

# CHARACTERIZATION OF LATIN AMERICAN UNIVERSITIES IN THE TOP10 OF THE QS WORLD UNIVERSITY RANKINGS 2021 ACCORDING TO THE METRICS FOR THE PERIOD 2018 - 2021

<sup>1</sup>CARLOS VOLTER BUENAÑO PESÁNTEZ, <sup>2</sup>ANGEL PATRICIO MENA REINOSO, <sup>3</sup>VALERIA ISABEL RODRIGUEZ VINUEZA, <sup>4</sup>ROBER ANIBAL LUCIANO ALIPIO

<sup>1</sup>Escuela Superior Politécnica de Chimborazo  
ORCID: <https://orcid.org/0000-0002-4170-2290>  
cbuenano@esPOCH.edu.ec

<sup>2</sup>Escuela Superior Politécnica de Chimborazo (ESPOCH); Facultad de Informática y Electrónica;  
angel.mena@esPOCH.edu.ec

<https://orcid.org/0000-0002-3216-163X>

<sup>3</sup>Escuela Superior Politécnica de Chimborazo - ESPOCH  
Facultad de Ciencias

<https://orcid.org/0000-0001-5515-3539>

valeria.rodriguez@esPOCH.edu.ec

<sup>4</sup>Universidad Nacional Autónoma Altoandina de Tarma

<https://orcid.org/0000-0001-9555-6690>

rluciano@unaat.edu.pe

**Abstract:** The QS World University Rankings® annually produces a ranking of world universities based on six metrics that reflect the quality of academic and research activities, among other purposes, in order to evaluate university performance. The objective of this paper is to characterize (through a descriptive analysis) the Latin American universities in the Top10 of the QS World University Rankings® 2021, in order to relate and compare their metrics in the period 2018 - 2021. First, information on the ranking metrics in the considered period is presented and, then, the results of both the Overall Score indicator and the metrics are shown: Academic Reputation, Employer Reputation, Faculty Student, Citations per Faculty, International Faculty, and International Students. Regarding the 70% of the weights of the metrics, it stands out that the indicator OS and AR. The UBA (Argentina) and the UNAM (Mexico) remain as the universities with the highest annual values during the four years and, therefore, they are located in the first position. UC (Chile) and UBA (Argentina) have the highest average values in the ER metric. The two Brazilian universities (USP and UNICAMP) occupy the first two places in the CF metric.

**Keywords:** University, QS World University Rankings®, Latin American universities, indicators, QS World University Rankings® 2020, QS World University Rankings® 2019, QS World University Rankings® 2018, QS World University Rankings® 2021.

## 1. INTRODUCTION

University rankings emerged in the USA in 1983 to facilitate the choice of universities by future professionals in that country [1]. Among them, the QS World University Rankings® [2] [3] stands out. It produces and publishes different world classifications of universities annually: either through a global ranking, by faculty, by area of study, by locality, by region. The latter, depending on the metrics or performance indicators in the methodologies used, result in independent studies that order the universities with a numerical value that informs about their position and an Overall Score indicator as university performance. [2] [4].

These values should reflect the quality of the academic and research function of universities [5] [6]. For this reason, it applies surveys to academic experts from other universities and employers to diagnose the opinion about research activities and the quality of graduates, in addition to relating information on the number of professors with respect to the number of students, number of

citations received the scientific papers published in the Elsevier's Scopus Database [4] [7] [8] [9], to name a few sources of information.

The objective of this paper is to characterize (through a descriptive analysis) the Latin American universities in the Top10 of the QS World University Rankings® 2021 [10], in order to relate and compare their metrics in the period 2018 - 2021. First, information is presented on the ranking metrics in the period considered. Then, the results of both the Overall Score indicator and the metrics are shown: Academic Reputation (AR), Employer Reputation (ER), Faculty Student (FS), Citations per Faculty (CF), International Faculty (IF) and International Students (IS).

#### Nomenclature

QS	Quacquarelli Symonds
OS	Overall Score
AR	Academic Reputation
ER	Employer Reputation
FS	Faculty Student
CF	Citations per Faculty
IF	International Faculty
IS	International Students

## 2. QS WORLD UNIVERSITY RANKINGS® 2018, 2019, 2020, AND 2021 EDITIONS.

The British consulting firm Quacquarelli Symonds (QS) publishes the ranking of universities QS World University Rankings® since 2004 [2] [4], as well as the QS World University Rankings by Subject, QS Business Masters Rankings, QS Global MBA Rankings, QS Graduate Employability Rankings, QS USA University Rankings, QS University Rankings by Region, QS Rankings by Location, QS Best Students Cities and QS Top 50 Under 50 [2].

The QS World University Rankings® 2021 was published on June 10, 2020 [10]. In this edition, the six metrics with their different weights are maintained: AR (40%), ER (10%), FS (20%), IF (5%), IS (5%), and CF (20%). These, when selected, can be used to rank universities according to the same globally, by sectors, by region, by study area, by locality, by faculty according to study area [2] [10]. The ordering of the metrics in the previous editions is the following:

- CF, IS, IF, FS, ER, and AR in 2020 edition [11]
- AR, ER, FS, IF, IS, and CF in 2019 edition [12]
- AR, CF, ER, FS, IF, and IS in 2018 edition [13]

Table 1 shows the average values of the metrics of Latin American universities in the Top10 of the QS World University Rankings® 2021 [10], which has been used for descriptive analysis. There are two universities selected by each country: the UBA and the UCA from Argentina, the UNAM and the ITESM from Mexico, the USP and the UNICAMP from Brazil, the UC and the UCHILE from Chile and, finally, the UNIANDÉS and the UNAL from Colombia. It is worth mentioning that in the 2018 [13] and 2019 [12] editions, the UCA (Argentina) does not appear in the Top10. Instead, in tenth place is the UFRJ (Brazil). For this article, since the Latin American universities present in the Top10 of the 2021 edition [10] have been taken as a reference for comparison, the UCA (Argentina) is included in the analysis with the data from the 2018 [13] and 2019 editions [12].

## 3. CHARACTERIZATION OF THE TOP 10 LATIN AMERICAN UNIVERSITIES IN THE QS WORLD UNIVERSITY RANKINGS® 2021 ACCORDING TO THE RANKING INDICATORS IN THE PERIOD 2018 - 2021

Below is the descriptive analysis of the Top 10 Latin American universities in the QS World University Rankings® 2021 (result of the comparison of the metrics: AR, ER, FS, IF, IS, and CF of the ranking) in the period 2018 - 2021.

Table 1. Average values of the metrics of Latin American universities in the Top 10 of the QS World University Rankings® 2021 in the period 2018 - 2021 [3] [4] [10] [11] [12] [13].

University	Country	World Rank	Overall Score (OS)	Academic Reputation (AR)	Employer Reputation (ER)	Faculty Student (FS)	International Faculty IF)	International Students (IS)	Citations per Faculty (CF)
				40%	10%	20%	5%	5%	20%
UBA	Argentina	66	67,20	89,03	92,30	77,38	53,70	68,90	2,47
UNAM	Mexico	100	58,35	92,33	89,65	53,05	14,70	3,93	4,07
USP	Brasil	115	56,23	89,73	77,83	26,33	8,90	3,70	34,67
UC	Chile	121	54,03	87,08	94,98	28,93	19,33	4,40	13,27
ITESM	Mexico	155	48,15	38,65	86,10	85,58	98,23	19,98	4,57
UCHILE	Chile	180	45,25	74,25	87,80	14,83	10,33	8,03	14,37
UNIANDES	Colombia	227	38,98	56,83	84,40	24,53	30,50	2,87	7,60
UNICAMP	Brazil	233	43,53	68,08	45,68	21,53	9,93	4,37	33,10
UNAL	Colombia	259	37,80	63,30	86,93	10,30	9,10	1,40	5,13
UCA	Argentina	326	31,58	16,90	49,78	89,48	2,70	15,37	1,13

### 3.1. Overall Score Indicator (OS)

Fig. 1 shows the results of the OS indicator in the period 2018 - 2021 [10] [11] [12] [13]. The UBA (Argentina) is the university with the best qualification in each year, it achieves an average value of 67.20 (Table 1). Next, we have: UNAM (Mexico), USP (Brazil), UC (Chile), ITESM (Mexico), UCHILE (Chile), UNIANDES (Colombia), UNICAMP (Brazil), UNAL (Colombia), and UCA (Argentina). In general terms, universities maintain their position every year, with the exception of UNICAMP (Brazil). The latter has dropped one place each year: from fifth place it occupied in 2018, it goes to sixth, seventh, and eighth place in 2019, 2020 and 2021, respectively.

### 3.2. Academic Reputation Metric (AR)

With a weighting of 40%, it measures the opinion of academic experts on the quality of teaching and research in the world's universities [3] [4]. Fig. 2 presents the results of the AR metric of Latin American universities in the Top 10 of the QS World University Rankings® 2021 in the period 2018 - 2021 [10] [11] [12] [13]. UNAM (Mexico) is the university with the best qualification in the four years: with an average value of 92.33 (Table 1). The previously named university is followed (with very close average values of 89.73; 89.03 and 87.08) by USP (Brazil), UBA (Argentina) and UC (Chile), correspondingly. Next are: UCHILE (Chile), UNICAMP (Brazil), UNAL (Colombia), UNIANDES (Colombia) and, in the last places, ITESM (Mexico) and UCA (Argentina), with average values of 38.65 and 16.90.

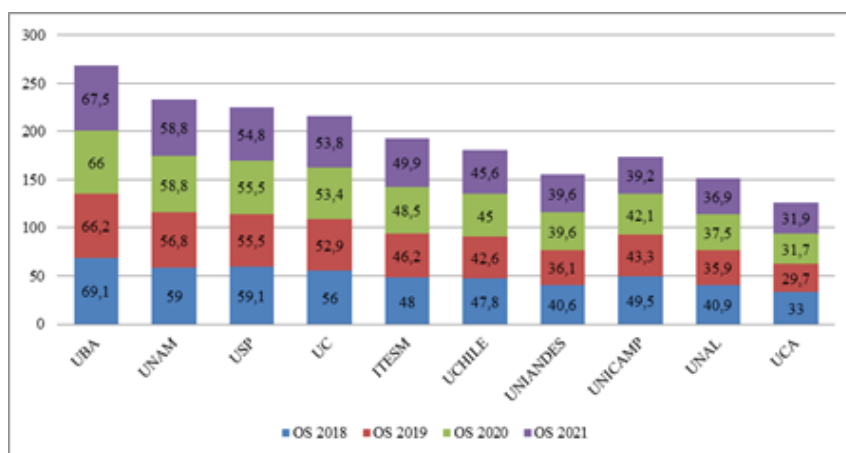
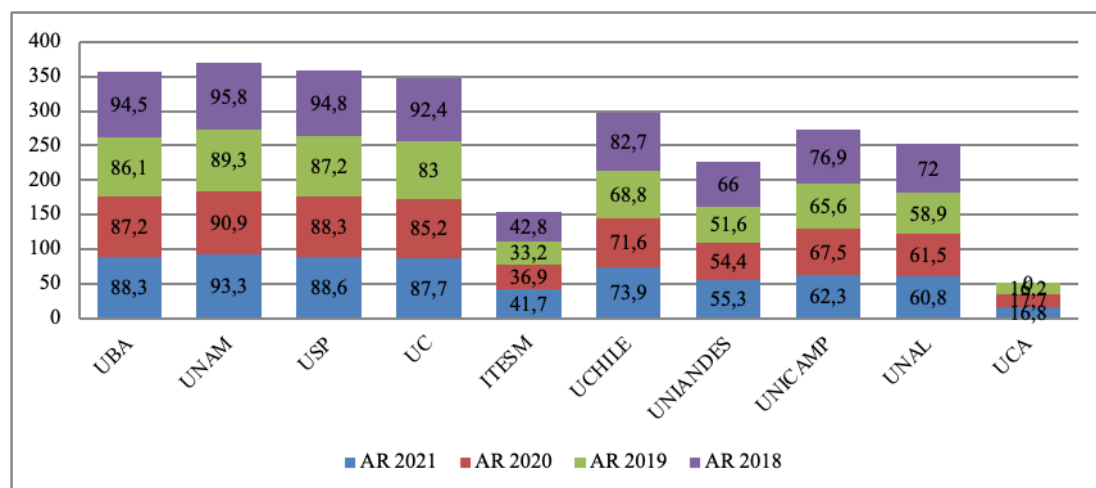


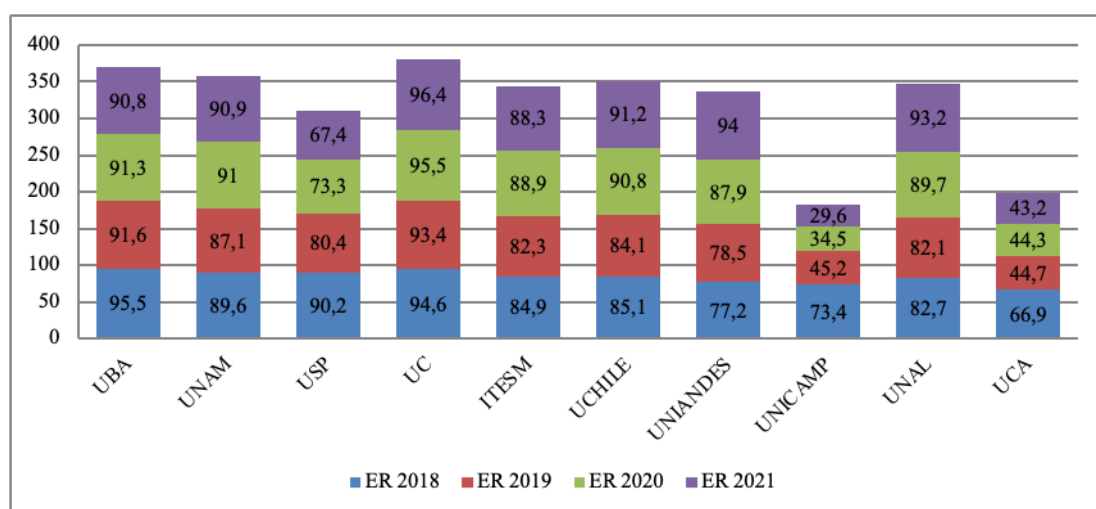
Fig. 1. Overall Score (OS) indicator of Latin American universities in the Top 10 of the QS World University Rankings® 2021 in the period 2018 - 2021 [3] [4] [10] [11] [12] [13].



**Fig. 2.** Academic Reputation (AR) Indicator of Latin American universities in the Top 10 of the QS World University Rankings® 2021 in the period 2018 - 2021 [3] [4] [10] [11] [12] [13].

### 3.3. Employer Reputation Metric (ER)

This metric identifies the universities that graduate the most competent professionals according to the opinion of employers and has a weight of 10% [3] [4]. Fig. 3 presents the results of the ER metric of Latin American universities in the Top 10 of the QS World University Rankings® 2021 in the period 2018 - 2021 [10] [11] [12] [13]. UC (Chile) and UBA (Argentina) have the highest average values of 94.98 and 92.30 (Table 1). Next are: UNAM (Mexico), UCHILE (Chile), UNAL (Colombia), ITESM (Mexico), UNIANDES (Colombia), USP (Brazil), UCA (Argentina), and UNICAMP (Brazil). These last two institutions have lowered their valuation in the four years. Their average values are 49.78 and 45.68, individually.

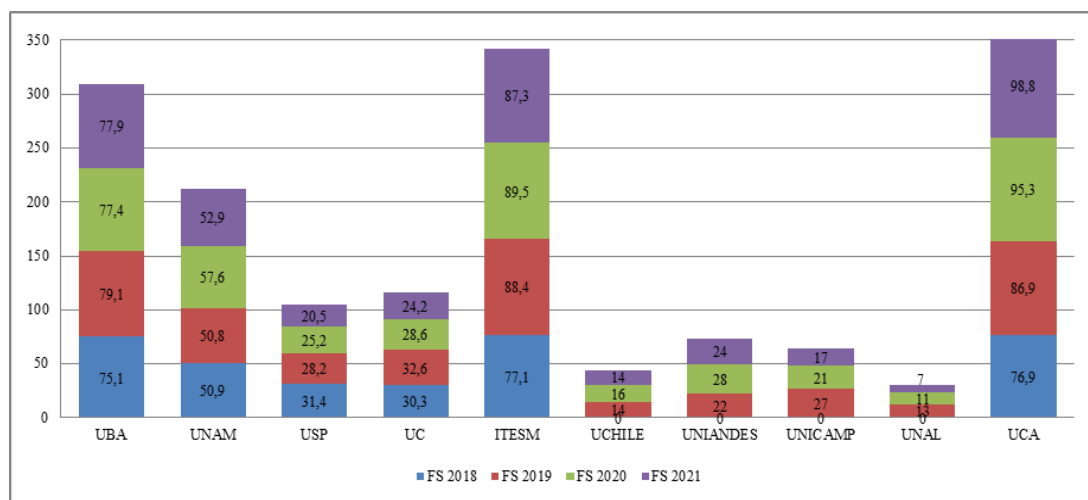


**Fig. 3.** Employer Reputation (ER) indicator of Latin American universities in the Top 10 of the QS World University Rankings® 2021 in the period 2018 - 2021 [3] [4] [10] [11] [12] [13].

### 3.4. Faculty Student Metric (FS)

With a weighting of 20%, this metric relates the number of academic staff employed at the university with the number of students enrolled [3] [4]. Fig. 4 shows the results of the FS metric of Latin American universities in the Top 10 of the QS World University Rankings® 2021 in the period 2018 - 2021 [10] [11] [12] [13]. The dispersion of the data is evident: UCA (Argentina), ITESM (Mexico), and UBA (Argentina) occupy the first three places with average values of 89.48, 85.58, and 77.38 (Table 1); The previous three contrast with those with values below 55: UNAM (Mexico),

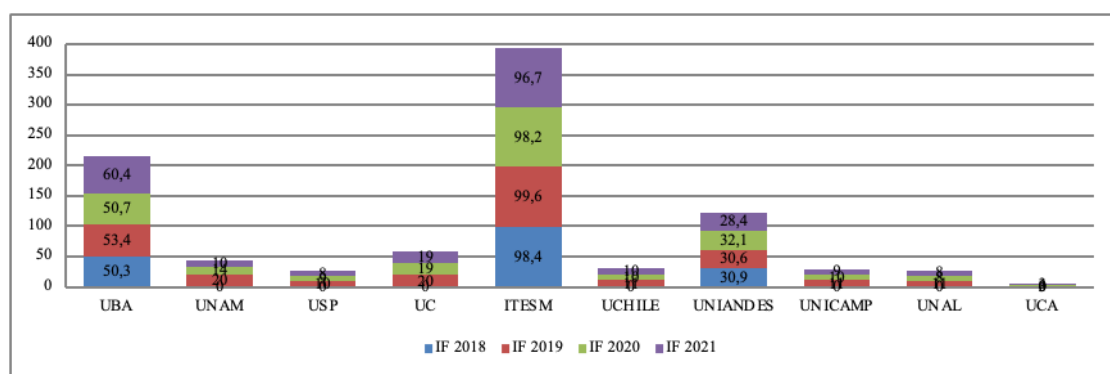
UC (Chile), USP (Brazil), UNIANDES (Colombia), UNICAMP (Brazil), UCHILE (Chile) and UNAL (Colombia). These last four universities do not have data available in the 2018 ranking edition.



**Fig. 4.** Faculty Student (FS) indicator of Latin American universities in the Top 10 of the QS World University Rankings® 2021 in the period 2018 - 2021 [3] [4] [10] [11] [12] [13].

### 3.5. International Faculty Metric (IF)

This metric refers to the proportion of international professors in relation to the total number of university professors and has a weight of 5% [3] [4]. Fig. 5 presents the results of the IF metric of the Latin American universities present in the Top 10 of the QS World University Rankings® 2021 in the period 2018 - 2021 [10] [11] [12] [13]. Also, as with FS, the dispersion of the data is evident: ITESM (Mexico) ranks first with an average value of 98.23. This is followed by UBA (Argentina) with 53.70 (Table 1). Then, there are the rest of the universities below 50: UNIANDES (Colombia), UC (Chile), UNAM (Mexico), UCHILE (Chile), UNICAMP (Brazil), UNAL (Colombia), USP (Brazil) and UCA (Argentina), with a value of 2.70. There is only data available for UBA, ITESM, and UNIANDES in the 2018 edition. In addition, there is no measurement for UCA in the 2019 edition.

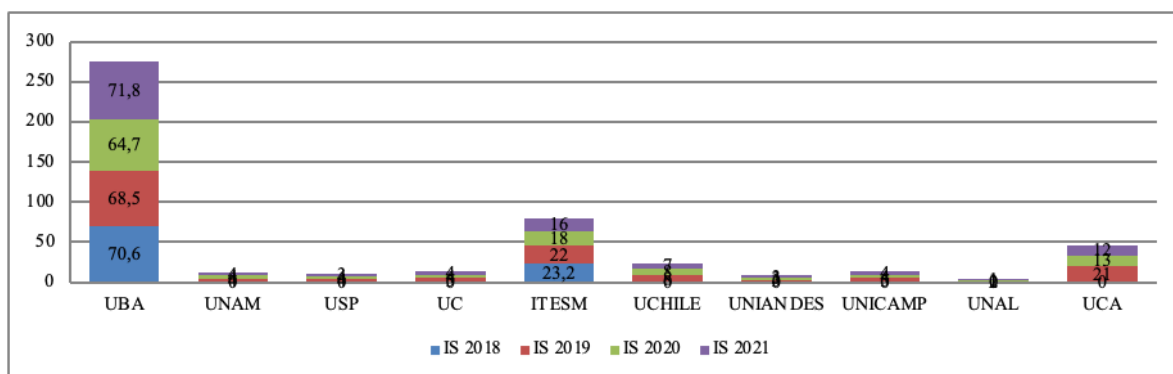


**Fig. 5.** International Faculty (IF) indicator of Latin American universities in the Top 10 of the QS World University Rankings® 2021 in the period 2018 - 2021 [3] [4] [10] [11] [12] [13].

### 3.6. International Students Metric (IS)

This metric relates the number of international students to the total number of students and has a weight of 5% [3] [4]. Fig. 6 shows the results of the IS metric of the Latin American universities present in the Top 10 of the QS World University Rankings® 2021 in the period 2018 - 2021 [10] [11] [12] [13]. As with the FS and IF metrics, the distribution of the data is evident: UBA (Argentina) with an average value of 68.90 ranks first, followed by ITESM (Mexico) and UCA (Argentina) with

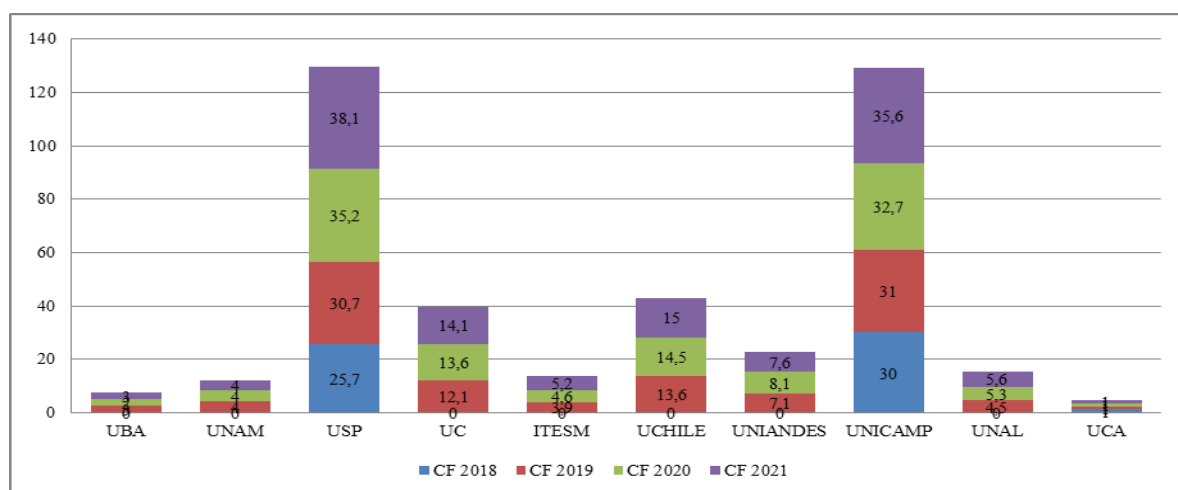
19.98 and 5.37 (Table 1). Then the universities with values below 9 are positioned: UCHILE (Chile), UC (Chile), UNICAMP (Brazil), UNAM (Mexico), USP (Brazil), UNIANDES (Colombia) and UNAL (Colombia). There is only data available for ITESM and UBA in the 2018 edition of the ranking.



**Fig. 6.** International Students (IS) indicator of Latin American universities in the Top 10 of the QS World University Rankings® 2021 in the period 2018 - 2021 [3] [4] [10] [11] [12] [13].

### 3.7. Citations per Faculty Metric (CF)

The CF metric refers to the total number of citations received in the last five years for the scientific documents produced and disclosed by an institution in Elsevier's Scopus Database with regard to the total number of professors of the same. It has a weighting of 20% [3] [4] [7] [14]. Fig. 7 shows the results of the CF metric of the Latin American universities present in the Top 10 of the QS World University Rankings® 2021 in the period 2018 - 2021 [10] [11] [12] [13]. As well as with the FS, IF, and IS metrics, the dispersion of the data is evident: the two Brazilian universities, USP and UNICAMP (with values of 34.67 and 33.10), occupy the first two places (Table 1). Then, the remaining ones with an average value lower than 15 are placed: UCHILE (Chile), UC (Chile), UNIANDES (Colombia), UNAL (Colombia), ITESM (Mexico), UNAM (Mexico), UBA (Argentina) and UCA (Argentina). There is only data available from USP, UNICAMP, and UCA in the 2018 edition of the ranking.



**Fig. 7.** Citations per Faculty (CF) indicator of Latin American universities in the Top 10 of the QS World University Rankings® 2021 in the period 2018 - 2021 [3] [4] [10].

## 4. CONCLUSIONS

The metrics of the QS World University Rankings® allow a ranking of universities as a way of reflecting the quality of academic and research activities. This is possible through a ranking value



and an Overall Score indicator that provides information on university performance. This paper has characterized (through a descriptive analysis) the Latin American universities in the Top 10 of the QS World University Rankings® 2021, in order to relate and compare their ranking metrics in the period 2018 - 2021. In this Top 10, two universities from each country are grouped: Argentina, Mexico, Brazil, Chile, and Colombia. Stand out as results:

- UBA (Argentina) is the university with the best evaluation each year and reaches an average value of 67.20 in the Overall Score indicator in the period studied. In addition, all the others practically maintain the same place in that period.
- UNAM (Mexico) is the university with the best annual evaluation and achieves an average of 92.33 in the Academic Reputation metric during the four years.
- UC (Chile) and UBA (Argentina) have the highest average values of 94.98 and 92.30 in the Employer Reputation metric.
- UCA (Argentina), ITESM (Mexico), and UBA (Argentina) occupy the first three places with average values of 89.48, 85.58, and 77.38 in the Faculty Student metric.
- ITESM (Mexico) ranks first with an average value of 98.23. It is followed by UBA (Argentina) with 53.70 in the International Faculty metric.
- The best positioned universities with respect to the International Students metric are: UBA (Argentina) with an average value of 68.90 occupies the first place. It is followed by ITESM (Mexico) and UCA (Argentina) with 19.98 and 5.37.
- The two Brazilian universities, USP and UNICAMP (with values of 34.67 and 33.10), occupy the first two places in the Citations per Faculty metric.

The results of FS, IF, IS, and CF metrics present marked dispersion and also highlight the incomplete data of the measurements in the 2018 ranking edition.

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