



Perception of competencies for writing scientific articles in social and human sciences researchers

Percepción sobre las competencias para escribir artículos científicos en investigadores de ciencias sociales y humanas

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Abstract

Considering that scientific writing presents complex challenges, we sought to determine the level of perception that social and human science researchers have about their competencies to write scientific articles, through a cross-sectional descriptive study in which 129 researchers of both sexes with various years of research experience participated. They self-assessed their writing using the Scale for Evaluating Scientific Articles in Social and Human Sciences by López-López, Tobón and Hernández-Juárez (2019), and an overall result of high level in writing competence was obtained, with a significant effect size; scoring highest in the Results and Reference List sections; while the lowest were in Style and Format and Appendices. When comparing writing competence with the variables gender, research experience or the number of books and articles published, no significant differences were found, despite the fact that in this study males presented a greater number of publications. However, the Methodology section, evaluated with the scale, research experience, as well as belonging to the male gender, were the predictor variables for the publication of articles. Finally, it is recommended that more support be given to female researchers and that more methodological training be provided to new researchers in the interest of promoting educational equity.

Keywords: competences, writing, scientific researcher, scientific article, social science, human science.

Resumen

Considerando que la escritura científica presenta complejos desafíos, se buscó determinar el nivel de percepción que tienen los investigadores de ciencias sociales y humanas sobre sus competencias para escribir artículos científicos mediante un estudio descriptivo transversal en el que participaron 129 investigadores de ambos sexos con diversos años de experiencia investigadora. Autoevaluaron su escritura mediante la Escala para Evaluar Artículos Científicos en Ciencias Sociales y Humanas de López-López, Tobón y Hernández-Juárez (2019), y se obtuvo un resultado global de nivel alto en la competencia de redacción, con un significativo tamaño del efecto. Las secciones de Resultados y Lista de referencias obtuvieron las puntuaciones más altas, mientras que Estilo y formato y Apéndices fueron las más bajas. Al comparar la competencia en la redacción con las variables género, experiencia investigativa o la cantidad de libros y artículos publicados, no se encontraron diferencias significativas a pesar que en este estudio los varones presentaron mayor número de publicaciones. Sin embargo, la sección de Metodología, evaluado con la escala, la experiencia en investigación, así como pertenecer al género masculino, fueron las variables predictoras de la publicación de artículos. Finalmente, se recomienda apoyar más a las investigadoras y brindar mayor capacitación metodológica a los nuevos investigadores con el interés de fomentar la equidad educativa.

Palabras clave: competencias, escritura, investigador científico, artículo científico, ciencias sociales, ciencias humanas.

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1. Introduction

Not all researchers have the same competencies to write scientific papers in their own disciplines (Perković Paloš et al., 2022), despite knowing the writing criteria (Gil Calderón, 2024; Giraldo-Giraldo, 2020), while some do quite well (Alzahrani, 2020; Bajwa et al., 2020; Perković Paloš et al., 2022; Ramírez-Castañeda, 2020; Zein et al., 2023), others write with ample opportunities for improvement (Echanique, Portillo 2020; Duvoba et al., 2020; Ganga-Contreras et al., 2022; Trinh et al., 2020).

The latter usually has several reasons: the production of knowledge goes beyond mere intellectuality (Castellaro & Peralta, 2020; Parra & Zarauza, 2021), and there are varied genres of writing with rhetorical demands of its own (Negretti et al., 2022). Therefore, it requires complex competencies to adapt the record, convincing argumentation, correct use of grammar and syntax, content and form to a variety of readers and purposes (Gil Calderón, 2024; Sologuren & Venegas, 2022; Yonai & Blonder, 2020); thus, writing is the place where the researcher demonstrates part of the quality and level of human talent he possesses (Hernández-López & Atayde-Manríquez, 2021).

These and other challenges of writing are reflected when writing the different sections in the universal structure for writing scientific articles: Introduction, Methodology, Results and Discussion (IMRyD), each of which presents particular challenges for the researcher (Codina 2022; Holgueras-Galán et al., 2023; Nundy et al., 2021; Laitin et al., 2021; Taherdoost, 2022) and for the discipline of knowledge, since each section retains variants of writing according to the discipline and discursive gender (Coto et al., 2020). For example, articles are usually brief in the areas of health, while they are more extended in the Social and Human Sciences, (Perković Paloš et al., 2022).

On the other hand, in the Social Sciences at an international level, pressure has increased to write and publish more articles than books (Mrva-Montoya & Luca, 2021), due to the widespread tendency of researchers to write more books and monographs than articles (Giménez Toledo, 2020). Regarding age and research experience, some studies indicate that, in the Social and Human Sciences, researchers begin by publishing few articles, advance

by writing more book chapters and books in the middle ages, until they achieve more books and chapters when they have more experience and age (Savage & Olejniczak, 2021).

By contrast, in other disciplinary fields, women decrease the number of publications as they advance in age and experience due to factors such as taking care of the home, raising children or the prejudices that exist against them (Beaudry et al., 2023). If the phenomenon is analyzed from the approach of how men and women write (Haghani, 2022), in relation to their age (Michiels et al., 2022), or years of research experience (Castelló, 2022; Savage & Olejniczak, 2021), the results will also be diverse (Christ et al., 2021; Beaudry, et al., 2023; Haghani, 2022; Oliveira-Ciabati et al., 2021; Ribarovska et al., 2020; Son Bell, 2022).

As observed, this phenomenon of the competence to write scientific articles has multiple edges, so it is complex to study it due to the amplitude of slopes from which they can be investigated. This complexity is even greater in the case of Latin America, where scientific articles require greater global participation and citation outside the region (Spatti et al., 2021), despite the fact that the impact has been increasing by 1.6% per year (Clarivate, 2023), although it still remains below the world average (Caballero & Fajardo, 2023).

Faced with these and other perspectives, the competence in academic writing (Ponce Carrillo and Alarcón Pérez, 2020) and scientific writing (Sayer, 2019), because they are transversal in the professions (Vieno et al., 2022), in addition to requiring educational planning focused on research (Aldana-Zavala, Vallejo-Valdivieso & Isea-Argüelles, 2021), deserves to be considered within education and permanent training (Muñoz Galeano, 2024), seeking its evaluation within a certain context to accumulate evidence (Castro Espinoza & Castillo Arredondo, 2016), and promote educational equity fair and democratic cooperation between researchers. Therefore, this study aims to: a) determine the competencies to write a scientific article in Mexican researchers assigned to the National System of Researchers in the area of Social and Human Sciences; b) identify whether there are differences in performance to write articles according to gender, research teaching experience, number of articles and books published; and c) determine the impact of competencies to write arti-

cles in the publication of articles, books and book chapters, controlling the effect of research experience, age, gender and other publications.

2. Methodology

2.1 Participants

In this quantitative-descriptive and cross-sectional study, 129 people were selected by convenience sampling from a total of 8033 members of the Social and Human Sciences area belonging to the National System of Researchers of Mexico, who answered a digital form, whose characteristics are indicated in the following section. The average age was 52.7 years (± 12.8). 75% are male and 97.68% have a doctorate. They have an average of 22.8 years of experience in teaching and research (± 14.6), an average of 56.2 scientific articles (± 85.5), 10.0 book chapters (± 15.7) and 3.1 books published throughout the professional career of the group (± 5.2).

2.2 Instrument

The instrument applied to measure self-perception about writing skills was the *Scale for Evaluating Scientific Articles in Social and Human Sciences-EACSH*. It evaluates the degree of quality in the writing of a scientific article by researchers with different degrees of expertise. The instrument has a reliability of 0.937, and consists of 19 items distributed in eight dimensions: cover and abstract (1-3), introduction (4, 5), methodology (6-9), results (10-12), discussion (13-16), references (16), appendices (17) and style and format (18, 19). It was validated in content and construct by López-López et al. (2019); each item is valued with five levels: very low, low, medium or acceptable, medium high and very high, and responds on average in 12.5 minutes. When validated, eight factors were found by exploratory factor analysis. The same applies to the confirmatory factor analysis carried out in this investigation, whose goodness of fit criteria are shown in Table 1.

Table 1. Goodness of fit of EACSH

Adjustment rates	Recommended value	Value obtained
Chi-square (χ^2)	Non-significant	269, $p < 0.001$
Degrees of freedom (gl)	--	126
Chi-reduced square (χ^2/gl)	< 3.0	2.14
Tucker-Lewis index (TLI)	> 0.90	0,860
Comparative Adjustment Index (CFI)	> 0.90	0,897
Mean Quadratic Error of Approach (RMSEA)	< 0.08	.094

Note: Recommended values based on Hair et al. (2014).

2.3 Statistical analysis

First, a descriptive analysis of the information was carried out, determining the percentages of the performance level of the researchers with respect to the quality of the writing of scientific articles in each dimension of the *EACSH*. Then, it was analyzed by a *t*-test for a sample if the performance in the eight dimensions was lower or higher than the theoretical median of 3.0, which is the mean or acceptable value. It was also sought to determine the existence of significant differences between the performance to write articles according to gender, the research

teaching experience, the number of articles and books published. A Welch *t* test was used for the gender variable, and analysis of variance (ANOVA), for the other cases. In each ANOVA a *post-hoc* test was used to evaluate differences between specific groups, using the Tukey method after determining compliance with the assumption of homoscedasticity with a Levene test.

Although the assumption of normality is not met, parametric tests were used, since various studies show that both the *t* test of Welch (Delacre et al., 2017; Guiard & Rasch, 2004; Rasch et al., 2011) and the ANOVA (Blanca et al., 2017; Delacre et al.,

2019; Nguyen et al., 2019) are robust to the violation of the assumption of normality in large samples that comply with the assumption of equality of variance. In fact, the disadvantages of switching to non-parametric tests far outweigh their advantages, especially with the possibility of making type I error. In all cases, parametric test results were compared with their non-parametric counterparts (Mann-Whitney U and Kruskal-Wallis, respectively), with no differences in the analyses obtained. For ease of interpretation, only parametric test results were reported. Finally, linear regression was performed to evaluate the impact of the different dimensions of writing on the publication of articles, books, and book chapters, controlling various sociodemographic factors (years of research experience, age and gender). All data was processed using Jamovi statistical software, v2.3.18.

3. Results

First, the levels obtained in the writing of articles were evaluated, both in general and by dimensions of the article. To measure whether the results differed statistically from a mean self-assessment, a sample t-test was used, comparing the averages obtained with the theoretical mean of the instrument (value = 3). In general, it was found that the level of writing of the researchers was high, with significant differences with respect to the theoretical mean of the instrument, and a large size of the effect measured by Cohen's d, which ranged from 1 to 2 standard deviations of the mean value. The writing of Results and List of references is seen as the greatest strengths, while the greatest opportunities are in the writing of Style and Format and Appendices (Table 2).

Table 2. Means obtained in the self-evaluation of the competences to write and difference with the theoretical mean

Dimension	Average	Standard Deviation	Test		Effect Size		
			Statistic	Value	Cohen's d	Upper limit	Lower limit
Abstract Portfolio	4.36	0.676	22.8	< .001	2.01	1.71	2.31
Introduction	4.40	0.787	20.2	< .001	1.78	1.50	2.06
Methodology	4.43	0.686	23.6	< .001	2.08	1.77	2.39
Results	4.51	0.656	26.1	< .001	2.30	1.97	2.63
Discussion	4.43	0.688	23.6	< .001	2.08	1.77	2.39
Reference List	4.67	0.700	27.1	< .001	2.38	2.04	2.72
Appendices	4.08	1,005	12.2	< .001	1.07	0.85	1.29
Style and format	3.85	0.792	12.2	< .001	1.07	0.85	1.29
Escalatotal	4.35	0.582	26.4	< .001	2.33	1.99	2.66

Note. The upper and lower limit of the effect size was calculated with a 95 % confidence interval.

There were no differences between genders in research experience, nor in the number of books and chapters published. The only relevant difference was in the number of published articles, as men published significantly more articles (mean = 65.0) compared to women (mean = 32.5; $t(123.6)=2,920$, $p = .004$, Cohen's $d = .455$).

Table 3 shows some Pearson correlations obtained between the variables of publication of articles, books and chapters, and some sociodemographic variables such as research experience and age. The results showed that the research experience

correlated with both age, as expected, and with the three types of publications, albeit with variable effect sizes. For example, the relationship between research experience and publication of articles was stronger ($r = .470$, $p < .001$) than between research experience and book chapter publication ($r = .294$, $p < .001$). To prevent publications of one type from interfering with the correlations of another, the analyses were replicated, this time controlling the effect of other types of publications in each case. In this second round of analysis, only the publication of articles ($r_p = .419$, $p < .001$) maintained a strong relationship

with the research experience. The publication of chapters had a weak relationship with research experience ($r_p = .179, p = .044$), while the publication of

books ($r_p = .148, p = .097$) no longer showed a significant relationship with research experience.

Table 3. Correlations between sociodemographic variables

	1	2	3	4	5
1 Experience in research	-				
2 No. of published articles	.470***	-			
3 No. of books published	.342***	.285**	-		
4 No. of published chapters	.294***	.131	.462***	-	
5 Age	.884***	.606***	.352***	.310***	-

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Subsequently, the differences between the means obtained in each dimension of the instrument

and the total score were evaluated according to the variables gender, years of research experience, and number of articles and books published (table 4).

Table 4. Level of writing of articles by dimensions and criteria

Criteria	Cover	Introduction	Methodology	Result	Disc.	Refer.	Appendix	Style	Total
Gender									
Feminine	4.41 (.568)	4.55 (.529)	4.55 (.570)	4.53 (.469)	4.45 (.672)	4.56 (.801)	4.28 (.813)	3.89 (.801)	4.42 (.444)
Masculine	4.34 (.717)	4.35 (.859)	4.38 (.722)	4.50 (.713)	4.43 (.699)	4.69 (.670)	3.99 (1,057)	3.85 (.796)	4.33 (.628)
Research experience									
0-9 years	4.41 (.601)	4.67 (.416)	4.60 (.510)	4.62 (.506)	4.39 (.698)	4.63 (.839)	4.15 (.989)	3.81 (.798)	4.44 (.466)
10-19 years	4.20 (.578)	4.21 (.824)	4.25 (.662)	4.35 (.660)	4.44 (.630)	4.65 (.608)	3.84 (1,003)	3.81 (.803)	4.23 (.546)
20-29 years	4.37 (.647)	4.28 (.924)	4.35 (.655)	4.50 (.518)	4.49 (.610)	4.85 (.366)	4.25 (1,118)	3.95 (.686)	4.36 (.508)
30 years or older	4.42 (.776)	4.42 (.833)	4.47 (.777)	4.56 (.761)	4.43 (.758)	4.63 (.774)	4.12 (.973)	3.85 (.838)	4.38 (.681)
No. of published articles									
0 to 14	4.27 (.567)	4.39 (.687)	4.47 (.630)	4.45 (.643)	4.33 (.685)	4.57 (.778)	3.71 ^a (1,152)	3.64 (.879)	4.28 (.519)
15-39	4.42 (.528)	4.54 (.605)	4.43 (.584)	4.59 (.470)	4.63 (.450)	4.84 (.442)	4.38 ^a (.794)	4.04 (.491)	4.47 (.389)
40-99	4.39 (.677)	4.39 (.899)	4.33 (.638)	4.48 (.527)	4.37 (.761)	4.67 (.645)	4.12 (.893)	3.97 (.770)	4.34 (.581)
100 or more	4.33 (.986)	4.21 (.988)	4.48 (.954)	4.51 (1,015)	4.36 (.852)	4.54 (.932)	4.08 (1,100)	3.69 (.987)	4.31 (.866)
No. of published books									
0 to 4	4.31 (.703)	4.38 (.819)	4.39 (.712)	4.51 (.676)	4.40 (.723)	4.69 (.722)	4.04 (1,050)	3.82 (.831)	4.33 (.613)
5-9	4.74 (.288)	4.72 (.667)	4.77 (.312)	4.62 (.460)	4.68 (.409)	4.33 (.707)	4.33 (.707)	3.94 (.527)	4.58 (.313)
10-14	4.57 (.575)	4.50 (.632)	4.52 (.668)	4.28 (.799)	4.62 (.527)	4.83 (.408)	4.17 (.983)	4.00 (.837)	4.44 (.517)
15 or more	4.44 (.576)	4.25 (.535)	4.45 (.628)	4.55 (.499)	4.46 (.529)	4.63 (.518)	4.25 (.707)	4.00 (.463)	4.39 (.416)

Note. For comparing gender means, Welch t was used; for the rest of the analyses ANOVA was used. The values in parentheses correspond to the standard deviation. PORT = Cover and abstract; INT = Introduction; MET = Methodology; RES = Results; DIS = Discussion; REF = References; APE = Appendices; EST = Style and Format; TOT = Total Scale. There were no statistically significant differences in the t-tests or ANOVA. In post-hoc comparison (Tukey), only differences were found between (a) the Appendices means, for researchers with 0 to 14 published articles and researchers with 15 to 39 published articles.

In general, no differences were observed in any of the variables considered; although in the *post-hoc* tests a significant difference emerged between

the means of the Appendices dimension between researchers with fewer than 15 published articles, and those between 15 and 39. However, this differen-

ce disappears at higher publication ranges. It is interesting to note that, in the dimensions Introduction, Methodology and Results, it is the researchers with less years of experience who are best evaluated, although there is no significant difference with the other ranges of research experience.

Finally, the impact of each dimension of the instrument in terms of the publication of articles, books and chapters was evaluated through linear regression, controlling the influence of age, gender, years of research experience, and other publications (table 5). Again, the results suggest a better fit of the model for the publication of scientific articles, which explained 51.4% of the variance, while the book and chapter publication models explained 23.4% and 20.1%, respectively. In the case of the article publication model, in the control variables, both research experience ($\beta = .505$, $p = .001$) and gender ($\beta = .153$, $p = .035$) had a positive impact on the number of publications. In general, the self-evaluation dimensions of the scientific writing had a limited impact, excepting the Methodology ($\beta = .238$, $p = .035$),

which is the only one that appears as significant. It is noteworthy that the dimension Appendices ($\beta = .152$, $p = .067$) also shows an interesting impact, close to statistical significance.

As for book and chapter publishing models, no dimension appears to have significant impact, although in the case of the chapter publishing model, the Introduction dimension has an impact close to statistical significance ($\beta = .201$, $p = .084$). It is interesting to note that there seems to be a mutual dependence on book and chapter publishing models. For example, in the book publishing model, the most impactful variable is chapter publishing ($\beta = .364$, $p < .001$). Also, in the chapter publication model, the variable with the greatest impact is book publication ($\beta = .380$, $p < .001$). Therefore, although both are two different types of publications, they have a close relationship not shared with the publication of articles, which seems to work with a different logic from a requirements perspective based on the variables considered in the present study.

Table 5. Linear regressions to evaluate the impact of instrument dimensions on article, book and chapter publications

Variables	Published articles		Published books		Published chapters	
	B	p	B	p	B	p
Cover	- .052%	.638	.194	.140	- .032%	.813
Introduction	- .044%	.650	- .162%	.155	.201	.084
Method	.238	.035	.002	.989	- .041%	.770
Results	- .005%	.958	- .130%	.288	.101	.420
Discussion	- .081%	.412	.117	.313	-.009	.943
References	- .042%	.671	-.129	.271	- .114%	.338
Appendices	.152	.067	-.016	.875	.096	.345
Style	- .053%	.625	.088	.497	-.013	.920
Research experience	.505	.001	- .078%	.676	.109	.569
Age	.126	.408	.195	.278	.162	.379
Gender	.153	.035	.065	.453	.098	.271
Published articles	-	-	.173	.129	-.099	.394
Published books	.123	.129	-	-	.380	<.001
Published chapters	- .068%	.394	.364	<.001	-	-
F	8.80***		3.85***		3.34***	
R ²	.717		.317		.287	
R ² adjusted	.514		.234		.201	

Note. *** $p < .001$

Discussion and conclusions

The first objective of the study was to describe the researchers' self-assessment of their competence to write the different dimensions of scientific articles. In this regard, it was found that, on average, they showed high scores in Results and List of references. This finding in Results is similar to what Colombian researchers obtained (Ramírez-Castañeda, 2020), probably because they are the ones who are familiar with the data; they have processed it, they know it in detail, they can interpret it and, therefore, they have the domain to translate and communicate the findings.

The opposite is true of Filipino researchers. They have the greatest weakness in writing in their own language (Echanique & Portillo, 2020), as well as the Social Sciences researchers of Latvia (Duvoba et al., 2020). This difficulty can be caused by the scarce research experience they have as the sources point out (Duvoba et al., 2020; Echanique & Portillo, 2020). However, it is important to note that in the Mexican sample, this difference was not observed according to experience. In fact, in Introduction, Methodology, and Results, researchers with less experience (0-9 years) had a higher average score (Introduction: 4.67; Methodology: 4.60; Results: 4.62) than the most experienced, who lowered the average in the group of 10 to 19 years (Introduction: 4.21; Methodology: 4.25; Results: 4.35), and were increasing progressively to those with more experience (more than 30 years; Introduction: 4.42; Methodology: 4.47; Results: 4.56), although these differences were not significant.

The similarities and differences found may mean several interpretations. Not all researchers have the same difficulties-facilities when writing the different sections of the article. The language in which they write is also not important, as Philippines and Mexicans wrote in their native language, while Colombians wrote in English. Even less so, the characteristics of the journal in which they submit their works, as well as the subject they develop, determine that the writing is easy or difficult. The important thing is the writing of the section itself, as each presents its own challenges and requirements. Some studies claim that of all sections, the Discussion may represent the greatest challenge due to its argumentative nature in relation to the findings and their meaning (Lele-Rozentale et al., 2021). Precisely, in

the Discussion, the average obtained increased with experience, and stabilized in the groups with more experience. Again, these differences are not statistically significant, but they set a striking pattern.

The result in List of references seems to indicate that researchers are aware that properly constructed references play an important role in locating the cited sources and assessing the quality of the research. In addition, it is the section that the journals' databases use to index the article, obtain the h-index and the identity of the authors and the journals cited in the article (Aksnes et al., 2019; Mammola et al., 2021). Knowing these values, it may be of the reasons why Mexicans put dedication and attention in the elaboration of this section.

The Methodology, little smaller than the previous two dimensions, continues to show a large size of the effect when compared with the theoretical mean of the instrument. This good performance can be because the researcher is the one who designs the study with a high degree of accuracy, the procedure and the possible solutions to the difficulties found. In contrast, Vietnamese researchers barely develop this section in their articles (Trinh et al., 2020), because they are new to the world scientific writing; while this section cannot be evaluated in Argentinian Social Science articles because journals do not adjust articles to the IMRyD in these disciplines (Piovani, 2019).

In this study, Mexican researchers showed greater opportunity for improvement in Style and Format, and Appendices. In relation to the first, there are several possible explanations. One is that most do not use reference managers to format articles because they are elderly people with an average age of 53 years, as happened with most researchers in Ghana, revealing not to use such managers and also an average of 51 years old (Bugyei et al., 2019).

Although this does not explain why a better result was obtained in List of references, another possibility is that journals, although based on standardized rules of style and format, have their own slight variants but that produce serious deviations from the norm that generate rejection by journals as happened with 65% of Latin American articles submitted for publication (Ganga-Contreras et al., 2022). Finally, we cannot rule out that some authors write their articles before identifying a journal without strictly adhering to publication standards. As for Appendices, probably the opportunity for

improvement is because the section is for complementary material of the article (Nikolov, 2022), so they better concentrate on writing the relevant content. If so, when responding to the scale, researchers probably did not give both dimensions the necessary importance to the corresponding items.

The second objective sought to determine whether there were significant differences in the quality of writing by gender, research teaching experience and the number of articles and books published. In general, there was no significant difference in being male or female; similar to the finding of Sword et al. (2020) with researchers from various countries, in which gender did not play a statistically significant role. However, there are studies that present some editorial differences such as that of Boettger and Wulff (2019): women wrote with more adverbs and passive verbs than men; although they agreed to use the same style markers in their rhetoric. Therefore, the difference seems to lie more in the style than in the quality of the writing, writing freely, although retaining already established criteria; relevant characteristics in expert researchers of different disciplines (Dorfler & Eden, 2019).

Regarding the writing of scientific articles and the research teaching experience, no significant differences were found, although the levels (0-9 years of experience) scored slightly higher in Introduction, Methodology, and Results than the other groups. It is possible that this higher self-assessment is related, precisely, to the lack of experience and opportunity to observe other experienced researchers, as well as to the absence of being immersed in various scenarios to receive feedback and stimuli about their writings. These factors, if reversed in opportunities, will be ideal means to develop self-efficacy and confidence when writing scientific articles (Mason & Merga, 2021). Researchers with 30 or more years of experience, while similarly self-evaluating, probably have a higher, more complex level of writing and self-critical thinking, and a tendency to strive for greater excellence (Negretti et al., 2022).

Regarding the publication of books and articles, no significant differences were found. Perhaps, because competing for funding on an international scale requires writing high-standard and quality articles and projects (Yonai & Blonder, 2020). Therefore, researchers are aware of the relevance of good writing. Another explanation is that scientific writing

is so specialized that it has a relatively standardized style to communicate the different phases of research, which becomes challenges without margins of options (Da Silva, 2022).

However, a difference was found in Appendices in the *post-hoc* tests for those who had published between 0 and 14 articles compared to those who published between 15 and 39 articles. One possibility of the phenomenon is that, by increasing the number of publications, it also increases the amount of relevant information that can be included in an Appendix. This differs from Supplemental Material which includes a hyperlink that redirects the reader to a digital repository hosted on the journal's website (Taber, 2016). This is an attractive alternative for young researchers, as authors who use it are cited more frequently (Taylor & Francis Group, 2023).

There was also a difference between publishing scientific articles, books and book chapters. On the other hand, although there is a strong relationship between research experience and the publication of articles, the same does not happen with the publication of books, but to a lesser extent, with the publication of chapters. Regarding the publication of books, some claim that it is the most relevant aspect in Social Sciences (Engel et al., 2018), while others consider that all starts by publishing few articles, then more books and book chapters as they advance in research experience (Savage & Olejniczak, 2021). This relationship invites to think that theoretical or reflective elements that do not require much research experience are included, so that neophyte researchers find in this space a freedom of writing not present in scientific journals. Or, that the editorial process includes revisions, sometimes less rigorous, that allow entering the world of academia. Finally, perhaps the most experienced researchers may feel that this is a safer space to invite novice researchers to collaborate for greater editorial freedom, without harming their larger investigations. Whatever the reason, it is a finding that needs to be reviewed in more detail in future research.

Thirdly, the impact of the different dimensions with respect to writing in the publication of articles, books, and chapters was evaluated, controlling the effect of research experience, gender, age, and other types of publications. The results showed that a high score in the ability to write the Methodology is essential in order to publish articles. This is

interesting, because some editors and reviewers of journals consider this section, along with gender and research experience, as relevant for the acceptance or rejection of the article (Ganga-Contreras et al., 2022; Suárez-Amaya et al., 2019). Concluding that, the more research experience, the more articles published; and being male increases the probability of publishing given the prevailing male bias, despite efforts to maintain balance (Franco et al., 2021; Oliveira-Ciabati et al., 2021).

The publication of books and chapters has a positive impact on each other, i.e. the publication of books positively influences the publication of chapters, and vice versa. This fact was also demonstrated by Savage and Olejniczak (2021). On the other hand, gender, research experience and dimensions of scientific writing were not significant. Neither did the publication of scientific articles affect the number of books or chapters published, nor did they significantly impact the number of articles published. This reinforces the idea that these are two distinct types of publications in this sample.

In conclusion, although researchers value positively their skills to write scientific articles, they have areas for improvement regardless of gender, age, research experience, number and type of publications. On the other hand, the main contribution of this study is that the Methodology, the investigative experience and being male are revealed as the predicting variables of the publication of articles. The factors studied lead to recommend greater support to female researchers and provide greater methodological training to seek educational equity, a democratic citizenship that promotes the social, cultural, economic and professional development of research.

The practical contribution of this study is to clarify how Mexican researchers of high level of Social and Human Sciences write, providing glimpses of the level of writing skills when comparing their performance with researchers from other countries. It has as strength the size of the sample that is wide, as well as its exploratory and descriptive character. One of the weaknesses is the intentional sample collected, reason for which the results cannot be generalized. It is therefore recommended to (a) replicate the study and, as far as possible, select the researchers by probabilistic sampling; (b) compare the results with high-level researchers from other countries, regions of Latin America, and other con-

tinents; and (c) replicate the study with early career and long-term researchers.

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