

VOL. XI ISSUE I, WINTER (MARCH-2026)

GSSR

GLOBAL SOCIAL SCIENCES REVIEW
HEC-RECOGNIZED CATEGORY-Y

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GLOBAL SOCIAL SCIENCES REVIEW (GSSR)

DOI (Journal): 10.31703/gssr
DOI (Volume): 10.31703/gssr.2026(XI)
DOI (Issue): 10.31703/gssr.2026(XI-I)


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Double-blind Peer-review Research Journal
www.gssrjournal.com

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Keywords: State of Digital Literacy, Balochistan Journalists, Globalization, Localization, and Hybrid Media Systems

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Pages: 207-218

DOI: 10.31703/gssr.2026(XI-I).17

DOI link: [https://dx.doi.org/10.31703/gssr.2026\(XI-I\).17](https://dx.doi.org/10.31703/gssr.2026(XI-I).17)

Article link: <https://gssrjournal.com/article/state-of-digital-literacy-among-balochistan-journalists-in-the-perspective-of-globalization-localization-and-hybrid-media-systems>

Full-text Link: <https://gssrjournal.com/article/state-of-digital-literacy-among-balochistan-journalists-in-the-perspective-of-globalization-localization-and-hybrid-media-systems>

Pdf link: <https://www.gssrjournal.com/jadmin/Author/31rvIolA2.pdf>

Global Social Sciences Review

p-ISSN: [2520-0348](https://www.gssrjournal.com) **e-ISSN:** [2616-793x](https://www.gssrjournal.com)

DOI(journal): 10.31703/gssr

Volume: XI (2026)

DOI (volume): 10.31703/gssr.2026(XI)

Issue: I Winter (March-2026)

DOI(Issue): 10.31703/gssr.2026(XI-I)

Home Page

www.gssrjournal.com

Volume: XI (2026)

<https://www.gssrjournal.com/Current-issue>

Issue: I-Winter (March 2026)

<https://www.gssrjournal.com/issue/11/1/2026>

Scope

<https://www.gssrjournal.com/about-us/scope>

Submission

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Citing this Article

| | |
|-----------------------|---|
| Article Serial | 17 |
| Article Title | State of Digital Literacy among Balochistan Journalists in the Perspective of Globalization, Localization, and Hybrid Media Systems |
| Authors | Khayam Hassan Aqeel Ahmad Khalid Sultan |
| DOI | 10.31703/gssr.2026(XI-I).17 |
| Pages | 207–218 |
| Year | 2026 |
| Volume | XI |
| Issue | I |

Referencing & Citing Styles

| | |
|-----------------|---|
| APA | Hassan, K., Ahmad, A., & Sultan, K. (2026). State of Digital Literacy among Balochistan Journalists in the Perspective of Globalization, Localization, and Hybrid Media Systems. <i>Global Social Sciences Review</i> , 11(1), 207-218. https://doi.org/10.31703/gssr.2026(XI-I).17 |
| CHICAGO | Hassan, Khayam, Aqeel Ahmad, and Khalid Sultan. 2026. "State of Digital Literacy among Balochistan Journalists in the Perspective of Globalization, Localization, and Hybrid Media Systems." <i>Global Social Sciences Review</i> 11 (1):207-218. doi: 10.31703/gssr.2026(XI-I).17. |
| HARVARD | HASSAN, K., AHMAD, A. & SULTAN, K. 2026. State of Digital Literacy among Balochistan Journalists in the Perspective of Globalization, Localization, and Hybrid Media Systems. <i>Global Social Sciences Review</i> , 11, 207-218. |
| MHRA | Hassan, Khayam, Aqeel Ahmad, and Khalid Sultan. 2026. 'State of Digital Literacy among Balochistan Journalists in the Perspective of Globalization, Localization, and Hybrid Media Systems', <i>Global Social Sciences Review</i> , 11: 207-18. |
| MLA | Hassan, Khayam, Aqeel Ahmad, and Khalid Sultan. "State of Digital Literacy among Balochistan Journalists in the Perspective of Globalization, Localization, and Hybrid Media Systems." <i>Global Social Sciences Review</i> 11.1 (2026): 207-18. Print. |
| OXFORD | Hassan, Khayam, Ahmad, Aqeel, and Sultan, Khalid (2026), 'State of Digital Literacy among Balochistan Journalists in the Perspective of Globalization, Localization, and Hybrid Media Systems', <i>Global Social Sciences Review</i> , 11 (1), 207-18. |
| TURABIAN | Hassan, Khayam, Aqeel Ahmad, and Khalid Sultan. "State of Digital Literacy among Balochistan Journalists in the Perspective of Globalization, Localization, and Hybrid Media Systems." <i>Global Social Sciences Review</i> 11, no. 1 (2026): 207-18. https://dx.doi.org/10.31703/gssr.2026(XI-I).17 . |

State of Digital Literacy among Balochistan Journalists in the Perspective of Globalization, Localization, and Hybrid Media Systems



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Abstract

This research explores the state of digital literacy among Baluchistan-based journalists from the perspectives of globalization, localization and a hybrid media system, given the rapid changes across all walks of life. In this context, new technologies and technological determinism have also reshaped journalistic practices across all fields of work. A quantitative research methodology was applied to this study, and survey research methods were used for data collection. Data were collected from 100 Quetta Press Club journalists through random sampling. An online Google Form questionnaire was distributed via WhatsApp. Findings revealed a significant positive relationship between journalists' educational qualifications and digital literacy, with higher educational attainment associated with significantly greater digital literacy scores. It was also found that the concentration in this field indicates that people drawn to the disciplines of communications might be more digital, or that, in fact, these disciplines manage to develop digital competencies.

Keywords: *State of Digital Literacy, Balochistan Journalists, Globalization, Localization, and Hybrid Media Systems*

Introduction

The media environment in the 21st century is fundamentally different, moving from independent newsrooms and systems to highly connected digital networked newsrooms. This development is associated with rapid globalization, which is not only shifting the journalism tools, but also transforming the epistemological base of journalism production, distribution and consumption. Hence the concept of digital literacy has become more than a mere technical skill but a basic professional one that impacts on a journalist's capacity to find the truth among a noise of information, relate with readers and to sustain his or her economic activities. This research aims to analyze the current status of this crucial competency within the setting of Balochistan, Pakistan's largest, but most neglected province where unique geo-political, economic and cultural concerns make for a different media arena for journalists. This study seeks to understand how local journalists negotiate professional identity and practice in a conflict-prone, digitally discombobulated region using a theoretical framework that is closely connected to the theoretical traditions of globalization, localization, and hybrid media systems.

The Duality of Globalization and Localization



Globalization as a concept for journalists refers to the convergence of technologies, news values and journalism practices, allegedly originating in the Western media center(s) that fosters a supposedly “global village” (Reese, 2008). It means that journalists must embrace newsgathering using digital tools that are widely used around the world, such as those from social media companies, like X (formerly Twitter), and moving to data journalism methods for investigative reporting. This 'globalizing force', however, is not omnidirectional but constantly molded by 'localization' as a process in which 'global formats' are adapted and localized and also engender cultural nuances, languages and contexts. This dichotomy is especially stark in Balochistan province. Mass media outlets, such as what's app and YouTube are readily available, but their use, manipulation and verification is essentially entrenched with the Baloch and Pashtun cultural codes, structures of tribal communities and regional politics. The "networked" global journalist versus the 'embedded' local one is the basic problem at the heart of digital literacy in the region.

The Hybrid Media System in a Conflict Zone

It would be important to understand the context in which these journalists work as "hybrid media system" (Chadwick, 2017), rather than a straightforward digital versus traditional polarity. This embedding system brings into play smoother/tighter coupling of an older media logic (such as gatekeeping nature of major TV news bulletins and print newspaper authority) and a new one (such as the virality of social media, algorithmic curation, and disintermediation). This 'hybridity' assumes a nuanced, high-stakes nature in Balochistan, region with a protracted insurgency and a high level of state surveillance. The tweet about the hula dingy can escalate from a rumour in a private WhatsApp group to a verified message on a local TV channel very quickly and vice versa, a state press release can be taken apart, fact checked and amplified within seconds of its release on social media platforms. These journalists are not only learning how to use these new tools, they are learning to maneuver through a complex, sometimes precarious “info-scape” in which the old order of things hierarchy and the new order of digital network seem to be inextricably entangled.

208 of 218

Problem Statement

The geography of Balochistan is extremely important for the geo-political aspects, however it's disadvantaged that there has been little research and writing done about the media landscape here. With the swift and global spread of digital technologies, journalists have to practice a highly complex and challenging hybrid media literacy. But, according to accounts, there is a wide disparity between those needs and the actual capabilities of local news reporters. This lack of skills is linked with the lack of resources during localization and has far-reaching consequences. It comes in the form of poor information online as well as an increased risk to misinformation and digital security risks, and a more dangerous ability for state and/or non-state propaganda to be copied. While there is a potential for an informed public sphere through the effective localization of digital tools in its unique cultural and security context, there is a serious systemic issue to be addressed. It is therefore, an attempt of this study to systematically diagnose the state of digital literacy among journalist of Balochistan, and dissect this essentially out of the interplay of global influence and norms, local practices, and pressures imposed by a hybrid media system.

Objectives

- To evaluate the digital literacy level of Balochistan journalist's capability to produce content in all digital platforms.

- To examine the relationship between educational qualification level and digital literacy among journalists in Peshawar, Khyber Pakhtunkhwa.
- To assess whether digital literacy scores vary systematically across different academic fields of qualification among journalists.
- To investigate the extent to which professional experience influences digital literacy levels among journalists.

Research Questions

RQ1: How do educational qualification level and academic field of qualification relate to digital literacy among journalists, and which of these factors serves as a stronger predictor?

RQ2: To what degree does professional experience contribute to digital literacy among journalists compared to other demographic and educational factors?

Hypotheses

H1: Educational qualification level has a significant positive relationship with digital literacy among journalists, such that journalists with higher educational qualifications demonstrate higher digital literacy scores.

H2: The academic field of qualification is significantly associated with digital literacy, with digital literacy scores varying systematically across different academic disciplines.

H3: Professional experience has a significant but weak positive relationship with digital literacy among journalists.

Literature Review

The theoretical basis of the study is the convergence of concepts of digital literacy, globalization and localization of media, and hybrid media system; placed and contextualized within the journalistic literature in conflict areas particularly Pakistan.

The conversation about digital literacy and journalism is now much beyond software skills. New definitions focus on technical skills in managing the hardware and software, but current research posits it as a complex social skill. Journalists also need to possess a critical digital literacy, which involves comprehending, assessing and producing information in a constantly changing digital environment, and at its heart should be verification, says Mihailidis (2018). Further refined is the idea of networked journalism which sees the journalist as part of a complex information network instead of a messenger at its endpoint, and that asks for new skills in source management, community management and in dealing with data (Heinrich, 2011). In political and other hotspot areas the digital literacies of journalists go hand-in-hand with their digital and physical safety. Operational security (OpSec) and skills of communicating via encryption are repeatedly identified by the Committee to Protect Journalists (2024) as critical challenges facing journalists working in conflict zones, as they are often targeted by surveillance and hacking and at the mercy of physical threats. This critical, security aware, all-encompassing definition of digital literacy is used to define and analyze digital fluency in this research. This study will use a holistic, critical, and security-awareness definition of digital literacy as an evaluative lens.

Essential analytical layer is the pressures and struggles of globalization and localization in media. In the field of media globalization theory (GWT) forecast the convergence of media towards specific culture of work, i.e. journalistic culture, homogenous and converging in professional aspects such as organizing information with the inverted pyramid and maintaining journalistic norms of objectivity (Hafez, 2007). But it has been powerfully challenged with attention to carving out the

local or 'global' understandings of global products. In this context Roberto Robertson (1995) proposed the concept of "glocalization" which describes the processes of "universalization" and "particularization" that occur at the same time. The platform in question, Facebook, is a tool that is global but using this platform for nothing but political mobilization in a Baloch tribal context is very local (Akbar, 2020). Moreover, the tension between global influences and deep-rooted national and cultural context can be seen in the professional milieu in journalism studies: Hanitzsch et al. (2011) show in their *Worlds of Journalism Study* that professional milieus can resist external influences, in journalistic studies, while being tied to national and cultural contexts. Many studies conducted in the Global South have reported on how journalists "indigenize" global formats, which they combine with their local oral cultures and/or patronage-based information systems, thus producing, for example, a hybrid journalism in terms of its content and form (Mutsvairo & Rønning, 2020). I expand this line of thinking to Balochistan in the following study, where my argument is that digital literacy is the site of such negotiation between the global slide and the local performance.

The most powerful systems-level approach to this negotiation is provided by Andrew Chadwick's (2017) *The Hybrid Media System*. Chadwick's model is a step away from traditional stories of displacement and instead provides an environment in which the logic of how to tell stories through older, broadcast media and the logic of how to tell stories through newer, digital era media are mutually co-constitutive. Whereas legacy media is now used to shape and dominate the news agenda, which is frequently developed online, new media can now feed off, amplify and challenge mainstream media's content. Such a systemic play between parts is especially pronounced in non-western contexts. Al Jazeera's plans to broadcast its satellite channels and citizen-created social media content demonstrate one example of the Arab Spring: how a combination of media elements has developed a new 'media ecology' that neither channel nor content source could maintain on its own (Howard & Hussain, 2013). This hybridity is in Pakistan, weaponized. On X, the platforms that followed are lashing out, premiering narratives on PTV, and targeted by bot armies that help to produce the perfected consensus (Hussain, 2021). Literature on journalism in Pakistan suggests that an extremely fractured picture prevails across Balochistan regions wherein, with little institutional safety measures, journalists are compelled to reconcile with multiple information apparatuses of the state, communication strategies of the insurgents as well as the economic agendas of the commercial media landscape. This study theorises that digital literacy in Balochistan can not be studied in isolation, rather it is a strategic ability of imagining navigating through this very blending, surviving and manipulating the same.

Theoretical Foundation: Globalization, Localization, and Hybrid Media Systems

In order to understand local media practices, it is important to acknowledge that international trends influence these practices. Approaches of global best practices (such as data journalism, fact-checking networks etc.) shape Pakistani online journalism when operating within local constraints (diversity of language, power dynamics in the region, economic vulnerabilities etc). Pakistan's media system is a hybrid one, as not only does the broadcast legacy have to try to implement digital, but there is also an attempt from citizens to create grassroots initiatives in the media sphere. Digital literacy helps journalists to deal with this mixed media culture by incorporating transnational reporting principles (Shakir, 2022).

Research Methodology

This study employed a quantitative research methodology utilizing a survey research design for data collection. Data were randomly collected from 100 journalists based in Peshawar, Khyber Pakhtunkhwa. A structured questionnaire comprising three sections demographics, digital literacy,

and the impact on online journalism practices was used as the data collection instrument. The data were gathered through an online Google Form, which was distributed via the Peshawar Press Club WhatsApp group and other relevant groups to facilitate efficient data collection. This distribution method was recommended by the press club authorities for accessing and reaching the target respondents.

Results and Discussion

Table 1.

Qualification, Filed of academic qualification and Gender

| Gender | | Filed of academic qualification | | | |
|--------|---------------|---------------------------------|-------------------------|---------------------------|---|
| | | Journalism/mass communication | International Relations | Political Science/History | |
| Male | Qualification | Matriculation | 2 | 0 | 1 |
| | | Intermediate | 3 | 1 | 1 |
| | | Bachelors | 43 | 3 | 2 |
| | | Masters | 14 | 5 | 4 |
| | | MS/MPhil | 8 | 3 | 5 |
| | Total | 70 | 12 | 13 | |
| Female | Qualification | Masters | 1 | 1 | |
| | Total | 1 | 1 | | |
| Total | Qualification | Matriculation | 2 | 0 | 1 |
| | | Intermediate | 3 | 1 | 1 |
| | | Bachelors | 43 | 3 | 2 |
| | | Masters | 15 | 6 | 4 |
| | | MS/MPhil | 8 | 3 | 5 |
| | Total | 71 | 13 | 13 | |

A cross tabulation was done to study the distribution of participants (n = 100) along the four columns of qualification level (Matriculation, Intermediate, Bachelors, Masters, MS/MPhil), academic field (Journalism/Mass Communication, International Relations, Political Science/History) and gender. Upon an inspection of the data there was a significant gender imbalance, 95% male (n = 95) and 5% female (n = 5). The greatest number among male's participants held Bachelor's degrees in Journalism/Mass Communication (n = 43) and Masters in Journalism/Mass Communication (n = 14). For females, n = 5, everyone had a Master's degree (one with a degree (specialization) in Journalism/Mass Communication and one in International Relations); no one was observed at any other level of qualification but Masters.

Table 2

Filed of work, Professional experience and Gender

| Gender | | Professional experience | | | |
|--------|---------------|-------------------------|------------|-------------|---|
| | | 1-5 years | 6-10 years | 11-15 years | |
| Male | Filed of work | Print media | 6 | 2 | 2 |
| | | Electronic media | 8 | 19 | 1 |
| | | online media | 43 | 5 | 0 |
| | | Freelance | 8 | 3 | 0 |

| Gender | | Professional experience | | | |
|--------|---------------|-------------------------|------------|-------------|---|
| | | 1-5 years | 6-10 years | 11-15 years | |
| | Total | 65 | 29 | 3 | |
| Female | Filed of work | online media | 1 | | |
| | | Freelance | 1 | | |
| | Total | | 2 | | |
| Total | Filed of work | Print media | 6 | 2 | 2 |
| | | Electronic media | 8 | 19 | 1 |
| | | online media | 43 | 6 | 0 |
| | | Freelance | 8 | 4 | 0 |
| | Total | 65 | 31 | 3 | |

A cross tabulation was made to explore the distribution of the participants (N = 99) by Field of work, length of experience and Gender. Among male participants, the largest group worked in online media (n = 48, 49.5% of the total sample), followed by electronic media (n = 28, 28.9%), print media (n = 10, 10.3%), and freelance (n = 11, 11.3%). The majority of male participants reported 1-5 years of experience (n = 65, 67.0%), with fewer reporting 6-10 years (n = 29, 29.9%) and only 3 reporting 11-15 years (3.1%). All of the participants were female, with 6-10 years of experience in either online media (n = 1) or freelance (n = 1). All of these results point to a need for further study which includes a more even gender balance and increased numbers in all experience levels.

Table 3

Employment Status, Professional role and Gender

| Gender | | Professional role | | | |
|--------|-------------------|--|--------------------|----|-----|
| | | Digital content creator (Multimedia/Podcast/social media) | Freelancer/Blogger | | |
| Male | Employment Status | Permanent | 8 | 4 | 20 |
| | | Contractual | 6 | 3 | 23 |
| | | Fixed pay | 11 | 8 | 48 |
| | | Freelancer | 3 | 2 | 6 |
| | Total | | 28 | 17 | 97 |
| Female | Employment Status | Permanent | | | 1 |
| | | Fixed pay | | | 2 |
| | Total | | | | 3 |
| Total | Employment Status | Permanent | 8 | 4 | 21 |
| | | Contractual | 6 | 3 | 23 |
| | | Fixed pay | 11 | 8 | 50 |
| | | Freelancer | 3 | 2 | 6 |
| | Total | | 28 | 17 | 100 |

The distribution of the participants (N = 100) according to their employment status, professional role and gender was analyzed by conducting a cross tabulation analysis. Among male participants (n = 97), the largest group held fixed pay positions (n = 48, 49.5%), followed by permanent (n = 20, 20.6%), contractual (n = 23, 23.7%), and freelancer (n = 6, 6.2%) positions. As for the professional roles, the majority, male (n = 52, 53.6%) were not included on this table but were in other professional roles. When it came to professional roles, the majority of male participants, n = 52, 53.6%, reported "Other professional roles not captured" while the other roles were Digital content

creators and Freelancer/Blogger at $n = 28$ and $n = 17$ respectively. All female participants ($n = 3$) were distributed across permanent ($n = 1$) and fixed pay ($n = 2$) positions, with no female participants reported in contractual or freelancer categories. No female participants were reported in either of the specified professional roles (Digital content creator or Freelancer/Blogger).

Table 4

Operational Reach of the organization, Frequency of Professional Engagement and Gender

| Gender | | | Frequency of Professional Engagement | | |
|--------|---------------------------------------|---------------|--------------------------------------|--------|-------------|
| | | | Daily | Weekly | Fortnightly |
| Male | Operational Reach of the organization | local | 42 | 1 | 1 |
| | | regional | 22 | 1 | 0 |
| | | National | 11 | 0 | 0 |
| | | International | 1 | 0 | 0 |
| | Total | | 76 | 2 | 1 |
| Female | Operational Reach of the organization | local | 1 | | |
| | | National | 2 | | |
| | Total | | 3 | | |
| Total | Operational Reach of the organization | local | 43 | 1 | 1 |
| | | regional | 22 | 1 | 0 |
| | | National | 13 | 0 | 0 |
| | | International | 1 | 0 | 0 |
| | Total | | 79 | 2 | 1 |

A cross-tabulation was conducted to examine the distribution of participants across operational reach of the organization, frequency of professional engagement, and gender ($N = 100$). Among male participants ($n = 97$), the majority reported daily professional engagement ($n = 76$, 78.4%), with very few reporting weekly ($n = 2$) or fortnightly ($n = 1$) engagement. The largest proportion of males worked in organizations with local operational reach ($n = 42$), followed by regional ($n = 22$), national ($n = 11$), and international ($n = 1$).

Among female participants ($n = 3$), all reported daily professional engagement. Two worked in organizations with national operational reach, and one worked in an organization with local operational reach. No female participants reported regional or international operational reach, nor weekly or fortnightly engagement.

Table 5

Correlations between qualification & field of academic and digital literacy

| | | Average_DL | Qualification | Filed of academic qualification |
|----------------|---------------|-------------------------|---------------|---------------------------------|
| Spearman's rho | Average_DL | Correlation Coefficient | 1.000 | .650** |
| | | Sig. (2-tailed) | . | .024 |
| | | N | 100 | 100 |
| | Qualification | Correlation Coefficient | .650** | 1.000 |
| | | Sig. (2-tailed) | .024 | . |
| | | | | .001 |

| | | Average_DL | Qualification | Filed of academic qualification |
|---------------------------------|-------------------------|------------|---------------|---------------------------------|
| Filed of academic qualification | N | 100 | 100 | 100 |
| | Correlation Coefficient | .650** | .650** | 1.000 |
| | Sig. (2-tailed) | .015 | .001 | . |
| | N | 100 | 100 | 100 |

** Correlation is significant at the 0.01 level (2-tailed).

The average digital literacy (average_DL) of 100 participants and their educational qualification level and the field of their academic qualification were correlated using Spearman's correlation. The assumptions used for the Spearman's correlation were met and shown at the preliminary stage, which were monotonic relationship between the variables and lack of outliers. All of the variables were measured on an ordinal scale.

The correlation matrix is shown in Table 1. Average_DL had a positive relationship with teacher qualification, $r_s(98) = .650$, as there was a statistically significant correlation between them in this study, $p = .024$, suggesting that with the increase of qualification the digital literacy score increased.

A moderate positive correlation with comparatively low significance was found in the correlation between average_DL and the field of academic qualification with $r_s(98) = .580$, $p = .015$, showing that the average DL scores for each academic field differed statistically in a systematic way.

Last, there was a correlation between qualification and field of academic qualification that was positive, strong, and highly significant $r_s(98) = .720$, $p = .001$, confirming a non-independence between the two: that is, a tendency for those who attained a higher qualification to be in the academic field mentioned.

There were strong intercorrelations, especially between qualifications and academic field ($r_s = .720$), which indicate that there is significant multicollinearity between the two predictor variables. Both were found to be individually connected with digital literacy, but they share common areas so the unique contributions of each are hard to gauge. Partial correlation could be performed or multiple regression could be used in future analysis to determine the independent contribution of each variable to digital literacy with the others being held constant.

Table 6

Correlations between Professional experience and Digital literacy

| | | average_DL | Professional experience |
|----------------|-------------------------|-------------------------|-------------------------|
| Spearman's rho | average_DL | Correlation Coefficient | 1.000 |
| | | Sig. (2-tailed) | . |
| | | N | 100 |
| | Professional experience | Correlation Coefficient | .237* |
| | | Sig. (2-tailed) | .018 |
| | | N | 100 |

* Correlation is significant at the 0.05 level (2-tailed).

For 100 participants a Spearman's rank-order correlation test was carried out to evaluate the relationship between average digital literacy level and the experience of the professionals. The results showed that there was a weak positive and statistically significant correlation between two variables, $r_s(98) = .237$; $p = .018$. The result implies that as one's main level of professionalism increases, their score in digital literacy is slightly higher. However, the small effect size ($r_s^2 = .056$)

means that only approximately 5.6% of the variance in digital literacy can be explained by professional experience, suggesting there may be other factors (not included in this analysis) that are more important determinants of digital literacy. The results suggest that those who are more experienced in their fields showed slightly higher scores on digital literacy; however, this relationship was of small magnitude.

The overall correlation coefficient $r = .237$ results in an r^2 (coefficient of determination) of approximately 5.6% for the variance in the digital literacy scores. Similarly, according to the Cohen's (1988) guideline ($r < .10$ = small, $r < .30$ = medium, $r < .50$ = large), the reading effect size is small. The correlation coefficient was significant, but of little practical significance. The conclusion is that although professional experience is a factor in digital literacy, other factors which were not measured are likely more significant.

Conclusion

The relationships between digital literacy and some demographic, professional, and educational variables were examined in this study that allocated 100 participants. The results of this study show that the links between the individual characteristics and the digital literacy outcomes are complex, and the study has certain methodological limitations that the interpretations should be treated with caution.

The present study shows that, the correlation between the average digital literacy and educational qualification is strong, positive and statistically significant with a value of .650 at the significance level of .024. A positive correlation attracted attention between the digital literacy scores and the level of education one achieved; that is, people with higher education scores had significantly higher digital literacy scores. This discovery is consistent with the literature that has already highlighted education as one of the main factors that influences the individual's level of digital literacy (van Deursen & van Dijk, 2019). The high correlation levels indicate that formal education has an important role in shaping digital competencies, a role that may be fulfilled by using digital tools, information literacy and critical thinking.

The average digital literacy showed a medium to high positive correlation with the area of academic qualification ($r_s = .580$, $p = .015$) which suggests that the level of digital literacy is not constant across academic disciplines. This research result is very significant because of the high percentage that participated in Journalism and Mass Communication (71% of the sample). It is noteworthy, however, that the concentration in this field indicates that people pulled to the disciplines of communications might be more digital or that, in fact, disciplines in these subjects manage to engender digital competencies. One should, however, be careful in an oversimplified interpretation of differences between the fields of study because of the discrepancy in the percentages showing the field distribution (13% in International Relations; 13% in Political Science/History).

The results align with the existing findings of digital literacy determinants and place an educational factor on the forefront as the main determinant, as opposed to professional experience, as found in much of the research on the topic. Formal education systems are important for the development of digital competencies, as this is strongly associated with qualification levels: formal education might present or be part of relevant curricula, provide access to technology, and leverage pedagogies that incorporate DS development.

In the same category as the small proportion of professional experience, however, is the fact that digital competences have not been evident in professional experiences thus far, which brings up important questions about digital competency training in the workplace. But the fact that there was no significant relationship between being involved in activities related to work and the digital

literacy scores found per day suggests that there is no guarantee that using digital devices at work will lead to an increase of digital literacy. This finding supports evidence indicating that deliberate and deliberate instruction and modelling are required for a meaningful acquisition of skills (Frailon et al., [2019](#)).

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