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The Impact of AI Literacy on the Performance of Digital Media Professionals

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Abstract. In today's digital media industry, having a basic understanding of artificial intelligence (AI literacy) has become an essential key competence. This study mainly aims to clarify two issues: first, how AI literacy affects the job performance of digital media practitioners; second, whether algorithmic media content awareness plays a mediating role in this process. 502 responses were collected through an online questionnaire and conducted statistical analysis using SPSS 26.0, ultimately confirming 474 as valid samples. The results show that AI literacy does have a positive impact on improving the job performance of digital media practitioners - that is, the more one understands AI, the better their job performance tends to be. Moreover, this improvement is partly achieved through the mediating mechanism of algorithmic media content awareness: the clearer practitioners are about how algorithms recommend and generate content, the better they can convert AI literacy into actual work achievements. Based on these findings, this study can provide some meaningful references at both theoretical and practical management levels.

Keywords: Artificial Intelligence Literacy, Digital Media, Job Performance, Generative AI, Media Content Awareness

1. Introduction

Generative technology in artificial intelligence has, over the past few years, evolved at a very high rate, which has had a direct impact on the changing landscape of the entire digital media industry. AI is no longer just a technological notion, but it is now a real productive force that all are capitalizing on. This change means that the existing job skills should be modernized, and the need to be AI-literate among practitioners grows as well. The number of professionals who apply AI tools to increase the efficiency of work and the possibility of producing content is growing; professionals also face a significant threat of ethical risks that AI applications introduce. Moreover, algorithms are reshaping the competitiveness of the individual within the workplace - one has to learn how the algorithms on platforms work to achieve better-quality work results.

The present-day workplace is slowly being taken over by Generation Z. Digital-native qualities are inherent to this generation, and they are more conversant with emerging technologies. Thus, the awareness of AI literacy and algorithmic content of the media has become one of the primary digital media professional skills. Though the research on AI is especially active currently, the literature on how AI literacy influences job performance remains incomplete - particularly in terms of particular

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industries, such as the digital media industry, or particular groups, such as the Chinese population. Also, algorithmic media content awareness, as a moderating factor, is an important variable in the control of the association between AI literacy and job performance.

In order to address the above research gap, this research surveyed 502 practitioners in the digital media industry today through a questionnaire. To begin with, by conducting a systematic review of the current research findings, inconsistencies, and gaps, this study will create a strong theoretical base, thus increasing the AI literacy of employees and their job performance more effectively. Moreover, the paper will particularly analyze the importance of algorithmic awareness of media content in the above-outlined key research directions and offer practitioners and businesses in the digital media sector some new insights.

2. Literature review

2.1. AI literacy

An overview of the literature available shows that there is no single definition of AI literacy, and the academic community tends to believe that it is a multi-dimensional skill. The particular dimensions of AI literacy have been co-defined by Cox and Obadă et al., and encouraged the study of the topic of critical assessment and ethical practice [1, 2]; Seker et al. addressed the antecedent variables of AI literacy [3]. Also, Lee and Park stressed that ChatGPT literacy is an essential part of AI literacy [4]. According to these studies, it can be concluded that AI literacy is a multi-dimensional and comprehensive skill, encompassing technical skills, critical thinking, and ethical sensitivity; it is preceded by a variety of antecedent variables, including digital literacy and 21st-century skills, and occurs across varying levels among practitioners of different professional levels.

2.2. AI literacy and job performance

Once the concept and dimensions of AI literacy are clarified, the most important step is to discuss its effect on job performance. It has been proven by numerous studies that AI literacy will be able to improve job performance; however, the majority of these studies have concentrated on the educational sector or the overall working situation. Applying to the quantitative research in [5], which used the UTAUT model and personality trait model, it can be concluded that AI literacy is a significant positive predictor of job performance. This conclusion adds more credibility to the entire research and offers a path and approach to this study. Besides that, Ayyoub et al. employed the mixed-method approach to examine the level of AI literacy of higher education instructors, and the authors considered the impact of such variables as GenAI adoption intention and institutional support on the development of AI literacy. Finally, they also showed that AI literacy has a positive relationship with job performance within academia [6].

The journalism industry and the digital media industry are greatly affected by generative AI; however, there is a lack of research specifically on this field, and it is usually dispersed. The participants of the United States, the United Kingdom, China, and India organized an international online symposium, organized by Holland et al. The results showed that one of the most essential skills that are still missing among most working journalists at present is critical AI literacy, i.e., one should be able to challenge the ways in which algorithms make decisions and pinpoint the biases that are systemic [7]. Liu et al. developed scales and empirically tested them in the newsroom setting and discovered that AI literacy of media professionals is lacking, especially in critical evaluation and verification of algorithmically generated content, which in turn negatively affects the

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overall job performance [8]. Obadă et al. discussed the idea of AI ethics and practices in journalism, where the concept of generative AI presents bias vulnerabilities in algorithmic content awareness. Journalists do not have AI literacy training, and the industry does not have responsible AI use norms [9]. When these studies are taken in tandem, it can be seen that the media industry has several severe deficiencies: the practitioners are not well-informed about AI literacy and have little knowledge about the awareness of algorithmic media content, and it is hard to respond to the diverse ethical and professional issues that the AI-driven content systems can cause.

According to the studies provided above, one may conclude that AI literacy is a multi-dimensional structure itself and can impact the job performance (e.g., work efficiency, quality of task completion, etc.) positively and significantly. Simultaneously, the issues that practitioners face regarding AI literacy are also present in the context of the corresponding work conditions, i.e., media and education. Just as Sengsri and Khunratchasana mentioned in the text, in the media and educational fields, artificial intelligence should be developed as a capability [10].

2.3. AI literacy in digital media and journalism

Up to this point, there is limited empirical data that specifically looks at the impact of AI literacy on job performance among digital media workers in the generative AI setting. This can be seen especially in the case of the Asian market, which is among the fastest-growing digital media ecosystems in the world, and its cultural, institutional, and regulatory conditions are unique and affect the dynamics of AI adoption. Research in this field does not exist. Not many studies have indicated the specific effects of AI literacy on the job performance of digital media professionals. In addition, the mediating impact of algorithmic media content awareness, which is an important bridging factor between AI applications and communication impacts, has not been sufficiently confirmed in a focused approach. In general, the current studies do not offer a holistic methodology that incorporates a multiplicity of aspects of AI literacy, industry ethical practices, and performance results.

What makes this study unique in comparison to the previous ones is that it systematically analyzes how AI literacy among digital media professionals can influence job performance and uses the algorithmic media content awareness as a moderator to examine the ways of how AI literacy among digital media professionals of Generation Z can be enhanced. Arguably, this study can more effectively show the population how AI literacy in digital media practitioners impacts their job performance and how awareness in regard to algorithmic media content mediates this outcome. Simultaneously, it also has the potential to help industry practitioners become more AI literate themselves and use this skill more productively towards job performance.

2.4. Gap and hypothesis development

According to the available studies, artificial intelligence (AI) literacy can have a direct influence on job performance. Nevertheless, the research that distinctly articulates the channels through which AI literacy mediates work outcomes is wanting, particularly in the area of digital media, where research gaps remain quite pronounced.

Furthermore, in the field of digital media, practitioners have to obtain familiarity with platform algorithms and know how to adapt their content to successfully use AI tools. Consequently, algorithmic awareness of media content can become a vital mediating factor, especially in such areas of human activity as digital media and content production that often use AI.

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This study will focus on the theoretical framework and literature-based deductions on AI literacy as an indirect factor in job performance through increasing awareness of algorithmic media content. In this way, the theoretical background and research hypotheses of this study have been developed.

3. Methods

3.1. Research design

The current research design was a quantitative cross-sectional survey to investigate the interdependence between AI literacy, awareness of the content generated by algorithms, and job performance among digital media practitioners. This type of design was chosen due to its ability to conveniently gather data on a large sample at a single point in time, which is suitable for testing hypothesized mediation relationships among the focal variables. An integrative mediation model was developed and tested, where artificial intelligence literacy was presumed to mediate via algorithmic media content awareness to job performance.

Regarding the data collection process, all respondents were given a comprehensive informed consent statement before participation, including the aspects of anonymity, confidentiality, voluntary involvement, and the right to withdraw without any consequences. The questionnaire was filled in anonymously, and the survey was conducted in 3 to 5 minutes.

3.2. Data collection and participants

The participants were digital media practitioners located in mainland China and included full-time practitioners, part-time practitioners, and freelance content creators. This group was chosen due to the fast growth of algorithmically-based platforms in the Chinese digital media market, which renders this group especially suitable to explore the significance of AI literacy and algorithmic awareness in professional performance. Their job roles covered content creation, new media operation, design and video editing, marketing and advertising, planning and directing, product and user operation, management positions, and other related roles.

Data were collected through the Wenjuanxing online questionnaire platform from March 13 to 27, 2026. A combined sampling strategy of convenience sampling, snowball sampling, and random online distribution was adopted. A total of 502 questionnaires were collected. After excluding responses with incomplete answers, straight-lining patterns, or completion times below 90 seconds —indicators of inattentive responding—474 valid samples were retained, yielding an effective response rate of 94.4%.

Demographic variables included gender, age, education level, years of experience in digital media, current job type, current employment status, and the province in the Chinese mainland.

3.3. Measurement tools

All variables were assessed using well-established, psychometrically validated scales with demonstrated reliability and validity in prior research. Three scales were used: artificial intelligence literacy scale, algorithmic media content awareness scale, and job performance scale. All the scales except the artificial intelligence literacy scale were 5-point scales, and the artificial intelligence literacy scale was a 7-point scale.

The scale of artificial intelligence literacy was assessed with the help of the PAILQ-6 scale introduced by Lee and Shin, which includes 6 items. The scores were higher when it came to

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artificial intelligence literacy. The alpha coefficient of the Cronbach's alpha of this study was 0.894. The AMCA scale, constructed by Taneja and Flanagin, was used to measure the awareness of algorithmic media content, which has 13 questions. The higher the scores, the more awareness of the algorithmic media content. The alpha coefficient of Cronbach was 0.939. Lastly, the IWPQ-6 scale created by Koopmans et al. with 6 items was used to measure the job performance scale. The higher the score, the better the job performance. The alpha coefficient of Cronbach was 0.919.

3.4. Data analysis

All statistical works were done in SPSS 26.0. Internal consistency was tested first by using reliability analysis (Cronbach's alpha coefficient). Second, Pearson correlation analysis and descriptive statistics were performed. Lastly, the mediating effect was tested using hierarchical regression and three-step regression analysis.

Common method bias was tested using a single-factor test developed by Harman. The unrotated principal component analysis comprised all the items of the core variables. The findings revealed that the first factor had the ability to explain 26.43 percent of the total variance, and this was lower than the critical figure of 40 percent. This meant that there was no major problem with common method bias in this study.

4. Results

4.1. Reliability analysis

Cronbach's alpha coefficients were calculated to assess the internal consistency of all measurement variables in the study. The results revealed that the Cronbach's alpha coefficient for AI Literacy (AL) was 0.894, for Job Performance (JP) was 0.919, and for Algorithmic Media Content Awareness (ACI) was 0.939. All these coefficients were higher than the recommended critical value of 0.70, which indicated that all measurement scales had good to excellent internal consistency reliability.

4.2. Descriptive statistics and correlation analysis

Descriptive statistical analysis and Pearson correlation analysis were conducted for all key research variables, with a total of 474 valid samples included in the analysis. The descriptive statistical results are presented as follows: AI literacy (AL) had a mean value of 5.7409 and a standard deviation of 0.89228; job performance (JP) showed a mean of 3.9662 with a standard deviation of 0.85989; algorithmic media content awareness (ACI) yielded a mean of 3.7968 and a standard deviation of 0.75454. The results of the correlation analysis showed that AI Literacy was significantly and positively correlated with Job Performance ($r = .320$, $p < .001$), and also had a significant positive correlation with Algorithmic Media Content Awareness ($r = .514$, $p < .001$). In addition, Algorithmic Media Content Awareness was significantly and positively associated with Job Performance ($r = .523$, $p < .001$). These correlation results confirmed that the prerequisite conditions for mediation analysis were satisfied—namely, that the independent variable was significantly associated with both the mediator and the outcome variable—thus providing preliminary empirical support for the hypothesized mediation model.

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4.3. Mediation effect analysis

A three-step regression analysis approach was adopted to test the mediating role of Algorithmic Media Content Awareness (ACI) in the relationship between AI Literacy (AL) and Job Performance (JP).

Step 1: The first step is to test the total effect of AI Literacy on Job Performance.

The regression analysis results showed that AI Literacy could significantly and positively predict Job Performance ($B = 0.285$, $\beta = 0.296$, $p < .001$), which meant the total effect of AI Literacy on Job Performance was statistically significant.

Step 2: The second step is to test the predictive effect of AI Literacy on Algorithmic Media Content Awareness (Path a).

AI Literacy was found to have a significant positive predictive effect on Algorithmic Media Content Awareness ($B = 0.373$, $\beta = 0.514$, $p < .001$), and the coefficient of determination R^2 of this regression model was 0.264. This result indicated that the path a of the mediation model was empirically supported.

Step 3: The third step is to test the predictive effects of AI Literacy and Algorithmic Media Content Awareness on Job Performance (Paths b and c).

AI Literacy and Algorithmic Media Content Awareness were simultaneously included in the regression model with Job Performance as the dependent variable for analysis (see Table 1; dependent variable: Job Performance, JP). The results showed that Algorithmic Media Content Awareness could significantly and positively predict Job Performance ($B = 0.555$, $\beta = 0.487$, $p < 0.001$), while the positive predictive effect of AI Literacy on Job Performance was no longer statistically significant ($B = 0.067$, $\beta = 0.069$, $p = 0.130$). Based on these results, it could be concluded that Algorithmic Media Content Awareness played a mediating role in the relationship between AI Literacy and Job Performance.

Table 1. Regression coefficient

Model	Predictor	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.	95.0% CI for B Lower Bound	95.0% CI for B Upper Bound	Collinearity Statistics (Tolerance)	Collinearity Statistics (VIF)
1	(Constant)	4.541	0.173		26.318	<0.001	4.202	4.880		
	Gender	-0.146	0.085	-0.085	-1.728	0.085	-0.313	0.020	0.849	1.177
	Age Group	-0.044	0.025	-0.095	-1.751	0.081	-0.094	0.005	0.694	1.441
	Education Level	-0.044	0.040	-0.058	-1.104	0.270	-0.123	0.035	0.756	1.323
	Current Status	-0.128	0.064	-0.106	-1.994	0.047	-0.255	-0.002	0.733	1.365
	Digital Media Work Years	0.033	0.050	0.036	0.665	0.506	-0.065	0.132	0.718	1.393
	Current Position Type	0.041	0.023	0.098	1.802	0.072	-0.004	0.085	0.703	1.423
2	(Constant)	2.775	0.312		8.907	<0.001	2.163	3.387		
	Gender	-0.116	0.081	-0.067	-1.425	0.155	-0.275	0.044	0.847	1.181
	Age Group	-0.022	0.024	-0.047	-0.889	0.375	-0.070	0.026	0.681	1.469
	Education Level	-0.046	0.038	-0.060	-1.200	0.231	-0.121	0.029	0.756	1.323
	Current Status	-0.096	0.062	-0.079	-1.561	0.119	-0.218	0.025	0.728	1.373

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Table 1. (continued)

Digital Media Work Years	0.024	0.048	0.026	0.506	0.613	-0.070	0.119	0.717	1.395
Current Position Type	0.031	0.022	0.073	1.414	0.158	-0.012	0.073	0.700	1.429
AL	0.285	0.043	0.296	6.685	<0.001	0.201	0.369	0.961	1.04122

5. Discussion

5.1. Central results, mechanism description, and applications

The discussion will be based on four main propositions:

Indirectly, AI literacy has a direct impact on job performance, with alpha-media content awareness being mediated by it, so it constitutes a full mediation pathway. The implementation of AI can directly improve the efficiency of tasks in traditional industries, but in the media environment, it is not the case. In this area, algorithmic systems control the content traffic, the number of viewers, and its effectiveness. Performance outcomes can only be realized by first having to grasp algorithmic logic and subsequently coming into sync with strategic content. This report is the pioneer in identifying this mediation course, which is the exact gap needed in the existing literature.

The subject of algorithmic content is more significant in the digital media industry than having technical skills in AI. The digital media landscape itself is more sensitive to the algorithm and content strategy. As such, algorithmic reasoning with a careful understanding of content (that is, content awareness) is the real core competitive advantage to practitioners. These industry-specific features are what form the premises of algorithmic media content awareness as a fundamental mediator.

Ethical and content aspects are evidently defined in the field of AI literacy in the digital media domain. According to Ayyoub et al., AI literacy is not a matter of technical competence only, but also has an ethical aspect, adherence to regulations, and critical usage [5]. Since digital media content is directly aimed at the population, there is a high need to develop honest, obedient, and accountable AI literacy.

AI literacy training must be systematic for digital media professionals. Tangible performance enhancement can only be achieved through extensive and systematic training. In carrying out the training, it must be planned holistically, and various stakeholders are to be involved. As viewed through the prism of enterprises, Pre-employment orientation needs to be improved, and AI literacy skills need to be introduced into the assessment procedures. According to the AMO (Ability Motivation Opportunity) theory and social cognitive theory (as Liu et al. have elaborated [6]), workplace generative AI literacy can be developed at the workplace.

In individual practitioners, it is important to develop proactively algorithmic awareness and critical thinking. The areas of concern in educational institutions and professional bodies should be: creating a customized curriculum, setting up certification structures, and integrating academic training more closely with industry needs. It is only by doing this that hybrid talents that are both adept at media services and able to employ artificial intelligence applications can be developed.

5.2. Comparison with the previous study

The determinants of AI literacy are different in other studies. Lee and Jeon targeted South Korean enterprise workers and studied the application of general AI, identifying that the personality factors

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had a stronger influence on applying AI on a daily basis. Liu et al. observed that technical operational skills were more significant and studied employees in the Chinese public sector, with an emphasis on "generative AI" made. Hollandek et al. researched journalists in various countries, highlighting the necessity to balance efficiency and reporting ethics, which suggests that the areas of resource support and professional needs are also critical in determining AI literacy. The former two studies focused on the beneficial effects of individual abilities on AI literacy, whereas the latter paid a bit more attention to environmental and occupational pressures. Conversely, the proposed research focuses on the digital media professionals in China and analyzes the mediating role of algorithmic media content awareness between AI literacy and job performance. In other words, the proposed research is a combination of individual skills (i.e., AI literacy of digital media professionals), as well as environmental needs (i.e., awareness of algorithmic media content), which is a more diversified and innovative research approach.

The mediating variables between AI literacy and the outcome variables differ in other studies. According to Lee and Jeon, AI literacy is a direct mediator between personality traits, learning agility, and job performance. Liu et al. discovered that creative self-efficacy mediates in part the relationship between generative AI literacy and job performance. Hollandek et al. did not include any mediating variables; primarily, they concentrated on the direct effect of AI literacy on responsible reporting. The hypotheses in this study are to C: The mediating variable of the impact of algorithmic media content awareness on AI literacy and job performance of digital media practitioners is positive. These differences can be explained by the fact that in different professional environments, such aspects as job performance are interpreted differently: in business/governmental spheres, more attention is paid to efficiency and output, whereas in the case of journalists, the quality of reporting and ethical standards are more relevant. Since the subjects of this research are the representatives of the digital media sector - a field of work that implies both corporate and journalistic business - it is quite natural that both efficiency and ethical adherence are considered.

6. Conclusion

The research primarily focuses on the correlation between AI literacy (AL), awareness of algorithmic media content (ACI), and job performance (JP) in the digital media sector. The particular hypothesis is to assess how AI literacy affects job performance among digital media professionals, with a special emphasis on how the mediating effect of the awareness of algorithmic media content comes into play.

The study used the methodology of a quantitative survey and gathered 474 valid questionnaires, and processed them using SPSS and Hayes Process Macro. It not only researched the direct effects and the mediating effects but also tested the common method bias. The findings are always in agreement that the awareness of algorithmic media content mediates between artificial intelligence literacy and job performance.

On this basis, it has been suggested that companies within the digital media sector should focus on offering AI literacy training. Research might also be undertaken in the future to track effects over a long period of time, or compare across industries and cultures. It might also include moderating variables like technology acceptance and organizational support. Moreover, the research area might be extended to new areas of research, such as generative AI and the application of AIGC.

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