

RISK-TAKING: CREATIVE EXPLORATIONS IN A STUDENT ENVIRONMENT

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ABSTRACT

This study analyzes the relationship between the level of risk-taking and creativity among a group of students in Abidjan. Using a Likert questionnaire to assess their propensity for risk, we discovered a significant and positive correlation between risk-taking and creativity, highlighting a qualitative preference for aspects such as flexibility and originality. By exploring the role of emotions and the psychotism trait, this research suggests that risk-taking promotes cognitive disinhibition, thus paving the way for innovative idea associations. These findings also encourage rethinking creativity from the perspective of mental courage and emotional management.

Keywords: Creativity, Risk-taking, Emotions, Psychotism, Cognitive Disinhibition.

1. INTRODUCTION

In a world facing myriad challenges, addressing resolution-driven issues is essential to building a more stable, sustainable and equitable future for future generations. It is from this perspective that our study explores the implications of the link between risk-taking and creativity, two fundamental concepts in the field of psychology and human behavior research. Risk taking involves an often conscious decision to engage in an action, regardless of potential consequences. It can be considered a character trait in certain individuals. On the other hand, creativity for its part is considered according to us to be the capacity in each trial to do new things, or the significant proportion of finding new things over a series of trials, not necessarily in the sense of novelty. (in terms of originality) but also in the sense of new links between elements. Which leads us to say that creativity is neither a plus nor a reply to mean that it is neither the quality of the thing created that is important but it is the variety of elements (the significant proportion of 'varied elements in a production suite) created or produced on each test which is important. In addition to these definitions it also seems important to highlight that although these two concepts have been discussed in the scientific literature, potential links between them have been suggested, thus warranting in-depth exploration.

It is essential to emphasize that risk-taking can manifest itself in various areas of life, whether through personal, professional, financial decisions, or even in creative and innovative situations; and it is essential to remember that taking risks often confronts us with situations where the results remain uncertain, but where the potential benefits can be considerable. It is precisely this reality that arouses our interest in the study of this variable. It should also be noted that risk-taking can vary depending on the individual and the task at hand, which can lead to more or less calculated or even considered levels of risk. Although the link between risk taking and other factors is not always clearly established in the literature, it is undeniable that this variable is influenced by many elements, including education, the social and cultural environment, past experiences, as well as personality (Erikson, 1994; Vygotsky, 1965; Skinner,

1953).

With regard to these numerous factors, it should be remembered that several studies justify the link between certain conative variables and creativity. In the model of creativity developed by (Lubart, 2003), conative aspects refer to the different habitual ways in which individuals behave. These aspects are grouped into three distinct categories: personality traits, cognitive styles, and motivation. Research conducted by Lubart demonstrated positive correlations, with an average of approximately $r = 0.35$, which scientifically confirms the relevance of these three categories as components involved in creativity. Regarding personality traits, it appears that the creative personality is characterized by an ability to act and reason outside of usual patterns. Csikszentmihalyi, through a study, identified certain characteristics specific to the creative personality. He observed that creative individuals are often both intelligent and naive, able to alternate between imagination and fantasy on the one hand, and a practical sense of reality on the other. They present a paradoxical tendency that mixes fantasy and discipline, responsibility and irresponsibility. These individuals are both modest and astute, able to move from introversion to extroversion. They are considered rebellious and independent, passionate about their work, perseverant, even obsessive. They demonstrate curiosity and open-mindedness, and they are well informed, skilled at restructuring ideas, have an assertive personality, autonomous, and initiative. They are energetic, endowed with humor and fantasy (Csikszentmihalyi, 1996). Simonton, for his part, defines these creative individuals as independent, non-conformist, unconventional, with broad interests, open to new experiences, flexible both behaviorally and cognitively, and bold in taking risks (Simonton, 2000, cited by Merhan, 2010). Another distinctive trait according to Merhan is their sensitivity. He points out that the sensitivity of these creative individuals sometimes exposes them to suffering, but also to great moments of happiness (Merhan, 2010).

Continuing the study of the creative personality, Barron identified specific traits commonly observed in creative individuals. These traits include tolerance for ambiguity, open-mindedness, the ability to take risks, and strong intrinsic motivation to explore new ideas (Barron, 1963). Other researchers have attempted to categorize these numerous traits listed in the literature by identifying six main ones: perseverance, tolerance of ambiguity, openness to new experiences, individualism, risk-taking, and psychotism (Lubart, Mouchiroud, Tordjman, & Zenasni, 2015). However, although all of these traits influence and appear to determine creativity, for the purposes of our study, we chose to focus specifically on the risk-taking trait and its connection to creativity.

The importance of looking at this trait is that risk-taking can encourage individuals and organizations to question established norms and think outside the box, rather than simply applying traditional solutions. This notion is highlighted in Csikszentmihalyi's work on creativity and the concept of "flow", which indicates that creativity emerges when individuals engage in stimulating activities that challenge them and take them out of their zone of comfort (Csikszentmihalyi, 1990). In our perspective, due to its flexible dimension, risk-taking pushes individuals to explore new ideas, alternative models, and radical approaches to solving complex problems from different perspectives. It thus promotes the resolution of complex problems, which often requires an iterative approach where ideas are constantly revised. Risk-taking encourages experimentation with potential solutions, even if their immediate success is not guaranteed. In addition, its dimension of resilience and perseverance makes it possible to learn

from failures and feedback from these trials, which guides the iteration and transformation of solutions towards the desired effectiveness. In its synthetic dimension, we believe that risk-taking promotes the exploration of various areas of knowledge and encourages collaboration between different approaches. Regarding the risk dimension, it is important to emphasize that risk taking can involve a conscious acceptance of uncertainty and a willingness to work despite obstacles and threats. This dimension adds to the risk-taking trait the character of perseverance, which seems to be characteristic of individuals of this profile in the face of adversity, thus allowing them to adapt their approaches and find ways to overcome unforeseen events.

It is also important to remember that some research establishes a strong theoretical link between risk-taking and creativity. They suggest that risk-taking is a crucial dimension for developing and maintaining creativity in individuals, because it allows them to go beyond usual limits and explore new avenues of thought and action Csikszentmihalyi (1990). In Simonton's work, we find the idea that creative people are often willing to take risks to explore new ideas and new paths. He believes that creative expression sometimes involves questioning established norms and thinking outside the box to come up with original ideas. Additionally, Simonton emphasizes that risk-taking allows individuals to overcome their fears of failure or social disapproval, which is often necessary to engage in creative activities (Simonton, 1994). In other words, according to Simonton, risk-taking is an important factor in the development of creativity. In Sawyer's work, we also find the idea that risk-taking is closely linked to the desire to question the status quo and to think outside the box to find original solutions to a given problem (Sawyer, 2007). . This perspective supports Barron's (1963) idea that risk taking is an important trait in creative individuals because it allows them to explore new ideas and push conventional boundaries to express their originality and creative potential. . In short, risk-taking appears to be an essential element in the creative process by encouraging exploration and innovation.

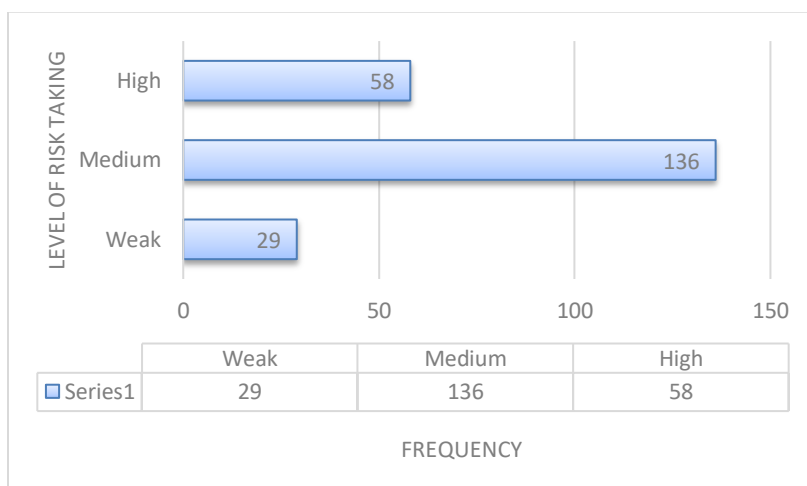
In a context where complex challenges require innovative approaches, it becomes clear that risk-taking encourages us to question established conventions, abandon prejudices and explore daring alternative paths, thus breaking the beaten track. This willingness to be daring can be compared to flexibility, characteristic of creative minds. Additionally, the ability to hypothesize, continually refine approaches based on results, adapt and refine solutions as you learn, and think in an iconoclastic manner, evokes the notion of originality that permeates creative minds. It should also be noted that risk-taking comes with the ability to adapt in the face of multiple attempts and the inevitable failures that result. This is part of a dynamic of learning through experience, generating valuable lessons likely to lead to significant subsequent performance. In this regard, (Bessis & Jaoui, 1972) observed that creative individuals rarely remain satisfied with the solutions they come up with. Which leads us to say that those who appreciate the taste for risk are resolute in their actions, which pushes them to persevere in their businesses. By closely examining the implications of this characteristic that we can describe as risk-taking, it appears that theoretically, it shares common features with creativity. It is with this observation that we ask ourselves the question of whether there is a link between risk-taking and creativity beyond all this theoretical appearance, and to ask operationally that there is a relationship positive relationship between risk-taking and creativity.

2.METHODOLOGY

As part of our study, we worked with 223 second-year students (License 2 & BTS 2) aged 18 to

25. These students came from various fields, some from major schools while others were enrolled at the Félix Houphouët Boigny University, all residing in the city of Abidjan. As part of a research on several themes linked to creativity that we carried out in Abidjan, we particularly selected the subjects of this present study using a Likert-type opinion questionnaire. This questionnaire aimed to collect their self-assessment regarding the degree of risk taking they believe they have. Our Likert scale ranged from 1 to 7, grouped into three levels: 1-2 for low degree, 3-5 for medium degree, and 6-7 for high degree. We chose this scale because of its simplicity and its ability to quickly identify the level of opinion of each participant. Based on these measurements, we obtained the following distribution:

Table 1. Distribution of the number of our students on the risk-taking variable.



Of the 223 participants who responded to our study, we found that 13% of them have low levels of risk-taking, meaning they are reluctant to take risks. On the other hand, 61% of our sample considers themselves to have an average level of risk-taking, while the remaining 26% evaluate their level of risk-taking as being very high. Subsequently, we subjected all participants to two creativity tests. The first test, entitled "Show your imagination with words", is inspired by the manual by (Torrance, 1976). It consists of presenting a vaguely defined scene in which a character stands on a branch, intending to do something unknown. The objective for the participants is to formulate as many questions as possible, the answers to which would help to understand this scene. The second test consists of asking participants to come up with clever ideas for using cardboard boxes. These two tests aim to evaluate three cognitive dimensions: fluidity, flexibility and originality. The total scores obtained on these three dimensions constitute the performance of each individual on the creativity test. It is important to emphasize that these cognitive dimensions, such as fluency (number of different ideas generated), flexibility (ability to approach the same object or idea from different angles), originality (unusual nature of ideas), and

also elaboration (ability to support an idea) are key elements in the study of creativity. However, in this study, we mainly focus on the first three dimensions.

Regarding the markers, after having trained them in the evaluation of each dimension of creativity, we initially submitted (56*2) sheets, or 112 sheets in total, to three different markers. The goal was to determine which rater had the highest commonality, that is, the degree of agreement between their assessments. In this regard, it is important to note that the inter-scorer correlation varied between 0.88 and 0.92. Based on this analysis, we selected the grader whose ratings were the most consistent and concordant to continue rating the remaining sheets. This approach aimed to ensure reliability and consistency of participants' assessments of creativity.

The assessment conditions that we have chosen largely follow current practices in the experimental field of creativity. The test took place collectively, with a limited time of 10 minutes for each test (test 1 and test 2), which totals a duration of 20 minutes. Participants were grouped in their respective classrooms, and everyone was free to sit as they wished. To assess participants' creativity in each of the two verbal tests, we measured three indices of divergent thinking: fluency, flexibility and originality. The fluency score was calculated based on two criteria: the relevance of the responses and the uniqueness of the responses. Thus, if an answer given by a participant was both relevant and unique, it received 1 point. The flexibility score was obtained by counting the number of different categories or themes to which an individual's responses could be assigned. For example, if a participant had produced ten answers divided into three categories, they would have obtained a score of 3 points in flexibility. The originality score was calculated based on the statistical rarity of each answer. Responses that fell between 0 and 2% of the total responses of the entire sample received 2 points, those between 2 and 5% received 1 point, and beyond 5%, no points were awarded. was assigned.

The sum of the scores obtained by each participant in these three dimensions for each of our tests constituted their creativity score. It is important to note that these data were processed using SPSS 25 software to calculate the correlation results between our risk-taking variable and the different creativity indices: fluidity, flexibility, originality, as well as the total creativity score for the two creativity tests. Let us also specify that given that our risk-taking variable is categorical with ordinal modalities, we opted to use the Spearman rank correlation coefficient to present the results.

3. RESULTS

Let's begin our presentation by exposing the averages obtained for each level of risk-taking in the two creativity tests that we administered to all of our participants. In the table below, you will see that the averages tend to increase as we progress from levels of low risk-taking to higher levels of risk-taking, and this manifests itself in the majority of aspects of creativity.

Table 2. Average of the different groups of the risk-taking variable on the dimensions of creativity

Level of Risk Taking	Dimension	Average	Minimum	Maximum	Typical deviation
Weak	Fluidity	8,5862	3,00	18,00	3,16811
	Flexibility	7,7241	3,00	13,00	2,47699
	Originality	0,3448	0,00	2,00	0,72091
	Creativity	16,6552	6,00	32,00	5,91774
Medium	Fluidity	9,2132	4,00	18,00	3,45427
	Flexibility	8,2647	2,00	16,00	3,02884
	Originality	0,7132	0,00	5,00	1,19820
	Creativity	18,1912	6,00	34,00	6,85243
High	Fluidity	9,9138	2,00	17,00	3,71948
	Flexibility	9,1552	3,00	18,00	3,15006
	Originality	1,2414	0,00	5,00	1,62557
	Creativity	19,9483	1,00	34,00	7,51472

As for the following table, it presents the correlations between our risk-taking variable and the creativity dimensions. From the results in this table, it is clear that there is a significant and positive correlation between risk taking and all the creativity dimensions mentioned.

Table 3. Risk taking in relation to other modalities of creativity

	Fluidity	Flexibility	Originality	Creativity
Risk Taking				
Correlation coefficient	,113*	,137*	,197**	,145*
(Spearman's Rho)				
Sig.	0,046	0,020	0,002	0,015
N	223	223	223	223

*. The correlation is significant at the 0.05 level.

**.. The correlation is significant at the 0.01 level.

The results of the correlations between risk taking and the different creativity indices are as follows: a correlation coefficient of $r = 0.11$ with the fluency index, $r = 0.14$ with the flexibility index, $r = 0.20$ with the originality index, and $r = 0.15$ with the creativity index. These

results allow us to conclude that the hypothesis of a significant and positive relationship between the level of risk taking and all of the creativity indices is confirmed. However, a few observations should be highlighted. First, risk taking appears to have a stronger correlation with flexibility (0.14), originality (0.20), and creativity (0.15) compared to its correlation with fluency (0.11). Second, it is notable that risk taking is more strongly correlated with originality (0.20), suggesting that risk taking has a more pronounced qualitative than quantitative influence on creativity.

4. DISCUSSION

Indeed, it is clear that the level of risk taking has a significant and positive correlation with creativity. This finding is hardly surprising given the work of numerous researchers and the often intuitive theoretical links between risk-taking and creativity. However, even if this relationship is often mentioned, its detailed explanation is less common in the literature on creativity. So we'll offer our own explanation at this link.

It is essential to remember that several authors, such as Bessis & Jaoui (1972), Lubart et al. (2015), Ellen (2007), and Simonton (2000), converge in their observation that the trait we describe as risk-taking is often associated with the creative personality or individuals considered creative. However, these authors do not necessarily detail how risk taking can influence the level of creativity. Let's start by emphasizing that certain works highlight the impact of affective, personal, motivational schemes, etc., on our cognitive processes Pascual-Léone (cited by Volpe, 2016). For Lubart et al. (2015), who closely observed creative topics, cognitive style, that is, the habitual way in which a person processes information (e.g., an overall style preferring to focus on general aspects of a task versus a meticulous style focusing on details), is linked to creativity. They suggest that cognitive styles primarily influence quantitative information processing, while personality traits and even intelligence influence qualitative information processing. Beyond the fact that personality traits are not without consequences on information processing, it seems important to emphasize that a good number of authors have also been interested in studying the link between creativity and certain pathologies.

Kay Jamison, clinical psychologist, concludes that there is a link between bipolar disorder and creativity. This researcher, based on the study of famous artists who were diagnosed with this disorder, shows how the manic and depressive episodes of bipolar disorder can influence artistic creativity. She suggests in interpreting this relationship that the intense emotions and mood fluctuations associated with bipolar disorder may fuel creativity (Jamison 1993). However, she is not alone in discussing the role of emotions in creativity. Other researchers, such as Isen, have examined the impact of emotions on creativity. Isen found that only positive emotional states promote creativity compared to negative or neutral emotional states. It argues that positive emotions facilitate access to positive cognitive materials in memory, which allows individuals to generate creative responses (Isen, 1999). However, researchers like Vosburg and Kaufmann have a different perspective. They believe that positive emotional states inhibit creativity, while negative emotional states promote it. They make a distinction between “optimizing” and “satisfactory” responses to justify their position (Vosburg & Kaufmann, 1997). Other researchers, such as Adaman and Blaney, show from their study which consisted of inducing three different emotional states in their subjects (joy, neutral, depression/sadness) that creative performances are better in groups subjected to emotional states (joy or depression) compared to

the neutral group and that there is no significant difference between the joy and depression groups. Which leads them to conclude that the change in emotional state, whatever the condition (joy or depression), promotes creativity (Adaman & Blaney, 1996). For their part, Lubart and his collaborators identify three ways in which emotion influences the creative process. In the first case, emotion is seen as a motivational variable which means that emotion is a factor motivating creativity; in the second case, emotion is seen as a contextual variable, that is to say a factor which positions individuals in a specific state (physiological, behavioral and cognitive) and makes it possible to promote or inhibit creative performances ; and in the third case, emotion is seen as a functional variable, that is to say allowing the stimulation of specific concepts which, through their idiosyncratic activation, can improve the creativity of individuals Lubart et al. (2015). These different explanations show how emotions, as non-cognitive aspects, can influence cognitive mechanisms and have an impact on creativity. But far from stopping there, let's take a look at the research carried out on schizophrenia and its potential link with creativity.

Nancy Andreasen's research on creativity and schizophrenia has suggested that the brains of creative people and people with schizophrenia exhibit common brain patterns (Andreasen, 2005). Additionally, Arnold Ludwig, although his findings seem nuanced, explored how the personal and psychological experiences of creative individuals might be linked to certain disorders (Ludwig, 1996). Authors such as (Borst, Dubois, & Lubart, 2006); Lubart et al. (2015), echoing Andreasen's findings, examined the parentage of people often considered creative, one of whose parents had a psychiatric disorder. They identified a common trait in these people, which they call the "psychotic trait." This trait concerns how an individual interacts with reality. We note that people with a high "psychotic" trait score tend to have cognitive inhibition disorders, that is to say, these people have a tendency to develop distant and sometimes strange associations. Thus this trait according to these authors explains the fact that creativity is sometimes evident in mentally ill people. With the mention that among schizophrenics we often see that they have difficulty ignoring ideas that have no relation to the problem to be solved. In other words, people with this trait described as psychotism to which cognitive inhibition disorder is linked seem to be potential subjects capable of developing association mechanisms that can promote the emergence of innovative ideas.

As for risk-taking, we can already note that this trait can be linked to fear or fear. Whoever speaks of fear also speaks of emotion and emotion management. For our part, it seems important to say that an individual with a high level of risk-taking has a greater propensity to manage or regulate their own emotions and this possibility of tending towards a state of neutral emotion. We believe that individuals with high levels of risk-taking demonstrate bravery in facing realities that others avoid, whether internally (at the level of their internal cognitive activity) or externally. (in their observable actions). Some researchers have also established a link between the state of fear and the inhibition of the use of strategies, arguing that emotions play a crucial role in learning processes, in mental preparation to face challenges, and in the way we evaluate the results obtained. The work of (Bartels & Magun-Jackson, 2009) revealed a negative correlation between fear of failure and the use of metacognitive strategies, thus suggesting that fear of failure is linked to a decrease in the ability to self-regulation when completing a task. Furthermore, (Artino & Stephens, 2007) concluded that effective students report fewer negative emotions. This implies that fear, or even an aversion to risk-taking, can restrict opportunities for

exploration and success. At this level, let us recall the observations that we made in Table 3 on the correlation between the level of risk taking and certain variables.

We observed that risk-taking correlates more with flexibility (.14), originality (.20) and creativity (.15), than its correlation with fluidity (.11); then we noted that risk-taking correlates much more with originality (.20); and thirdly we found that the level of risk taking also correlates much more qualitatively than quantitatively (fluidity .11 < originality .20). This may mean that risk-taking acts much more on the qualitative mechanisms of cognitive activity. Indeed, we believe that risk-taking seen as a mental state or a predisposition of the individual to face certain actions which may seem difficult to undertake is in a very close relationship with the inhibition and disinhibition functions of our organism. . An individual with a high level of risk-taking has a predisposition of his cognitive mechanisms to act on his inhibition process by facilitating the possibility of maximum deactivation of this inhibition process, which allows him to lift internal sanctions while by maximizing the conditions for association mechanisms, thus creating an environment conducive to the generation of associations of innovative ideas. This leads us to suggest that risk-taking plays a role similar to that of psychoticism with regard to creativity. An individual with a strong penchant for risk-taking appears to benefit from a reduction in censorship within their psychological machinery, which brings them closer to creativity. This effect manifests itself by expanding the range of available crossing mechanisms, particularly those of a qualitative nature. This expansion favors the multiplication of connections between the structures at the origin of superschemes, the latter being mainly qualitative. These explanations also justify the observed correlations, notably the relatively weak correlation ($r = .11$) between risk taking and fluidity, as well as the slightly stronger correlation ($r = .14$) with flexibility. Regarding the link between risk-taking and originality, it is explained by the fact that the higher the level of risk-taking, the greater the lifting of restrictions and censorship, or the potential for disinhibition of the subject, lead to increasingly distant associations. These associations range from the simplest to the most complex, which also justifies the link between risk-taking and creativity ($r=.15$) due to productions based on increasingly rich, distant and therefore more original associations ($r= .20$).

In conclusion, the results of this study confirm theoretical assumptions regarding the relationship between risk taking and creativity, thus supporting the findings of previous researchers who have explored this correlation. Nonetheless, it is important to emphasize that our study merits further research to explore in more detail the different levels of risk-taking in relation to the various creativity indices we examined. Potential contributions from future studies could focus on the different categories of risk taking that we have defined, namely low, medium and high levels. Furthermore, our proposed interpretation of this relationship merits further examination and verification by further research. This opens the door to new avenues of investigation to better understand how risk-taking influences creativity and how it can be harnessed to encourage innovative and original thinking. Finally, let us add that this study constitutes an initial contribution to our understanding of the relationship between risk taking and creativity, and invites continued research in this exciting area to deepen our knowledge and discover new practical implications.

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