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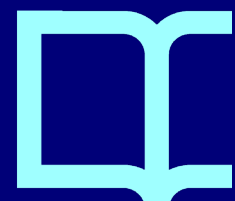
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In Search of the Global South: Assessing Attitudes of Latin American Journalists to Artificial Intelligence in Journalism

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In Search of the Global South: Assessing Attitudes of Latin American Journalists to Artificial Intelligence in Journalism

Abstract

This research observes the relationship between Latin American (LA) journalists from six countries that are rarely observed by international scholars (Bolivia, Brazil, Colombia, Cuba, Peru and Venezuela) and artificial intelligence (AI). Particularly, it seeks to identify and compare their attitudes, perceived constraints, and knowledge on the state of the art of the application of AI to professional journalistic practices. In tune with the quantitative turn in contemporary journalism and due to the lack of quantitative measures in this field, this research also develops and psychometrically validates tools for measuring such aspects. The main results reveal the existence of differences in these journalists' attitudes and knowledge with regard to AI that can be attributed to their cultural context. They also show similarities to attitudes of journalists from Northern countries to AI. This research fills in the gap in the existing literature on journalism, AI, journalists' attitudes, Global South and LA journalism.

Keywords: artificial intelligence, journalism, attitudes towards technology, journalists' attitudes, Global South, Latin America, media.

In Search of the Global South: Assessing Attitudes of Latin American Journalists towards Artificial Intelligence in Journalism

Although still in its infancy, the relationship between artificial intelligence (AI) and journalism has interested academic researchers in recent years (Parratt-Fernández et al., 2021). AI is generally understood to mean the capability of a machine to imitate intelligent human behavior (Aghion et al., 2019). In journalism studies, its application to automatic news making and distribution is given different names depending on the specific tasks or processes involved (Parratt-Fernández et al., 2021). For instance, it is called algorithm (Diakopoulous, 2014), artificial (Túñez et al., 2019), automated (Jamil, 2020) or robot journalism (Kim & Kim, 2017, 2018, 2021). All these terms refer to autonomous systems designed for data mining, comparison and combination in the making of news (Kim & Kim, 2021), and define methods by which human programmed algorithms autonomously obtain and analyze information and produce news articles (Kim & Kim, 2017).

AI is already being used in many newsrooms to create and deliver different types of news (Kim & Kim, 2018). Indeed, it has been used for the automated writing of articles since 2014 (Kim & Kim, 2021) and has become an essential element of contemporary newspaper production in the Global North (Túñez-López et al., 2018).

The use of algorithms and automated processes transforms journalistic work (Jamil, 2020), changes news production routines and narratives (Kim & Kim, 2018) and also impacts the retrieval, storage, conception, transmission and consumption of information (Túñez-López, 2019). Consequently, researchers have recently recommended more in-depth study of three different aspects. The first is the analysis of the application of AI to the newsrooms of non-large-scale economies and low-income countries (Jamil, 2020). This is important due to the evident differences between countries in terms of technology adoption (Salaverría & de Lima-Santos, 2021) and because the scarcity of studies on journalism in certain parts of the

world prevents a full understanding of how technological changes affect journalism practices beyond the dominant actors (Goyanes et al., 2021). In fact, northern media practices and journalistic standards are erroneously considered ideal since they dominate research while peripheral perspectives are ignored (Goyanes et al., 2021). However, the standard features of Global North (GN) news organizations are of varying predominance among their peers in the Global South (GS), who must deal with diverse everyday issues such as inadequate infrastructure, self-censorship, illiteracy, restricted rights, inequalities, violence, corruption, populism and authoritarianism (Borges-Rey, 2019). Indeed, many GS countries have yet to fully join the information society, whereas northern countries have been exploiting its technological innovations for decades (Salaverría & de Lima-Santos, 2021). Thus, the study of professional journalism practices in different regions is essential in order to counteract and challenge established discourses and models (Goyanes et al., 2021).

Secondly, researchers recommend analysis of the role of journalists in the application or adoption of AI (Parratt-Fernández et al., 2021). Very few studies have observed journalists' perceptions of AI, despite them being key agents in creating and deciding on news contents, and being so greatly affected by its introduction to newsrooms, even including the likelihood of being displaced by it (Kim & Kim, 2018).

Finally, research on AI and journalism typically applies qualitative methods (Parratt-Fernández et al., 2021) while quantitative study of professional roles, orientations and attitudes has been sporadic (Túñez-López et al., 2019). Indeed, the so-called quantitative turn in contemporary journalism (Coddington, 2015), the lack of quantitative measures (Carlson, 2018) and the increasing interest in comparative cross-cultural research in the field (Oller, et al., 2019) are calling for the development of objective, efficient tools for application to different cultural contexts.

Attitudes to and knowledge of AI

The few studies on attitudes to the application of AI to journalism reveal two contrary positions among GN journalists. Optimistic professionals view AI as an opportunity to produce a greater number of contents at a faster rate, with enhanced quality, in varied languages and at minimal costs. They believe that thanks to AI, routine tasks are performed by algorithms so they can focus instead on in-depth reporting. Contrarily, pessimists stress the risk of job loss as humans are substituted by machines. They disapprove of the mechanical, insipid news style produced by algorithms, which does not question, criticize or monitor the functions of governments, democracy or rights (Wölker & Powell, 2021).

Still in the GN, Túñez-López et al. (2019) observed the attitudes of Spanish journalists towards AI and found that they had no clear awareness of the characteristics of news automation processes or their level of implantation in the media. Moreover, they believed that robotization was only being used to write service and agenda news while other hard topics, such as politics, were far from being automated. They also considered that robotization will support, not substitute, human news production, and perceived cost-cutting benefits for news organization. In contrast, and paradoxically, they considered the main negative consequence of AI to be that it prevents journalists from doing their duty as interpreters of events and creators of news. Another paper claims that Spanish journalists believe the application of AI to machine content creation implies a shift in productive routines rather than a drastic transformation that could cause the disappearance of news-making professionals (Túñez-López et al., 2018).

Meanwhile, Kim and Kim (2018) observed the attitudes of South Korean professionals to robot journalism, based on the theories that it can have a significant positive effect on job performance and the adoption of innovation, which in turn impacts news organizations and businesses. After applying a qualitative Q-methodology, the researchers

described three types of attitudes towards robot journalism. A type 1 journalist is not concerned about changes in their status because of the introduction of robot journalism. They believe that human journalists have certain capabilities that cannot be supplanted by robots, such as understanding nuances and finding or interpreting news. Instead, robots can make mistakes and spoil journalism, so their role will be limited to dry facts and collecting information. Type 2 journalists consider robots to be potential rivals, and are hence worried about their own declining status in society. This type of journalist expresses adverse reactions, fear and suspicion of robots. Finally, type 3 has a relatively positive view of journalism. They consider robots to have limitations, but they see the benefits of their adoption and hence do not resist them. In their conclusions, the authors also warn that the sociocultural context of newspapers must be considered when observing attitudes towards technology. They also recommended research in different regions to gain additional information on the topic. This research responds to both demands.

In a GS context, Jamil (2020) investigated how Pakistani journalists perceived AI through a Human-Machine Communication (HMC; Lewis et al., 2019) qualitative approach and identified perceived constraints of the application of AI to mainstream news media. HMC is interested in how machines create meanings and perform as communicators. It analyses communication processes between humans and machines and their consequences for individuals and society. According to this theory, the study of AI as a communicator needs to be related to the socio-political and legal contexts in which communication processes occur (Guzmán, 2018), as the present study also assumes. Coherently, Jamil (2020, p. 14) identified six major obstacles for the use of AI in newsrooms according to Pakistani journalists: 1) lack of economic and technological resources, 2) data inaccuracy, 3) lack of AI-related education and training, 4) lack of government strategies to foster AI in journalism, 5) limited access to data, and 6) the existing digital divide in that country. The author concluded that these

professionals neither accept technology in the role of communicator nor see opportunities to transform journalism in Pakistan. In fact, they merely view AI as a moderator or intermediary in the communication process (i.e., as a means of communication). Paradoxically, they view these devices as a threat to their livelihood since they can replace their existing roles and jobs.

It should be made clear at this point that attitudes are generally defined as learned prescriptions that make individuals respond consistently in a favorable or unfavorable manner to a given phenomenon, event or object. They influence individuals' intentions and predict behaviors (Fishbein & Ajzen, 1975). The most widely used theory to explain users' acceptance, intentions and behaviors towards technological innovation is the Technology Acceptance Model (TAM; Davis, 1989) that states that perceived usefulness and ease of use determine users' beliefs regarding a technology and subsequently predict their attitudes towards it. A recent metanalysis on TAM (Feng et al., 2021) confirms the strong effect of attitudes on intended and actual use, whereby a positive attitude towards a technology is a good indication of the intention to use it. The effects of perceived ease of use and perceived use of a technology are also mediated by attitudes. TAM has been successfully applied to journalism in diverse cultural contexts related to different technologies (e.g., Goni & Tabassum, 2020; Patabandige, 2019; Zhou, 2008). To our knowledge TAM has not been yet applied to Latin American (LAN) journalism. The necessity of conducting TAM cross-cultural comparisons has been stressed (Zhou, 2008).

Concerning technology, it is also fundamental to consider resistance to innovations within organizations. The literature informs that employees typically have two types of concerns. Status concerns define the anxiety produced by job instability (Hedge & Pulakos, 2002) because technological innovations might cause employees to worry about potential displacement within their workplace (Dirks et al., 1996). In turn, functional concerns describe

the relationship between the worker and the technology, and appear in the former's difficulties to adapt to, use, be trained in, learn and accept the innovation (Rangarajan et al., 2005).

Latin America (LA) and its journalism

LA is a GS region (Kim, 2017). Despite frequent misconceptions, it is not a monolithic block although its countries do share some communalities. For instance, they have similar colonial pasts and have recently witnessed the re-emergence of non-democratic and authoritarian regimes (Salaverría & de Lima-Santos, 2021). Also, despite their vicinity and trade partnerships with developed countries, LA countries have been slow to access and adopt new communication technologies having started on their path to digitization in the new century while still facing inequalities in information access and digital gaps (Galperín, 2017). Moreover, LA countries share characteristics such as high-to-moderate economic dependence, foreign intervention, indigenous rebellions, anti-colonial struggles for independence or autonomy and low-to-middle GDP per capita (Galeano, 1987).

In terms of media, LA has highly concentrated industries owned by small numbers of families that are dependent on political and economic powers (Guerrero & Márquez-Ramírez, 2014). Indeed, it is the region with the weakest state participation in media ownership in the world (Schuliaquer, 2021).

Regarding journalism, LA has undergone profound transformations recently. Press freedom has progressively deteriorated in many of its countries (Mesquita & de Lima-Santos, 2021). The appearance of hundreds of native digital publications that challenge the traditional journalistic status quo of the region defines the stagnation or decline of big media. A large amount of innovative online media projects has flourished in LA (Salaverría et al., 2019), promoting cultural change, improving laws, exposing corruption, fighting power abuses and

defending human rights even in countries that are still highly politically polarized (Warner et al., 2017). Research shows that LA news media are testing innovative strategies and adopting both simple and advanced technological solutions, such as AI. Consequently, technology has opened the door for creative news production, dissemination and consumption processes. Journalistic actors are aware that technology and data are fundamental for the sustainability of LA media industries (de Lima-Santos & Mesquita, 2021). However, despite the evident growth of innovative projects in LA, journalists working for traditional mainstream news organizations claim there is a lack of technological skills and training for adopting new technologies. Moreover, their perceptions of technology adoption depend on where they work or live and how the innovation is defined (Schmitz, et al., 2020), hence homologous definitions and measures need to be produced.

LA is a multicultural region with particular national characteristics and specificities in terms of journalistic models (De Lima-Santos & Mesquita, 2021). However, despite being considered one of the most dynamic and fastest-growing regions in the world (Arredondo-Trapero et al., 2020), research on LA journalists and news organizations has often being ignored by mainstream scholarship (Borges-Rey, 2019). Consequently, there is a lack of academic studies on LA journalism (Salaverría & de Lima-Santos, 2021) while existing research focuses mostly on GN communities (Goyanes et al., 2021). The fact that LA journalists and news organizations have not historically enjoyed comparable infrastructures, resources, capacity building, freedom or safety to their counterparts in North America and Europe has been proposed as an explanation (Borges-Rey, 2019).

Justification and objectives

This research holds two underlying assumptions. First, it assumes that advances in AI and culture impact each other. Cultural values and technology consumption are hence

interrelated: Users perceive, interpret, and act towards algorithms influenced by their own cultural context. Indeed, algorithms are designed, developed and consumed within particular social spheres (Shin et al., 2022). Second, it assumes that national cultures differ in technology adoption depending on various factors (Eitle & Buxmann, 2020).

Coherently, this research intends to fill in the gap in the existing literature on journalism, AI, journalists' attitudes, GS and LA journalism. It aims to observe the relationship between LAN journalists and AI applied to journalistic practices.

Moreover, it applies a quantitative approach, which is not a common practice in the study of such attitudes. In tune with the quantitative turn in contemporary journalism and due to the lack of quantitative measures in this field, this research develops tools for measuring attitudes towards AI. Also, it compares data from six LA countries, some of which are rarely observed by international communication scholarship.

The specific objectives of this research are:

- 1) To unveil journalists' a) Attitudes towards the application of AI to journalism; b) Perceived constraints of the application of AI to journalism; and c) Knowledge on the current state of the art of AI applied to journalism) in six LA countries (i.e., Bolivia, Brazil, Colombia, Cuba, Peru and Venezuela).
 - 1.1) To develop and gather evidence on the psychometric quality of three quantitative scales for adequately measuring at a cross-cultural level those cited aspects. This would provide adequate instruments for assessing journalists' attitudes to AI in two languages (Portuguese and Spanish).
- 2) To determine the extent to which there are differences in the aforementioned aspects between journalists in the six LAN countries while considering their age, years of experience, and professional specialization.

- 3) To advance in the knowledge of technological innovations adoption in GS journalism, particularly by the understudied Latin American professionals.

Method

Participants

There were 935 participants from 6 countries (Age: $M = 41.2$, $SD = 12.9$, Range = 19-86). Of the total, 50.2% were female. Table 1 shows the distribution by country and gender. Table 2 shows other sociodemographic variables by country.

Table 1

Sample Size and Gender by Country

Country	n	%	Female	Male	Non-binary
Bolivia	100	10.7	35.0	65.0	0.0
Brazil	206	22.0	64.6	35.4	0.0
Colombia	210	22.5	38.1	61.9	0.0
Cuba	100	10.7	68.0	32.0	0.0
Peru	217	23.2	41.0	58.5	0.5
Venezuela	102	10.9	62.7	37.3	0.0

Table 2

Sociodemographic Characteristics by Country

Country	Age				Years of experience				Workplace (%)			
	M	SD	Min	Max	M	SD	Min	Max	Internet	Press	Radio	TV
Total	41.2	12.9	19	86	16.4	12.1	0	65	23.0	47.9	10.8	18.3
Bolivia	45.4	11.3	19	70	18.4	11.4	0	45	8.0	64.0	9.0	19.0
Brazil	41.8	12.4	20	69	17.5	11.7	0	47	25.2	40.8	10.2	23.8
Colombia	42.2	14.4	20	82	17.3	14.0	0	65	21.9	47.6	19.0	11.4
Cuba	32.6	9.7	23	69	9.1	8.7	0	45	25.0	39.0	13.0	23.0
Peru	40.0	12.4	19	86	15.0	11.1	1	60	24.0	54.4	4.6	17.1
Venezuela	45.2	12.2	20	69	20.4	11.3	0	39	31.4	42.2	7.8	18.6

Measures

A questionnaire containing the three scales proposed by this study was administered. The psychometric properties of such tools are discussed in the results section as they are an objective of this research. The scales were on (English, Spanish and Portuguese item content can be found in Annex 1):

- Attitudes towards the application of AI to Journalism (AAI)
- Perceived constraints for the application of AI to Journalism (PCAI)
- Knowledge on the current state of the art of AI related to Journalism (KAI).

The questionnaire also asked for sociodemographic information: gender (female, male, other), age, years of experience, workplace (Internet, Press, Radio, TV) and country. A control question asked: “Are you currently working as a journalist?” due to the fragility (i.e., ingrained in-job instability as opposed to the full, permanent employment of northern communities) of the journalistic profession in the GS (Matthews & Onyemaobi, 2020).

Data analysis

First, we obtained evidence based on the internal structure of the measures. We performed an Exploratory Factor Analysis (EFA) with minres estimator and oblique rotation using the psych package (Revelle, 2021) in a random sample of 150 persons from the total sample. Parallel analysis assessed the number of dimensions and compared goodness of fit indexes (GOFI).

We then assessed the tests’ internal structure through a Confirmatory Factor Analysis (CFA) and checked the measurement invariance between the six different countries with a multi-group analysis. This ensured that the measures were equal across the different cultural contexts (countries and languages). A *Comparative Fit Index (CFI)* and a *Tucker-Lewis Index*

(*TLI*) greater than .90 and a *Root Mean Error of Approximation* (*RMSEA*) less than .05 was considered an adequate *GOFI* (Hu & Bentler, 1999).

For the multi-group analysis, we tested the configural invariance (i.e., same factor structure across countries), metric invariance (i.e., same factor loadings across countries) and scalar invariance (i.e., same factor loadings and intercepts across countries). We then assessed the difference of chi-square and the p values (p-value greater than .05 suggests invariance) and of *CFI* and *RMSEA* (less than 0.01 suggests invariance; Chen, 2007). To determine the internal consistency reliability of test scores, we followed Viladrich et al. (2017)'s recommendations and obtained the omega coefficient and Cronbach's alpha.

To observe differences and similarities between countries, an ANOVA for each created variable by country was executed. A possible interaction between gender, specialization and current work was then sought.

A regression analysis was performed to determine the effect of age and years of experience. Since all models explained less than 10% of the dependent variables, the results were considered insightful and are not presented here. The non-binary sex category was excluded from the ANOVA analysis because there was only one case, so an effective sample of 924 observations was used.

Procedure

This research has followed the ethical guidelines and procedures of the University XX, where the principal researcher of this study works. The non-probabilistic sample was obtained by personally contacting different news companies and journalists. Researchers from six different LAN countries were involved in online data collection. The first page of the questionnaire informed about the objectives of the research and requested the participants' consent.

The questionnaires were answered in Spanish in all countries except Brazil, where they were answered in Portuguese. Equivalent translation in both languages was ensured for the translation process and the CFA multi-group analysis.

Results

Development of the scales

The items of two scales [(9i) AAI and (7i) PCAI)] were inspired by Jamil's (2020) results on attitudes of Pakistani Journalists to AI. The 14 items in the KAI scale were created from the review of recent literature (i.e., Diakopoulos, 2019; Parratt-Fernández et al., 2021; Túñez-López et al., 2019).

The three scales were created in English and later translated into Spanish and Portuguese following the six-stage process recommended by Lenz et al. (2017). Equivalences in the Spanish spoken in the different countries were specifically assessed to verify the adequateness of technical and professional terms and nuances in their everyday use.

Validity Evidence based on the Internal Structure

Attitudes towards the application of AI to Journalism

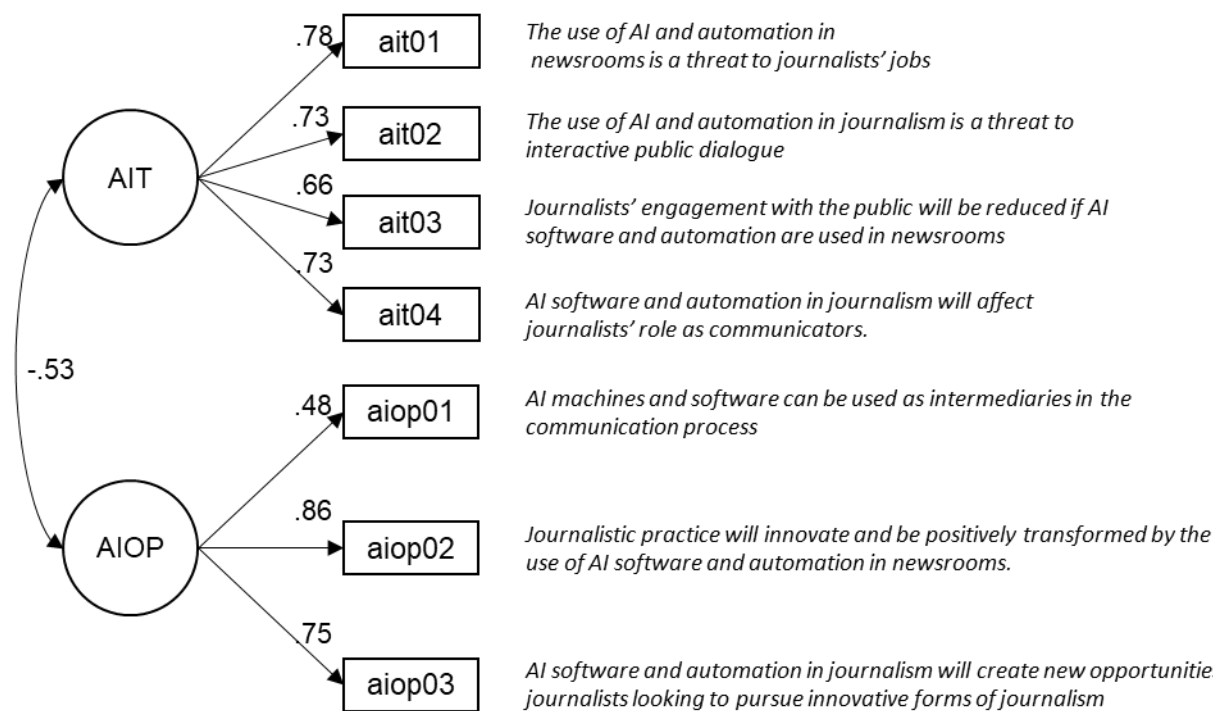
We performed an EFA and retained the two factors that explained 50% of the variance. We excluded two items because their factor loadings were low ("AI machines and software can be used as moderators in the communication process" and "The use of AI software and automation in journalism will create new digital challenges such as privacy and data security issues").

We then confirmed the two-factor model with a CFA, which obtained adequate GOFI (see Figure 1, $X^2[df] = 40.93 [13]$, $p < .001$, $CFI = 0.987$, $TLI = 0.979$, $RMSEA = 0.05 [0.03]$,

0.06]). One of the factors contained items related to considering the application of AI to journalism as a threat while the other contained items that consider AI as an opportunity (Figure 1). The final items forming the AI as a threat scale (THRE, 4) are associated to the potential negative influence of AI on journalists' jobs, roles as communicators, and engagement with audiences. They also account for the harmful effects on the interactive public dialogues. The final items of the AI as an opportunity (OPPO, 3) are related to the positive transformation of software and hardware in newsrooms, to the creation of new opportunities for journalists pursuing innovative forms of journalism, and to the possibility of using AI as intermediary of the communication process. See appendices.

Figure 1

Measurement Model for AAI



To assess the invariance of the AAI, we first fit the configural model ($X^2[df] = 137.21[78]$, CFI = .970, RMSEA = .07), and then set the factor loadings equal across the groups ($\Delta X^2 = 23.78$, $df = 25$, $p = 0.53$, $\Delta CFI = .001$, $\Delta RMSEA = .01$). Finally, we assessed equal factor loadings and intercepts ($\Delta X^2 = 43.45$, $df = 25$, $p = 0.01$, $\Delta CFI = .009$, $\Delta RMSEA =$

.002). Considering ΔX^2 , we assumed metric invariance but not scalar invariance. However, we could assume scalar invariance by considering a change of 0.01 in GOFI.

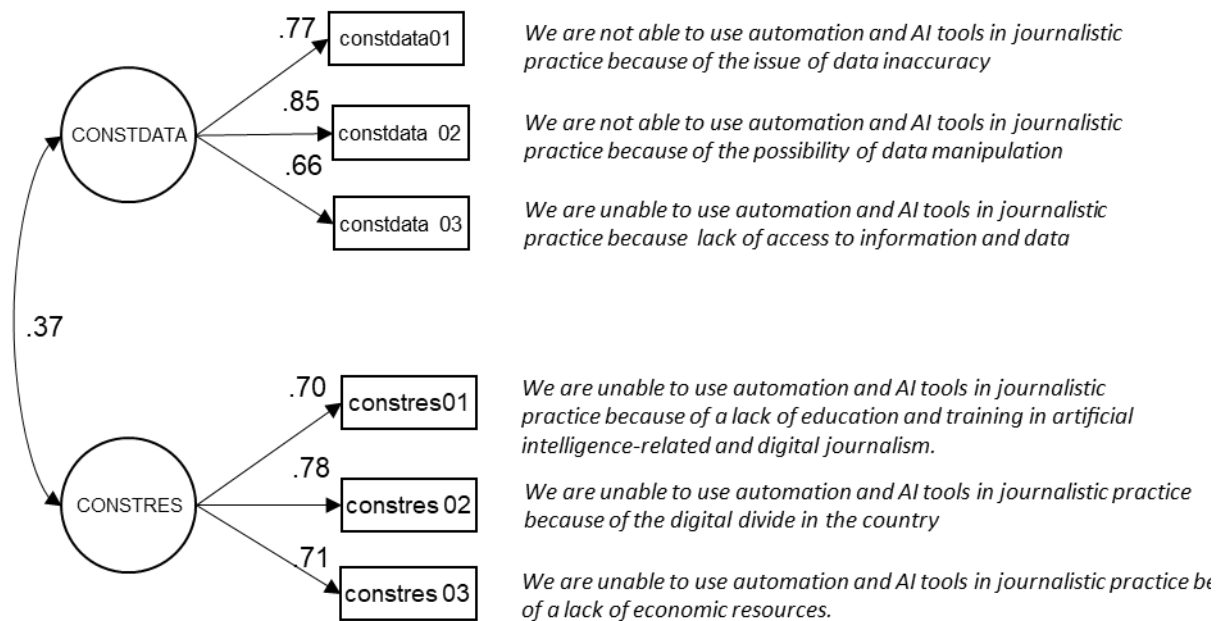
Perceived constraints for the application of AI to Journalism

To determine the dimensionality of PCAI, we considered parallel analysis and theory. We retained two factors explaining 53% of the variance. We deleted one item because of its low factor loading in both factors (“We are unable to use automation and AI tools in journalistic practice because of a lack of government policies and strategies to support the use of AI in journalism”).

We obtained adequate GOFI (see Figure 2, $X^2[df] = 32.103[8]$, $p < .001$, $CFI = .980$, $TLI = .963$, $RMSEA = 0.057 [0.039, 0.076]$) for the 2-factor model. These results are shown in Figure 2: One of the factors is related to the lack of resources for applying AI to journalism while the other is related to constraints imposed by untrustworthy data. The final items related to the lack of constraints imposed by untrustworthy data (DATA, 3) describe the journalists’ impossibility to use automation and AI tools in journalistic practice because of data inaccuracy, data manipulation. Also, because of their deficit of access to right information and data. The final items related to the lack of constraints scale (RESO, 3) are linked to the journalists’ inability to use automation and AI tools in journalistic practice because of deficiency of education and training on AI and digital journalism; the digital divide in the country, and the nonexistence of economic resources. See appendices.

Figure 2

Measurement Model for PCAI



Note. Standardized factor loadings.

To assess the measurement invariance, we fit a configural model ($\chi^2[df] = 92.55 [48]$, $CFI = .974$, $RMSEA = .08$) setting the same factor structure across groups. We then observed the metric invariance (constraining factor loadings across groups: $\Delta\chi^2 = 25.18$, $df = 20$, $p = 0.19$, $\Delta CFI = .003$, $\Delta RMSEA = .009$). Finally, we analyzed the scalar invariance ($\Delta\chi^2 = 53.94$, $df = 20$, $p < .001$, $\Delta CFI = .019$, $\Delta RMSEA = .01$) and found differences in the intercepts. We noticed that scalar invariance could not be assumed for the CFI when considering differences of 0.01 in GOFI. If the intercepts of item cons03 and item cons07 are unrestricted, the chi square difference became ($\Delta\chi^2 = 13.71$, $df = 10$, $p = .19$), so we could assume partial scalar invariance.

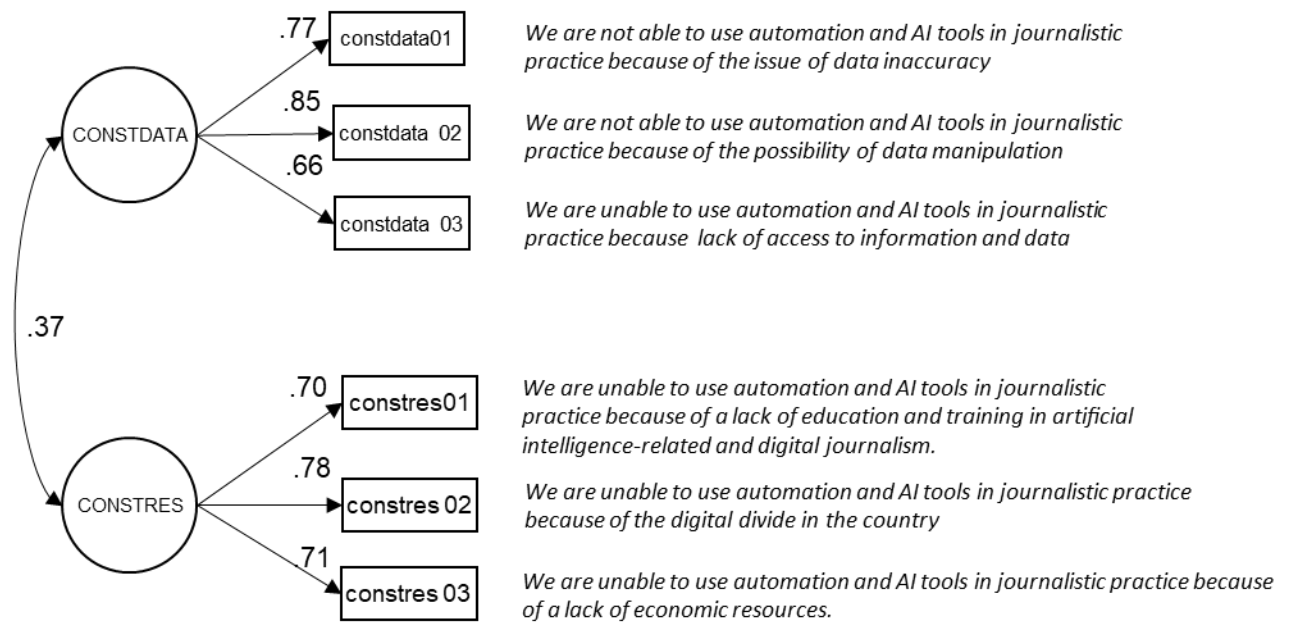
Knowledge on the current State of the Art of AI related to Journalism

The EFA of the 14 items suggested two factors related to knowledge on the current state of the art of AI applied to Journalism. The first (1 to 7) corresponded to items related to the uses of AI in journalism in general. The second (11 to 13) related specifically to AI uses for news making. We excluded some items because of low factor loadings. A three-factor solution was not interpretable. We therefore considered those two factors. The results of the

CFA confirmed the proposed structure (see Figure 3; $X^2[df] = 92.55$ [48], CFI = .97, RMSEA = .08). Regarding measurement invariance, we fit a configural model ($X^2[df] = 411.9$ [204], CFI = .92, RMSEA = .08). We then assessed the metric invariance using ($\Delta X^2 = 36.91$, $df = 40$, $p = 0.61$, $\Delta CFI = .001$, $\Delta RMSEA = .007$). Finally, we tested scalar invariance ($\Delta X^2 = 137.13$, $df = 40$, $p < .001$, $\Delta CFI = .04$, $\Delta RMSEA = .009$). We also found differences in the intercepts by observing the difference of CFI/RMSEA. The final items defining the state of the art of AI tools for journalism scale (TOOL, 6) are related to knowing the extent to which AI can be used: to find new topics which are typically hidden from the human eye; to identify trends in data by time, periods, geography or demographics; to assess the credibility of news and data; to personalize news or contents; to the fast analysis and summary of data, and to moderate audiences' comments to news. The final items forming the state of the art of AI as generators of news (GENE, 4) are linked to the capacity of AI: to predict virality of news; to report news in real time; to produce large quantity of news, and to create news without human intervention. See appendices.

Figure 3

Measurement Model for KAI



Internal consistency reliability

Table 3 displays the descriptive statistics and internal consistency reliability coefficients for the variables. All omega coefficient values were greater than 0.70 and consequently adequate. Considering that the scale ranges from 1 to 5, the results show that, in general, LA journalists perceive AI as an opportunity rather than a threat. They are also more concerned about the lack of resources than the trustworthiness of data. Finally, they manifest greater knowledge of state of the art of the general current uses of AI in Journalism than on the current uses of AI for specific news production.

Table 3

Construct	M	SD	Mdn	Sk	k	α	ω
<i>AI as an opportunity</i>	3.61	0.95	3.67	-0.44	-0.27	.728	.744
<i>AI as a threat</i>	2.93	1.07	3.00	0.07	-0.76	.811	.810
<i>Untrustworthy data as a concern</i>	2.91	0.99	3.00	0.09	-0.35	.801	.806
<i>Lack of resources as a concern</i>	3.82	0.95	4.00	-0.75	0.18	.773	.775
<i>Current uses of AI in Journalism</i>	3.97	0.72	4.00	-0.70	0.56	.782	.786
<i>Current uses of AI for news production</i>	2.98	0.90	3.00	-0.04	-0.37	.719	.733

Note. α = Cronbach's alpha internal consistency coefficient; ω = omega internal consistency coefficient

Comparisons between countries

Table 4 shows the results for multiple ANOVAs. We found three different models for each dependent variable (each sum score): one considering country as an independent variable; another considering gender as an interaction; another with specialization as an interaction and finally considering current work as an interaction.

Table 4

ANOVA Models for the Six Sum Scores

Model/variables	Opportunity			Threat		Data		Resources		Uses		Generation	
	df	F	p	F	p	F	p	F	p	F	p	F	p
Country													
Country	5,928	11.5	<.001	16.25	<.001	6.27	<.001	13.92	<.001	7.86	<.001	7.87	<.001
Country and Gender													
Country	5,922	11.6	<.001	16.34	<.001	6.23	<.001	13.92	<.001	7.87	<.001	7.86	<.001
Gender	1,922	0.16	.69	0.57	.45	0.01	0.89	0.79	.37	1.91	.17	0.04	.84
Country*Gender	5,922	2.98	.01	2.12	.06	0.34	0.88	2.90	.01	1.08	.37	0.76	.58
Country and Specialization													
Country	5,910	11.48	<.001	16,31	<.001	6.22	6.22	13.9	<.001	7.92	<.001	7.87	<.001
Specialization	3,910	1.33	.26	0,406	.75	0.79	0.79	0.02	1.00	3.12	.02	3.67	.01
Country*Specialization	15,910	0.61	0.866	1,32	.18	0.55	0.55	0.81	.67	1.06	0.39	0.45	.96
Country and Current work													
Country	5, 922	11.48	<.001	16,33	<.001	6.25	<.001	16.59	<.001	7.86	<.001	7.89	<.001
Current work	1,922	0.25	.61	4,43	0,04	0.01	.93	0.01	.98	0.19	.66	4.47	.03
Country*Current work	5, 922	0.87	.50	1,17	0,32	0.72	.61	0.63	.72	1.12	0.35	0.55	.63

AI as an opportunity

The Opportunity column shows the results for the four models. Once an ANOVA by country had been fitted, we found significant differences between countries ($F_{5,928} = 11.5$, $p < .001$). We also found an effect of the interaction between country and gender ($F_{5,922} = 2.98$, $p = .01$). Figure 4 shows these results, including the mean and error bars for opportunity by country and sex. Bonferroni's test revealed that Cuban journalists perceive AI as an

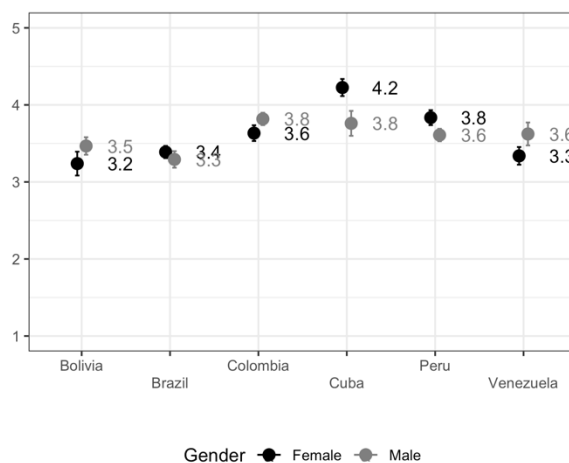
opportunity to a significantly greater extent than Bolivian ($p < .001$), Colombian ($p = .01$), Peruvian ($p = .003$) and Venezuelan ($p < .001$) journalists.

On the other hand, Brazilian journalists perceived AI as an opportunity to a lesser extent than Colombian ($p < .001$) and Peruvian journalists ($p = .001$).

While assessing the effects of the interaction and fixing by country, we obtained differences between females and males in Cuba ($t = 2.4$, $df = 922$, $p = .04$): Cuban females scored higher for considering AI as an opportunity than Cuban males.

Figure 4

Mean and Error bars for AI as an Opportunity by Country and Sex



As shown in Table 3, we also explored the effect of media specialization and if participants were currently working as journalists. No statistically significant effects were found.

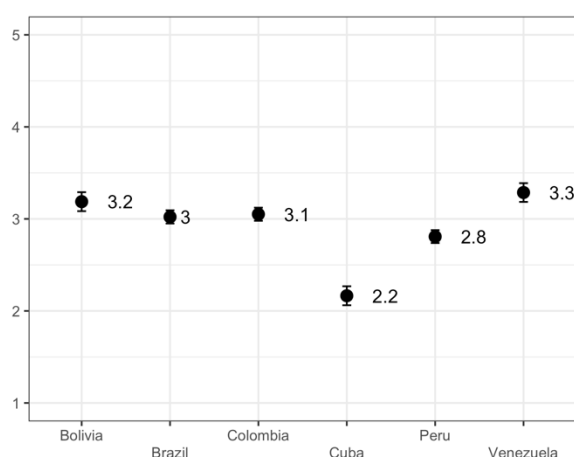
AI as a threat

Regarding AI as a threat (see Threat column in Table 3), we also found significant differences between countries (See Figure 5). As Bonferroni's post-hoc tests showed, Cuban journalists view AI as a threat to a lesser extent than Bolivians ($p < .001$), Brazilians ($p < .001$), Colombians ($p < .001$), and Peruvians ($p < .001$).

Meanwhile, Venezuelan ($p < .001$) journalists consider AI a threat to a greater extent than Brazilians ($p < .001$), Cubans ($p < .001$) and Peruvians ($p = .006$).

Figure 5

Mean and Error bars for AI as a Threat by Country



When assessing the impact of gender, we did not find significant differences (and did not as an interaction with the country either). Similarly, we did not find differences for specialization. Finally, we found differences if journalists were currently working as such or not ($F_{(5,923)} = 4.41$, $p = .04$) but not for the interaction between country and current work ($F_{(5,923)} = 1.17$, $p = .32$). The analysis of such differences ($F_{1,933} = 10.65$, $p < .001$) revealed that people working as journalists at the moment of the survey perceive AI as a threat to a lesser extent ($M = 2.86$, $IC = 2.78 - 2.94$) than those who were not ($M = 3.12$, $IC = 2.99 - 3.25$).

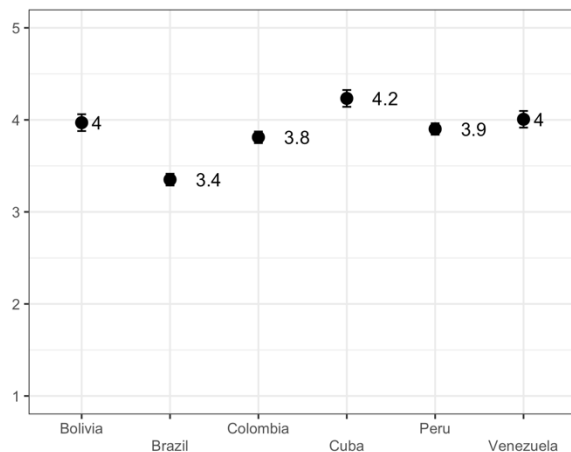
Untrustworthy data as a concern

For untrustworthy data as a concern (see data column in Table 4), we only found differences by country ($F_{(5,929)} = 6.21$, $p < .001$), as shown in Figure 6. Post-hoc tests showed that Bolivian journalists are concerned about untrustworthy data to a greater extent than

Brazilians ($p = .04$) and Cubans ($p = .01$).

Figure 6

Mean and Error bars for Untrustworthy Data as a Concern by Country



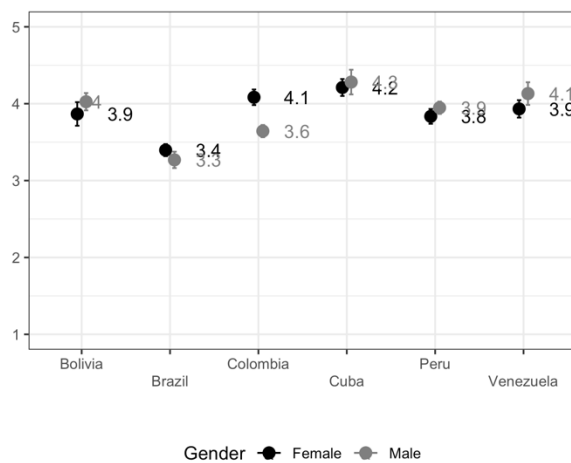
Lack of resources as a concern

Table 4 shows the models for assessing differences in concerns about lack of resources. We found differences between countries, also when considering the interaction with gender. Figure 7 shows the results. When executing post-hoc tests by country, we found that Brazilian journalists were concerned about the lack of resources to a lesser extent than journalists from the other countries ($p < .001$ in all contrasts). Moreover, Cuban journalists are less concerned about the issue than Colombians ($p = .002$) and Peruvians ($p = .002$).

Regarding gender, we only observed differences in Colombia ($d = 0.44$, $SE = 0.13$, $t = 3.4$, $df = 922$, $p = .002$), where female journalists were more concerned about resources than males.

Figure 7

Mean and Error bars for Lack of Resources as a Concern by Country and Gender

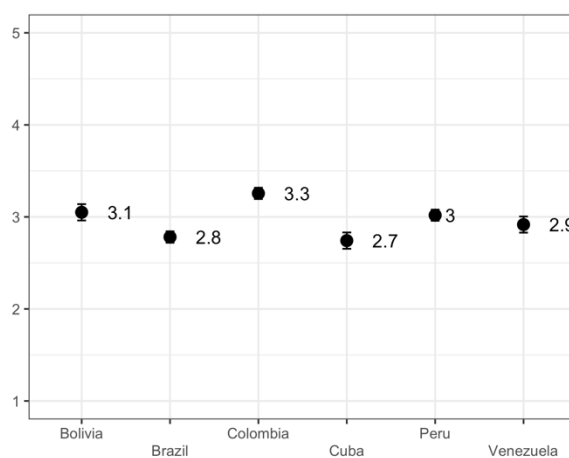


Knowledge of the state of the art of current uses of AI in Journalism

For knowledge of the current general uses of AI in journalism, we found differences between countries. Brazilian journalists showed less knowledge than Colombians ($p < .001$) and Peruvians ($p < .001$). Moreover, Cubans have greater knowledge than Bolivians ($p = .006$) and Venezuelans ($p < .001$), and Colombians than Venezuelans ($p = .003$).

Figure 8

Mean and Error bars for Knowledge of the State of the Art of Current Uses of AI in Journalism by Country



We found differences when assessing the effects by gender. Having adjusted the model for specialization ($F_{3, 930} = 2.95, p = .03$), we observed differences ($\text{dif} = 0.1177, \text{SE} = 0.05, T = 2.93, \text{df} = 930, p = .01$) between those who worked for Internet based newspapers ($M = 4.09, CI = 4.0-4.19$) and those who worked for the traditional press ($M = 2.93, IC = 3.85-3.99$). Internet journalists claimed to have greater knowledge of the state of the art of current uses of AI in journalism than those working for traditional news outlets.

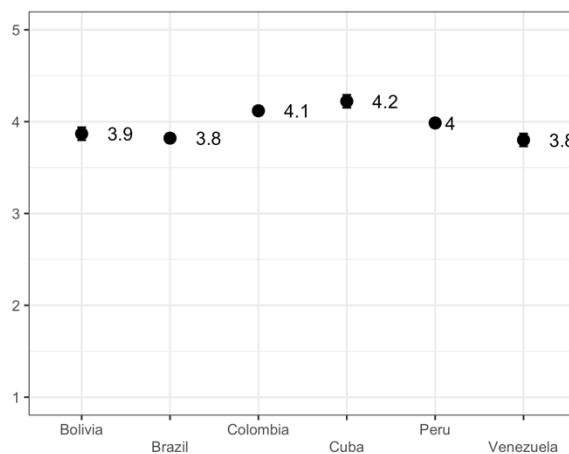
Knowledge of the state of the art of current uses of AI for news production

Finally, we found differences in knowledge of the state of the art of current uses of AI for news production depending on the country, specifically between Brazilians and Colombians ($p < .001$). Colombians claimed to have greater knowledge than Brazilians did. There were also differences between Colombians and Cubans ($p < .001$), whereby the latter claimed to have greater knowledge than the former. Moreover, Colombians claimed to have greater knowledge of the matter than Venezuelans ($p = 0.046$).

We also observed differences for specialization, although not for the interaction. We particularly found differences ($F_{3, 930} = 3.33, p = .02$) between Internet and press ($\text{dif} = 0.20, t = 2.69, p = .04$) and between Internet and TV ($\text{dif} = 0.24, t = 2.65, p = .04$). Journalists working for Internet based media claimed to have greater knowledge of the matter than those working for the traditional press and TV.

Figure 9

Mean and Error Bars for Knowledge of the State of the Art of Current Uses of AI for News Production by Country



We also obtained differences for current work, but not for the interaction between this variable and country. Having adjusted the model to leave out country and interaction ($F_{1, 932} = 6.40, p = .01$), we found a difference of 0.168 between both ($SE = 0.0662$). Journalists who were not currently working claimed to have greater knowledge of the state of the art of the current uses of AI for news production ($M = 3.10, CI95\% = 2.99-3.22$) than journalists who were ($M = 2.94, CI95\% = 2.87-3$).

Discussion

This research contributes to journalism studies in various aspects. First, it furthers our knowledge of the application of AI to journalism, which is a topic of growing and recent interest (Parratt-Fernández et al., 2021).

Second, it responds to researchers' demands regarding the need to observe the application of AI to journalism in GS countries (Jamil, 2021) in order to improve our understanding of journalism practices beyond actors in the dominant north (Goyanes et al., 2021).

Third, it focuses on LA journalism, which is typically absent from the mainstream scholarship (Borges-Rey, 2019) that is required for academic discussion (Borges-Rey, 2019; Salaverría & de Lima-Santos, 2021).

Fourth, it adopts a cross-cultural perspective, following an increasing tendency in journalism research (Oller, et al., 2019) while accepting that national cultures might differ in their adoption of technology (Eitle & Buxmann, 2020). Indeed, it compares professional aspects of journalists from six LA countries that are infrequently addressed by the literature. Moreover, in doing so, the research also contributes to understanding the models for technology adoption from a cross-cultural perspective (Zhou, 2008).

Fifth, it is in tune with the quantitative turn in journalism (Coddington, 2015) and helps to fill in the gap regarding the scarcity of objective measures in journalistic studies (Carlson, 2018). It provides psychometrically sound scales in Spanish and Portuguese for measuring journalists' attitudes (see appendices). In this regard, this study specifically takes a quantitative approach to analyzing journalists' attitudes, which until now has been at best sporadic (Túñez-López et al., 2019) or otherwise almost inexistent because such phenomena are typically only researched qualitatively (Parratt-Fernández et al., 2021). The tools that have arisen from this study are an efficient, economic, and methodologically sound way to dimension attitudes in the two languages of this study. They can be applied to other cultural contexts to guarantee conceptual and theoretical equivalence and uniformity.

Sixth, this research contributes to technology adoption theories by informing on aspects related to the specific professional culture and practice of journalism.

Lastly, but most importantly, it furthers our understanding journalists' attitudes towards AI, which is a necessity (Kim & Kim, 2018; Túñez-López et al., 2019), particularly in GS countries (Jamil, 2020). Such attitudes impact job performance (Kim & Kim, 2018), media strategies (Túñez-López et al., 2018) and the adoption of innovation in news organizations (Kim & Kim, 2018).

The results of this research are coherent with previous studies in the GN that have identified both optimistic and pessimistic views about the application of AI to journalism

(Kim & Kim, 2018; Túñez-López et al., 2019; Wölker & Powell, 2021). The two-factor model characterizing the attitudes of LA journalists towards AI coincide with Kim & Kim (2018)'s so-called journalist types 2 and 3. Viewing AI as a threat is similar to perceiving robots as potential rivals that could produce a decline in the status of journalists in society (i.e., type 2). On the contrary, conceiving AI as an opportunity is similar to type 3 journalists in that they see the benefits of its adoption, despite recognizing its limitations. In this research, a limitation would be viewing AI as a mere intermediary in the process, which is in tune with Túñez-López et al. (2019) for the GN.

On the other hand, this research has found that, generally speaking, LA journalists perceive AI as an opportunity rather than as a threat. These results differ from Jamil's (2020), which were also obtained in a GS context. The Pakistani journalists in her sample mostly perceived AI as a threat whereas LAs were generally optimistic about it. Consequently, not all GS contexts show same attitudes towards AI. Both samples, however, considered the role of AI as a communicator to be threatening, while agreeing that AI should serve an intermediary role.

These results might be interpreted in two ways. First, they are aligned with Kim & Kim's (2018) assumption on the potential effect of the sociocultural context of the news media on attitudes towards AI. Moreover, they provide nuances on the impact of specific cultural contexts on human-machine communication processes (HMC; Lewis et al., 2019). However, more cross-cultural research is needed to draw firmer conclusions. There is a particular need for compared research on the journalism in South Asia and South America. Although both regions are typically described as part of the GS, they might differ in many variables as our results suggest. For instance, the South American nations in this research share a similar cultural heritage that largely differs from the Pakistani one (i.e., mostly Muslims, British colonizers...). Those cultural peculiarities might impact journalists'

relationships with technology and news organizations and affect specific attitudes towards them too.

These results quantitatively confirm Jamil's (2020) qualitative observations on the perceived constraints of the application of AI in GS contexts. However, they add further weight to their relevance. Our results particularly show that, for LA journalists, the lack of resources is a greater concern than the trustworthiness of data. This is reasonable since access to resources is a prior for evaluating the quality of data. Nevertheless, that might also be interpreted as an impact of the historical delay in access to information technologies and the digital divide in the region (Álvarez & Osorio, 2018; Borges-Rey, 2019; Collazos et al., 2018; Rodriguez-Hidalgo et al., 2020). Further research should elaborate on these interpretations too.

Moreover, these results add to literature on innovation technology adoption, particularly to TAM. They mostly account for the social and contextual aspects that explain attitudes towards technology in newsrooms. Within a GN context, status (Dirks et al., 1996; Hedge & Pulakos, 2002) and functional concerns (Rangarajan et al., 2005) are used to describe employees' acceptance of technological innovations. However, in GS journalism, the equation might be more complex and include other aspects such as the lack of resources. Regarding this, two different aspects would define such lack of resources: One related specifically to journalism technologies for detecting and controlling data inaccuracy, manipulation and right information. Another related to social aspects of technology: digital divide, insufficient economic resources and illiteracy (education and training) in AI. Consequently, new research associated to TAM should explore contextual and social factors as moderators and mediators of the attitudes of journalists towards AI technology acceptance and use. This would be in line of criticisms about TAM ignoring social influence and its necessity to add external variables to its predicting models (Taherdoost, 2018). On the other

side, since truthfulness of data, on the contrary, might be a shared concern by GS and GN journalist, further comparative research on the differences in innovation adoption in GS and GN newsrooms might shed more light on these aspects too. Indeed, TAM models for journalists' adoption of technology, particularly of AI, should be re-thought for GS contexts. The cross-cultural analysis executed by this research which allowed to identify differences in some of the examined variables depending on the examined country responds to a necessity of TAM studies (Zhou, 2008). Further investigations must deepen on identifying the reasons for such spotted differences in relation to specific social and cultural characteristics.

Another contribution is the proposal and validation of a scale for measuring knowledge on the state of the art of AI applied to journalism. This scale could be examined in diverse cultural settings to elaborate on the degree of agreement between journalists in different parts of the world, particularly in the GN or adopting a North-South comparative perspective. It is possible that, as recently observed by Túñez-López et al. (2019), journalists have similar degrees of knowledge in one or both observed dimensions no matter their origin. Factors such as age or media type might also produce differences in knowledge. However, researchers using this scale might also consider the effect of social desirability in the responses and apply other complementary measures to control for it. In this research, for instance, journalists who are not currently working for a specific media company scored higher for the items in the scale, which could be due to such bias.

This research also found differences between the responses of journalists in the examined LA countries to the analyzed aspects. To different degrees, they differ in the way they relate to the application of AI to journalism. Providing a satisfactory reason for such differences exceeds the scope of the present study, which merely intended to identify and measure them. However, some of the results are thought-provoking if we accept that cultural variables affect technology adoption (Eitle & Buxmann, 2020; Shin et al., 2022).

For instance, one of the most intriguing results is that Cuban journalists perceive AI as an opportunity to a significantly greater extent than journalists in Bolivia, Colombia, Peru and Venezuela. Coherently, they also view AI as a threat to a significantly lesser extent than most of those countries. Cuban journalists therefore have more positive expectations towards the application of AI in the newsroom than their LA colleagues. Following TAM (Feng et al., 2021), this would imply that they have greater intentions of use, perceived ease and use of the technology than their peers in other LAN countries. Paradoxically, Cuba was one of the last countries to provide online access to its citizens (Priluck, 2016), who are largely deprived of data plans and broadband services due to pricing policy and low income (Nelson, 2016). On the other hand, Cubans are described as extremely ingenious in overcoming shortages of hardware, software, or access to information and are considered remarkably well-informed about the outside world (Nelson, 2016). Indeed, the Cuban journalists' creative attitudes are similar to those described recently by Peko et al. (2019) for news editors from post-soviet Asian Central countries who engage in creative solutions for embracing new technologies, overcoming technical issues, improving transparency and achieving press freedom. All these reasons might also explain such positive attitudes among Cuban journalists to the application of AI to journalism, although further research is needed to increase our understanding of this. The results also confirm that the emotional dimension of attitudes requires more in-depth observation in research linked to TAM and AI adoption, as stated before. The fact that female Cuban journalists have a more positive attitude to AI in the newsroom also raises the need to include a gender perspective.

Another interesting result is that Venezuelan journalists consider AI to be a threat to a greater extent than their Brazilian, Cuban, and Peruvian colleagues. A potential explanation is the constant danger, fear and threat that Venezuelan journalists experience. In recent years, Venezuela has suffered from extreme changes, ruptures and displacement that have interfered

with the democratic values of the press. Consequently, being a professional journalist in Venezuela entails perils and fear. Indeed, it is the LA country with the largest number of imprisoned journalists and extreme media censorship by the government (Pain & Korin, 2020). Since 2003, due to government censorship, Venezuelan journalists have become overly suspicious and cautious in their work (Korin, 2021; Pain & Korin, 2020). As such a conflictive environment has augmented the experience of negative emotions among journalists (García & Salojärvi, 2020), it is plausible that this has influenced their attitudes to other spheres of journalistic practice, including stability concerns related to the adoption of technology. Of course, further work must test this assumption. However, all this suggests that TAM based studies must definitively not only include external factors as predictors of technology adoption but individual psychological variables, particularly emotions, to its explaining models. Journalists' affective reactions to the social and cultural factors determining technology adoption matter.

Another interesting finding is that Cuban and Colombian journalists have greater knowledge of the current uses of AI in journalism and news production than their colleagues in some of the other countries examined. Cubans' positive expectations regarding the introduction of advanced technologies to journalistic production together with a social desirability bias might explain their responses. Such expectations might also have stimulated them to be better informed about current innovations in the field. As stated, Cubans are very well-informed and trained people (Nelson, 2016). There is no entirely satisfactory explanation for the Colombian case either. However, recent discussions in the Colombian media about the introduction of AI systems to the public sector, its regulation (Garzón, 2020) and the approval of a national strategy for the digital transformation and use of AI (Gómez et al., 2020) might have stimulated the interest of Colombian journalists in the development of

AI. This is in line of the necessity of TAM to identify and categorize the social factors influencing AI adoption in GS contexts.

This research intends to inspire further confirmations and discussions, and attract the interest of international scholars to the study of journalistic practices in the GS. As well as challenging existing paradigms, a cross-cultural perspective could help to generate a more solid body of knowledge about the particularities and similarities of the different journalistic practices in the different regions and countries of the world. Comparative research on South America and South Asia is especially necessary and opportune (Kim, 2017) particularly to applying a mixed-method approach. Moreover, the identification of the specific social, cultural and individual variables in explaining technology adoption within journalism practices all over the world is also essential.

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Appendix1. Item Content in English, Spanish and Portuguese and Descriptive Statistics for the developed Scales

	Scales	M	SD	Range	Skew	kurtosis
Attitudes towards the application of AI to Journalism (AAI)						
	<i>AI as a threat (THRE)</i>					
thre(1)	<p>The use of Artificial Intelligence and automation in the newsrooms is a threat to journalists' jobs</p> <p>El uso de la inteligencia artificial y la automatización en las redacciones son una amenaza para el trabajo de los periodistas.</p> <p><i>O uso da inteligência artificial e a automação nas redações são uma ameaça para o trabalho dos jornalistas.</i></p>	2.80	1.21	1-5	0.17	-0.76
thre(2)	<p>The use of AI and automation in journalism is a threat to interactive public dialogue.</p> <p>El uso de la inteligencia artificial y la automatización en el periodismo son una amenaza para la interacción durante el diálogo público.</p> <p><i>O uso da inteligência artificial e a automação em jornalismo são uma ameaça para a interação durante o diálogo público.</i></p>	3.20	1.31	1-5	-0.15	1.08
thre(3)	<p>Journalists' engagement with the public will be reduced if AI software and automation are used in newsrooms.</p> <p>El compromiso de los periodistas con el público será menor por el uso de la inteligencia artificial y la automatización en las redacciones.</p> <p><i>O compromisso dos jornalistas com o público será menor pelo uso da inteligência artificial e a automação nas redações.</i></p>	2.57	1.45	1-5	0.38	1.26
thre(4)	<p>AI software and automation in journalism will affect journalists' role as communicators.</p> <p>La inteligencia artificial y la automatización en el periodismo</p>	3.18	1.38	1-5	-0.17	1.12

	afectarán al papel de los periodistas como comunicadores. <i>A inteligência artificial e a automação no jornalismo afetarão o papel dos jornalistas como comunicadores e comunicadoras.</i>					
	<i>AI as an opportunity (OPPO)</i>					
oppo(1)	Artificial Intelligence machines and software can be used as intermediaries in the communication process. Las máquinas y programas de inteligencia artificial pueden ser utilizados como intermediarios en los procesos de comunicación. <i>As máquinas e os programas de inteligência artificial podem ser usados como intermediários nos processos de comunicação.</i>	3.46	1.19	1-5	-0.39	0.69
oppo(2)	Journalistic practice will innovate and be positively transformed by the use of AI software and automation in newsrooms. Las prácticas periodísticas serán positivamente transformadas e innovadas gracias al uso de la inteligencia artificial y la automatización en las redacciones. <i>As práticas jornalísticas serão positivamente transformadas e inovadas graças à utilização da inteligência artificial e da automação nas redações.</i>	3.46	1.19	1-5	-0.39	0.69
oppo(3)	AI software and automation in journalism will create new opportunities for journalists looking to pursue innovative forms of journalism. La inteligencia artificial y la automatización crearán oportunidades para los periodistas que persiguen hallar formas novedosas de hacer periodismo. <i>A inteligência artificial e a automação irão criar oportunidades para os jornalistas</i>	3.82	1.14	1-5	-0.79	0.12

	<i>que procuram novas maneiras de fazer jornalismo.</i>					
Perceived constraints for the application of AI to Journalism (PCAI)						
	<i>Constraints imposed by untrustworthy data (DATA)</i>					
data(1)	<p>We are not able to use automation and AI tools in journalistic practice because of the issue of data inaccuracy.</p> <p>No podemos usar las herramientas de automatización e inteligencia artificial en la práctica periodística debido a la inexactitud de los datos que ofrecen.</p> <p><i>Não podemos utilizar ferramentas de automação e de inteligência artificial na prática jornalística devido à imprecisão dos dados que oferecem.</i></p>	2.71	1.14	1-5	0.30	0.55
data(2)	<p>We are not able to use automation and AI tools in journalistic practice because of the possibility of data manipulation.</p> <p>No podemos usar las herramientas de automatización e inteligencia artificial en la práctica periodística debido a la posibilidad de que los datos estén manipulados.</p> <p><i>Não podemos usar ferramentas de automação e de inteligência artificial na prática jornalística, devido à possibilidade de que os dados estejam manipulados.</i></p>	3.03	1.16	1-5	0.05	-0.72
data(3)	<p>We are unable to use automation and AI tools in journalistic practice because we have a lack of access to information and data.</p> <p>No podemos usar las herramientas de automatización e inteligencia artificial en la práctica periodística debido a la falta de acceso a los datos y a la información.</p> <p><i>Não podemos usar ferramentas de automação e de inteligência artificial na prática jornalística por falta de acesso aos dados e às informações.</i></p>	3.00	1.21	1-5	-0.01	0.87

	<i>Lack of resources as a constraint (RESOURCES)</i>					
reso(1)	<p>We are unable to use automation and AI tools in journalistic practice because of a lack of education and training in artificial intelligence-related and digital journalism.</p> <p>No podemos usar las herramientas de automatización e inteligencia artificial en la práctica periodística debido a la falta de formación y entrenamiento en inteligencia artificial y periodismo digital.</p> <p><i>Não podemos usar ferramentas de automação e de inteligência artificial na prática jornalística devido à falta de formação e de treinamento em inteligência artificial e jornalismo digital.</i></p>	3.85	1.12	1-5	0.89	0.16
reso(2)	<p>We are unable to use automation and AI tools in journalistic practice because of the digital divide in the country.</p> <p>No podemos usar las herramientas de automatización e inteligencia artificial en la práctica periodística debido a la brecha digital del país.</p> <p><i>Não podemos usar ferramentas de automação e de inteligência artificial na prática jornalística devido à exclusão digital que existe no país.</i></p>	3.88	1.17	1-5	-0.83	-0.23
reso(3)	<p>We are unable to use automation and AI tools in journalistic practice because of a lack of economic resources.</p> <p>No podemos usar las herramientas de automatización e inteligencia artificial en la práctica periodística debido a la falta de recursos económicos.</p> <p><i>Não podemos usar ferramentas de automação e de inteligência artificial na prática jornalística por falta de recursos financeiros.</i></p>	3.72	1.14	1-5	-0.64	-0.35
Knowledge on the current state of the art of AI related to Journalism (KAI)						
	<i>Knowledge about applications of AI to journalism in general (TOOLS)</i>					

tool(1)	<p>Artificial intelligence tools can be used to find new topics to report which are typically hidden from human eye.</p> <p>Las herramientas de inteligencia artificial pueden ser utilizadas para encontrar temas nuevos a los que atender y que se esconden al ojo humano.</p> <p><i>As ferramentas de inteligência artificial podem ser utilizadas para encontrar temas novos aos que atender e que se escondem ao olho humano.</i></p>	4.10	1.05	1-5	-1.12	0.68
tool(2)	<p>Artificial intelligence can effectively identify trends in data by time periods, geography, or demographics at the moment.</p> <p>La inteligencia artificial puede efectivamente identificar al momento las tendencias de los datos según períodos de tiempo, geografía o demografía.</p> <p><i>A inteligência artificial pode, efetivamente, identificar, no momento, as tendências dos dados de acordo com períodos de tempo, geografia ou demografia.</i></p>	4.32	0.84	1-5	-1.18	1.22
tool(3)	<p>Artificial intelligence can be used to assess the credibility of news and data</p> <p>La inteligencia artificial puede ser usada para determinar la credibilidad de los datos y las informaciones.</p> <p><i>A inteligência artificial pode ser usada para determinar a credibilidade de dados e de informações.</i></p>	3.62	1.13	1-5	-0.57	-0.35
tool(4)	<p>Artificial intelligence tools can be used to personalize news and content.</p> <p>Las herramientas de inteligencia artificial pueden ser usadas para personalizar las noticias y los contenidos.</p>	3.77	1.20	1-5	-0.74	0.37

	<i>As ferramentas de inteligência artificial podem ser usadas para personalizar notícias e conteúdos.</i>					
tool(5)	<p>A high volume of data can be effectively analyzed and summarized in a matter of minutes or seconds by artificial intelligence tools alone.</p> <p>Las herramientas de inteligencia artificial pueden analizar y resumir eficazmente en cuestión de minutos o segundos un gran volumen de datos.</p> <p><i>As ferramentas de inteligência artificial podem, eficazmente, analisar e sintetizar, em uma questão de minutos ou segundos, um grande volume de dados.</i></p>	4.33	0.89	1-5	-1.45	2.11
tool(6)	<p>Artificial intelligence tools are already able to moderate audiences' comments to news pieces.</p> <p>Las herramientas de inteligencia artificial ya pueden ser usadas para moderar los comentarios de las audiencias a las noticias.</p> <p><i>As ferramentas de inteligência artificial já podem ser usadas para moderar os comentários da audiência sobre as notícias.</i></p>	3.67	1.13	1-5	-0.62	0.39
	<i>Knowledge about applications of AI to newsmaking (GENERATION)</i>					
gene(1)	<p>The virality of news can be already predicted by artificial intelligence.</p> <p>La viralidad de las noticias puede ser enteramente predicha por la inteligencia artificial hoy día.</p> <p><i>A viralidade das notícias pode ser inteiramente prevista pela inteligência artificial hoje.</i></p>	3.09	1.27	1-5	-0.12	0.96
gene(2)	<p>Artificial intelligence can report news in real time.</p> <p>La inteligencia artificial puede ya reportar noticias en tiempo real.</p> <p><i>A inteligência artificial agora pode relatar notícias em tempo real.</i></p>	3.35	1.26	1-5	-0.35	0.83

gene(3)	<p>A greater quantity of news can be produced by artificial intelligence.</p> <p>La inteligencia artificial puede producir una gran cantidad de noticias.</p> <p><i>A inteligência artificial pode produzir uma grande quantidade de notícias.</i></p>	3.68	1.24	1-5	-0.68	0.48
gene(4)	<p>Artificial intelligence's production of news no longer necessitates any human intervention or assistance.</p> <p>La producción de noticias por parte de la inteligencia artificial no necesita ya de la intervención o asistencia humana.</p> <p><i>A produção de notícias feita por inteligência artificial não requer mais a intervenção ou a assistência humana.</i></p>	1.80	1.15	1-5	1.34	0.78