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ATTITUDE TOWARDS SCIENTIFIC RESEARCH: ANALYSIS OF PSYCHOLOGY STUDENTS IN PERU AND COLOMBIA

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ABSTRACT

The attitude towards scientific research is an indicator of educational quality in university education. The objective of this research was to determine the attitude towards scientific research in university psychology students from Peru and Colombia. The research was descriptive, comparative and cross-sectional. The sample comprised 1150 students enrolled in universities in Peru (546) and Colombia (604), identified through convenience sampling. The General Research Attitude Index instrument, which was adapted for the study, was applied for data analysis. The high reliability of the instrument was verified with a Cronbach's Alpha of .935. Regarding the results, it was found that students from Colombia had a high predisposition towards research (41.7%) compared to students from Peru (29.9%). Regarding knowledge about research, students in both countries adequately valued that the university promoted the development of scientific production (52.6% in Colombia and 54.3% in Peru). Regarding the evaluation of the quality of university teaching, students in Colombia perceived a higher quality in their education (8.27 out of 10), the quality of the program in which they were enrolled (8.51 out of 10), and the infrastructure of their university (8.44 out of 10). It is concluded that students from Colombia show a better attitude towards research (M=73.79, SD=12.96) than students from Peru (M=70.64, SD=11.80). the study recommends teachers to possess a greater pertinence of knowledge and experience to motivate a favorable attitude towards research and ensure its visibility.

Contribution/Originality: This study uniquely contributes to understand the attitudinal perception of university psychology students in Peru and Colombia towards scientific research, a much-needed requirement to design and implement university research training policies for students.

1. INTRODUCTION

Research is a driver of development for any country seeking to become less dependent on natural resources (Alarco, Changllio-Calle, & Cahuana-Salazar, 2017). In this regard, it is expected that universities will promote the spirit of inquiry under the scientific method, thus having the possibility of generating knowledge in all fields of knowledge, including mental health, where it is still necessary to empower evidence-based practices (Luna-Solis, 2015). When speaking of generating scientific knowledge during university life, it is essential to include attitudes towards research as a driving force. In this case, attitudes represent pre-established thought patterns (Ortega, 1986) which in the context of science can be defined as a tendency to react favorably or unfavorably to the exercise of scientific research (Mamani-Benito & Apaza, 2019).

Taking into account the urgent need to boost student scientific production in Latin America (Corrales-Reyes & Dorta-Contreras, 2018; Sánchez-Duque, Gómez-González, & Rodríguez-Morales, 2017) several authors agree that it is important to awaken favorable attitudes towards research from day one at the university. Consequently, higher education systems in several countries in the region have been implementing strategies based on formative research to improve the profile of competencies and skills of professionals in the social and health sciences (Espinoza, 2020; Hurtado, Baños, & Silvente, 2015; López-de Parra, Polanco-Perdomo, & Correa-Cruz, 2017).

As is known, psychology in this part of the world has been going through a period of critical reformulation for many years, taking into account historical, cultural, political, economic and social aspects, since each of the countries in the region share similar experiences, such as Iberian-Catholic colonization, late modernization and exploitation of natural and human resources (Pessoa, 2013). The construction of multiple objects of study, which respond to the needs of the population, represented in the health problems that afflict each territory (Romero, 2013) have been proposed in the Latin American psychology.

Faced with this reality, research has once again been considered a fundamental pillar in higher education programs in countries like Peru, where a university level reform has been implemented since 2014 (Mayta-Tristán, 2016; Mayta-Tristán, Toro-Huamanchumo, Alhuay-Quispe, & Pacheco-Mendoza, 2019; Mendoza-Arana, Rivera-Del Rio, Gutierrez-Villafuerte, & Sanabria-Montanez, 2018). This reform has caused a notable increase in scientific production in areas such as biomedical research (Glass, Garcia, Belter, Livinski, & Leon-Velarde, 2018) and Colombia, which in recent years stands out for its positioning in The SCImago Journal & Country Rank (SJR) and for a notable increase in its scientific production, in general (Maz-Machado, Jiménez-Fanjul, & Villarraga-Rico, 2016) and mental health, in particular (Flórez-Rojas & Becerra, 2020; Hernández & Marulanda, 2014).

As for these two countries, Peru and Colombia, despite the advancements in research, both have common scenarios and limiting factors. For example, students do not show progress in scientific production from undergraduate studies (Camargo–Coronell, Almanza–Moreno, & Díaz–Caballero, 2021; Toro-Huamanchumo, Meza-Liviapoma, Quispe-Juli, Fernández-Chinguel, & Torres-Román, 2015) and the same happens with those groups called scientific societies, where greater involvement and production of new knowledge is expected (Ortiz-Martinez & Pulido-Medina, 2017). It can be interpreted that the problem does not lie in low motivation, but in the predisposition that conditions some basic aspects of the exercise of research, such as scientific methodology learning, scientific writing, mastery of scientific search engines, digital skills, among others. Therefore, it is clear that science does not advance by emotions, but by discipline, motivation, perseverance and commitment (Mamani-Benito, 2021).

Based on the evidence found in the literature, in the Peruvian context, research has been reported with diverse results such as studies which reveal that students show favorable attitudes, such as the one conducted by Loayza-Rivas (2021) and Olivera (2020) in psychology students, and Mercado (2017) in medical students, and also studies that reveal unfavorable attitudes, such as the one conducted by Gálvez, Gonzáles, and Monsalve (2019) in nursing students, and Arellano-Sacramento, Hermoza-Moquillaza, Elías-Podestá, and Ramírez-Julca (2017) in stomatology students. In the case of Colombia, unlike in the Peruvian context, there are no conclusive research studies either in

favorable (Rojas, Méndez, & Rodríguez, 2012; Villamizar, Lobo, & Arias, 2016) or unfavorable attitudes towards research (Gutierrez, Patiño, & Munévar, 2021; Rojas et al., 2012; Villamizar et al., 2016).

In sum, given the importance of attitudes towards research in promoting student scientific production, it is necessary to analyze the experiences of different scenarios, in this case, seeking to improve the scientific production indicators of two countries. In addition, in order to improve understanding and identifying the prevalence of the problem, as has been done in previous studies (Hernández, Saavedra-López, Calle-Ramirez, & Rodríguez-Fuentes, 2021) the objective of this study was to describe and compare the index of attitudes towards research in psychology students in Peru and Colombia.

2. METHODOLOGY

2.1. Type and Design of Research

The research is comparative and descriptive as it studies the state of the study variable in a given population (Hernández-Sampieri & Mendoza, 2018) such as the attitudes towards research in psychology students in the countries of Colombia and Peru in the case of this research. In addition, the research study is basic since it makes it possible to gather information on reality in order to increase scientific knowledge and better understand a specific problem (Barriga, 1974). It is a cross-sectional study of non-experimental design, since no manipulation of the variables will be carried out, being a purely descriptive study (Hernández-Sampieri & Mendoza, 2018).

2.2. Sample

The population comprised of psychology students from universities in Peru and Colombia. The sample consisted of 1,150 university students in the professional career of psychology, who were enrolled in universities in Colombia (604) and Peru (546). Due to the current health emergency situation, the sample was chosen using convenience sampling and technologies (filling out a Google form).

2.3. Instruments

The instrument used was adapted from different sources (Blanco & Alvarado, 2005; Denofrio, Russell, Lopatto, & Lu, 2007; Rojas, 2010). Likewise, researchers used a version that was standardized in Peru with 19 items linked to the General Index of Attitudes towards Research, and it presented three dimensions: Self-Assessment (SA), Faculty Influence (FI) and Institutional Influence (II). In addition, the instrument had independent variables that allowed better identification of the characteristics of the study population: 1. Knowledge of and participation in university research systems, 2. Quality of the program, environment and professors. Finally, the Cronbach's Alpha reliability value was .935, which showed a high reliability of the instrument applied.

2.4. Data Analysis

The Statistical Package for Social Sciences (SPSS V. 25.0) and Microsoft Excel were used for data analysis. Moreover, the analysis was carried out with tables of frequency, percentages, average, central tendency, and cut-off points. Finally, Cronbach's Alpha reliability analysis was used.

Table 1 The sample of this study is represented by students aged between 17 and 21, with 62.41% for Colombia and 55.49% for Peru. In addition, 37.78% and 44.50% are represented by students aged 22 and older in Colombia and Peru, respectively. In relation to gender, females have the highest percentage of participation in the Professional Schools of Psychology in both countries, and male participation is 16.22% in Colombia and 28.75% in Peru. Moreover, in both countries, the most prevalent teaching modality for professional training in psychology is synchronous virtual, with 95.69% in Colombia and 95.60% in Peru. In relation to the main source of financing for studies, Peru has a high level of support from parents or relatives with 80.76% compared to Colombia, which has

47.51%. Also, 14.90% of Colombian students use their own funds to study compared to 10.25% of Peruvian students.

Table 1. Characteristics of the study population by country.

Characteristics of the study population		Country	
		Colombia	Peru
		Percentage	Percentage
Age	17 to 21	62.41	55.49
	22 and older	37.58	44.50
Gender	Female	83.77	71.24
	Male	16.22	28.75
Study Modality	Asynchronous virtual	4.30	4.39
	Synchronous virtual	95.69	95.60
Main source of financing	Parents/Family	47.51	80.76
	Own Funds	14.90	10.25
	Credit/Loan	27.81	1.46
	Scholarship or Similar	7.88	5.86
	Other	1.98	1.64
Years of study	1st year	20.19	0.00
	2nd year	19.53	21.79
	3rd year	19.04	25.09
	4th year	17.38	22.34
	5th year	14.90	12.27
	6th year	2.48	8.60
	7th year	6.45	9.89

Note: % = Percentage.

The credit or loan option shows a higher percentage in Colombian students (27.81% compared to 1.46% of Peruvian students). Similarly, 7.88% of Colombian students receive scholarship or similar aid to continue studying compared to 5.86% of Peruvian students. In both countries, there are other forms of financing students can choose, with 1.95% in Colombia and 1.64% in Peru. Finally, with respect to the years of study, this research shows that in Colombia almost 60% of students are distributed between the first and third years of study. However, in Peru, more than 60% of students are distributed between the second and fourth years of study.

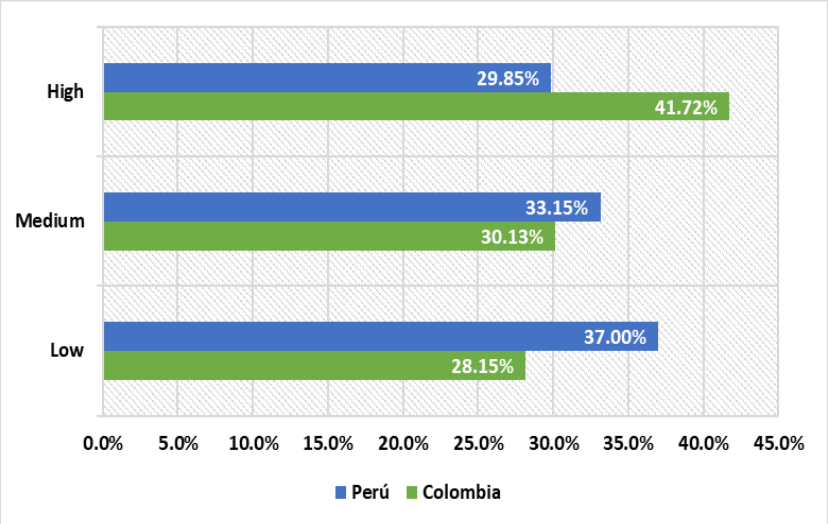

Figure 1. Levels of index of attitudes towards research.

Figure 1 shows that 41.72% of Colombian psychology students have a more favorable attitude towards research compared to 29.85% of Peruvian psychology students. In addition, more than 30% of psychology students in both

countries presented a medium level of attitude towards research. Finally, 37% of the Peruvian students presented a low level of attitude towards research compared to 28.15% of the Colombian students.

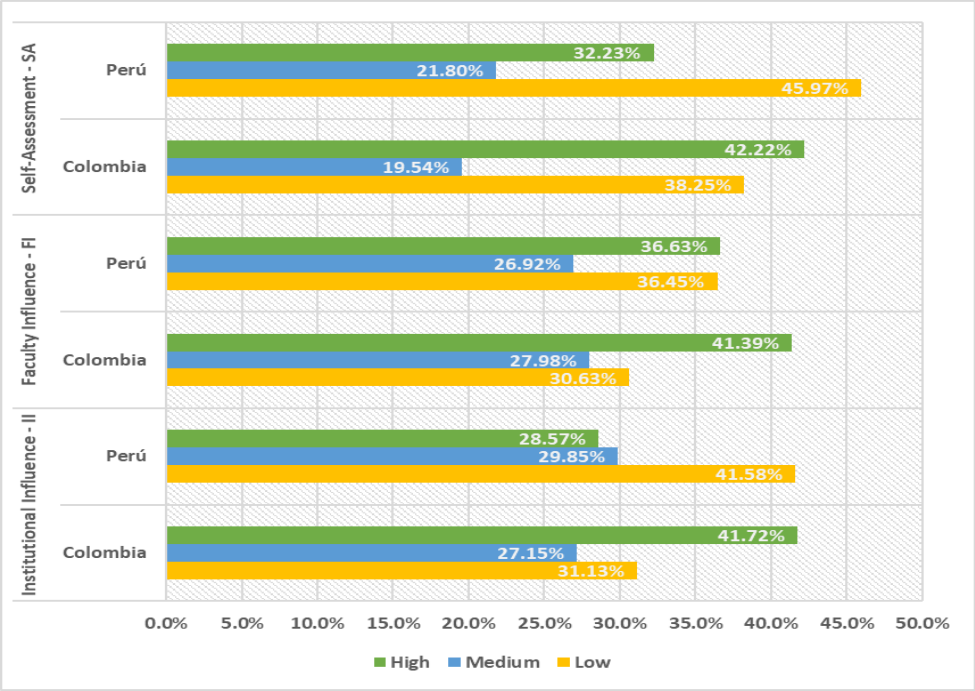

Figure 2. Levels of the dimensions of index of attitudes towards research.

Figure 2 shows that in the Self-Assessment dimension (SA), 42.22% of Colombian students show a high level of attitude towards research compared to 32.23% of Peruvian students. In addition, 45.97% of Peruvian psychology students show a low level of attitude towards research, almost 10% more than Colombian students (38.25%). In the Faculty Influence (FI) dimension, Peru maintains similar percentages with respect to high (36.63%) and low (36.45%) levels of attitude towards research. However, the majority of Colombian students (41.39%) show a high level of attitude towards research. Finally, in the Institutional Influence (II) dimension, 41.72% of the Colombian students present a high level of attitude towards research unlike Peru, where 41.58% of students show a low level of attitude towards research.

Table 2 shows the following: 1. Regarding knowledge of the university research system, more than 60% of psychology students in both countries reported medium level of knowledge (46.85% in Colombia and 49.63% in Peru) and high level of knowledge (17.05% in Colombia and 11.17% in Peru). 2. Regarding training of students in scientific research, 55.49% of Peruvian students and 44.58% of Colombian students think that training is provided to a moderate extent. Likewise, 33.27% of Colombians and 25.45% of Peruvian students think that training is provided to a great extent. 3. In relation to the promotion of the development of scientific production, Colombian students think that this occurs to a great extent (52.64%) compared to Peruvian students (40.84%). Likewise, 42.67% of Peruvian students think this occurs to a moderate extent compared to 32.45% of Colombian students. 4. Regarding if they are familiar with research incubators or projects, Peruvian students answered to a lesser extent (32.28%) and to a moderate extent (37.54%) compared to Colombian students who answered to a moderate extent (34.27%) and to a great extent (38.41%). 5. Regarding the quality of scientific training in the academic program, more than 80% of the students in both countries think that it is adequate to a moderate or great extent: 45.69% of them answered to a great extent in Colombia and 52.01% of them answered to a moderate extent in Peru. 6. Regarding the possibility of becoming a scientific researcher in the future, more than 70% of the students in both countries answered to a moderate and great extent.

Table 2. Knowledge and participation in university research systems according to country.

Knowledge and participation in university research systems		Country	
		Colombia	Peru
		Percentage	Percentage
1. Do you know the research system of your university?	Don't Know	14.5	12.27
	To a lesser extent	21.52	26.92
	To a moderate extent	46.85	49.63
	To a great extent	17.05	11.17
2. Do you think that students at your university are trained in scientific research?	Don't Know	7.28	1.46
	To a lesser extent	14.90	17.58
	To a moderate extent	44.53	55.49
	To a great extent	33.27	25.45
3. Do you think that your university promotes the development of scientific production?	Don't Know	3.64	2.01
	To a lesser extent	11.25	14.46
	To a moderate extent	32.45	42.67
	To a great extent	52.64	40.84
4. Are you familiar with the research incubators or projects at your university?	Don't Know	8.77	18.49
	To a lesser extent	18.54	32.23
	To a moderate extent	34.27	37.54
	To a great extent	38.41	11.72
5. Do you think that the quality of scientific training in your academic program is adequate?	Don't Know	4.80	3.29
	To a lesser extent	11.09	15.93
	To a moderate extent	38.41	52.01
	To a great extent	45.69	28.75
6. In your particular case, would you like to be a researcher/scientist in the future?	Don't Know	7.28	7.14
	To a lesser extent	17.38	20.87
	To a moderate extent	38.41	36.99
	To a great extent	36.92	34.98

Note: % = Percentage.

Table 3. Program quality, environment and professors by country.

Quality of the program, environment and professors Scale 0 to 10 points	Country	
	Colombia	Peru
	Average	Average
1. The university where I am studying	8.27	7.72
2. The program in which I am enrolled	8.50	7.55
3. My curriculum	8.32	7.41
4. My professors	8.34	7.97
5. My classmates	7.57	7.22
6. The welfare services of my university	8.03	7.07
7. The infrastructure of my university	8.44	7.14
8. The opportunities provided by my university to do research	7.99	6.91
9. Scholarships and awards for students	7.58	6.92

In Table 3 on the perception that psychology students have in relation to quality, environment and professors, it is observed in statement 1. The university where I am studying, students from Colombia present a better perception of quality with an average of 8.27 compared to Peru which presented an average of 7.72. 2. Colombian students present a better perception of the curriculum quality with an average of 8.50, which is higher than the average given by the Peruvian students (7.55). 3. In relation to the curriculum, the average perception of its quality in Peru is 7.41, being surpassed by Colombia, which has an average of 8.32. 4. In relation to the perception of professor's quality, Colombia obtained an average of 8.34, surpassing Peru with 7.97. In relation to the perception of classmates, both countries obtained a similar average of 7.57 for Colombia and 7.22 for Peru. 6. The statement on the quality of the welfare service of the universities obtained an average of 7.07 in Peru, while the quality was higher in Colombia, where the average was 8.03. 7. In terms of infrastructure, Colombian students think that these conditions are adequate, with an average of 8.44, surpassing Peru, which obtained 7.14. 8. Peruvian students think that there are few opportunities to conduct research at the university, with an average of 6.91, compared to

Colombian students who think that they have more opportunity, with an average of 7.99. Finally, in statement 9, which refers to scholarships and awards, students in Peru scored an average of 6.92, being surpassed by the perception of opportunities in psychology students in Colombia, who scored an average of 7.58.

Table 4. Measures of central and inferential tendency of the IAI between Peru and Colombia.

Central Tendency and Inferential Calculations	Country	N	M	SD	t	GL	Sig.
Index of Attitudes towards Research in Psychology Students	Colombia	604	73.79	12.96	4.29	1148	0.000
	Peru	546	70.64	11.80			

Note: N=Sample; M= Mean; SD= Standard Deviation; t= t Student; GL= Degrees of Freedom; Sig= Significance value.

Table 4 shows that the overall score of the index of attitudes towards research in the studied samples of psychology students from Peru and Colombia reaches a high level of statistical significance (Sig. < 0.001). As shown by the "t student" value (4.29) the differences between samples are slight. In addition, taking into account the averages, it can be concluded that Colombian students have a more positive attitude towards research than those from Peru.

3. DISCUSSION

In times where health crisis has been leaving its mark on mental health, it is urgent that professional psychologists address the alterations produced by evidence-based strategies. Although the literature shows that countries such as Peru and Colombia have made significant progress in terms of scientific productivity in mental health, it is still notorious the existence of indicators of negative attitudes towards the application of the scientific method in students in training. Therefore, the purpose of the study was to describe and compare the index of attitudes towards research in psychology students in Peru and Colombia.

In analyzing the results, the first finding was that Colombian psychology students have more positive attitudes towards scientific research than Peruvian students. This fact could be interpreted as an advantage in favor of Colombian students in terms of measuring how much research they do or are interested in doing; However, a review of studies in both countries shows that in Peru and Colombia, a good number of students do show positive attitudes to research (Enriquez, Moreno, Pérez, & Rico, 2017; Loayza-Rivas, 2021) but, apparently, this is not enough to increase the number of publications or student participation in the scientific production of each country (Hernández, Carranza Esteban, Caycho-Rodríguez, Cabrera-Orosco, & Arias Chávez, 2019).

In addition, it was found that Peruvian students scored lower in self-assessment of research skills, perception of the quality of human resources for professional training and promotion of research by the university. This fact seems to contrast correctly with what has been observed in the Peruvian context in recent years, where university students perceive their research skills as limited (Carrillo-Larco & Carnero, 2013) refer that many of their professors do not have experience publishing scientific papers (Benito, Verastegui-Diaz, Alvarez, & Caycho-Rodríguez, 2020) and certainly some universities have not provided the necessary support for student research (Cervantes, Bermúdez, & Pulido, 2019). Although in the Colombian context there seem to be similar perceptions, the changes and reforms implemented in recent years seem to be bearing positive fruits, as evidenced by the fact that at least a higher percentage of degree projects, compared to the Peruvian scenario, end up being published in indexed scientific journals (Cruz et al., 2021).

Another relevant aspect to discuss has to do with the fact that Colombian students perceive that they are more familiar with the research system in their universities, recognizing that research is important in their education for the promotion of the development of scientific production, giving a special value to the fact of belonging to research incubators or research projects. In this regard, unlike the Peruvian context, where a university reform has been implemented since 2014 (El Peruano, 2014) in Colombia, health research has been considered a public policy for many years (Escobar-Díaz & Agudelo-Calderón, 2016). In addition, the Ministry of Science and Technology has

been articulating strategies to improve the quality of the higher education system (Barrios-Hernández, García-Villaverde, & Ruiz-Ortega, 2021). These facts may clearly be generating reflection among university students about the importance of research for professional development in favor of society. This can also explain students' better perception of the quality of the curriculum, environments and human resources for training. Peruvian students, during the period of institutional licensing, have been able to notice the crisis of university education in their country (Diario El Comercio, 2019).

4. CONCLUSION

In conclusion, Colombian psychology students present more positive attitudes towards research, unlike Peruvian students. The latter show a better self-assessment of their research skills, they think that their professors are qualified in teaching research and that their universities promote the formation of groups or incubators. In contrast, Peruvian university students show little knowledge of the research system in their universities, which makes them favorably evaluate scientific activity.

Despite the interesting findings, the study has some limitations. First, the sampling applied was a non-probability sampling, so the results cannot be generalized to the total population of psychology undergraduate students in both Peru and Colombia. Therefore, it is recommended that probability samples be taken in the future. Second, since it is a descriptive study, it is not possible to analyze some factors associated with unfavorable attitudes towards scientific research. It is recommended that future studies could apply analytical and/or explanatory methods to increase the understanding of the problem. Third, the use of self-report measures does not allow in-depth exploration of predispositions and their causes, so future research should consider applying semi-structured interviews.

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