# Development and Cross-Validation of the Multidimensional Problematic AI Use Scale (MPAIU) Among Young Adults

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**Abstract**

Artificial intelligence (AI) systems are increasingly integrated into everyday cognitive and social activities, particularly among young adults. While AI tools offer benefits for productivity and information access, there are emerging concerns that certain patterns of engagement may become maladaptive. The present study developed and validated the Multidimensional Problematic AI Use Scale (MPAIU) to assess problematic patterns of AI engagement. Using a U.S. sample of young adults aged 18–25 recruited through Prolific ($N$ = 778), a split-sample cross-validation design was employed. Study 1 ($n$ = 388) used exploratory factor analysis to examine the latent structure of an initial 60-item pool, resulting in a three-factor solution reflecting cognitive–emotional dysregulation, attitudinal ambivalence, and behavioral over-engagement. Study 2 ($n$ = 390) used confirmatory factor analysis to validate the scale and structural equation modeling to examine associations with psychological variables. The results indicate that fear of missing out (FoMO) was positively associated with problematic AI use, whereas psychological well-being and psychological richness were not significant predictors. The MPAIU is a psychometrically validated instrument for assessing problematic AI engagement in emerging adulthood.

**Keywords**: problematic AI use; artificial intelligence; scale development; young adults; fear of missing out