Artificial Intelligence Literacy in Korean Older Adults: Psychological and Technology-Related Factors H.J. Lee, J.W. Lee, D.H. Lee, H.R. Shin, Y.S. Kim. *Gerontechnology* 25(s)

Purpose Artificial intelligence (AI) offers significant opportunities to enhance the health, independence, and social participation of older adults. Despite the increasing availability of AI-based technologies, older adults' effective engagement remains limited due to differences in psychological readiness and confidence. Previous research has shown that technostress and low perceived competence can hinder interaction with AI-driven services [1, 2]. While AI literacy is a key factor, empirical evidence focusing on older adults and the influence of psychological factors beyond basic digital skills remains scarce [3]. This study examines AI literacy levels among Korean older adults and identifies key technological and techno-psychological predictors associated with AI adoption. **Method** Data were drawn from Wave 2 of the 2024 Korean Older Adults' Technology Acceptance Panel Survey (N=437). To ensure national representativeness, we employed stratified quota sampling by province, sex, and age group, approximating the national distribution of community-dwelling older adults aged 60 and older. Professional interviewers conducted in-home, face-to-face interviews using CAPI. Measures included the AI Literacy Scale [3], digital literacy, technostress [1], and technology self-efficacy [2]. Hierarchical regression was conducted across four models to identify predictors. The study was approved by the Kyung Hee University IRB (KHGIRB-24-085-1). **Result and Discussion** Hierarchical regression revealed that demographics (age, education) significantly predicted AI literacy, explaining 39.0% of the variance. The addition of digital literacy (Model 2) increased the explained variance to 59.3% (ΔR^2=.198, p<.001), with digital literacy as the strongest predictor (β=.597, p<.001). Model 3, which incorporated technology-related psychological factors, further improved the model to 64.7% variance explained. Specifically, technology self-efficacy (β=.186, p<.001) and enthusiasm (β=.126, p=.002) were significant predictors. General psychological factors (Model 4), such as depression and resilience, did not provide significant incremental explanatory power (ΔR^2=.004, p=.190). The findings suggest that while digital literacy is the foundation, techno-psychological factors—especially self-efficacy and enthusiasm—play a decisive role in AI readiness. Interventions should focus on psychological empowerment and building technology confidence alongside technical access. Promoting AI literacy through these multidimensional approaches can serve as a meaningful pathway to digital inclusion, ensuring that older adults can effectively navigate and benefit from an increasingly AI-driven society.

References

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Table 1. Hierarchical Regression Analysis Predicting Artificial Intelligence Literacy (Model 4)

Factors	Variables	Model 4			
		B	SE	β	t
Demographics	Age	-.138	.057	-.090	-2.438*
	Gender	.315	.730	.013	.432
	Residential Area	.888	.800	.033	1.110
	Education	.686	.349	.076	1.966
Technological Competence	Digital Literacy	3.592	.389	.417	9.226***
Tech-Related Psycholgical Factors	Technology Stress	-.158	.072	-.070	-2.189*
	Technology Self-Efficacy	2.100	.525	.182	3.997***
	Technology Enthusiasm	.584	.196	.121	2.981**
GeneralPsychological Factors	Depression	-.013	.078	-.006	-.172
	Resilience	-.934	.800	-.041	-1.167
	General Self-Efficacy	.195	.094	.076	2.075*
F		71.910***			
R^2		.650			
Adj. R^2		.641			

Note. B = unstandardized coefficient; SE = standard error; β = standardized coefficient. *p < .05, ** p < .01, *** p < .001.