



A Study on association between Empathy and Creativity and the influence of Generative AI Usage among Young Adults

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Abstract: The relationship between empathy and creativity has been studied by researchers in the past. This relationship could be moderated by generative AI usage. Empathy is an ability that allows a person to comprehend, share and navigate the emotional states of others. Creativity is a mental process that generates ideas, solutions or products which are novel and useful. Generative AI is a type of artificial intelligence that produces text, images, video, code or audio from massive datasets. The current study investigated the association between empathy and creativity and how generative AI usage influences this association among young adults. Standardized scales were used to measure empathy, creativity and generative AI usage. The sample included 61 participants belonging to the age group 20-30. The findings showed significant positive correlation between creativity and empathy as well as generative AI usage and creativity. The results also revealed that the main effects of empathy and generative AI usage on creativity were statistically significant but the interaction effect of empathy and generative AI usage on creativity was found to be statistically insignificant. Simple slope analysis demonstrated that the association between empathy and creativity was significant at average and low levels of generative AI usage but became non-significant at high levels of generative AI usage. The findings suggested that young adults with high creativity should practice perspective-taking and design solutions by employing design-thinking frameworks to enhance empathy. They should improve creativity by using generative AI as a brainstorming tool to reduce mental block and apprehension during ideation process of a project.

Keywords: *Empathy, Creativity, Generative AI usage, Young adults*

1. Introduction

"Vulnerability is the birthplace of love, belonging, joy, courage, empathy and creativity."

Brené Brown

Empathy is experiencing other person's world as if it is your own without losing the "as if" quality. There are three types of empathy; a) cognitive empathy (understanding another person's mental state, thoughts and emotions), b) affective empathy (the capacity to physically and emotionally feel what another person is experiencing) and c) compassionate empathy (understanding another person's feelings and taking action to help them). Empathy strengthens relationships, regulates emotions and promotes helping behaviors.

Creativity is the capacity to develop new ideas and use it to solve problems. Creativity consists of two components which are originality (the idea should be novel) and functionality (the idea should be useful). Creativity is interconnected with empathy. Understanding a situation from another person's perspective helps individuals to overcome personal bias and build novel solutions. Generative AI usage means employing machine learning models like ChatGPT or Copilot to generate text, images, audio, video and code from prompts. People use generative AI for work and personal projects, learning and emotional support. Generative AI usage can influence the relationship between empathy and creativity.

According to Carrier et. al (2015), a study was conducted on young adults determining the nature of the relationship between Internet usage and empathy found out that going online had less negative impact upon cognitive and affective real-world empathy and improved time spent in face-to-face communication. Further, it was also found out that video gaming reduced real-world empathy in both females and males but didn't reduce face-to-face time. The data also revealed that virtual empathy was positively correlated with real-world empathy.

A study was conducted on young adults of ages 23-40 years investigating the relationship between dialectical thinking and creative performance in early adulthood found out that scores on dialectical thinking were positively correlated and scores on formal thinking were negatively correlated with divergent thinking test scores. Further it was also found out that participants in the dialectical thinking group scored higher than those in the formal thinking group on the six dimensions of the divergent thinking test (Yang, et al. 2010).

According to Chan et al. (2026), a study was conducted on young adults aged 18-24 across four societies (Austria, Serbia, Indonesia, Hong Kong and China) examining how the perceived

valence of generative AI on social media shapes young adults' intentions to use generative AI across four societies and the mediating roles of perceived usefulness and general attitudes found out that perceived usefulness and positive attitudes toward generative AI significantly mediated the relationship between perceived valence and use intention. Further it was also found out that the direct relationship between perceived valence and use intention was significant only in Indonesia and Hong Kong and not in Austria and Serbia. The data also revealed that the influence of perceived valence on positive attitudes was stronger in the two Asian societies compared to the European societies.

2. Review of literature

2.1 *Empathy*

According to Kalisch (1973) empathy is defined as "the ability to enter into the life of another person, to accurately perceive his current feelings and their meanings." Rogers (1959) defined empathy as "being able to perceive the internal frame of reference of another with accuracy and with the emotional components and meanings which pertain thereto as if one were the person, but without ever losing the 'as if' condition." "Empathy refers to the act of constructing for oneself another person's mental state." (Hogan, 1969)

According to Alzayed, Miller and McComb (2022) a study was conducted on 103 first-year engineering students investigating the role of trait empathy in creative concept generation and selection in a humanitarian engineering design student project found out that empathic concern tendencies predicted the generation of more ideas. Further it was also found out that perspective-taking and fantasy tendencies negatively predicted the generation of more ideas. The data also revealed that personal distress predicted participants' propensity for the selection of useful ideas whereas empathic concern negatively predicted the selection of useful ideas.

A study was conducted on Chinese graduates and undergraduates exploring the relationship between empathy and everyday creativity across various dimensions found out that cognitive empathy significantly positively correlated with everyday creativity and domain-specific creative behaviors. Further it was also found out that cognitive empathy positively correlated with creative achievement and domain-specific creative achievements (Tie et.al, 2024).

According to Kripal and Reiter-Palmon (2024) a study was conducted on 220 participants examining the connection between empathy, problem construction and creative problem solving

found out that empathy significantly positively correlated with problem construction quality and originality. Further it was also found out that problem construction quality and originality each mediated the relationship between empathy and solution quality and originality.

2.2 Creativity

According to Welch and McPherson (2012) creativity is defined as "the human capacity to use imagination and to create solutions for complex problems." Amabile (1997) defined creativity as "the ability to produce novel, appropriate ideas in any realm of human activity, from science, to the arts, to education, to business, to everyday life." "Creativity is a process that leads to the production of a novel, useful idea or product." (Runco and Jaeger, 2012)

According to Wang et. al (2026) a study was conducted on 267 supervisor-employee dyads investigating the connection between generative artificial intelligence usage and employee creativity in workplace settings found out that generative artificial intelligence usage is positively correlated with creative self-efficacy, creative process engagement and employee creativity. The findings demonstrated that both creative self-efficacy and creative process engagement mediate the relationship between generative artificial intelligence usage and creativity. The data also revealed that task complexity moderates these mediating effects with stronger indirect effects observed under high-complexity conditions.

A study was conducted on 267 Chinese in-service employees examining the dual effects (both positive and negative) of generative artificial intelligence usage on employee creativity found out that generative artificial intelligence usage improves domain-relevant skills, but it reduces employee creativity by increasing dependence on intelligent machines. Further it was also found out that creative adaptability moderates the positive relationship between generative artificial intelligence usage and domain-relevant skills, subsequently influencing the mediated effects on creativity (Mingjie et. al, 2025).

According to Mahon et al. (1999) a study was conducted on 68 young adults exploring the associations of loneliness, perceived social support and the lack of social self-confidence with creativity in young adults found out that perceived social support was significantly positively correlated with creativity. The data revealed statistically significant inverse correlations between loneliness and creativity and between lack of social self-confidence and creativity.

2.3 Generative AI usage

According to Brown (2021), generative AI is defined as "the virtual mentor or partnership."

Peres et al. (2023) defined generative AI as "a tool having powerful information processing ability, enabling efficiency in tasks such as text generation, question answering and text summarizing."

According to Satria, Gita and Dewangga (2025) a study was conducted on 120 undergraduate students examining the influence of generative artificial intelligence on human emotional understanding and digital empathy in online communication contexts found that exposure to emotionally responsive artificial intelligence significantly increased users' empathy levels and emotional understanding compared to neutral artificial intelligence interaction. Further it was also found out that digital empathy strongly correlated with emotional understanding.

A qualitative case study was conducted exploring how novice designer students' interactions with generative artificial intelligence shaped the preparation and execution of student-led empathy interviews found out that the depth of human-artificial intelligence collaboration during the question generation phase directly influenced the quality of the empathy interviews. Further it was also found that students employing high generative artificial intelligence output modification resulted in greater empathic connection through active listening and follow-up probing (Farrington, 2026).

3. Purpose

The purpose is to investigate the association between empathy and creativity and how generative AI usage influences this association among young adults.

4. Hypothesis

H1: Empathy will be significantly positively associated with creativity among young adults

H2: Generative AI usage will significantly moderate the relationship between empathy and creativity among young adults

5. Method

5.1 Sample

A total sample of (N = 61) of young adults belonging to the age group 20-30 years consisting of students and working professionals who use generative AI was collected via convenience sampling from the city of Pune.

5.2 Measures

Toronto Empathy Questionnaire (TEQ): The Toronto Empathy Questionnaire was used to measure empathy among young adults. The scale was developed by Spreng et.al, 2009. The scale consisted of 16 items and the rating scale included, Never (0), Rarely (1), Sometimes (2), Often (3), Always (4).

Short Scale of Creative Self (SSCS): The Short Scale of Creative Self was used to measure creativity among young adults. The scale was developed by Karwowski (2011). The scale consisted of 11 items and the rating scale included, Definitely not (1), somewhat not (2), neither yes or no (3), somewhat yes (4), definitely yes (5). It assesses two core dimensions: creative self-efficacy (questions 3, 4, 5, 6, 8, 9) and creative personal identity (questions 1, 2, 7, 10, 11).

Generative AI Engagement Scale (GAIES): The Generative AI Engagement Scale was used to measure generative AI usage among young adults. The scale was developed by Zhang et.al (2025). The scale consisted of 20 items (8 items in part 1 and 12 items in part 2) and the rating scale included, Never - not at all in the past month (1), Rarely - about one or two times in the past month (2), Occasionally - about once per week (3), Frequently - several times per week (4), Very frequently - nearly daily (5) in part 1 and Strongly disagree (1), Disagree (2), Neither agree nor disagree (3), Agree (4), Strongly agree (5) in part 2. It assesses two core dimensions: use frequency (questions 1-8) and interaction style (questions 1-12).

5.3 Procedures

The study was carried out by obtaining responses from participants via Google forms. Informed consent was taken from each participant and standardized psychological measures were administered to the participants.

6. Analysis of Data

6.1 Results

Table 1: *N, Mean and Standard Deviation*

	Empathy	Creativity	Generative AI usage
N	61	61	61
Mean	46.4	42.8	65.2

Standard deviation	8.94	8.13	16.1
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Table 2: *Correlation between empathy, creativity and generative AI usage*

	Empathy	Creativity	Generative AI usage
Empathy	—		
Creativity	0.320*	—	
Generative AI usage	-0.041	0.351**	—

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

Table 3: *Moderation Model Summary (Generative AI usage as a Moderator)*

Predictor	Estimate	SE	Z	p
Empathy	0.30566	0.13259	2.305	.021
Generative AI usage	0.18347	0.05820	3.153	.002
Empathy $\times$ Generative AI usage	-0.00182	0.00873	-0.209	.835

Table 4: *Simple Slope Estimates showing the effect of the predictor (Empathy) on the dependent variable (Creativity) at different levels of the moderator (Generative AI usage)*

Generative AI Usage Level	Estimate	SE	Z	p
Average	0.306	0.132	2.32	.021
Low (-1SD)	0.335	0.175	1.91	.056
High (+1SD)	0.277	0.203	1.36	.174

7. Discussion of Results

The objective of this study is to examine the relationship between empathy and creativity and how generative AI usage affects this relationship among young adults. The results found out that there is a significant positive relationship between creativity and empathy ($r=0.32$, $p < .05$).

Moreover, it was also found out that there is a significant positive relationship between generative AI usage and creativity ($r=0.35$, $p < .01$).

A moderation analysis was conducted to examine whether generative AI usage moderates the relationship between empathy and creativity. The main effects of empathy ($\beta = 0.305$, $SE = 0.132$, $Z = 2.305$, $p = .021$) and generative AI usage ($\beta = 0.183$, $SE = 0.058$, $Z = 3.153$, $p = .002$) were statistically significant. However, the interaction between empathy and generative AI usage was not significant ($\beta = -0.001$, $SE = 0.008$, $Z = -0.209$, $p = .83$), indicating that generative AI usage doesn't moderate the relationship between empathy and creativity. Simple slope analysis demonstrated that the association between empathy and creativity was significant at average ($\beta = 0.306$, $p = .021$) and low levels of generative AI usage ($\beta = 0.335$, $p = .056$) but became non-significant at high levels of generative AI usage ($\beta = 0.277$, $p = .174$). These findings indicate that among individuals with average and low generative AI usage, higher empathy is associated with higher creativity, enabling individuals with higher levels of empathy to maintain or develop high creativity.

As our findings highlight significant positive relationship between creativity and empathy. Hence, the first hypothesis that empathy will be significantly positively associated with creativity is accepted. The findings align with the study published by Wu et al. (2026) in The Journal of Creative Behaviour, which indicated that empathy was more strongly associated with the two facets of creativity primarily among students with limited multicultural experience. Similarly, our research study demonstrates significant positive association between creativity and empathy.

Finally, we obtained evidence that the interaction between empathy and generative AI usage was not significant thus generative AI usage doesn't moderate the relationship between empathy and creativity. Hence, the second hypothesis that generative AI usage will significantly moderate the relationship between empathy and creativity among young adults is rejected.

Young adults having high creativity should use their imagination to practice perspective-taking and invent solutions for people using design-thinking frameworks to enhance empathy. They should improve their creativity by using generative AI as a brainstorming tool helping them move past mental blocks and apprehension during ideation stage of a project. One limitation of this study is that the results of this study that it has small sample size therefore the findings of the research should be interpreted with caution. Future research should use larger samples to further investigate the relationship between empathy and creativity and generative AI usage.

Despite these limitations, the present study has enhanced our understanding of relationship between empathy and creativity and generative AI usage. We hope that the current research will stimulate further investigation of this important area.

8. Conclusion

The relationship between empathy and creativity has been studied by researchers in the past. This relationship could be moderated by generative AI usage. Empathy is an ability that allows a person to comprehend, share and navigate the emotional states of others. Creativity is a mental process that generates ideas, solutions or products which are novel and useful. Generative AI is a type of artificial intelligence that produces text, images, video, code or audio from massive datasets. The current study investigated the association between empathy and creativity and how generative AI usage influences this association among young adults. Standardized scales were used to measure empathy, creativity and generative AI usage. The sample included 61 participants who were students or working professionals belonging to the age group 20-30. The findings showed significant positive correlation between creativity and empathy as well as generative AI usage and creativity. The results also revealed that the main effects of empathy and generative AI usage on creativity were statistically significant but the interaction effect of empathy and generative AI usage on creativity was found to be statistically insignificant. Simple slope analysis demonstrated that the association between empathy and creativity was significant at average and low levels of generative AI usage but became non-significant at high levels of generative AI usage.

The findings suggest that young adults with high creativity should engage in perspective-taking exercises, practice active listening without judgment to improve empathy. They should participate in different storytelling and community art projects to understand various perspectives of people. Young adults can use generative AI as a brainstorming tool to reduce mental blocks and apprehension during ideation stage of a project which enhances creativity. They can ask generative AI to challenge their core assumptions to strengthen their understanding of a concept. However, the findings of the research should be interpreted with caution as the study has small sample size. Future research should use larger samples to further investigate the relationship between empathy and creativity and generative AI usage.

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