



A Study on Association between AI and Critical Thinking, Impulsivity, Dependence among Young Adults

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Abstract: Today's lifestyle is altering rapidly, constant connectivity to digitalization and over reliance on AI on regular basis among young adult is concerning. However, the use of technologies and digitalization has its clear merits for mankind but habitual usage turning into has created its own concerning events. The current study aimed to explore the association between AI dependence, critical thinking and impulsive behavior among young adults (18-27 years). Data was collected from participants through standardized psychological assessment. AI has its own benefits and has proved itself valuable but unregulated use or overdependence effects human psychologically, cognitively and behaviorally. Individuals may turn this advantage into liability by just mere not having inability to self-regulate. It has also been seen that young adults are turning to AI for validation, acceptance and other emotional needs. The results found out significant positive correlation between ai dependence and urgency. These insights promote self-regulated thinking and resilience among young adults and to balance the use of AI.

Keywords: *AI, Dependency, Impulsive Behavior, Critical Thinking, Young Adults, Cognitive Clarity, ChatGPT, Deepseek*

1. Introduction

Aristotle defined "man is a social animal," and explained how, human is a complex being with unique ability of social, psychological, biological, that can develop ideas, creates social institutions, and cognitive measures. Human civilization has undergone various transformations and advancements, invented creative devices machineries, innovative frameworks lifestyles and many more. All aspects like social, psychological, cognitive and

political aspects have gone under substantial transformation. New scientific discoveries, technologies have been invented, and pushed their engineering boundaries, designed AI technologies.

In search of convenience and pursuit of efficiency, now humans have turned themselves towards the new AI (Artificial Intelligence) technologies. These technologies may offer beneficial elements, that enhance comfort and luxuries to contemporary living standard. However, in the rapidly growing and cultivating lifestyles, it has subsequently challenged individuals especially young adults. This technological exposure has started to reshape the behavioral aspect and affected cognitive lucidity of emerging adult. Artificial intelligence has substantially contributed to numerous sectors let alone the engineering and science like healthcare sector, educational, industrial sector, but its growing popularity is also a state of concern, the mere help is now turning into dependence at alarming rates, especially for emerging adults.

Young generation is gravitating towards AI for psychological needs like loneliness, validation seeking, acceptance. Moreover, the pursuit of immediate gratification is increasingly leading to dependence towards AI. However, this is just the tip of the iceberg, young generation is not only getting dependent on AI but also it is weakening their ability to thinking critically and act purposefully. The growing reliance on AI among young generation could impair their ability to judge, decision-making, creative ideas and this may also lead to affect their intelligence and weaken their goal orientation ability. Growing dependence on AI for emotional need may also lead to negative impact on patience, the fast and quick answers from artificial intelligence make young generation diminishing their patience and increasing if impulsivity. Leading to impulsivity may lead to lack of perseverance and high on urgency, unable to sit and relax.

In addition, it may also cause weaken the ability to utilize emotional intelligence, lack of empathy. Whether AI is truly prepared to replace healthcare professionals or social support networks remains highly debatable. It is also controversial to consider if people are willing to stop innovating and rely entirely on artificial intelligence.

Impulsivity

Impulsivity is defined as “a predisposition towards rapid, unplanned reactions to internal or external stimuli without regards to the negative consequence of these reactions to the impulsive individual or to others” (Moeller, et. al, 2001, p. 1784). According to Whiteside and Lynam (2001), “impulsivity, is a multidimensional concept that compasses a broad range of behaviors that reflect poor planning, premature responding before considering

consequences, sensation-seeking, risk-taking, an inability to inhibit responses, and preference for immediate over delayed rewards.” Nigg et al. (2005) defined “impulsivity as a rash response in situations where considerate response is more appropriate.”

Chamberlain and Grant (2019) studied impulsivity and compulsivity among 479 young adults, the aim also revolved around quality of life getting affected. The researchers also studied how this affects brain development and goal orientation among young adult, the outcome of this study were the low quality life was in-fact linked with impulsive, control disorders, poor cognitive performances like decision making, goal setting, they also explains the lack of self-control and more addiction or high control activity can lead to diminishing of quality of life. In addition, another study suggested same that any kind of dependency and addictions can lead to cognitive impulsivity and impulsive behavior and compulsion, this study was conducted on 194 young adults and the results also suggested that this can lead to emotional dysregulation, and these leads onto the more harms, avoidance and emotionally weakening (Schreiber et al., 2012).

Artificial Intelligence

To begin with Artificial intelligence is explained as “the capability of computational systems to perform tasks typically associated with human intelligence, such as learning, reasoning, problem-solving, perception, and decision-making. It is a field of research in computer science that develops and studies methods and software that enable machines to perceive their environment and use learning and intelligence to take actions that maximize their chances of achieving defined goals (Russell et al., 2022). In addition, “AI is a set of computer programs designed to think and mimic human behavior such as learning, reasoning and self-correction.

Gillath et al. (2020), although artificial intelligence, explained in blog (Stryker et al., 2025) “AI is the technology that enables computers and machines to simulate human learning, comprehension, problem solving, decision making, creativity and autonomy. AI dependence has been adapted from handy smartphones, it for sure has a base of smart phone addiction, that constant stimulus has trick the brain of emerging young adults to realize it, then constant reassurance and addictively fast replies and validation has completely made its user to get dependent on it. Huang et al. (2024) conducted a cohort study in Beijing University in two waves; however, this study was conducted on 3483 adolescents but has significant results it proved how addictive AI can be. It can overwhelm young adults, making them vulnerable and reliant on AI for motivation and mental health advice. Furthermore, Naseer et al. (2025) studied 500 participants from healthcare and education sector in Punjab, Pakistan, the study focused

on Cognitive and Psychological impact of AI usage. The findings found cognitive overload, difficulty in decision making, shorter attention time space, emotional dependence, rising of anxiety. Saif et al. (2023) conducted a study on 340 management students in higher education, on Chat Gpt Dependency Syndrome, and found out in fact overutilization or dependence on AI/Chat Gpt results in weaken of creativity, difficulties in earning, affects emotionally, difficulty in socialization.

Critical Thinking

Critical Thinking according to Ennis (1992), is “reasonable reflective thinking focused on deciding what to believe or do.” Merters (1991) described “critical thinking as a conscious and deliberates process which is used to interpret or evaluate information and experiences with a set of reflective attitude and abilities that guide thoughtful beliefs and actions.” Whereas Lipman (1995), states Critical thinking as “skillful, responsible thinking that facilitates good judgment because it (1) relies upon criteria, (2) is self-correcting, (3) is sensitive to context.” Moreover, (Mayer & Goodchild, 1990), has described critical thinking “as active, systematic process of understanding and evaluating arguments, an argument provides an assertion about the properties of some object or the relationship between two or more objects and evidence to support or refute the assertion. Critical thinkers acknowledge that there is no single correct way to understand and evaluate arguments and all attempts are not necessarily successful. Weimann-Sandig (2023) studied if AI tools like Chat Gpt challenges critical thinking, an experiment was carried from (BediRA Project at University of Applied Sciences for Social Work, Education and Nursing, Dresden). The results carried out states that AI tools threaten the development of critical thinking and it also affects academics integrity and ethics. Further, Arshad and Guibas, 2024, explored development of cognitive and critical thinking skills. The result found that AI is good for learning and has application in real world context, however also stated that overreliance can lead to derogating of essential skills.

2. Purpose

The purpose of the study is to explore association between AI dependence, Critical Thinking and Impulsivity among young adults.

3. Hypothesis

H₁: There will be a significant positive relationship between Ai dependence and Impulsivity.

H₂: There will be a significant negative relationship between critical thinking and Impulsive behavior.

4. Methods

4.1 Sample

The sample was collected by simple random sampling. In which interested participant filled google form with honesty. The total number of samples obtained were 55 in the city of Chandigarh.

4.2 Measures

The Impulsive Behavior Short Scale: The Impulsive behavior short scale was used to measure the impulsive behavior among young adults. The scale was developed by Groskurth, Nießen, Rammstedt, & Lechner (2022). The scale consists of 8 items and the rating scale included of does not apply (1), applies a bit (2), applies somewhat (3), applies mostly (4), applies completely (5). The scale has four sub-scale that measures (i) Urgency, (ii) Lack of Premeditation, (iii) Lack of Perseverance, (iv) Sensation Seeking.

The Critical Thinking Disposition Scale: The Critical Thinking Disposition Scale was used to measure thinking, skill and creativity among young scale. The scale was developed by Sosu, (2012). The scale has 11 items, where there were 2 subdimension Critical Openness (7 items) and Reflective Scepticism (4 items). Items were scored using Likert type response- Strongly Disagree (1), Disagree (2), Neither agree nor disagree (3), Agree (4), Strongly Agree (5).

The Dependence Artificial Intelligence scale: The Dependence Artificial Intelligence scale (DAI) (Morales-García et al., 2024), was used to measure the level of dependence among young adults towards artificial intelligence (AI). The scale has five items which is formatted in Likert-type response manner from Completely false for me (1), Mostly false for me (2), Neutral/sometimes true for me (3), Mostly true for me (5) Describe me perfectly.

4.3 Procedure

The participants were informed purpose of the research and questionnaire were filled through google form. Standardized test was administered with the participants. Each participant was appreciated for their cooperation and participation.

5. Analysis of data

Results

Table 1: *N, Mean, and Standard Deviation*

	Reflective Thinking	Critical Openness	Urgency	Lack Of Premeditation	Lack Of Perseverance	Sensation Seeking	AI Dependence
N	56	56	56	56	56	56	56
Mean	14.7	25.9	5.64	5.54	5.30	7.09	12.3
Standard deviation	4.28	6.78	1.87	2.04	2.13	2.00	5.62

Table 2: *Correlation*

	Reflective Thinking	Critical Openness	Urgency	Lack Of Premeditation	Lack Of Perseverance	Sensation Seeking	AI Dependence
Reflective Thinking	—						
Critical Openness	0.841***	—					
Urgency	0.074	0.148	—				
Lack Of Premeditation	-0.353**	-0.380**	0.046	—			
Lack Of Perseverance	-0.234	-0.293*	0.255	0.550***	—		
Sensation Seeking	0.251	0.234	0.072	-0.496***	-0.663***	—	
AI Dependence	-0.044	0.088	0.302*	-0.038	-0.044	0.015	—

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

6. Discussion of Results

The results found out that the sub dimension of impulsive behavior; urgency is significant positively correlated with AI dependence ($r = 0.0302$, $p < 0.05$), further, another dimension lack of perseverance is negative significant with critical openness ($r = -0.293$, $p < 0.05$), this was also found that there is negative significant relationship lack of premeditation and sensation seeking ($r = -0.496$, $p < 0.001$). It was also observed that lack of perseverance is also in negative significant with ($r = -0.663$, $p < 0.001$) with sensation seeking, whereas lack of perseverance is positive significant with lack of premeditation ($r = 0.550$, $p < 0.001$). In addition lack of premeditation is negative significant with reflective thinking ($r = -0.353$, $p < 0.01$), and lack of premeditation is also negative significant with critical openness ($r = -0.380$, $p < 0.01$)

and this was also observed that critical thinking is positive significant with reflective thinking ($r= 0.841, p<0.001$).

Further more in another recent study by Yankouskaya et al. (2025) has found out similar results that AI/ Chat Gpt can establish dependency like behaviour, as people may turn to it for emotional validation and personalising its responses and due to which may create a space where one may over rely and create overindulging and victimisation thinking for themselves. This finding shows the need of consideration while interacting with AI, in the context of behavioural and cognitive patterns.

7. Conclusion

Humankind had undergone subsequential changes, from stone age to technology and eventually developed Artificial Intelligence. AI proved its worth, but excess of anything is harmful. Young adult started relying more on AI rather than their own skills, turned to AI, it started to alter their behavioral pattern example- impulsive behavior, create a need for urgency and inability to wait, evoked desire of immediate gratification, in addition which started diminishing the ability to think critically, effecting decision making, furthermore challenging self-regulation. There are few limitations to this study as it does not focus on groups of ai users and non ai users, moreover this study doesn't include gender difference on respective subject. However, some policies can be used for limitation or to alter it for help and try to eliminate the over-empathetic communicating way that make young adults like victims.

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