



U-Sapiens Ranking Colombia 2010_2

By **Carlos-Roberto Peña-Barrera** (1977-Colombia-Sapiens Research Group)
 editor@sapiensresearch.org

Abstract

The main objectives of the investigation are the following: (1) that the national and international scientific community in general get to know the U-Ranking Sapiens Colombia 2010_2, which classifies each Colombian higher education institution (HEI) into score, position and quartile, (2) to highlight the most important movements when comparing the results of the 2010_1 ranking with the results of 2010_2, (3) and to acknowledge some institutions, the media and researchers that have been interested in this investigation. The scope of this study addressed each and every HEI (even though only some made the ranking) in the first semester of 2010 according to (1) results 2010-1 from Publindex (National Indexation and Homologation System of Specialized Magazines of CT+I) indexed magazines, (2) master's and doctoral programs active during 2010-1 by the National Education Ministry (NEM), and (3) results from researching groups qualified in 2010 by Colciencias (Administrative Department of Science, Technology and Innovation). The method used for this research is the same as the one used in the 2010_1 ranking except that one of the specifications is much more detailed in one of the steps in the model (the variables α , β , γ). It is completely quantitative and the data for the research comes from Colciencias and NEM. This time the results will be made known depending on the variable for 2010_1 and 2010_2. The most relevant results are these: (1) eight HEI entered the ranking and three left it, (2) the first three HEI are public, (3) there are six institutions total in the ranking, (4) seven of the ten HEI are official, (5) the top three HEI are in Bogotá and Barranquilla, (6) there is a relationship between the scores of the top ten HEI and the number of national and foreigner PhD grant holders of Colciencias which is 0.96 in 2010 and of preliminary plans which is of 0.94 in 2010, (7) the top five HEI coincide once again (even though not in every position) with the Scimago Institutions Rankings and the Webometrics Ranking of the World Universities. The most significant conclusions come from the great interest of the Colombian community to have a classification based on research indicators, the positive national and international impact of the institutions and the media in relationship with the transparency of the model and of the interesting and relevant results that came as a result of the correlation of other data linked to the research fields. This research was registered in the National Copyright Direction, it has been exposed as colloquium in different national stages and will be exposed in international stages and it has prompted interviews and articles in the international media.

Keywords: correlations, Higher Education Institutions, U-Sapiens Ranking Colombia, research variables

Referencing: Peña-Barrera, C-R. (2011). U-Sapiens Ranking Colombia 2010_2. In: *Boletín Científico Sapiens Research*, Vol. 2 (1), pp. 102-108.

Awards

U-Sapiens Ranking Colombia 2010_1 has been read by more than 23,000 people in all the world through the online page of the Issuu magazine and many others have become familiar with it through different media that have referenced or cited the results. 35 websites have posted the link of the Sapiens Research Scientific Bulletin so that those interested can read the investigation directly in Issuu. Many universities have referenced this ranking and its percentages in their websites. Some others have taken it into account for their reflections and research planes. Google shows more than 4,000 results for the words «U-Sapiens Ranking» among these stand out five videos made by universities, 21 blogs, 10 twitter followers, 6 documents and 17 debate forums. It has also been cited and analyzed in these sites and in many others. Finally it is important to highlight two articles published by two well-known international media on higher education issues.

University Rankings Take Root in Latin America, por Andrew Downie, in: *The Chronicle of Higher Education*
<http://chronicle.com/article/University-Rankings-Take-Root/126919/>

COLOMBIA: First national university rankings unveiled, por Philip Fine y Gabriel Linero, in *University World News*
<http://www.universityworldnews.com/article.php?story=20110204224146865>



Indicators

The indicators chosen aim at the research field, science, technology and innovation, which is why this ranking responds to this aspect in particular, and not any other. Each and every one of the sources of this research are free and for public access.

Revi	↔ Number of magazines indexed in Publindex. Relationship with the investigation: the articles published are related with the national and international research. Source: Publindex, Colciencias (IBN-Publindex).
PosG	↔ Number of master degrees and doctorate degrees activated by HEI. Relationship with investigation: formation of the researchers and scientists. Source: National System of Higher Education information (NSHEI), NEM.
GruP	↔ Relative number of research groups recognized and classified by Colciencias. Research relationship: projects and scientific-technological activities are formulated and developed. Source: ScienTI-Colombia Platform, Colciencias (GrupLAC).

Model

We counted the master degrees (M) and the doctorate degrees (D) activated by HEI, the research groups of the HEI classified in D,C, B, A and A1 (from smallest to largest) and the magazines of the HEI classified as C, B, A2 and A1 (from smallest to largest). The total of the research groups for each HEI was obtained from a relative point of view (not absolute), because a research group can be backed up by more than one HEI. This means that if one group is backed up by three HEI each one will be in charge of one-third part of that group. We did not take into account the HEI that support a group but don't back it up. The steps were the following:

1. A proportional weight between 0 and 1 is assigned to each of the indicator's subdivision in accordance with importance and equality to be multiplied by the total number applied to each subdivision.
 2. We added the results of the previous operation for each of the indicator's subdivision.
 3. To each of these new results we gave a weight α , β , γ , which corresponds in an inversely proportional way to the addition of the participation of the indicators over the result of the addition of the three indicators.
1. Finally the results of each indicator were added to give a final score of each HEI.

Revi				PosG		GruP				
C	B	A2	A1	M	D	D	C	B	A	A1
$C * 0,25$	$B * 0,5$	$A2 * 0,75$	$A1 * 1$	$M * 0,4$	$D * 1$	$D * 0,2$	$C * 0,4$	$B * 0,6$	$A * 0,8$	$A1 * 1$
$(C*0,25 + B*0,5 + A2*0,75 + A1*1)$				$(M*0,4 + D*1)$		$(D*0,2 + C*0,4 + B*0,6 + A*0,8 + A1*1)$				
$(C*0,25 + B*0,5 + A2*0,75 + A1*1) * 0,\alpha$				$(M*0,4 + D*1) * 0,\beta$		$(D*0,2 + C*0,4 + B*0,6 + A*0,8 + A1*1) * 0,\gamma$				
$[(C*0,25 + B*0,5 + A2*0,75 + A1*1) * 0,\alpha] + [(M*0,4 + D*1) * 0,\beta] + [(D*0,2 + C*0,4 + B*0,6 + A*0,8 + A1*1) * 0,\gamma]$										

$(C*0,25 + B*0,5 + A2*0,75 + A1*1) = r$	$(M*0,4 + D*1) = p$	$(D*0,2 + C*0,4 + B*0,6 + A*0,8 + A1*1) = g$
$r_1 + \dots + r_n = r'$	$p_1 + \dots + p_n = p'$	$g_1 + \dots + g_n = g'$
$r' + p' + g' = T = 100$		
$((r' * 100) / T) + ((p' * 100) / T) + ((g' * 100) / T) = 100$		
$R + P + G = 100$		
$\alpha = 100 - R$	$\beta = 100 - P$	$\gamma = 100 - G$



U-Sapiens Ranking Colombia 2010_2 (U-S Rk Co-2010_2)

By **Carlos-Roberto Peña-Barrera**, Sapiens Research Group
 editor@sapiensresearch.org

Position 10_1→10_2	Difference Position	HEI	Quartile	Departments	Rev1 10_1→10_2	PosG 10_1→10_2	GruP 10_1→10_2	Score 2010-1	Score 2010-2	Difference Score
1→1	0	(OU) Universidad Nacional de Colombia	Q1	Bogotá	15,8→15,7	37,8→48,6	56,6→50,4	110,14	114,71	4,57
2→2	0	(OU) Universidad de Antioquia	Q1	Antioquia	10,6→11,2	18,5→32,3	30,2→29,0	59,29	72,49	13,20
3→3	0	(OU) Universidad del Valle	Q1-Q2	Valle del Cauca	4,7→5,4	13,6→17,5	19,8→23,8	38,08	46,74	8,66
5→4	1	(PU) Universidad de los Andes	Q2	Bogotá	5,2→4,7	14,8→17,2	15,6→21,4	35,57	43,32	7,75
4→5	-1	(PU) Pontificia Universidad Javeriana	Q2	Bogotá	11,0→10,1	11,2→14,6	14,9→18,3	37,10	42,96	5,86
6→6	0	(OU) Universidad Nacional de Colombia	Q2	Antioquia	3,8→3,7	14,3→19,9	14,6→14,7	32,67	38,35	5,68
7→7	0	(OU) Universidad Industrial de Santander	Q2	Santander	2,3→2,8	7,7→10,9	10,7→11,3	20,59	25,06	4,47
8→8	0	(PU) Fundación Universidad del Norte	Q2	Atlántico	3,6→2,6	9,8→14,2	6,6→8,1	20,04	24,86	4,82
12→9	3	(OU) Universidad del Cauca	Q2-Q3	Cauca	0,7→0,9	5,6→12,5	8,3→7,8	14,61	21,26	6,64
9→10	-1	(OU) Universidad Tecnológica de Pereira	Q2-Q3	Risaralda	0,5→0,5	6,1→10,3	9,4→10,1	15,94	20,87	4,93
10→11	-1	(OU) Universidad de Caldas	Q3	Caldas	3,4→4,4	6,2→9,3	5,8→7,0	15,43	20,78	5,35
11→12	-1	(PU) Universidad Pontificia Bolivariana	Q3	Antioquia	1,1→1,6	6,8→8,8	6,8→8,7	14,75	19,21	4,46
13→13	-1	(OU) Universidad Pedagógica y Tecnológica de Colombia	Q3	Boyacá	0,9→1,2	5,2→7,4	8,2→9,8	14,26	18,31	4,05
15→14	0	(OU) Universidad de Cartagena	Q3	Bolívar	0,5→0,5	4,7→6,0	6,5→9,8	11,62	16,32	4,70
16→15	0	(PU) Universidad Externado de Colombia	Q3	Bogotá	0,9→1,4	5,5→7,7	4,8→7,0	11,22	16,02	4,80
19→16	2	(PU) Universidad del Rosario	Q3	Bogotá	2,3→3,0	4,0→7,1	4,3→5,7	10,52	15,85	5,34
14→17	1	(OU) Universidad Distrital Francisco José de Caldas	Q3	Bogotá	1,1→1,9	2,3→3,1	8,2→10,3	11,64	15,32	3,67
20→18	2	(PU) Universidad Santo Tomás	Q3	Bogotá	1,4→1,6	3,2→6,3	4,1→6,8	8,64	14,80	6,16
17→19	-2	(PU) Universidad EAFIT - Medellín	Q3	Antioquia	1,6→1,9	3,8→5,9	5,5→6,1	10,88	13,90	3,02
21→20	1	(PU) Universidad de la Sabana (Chía)	Q3	Cundinamarca	2,5→2,6	2,5→4,0	3,3→5,4	8,27	11,93	3,67
18→21	-3	(OU) Universidad Pedagógica Nacional	Q3	Bogotá	2,5→2,8	3,5→4,0	4,6→4,6	10,57	11,38	0,81
22→22	0	(OU) Universidad del Atlántico - Barranquilla	Q3	Atlántico	0,5→0,5	2,4→3,8	4,8→6,7	7,68	10,97	3,29
27→23	3	(PU) Universidad de la Salle	Q3-Q4	Bogotá	0,9→1,4	1,4→3,2	4,9→6,0	7,19	10,63	3,44
37→24	13	(PU) Universidad de Medellín	Q4	Antioquia	1,4→2,1	1,7→5,9	2,2→2,6	5,19	10,62	5,43
25→25	0	(OU) Universidad de Córdoba - Montería	Q4	Córdoba	0,9→1,2	2,8→4,3	3,6→3,3	7,28	8,79	1,51
26→26	0	(OU) Universidad del Magdalena	Q4	Magdalena	0,5→0,5	2,0→3,1	4,7→5,2	7,21	8,76	1,55
30→27	3	(PU) Universidad de Manizales	Q4	Caldas	1,1→1,6	3,0→4,3	2,3→2,6	6,43	8,50	2,07
29→28	1	(PU) Universidad Libre	Q4	Valle del Cauca	0,2→0,5	1,0→2,7	5,5→5,0	6,64	8,07	1,43
23→29	-6	(OU) Universidad Militar Nueva Granada	Q4	Bogotá	2,7→2,3	1,4→2,1	3,3→3,5	7,43	7,93	0,50
28→30	-2	(OU) Universidad de Pamplona	Q4	Norte de Santander	0,5→0,5	2,9→3,8	3,7→3,6	7,02	7,91	0,89
32→31	1	(OU) Universidad del Tolima	Q4	Tolima	0,2→0,5	2,6→3,8	3,4→3,1	6,29	7,45	1,16
34→32	2	(PU) Universidad Simón Bolívar	Q4	Atlántico	0,2→0,2	1,9→2,7	3,5→4,5	5,60	7,39	1,80
31→33	-2	(OU) Universidad Nacional de Colombia	Q4	Valle del Cauca	1,9→2,7	1,9→2,7	3,7→4,0	6,29	7,36	1,07
36→34	2	(PU) Universidad CES	Q4	Antioquia	0,9→0,9	1,9→2,7	2,4→3,7	5,22	7,29	2,07
35→35	0	(PU) Universidad el Bosque	Q4	Bogotá	0,5→0,7	1,8→2,2	3,1→4,2	5,37	7,11	1,74
38→36	1	(PU) Universidad Autónoma de Bucaramanga	Q4	Santander	0,7→0,7	1,9→2,9	2,3→3,0	4,94	6,60	1,67
39→37	2	(PU) Pontificia Universidad Javeriana	Q4	Valle del Cauca	0,9→1,2	1,2→1,8	2,8→3,6	4,86	6,51	1,65
40→38	2	(PU) Universidad Libre	Q4	Bogotá	0,5→0,5	1,7→2,8	2,7→3,1	4,80	6,32	1,52
33→39	-6	(OU) Universidad del Quindío	Q4	Quindío	0,2→0,2	2,0→2,1	3,7→3,7	5,96	5,97	0,02
→40		(OU) Universidad Surcolombiana	Q4	Huila	→0,2	→0,9	→4,8		5,91	
47→41	6	(PU) Universidad Sergio Arboleda	Q4	Bogotá	0,2→0,5	1,3→2,2	2,0→2,8	3,59	5,50	1,91
44→42	2	(PU) Universidad Autónoma de Occidente	Q4	Valle del Cauca	1,0→2,1	2,9→3,2	4,08	5,49	1,40	
48→43	5	(PU) Universidad ICESI	Q4	Valle del Cauca	0,7→0,9	1,2→2,1	1,5→1,7	3,38	4,70	1,33
41→44	-3	(OU) Universidad de Nariño	Q4	Nariño	0,5→0,9	1,6→1,9	2,6→1,7	4,61	4,56	-0,05
42→45	-4	(PU) Universidad Católica de Colombia	Q4	Bogotá	1,6→0,9	0,7→0,9	2,1→2,6	4,40	4,38	-0,02
59→46	13	(PU) Universidad EAN	Q4	Bogotá	0,2→0,5	0,5→2,1	0,8→1,7	1,55	4,24	2,69
55→47	9	(OU) Universidad de los Llanos	Q4	Meta	0,5→0,5	0,5→1,2	1,2→2,3	2,16	3,91	1,75
45→48	-2	(PU) Universidad Antonio Nariño	Q4	Bogotá	0,2→0,2	0,2→0,3	3,6→3,3	4,04	3,87	-0,16
50→49	2	(PU) Universidad de San Buenaventura	Q4	Bogotá	0,5→0,9	0,7→1,2	1,3→1,7	2,49	3,79	1,30
→50		(PU) Universidad de San Buenaventura	Q4	Antioquia	→0,2	→1,6	→1,6		3,43	
54→51	3	(PU) Universidad de San Buenaventura	Q4	Valle del Cauca	0,2→0,2	1,2→2,1	0,8→1,1	2,21	3,41	1,21
→52		(PU) Universidad Autónoma del Caribe	Q4	Atlántico	→0,7	→1,2	→1,4		3,30	
49→53	-4	(OU) Universidad Tecnológica del Chocó	Q4	Chocó	0,2→0,2	0,5→0,6	2,3→2,4	2,99	3,25	0,27
52→54	-2	(PU) Universidad Cooperativa de Colombia	Q4	Bogotá	0,7→0,5	0,2→0,3	1,4→1,9	2,30	2,69	0,39
60→55	5	(UPI) Escuela de Ingeniería de Antioquia	Q4	Antioquia	0,7→1,4	0,2→0,3	0,5→0,9	1,46	2,55	1,10
63→56	7	(UOI) Instituto Tecnológico Metropolitano	Q4	Antioquia	0,5→0,5	0,5→0,6	0,2→1,4	1,11	2,50	1,39
→57		(OU) Universidad Nacional Abierta y a Distancia	Q4	Bogotá	→0,2	→0,3	→2,0		2,48	
57→58	-1	(PU) Universidad de Ciencias Aplicadas y Ambientales	Q4	Bogotá	0,7→0,7	0,2→0,3	1,1→1,4	2,03	2,41	0,38
51→59	-8	(UPI) Fundación Universitaria Konrad Lorenz	Q4	Bogotá	1,4→1,4	0,5→0,6	0,5→0,4	2,37	2,39	0,02
58→60	-2	(PU) Universidad Santo Tomás	Q4	Santander	0,5→0,7	0,5→0,3	0,8→1,4	1,77	2,37	0,60
61→61	0	(PU) Fundación Universidad Autónoma de Colombia	Q4	Bogotá	0,2→0,5	0,2→0,3	0,9→1,6	1,35	2,34	0,98
56→62	-6	(OU) Universidad Francisco de Paula Santander	Q4	Norte de Santander	0,2→0,2	0,2→0,3	1,7→1,4	2,15	1,97	-0,17
→63		(PU) Universidad Pontificia Bolivariana	Q4	Santander	→0,2	→0,3	→1,2		1,77	
→64		(UOI) Dirección Nacional de Escuelas	Q4	Bogotá	→0,2	→0,9	→0,7		1,77	
62→65	-3	(PU) Corporación Universidad Piloto de Colombia	Q4	Bogotá	0,2→0,2	0,2→0,3	0,7→1,2	1,19	1,73	0,54
→66		(UPI) Escuela Colombiana de Ingeniería	Q4	Bogotá	→0,2	→0,3	→1,1		1,61	
→67		(UOI) Escuela Superior de Administración Pública	Q4	Bogotá	→0,5	→0,3	→0,8		1,58	
64→68	-4	(PU) Universidad Católica de Manizales	Q4	Caldas	0,2→0,2	0,2→0,3	0,2→0,5	0,71	0,99	0,28

OU: official university. PU: private university. UOI: university official institution. UPI: university private institution. Weight: α = 93; β = 73; γ = 32



Most Important Movements

HEIs that ascended and descended in score from 2010_1	Move.	Diff-Sco	
(OU) Universidad de Antioquia (UDEA) – Medellín	↑	13,20	The Universidad de Antioquia ascended significantly because there were many master degrees and doctorate degrees active. The same thing happened with the Universidad del Valle even though not in the same proportions but the research groups classified by Colciencias increased. This last category was the one that influenced the most so that Universidad de los Andes increased also.
(OU) Universidad del Valle – Cali	↑	8,66	
(PU) Universidad de los Andes – Bogotá	↑	7,75	
(PU) Universidad de Nariño – Pasto	↓	-0,05	
(PU) Universidad Antonio Nariño – Bogotá	↓	-0,16	
(OU) Universidad Francisco de Paula Santander – Cúcuta	↓	-0,17	
HEI that ascended and descended the most since 2010_1	Move.	Dif-Rk	
(PU) Universidad de Medellín – Medellín	↑	13	The Universidad de Medellín went from place 37 to place 24, because there were more master degree programs and doctoral programs active (information given by the NEM). The same thing happened to the Universidad EAN (59-46) but also because more research groups were classified. It is important to highlight the University of los Llanos (55-47) because they have worked hard towards creating more research groups.
(PU) Universidad EAN – Bogotá	↑	13	
(OU) Universidad de los Llanos – Villavicencio	↑	8	
(OU) Universidad del Quindío – Armenia	↓	-6	
(OU) Universidad Francisco de Paula Santander – Cúcuta	↓	-6	
(UPI) Fundación Universitaria Konrad Lorenz – Bogotá	↓	-8	
The top university institutions	Sco-10_2	RK-10_2	
(UPI) Escuela de Ingeniería de Antioquia – Envigado	2,55	55	There are already six institutions that form part of the U-Sapiens Ranking Colombia. Even though they represent a small percentage (5%) of the 119 universities in the country today, these have focused their work in the research field (magazines, grad programs and research groups). The best qualified are Antioquia and Bogotá. The representation among private and public is the same (3-3). The Escuela de Ingeniería de Antioquia is above seven universities.
(UOI) Instituto Tecnológico Metropolitano – Medellín	2,5	56	
(UPI) Fundación Universitaria Konrad Lorenz – Bogotá	2,39	59	
(UOI) Dirección Nacional de Escuelas (Policía Nacional de Colombia) – Bogotá	1,77	64	
(UPI) Escuela Colombiana de Ingeniería – Bogotá	1,61	66	
(UOI) Escuela Superior de Administración Pública (ESAP) – Bogotá	1,58	67	
Official HEI Top 5	Sco-10_2	RK-10_2	
(OU) Universidad Nacional de Colombia – Bogotá	114,71	1	Bogotá, Medellín, Cali and Bucaramanga are privileged to had the top 5 public universities. The highest-ranking university is Universidad Nacional de Colombia with headquarters in Bogotá and Medellín. The Universidad de Antioquia and the Universidad Industrial de Santander are also very good and they stick out for being among the top scoring universities.
(OU) Universidad de Antioquia (UDEA) – Medellín	72,49	2	
(OU) Universidad del Valle – Cali	46,74	3	
(OU) Universidad Nacional de Colombia – Medellín	38,35	6	
(OU) Universidad Industrial de Santander (UIS) – Bucaramanga	25,06	7	
Private HEI Top 5	Sco-10_2	RK-10_2	
(PU) Universidad de los Andes – Bogotá	43,32	4	This semester the Universidad de los Andes holds first place among the private universities of the country followed very closely by Universidad Javeriana with headquarters in Bogotá. Each university has its strength, the Javeriana with indexed magazines (which double those that the Andes has) and the Andes in research groups. The last two universities along with the Universidad del Norte are among the top 10.
(PU) Pontificia Universidad Javeriana - Bogotá	42,96	5	
(PU) Fundación Universidad del Norte – Barranquilla	24,86	8	
(PU) Universidad Pontificia Bolivariana – Medellín	19,21	12	
(PU) Universidad Externado de Colombia – Bogotá	16,02	15	
HEI that entered the ranking	Sco-10-2	RK-10-2	
(OU) Universidad Surcolombiana (USCO) – Neiva	5,91	40	8 HEI (5 universities and 3 university institutions) were added to the « U-Sapiens Ranking Colombia» this semester. The Universidad Surcolombiana sticks out because it immediately went into the ranking in number 40 over 17 universities that were already classified. The main reasons were the index of magazines in Publindex. The results show that it is easier to have qualified research groups and master degree and doctorate programs than to have indexed magazines. This classification recognizes the entry of the Dirección Nacional de Escuelas.
(PU) Universidad de San Buenaventura – Medellín	3,43	50	
(PU) Universidad Autónoma del Caribe – Barranquilla	3,3	52	
(OU) Universidad Nacional Abierta y a Distancia (UNAD)	2,48	57	
(PU) Universidad Pontificia Bolivariana – Bucaramanga	1,77	63	
(UOI) Dirección Nacional de Escuelas (Policía Nacional de Colombia) – Bogotá	1,77	64	
(UPI) Escuela Colombiana de Ingeniería – Bogotá	1,61	66	
(UOI) Escuela Superior de Administración Pública (ESAP) – Bogotá	1,58	67	
HEI that left the ranking			
(PU) Universidad de Ibagué – Ibagué			If a university that only has two magazines neglects to do the indexation, they will leave the classification.
(PU) Universidad Autónoma de Manizales – Manizales			
(PU) Fundación Universidad Central – Bogotá			

Comparison with other Rankings

U-S Rk Co-2010_2	HEIs		Rk Wex-LA	Rk Wex-World		Rk SIR-LA	Rk SIR-IBE
1→1	Universidad Nacional de Colombia - Bogotá	1→1	10→14	521→426	1→1	29→25	67→56
2→2	Universidad de Antioquia – Medellín	2→2	28→27	799→631	2→2	37→37	87→81
3→3	Universidad del Valle – Cali	5→5	43→51	1076→955	3→4	65→65	118→119
5→4	Universidad de los Andes – Bogotá	3→3	31→30	855→700	4→3	68→56	121→108
4→5	Pontificia Universidad Javeriana - Bogotá	4→4	41→47	1045→891	5→5	92→92	154→153

U-S Rk Co-2010_2: U-Sapiens Ranking Colombia 2010_2; Rk Wex-LA: Webometrics Ranking of Latinoamérica Universities 2011; Rk Wex-mundo: Webometrics Ranking of World Universities 2011; Rk SIR-LA: Scimago Institutions Rankings Latinoamérica 2011; Rk SIR-IBE: Scimago Institutions Rankings Iberoamérica 2011.

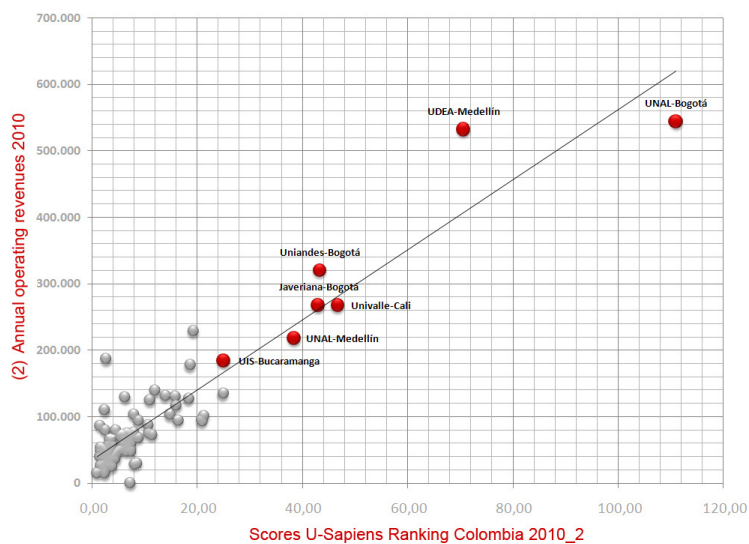
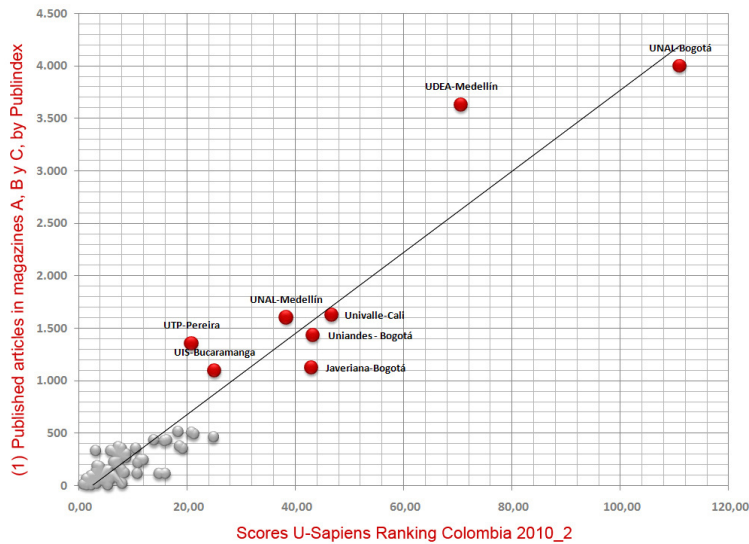
The top 5 universities in the U-Sapiens Colombia 2010_2 are the same as the ones in the first semester of 2010 and the coincide with the rankings of the Webometrix and SIR. This time around the Universidad Javeriana fell one place (from 5 to 4) particularly in the Rev1 (-0,9) variable and Universidad de los Andes took its place growing to a total of 7.75 (35.57-43.32) in the GruP variable (5.8). The rest of the universities are in the same place. The Universidad de Antioquia was the one that increased the most (11.33) and it was the one that increased the most in variable Pos G (13.8). The five HEI keep there same rank in the Rankin Webometrics even though only the first two coincide with the U-Sapiens ranking Colombia 2010_2. Finally, these five keep there same place in the SIR ranking except for la Universidad del Valle lost its place (3-4) which was occupied by the Universidad de los Andes (4-3). We compared the positions with this last ranking 1,2 and 5.



Correlation coefficient (CC) and R² coefficient between the U-S Rk Co-2010_2 scores and other variables.

Variables correlated with scores	(CC) 2010_2 (10 firsts HEI)	R ²	(CC) 2010_1→2010_2 (total HEI)	R ²
(1) Published articles in magazines A, B y C, by Publindex	0,92	0,85	0,95→ 0,95	0,91
(2) Annual operating revenues 2010	0,93	0,87	0,91→ 0,93	0,86
(3) Annual expenditures on staff 2010	0,93	0,87	0,92→ 0,90	0,82
(4) Teachers Total 2010-1	0,51	0,26	0,61→ 0,63	0,40
(5) Total pre-graduate enrollment in 2010-1	0,45	0,20	0,57→ 0,58	0,33
(6) Enrolled students total 2010-1	0,67	0,44	0,56→ 0,45	0,21
(7) Years since foundation	0,23	0,05	0,34→ 0,40	0,16
Variables correlated with scores	(CC) 2010_2 (10 firsts HEI)	R ²		
(8) Fellows of domestic and foreign doctorates in 2010 by Colciencias	0,97	0,94		
(9) Recommended (call 502) and to fund (call 521) projects in 2010 by Colciencias	0,96	0,91		
(10) Approved drafts (call 503) in 2010 by Colciencias	0,94	0,89		
(11) Quantities to fund (call 502) and requested (call 521) in 2010 by Colciencias	0,85	0,73		
(12) Doctorate and masteries fellows in 2010 by Colfuturo	0,34	0,14		

Source: results were calculated by the author with data from the (NSHEI), NEM., Colciencias, Colfuturo.



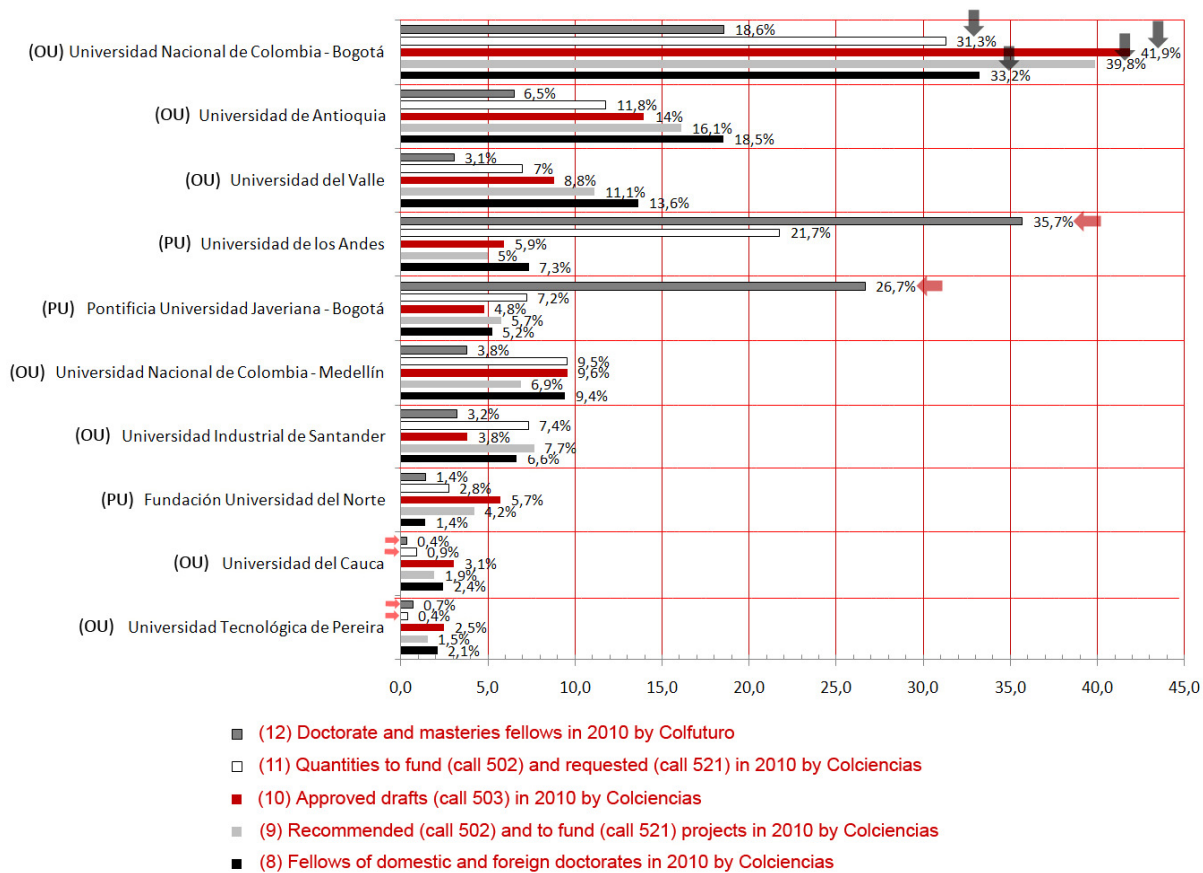
It is important to remember that the «U-Sapiens Colombia Ranking» is not only a classification of higher education institutions but that it is a continuous investigation that analyzes different aspects, all related with the Colombian investigation which makes it a transparent scenario to self analyze the universities.

This classification not only creates a position and quartile but it also gives a score. The score is precisely what has made it possible to relate it with other variables like the ones mentioned in the table above. We can observe seven variables ranging from «Articles published in magazines A, B and C according to Publindex» to «Foundational years». This same exercise was done for all of the HEI classified and for the top ten. For all of the classified. The relevant correlations apply to the variables (1), (2) and (3) because they are equal or above 0.90. In the case of the variable (1) the result was 0.95 an interesting fact for many because this aspect influences the scientific articles published in indexed magazines that have been approved by Publindex. This is followed by the second variable (2) operation annual income which include the income that is exclusive for research. Its result was 0.93. Finally, the correlation with variable (3), annual expenses in administrative personnel was 0.90. These three results clearly show that if the higher education institutions are supported financially and they know how to use it in terms of productivity as well as a fair remuneration with the human resources there will be positive results in terms of scientific contributions in the national and international research media.

Perhaps we might think that the best-ranked universities are those with a larger number of teachers (variable 4), pre-graduate programs with enrolled students (variable 5), with greater number of students (variable 6) or with more antiquity (variable 7), but is far from being real. The correlation with these variables is very weak even though it is highly positive. This means that a greater number of these variables does not influence in the scores or in the first variables. In other words, the universities that are very old or have a great number of teachers does not mean that these are the most productive universities in terms of investigation.

This same exercise was done with the top ten universities but the results were not as detailed as the with 68 classified universities. Nonetheless, we were able to correlate the scores from the top ten universities with other variables taken from Colciencias and Colfuturo (variables 8, 9, 10, 11 and 12). It was very interesting to confirm that the top universities are the ones that had more doctorate grants nationally and internationally by Colciencias, the ones that had the greatest number of recommended projects (call 502), and the ones that had the greatest number of preliminary plans approved (call 503) even though there was a correlation with the doctorate grant holders and master degree grant holders in Colfuturo. The highest correlations are between the variables 8, 9 and 10.

Finally, graphics on the lefts (above and below) show the dispersions that release between the scores of «U-Sapiens Ranking Colombia» and the variables 1 and 2. As you can see, University of Antioquia reaches levels almost equals as the National University of Colombia, Bogotá location, with a score that being second (72,49) is away from the first place (110,14), Which shows that less is more. Is remarkable too that the rest of universities (near of the 90%) makes a kind of heap on the inferior left corner, result that shows a similar behavior of these two variables.



As we mentioned before in this second classification we decided to compare scores with the «U-Sapiens Colombia Ranking» with an additional five variables and the ones numbered previously as (8), (9), (10), (11) and (12). The variables (8) and (11) are from Colciencias: and refer to the doctorate grant holders in and out of the country, recommended projects that need financing, preliminary plans and money requested. The variable (12) refers to the Colfuturo grant holders that are doing there doctorate and master studies abroad.

The graphic with horizontal bars above represents in percentages what each university gives to the universe of focus for these top ten universities.

Variable (8): Fellows of domestic and foreign doctorates in 2010 by Colciencias = 286

Variable (9): Recommended (call 502) and to fund (call 521) projects in 2010 by Colciencias = 261

Variable (10): Approved drafts (call 503) in 2010 by Colciencias = 523

Variable (11): Quantities to fund (call 502) and requested (call 521) in 2010 by Colciencias = \$52.514'392.325 colombian pesos

Variable (12): Doctorate and masteries fellows in 2010 by Colfuturo = 555

The graphic shows that University Nacional of Colombia, with headquarters in Bogotá is the most benefited institution. If we look closely, we'll see that the location in front of the bars of the all other HEI is exponential and leads this tendency. Between variables (8) to (11) this is the largest contributor: average 36,5%. The University of Antioquia and University of El Valle are also benefited but not in the same proportions. The last two universities , University of Cauca and the Technological in Pereira hardly benefit from Colfuturo and Colciencias. This is an alert for these institutions so that they can take advantage of all their potential.

Something important to reflect on is the contrast between the percentage participation of variables (8) and (12) given to post graduate students. According to the first four variables we could deduct that University Nacional should be the most benefited by Colfuturo but this isn't happening. The most benefited are the top two universities, Andes and Javeriana. Why does this happen? It does not have to do with competition but with an equality mechanism that allows these two excellent universities to help their graduates.

These results show that the «U-Sapiens Colombia Ranking» is a trustworthy investigations, that impacts and shows waht is happening in the universities in our country in terms of research and this allows students to make decisions



Correlation coefficient (CC) and R^2 coefficient between the quartiles of Rk U-S Co-2010_2 and variables from Colciencias-Publindex

Starting from this second classification, we make the decision of classify the HEI not just by score and position but by quartile too (Q1, Q2, Q3, Q4). Quartiles divide a quantity in 4 equal parts. For the case of «U-Sapiens Ranking Colombia» this quartiles are articulated to the sum of the scores of this 68 universities. Taking floor on what the quartiles represent over the institutions, we decided to correlate this results with other variables derived from Colciencias. Below you can clearly see a chart showing how many HEI form the quartile, charts from other variables and correlation results:

HEI per quartile (Q)	Articles type 1-2-3 in magazines presented and indexed in Publindex 2010_1	Articles type 1-2-3 in magazines that were presented and indexed in Publindex and that are part of the «U-Sapiens Colombia Ranking 2010_2»	Magazines indexed in Publindex 2010_1	Magazines indexed in Publindex that are part of «U-Sapiens Ranking Colombia 2010_2»	Groups classified by Colciencias 2010	Groups classified by Colciencias 2010 and that form part of the «U-Sapiens Colombia Ranking 2010_2»
Q1 = 2,5	A1 = 372	A1 = 333	A1 = 20	A1 = 17	A-A1 = 491	A-A1 = 420
Q2 = 7	A2 = 785	A2 = 621	A2 = 49	A2 = 49	B = 668	B = 528
Q3 = 13	B = 887	B = 635	B = 73	B = 53	C = 965	C = 720
Q4 = 45,5	C = 1717	C = 1412	C = 165	C = 156	D = 1951	D = 1156
Correlation coefficient	0,98	0,99	0,99	0,99	1	0,98
R^2 coefficient	0,95	0,97	0,98	0,98	0,99	0,97

The data in the articles, magazines and research groups are organized into categories depending on the universe and the focus. This means that it is applied to the 68 HEI in the «U-Sapiens Ranking in Colombia». The correlation results are very shocking: all of them are positive and very high, so high that one of the correlations is one. In other words this means that there is a direct and proportional tendency between the distribution of the quartiles in the ranking and the categories in the research groups. Nonetheless the same thing happens to the rest of the variables but not as exact. To sum it up the scientific contributions, the published research and the research projects in our country are growing at the same paste as the «U-Sapiens Colombia Ranking». Another argument that supports that this classification is logical, rational and scientific.