

Self-Efficacy Meets Creativity: How the Dual Moderating Roles of Intrinsic and Extrinsic Motivation Shape Innovative Outcomes

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Abstract

Despite the growing emphasis on the role of creativity, the underlying mechanisms associating self-efficacy and creativity with certain mediating roles remain partly ambiguous. Generally defined as having the skill to make something new and original, creativity is commonly acknowledged as a construct having many ties in common with several realms. This study aims to discover its relationship with self-efficacy through the mediating roles of intrinsic and extrinsic motivation. The Marmara Creative Thinking Dispositions Scale, The Academic Self-Efficacy Scale, and The Academic Motivation Scale were used for collecting the data and they were administered to a total of 197 participants attending a university in İstanbul in the academic year of 2023-2024. The study followed a quantitative approach and mediation analysis was employed to examine the mediating roles through Structural Equation Modeling (SEM). The findings revealed that except for the link between creativity and extrinsic motivation, intrinsic motivation and self-efficacy correlated with creativity in a positive and significant way. As for the mediating roles, while there was a positive and significant effect of intrinsic motivation on the relationship between self-efficacy and creativity ($\beta = 0.155$, $t = 0.664$, $p < 0.01$), a significant but negative mediating role of extrinsic motivation ($\beta = -0.064$, $t = -2.096$, $p < 0.05$) was observed. The practical implications and interpretations of the findings are further discussed.

Keywords:

Creativity, self-efficacy intrinsic motivation, extrinsic motivation, moderating effect

Introduction

The exponential growth in the complexity of today's professional and academic world has urged individuals to promote the ability to think creatively (Cromptley, 2022; Hernández-Torrano & Ibrayeva, 2019) in that creativity enables individuals adapt new settings, find suitable solutions for challenging tasks and generate new opportunities for new avenues for development (Hughes et al., 2018). Defined as "the ability to make or otherwise bring into existence something new, whether a new solution to a problem, a new method or device, or a new artistic object



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or form" (Encyclopedia Britannica, n.d.), creativity is acknowledged as an important human attribute for societal, technological and financial aspects (Haigh, 2010) and as a valuable field of interest (Kerr & Stull, 2019; Ma et al., 2024). Many researchers who have remarked on the definition of the concept of creativity consented that the term contains two fundamental components: novelty or originality, and task-appropriateness or meaningfulness, to which the socio-cultural and historical context has recently been added (Beghetto & Kaufman, 2008; Helfand et al., 2017; Kaufman et al., 2016; Plucker et al., 2018; Simonton, 2009). It is also highlighted lately that the discussions on creativity have focused on output and useful as well as practical outcomes that can be used or produced effectively to solve problems confronted in daily life (Cropley, 2020). In this sense, creative individuals have been referred to as the ones who come up with and "buy low" unique or promising ideas and after refining, "sell them high" (Lubart & Guignard, 2004, p. 45). Therefore, creative people have the ability to find alternative solutions to the problems they encounter that others cannot think of or visualize and to overcome obstacles that others may give up on (Kaufman 2016).

While the preceding explanations and perspectives highlight the complex and multidimensional nature of creativity, to further clarify the theoretical frames which underscore the sources and types of creative potential and behavior seem required. Sternberg and Lubart (1992) examine approaches to explaining creativity in two groups, person-centered and context-centered, with the former placing more emphasis on the internal or personal aspects of creative performance, while the latter focuses on the individual's interaction with the external environment. The investment theory that Sternberg and Lubart (1991) constructed also highlights similar notions and connotes that there are six sources of creativity: "intelligence, knowledge, intellectual styles, personality, motivation, and environment, the first five of which are related to person-centered, while the last is about context-centered" (Zhang & Sternberg, 2011).

While creativity is linked to individuals developing new and original ideas, person-centered approaches, in particular, emphasize the importance of the individual's trust in his or her creativity and feeling competent in creative processes (Beghetto & Karwowski, 2023; Karwowski et al., 2019). Individuals' confidence in their creativity motivates them to overcome obstacles they encounter during the creative process and helps them express their ideas freely as their beliefs in evaluating and developing their own potential stand out as an important component of creative performance. Bandura (1997) argues that long-term and challenging creative processes require individuals to have persistent self-efficacy beliefs in

themselves. Accordingly, in processes where progress is relatively stable and hopelessness about the results prevails, self-efficacy beliefs, namely, individuals' self-confidence in being able to produce original ideas, emerge as a concept that positively affects creativity (Supriatna, 2019).

Defined as "an individual's belief in one's capability to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3), the concept self-efficacy has its roots in social cognitive theory, and it is stated that as a self-regulatory mechanism, high levels of self-efficacy provide increased performance in many areas and various tasks (Gerhardt & Brown, 2005). Haase et al. (2018) assert that self-efficacy is a matter of how long and how much effort individuals put in to find a successful result or an effective solution. In this context, the point that needs to be underlined is the belief that individuals feel about themselves throughout the process, so self-efficacy emerges as an important concept in explaining and understanding the increase in performance in the field of creativity. It is stated that the concepts of creativity and self-efficacy are related to the perceptions of individuals about their abilities and skills in solving the problems they encounter and successfully developing alternative solutions. The combination of the two concepts provides the production of innovative ideas and the performance increase brought about by the personal belief emphasized by the concept of self-efficacy (Bandura, 1997; Valdez-Juárez & Pérez-De-Lema, 2023). Therefore, when individuals believe that they can accomplish assigned tasks and have confidence in themselves, they are more possibly to engage in the process and develop their ideas originally because they feel the potential for success (Valdez-Juárez & Pérez-De-Lema, 2023).

Schunk (1991) states that self-efficacy is not the only factor or the most important factor affecting behavior, but that expectations or beliefs about the outcome are important, as individuals' expectations or beliefs about negative outcomes will not motivate them. Research on motivation suggests that the notion of self-efficacy in Bandura's social cognitive theory is an important and fundamental part of academic motivation (Bryant, 2017), given that self-efficacy is theoretically linked to motivation and perseverance, or the ability to persist in action when faced with problems (Supriatna, 2019). In other words, the belief about oneself affects not only the individual's behavior but also his or her motivation for personal development and success. In this context, the relationship between self-efficacy and motivation gains a deeper meaning within the framework of Self-Determination Theory (SDT). Self-Determination Theory aims to understand the internal and external sources of motivation of the individual and is based on the three basic psychological needs of individuals:

autonomy, relatedness, and competence. While autonomy is related to having a feeling of autonomy when making choices, relatedness focuses on internal tendencies such as the need to establish relationships, the sense of belonging, caring, being loved and cared for. Competence, which is closely associated with self-efficacy, underscores the desire or tendency of individuals to feel effective and competent when interacting with the environment, which is supposed to strengthen their internal motivation and make them more enthusiastic to learn (Deci & Ryan, 2000; Margolis & McCabe, 2006; Petrich, 2020; Ryan and Deci, 2009; Van Den Broeck et al., Wentzel et al., 2016; 2021; Zheng et al., 2020). Being one of the theories that explains the motivation of individuals in the most effective and detailed way, SDT is presented as a construct in which motivation is grouped as "intrinsic and extrinsic", with the main point emphasizing what type of motivation an individual has rather than the amount or level of motivation (Deci & Ryan, 2000; Dörnyei, 2003; Pelletier, 2002; Ryan & Deci, 2009; Zheng et al., 2020). Bryant (2017) attests that both self-efficacy and motivation are motives that enable individuals to adopt and pursue a goal and to persevere in the face of challenges. Individuals with a relatively high sense of efficacy tend to take on more demanding tasks and are more persistent and motivated in the face of obstacles. Deci and Ryan (1985), citing White (1959), maintain the need for a basic motivational initiative that drives a wide range of non-impulsive behaviors and suggest that there is an intrinsic satisfaction in expanding one's capabilities, where the energy behind this activity is called motivation and the corresponding effect is named efficacy.

Self-efficacy, confidence or belief in one's ability, promotes motivation that enhances creative thinking and innovation. Related literature underscores the fact that higher levels of creative self-efficacy increase confidence associated with creativity and thus motivates individuals to have creative outcomes (Anggarwati & Eliyana, 2015; Bozdoğan, 2023; Chen et al., 2023; Tierney & Farmer, 2011). The findings of various studies in terms of the significance of self-efficacy perception and motivation are consistent with the theoretical framework. Among others, Chowdhury and Shahabuddin (2007), Taheri-Kharamah et al., (2018), Williams et al., (2014), Saracaloğlu and Dinger (2009), and Yüner (2020) found a significant and positive relationship between self-efficacy and motivation. Specifically, as for the role of intrinsic motivation, Gan et al. (2023) found a positive and significant relationship between intrinsic motivation and English language self-efficacy. Similarly, the positive and significant relationship was also evidenced by Alci (2015), Atik (2020), Chen and Sukying (2024), Fatima et al. (2018), Rossi et al. (2020) and Walker et al.'s (2006) studies. Farmer and Tierney (2017) assert that self-efficacy and intrinsic motivation are diverse motives

that promote the creativity levels of individuals. In this context, Zhou et al. (2012) in their research focusing on problem-solving demand and creativity found that intrinsic motivation acted as a moderator in the association and that the link was far more powerful for the ones with high levels of intrinsic motivation. The studies focusing on the relationship between extrinsic motivation and self-efficacy generally yield a negative linkage. For instance, the studies conducted by Walker et al. (2006), Rossi et al. (2020) as well as Martinelli and Sassi (2010), revealed a negative relationship between extrinsic motivation and self-efficacy, which could be attributed to the fact that extrinsic motivation focuses on external factors and occurs when an activity is performed to gain separable consequences. In contrast to intrinsic motivation, it does not provide joy or satisfaction in the activity itself but bears a kind of instrumental value and compliance (Gan et al., 2023; Ryan & Deci, 2000).

As a conclusion, the notion of self-efficacy increases individuals' beliefs in themselves and their ability to realize their potential. It is observed that individuals with high self-efficacy levels have a highly developed capacity to cope with the difficulties they face, and therefore the concept itself serves critical importance for individuals to realize themselves and produce creative solutions, because being related to individuals' beliefs about their ability to achieve any goal, self-efficacy is commonly acknowledged as a fundamental psychological construct that influences many aspects of performance, including creative solutions or products. Thus, exploring the relationship between creativity, which is an indispensable skill in social, professional and academic settings, and self-efficacy could yield deeper insights on how self-efficacy evolves into creative potential. In this sense, motivation emerges as an element that enables individuals to actively participate in the learning process and supports creativity and is therefore closely related to self-efficacy, because while motivation bridges the gap between one's performance and abilities, lack of motivation, on the other hand, leads to a decrease in individuals' self-belief and, as a natural consequence, to their failure to fully demonstrate their potential.

In this study, while the relationship between self-efficacy and creativity is examined, the reflections of intrinsic and extrinsic motivation factors as mediating factors on this relationship will also be explored, which will add further implications to the related literature. Intrinsic motivation, which is associated with personal interests, desires and tendencies, brings deeper engagement and more effective creativity processes to the forefront. On the other hand, extrinsic motivation, which is essentially related to external promises or rewards, can also activate and spur creative processes, although its reflections could vary depending on the

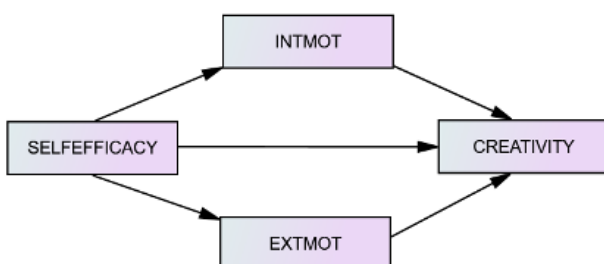
context and task nature. In this context, university students as a study group could provide important demographic reflections in that university setting is structured in a way that it enhances, among others, intellectual curiosity, skill development, critical thinking and creativity as they constantly handle problem-solving, producing innovative ideas, trying to find out and observe their beliefs and aptitudes and interacting with others. In addition, at this level, they are more prone to acknowledge their opinions about themselves and about what makes them stimulate to have creative outcomes.

The present research, addressing the relationship between self-efficacy and creativity and examining how intrinsic and extrinsic motivation mediates this relationship separately, is thought to contribute to understanding which type of motivation directs self-efficacy to creative behavior more effectively. The findings are thought to be useful for educators and practitioners who aim to promote innovative environments and processes and to reveal individuals' beliefs in success. In this vein, the present study intends to examine the impact of individuals' beliefs regarding their potential on creative endeavors and identify how intrinsic interests and pleasures, as well as external incentives and rewards, contribute to the pathway between self-efficacy and creativity. More specifically, the main purpose of this study is to examine the association between self-efficacy and creativity and particularly to focus on investigating the mediating roles of intrinsic and extrinsic motivation. With this aim, the research intends to provide detailed insights into the role of motivation in the context of self-efficacy and creativity and to contribute to the process of utilizing more effective approaches to enhancing creative endeavors in educational settings.

Research Questions:

1. How does self-efficacy relate to creativity?
2. To what extent does intrinsic motivation act as a mediator in the relationship between self-efficacy and creativity?
3. To what extent does extrinsic motivation act as a mediator in the relationship between self-efficacy and creativity?

Figure 1.
The model with intrinsic and extrinsic motivation as moderators



Methods

Research Design

The present study follows the quantitative approach to explore the relationship between self-efficacy and creativity through the mediating roles of intrinsic and extrinsic motivation. Mediation analysis is employed in order to examine the mediating roles through Structural Equation Modeling (SEM), a statistical method that consents the examining of a set of associations among one or more independent variables and one or more than one dependent variables (Ullman & Bentler, 2012). The application of SEM in the current study is due to its allowance for the analysis of the relationships of multiple variables including the estimation of direct and indirect effects among numerous variables (Valeri & VanderWeele, 2013). In the present study specifically, SEM allowed the examination of intricate links among self-efficacy, meta-cognitive awareness, reflective thinking, and critical thinking, within a single model as the latent variables.

Participants

The data collection tools were administered to a total of 197 participants attending a university in Istanbul at diverse departments chosen in line with the principles of convenient sampling (Oreswell, 2012). The present study employed this type of sampling in that allowed to select participants based on their availability and eagerness to take part in the research. As the participants were attending preparatory classes, the opportunity for representing a diverse cross-section of various academic majors in the university. In the sample, there were 93 (47.2%) female participants and 104 (52.8%) male participants. The tools were administered to the participants in their classes in the academic year of 2023-2024, and the participants were informed about the confidentiality of the data and that the participation was entirely based on voluntariness. In table 1, the demographic variables of the participants are presented.

Table 1
The Demographic Characteristics of the Sample

		f	%
Gender	Female	93	47.2
	Male	104	52.8
Age	17-20	185	94
	21-23	9	5
	24-26	3	1
Total		197	100

Instruments

The Marmara Creative Thinking Dispositions Scale

The Marmara Creative Thinking Dispositions Scale consists of 25 items and six structures (innovation

search, courage, self-discipline, inquisitiveness, doubt, and flexibility). Being a five-Likert tool ranging from “Never” (1) to Always (5)”, the scale was developed by Özgenel and Çetin (2017), and the reliability of the whole scale was found as Cronbach’s alpha internal consistency coefficient .91. According to the results of the test-retest, the correlation coefficient was found to be significant for the whole scale ($r = .88; p < .001$).

The Academic Self-Efficacy Study

Developed by Owen and Froman (1988), The Academic Self-Efficacy Scale was adapted into Turkish culture by Ekici (2012). For validity and reliability, the scale was administered to 683 university students, and it was found to have three sub-dimensions (“social status, cognitive applications and technical skills”). Consisting of 33 items and prepared in the form of five-Likert scale, it ranges from “strongly disagree (1) to strongly agree (5). The reliability coefficient as Cronbach’s alpha for the whole scale was found to be .86. Cronbach’s alpha value was .88, .82 and .90 for “social status, cognitive applications and technical skills dimensions”, respectively.

The Academic Motivation Scale

The Academic Motivation Scale was originally developed by Vallerand et al. (1992) and translated into Turkish by Karataş and Erden (2012). The scale consists of 27 items and three sub-scales, assessing three different types of motivation (“intrinsic motivation, extrinsic motivation and amotivation”). Prepared in a seven-Likert form ranging from “does not correspond at all (1) to corresponds exactly (7)”, the internal consistency coefficient of the scale was found to be .97 Cronbach alpha and the factor analysis values also demonstrated that there were seven factors explaining 68.59% of the total variance in the scale (Karataş & Erden, 2012). In the present study, the items for intrinsic (10 items) and extrinsic motivation (13 items) were analyzed and Cronbach’s alpha value in the study without the presence of amotivation subscale was found to be .83.

Data Analysis

Prior to data collection, the participants were appraised of the study’s aim and were provided informed consent. Data collection tools were administered in the classrooms under the supervision of the lecturers. Responses gained through the tools were screened for completeness and invalid papers were excluded. The dataset was then inputted into software program (SPSS, 23.0) for the analysis.

The data obtained from the data collection tools were conducted to investigate the relationship between self-efficacy and creativity through the mediating roles of intrinsic and extrinsic motivation. First, descriptive

statistics were obtained regarding the data, and Pearson correlation coefficients were calculated to evaluate the relationships between the variables. In the following process, whether intrinsic and extrinsic motivation had any role in the relationship between self-efficacy and creativity was tested through SEM. The aim of this analysis was to determine the direct or indirect effect of intrinsic and extrinsic motivation on the relationship in question.

Findings

The values of descriptive statistics along with skewness and kurtosis of the variables of the study are presented in Table 2.

Table 2
The Descriptive Values of the Variables

	N	M	SD	SE	Min.	Max.	Range	Skewness	Kurtosis
Creativity	197	80.56	24.60	1.74	52	115	63	-.584	-.112
Self-Efficacy	197	96.98	22.94	1.60	53	140	87	-.738	.293
Intrinsic Mot.	197	39.21	8.98	0.64	33	45	12	-.679	.336
Extrinsic Mot.	197	40.46	12.85	0.90	27	62	35	.103	.844

Table 2 presents the descriptive statistics of the variables involved in the study. The arithmetic means of creativity, self-efficacy, intrinsic motivation and extrinsic motivation were computed at 80.56 ($SD = 24.60$), 96.98 ($SD = 22.94$), 39.21 ($SD = 8.98$) and 40.46 ($SD = 12.85$), respectively. As illustrated, the skewness and kurtosis values of the variables are between +1 and -1; they suggest a normal distribution of the data (Hair et al., 2022).

The correlation values among creativity, self-efficacy, intrinsic and extrinsic motivation are illustrated in Table 3.

Table 3
The Correlation Analysis

	1	2	3	4
Creativity	1			
Self-Efficacy	.394*	1		
Intrinsic Mot.	.502*	.641*	1	
Extrinsic Mot.	.061	.331*	.405*	1

* $p < 0.01$ (two-tailed)

As illustrated in Table 3, the correlation values between self-efficacy and creativity ($r = .394; p < 0.01$); intrinsic motivation and creativity ($r = .502; p < 0.01$); intrinsic motivation and self-efficacy ($r = .641, p < 0.01$); extrinsic motivation and self-efficacy ($r = .331, p < 0.01$) and extrinsic motivation and intrinsic motivation ($r = .405, p < 0.01$) were statistically significant and positive. On

the other hand, although the association between extrinsic motivation and creativity ($r = 0.61, p > 0.05$) was positive, it was not statistically significant.

Figure 2 shows the unstandardized regression values of the model with the mediating roles of intrinsic and extrinsic motivation.

Figure 2.
The regression values of the model

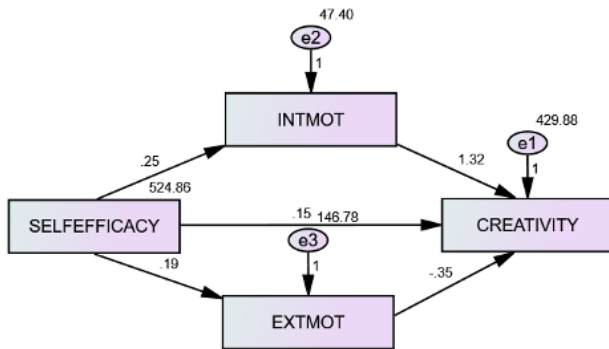


Table 4 presents the regression weights, standard errors, critical ratios, and p-values of the variables.

Table 4 illustrates that the predictive power of self-efficacy on creativity (MLE = .15; CR = 2.39), self-efficacy on intrinsic motivation (MLE = .25; CR = 15.74), intrinsic motivation over creativity (MLE = 1.32; CR = 8.27), self-efficacy over extrinsic motivation (MLE = .18; CR = 6.59) are statistically significant and positive. On the other hand, the predictive pattern between extrinsic motivation and creativity is statistically significant though negative.

Table 5 illustrates the association between self-efficacy and the mediating roles of intrinsic and extrinsic motivation.

Table 5 summarizes the mediating roles of intrinsic and extrinsic motivation on the relationship between

self-efficacy and creativity. The findings disclosed statistically a positive and significant indirect effect of intrinsic motivation on the relationship between self-efficacy and creativity ($b = 0.155, t = 0.664, p < 0.01$). Similarly, the direct effect of self-efficacy without the mediating role of intrinsic motivation was also positive and significant ($b = 0.330, p < 0.01$). On the other hand, upon analysing the effect of extrinsic motivation on the linkage between self-efficacy and creativity, the findings revealed a significant but negative mediating role of extrinsic motivation ($b = -0.064, t = -2.096, p < 0.05$). As illustrated, the lower and upper bound values for the relationship with the presence of intrinsic motivation range from 0.243 to 0.444, while with the mediating role of extrinsic motivation, the values lie between -0.136 and -0.014 at the 95% confidence interval. Thus, it can be concluded that intrinsic and extrinsic motivation partially mediated the association between self-efficacy and creativity.

Discussion

The current study centres on the association between self-efficacy and creativity with the presence of intrinsic and extrinsic motivation as moderators. Upon analysing the data, the findings revealed a significant and positive association between self-efficacy and creativity, indicating that individuals' self-beliefs and their confidence affect their creativity levels in a positive way. Further, the findings also underscored that intrinsic motivation as a mediator over the relationship between self-efficacy and creativity acts in a positive and significant way, which underlines the significant role of intrinsic motivation as an important variable in increasing the creativity levels of university students.

This is especially pertinent for university students in that they usually confront settings and conditions that entail creative endeavours, innovation, practical solutions for the problems that they encounter and self-beliefs as well as confidence of themselves.

Table 4
The standardized values of regression weights, standard errors, critical ratios, and p

	MLE	SE	CR	p
SE → CRT	.14	.06	2.39	.00**
SE → INT	.64	.01	15.74	.00**
INT → CRT	.47	.16	8.27	.00**
SE → EXT	.33	.02	6.59	.00**
EXT → CRT	-.18	.09	-3.85	.017*

**p < 0.01; *p < 0.05; SE = Self-Efficacy; CRT = Creativity; INT = Intrinsic Motivation; EXT = Extrinsic Motivation

Table 5
The Mediation Analysis

Relationship	Direct Effect	Indirect Effect	Confidence Interval		p-value	Conclusion
			Lower Bound	Upper Bound		
SE → INT → CR	0.330	0.155	0.243	0.444	0.00**	Partial Mediation
SE → EXT → CR	(0.000)	-0.064	-0.136	-0.014	0.013*	Partial Mediation

**p<0.01; *p < 0.05, SE=Self-Efficacy; CRT=Creativity; INT=Intrinsic Motivation; EXT=Extrinsic Motivation

Hence, with high levels of self-efficacy beliefs as well as elevated inner drive, they would be able to take on more creative acts such as projects, academic tasks and research. In this context, in educational settings, the learning practices that underscore motivation, self-confidence, autonomy as well as reflective practices should be prioritized.

When the role of extrinsic motivation in the relationship is examined, it can be stated that the variable acts as a significant but negative mediator over the linkage between self-efficacy and creativity. When compared to intrinsic motivation, it is observed that extrinsic motivation has a rather restrictive and negative effect on the creativity levels of individuals. Therefore, the findings show that the mediating effect of intrinsic motivation is significant and positive, and it serves as a strong and supportive component in the relationship between self-efficacy and creativity, unlike extrinsic motivation, which, according to the findings, acts as a weakening mediator.

As a response to the first research question of the study, the findings underscore that individuals' self-beliefs and confidence in themselves positively affect their creativity incentives. The positive relationship between self-efficacy, defined as individuals' belief in their abilities and skills to solve the problems they confront or the tasks assigned to them (Bandura, 1997), and creativity, illustrated as the ability to produce innovative, unique and original ideas (Stenberg, 1985), reveals that individuals with high self-efficacy are more effective in creative processes and can produce original ideas. Farmer and Tierney (2017) suggest that in creative processes, especially when faced with discouraging and demotivating difficulties such as frequent failures at the starting point, individuals need a driving force that will mobilize their determination and perseverance in order to take creative action at this point. In this sense, self-efficacy provides such power in terms of choice, initiation, participation and sustainability. Thus, upon confiding in themselves and their potential, individuals could be more daring and enthusiastic when confronted with challenges and restrictive boundaries while coming up with creative ideas, which helps them utilize their creativity more efficiently and competently. Then, due to the difficulties inherent in the creativity process, perseverance and resilience are necessary for individuals to realize their creative potential (Coursey et al., 2018), as, after all, self-efficacy beliefs not only provide information about, but can also be predictive of, whether people who have the tendency and ability to perform creatively will engage in a task they encounter, whether they will make an effort to accomplish the task, and ultimately whether they will carry out the creativity process as required (Beghetto & Karwowski, 2023). Several studies in the related literature seem to support the highlighted association between self-efficacy and

creativity. For instance, a meta-analysis conducted by Haase et al. (2018) with 17226 participants involved revealed a strong relationship between self-efficacy and creativity ($r=.53$). Similarly, in another meta-analysis with a sample size of 11621, Herianto (2024) found the relationship between self-efficacy and mathematical creativity positive and significant.

As a response to the second research question of the study, the role of intrinsic motivation was examined, and the findings revealed that as a moderator, intrinsic motivation acts in a positive and significant way on the link between self-efficacy and creativity. Amabile (2013), in her widely cited theory of the componential model of creativity, argues the essential components that lead to creativity, one of which is intrinsic motivation, being a central tenet. The theory asserts that "people will be most creative when they feel motivated primarily by the interest, enjoyment, satisfaction, and challenge of the work itself – and not by external pressures" (Amabile & Fisher, 2009, p. 2). In line with the theory, numerous studies have examined the link between intrinsic motivation and creativity. Among others, Fischer et al. (2019), Cromwell et al. (2023), and Choi (2004) found a positive and significant relationship between the constructs. In addition, a meta-analysis conducted by De Jesus et al. (2013) with 6435 participants also revealed a positive and significant relationship. These findings highlight the creative processes that intrinsic motivation helps promote and emphasize that when the individuals have an intrinsic interest in the activities they perform and enjoy them, their creativity levels become far more evident. Reviewing the obtained findings and relevant literature reveals that individuals' self-efficacy perceptions support the emergence of original and unique ideas through creativity processes. At this point, it can be stated that individuals with high self-efficacy perceptions increase their creativity levels with their beliefs about themselves and high-level intrinsic motivation. In other words, as observed in this study, individuals' beliefs about themselves supported by intrinsic motivation help increase creativity performance.

The findings obtained from the study have revealed that extrinsic motivation plays a negative mediating role in the relationship between self-efficacy and creativity. This shows that extrinsic motivation may have a limiting and reducing effect rather than encouraging creativity levels. Extrinsic motivation focuses on external factors and occurs when an activity is performed to gain separable consequences. In contrast to intrinsic motivation, it does not provide joy or satisfaction in the activity itself but bears a kind of instrumental value and compliance (Gan et al., 2023; Ryan & Deci, 2000). Individuals possessing or tending to have this type of motivation may direct them to traditional or risk-free solutions. This situation

may inhibit their independent and free thinking in creative processes and limit their potential to produce new ideas. The finding of the current study is consistent with some studies suggesting the negative or no association between extrinsic motivation and creativity. For example, the studies of Cooper and Jayatilaka (2006), Baer et al. (2003), Prabhu et al. (2008), and Zhu et al. (2018), along with Amabile (1985) demonstrated that extrinsic motivation has a kind of lowering effect or negative relationship with creativity. This may connote the idea that when factors such as external reward, fear of disapproval, punishment, and fear of being evaluated in a negative way by others are involved, individuals may focus on meeting expectations rather than thinking creatively. Therefore, the negative mediating role of extrinsic motivation on creativity may limit the ability of individuals to think independently and uniquely in their creative processes. In addition, the confidence interval of extrinsic motivation (-0.136 and -0.014) gained through the data, unlike that of intrinsic motivation (0.243 and 0.444) also suggests that intrinsic motivation could be an important motive for creativity, whereas extrinsic motivation could serve as a restrictive factor.

Conclusion

To sum up, the findings of the current study confirm that there is a significant and positive relationship between self-efficacy and creativity, and that intrinsic motivation has an important mediating role supporting this relationship. On the other hand, it is seen that extrinsic motivation has a limiting or weakening effect on the relationship. The findings underscore the significance of promoting self-belief and inner-drive in educational settings. In this context, the study offers key insights for university students who are supposed to have these skills for their academic and prospective careers. This indicates that when the students have internal motivation out of curiosity or interest, and with the help of high self-efficacy beliefs, then they are far more inclined to reach creative outcomes. Therefore, in processes that require creativity, individuals' joy in what they do and acts in line with their own desires and motives help them to come up with original and new ideas, which are the basic elements of creativity. On the other hand, individuals' actions when based on expectations prevent original ideas from being put forward and limit creative performance.

Implications

This research provides evidence that self-efficacy has a significant relationship with creativity processes and that intrinsic motivation plays an important mediating role in supporting individuals to perform better in creative processes. It is recommended that structures that support the intrinsic motivation of individuals be established, especially in educational settings where creativity is desired to be encouraged. Opportunities

such as providing opportunities that consider the interests of individuals and allowing them to think and act freely can help to reveal more creativity. In addition, it should be kept in mind that extrinsic motivation practices based on external motivations may have relatively limiting characteristics on creativity.

A thought-provoking follow-up study to the present research would be to examine the effect of intrinsic and extrinsic motivation on creativity in different cultural backgrounds. This could have important impacts over creativity and motivational factors could be an inviting field to study in this sense. In addition, exploring the impact of self-efficacy over creative performance perceptions at different age groups and in different fields could also be helpful.

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