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Underlying Dimensions of Lifestyle and Their Relation with Creative Ideation Among Undergraduate Students

Puthyrom TEP[1] , Saranya CHUATHONG[2] , Suwanna SOMBUNSUKHO[3]

[1] *King Mongkut's University of Technology Thonburi, Bangkok, Thailand* 0000-0001-7647-1536

[2] *King Mongkut's University of Technology Thonburi, Bangkok, Thailand*

[3] *King Mongkut's University of Technology Thonburi, Bangkok, Thailand*

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ABSTRACT

In higher education, a limited number of studies have been conducted on the relationship between lifestyle and creativity and dating back tomore than 50 years ago. This study investigates the up-to-date results of the relationship between university students' lifestyles and their creative ideation. The data was collected two times in order to perform Exploratory Factor Analysis (EFA) and Hierarchical Regression Analysis. The participants consisted of 233 students for EFA, whereas regression analysis consisted of 239 students from five public universities across Thailand. The data was analyzed using 'R Programing Language' to obtain the results. The study revealed that in a collectivist culture society like Thailand, student lifestyles consist of five dimensions, i.e., family-oriented, community consciousness, modern, family concern, and traditional lifestyle. The correlation results showed that community consciousness and a modern lifestyle were significantly associated with creative ideation after controlling for gender and age variables. In contrast, family concern, family-oriented, and a traditional lifestyle were not. These findings suggest that undergraduate students who endorse modern and community consciousness lifestyles were likely to perform better in generating creative ideas.

Keywords:
Creativity, creative ideation, higher education, lifestyle

1. Introduction

Numerous reports claim that creative thinking is vital to future employment. For instance, the American Management Association's survey reported that critical thinking, communication, collaboration, and creativity were soft skills required for entry-level jobs (AMA, 2019). The reports of International Business Machines Corporation (IBM, 2012) and Adobe (2012) also supported the claim, indicating that creative thinking is the qualification employers are searching for in their recruitment. The conception of creativity is pretty broad, whereas creative ideation falls into a small part of it. Even though creative ideation is minor, all creativity seems certainly need it (Runco, Plucker, & Lim, 2001). Creative ideation can be elucidated in terms of thinking disposition or ideational behavior. Simply, it is referred to as an original idea development process where the idea is considered a creative and useful outcome (Plucker et al., 2006; Runco et al., 2001). In other words, it is the cognitive ability to produce or coming up with creative ideas (Pannells & Claxton, 2008).

In numerous studies, creative ideation is the focus and center of attention that is structurally interpretable in various terms. For instance, it is considered everyday creativity (Benedek, Franz, et al., 2012; Benedek, Könen,

[1]Corresponding author's address: Darunsikkhalai School for Innovative Learning, King Mongkut's University of Technology Thonburi Bangkok/Thailand
e-mail: puthyrom.tep@mail.kmutt.ac.th
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et al., 2012; Cohen & Ferrari, 2010), interpreted as creative ideation (Hao et al., 2016; Pannells & Claxton, 2008; Tyagi et al., 2017), referred to creative behavior (An et al., 2016; Smith Ronda et al., 2016), and ideational behavior (Batey et al., 2010; Paek & Runco, 2018). Much research has been conducted on different factors affecting creativity, e.g., educational settings, parental and individual factors (see also Tep et al., 2018, p. 86), yet research regarding the notion of creative ideation and its association with university students' lifestyles are understudied. According to Florida (2002), a society that offers a stimulating lifestyle, a rich culture, amusement, recreation, and educational opportunities may produce and attract more creative individuals; thus, regions with economies that rely strongly on creativity become more prosperous. Csikszentmihalyi (1996) interviewed 100 practical knowledge people and demonstrated that when lifestyle operated at an appropriate moment and a precise place, it constitutes a significant part in creativity. Therefore, it seems lifestyle likely affects individual creativity.

Through the lens of psychological analysis, lifestyle as the style of thought is a mixture of personality dimensions such as attitudes, opinions, interests and values, cognitive processes, and overt behavior patterns (Anderson & Golden, 1984; Horley et al., 1988). At the Stanford Research Institute, Mitchell and Spengler assessed the lives of Americans and investigated the relationship between their actions, beliefs, and values. They found that perceived value predicted and explained human behavior (Mitchell, 1983; Mitchell, 1994). Additionally, perceived values are a combination of human beliefs, attitudes, and demands. Style is strongly linked to actions and operations and how individuals respond to conditions, objects, or stimuli (Ansbacher, 1967). Cultural factors seem to play an important and profound role in an individual's lifestyle. In recent years, many researchers have explored the topic of the impact of culture on lifestyle. Physical exercise, sedentary behavior, bad eating habits, cigarette usage, physical wellness (obesity, hypertension, and other non-communicable diseases), life quality, and psychological well-being were all found to be highly influenced by the socio-cultural environment (Cerin et al., 2016; Joh et al., 2017; Van Dyck et al., 2012).

In addition, Wells and Tigert (1971) originally studied people's lifestyles regarding their activities, interests, and opinions (AIO). They created AIO statements to measure individual lifestyles. Table 1 shows the major lifestyle dimensions. Actual individual external behaviors explain activities, interests are defined by how individuals continue to be concerned with specific objects, events, or topics. Place concerns the immediate surroundings, and opinions are the attitudes of individuals in response to certain events, their views, or beliefs (Plummer, 1974; Wells & Tigert, 1971).

Table 1: *Lifestyle dimensions*

Activities	Interests	Opinions
Work	Family	Themselves
Hobbies	Home	Social issues
Social events	Job	Politics
Vacations	Community	Business
Entertainment	Recreation	Economics
Club membership	Fashion	Education
Community	Food	Products
Shopping	Media	Future
Sports	Achievements	Culture

Adopted from Plummer (1974)

Besides AIO studies, many studies have been conducted to measure lifestyle and interpreted within the different theoretical perspectives. For instance, Thorne (1975) measured lifestyle in relation to the need system and extracted five factors, i.e., aggressive-domineering, conforming, defensive-withdrawal, amoral sociopathy, and resistive-defiant. O'Phelan and Louise (1977) suggested that lifestyle can be divided into six distinct categories: achievement, social proprieties, interpersonal mechanics, right-wrong, posture, and gender. Kern (1982) assessed lifestyle based on individuals' personality characteristics and classified them into five themes: control, perfectionist, need to please, victim, and martyr. This study attempted to explore students' lifestyles using AIO statements.

Through the notion above, value is considered one of the vital variables defining lifestyle (Rokeach, 1979). A lifestyle guided by values may reflect motivational goals and assist individuals' decisions in their life, whereas human values are likely to offer a strong stimulus toward creative behavior (Dollinger et al., 2007).

Simultaneously, Dollinger et al. (2007) further stated that creativity could be a function of the values an individual holds. The association between creativity and human value was also proposed in the values theory of Schwartz (1992). The creative individual seems to endorse self-direction, universalism, and stimulation values (Schwartz, 1992). Therefore, this logic may explain that lifestyle tends to be associated with creative ideation.

Few studies have also been conducted to assess the relationship between lifestyle and creativity within an individualist culture in higher education. Mackler and Shontz (1965) conducted empirical research on style of life and creativity focusing on students' college majors. The authors used sensory modes, i.e., visual, kinesthetic, auditory, tactile, or ol-factory interchanged with life style, which narrowly focused on personality. Winter and Russell (1973) studied creative people's perspectives towards psychographics. The authors emphasized the values that are attributed to psychographics. These studies, which were published in the 1970s or 1980s, are over 50 years old. This prompts interest in the context of the up-to-date lifestyle-creativity relation findings from current research. Further, previous studies did not precisely demonstrate the intimate association between lifestyle and creativity. Therefore, this study's main goal is to grasp the tenable association between university students' lifestyle and their creative ideation. The specific research questions were as follows:

- What are the underlying lifestyle dimensions of undergraduate students?
- What is the relationship between lifestyle dimensions and creative ideation?

2. Method

2.1. Method and Participants

The convenient sampling method was employed in the current research. This method offers considerable benefits in terms of professional networks and assures a high response rate. All participants voluntarily took part in the study. The data was collected two times from five public universities across Thailand in order to perform Exploratory Factor Analysis (EFA) and Hierarchical Regression Analysis. Participants were freshman, sophomore, junior, and senior students majoring in Educational Communication and Technology. The majority of participants were from universities located in central Thailand.

Regarding the EFA part, 234 students completed the survey. One response was excluded from the analysis due to outliers. Mahalanobis distance method was conducted using a critical point of 59.70. The final participants consisted of 233 students, 160 (68%) females and 73 (32%) males with an average age of 21.04 years and a standard deviation of 1.39. Hair et al. (2019) suggested that a sample size of 200 is recommended to estimate the factor loading of .40 in EFA.

In the regression analysis part, 256 students completed the survey. Seventeen students were omitted from the analysis as a result of outliers. Mahalanobis distance method was conducted using a critical point of 90.57. The final participants comprised 239 students, 170 (71%) females and 69 (29%) males, with a mean age of 20.72 years and a standard deviation of 1.41. In the current study, 30.5% of the sample were freshmen, 26.8% sophomore, 25% junior, and 17.7% senior. An adequate sample size was also estimated to perform regression analysis. The pre-power analysis was done with G*Power 3.1 (Faul et al., 2009) by setting the power value to 0.95 and the significance level to 0.05. The result indicated that estimating a medium effect of $f^2 = .15$ with seven independent variables in multiple linear regression, 153 participants would be needed.

2.2. Measures

Two questionnaires were designed and developed to collect the data. The first consisted only of lifestyle measurements based on AIO statements. The second is divided into three sections. Section one collected demographic information, e.g., gender, age, year level, subject area, and academic achievement. Section two collected lifestyle information. The final section of the survey assessed creative ideation. The summary of instruments is shown in Table 2.

Lifestyle measurement. Lifestyle was measured through 30 activities, interests, and opinions (AIO) statements obtained from the literature (Anderson & Golden, 1984; Mitchell, 1983; Wells, 1975; Wells & Tigert, 1971). It was constructed based on lifestyle dimensions (see table 1) suggested by Plummer (1974). Ten activity statements were developed and represented vocation, shopping, entertainment, hobbies, social events, and community dimension. Responses to the questions "How often do you take part in these activities?" are categorized on a 5-point Likert-type scale ranging from "1" being "Never" and "5" being "Always." Ten interest statements were constructed and represented family, home, community, recreation, food, education, and social issues. Responses to the question "How would you rate your interest in these matters?" are categorized on a 5-point Likert-type scale, ranging from "1" being "Not at all" and "5" being "Very much." Moreover, ten opinion statements were created and represented family, economics, education, the future, and culture. Responses to the questions "Rate your agreement with the below statements." are categorized on a 5-point Likert-type scale ranging from "1" being "Not at all' and "5" being "Very much."

Table 2. *Summary of instruments*

Construct	Instrument	No. of items	Respond to Question	5-point Likert-type 1 (2 3 4) 5	Cronbach's alpha (α)
Lifestyle (AIO statements)	Activity	10	How often do you take part in these activities?	Not at all → Very Much	.80
	Interest	10	How would you rate your interest on these matters?		.87
	Opinion	10	Rate your agreement		.85
Creative Ideation	RIBS	23	Rate your agreement	Never → Always	.95

Note(s): AIO = activities; interests and opinions, RIBS = Runco Ideational Behavior Scale

Creative Ideation. Creative ideation was measured using the Runco Ideational Behavior Scale (RIBS; Runco et al., 2001). This scale assessed various aspects of ideas, e.g., a different way of utilizing ideas, appreciation, and individuals' capability of ideas initiating everyday behavior without covert activities or actions. This inventory comprised 23 self-report items that were designed and developed to measure on a 5-point Likert-type scale ranging from "1" being "Never" and "5" being "Always" (For reliability and validity procedures, see Tep, Maneewan, Chuathong, et al., 2021).

Control Variables. Baer and Kaufman (2008) indicated there were inconsistent results of gender differences in creativity; consequently, they found that females outperformed males in creativity tests. Dacey et al. (1998) demonstrated that the more years students spent in formal education, the more their creativity attenuated. Thus, gender and age were included as a control variable to partial out their effect on creative ideation.

2.3. Procedures

The study was undertaken after receiving approval and granting the University Institute Research Board (IRB) consent. Data collection was conducted by following human subjects' guidelines and principles. Before participants started filling out the questionnaire survey, they were informed that all their answers were treated as anonymous and confidential. Their participation in this study was considered a volunteer and received no educational benefits, e.g., extra credit. These details were also notified on the survey document. According to the discretion of participants, they can completely or partially fill the questionnaire. They can also reserve the right not to undertake the survey, thus, they can return the blank sheet. First, all items in the questionnaire survey were translated into English. Next, they were back-translated into the Thai language. In the current study, the translation process was adopted and followed the procedure developed by Brislin (1980). The author proposed the translation-back-translation procedure. All items were verified and valid.

2.4. Data analysis

All data analysis in this study were performed using R programming language (R Core Team, 2020). All required packages were loaded into R. First, and data screening was conducted to search for missing value. Normality and multicollinearity assumptions were also tested. For normality, skewness and kurtosis measures were run. Multicollinearity was checked via the correlation value of observed variables. It manifested when r > .80 (Gana and Broc, 2019). Second, to answer research question one, lifestyle was analyzed using EFA. Before conducting EFA, assumptions, e.g., sampling adequacy and intercorrelation among variables, were assessed. A principal axis factoring (PAF) was run utilizing Promax oblique rotation. PAF was used in this study due to its function in obtaining the underlying factors. The nature and number of these factors were exacted due to participants' responses (Hatcher, 1994). Oblique rotation was applied because of the theoretical factor correlation expectation. A total number of factors was defined using parallel analysis and scree plot. Each factor was retained when the eigenvalues is higher than one (Kaiser, 1960). The significance of a loading, according to Stevens (2002), gives little indication of the substantive importance of a variable to a factor. In that respect, items were retained only if they displayed factor loadings greater than 0.4 in absolute value (which explains around 16% of the variance in the variable). We considered the one-dimensional factor of creative ideation due to empirical suggestion regarding a lack of theoretical support made by Runco et al. (2001). Thus, EFA was not performed on RIBS. Cronbach's alpha (α) was calculated separately for each scale and subscale to check the reliability of measure scales.

Factor scores of lifestyle and creative ideation were obtained to use for further correlation and regression analysis. Finally, hierarchical regression analysis (sequential regression) was undertaken to answer research question two. Hierarchical regression has offered researchers initially partial out a set of controlled variables variance before examining the contribution of major predictors (Denis, 2020). Diagnostic tests, such as discrepancy, leverage, and influence case, and assumptions, such as normality, multicollinearity, homoscedasticity, and error independence, were conducted before doing a regression analysis to ensure that the regression model fitted the data.

3. Results

3.1. Preliminary and Exploratory Factor Analysis

Data screening exhibited no missing values. The all-item skewness value varied between .53 and -1.23, whereas the kurtosis value ranged from .40 to -1.32. Based on Hahs-Vaughn & Lomax (2013), skewness and kurtosis values less than 1.5 demonstrated normal distribution. Thus, missing data and normality assumptions caused no concerns toward the analysis. In order to test the multicollinearity assumption, Pearson's correlation coefficient among all items was run. All-item correlation value ranging from -.04 to .72 was less than .80. Therefore, multicollinearity also did not exist in the analysis. Regarding lifestyle EFA, the Kaiser-Meyer-Olkin measure (KMO) confirmed that the sample was adequate for performing the analysis. The overall KMO value equaled .89, and each item's KMO value was greater than .71, which is higher than the sufficient value of .5. Further, Bartlett's test of sphericity, χ^2 (435) = 3290.04, p < .001, demonstrated that all-item correlation was sufficiently abundant for PAF. Parallel analysis and scree plot proposed a five-factor solution that is most appropriate. However, five items (OP01, OP02, OP07, OP08, and OP09), e.g., businesses should expect profit and benefit society, were omitted from the lifestyle scale because of their cut-off point cross-loading values. Loaded values of all-item in each factor were higher than .4. The final five factors represented 53% variance.

As shown in table 3, Factor 1 is comprised of 5 items. They are all related to family activities; thus, this factor was labeled as a "family-oriented lifestyle: FOLS." Factor 2 held six items, e.g., "I am interested in providing assistance to communities or charity organizations." Hence, it was labeled as "community consciousness lifestyle: CCLS." Factor 3 incorporated six items, e.g., "I shop for brand products based on popular trends." Therefore, it was labeled as "modern lifestyle: MOLS." Factor 4 consisted of five items, e.g., "I am interested in

minding all family members' problems." As a result, it was labeled as "family concern lifestyle: FCLS." Factor 5 had three items, e.g., "I participate in religious activities." Consequently, it is labeled as "traditional lifestyle: TDLS." The subscale Cronbach's alpha values for family-oriented lifestyle, community consciousness lifestyle, modern lifestyle, family concern lifestyle, and traditional lifestyle respectively were .88, .84, .77, .83, and .77.

Table 3. *Summary of EFA results for lifestyle (N = 233)*

Item	FOLS	CCLS	MOLS	FCLS	TDLS
(OP) Family is the most important thing	.92	-.14	-.11	.02	.02
(OP) Relaxing on holidays, a person should spend more time on family rather than anything else	.77	.03	-.03	.09	-.04
(OP) People should help disadvantaged person every time they have a chance	.77	.21	.02	-.23	-.02
(OP) Spending free time on holidays with family is considered as the best activity	.70	-.03	-.07	.21	.02
(OP) People should enjoy life and fill it with happiness whenever possible	.68	-.01	.18	-.04	.01
(IN) Supplying the help to communities or charity organizations	-.06	.77	-.06	.03	.13
(IN) Ecotourism and conservation tourism which supplying benefit to communities or charity organizations	-.05	.74	-.04	.03	.12
(IN) Social or environmental problems	.15	.73	-.09	-.09	-.03
(IN) Biography of important person	-.02	.66	.05	.04	-.12
(IN) Learning religious doctrine and put it into practice	.02	.57	-.02	-.03	.15
(IN) Exhibition of history, art, and culture	-.01	.55	.16	.17	-.19
(AC) Visiting entertainment places, e.g., movie theatre, concerts, or nightclubs	.05	-.02	.75	-.01	-.06
(AC) Shopping for brand products based on popular trends	.00	.00	.73	-.03	-.02
(AC) Eating outdoor or socializing after work	-.09	-.06	.66	.07	.03
(AC) Buying the latest model of technological products, e.g., smart phone, notebook, and camera	.05	.01	.65	-.11	-.07
(AC) Recommending or persuading friends to go to new-opening entertaining places	-.14	.11	.62	-.03	.08
(AC) Traveling domestically on holidays	.13	-.06	.49	.09	.07
(IN) Thinking about or finding the activities to do with the family on holidays	-.11	.01	-.01	.91	-.05
(IN) Daily necessities and food for all family members which must have at home all the time	-.06	.11	.00	.81	-.07
(IN) Minding all family members' problems	.24	.01	-.17	.69	-.09
(IN) Saving money and keeping financial stability	.05	.16	.02	.51	.09
(AC) Activities with family members on holidays, e.g., doing sports, shopping, playing game etc.	.13	-.11	.12	.41	.14
(AC) Taking part in religious activities	-.06	.05	-.08	-.08	.89
(AC) Taking part in traditional activities on important days	.05	.01	.02	-.11	.85
(AC) Paying a visit to relatives on important days or festival holidays	.01	.00	.06	.13	.51
Eigenvalues	3.22	3.00	2.64	2.63	1.88
% of variance	13	12	11	11	.08
Cronbach's α	.88	.84	.77	.83	.77

Note(s): AC = I do, OP = In my opinion, IN = I am interested in, FOLS = Family-Oriented Lifestyle, CCLS = Community Consciousness Lifestyle, MOLS = Modern Lifestyle, FCLS = Family Concern Lifestyle, TDLS = Traditional Lifestyle, Factor loadings over .40 appear in **bold**.

3.2. Hierarchical Regression Analysis

Two regression models, one with control variables and one with five lifestyles after controlling for students' gender and age with creative ideation as the outcome, were assessed. A total of seven predictors, two from demographics as control variables (gender and age) and five from lifestyle (family-oriented, community consciousness, modern, family concern, and traditional lifestyle), were loaded into the two models using the Enter method. Diagnostics for both models noted no concerns with influential cases (Cook's values < 1), and

assumption testing found no concerns normality (a Shapiro-Wilk normality test; w = .99, p = .17), homoskedasticity (Breusch-Pagan test; BP(7) = .10, p = 0.18) , and independence of the error (the Durbin–Watson statistic value = 1.16). The values lower than one or higher than three caused concerns, it should be close to 2 (Field et al., 2012). The variance inflation factor (VIF) was also investigated to test the model's multicollinearity assumption. Field et al. (2012) suggested that VIF values higher than 10 presented a violation of assumption and caused concerns. Table 4 shows the VIF values of each independent variable. Thus, multicollinearity has not violated the model.

Table 4: *The Mean, Standard Deviations, and Correlation Among All Constructs*

	1	2	3	4	5	6	Mean	SD	skewness	kurtosis	VIF
1. FOLS							4.03	1.08	-1.18	.57	1.86
2. CCLS	.38***						3.09	1.13	-.16	-.97	1.52
3. MOLS	.24***	.18**					2.73	.72	.30	-.43	1.42
4. FCLS	.60***	.50***	.44***				3.64	1.02	-.75	-.24	2.90
5.TDLS	.24***	.30***	.33***	.43***			3.19	.82	.18	-.65	1.38
6. CI	.27***	.39***	.41***	.30***	.20**		3.14	.71	.06	-.18	-

Notes: FOLS = Family-Oriented Lifestyle; CCLS = Community Consciousness Lifestyle; MOLS = Modern Lifestyle; FCLS = Family Concern Lifestyle; TDLS = Traditional Lifestyle; CI = Creative Ideation; VIF: variance inflation factor, *** p <.001; ** p <.01.

Based on Table 5, regression model 1 showed the effects of the control variables, gender and age represented as dummy variables, on creative ideation, adding unique variance (R^2 = .061, R^2_{Adj} = .053, p < .001). For the regression model 2 predicting students' creative ideation, 31% of the sample outcome variance (R^2 = .316, R^2_{Adj} = .295, p < .001) was accounted for, was found to significantly predict the outcome, F(7, 231) = 15.27, p < .001 after controlling for gender represented as dummy variable and age. Two of the lifestyle predictor variables significantly contributed to the model. Community consciousness lifestyle (β = .37, t = 5.17, p < .001) and modern lifestyle (β = .41, t = 5.90, p < .001) had significant and positive influence on creative ideation. Three other lifestyle predictor variables, family concern (β = -.16, t = -1.67, p = .09), family-oriented (β = .12, t = 1.57, p = .12) and traditional lifestyle (β = -.03, t = -.46, p = .64) did not significantly contribute to the model.

Table 5. *Hierarchical Regression Analysis*

Predictors	Outcome: Creative Ideation					
	Model 1			Model 2		
	β	*t*	*p*	*β*	*t*	*p*
Control variables						
Gender	-.18	-1.32	.18	-.08	-.71	.48
Age	.16	3.63	.000***	.11	2.99	.003**
Lifestyle						
FOLS				.12	1.57	.12
CCLS				. 37	5.17	.000***
MOLS				.41	5.90	.000***
FCLS				-.16	-1.67	.09
TDLS				-.03	-.46	.64

Note(s): Gender was coded 1 = female, 2 = male; FOLS = Family-Oriented Lifestyle; CCLS = Community Consciousness Lifestyle; MOLS = Modern Lifestyle; FCLS = Family Concern Lifestyle; TDLS = Traditional Lifestyle; Model 1, R^2 = .061, Adj. R^2 = .053; p < .001. Model 2, R^2 = .316, Adj. R^2 = .295; p < .001. *** p < .001; ** p < .01.

4. Conclusion and Discussion

The results of the exploratory factor showed that five main lifestyle dimensions existed among undergraduate students in Thailand, which were considered moderately intercorrelated with each other. The first dimension, family-oriented, demonstrated a lifestyle that gives priority to the family. In a collectivist culture, mostly in Asia, collectivism emphasizes family over the individual (Lyu et al., 2017). The second dimension, community consciousness, demonstrated a lifestyle that raises awareness of local inheritance,including natural and cultural. This consciousness led to the conservation movement and broadened its perspective and knowledge through learning among people in the community (Murphy, 1988). The third dimension, modern lifestyle,

demonstrates a lifestyle that values the pursuit of pleasant excitement and trying something new. Fariza Md et al. (2015) indicated that the new generation is closely involved with information technology and desires the modern, novel, and the experiences such as an adventure. Typically, the modern lifestyle was most practiced by adolescents. The fourth dimension, family concern, demonstrated a lifestyle that values caring about family and close friends and providing them with both practical and emotional needs. A point to notice is that female participants in the current study were more than males due to the Thai population and feminine culture. Fakhruddin (2016) demonstrated that in Thailand, "Women are a particularly good resource in mobilizing their peers, caring for family members with special needs, organizing food preparation and distribution, and knowledge of household needs in the community" (p. 662).

The final dimension, traditional lifestyle, demonstrates a lifestyle that values following the cultural or religious traditions. The traditional life, individuals live their life "based on the historical experience of indigenous people and their ancestors in the sphere of land and natural resources use, a traditional social organization of their communities, unique ancient culture, continuous practice of the traditions, religions and beliefs" (Xanthaki, 2004, as cited in Åhsberg, 2020, p. 2). Schwartz (2012) suggested that as youth move from late adolescence to early adulthood, their development patterns in value priorities affecting lifestyle were also changed. These findings illustrated the different lifestyle dimensions from the studies of O'Phelan and Louise (1977); Thorne (1975) and Kern (1982) perceived lifestyle based on Adler's lifestyle theory (Adler, 1956).

According to the literature review cited above, there are few research that look into the relationship between undergraduate students' lifestyle and their creative ideation. The current study's findings filled in the gaps, indicating a positive relationship between lifestyle dimensions and creative ideation in higher education (see Table 4). The results demonstrated that a community consciousness lifestyle positively affected creative ideation in the university context. The current finding may be explained by Schwartz's value theory. It is likely that the community consciousness lifestyle endorsed universalism value. According to Kasof et al. (2007), universalism values are positively correlated with creative performance. It has also been found that the modern lifestyle has a positive influence on creative ideation. This finding suggested that students who have lifestyle endorsed travelling, shopping for technological or trend products, and try something new, were likely to generate more ideas. Students who possess these lifestyles construct perceptions of value in self-direction and stimulation. This result concurred with the study of Tep, Maneewan, Chuathong, et al. (2021), who conducted a study regarding the relationship between value, creative self-efficacy, and creative ideation. The authors found that stimulation value significantly affected creative ideation. This finding was consistent with Dollinger et al. (2007), Kasof et al. (2007), and Taylor and Kaufman (2020). Their research findings demonstrated a direct association between self-directed value and creativity. Schwartz's values theory plays a part in supporting the finding. It proposed that self-direction and stimulation were characterized by creativity.

However, family concern, family-oriented, and traditional lifestyles found non significantly associated with creative ideation. Using Schwartz's value theory, family concern lifestyle is likely endorsed with benevolence value, which was negatively correlated with creative accomplishments (Dollinger et al., 2007). Family-oriented was plausible endorsed benevolence and conformity values, whereas traditional lifestyle was likely to endorse tradition value. Benevolence, conformity, and traditional values were found to be negatively correlated with creativity (Dollinger et al., 2007; Kasof et al., 2007).

5. Recommendations

In this study, the results are still limited in some points. First, data collection was conducted using self-report. It was regarded as a descriptive research design, not an explanatory one. Therefore, all the results shown in this study did not present a cause-and-effect relationship between lifestyle and creative ideation in a higher education context. Future studies should consider deploying different research designs, e.g., qualitative, mix-method, or third-party observation, compared with self-rating. Second, the factor analysis of the lifestyle survey obtained five reasonable factors, but there are likely additional dimensions of lifestyles that should be considered.

This study highlighted the important implications for education. First, understanding the type of lifestyle influencing creative ideation may help educators design settings to enhance it. For example, the community consciousness and modern lifestyle likely influenced students' creative ideation. Therefore, finding

appropriate ways to design the learning environments by adapting the community consciousness and modern students' lifestyle into the classroom context or considering policies for preferences for tasks may contribute significantly to foster their creative thinking.

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