British University Vietnam, in which a large database (12,937) was used and the works presented by the students were analyzed from April 2014 to October 2019. Very low levels of academic plagiarism were found (3.36%). However, it is noteworthy that in this case, the works presented by the students over several years were

analyzed, while in the present study, only the perception of plagiarism by the students was analyzed. In addition, when comparing both results, it was possible to infer that the perception of academic plagiarism was higher than what normally occurs.

Regarding the level of perception of the dimensions of academic plagiarism, the results indicate that in the plagiarism knowledge dimension, the majority of the students (51.0%) perceived a low level. In reference to the motivations dimension, 52.3% of the students thought that there is an unjustifiable level. For the practical dimension, the majority of the students (56.8%) believed that there is an adequate level. These results allow us to interpret that students have little knowledge about how to avoid academic plagiarism and what it means to plagiarize, and they also have different motivations that induce them to plagiarize involuntarily. Among the most outstanding motivations is ignorance, affirming that they carry out this practice at some point but not on a regular basis.

These findings can be compared with the study by Villacreses [16], given that in his study, 72.3% of the respondents perceived a high level of knowledge about plagiarism, and therefore, they knew how detrimental it is to the academic training process. Likewise, in the case of the reasons for committing plagiarism, 55% of the students alluded to internal reasons, such as obtaining a higher grade. Regarding plagiarism practices, 56.4% placed it at an inadequate level, which reflects that they committed academic plagiarism at some point. Similarly, the results are contrary to the study by Cebrián et al. [19], where students perceived plagiarism as copying and using a fragment in whole or in part in a particular work, but they did not consider self-plagiarism or copying images or tables from the web to be academic plagiarism.

Similarly, the findings on the perception of the dimensions of academic plagiarism can be compared with the work of Nabee et al. [4], who determined the mean and standard deviation for each of the items that described the most important aspects in the perception of plagiarism by students, such as knowing the anti-plagiarism policy of the university, knowing if the application of Turnitin helps to be aware of the plagiarism, knowing if paraphrasing is plagiarism and perceiving if plagiarism in the university is normal. In this sense, the studies are similar, since they handle the possible dishonest behaviors that academic plagiarism involves. However, Nabee et al. [4] identified other predictive aspects of plagiarism practices and did not break academic plagiarism into dimensions.

On the other hand, the level of perception of academic plagiarism in students according to their age reflects that the majority of students (53.9%) aged between 16 and 19 years perceive a justifiable level, as is also perceived by 50.0% of students aged between 20 and 23 years and 54.5% of students over 24 years of age. In other words, most students think that academic plagiarism is accepted and normal behavior. Similarly, for Castro et al. [2], the students of higher years showed better behavior when copying articles, theses and documents. This is understandable considering that the student's maturity increased and allowed him or her to conceive academic plagiarism in a negative way.

Regarding the level of perception of academic plagiarism according to the gender of the students, the majority of the men (60.0%) perceived an unjustifiable level, unlike 56.5% of the women, who perceived a justifiable level; that is, there are differences between the perceptions of men and women in reference to academic plagiarism. These results contrast with the study by Villacreses [16], where of 283 students surveyed, 53.7% (i.e., 152 students) stated that they had unfavorable perceptions of academic plagiarism, of which 95 were women and 57 were men. The same students affirmed that plagiarism is a dishonest, unethical and negative behavior for learning and the acquisition of skills. On the other hand, 46.3% (i.e., 131 students) perceived a favorable level of academic plagiarism, and in this sense, there were 90 women and 41 men.

In relation to the level of perception of academic plagiarism according to the students' study cycles, the results show that 60.0% of the 8th-cycle students perceived a justifiable level, as well as 54.1% of the 9th-cycle students. These findings are similar to what was proposed by Castro et al. [2], who stated that the students of the last years of study expressed

knowledge of plagiarism, while the students of the first years of study showed ignorance, especially in the methods of citations, references and paraphrasing.

For the descriptive analysis of the knowledge dimension of academic plagiarism according to the age of the students, in all the ranges considered (from 16 to 19 years old, from 20 to 23 years old and over 24 years old), a low level of perception was obtained. Regarding the gender of the students, it was found that both men and women perceived a low level of academic plagiarism. Finally, according to the study cycle of the students, the results showed that in both cycles, the students perceived a low level of academic plagiarism.

These results contradict López and Fernández [11], since in their study, knowledge of the general characteristics of academic plagiarism was highlighted. However, ignorance was detected in some other particularities in the students evaluated, and they also showed little clarity for the consequences of this practice. It should be considered, on the other hand, that Kadam [7] stated that knowing what plagiarism represents is a problem for researchers, for which he focused his work on a regulation implemented by the Indian government called Promotion of Academic Integrity, and Plagiarism Prevention in Higher Education Institutions, where behaviors defined as plagiarism and the corresponding sanctions in case of detection are disclosed.

Regarding the motivations of the academic plagiarism dimension according to the age of the students, in all the established age ranges, it was confirmed that there is a level of perception that is not justifiable. In the case of the motivations dimension according to gender, the findings show that both men and women perceived an unjustifiable level. In the dimension of motivations, according to the cycle of study of the students, it was determined that in both cycles, there was an unjustifiable level. It is important to broaden these motivations, as stated by Castro et al. [2], who pointed out that it is necessary to delve into the factors or reasons that influence a student's decision to commit academic plagiarism.

Within this previous perspective, Peters et al. [26] pointed out that in order to determine the motivations for academic plagiarism, it is important to consider the conditions of the student or researcher, the pressure to which they are subjected in terms of their performance and the pressure to create and excel in a competitive environment. Taking into account that the issue of plagiarism is complicated, it must be analyzed from the context of knowledge, law, learning, customs, values and ideology.

Finally, in the practical dimension of academic plagiarism according to age, it was confirmed that in all the age ranges studied, there was an adequate level. For the practical dimension, according to gender, it was obtained that both men and women perceived an adequate level. Likewise, for the practical dimension according to the study cycle, the results indicate that in both study cycles, the students perceived an adequate level of academic plagiarism. When comparing the results with the study by López and Fernández [11], despite the fact that the level of perception of academic plagiarism practices was not differentiated according to the age, gender or study cycle of the students, a coincidence was observed with the present study, as most of the students knew that they must give credit to the sources they use, but they were not clear about the methodology for making citations or references.

Within this framework of plagiarism practices, the work of Juola [5] was also analyzed, where lexical overlapping was highlighted as a practice of academic plagiarism, which indicates that too much overlapping reflects a compromised text (copied and pasted). In this sense, in any research, some overlap is expected due to the similarity of topics. However, according to the author, more than 60% is undoubtedly dishonest behavior that violates academic integrity.

5. Conclusions

According to the descriptive analysis, most students perceive academic plagiarism in a negative way. In the inferential analysis, no statistically significant differences were found ($p > 0.05$) in reference to the perception of academic plagiarism by industrial engineering students at a public university in Lima. To minimize these results, it is necessary to

integrate the concepts of academic plagiarism and its implications and consequences into study programs.

In the case of the dimensions of academic plagiarism, most students perceived the knowledge of academic plagiarism at a low level, the motivations to commit plagiarism were perceived at an unjustifiable level, and the practices of academic plagiarism were at an adequate level. This means that students have little information about what it means to commit plagiarism and what its consequences and sanctions are. On the other hand, they do not justify the reasons for committing plagiarism, but at the same time, they know the related practices. From the inferential point of view, no significant statistical differences were found ($p > 0.05$). In this sense, to combat academic plagiarism, it is essential to promote awareness campaigns in universities about what it means to commit this dishonest behavior.

Regarding the level of perception of academic plagiarism according to age, in the three (3) established age ranges (from 16 to 19 years, from 20 to 23 years and 24 years and older), a justifiable level of perception of plagiarism was obtained in the academic field. In the inferential field, no significant statistical differences were obtained ($p > 0.05$). Considering these findings, age is not a conditioning factor for committing academic plagiarism, despite the fact that older students should generally be more mature and aware of the damage it can cause to their education.

On the other hand, the level of perception of academic plagiarism according to the gender of the students reflects that the majority of the men perceived an unjustifiable level, while the women perceived a justifiable level. In this sense, statistically significant differences were found ($p < 0.05$). These results expose the difference in perception according to gender without considering other factors that may be influential, such as education at home, customs and beliefs.

With reference to the level of perception of academic plagiarism according to the study cycle, most of the 8th- and 9th-cycle students perceived academic plagiarism as a justifiable behavior, and therefore, no significant statistical differences were found ($p > 0.05$). In the present study, the students of the last cycles of industrial engineering were considered, since it is estimated that at this stage, they are more concerned about their educational preparation (i.e., knowing how to identify the factors that affect or benefit their learning). However, the results indicate that this behavior was not present.

Within this order of ideas, the university education process must contemplate the dissemination of issues inherent to academic plagiarism and academic integrity in such a way that the student knows from the undergraduate level the ethics and good practices needed for research development. Considering that academic plagiarism is a reprehensible behavior for universities and scientific journals, they see the need to implement software to detect it, such as Turnitin or iThenticare, as a support measure for plagiarism detection [27]. In addition, it is essential to build a culture of integrity in higher education with an innovative approach that helps improve ethics in the development of research projects [28]. In this way, the student knows how and when to cite and how to make arguments, and this is achieved through training that promotes good practices in research based on ethics and integrity [26].

The main limitations of the study include the lack of information and data on academic plagiarism detected at the university, in addition to the few investigations carried out on the subject, including the most common practices of plagiarism, academic integrity, copyright and intellectual property. On the other hand, there is the lack of sincerity on the part of the respondents when answering the questions of the questionnaire, which may not reflect the true results. Motivated by the aforementioned factors, it is necessary to establish policies and strategies that contribute to promoting the prevention of academic plagiarism, thus allowing the strengthening of integrity and ethical values in students.

As part of this study, the following actions are recommended to promote values, principles of honesty, integrity and ethics among students and to define and disseminate the anti-plagiarism policy of the university institution: (1) assign an area or department in

charge of academic integrity that records the cases of plagiarism detected and sanctioned, (2) implement anti-plagiarism software that must be applied to the works presented by the students, (3) implement training programs on the definition of academic plagiarism, intellectual property and copyright, (4) establish training programs on ethics, honesty and academic integrity, (5) develop investigative methodology programs and all the necessary areas to carry out an investigation correctly and (6) develop awareness programs about dishonest conduct in universities.

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