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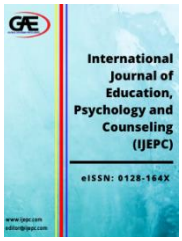

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THE RELATIONSHIP OF CREATIVITY DOMAINS WITH BIG FIVE PERSONALITY TRAITS: A STRUCTURAL EQUATION MODELLING ANALYSIS

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Abstract:

The importance of fostering creativity in higher education has grown increasingly recognized. In this information age, universities have acknowledged the advantages of creativity for both individuals and societies. This study established a model to use Structural Equation Modeling (SEM) to analyse the relationship between creativity domains and personality traits based on the psychometric method and expanding on the creativity domains theory and the traits theory. The measurement model survives the validity and reliability test. The structural model has shown acceptable goodness of fit tests. The instruments were administered to 415 Malaysian undergraduate students. The study concludes that personality traits have a significant relationship with creativity domains and can theoretically enrich the current research of creativity assessment in higher education. This is an essential skill for students to develop, with implications both for their personal futures and for society as a whole.

Keywords:

Creative Person; Higher Education; Creativity Assessment; Personality Traits; Structural Equation Modelling

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Introduction

Higher education has focused on preparing students to acquire knowledge for the last century, however recently there has been a shift toward preparing students with a variety of soft skills that rely not only on cognition but also on the connections of cognitive, social, and emotional characteristics (Care & Anderson, 2016). Higher education students need to acquire practical soft skills to be exceptional future employees in order to adapt to the expectations of the working world. According to the 2016 World Economic Forum discussion on "The Future of Jobs," which also covered the future of job skills and workforce strategy creativity was one of the top skills employees need in today's economy,. In the information era, creativity has grown to be one of the most in-demand skills for students in higher education. For higher education institutions, creative people are in high demand (Littleton et al., 2010). For instructors, professors, and students, creativity has evolved over the past ten years into a skill that is essential. It is regarded as a remedy for a number of social, economic, and educational issues. As a result, a great deal of research has been focused on assessing creativity (Said-Metwaly et al., 2017).

Creativity, which is now seen as the key to success in the workplace, is at the center of the educational process in the twenty-first century (Robinson, 2011). According to corporate and public sector leaders, creativity is the most essential skill a leader must hold (Vincent & Kouchaki, 2015). According to Piirto (2011) Creative individuals establish a powerful aspect of facing complex changes and challenges in different sources of competition. The increasing awareness of the importance of fostering creativity in higher education is rising all the time (Eunice Maria Lima Soriano de Alencar & de Oliveira, 2016). However, creative initiatives in higher education are undervalued and even impeded (Watson, 2014). It is possible that the reason for this is that the complicity of creativity assessment explains the lack of enthusiasm regarding creative practices in higher education. For example, creativity assessment is complex and problematic (Loveless, 2006). The inclusion of creativity needs new approaches in terms of how we assess creative skills and qualities (Henriksen et al., 2016; Mishra & Henriksen, 2013).

Assessing creativity is one of the main topics in creativity research as it is one of the most challenging skills to measure. Typically, studies focusing on assessing the creative personality refers to the four P's model by Rhodes (1961): creative process, product, press, and person. The study of the creative personality has established itself as a major avenue of research on creativity (Selby et al., 2005). Guilford and Torrance work led to what is often referred to as the psychometric approach to creativity (Kaufman & Sternberg, 2010). The Psychometric Approach is recommended to study the creative personality which include Trait Theory; in psychology, trait theory is an approach to the study of human personality (Olatoye et al., 2010). The development of creativity is important for higher education; however, most creativity researchers argue that little is being done to promote it (Charyton et al., 2009; Eunice M.L.Soriano De Alencar et al., 2017; Gaspar & Mabic, 2016; Manzi, 2015).

According to Henriksen et al. (2016), assessment must be taken into account when blending creativity and technology into education. Creativity is challenging to measure and assess, and the field of assessing creativity is filled with several difficulties that frequently appear as dichotomous tensions. The most significant educational challenge that confronts all institutions is essentially a developmental issues centered on the issue of how to prepare students for the obstacles they will face in their future lives (Gaspar & Mabic, 2016). In order to deal with,

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adjust to, and take advantage of the complexity in which we are constantly immersed, the higher education sector needs to tap into our imaginations and creativity (Jackson, 2014; Jackson & Jackson, 2008).

Different factors contribute to the tensions that result from the assessment of creative person. Can creativity be measured? What is the most efficient approach to assess individual creativity? Does creativity have an impact on higher education? 2020a (Awawdeh & Lim). One thing that all creativity scholars concur on is the difficulty of assessing creativity. Since creativity research aims to observe and measure things that are atypical, novel, innovative, and unusual, whether they be products, ideas, or people, assessment has long been a challenging issue for creativity researchers (Silvia et al., 2012). Traits Theory and the affective domain are included in the study of the creative personality. Studies of creative people's personality traits are part of the assessment of the creative person. Personality traits can generally describe the degree to which pupils show creativity. Several approaches have been used to assess personality traits, including self-reporting behavior scales on questionnaires (Charyton et al., 2009).

Trait theory is an approach used to investigate the personality of humans in psychology. The assessment of traits, which are characterized by deeply ingrained patterns of behavior, thinking, and emotion, is of particular interest to trait theorists (Kassin, 2003). This viewpoint defines characteristics as aspects of personality that vary between individuals (for example, some people are extroverted while others are not), are largely constant across contexts, and have an impact on behavior. States, which are more ephemeral dispositions, are not traits. Many theories and systems view traits as dimensions, such as extraversion vs. introversion, with each person scoring somewhere along this spectrum. However, in many other theories and systems, traits are something a person either has or does not have. Traits can be defined in one of two ways: as purely descriptive summaries or as inherent causal qualities. The internal causal definition states that traits influence our behaviors, leading us to do things in line with that trait. On the other hand, traits as descriptive summaries are descriptions of our actions that don't try to infer causality (Abel, 2018).

Assessing the creative person involves investigating personality traits that characterize creative people. Numerous research have looked at the relationship between creativity and personality, but the results are still inconsistent and rarely focused on higher education. Singh and Kaushik (2015) discovered a strong positive link between creativity and extraversion, which contradicts Parveen and Ramzan's (2013) findings that there is no connection between the two. On the other hand, Karwowski et al. (2013) and Werner et al. (2014) found a positive correlation with Openness, Extraversion, and Conscientiousness. The Big Five model of personality traits, also known as big five factor (BBF), has become a favored measure for personality dimensions. It includes agreeableness, conscientiousness, extraversion, openness, and neuroticism. Assessment of personality using the self-report scale is the most economical and reliable way to assess creative personality; these traits are related to creativity in different domains (Charyton et al., 2009).

In addition, it considers that the affective domain is as important to creativity as is the cognitive domain (Baer, 2016; Helson, 1996; Kaufman & Baer, 2012). Expanding on this creativity domains theory, Kaufman (2012) developed the Kaufman Domains of Creativity Scale (K-DOCS), a five-factor of self-assessed creative behaviors: Self/Everyday, Scholarly, Performance (encompassing writing and music), Mechanical/Scientific and Artistic. The aim

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here is to investigate the relationship between creativity domains and the personality traits. The aim of the study serves as a guideline indicating the variables, which include Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience. These variables are used to investigate the relationships with the five creativity domains (Self/Everyday, Scholarly, Performance, Mechanical Scientific and Artistic).

Method

Sample and Data Collection

In total, 415 Malaysian undergraduate students (206 male and 209 female) from Universiti Sains Malaysia took part in this study. The students' ages ranged from 18 to 23. Participants' main fields of studies were applied science, applied arts, pure arts and pure science. One school was randomly selected from each category (school of Computer Sciences, school of Educational Studies, school of Languages, Literacies and Translation, and school of Mathematical Sciences) in order to study the field of study factor. Students were also drawn from first year and final year as a way of gauging their experiences. Data was collected between October 2019 and April 2020. The data was collected by paper and via an online survey.

Instruments

Creativity Domains

The Kaufman Domains of Creativity Scale (K-DOCS) was used to measure the creativity domains in this study. These 50 items, five-point Likert scale with 1 being much less creative and 5 being much more creative. Measures five domains of creativity, which are Self/Everyday (11 items), Scholarly (11 items), Performance (10 items), Mechanical/Scientific (9 items), and Artistic (9 items).

Personality traits

The Big Five Inventory (BFI) developed by John, Donahue, and Kentle (1991) was used to measure the personality traits in this study. The 44-item BFI five-point Likert scale was developed to create a brief inventory that would allow efficient and flexible assessment of big five-factor personality theory: Extraversion (8 items), Agreeableness (9 items), Conscientiousness (9 items), Neuroticism (8 items), and Openness to Experience (10 items).

Data Analysis

Prior to the data analyses, the reliability of the instruments was determined in SPSS 23. For the content validity of the scale (S-CVI), the instruments were sent to a panel of three experts for comments and feedback. Next, data was analyzed using SEM in Smart PLS3. To answer the study questions, data from the respondents was analyzed using structural equation modelling (SEM) technique; structural equation modelling is a multivariate statistical analysis technique that is used to analyze structural relationships. The first step was defining the constructs and the items from the adopted instruments, then to develop the measurement model. After data collection, both measurement and the structural model were assessed before the testing of the hypothesis.

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Composite reliability

The composite reliability was higher than 0.70 for all constructs; the creativity domains constructs range was (0.879-0.958). The personality traits constructs range was (0.878-0.913). The reliability of the constructs was accepted (Hair et al., 2014).

Average Variance Extracted (AVE)

The AVE was higher than 0.50 for all constructs. The creativity domains constructs range was (0.581-0.675). The personality traits constructs range was (0.504-0.601). The results indicate convergent validity (Hair et al., 2014).

Cross Loading

The first primary methods for determining discriminant validity (the extent to which factors are distinct and uncorrelated) is to examine the pattern matrix. Variables should load significantly only on one factor. In our study, all items load strongly on their own constructs. All the loading of the indicators on it assigned latent variable were higher than its loading on all other latent variables indicating discriminant validity.

Variable Correlation

The second primary methods for determining discriminant validity is to examine the constructs correlation, the average correlation extracted for a construct reneged (0.728- 0.906). The average correlation extracted for a construct was greater than the shared correlation between constructs. The correlation for each construct were as follows: Artistic (0.770), Mechanical/ Scientific (0.762), Performance (0.783), Scholarly (0.789), Self/Everyday (0.821), Agreeableness (0.710), Conscientiousness (0.768), Extraversion (0.739), Neuroticism (0.776), and Openness to Experience (0.746). The results of the Cross loading and Variable correlation indicate discriminant validity (Hair et al., 2014).

Model Fit

The Coefficient of Determination R2 for the creativity domains constructs show acceptable moderate values. Constructs values ranged from 0.342 to 0.554, Artistic (0.342), Mechanical/ Scientific (0.377), Performance (0.449), Scholarly (0.509), and Self/Everyday (0.554). These results point to the 'goodness of the fit of the model'. The Predictive Relevance of the Model Q2 was greater than zero for all constructs – Artistic (0.191), Mechanical/ Scientific (0.121), Performance (0.267), Scholarly (0.310), and Self/Everyday (0.369) – supporting the claim that this study model has adequate ability to predict the endogenous variables (creativity domains). The Goodness of Fit (GoF) for the model was (0.565). The Standardized Root Mean Square Residual (SRMR) was also estimated for the Saturated Model (0.052) and Estimated Model (0.060). Both values were less than 0.10, which is considered a good fit measure for PLS-SEM. The Normed Fit Index (NFI) was 0.76 – the closer the NFI to 1, the better the fit. It can be concluded that the GoF model of this study is large enough to be considered a sufficient global PLS model validity.

Results

We found that personality traits effect the creative person in Malaysian higher education. The general purpose of this study was to investigate the relationship between creativity domains and personality traits. Therefore, the following hypotheses were put out:

I. H1a: Agreeableness has significant relationship with creativity domains.
II. H1b: Conscientiousness has significant relationship with creativity domains.

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III. H1c: Extraversion has significant relationship with creativity domains.
IV. H1d: Neuroticism has significant relationship with creativity domains.
V. H1e: Openness to Experience has significant relationship with creativity domains.

The relationship between creativity domains and personality traits was analyzed using path analyses by bootstrapping in SmartPLS and using the path coefficients to determine the P values, R-value, and the Original Sample (O). Results were as follows:

Table 1. Relationship between Agreeableness and Creativity Domains

Relationship	Original Sample (O)	R Value	P Values
Agreeableness -> Artistic	0.273	0.306	0
Agreeableness -> Mechanical/Scientific	0.197	0.308	0
Agreeableness -> Performance	0.09	0.241	0.057
Agreeableness -> Scholarly	0.242	0.331	0
Agreeableness -> Self/Everyday	0.155	0.227	0

Table 1 show the relationships between the Agreeableness construct with the creativity domains constructs. Agreeableness was significantly correlated with Artistic, Mechanical/ Scientific, Scholarly, and Self/Everyday at P≤0.01. Based on the Original Sample (O) values, all the significant relationships are positive. The correlation coefficients for the significant relationships between Agreeableness and creativity domains ranged (0.227-0.331).

Table 2. Relationship between Conscientiousness and Creativity Domains

Relationship	Original Sample (O)	R Value	P Values
Conscientiousness -> Artistic	0.236	0.308	0
Conscientiousness -> Mechanical/ Scientific	0.168	0.350	0.001
Conscientiousness -> Performance	0.126	0.261	0.004
Conscientiousness -> Scholarly	0.255	0.375	0
Conscientiousness -> Self/Everyday	0.098	0.270	0.016

The table 2 show the relationships between the Conscientiousness construct with the creativity domains constructs. Conscientiousness was significantly correlated with Artistic, Mechanical/ Scientific, Performance, and Scholarly at P≤0.01, while Conscientiousness was significantly correlated with Self/Everyday at P≤0.05. Based on the Original Sample (O) values, all the significant relationships are positive. The correlation coefficients for the significant relationships between Conscientiousness and creativity domains ranged (0.261-0.375).

Table 3. Relationship between Extraversion and Creativity Domains

Relationship	Original Sample (O)	R Value	P Values
Extraversion -> Artistic	0.001	0.192	0.98
Extraversion -> Mechanical/ Scientific	-0.121	-0.133	0.018
Extraversion -> Performance	0.12	0.092	0.02
Extraversion -> Scholarly	0.147	0.168	0.001
Extraversion -> Self/Everyday	0.2	0.426	0

Table 3 show the relationships between the Extraversion construct with the creativity domains constructs. Extraversion was significantly correlated with Scholarly and Self/Every at P≤0.01, while Extraversion was significantly correlated with Mechanical/ Scientific and Performance

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at P≤0.05. Based on the Original Sample (O) values, relationships with Performance, Scholarly, and Self/Everyday were positively significant. While the relationship with Mechanical/ Scientific was negative. The correlation coefficients for the significant relationships between Extraversion and creativity domains ranged (-0.133-0.426).

Table 4. Relationship between Neuroticism and Creativity Domains

Relationship	Original Sample (O)	R Value	P Values
Neuroticism -> Artistic	-0.018	-0.261	0.756
Neuroticism -> Mechanical/ Scientific	0.168	0.481	0.014
Neuroticism -> Performance	-0.075	-0.024	0.091
Neuroticism -> Scholarly	-0.032	-0.147	0.469
Neuroticism -> Self/Everyday	-0.041	-0.390	0.449

Table 4 show the relationships between the Neuroticism construct with the creativity domains constructs. Neuroticism was only significantly correlated with Mechanical/ Scientific at P≤0.05. Based on the Original Sample (O) values, the relationships between Neuroticism and Mechanical/ Scientific is positively significant. The correlation coefficients for the significant relationships between Neuroticism and creativity domains ranged (-0.390-0.481).

Table 5. Relationship between Openness to Experience and Creativity Domains

Relationship	Original Sample (O)	R Value	P Values
Openness to Experience -> Artistic	0.317	0.289	0
Openness to Experience -> Mechanical/Scientific	0.16	0.202	0.001
Openness to Experience -> Performance	0.088	0.082	0.035
Openness to Experience -> Scholarly	0.039	0.209	0.327
Openness to Experience -> Self/Everyday	0.145	0.109	0

The table 5 show the relationships between the Openness to Experience construct with the creativity domains constructs. Openness to Experience was significantly correlated with Artistic, Mechanical/ Scientific and Self/Everyday at P≤0.01, while Openness to Experience was significantly correlated with Performance at P≤0.05. Based on the Original Sample (O) values, all the significant relationships are positive. The correlation coefficients for the significant relationships between Openness to Experience and creativity domains ranged (0.082-0.289).

Discussion

Based on the creative domains theory and the Traits Theory, this study produced a model of the relationship between creativity domains and personality traits in the context of creativity assessment in higher education. The model has been empirically tested, and major findings have been drawn. In terms of the study's goal, we discovered evidence supporting the association between creativity domains and personality traits. The findings imply that personality traits are important for assessing the creative person.

The findings were consistent with (Karwowski et al., 2013; Kaufman & Baer, 2012; Kaufman & Beghetto, 2009; Werner et al., 2014). Personality traits (extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience) does have a significant relationship with creativity domains (Self/Everyday, Scholarly, Performance, Mechanical

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Scientific and Artistic). The correlations between the five creativity domains and the five personality factors were consistent with past research, openness to experience significantly correlated with all creativity domains but Mechanical/Scientific. Extraversion significantly correlated with Performance, Scholarly, and Self/Everyday. Conscientiousness was positively correlated with Artistic, Scholarly and Performance. Agreeableness was positively correlated with Scholarly. Neuroticism correlated with Mechanical/Scientific (Kaufman, 2012a; Werner et al., 2014). Other consistent findings include Mechanical/Scientific being significantly positively correlated with Neuroticism (Silvia et al., 2009), and Performance being significantly correlated with extraversion (Kaufman et al., 2009; Silvia et al., 2009).

Based on the findings of this study and consisting with (Baer, 2017; Kaufman, 2012a; McKay et al., 2017), emotional students are not expected to express themselves against others appropriately and originally in everyday life relations and interactions (Self/Everyday) or think about, learning, and producing information in higher education courses (Scholarly). Consisting with (Baer, 2017; Mohammadi et al., 2013), students who show personality traits that include adjust their behavior to suit others, being honest and hardworking, or seeking new experience and intellectual pursuits are expected to have skills and talent to create exceptional works of art (Artistic). to students who show personality traits of seeking fulfillment from sources outside the self or in community didn't show to have novel-original and useful-adaptive ideas in the domain of natural and social sciences (Mechanical/ Scientific) (Kaufman, 2012b). Finally, students who show personality traits of being honest, seeking fulfillment or new experience show to have high level of capability to solve a problem in resulting in effective action (Performance).

However there were some inconsistent results such as; Singh and Kaushik, (2015) who found that extraversion was negatively related to artistic which was not found in this study. Agreeableness and conscientiousness were both negatively correlated with Mechanical/Scientific and Self/Everyday (Kaufman, 2012b). This divergence might be due to what Kaufman (2012) noted that the factor structure of creativity domains is inconsistent across cultures; western conceptions tend to emphasize unconventionality, inquisitiveness, imagination, humor, and freedom, while eastern conceptions are more likely to encompass moral goodness, societal contributions, and connections between old and new knowledge. Different cultures view creativity differently by domain. Such comparable preferences and beliefs is expected to result in different patterns for different cultures, such as Malaysia.

The advantage of this study was to explore the relations of creative domains with personality traits in higher education, since the literature on this issue provided very few suggestions. The findings supported these relations, and confirm the hypothesis. Some of the inconsistent results might be due the specific age of participants as other creative person studies focused on school students, higher education students are expected to show different results (Werner et al., 2014). Another reason is the creativity measure used in the present study and the data analyzing technic that is PLS-SEM. Previous studies used a one dimeson for creativity such as the Biographical Inventory of Creative Behaviors, the Creative Achievement Questionnaire, and the Creative Domain Questionnaire (Silvia et al., 2012), using this types of scale explain the divergence results, in this study the researchers investigated the creative person by looking at creativity and personality as a multi-dimensional concepts.

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Historically, assessment has played a central role in education. This study provides an approach to identify and measure creativity in higher education. As an indicator for future teacher recruitment, the results of the creativity assessment will provide useful insights into teachers' evaluation and professional growth, as well as decisions and policy-making in educational reform. (Awawdeh & Lim, 2020a). Higher education must assist and empower students to get experience and comprehend their own creativity. (Jackson, 2006). The moral objective of education is to create a positive effect in the lives of students (Fullan, 2003). Higher education is all about preparing learners in reaching their greatest potential. Furthermore, understanding and developing one's own creative abilities is an important and worthwhile goal in higher education. Providing students with opportunities to be creative should be an explicit element of the higher education experience.

In recent decades, there has been a remarkable increase in entrepreneurship education at colleges all over the world. Many organizations are under increasing pressure to recruit and retain creative individuals as a core asset in the emerging knowledge economy (Awawdeh & Lim, 2020b, 2020a). In universities, these people are often academics who focus on high impact, innovative and interdisciplinary research. Nonetheless, many of these academics face difficulties in developing and fostering creativity in their student (Kandiko, 2012). Creativity assessment provides feedback towards both academics and policymakers in education systems, as well as information on how to modify the classroom environment to encourage creativity. The evaluation results can provide essential insights for the professional growth of creativity in higher education, as well as educational reform decision-making (Charyton et al., 2009; Littleton et al., 2010). The most critical educational problem that universities face is preparing students for future encounters. Creativity has emerged as a response to such a problem, particularly for colleges transitioning from traditional research institutions to entrepreneurial universities in order to transfer contacts within their respective regions. Entrepreneurship education at universities has increased dramatically over the world.

The current study adds to the field about the role of domains in creativity. It implies that the measurement of domains differ from culture to culture. Therefore, meaningful studies of creativity across domains should be grounded on the factors that affect creativity domains and cross validated scales. The finding also support the efficiency of using the psychometric approach for assessing the creative person using self-scale reports. The findings of the study provided insight on how creativity could be assessed in higher education. The overall finding highlighted the essential role of personality traits in the assessment of creativity domains in higher education, all of the five personality traits was found to play a major role for the creative person, which support the importance of including personality traits in the assessment of the creative person. Consisting with McKay et al. (2017) and Werner et al. (2014), openness to experience is the most common personality traits to effect creativity, however, this study show that other personality traits contribute in the assessing of the creative person, which enhanced the essential role of including all the personality traits theory in the assessment of the creative person. Creativity researchers should measure creativity through the domain theory for a deeper understanding on what makes students creative.

The findings of this study have major implications for higher education, mainly in its goal in developing the full potential of students, and improve their experience and understanding their own creativity. Understanding how a student is creative, is the first step in developing and fostering higher educational students' creativity. To foster and develop creativity successfully

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in higher education, students should be assessed in all five domains of creativity discussed in this study and the relations with all big five personality. As such, all constructs should be given equal attention and weight in the application of the model.

In terms of academic strategies, that focus on fostering creativity, studies indicate that successful approaches work across multiple dimensions, including the four P's of creativity (Hallman et al., 2014). This study has implications for educators and professional development as well as decision and policy-making in educational reform and an indicator for future employees. It seems the creativity development in higher education is strongly influenced by student's personality. As for developing entrepreneurship, Sinkovec and Cizeij (2013) specified that a component of developing higher education entrepreneurship include putting emphasis on the key basic traits that is creativity. This can be achieved and yield its most productive results through, risk taking, confidence and independence, and providing knowledge (Suacamram, 2019), by improving the academic environment and encourage students to engage more.

Research Limitations and Future Research

The findings of this study have generated some interesting possibilities for further research. This study was only limited to one public Malaysian university, due to the practical limitation of time and cost, more studies should also be conducted on privet universities to compare the results. The academic environment has discussed to have a significant relationship with creativity domains. Future research should also look into other environment constructs to further investigate the effect on creativity in higher education and how to boost the environment in a way that successfully develop and foster creativity. The outcome of the investigation will provide information on to what extend does the environment go on effecting creative individuals. Using a self-scale report approach is an important limitation in this study because students or respondents offered answers that are perceived as socially acceptable.

The problem with self-scale report instruments is that the researchers have no other choice but to rely on the honesty of participant responses. Students may have the tendency to agree (or disagree) with items regardless of their content. This is a threat to the validity of the instrument. However, building on this approach, many researchers have developed new and reliable instruments using self-report scales. Silvia et al. (2012) review the recent developments in the assessment of creativity using the self-scale report. Based on their work the state of self-scale report is much better than researchers have previously thought it to be. Researchers still must strive to ensure participant cooperation and willingness to participate. There are evidences of gender differences in creativity measurements, particularly in self-scale report (Baer & Kaufman, 2008; Matud et al., 2007), adding gender as moderator factor – that affects the strength of the relationship – can shed more light on the nature of the relationships in further research. We argue that in order to develop and foster creativity in higher education it is not enough to measure creativity. We also need to strive to understand what makes a higher education student creative by assessing the key factors that influence the creative personality.

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