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Quantitative Analysis of Creative Self-Efficacy amongst University Students in Malaysia

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Objective: One key factor found to be related to creativity is creative self-efficacy. Creative self-efficacy (CSE) refers to one's own conviction in their own ability to produce creative work effectively. The study aims to explore on the predictive values of time management and reading habit on CSE, as well as on the significant difference between gender and CSE.

Method: This study (n = 313) is a cross-sectional survey design. The inclusion criteria for the participants are full-time university students studying in Malaysia and aged between 18-25 years old. Data collected was analysed by linear regression, multiple linear regression and independent sample t-test.

Results: Reading habit is a significant positive predictor of CSE. Both daily planning and confidence in long-range planning in time management are significant positive predictors of CSE. However, there is no significant difference between gender in terms of male and female and CSE.

Conclusion: This study provided evidence on the role of reading habits and time management on creative self-efficacy amongst undergraduate student in Malaysia.

Keywords: *creative self-efficacy; gender; reading habit; time management; emerging adulthood stage; university students*

Introduction

Creativity is considered as vital for success amongst various occupations (Ritter & Mostert, 2017). Production of innovative ideas drives progress in a society. This promotes creativity inclusion in various activities and research by most educational policies (Hilal, *et al*, 2013). One key factor found to be related to creativity is creative self-efficacy. Creative self-efficacy refers to one's conviction in their own capacity to produce creative work effectively (Tierney & Farmer, 2002). Creative self-efficacy plays a role in shaping individuals' creativity and tendency to be involved in creative performance (Beghetto & Karwowski, 2017). Khan and colleagues (2023) stated creative self-efficacy plays the role as a mediator between innovative work behavior and self-leadership. This indicates the significance of creative self-efficacy in creativity, which is expressed through creative performance as well as innovative behaviour.

Factors related to creative self-efficacy have been studied in the past, such as gender, reading habits and time management, which will be dissected further in this study. However, there is limited amount of research regarding the relationship between gender and creative self-efficacy, and the results have been inconclusive (He & Wong, 2021). Heang and colleagues (2019) stated that one of the problems encountered by fresh graduates is lack of time management skills. Next, reading habits bring many advantages to individuals especially university students (Hassan Mohammed, *et al*, 2019). However, the rate of reading habits amongst university students in Malaysia is still very low, in which they only read two books per year on average (Hassan Mohammed, *et al*, 2019). Eighty percent of university students in Malaysia are reluctant readers, as they have the ability

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to read but choose not to read (Hassan Mohammed, *et al*, 2019). Barriers to creativity in Malaysia are still prevalent, especially amongst university students in which a study indicated that one of the most challenging creativity barriers to be handled by Malaysian undergraduate students is barriers related to self-concept (Hilal, *et al*, 2013). This is related to creative self-efficacy, as it is a part of identity in self, which heightens the need to examine this aspect amongst university students. Especially in the Malaysian context, research concerning creative self-efficacy in Malaysia amongst university students is scarce.

Gender and Creative Self-Efficacy

Past research has found significant differences between gender on creative self-efficacy. Brockhus and colleagues (2014) found a significant association between gender and creative self-efficacy where the correlation coefficient of creative self-efficacy is higher in males than females. This indicates males having higher creative self-efficacy compared to females (Brockhus, *et al*, 2014). According to Beghetto (2006), superiority in creative self-efficacy was indicated by female students compared to male students. This might be due to support from the academics on creative behaviour through open expression of creative ideas (Sokić, *et al*, 2021). Unexpectedly, Aldhamit, Albdour and Alshraideh (2020) implicated that no significant gender differences were found in creative self-efficacy. This might be due to the effect of the emancipation of women across the time in which gender differences in creativity are decreasing significantly (Sokić, *et al*, 2021). Malaysia is a patriarchal society, but many private universities emphasise on gender equality. Due to the differences found in association between gender and creative self-efficacy, there is a need to examine these two aspects.

Reading Habit and Creative Self-Efficacy

Mahato (2016) explained the relationship of reading and aspects of self in which the formation of personality and self can be enhanced through reading. Regular and systematic reading leads to emotional refinement, intellect sharpening and perspective provision for an individual's living (Mahato, 2016). Creativity is always perceived as a novel response, considering its association with original ideas created. However, according to Sternberg (2007), creativity is a habit that occurs due to habitual responses to problem-solving in novel ways instead of reckless response. Reading itself is crucial to problem solving as it requires individuals to draw inferences and weigh the importance of ideas and meanings (Palani, 2012). Thus, forming a habit in reading might promote creativity, as it trains individuals to tackle tasks in innovative ways. Furthermore, Wang (2012) discovered that a significant and positive association existed between habitual reading and creative ability. This provides a different perspective on creativity formation in individuals through habit.

Time Management and Creative Self-Efficacy

Time management has been evidenced in past research as playing an important role in creativity. An experiment carried out in a workplace setting in the United States indicated that an incubation process through adequate time should be provided to individuals in order to be able to solve a task creatively (Shin & Grant, 2021). Adequate time provides flexibility to restructure the problem and activate new

knowledge consciously and subconsciously (Shin & Grant, 2021).

Creativity involves the attainment of novel ideas in which time management behaviours such as planning play a crucial role (Darini & Moshiri, 2011). Job control which includes time management behaviours such as managing a work schedule helps undergraduates to improve in their own self-efficacy in creative performance. As workers are given higher freedom to assign resources based on their particular needs, ways to perform work with higher effectivity would be discovered (Du, *et al*, 2018). Through this discovery, workers would gain a higher sense of confidence and competence as well as mastery which serves to promote their creativity (Du, *et al*, 2018). However, most of the studies mentioned above circulated in an organisational context. Hence, there is a need to examine this in the university context among undergraduate students.

Emerging Adulthood Stage in Creative Self-Efficacy

Individuals aged between 18-25 years are in the emerging adulthood stage, which is marked by exploration of identity and self-focus (Arnett, 2000). This is in relation to the participants of this study who are current undergraduate university students. In terms of creativity in relation to the emerging adulthood stage, similarity existed between key thinking processes comprised in creativity and identity formation. The key thinking processes involved are divergent thinking, which involves expanding various solutions in creative thinking and convergent-integrative thinking, which involves integrating existing elements in new and innovative ways (Barbot, *et al*, 2016). The Malaysian education system had tried to incorporate higher-order thinking skills, which include divergent thinking and convergent-integrative thinking, in Malaysian universities (Jerome, *et al*, 2017). However, implementing this in a tertiary context had been found to be difficult due to a lack of awareness, knowledge and readiness indicated by students, lecturers and administrators as well (Jerome, *et al*, 2017; Wilson & Narasuman, 2020). This implies the necessity to further explore creative self-efficacy, which is a vital aspect of creativity amongst Malaysian undergraduate university students who are in the emerging adulthood stage.

Hypotheses:

H01: There is a significant difference in creative self-efficacy between male and female

H02: Reading habit is a significant predictor of creative self-efficacy

H03: Daily planning in time management is a significant predictor of creative self- efficacy

H04: Confidence in long-range planning in time management is a significant predictor of creative self-efficacy

Method

Participants

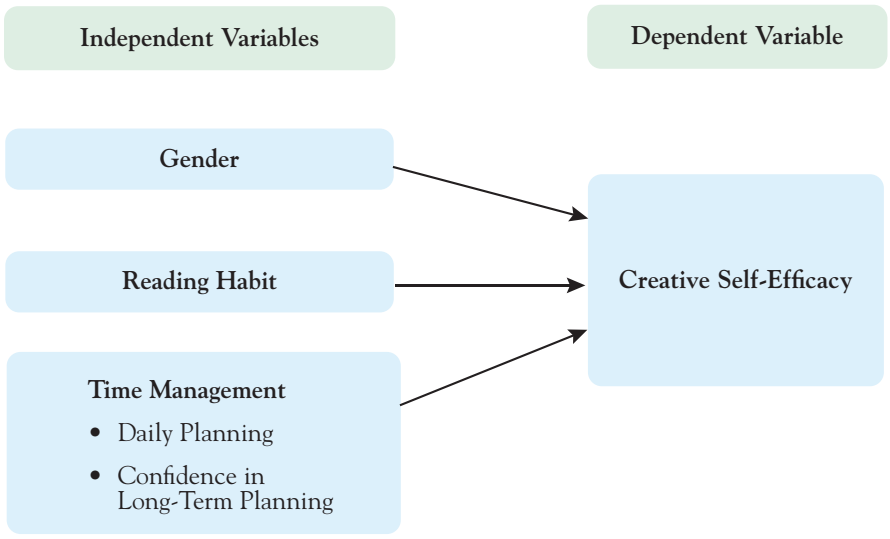
Convenient and purposive sampling methods were employed in this study (Andrade, 2021). The inclusion criteria for the participants were full-time undergraduate university students studying in Malaysia and aged between 18-25 years old. The exclusion criteria for the participants were part-time undergraduate university students, college students

and full-time undergraduate university students who were working part-time jobs at the same time to reduce confounding factors such as workload variability. Recruitment of the participants was through dual-mode data collection: (1) face-to-face data collection in several universities in Malaysia, such as IMU University, Universiti Malaya, and Unversiti Tun Abdul Razak; and (2) online platforms such as WhatsApp and Microsoft Teams. The sample size was determined based on considerations of statistical power. An a-priori analysis was performed using G*Power to determine the appropriate sample size needed for this study. Results indicated the required sample size to achieve 80% power for detecting a medium effect was 193 (Cohen's r = 0.2).

Materials and Procedure

This study utilised a quantitative research method with a cross-sectional survey design on three independent variables (gender, reading habit and time management) and one dependent variable (creative self-efficacy). The study examined the significant difference between gender and creative self-efficacy and the predictive values of reading habit and time management on creative self-efficacy. Refer to Figure I for the conceptual framework of the study.

Figure I. Conceptual Framework of the Present Study



Demographic Questionnaire

Demographic sheet was to obtain the participants' gender, age, ethnicity and job status details as a form of descriptive data.

Self-Report Habit Index for Reading (SRHI-R)

The 10-item Self-Report Habit Index for Reading scale (SRHI-R; Schmidt & Retelsdorf, 2016) was employed to measure the reading habits of the individuals through automaticity, behavioural frequency and identity expression in reading. The measure was self-reported in the form of a 5-point Likert scale ranging from 1 "totally disagree" to 5 "totally agree". A sample item was "Reading in my spare time is something I do frequently." This scale had a Cronbach's alpha of 0.96 which indicated a good internal reliability. Good external validity was indicated through this scale as well.

Time Management Questionnaire (TMQ)

The 14-item Time Management Questionnaire (TMQ) (Trueman & Hartley, 1995) was utilised to measure the time management of the individuals through two sub-scales, which were daily planning and confidence in long-term planning. The Daily Planning subscale had 5 items and a Cronbach's alpha of 0.85, whereas the Confidence in Long-Term Planning subscale had 9 items and a Cronbach's alpha of 0.71. A sample item from the Daily Planning subscale was "Do you make a list of the things you have to do each day?", whereas a sample item from the Confidence in Long-Term Planning subscale was "Do you set and honor priorities?"

The questionnaire had five response categories which were "Always", "Frequently", "Sometimes", "Infrequently" and "Never" where "Never" is scored as 1 and "Always" is scored as 5 for all items except for items 8, 9, 11 and 13 from the Confidence in Long-Term Planning subscale, in which the scale was reversed. A sample item of the reverse-coded item was "Do you continue unprofitable routines or activities?" A higher score indicated a more positive attempt at managing time. This questionnaire indicated good construct validity in which all items except for items 8, 11, and 13 had acceptable factor loads through the confirmatory factor analysis test (Sevari, *et al*, 2009).

Creative Self-Efficacy Scale (CSE Scale)

Creative Self-Efficacy Scale (CSE Scale) (Karwowaki, *et al*, 2018) measured one's belief in their own ability in creative problem solving or creative thinking. This scale consisted of six items in which each item had five response categories such as "Definitely yes", "Probably yes", "Possibly", "Probably not" and "Definitely not" in which it ranges from the score of 1 for "Definitely not" to the score of 5 for "Definitely yes". A sample item is "I am good at proposing original solutions to problems". This scale had a Cronbach's alpha of 0.80 which showed good internal reliability. Psychometric analyses results indicated that the scale had acceptable factorial and discriminant validity (Shaw, *et al*, 2021). In addition, this scale indicated good construct validity in which significant correlation between scores from the new scale and scores from creativity abilities and a divergent thinking task exists (Shaw, *et al*, 2021).

Procedures

Initially, approval was sought from the Ethics Committee of IMU University. Then, a collection of data was conducted through face-to-face methods as well as through online platforms. For both modes of data collection, participants were given the survey link in which Google Forms was set up. In the next

step, participants were required to read the Study Information Sheet and fill out the informed consent form. The survey took approximately five minutes to be completed. Participants filled in demographic information, the Self-Report Habit Index for Reading scale (SRHI-R), Time Management Questionnaire (TMQ) and Creative Self-Efficacy Scale (CSE Scale). Participants were excluded from the data analysis if study criteria were not met or withdrawal action was taken by the participants. Data collection period was between July 2023 to October 2023. No remuneration was given to participants.

Data Analysis

Collected data was cleaned and analysed in accordance with the hypotheses by employing IBM SPSS version 26.0. Demographic variables were analysed through descriptive analysis. Then, normality of the data was tested by the Kolmogorov-Smirnov test. Based on the alternative hypotheses, the significance level is set at 0.05. In case of outliers or missing values detected, data cleaning was conducted. In accordance with the formulated hypotheses, two different statistical analysis were employed to analyse the data collected. Firstly, an independent sampled *t*-test was used to analyse the significant difference of gender towards creative self-efficacy. Secondly, linear regression and multiple linear regression were used to analyze the predictive value of the independent variables towards the dependent variable.

Results

The number of samples collected was 370 participants. However, 57 participants were excluded due to unfulfilled criteria. Hence, the final sample was 313 participants with 82 males and 231 females. Outliers are identified through stem-and-leaf plot and histogram before conducting inferential analyses. Identified outliers are excluded from the data set through the deletion method in SPSS. Table II shows Kolmogorov-Smirnov normality tests, skewness and kurtosis. Based on Table II, the significance level for all the scales is below 0.05. Thus, the data is not normally distributed. However, the skewness of reading habit, daily planning in time management, confidence in long-term planning in time management and creative self-efficacy are .127, -.186, .062 and .329 respectively, which are lesser than the skewness tolerance value by Kline (1998) which is significant at +/- 2.00. In addition, despite Kolmogorov-Smirnov tests showing non-normal distributions, reliable results could be generated using parametric analysis as the sample size is more than 100 observations (Frost, 2019).

Table 1. Demographic Variables of Participants in the Present Study (n = 313)

DEMOGRAPHIC VARIABLES	*n*	%	M	*SD*
Gender				
Male	82	26.2		
Female	231	73.8		
Ethnicity				
Malay	97	31		
Chinese	166	53		
Indian	32	10.2		
Others	18	5.8		
Age			20.8	1.4
18	10	3.2		
19	43	13.7		
20	105	33.5		
21	74	23.6		
22	46	14.7		
23	21	6.7		
24	7	2.2		
25	7	2.2		
Programme of Study				
Psychology	40	12.8		
Medicine	64	20.4		
Arts Studies	6	1.9		
Technology	3	1.0		
Chemistry	17	5.4		
Education	10	3.2		
Asian Studies	9	2.9		
Social Sciences	9	2.9		
English Language & Literature	13	4.2		
Business Studies	4	1.3		
Chiropractic	18	5.8		
Dentistry	14	4.5		
Management	3	1.0		
Media Studies	4	1.3		
Biological Science	24	7.7		
Nursing	1	0.3		
Dietetics and Nutrition	20	6.4		
Pharmacy	11	3.5		
Engineering	4	1.3		
Mathematics	5	1.6		
Chinese Medicine	7	2.2		
Computer Science	5	1.6		
Digital Health	1	0.3		
Economics	7	2.2		
Not Stated	14	4.5		

Table II. Kolmogorov-Smirnov Normality Tests, Skewness and Kurtosis (N=313)

Scale	Kolmogorov-Smirnov				
	Statistic	*df*	Sig.	Skewness	Kurtosis
Total Reading Habit	.052	313	.042	.127	-.814
Total Daily Planning	.063	313	.004	-.186	-.585
Total Confidence in Long-Term Planning	.071	313	<.001	.062	.148
Total Creative Self-Efficacy	.110	313	<.001	.329	-.396

Is there a significant difference between male and female in creative self-efficacy?

An independent-sample t-test was utilised to analyse the significant differences of male and female participants towards creative self-efficacy. There is no significant difference in creative self-efficacy between male (M = 20.50, *SD* = 4.31) and female (M = 20.36, *SD* = 4.14), *t* (311) = .253, *p* = .800 (refer Figure III). Hence, Hypothesis 1 which states that there is a significant difference between gender and creative self-efficacy is rejected.

Is reading habit a significant predictor of creative self-efficacy?

Using linear regression analysis, the model significantly predicts creative self-efficacy, with *F* (1, 311) = 28.00, $p < 0.001$. The $R^2 = 0.083$, thus reading habit variable in the model explain 8.3 % of the variance in creative self-efficacy. Reading habit significantly predicts creative self-efficacy, *B* =.109, *SE* = .021, *t* (311) = 5.29, *p* <.001. Hence, Hypothesis 2 which states that reading habit is a significant predictor of creative self-efficacy is accepted.

Is daily planning in time management a significant predictor of creative self-efficacy?

Using linear regression analysis, the model significantly predicts creative self-efficacy, with *F* (1, 311) = 18.88, $p < 0.001$. The $R^2 = 0.057$, thus daily planning variable in the model explains 5.7% of the variance in creative self-efficacy. Daily planning significantly predicts creative self-efficacy, *B* =.197, *SE* = .045, *t* (311) = 4.35, *p* <.001. Hence, Hypothesis 3 which states that daily planning in time management is a significant predictor of creative self-efficacy is accepted.

Is confidence in long-term planning in time management a significant predictor of creative self-efficacy?

Using standard linear regression analysis, the model significantly predicts creative self-efficacy, with *F* (1, 311) = 26.98, $p < 0.001$. The $R^2 = 0.080$, thus confidence in long-term planning variable in the model explain 8% of the variance in creative self-efficacy.

Confidence in long-term planning significantly predicts creative self-efficacy, B = .270, SE = .052, t (311) = 5.19, p <.001. Hence, Hypothesis 4 which states that confidence in long-term planning in time management is a significant predictor of creative self-efficacy is accepted.

Reading Habit, Daily Planning in Time Management and Confidence in Long-Term Planning in Time Management are Significant Predictors of Creative Self-Efficacy

As significant predictions were found between reading habit and creative self-efficacy, daily planning in time management and creative self-efficacy, as well as confidence in long-term planning in time management and creative self-efficacy, exploratory analyses were carried out to analyse the predictive value of reading habit and daily planning in time management and confidence in long-term planning in time management as a three-factor model towards creative self-efficacy.

Using standard multiple regression analyses, the model significantly predicts creative self-efficacy, with F (3, 309) = 18.31, p < 0.001. The R^2 = 0.151, thus all variables in the model together explain 15.1% of the variance in creative self-efficacy. All three predictors are significantly regressed on the DV creative self-efficacy (CSE). Reading habit significantly predicts CSE B = .089, SE = .020, t (311) = 4.34, p <.001. Daily planning in time management significantly predicts CSE, B = .096, SE = .048, t (311) = 2.01, p = .045. Confidence in long-term planning in time management significantly predicts CSE, B = .190, SE = .055, t (311) = 3.47, p <.001.

Discussion

This study aims to determine whether reading habits, daily planning and confidence in long-term planning in time management predict creative self-efficacy amongst undergraduate students in Malaysia, as well as to explore the differences between male and female undergraduates in creative self-efficacy. The present study found that reading habit, daily planning in time management and confidence in long-term planning in time management are significant predictors of creative self-efficacy. However, this study found that there is no significant difference between males and females in creative self-efficacy.

The findings of this study provide empirical support for previous research findings, where reading habit is a significant predictor of creative self-efficacy (Wang, 2012; Yanti, 2018). This is due to the role of reading habit in helping individuals, particularly undergraduates in Malaysia, to discover efficient ways to solve problems. Reading habit helps in the formation of self through sharpening the individuals' intellect and refining emotions (Mahato, 2016). Reading plays a significant role in adapting to the rapidly changing world by fostering skills such as thinking, valuing, adaptability and creativity (Le, *et al*, 2019). Reading habit also leads to stronger creative role identity which promotes creative self-efficacy. According to Mar and colleagues (2009), reading habit enhances openness to experience trait. Openness to experience trait itself is associated with high intrinsic motivation (Tan, *et al*, 2019). Following that, higher intrinsic motivation intensified creativity-related activities engagement which enhanced self-rated creativity that is referred to as

creative role identity (Tan, *et al*, 2019). Furthermore, a positive association has been found previously between creative role identity and creative self-efficacy (Tierney & Farmer, 2011). Hence, this shows that reading habit plays a significant role in enhancing one's creative self-efficacy amongst undergraduate students in Malaysia.

Daily planning in time management is a significant factor predicting creative self-efficacy, which is in line with past findings by Darini and Moshiri (2011) and Liu and colleagues (2023). Implementation of daily planning behaviours produces long-lasting habit in individuals' lives particularly the undergraduate students in Malaysia. Malaysian universities have their own academic standards to be followed by the students. For instance, the amount of assignments and the quality of the work considering the nearby deadlines. Hence, undergraduate students are required to commit to this particular standard through daily planning behaviours. As undergraduate students are given autonomy through time control to complete tasks, sense of competence, mastery and confidence are enhanced which leads to innovative behaviour related to creativity (Zhao, *et al*, 2022). Hence, this indicates that daily planning is vital in enhancing one's creative self-efficacy amongst undergraduate students in Malaysia.

The findings of this study provide empirical support for previous research findings, where confidence in long-term planning in time management is a significant predictor of creative self-efficacy (Darini & Moshiri, 2011; Zarbakhsh, *et al*, 2015). Confidence in long-term planning requires individuals to perceive the significance of their work in order to promote creative self-efficacy. Long-term planning behaviours involve task prioritization process which indicates the importance of tasks. Hence, perceived work significance in Malaysian undergraduate students improves creative self-efficacy (Christensen-Salem, *et al*, 2021).

Confidence in long-term planning requires undergraduate students in Malaysia to acquire the ability to withstand challenges. Long-term planning is a challenge for undergraduate students in Malaysia as obstacles may hinder this process (Jailani, *et al*, 2020). Obstacles may come from adjustment to the changing academics system, financial struggle and family or peer issues (Jailani, *et al*, 2020). Compulsory requirements set by Malaysian universities may lead to habit formation amongst undergraduate students as these requirements reinforce critical thinking ability which heightens creative self-efficacy. As students are highly exposed to critical thinking solutions, their openness to challenges increases and this leads to a stronger creative self-concept (Álvarez-Huerta, *et al*, 2022). Critical thinking solutions lead to the development of confidence and competence amongst Malaysian undergraduates (Egan, 2019). This is due to goal-setting and planning, decision-making and self-regulation skills which are enhanced through critical thinking solutions (Egan, 2019).

The findings of this study provide empirical support for previous research findings, where no significant difference exists between male and female in terms of creative self-efficacy (Aldhamit, *et al*, 2020; Hashim, *et al*, 2022). Equal access to education in terms of gender in Malaysia might account for this finding. In 2021, the Malaysia Gender Gap Index (MGGI) scored

0.707 where in terms of educational attainment, women's achievement has surpassed men's sub-index with a score of 1.060 (The Star, 2023). A score with the value of 1.0 indicates achievement of equality of men and women where both men and women acquire equal access to education (The Star, 2023).

The current findings are in line with the previous findings (Darini & Moshiri, 2011; Wang 2012). Prolonged activities involved under reading habit, daily planning in time management and confidence in long-term planning in time management require high persistence, which promote creative self-efficacy within individuals. This is in line with a theory that stated, "innovativeness requires an unshakable sense of efficacy to persist in creative endeavours when they demand a prolonged, investment of time and effort". (Bandura, 1997, p.239)

Consistent reading habit may lead to individuals becoming more organised in managing time. Consistency in this activity may enhance creative self-efficacy. A study discovered that belief in creativity must be followed by habitual actions that develop creativity (Hokanson & McCluske, 2016). Furthermore, habitual actions are less repetitive than perceived as uncertainty is included in it and this leads to the importance of habitual actions in a creative process (Ross & Glăveanu, 2023). A study found one aspect of habit, persistence, as one of the predictors of creative personality (Gablan & Abdelaziz, 2021). Creative self-efficacy mediates the relationship between persistence and creative personality (Gablan & Abdelaziz, 2021). Hence, this implies the importance of habits in creative self-efficacy.

The three-factor model which includes daily planning, long-term planning and reading has always been applied by undergraduates in Malaysia, in which leads to enhancement of creative self-efficacy. However, these three factors only account for 15.1% of the variance. Other factors may play a role in promoting creative self-efficacy. For instance, Puente-Díaz and Cavazos-Arroyo (2017) indicated that curiosity trait, enjoyment and achievement goals showed significant positive influence towards creative self-efficacy. Hence, this leads to more studies required to analyse the factors predicting creative self-efficacy in the Malaysian undergraduates' context. Additionally, the cross-sectional design employed in the study potentially leads to sampling biases specifically self-selection bias, as participants who completed the survey may have different characteristics such as, more free time or a higher interest in the study (Bethlehem, 2010).

Theoretical Implications

Self-efficacy Construct. The current findings contribute significantly to the exploration of self-efficacy amongst the creative potential aspect. This study addresses the lack of empirical evidence concerning creative self-efficacy amongst Malaysian undergraduates. In addition, the findings support one of the essential sources of self-efficacy, enactive mastery experiences, as habits which are formed through enactive mastery experiences are implied as crucial factors predicting creative self-efficacy from reading and time management aspects (Bandura, 1977).

Time Management Model. The findings of this study corroborate the importance of time management

behaviours as it gives a sense of mastery and confidence in utilising innovative ways in creative self-efficacy (Macan, 1994). In particular, this study extends beyond organisational context as it adds empirical evidence on the importance of time management in promoting creative outcomes in the context of undergraduate students in Malaysia.

Metacognition Theory. The current findings contribute significantly to exploration of reading as one of the factors that influences the ways humans think (planning, monitoring and evaluating cognition) especially in the context of Malaysian undergraduate students' context (Flavell, 1979). Moreover, this study highlights the importance of reading activity in enhancing metacognitive strategies, which leads to enhancement of creative self-efficacy particularly amongst undergraduate students in Malaysia.

Practical Implications

This study's findings found reading habits and both daily planning and confidence in long-term planning under time management as significant factors predicting creative self-efficacy. Promotion of time management for the undergraduate students may be conducted through workshops in order for the undergraduate students in Malaysia to fully grasp the ways to manage their time effectively amongst the hectic schedule in university. Undergraduate students can also develop critical thinking skills and improve long-term planning by engaging in collaborative activities, such as building peer connections to find solutions for overcoming challenges.

Based on these findings, university management and lecturers may promote reading habits and planning in time management among undergraduate students during their semester breaks. Libraries in universities may also extend their operation hours and hold more events in order to attract the undergraduates which may promote reading habit.

Limitations and Future Directions

References used in this study are mainly from a western background due to a lack of previous studies based in Malaysia. Then, participants may create social desirability responses through the self-report survey employed in this study. Based on my results, the highest variance value in the regression explained only 15.1% variance of participants' creative self-efficacy. Thus, the remaining percentages are yet to be examined regarding their impact as predictors of predicting creative self-efficacy.

This study employed online survey design as the method to collect data from the participants. Hence, in order to investigate more details pertaining to creative self-efficacy, longitudinal measurement can be employed. Self-Report Habit Index for Reading (SRHI-R) scale to measure reading habit only captured automaticity, behavioral frequency and expression of one's identity in reading (Schmidt & Retelsdorf, 2016). A factor such as the length of reading habit and types of reading are not accounted for in this reading habit measurement. Hence, tracing development of undergraduates from Year 1 to Year 2 to Year 3 can be conducted in order to examine whether their reading habit and time management truly enhance creative self-efficacy. Sampling biases may stem from the over-representation of medical and psychology students, as well as a gender imbalance (73.8% female), both of which could have affected the study's results.

Future researchers should consider recruiting participants from a wider range of universities and cultural backgrounds as well as taking the number of males and females and the number of students in particular courses into consideration to improve the generalisability of the findings. Incorporating mixed methods, such as adding a qualitative component, could provide a more comprehensive understanding of the factors influencing creative self-efficacy and how students perceive their creative abilities. Additionally, exploring other potential predictors, such as teaching methods, mentorship, or access to creative resources, could offer a more holistic view.

Conclusion

The current study found that reading habit, daily planning in time management and confidence in long-term planning in time management significantly predict creative self-efficacy amongst undergraduate students in Malaysia. The current findings indicate that there is gender-equality in the higher education institution in the Malaysian context, specifically in the domain of creative self-efficacy. However, other factors may contribute to the prediction of creative self-efficacy amongst undergraduate university students in Malaysia, as the variance explained by the regression model is only 15.1%. Future studies can employ longitudinal measurement to further examine the mechanism of creative self-efficacy over time and adding a qualitative component to provide a more comprehensive understanding of the factors influencing creative self-efficacy and creative abilities perception by students. This study is vital for us to comprehend further the predictive values of the variables, with the hope of implementing interventions in universities in order to enhance creative outcomes amongst undergraduate students in Malaysia.

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