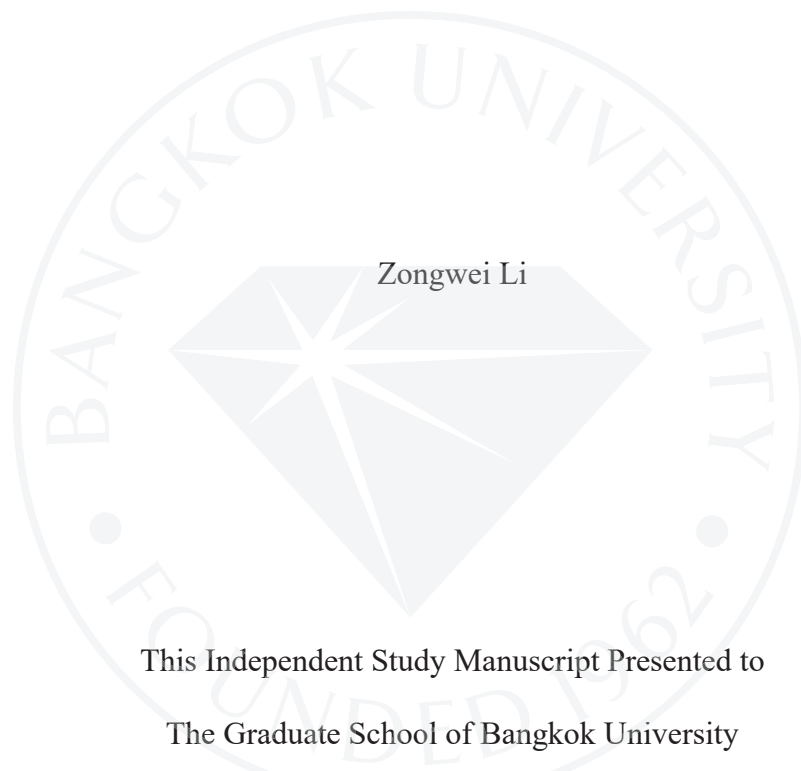


**EXPLORATIVE ANALYSIS OF BU LIBRARY REDESIGN TO BECOME  
A CREATIVE SPACE: FROM BU INTERNATIONAL STUDENTS' POINT  
OF VIEW**



EXPLORATIVE ANALYSIS OF BU LIBRARY REDESIGN TO BECOME  
A CREATIVE SPACE: FROM BU INTERNATIONAL STUDENTS' POINT  
OF VIEW



This Independent Study Manuscript Presented to  
The Graduate School of Bangkok University  
in Partial Fulfillment

of the Requirements for the Degree  
Master in Business Innovation

2020



©2020

Zongwei Li

All Rights Reserved

This manuscript has been approved by

the Graduate school

Bangkok University

Title: Explorative Analysis of BU Library Redesign to Become a Creative Space:  
From International Students' Point of View

Author: Mr. Zongwei Li

Independent Study Committee:

Advisor:



(Dr. Xavier Parisot)



(Dr. Varalee Chinerawat)

Field Specialist:



(Assoc. Prof. Dr. Vincent Ribiere)



(Mr. Virat Rattakorn)

Dean, Graduate School

November 27, 2020



Li, Z. M.M. (Business Innovation), November 2020, Graduate School, Bangkok University.

Explorative Analysis of BU Library Redesign to Become a Creative Space: From BU International Students' Point of View (183 pp.)

Advisor: Xavier Parisot, Ph.D. and Varalee Chinerawat, Ph.D.

Co-advisor: Wenbin Lin, Ph.D.

### **ABSTRACT**

This research aims to explore a question: What are the areas of improvement of BU library services so that more students can use the library as a creative space? Therefore, the objective of this research is to discover the creative needs and suggestions of users when using the BU Library creative space.

Based on the literature review, the BU Library creative space positioning and conceptual design sketches were obtained, and the theoretical framework of the BU library creative space was derived from this.

For the research methodology, this research is applied convergent exploratory design with triangulation by using both qualitative approach with 4 samples respond to visual picture and interview items and quantitative approach with 59 samples to respond the questionnaire survey, and combined with qualitative analysis, users' agreement on the creative space of BU Library were found.

For the tool quality, the 4 experts in education management and content outside the university are invited to proof reading questionnaires before launching the 36-item

questionnaires which passed screen its content validity into this research (IOC >.75).

The qualitative finding, it is found that, 9 key findings are important to build creativity and creative behaviors in Bangkok University. In order to build creative space library like best practices in the leading companies and global benchmark. The structured interview to explore the needs of creative space covering 9 key findings which are mainly focused on city campus's library, for example 1) There is a great demand for creative forums, and most students hope to improve their creativity here. 2) The display in the exhibition hall can improve the creativity of users, such as wall paintings and painting exhibitions, etc. 3) Group discussion and exchange of ideas are the items most selected by users. 4) The public reading area with larger area and wider view is favored by many users. 5) Space color and e-book resources have a high average score, which encourages students to innovate. 6) University needs to solve 'Open at night' and 'Open the library on weekends'. 7) Sound insulation or no noise in any area. 8) The freely movable and combined tables, chairs and sofas in the creative space will be very popular with users. Place markers, whiteboards, etc. 9) The public reading area is arranged close to the glass curtain wall, which is very suitable for the user's choice, and has good natural ventilation and lighting. However, only frequent users of Rangsit Library think improving creative spaces are critical which the architect department should apply this finding to improve libraries.

*Keywords: Creative space, Spatial design research, Library space, Explorative analysis, Explorative Mixed-method.*

## ACKNOWLEDGMENT

I got the support and dedication for my independent study from many people in the process of completing this IS.

First of all, I would like to express my heartfelt thanks to my consultant Dr. Varalee Chinerawat. Her constant encouragement, illuminating instruction and meticulous guidance have greatly contributed to the shaping of this IS. She carefully read and edited the drafts of my IS and provided me with suggestions. Without her help, this IS would not be what it appears now.

Secondly, I would like to thank Dr. Xavier Parisot, who carefully reviewed the subject of this IS, and taught us how to search and read literature, and gave me great inspiration in writing this IS.

Thirdly, I would like to thank my co-adviser Dr. Wenbin Lin from Baise University, who taught me how to write a literature review.

I am very grateful to Dr. Renuka Sittitavong and her students. They provided selfless help when collecting this IS online questionnaire sample, giving me the opportunity to complete the data required for this independent study.

In addition, I would like to thank the members of the Independent Research Committee of Bangkok University, Dr. Attapong Sritalalai, Dr. Penpim Phuangsuwan, Dr. Nipon Sasipanudech and Dr. Thanaphum Pongsangiam, for their effectiveness analysis and giving to the content of my questionnaire. I have gained a lot from insightful comments.

Last but not least, I would also like to thank all other teachers and dear friends for their support and encouragement in the process of writing this IS.

Zongwei Li

## TABLE OF CONTENTS

	Page
ABSTRACT .....	iv
ACKNOWLEDGMENT .....	vi
LIST OF TABLES .....	ix
LIST OF FIGURES .....	x
CHAPTER 1: INTRODUCTION .....	1
1.1 Research Background .....	1
1.2 Research Questions .....	3
1.3 Research Objective.....	4
1.4 Research Contents and Framework .....	5
CHAPTER 2: LITERATURE REVIWE .....	7
2.1 Library Creative Space Theory Research .....	7
2.2 Traditional Library Space Research .....	17
2.3 Modern Library Creative Space Research .....	18
2.4 Position and Conceptual Design of BU Library Creative Space.....	21
CHAPTER 3: METHODOLOGY .....	23
3.1 Explorative Mixed-Method .....	23
3.2 Research Design .....	24
3.3 Data Collection .....	27
3.4 Statistical Data Analysis .....	38
3.5 Summary .....	41

## TABLE OF CONTENTS (Continued)

	Page
CHAPTER 4: DATA ANALYSIS .....	42
4.1 Narrative Coding and Theme from Raw Data Interview .....	42
4.2 Descriptive Statistics of Respondents' Demographic.....	42
4.3 Descriptive Statistics of Respondents' Agreement.....	48
4.4 Linear Regression Analysis of Respondents' Agreement.....	55
4.5 The Frequency and Mean of Respondents' Agreement.....	57
CHAPTER 5: CONCLUSION & DISCUSSION .....	91
5.1 Summary of Research .....	91
5.2 Discussion and Interpretation of Findings .....	94
5.3 Significance of the Study .....	95
5.4 Recommendations for Further Research .....	95
BIBLIOGRAPHY .....	97
APPENDICES .....	101
Appendix A: Qualitative Interview Outline .....	102
Appendix B: Respondents' Raw Recorded Data .....	108
Appendix C: Narrative Coding and Theme from Raw Data Interview .....	126
Appendix D: BU Library User Agreement Questionnaire .....	137
Appendix E: IOC Item Content Validity .....	142
Appendix F: List of Mean and Standard Deviation of All Variables .....	169
Appendix G: Respondent's Agreement with Variables .....	172
BIODATA .....	184
LICENSE AGREEMENT OF INDEPENDENT STUDY .....	185

## LIST OF TABLES

	Page
Table 2.1: Literature Research Related to Library Physical Space Design .....	12
Table 2.2: Functional Zoning of Creative Spaces in Modern Libraries .....	19
Table 3.1: Finding Keywords Related to Library Creative Space .....	27
Table 3.2: Qualitative finding on BU Library Creative Space .....	32
Table 3.3: Categorical Name of the Independent Variables .....	34
Table 3.4: BU Library Creative Space User Agreement Questionnaire .....	38
Table 4.2.1: Descriptive Summary of the Respondents.....	42
Table 4.2.2: Frequency of Visit the BU Library * Gender Cross-tabulation .....	44
Table 4.2.3: Residence Time in the BU Library * Gender Cross-tabulation .....	45
Table 4.2.4: The Purpose of Visiting the BU Library * Gender Cross-tabulation.	46
Table 4.2.5: The Correlation between Gender and Visit Frequency and Length of Stay in University Library.....	47
Table 4.3.1: Mean and Standard Deviation of Respondents' Agreement .....	49
Table 4.4.1: Linear Regression Analysis of Variables (Coefficients <sup>a</sup> ) .....	55

## LIST OF FIGURES

	Page
Figure 1.1: Independent Study Content Framework .....	6
Figure 2.1: Appropriate Reflection Factors for Library Spaces .....	12
Figure 2.2: Psychological Effects of Light and Color on Space User .....	14
Figure 2.3: Co-working Spaces and Business Incubators in Libraries That Support Local Workers .....	16
Figure 2.4: Relationship Between Library Area and Creative Space .....	20
Figure 2.5: Modern Library Creative Space .....	21
Figure 2.6: Position and Conceptual Design of BU Library Creative Space .....	22
Figure 3.1: Research Process of the Explorative Mixed-method .....	24
Figure 3.2: Steps to Determine User Agreement of Library Creative Space .....	26
Figure 3.3: The Theoretical Framework of BU Library Creative Space .....	35
Figure 3.4: Conceptual Framework of the Independent Study.....	36
Figure 3.5: Five Point Likert Scale .....	37
Figure 4.3.1: Mean and S.D of Respondents' Agreement (Mean=2.31-2.39) .....	50
Figure 4.3.2: Mean and S.D of Respondents' Agreement (Mean=2.24-2.29) .....	51
Figure 4.3.3: Mean and S.D of Respondents' Agreement (Mean=2.10-2.17) .....	52
Figure 4.3.4: Mean and S.D of Respondents' Agreement (Mean=2.02-2.08) .....	53
Figure 4.3.5: Mean and S.D of Respondents' Agreement (Mean=1.51-1.98) .....	54
Figure 4.5.1: Does the Comfort of the Table, Chairs and Sofas Affect Your Creative Mood? .....	57
Figure 4.5.2: Will the Supply of Sockets Affect Your Creative Process? .....	58

### LIST OF FIGURES (Continued)

	Page
Figure 4.5.3: If the BU Library Has a Water Dispenser or Drinking Room, Will Your Creative Mood Be Better? .....	59
Figure 4.5.4: Do You Think Studying in the Coffee Room of the BU Library Can Better Inspire Your Creativity? .....	60
Figure 4.5.5: Whether the BU Library's Daytime Opening Hours Meet Your Creative Process? .....	61
Figure 4.5.6: Can opening the Library at Night Improve Your Creative Thinking	62
Figure 4.5.7: If the BU Library is Also Open on Weekends, Can You Better Complete Your Creative Tasks? .....	63
Figure 4.5.8: Can the Computers in the BU Library Help You Accomplish Your Creative Tasks Better? .....	64
Figure 4.5.9: If the BU Library Provides Free Wi-Fi, Do You Think It Can Make You Better Complete Creative Tasks? .....	65
Figure 4.5.10: Can the Printer Equipment in the BU Library Bring Benefits to Your Creative Process? .....	66
Figure 4.5.11: If the BU Library Install a Fully Automated Book Borrowing & Returning System, Will It Save Your Creative Time? .....	67
Figure 4.5.12: Will the Warm and Comfortable Lighting of BU Library Make Your Creative Mood Better? .....	68
Figure 4.5.13: Does Indoor Air Circulation Make Your Creative Mood Better? .	69



### LIST OF FIGURES (Continued)

	Page
Figure 4.5.14: Will Comfortable Indoor Temperature and Humidity Affect Your Creative Behavior? .....	70
Figure 4.5.15: Will the Size and Quietness of the Personal Reading Room in BU Library Affect Your Creative Thinking? .....	71
Figure 4.5.16: Will the Noise in the Public Reading Room of the BU Library Affect Your Creative Mood? .....	72
Figure 4.5.17: Is the Books and E-books Provided by BU Library Improve Your Creative Ability? .....	73
Figure 4.5.18: Can the Puzzle Games in the Games Zone Help You Increase Your Sense of Creativity? .....	74
Figure 4.5.19: Do Movies in the Movie Zone Help Your Creative Process? .....	75
Figure 4.5.20: Can Music in Music Room Inspire Your Creative Inspiration? ....	76
Figure 4.5.21: Can the Size and Layout of the Demo Hall of The BU Library Meet Support Your Creative Tasks? .....	77
Figure 4.5.22: Can the Design of the Exhibition Zone of the BU Library Simplify Your Creative Process? .....	78
Figure 4.5.23: Will the Soundproofing and Layout of the Discussion Room of the BU Library Affect Your Creative Mood? .....	79
Figure 4.5.24: Will the Colors and Design Shapes Used in the Creative Space of the BU Library Affect Your Creative Mood? .....	80

### LIST OF FIGURES (Continued)

	Page
Figure 4.5.25: Will the Size and Comfort of the Creative Space in the BU Library Affect Your Creative Behavior? .....	81
Figure 4.5.26: Will the Bookshelves and Books Placement of the BU Library Affect Your Creative Process? .....	82
Figure 4.5.27: The More Potted Plants, the Better Your Creative Mood? .....	83
Figure 4.5.28: If the BU Library Uses Glass Curtain Walls, Can It Better Meet Your Creative Needs? .....	84
Figure 4.5.29: Does the Sound Insulation Effect of the BU Library Meet Your Creative Requirements?.....	85
Figure 4.5.30: Do You Think the Tone of the Wall Painting in the BU Library Can Inspire More Creative Ideas? .....	86
Figure 4.5.31: Do You Think the Display Wall of the BU Library Can Improve Your Creative Ability? .....	87
Figure 4.5.32: Can a Creative Practice Room Improve Your Creative Thinking?	88
Figure 4.5.33: Are You Agree with the Overall Design Creative Space of the BU Library? .....	89

## CHAPTER 1

### INTRODUCTION

#### 1.1 Research Background

The new generation of students are required critical skills not only has theoretical knowledge, but also the ability to complete their work with high quality with creativity “new approach, new things, for better outcome”.

With this logical behind, Bangkok University has its own vision to build a college with diverse and promoting creativity to be a focal points place for Thailand and South East Asia with 10 schools, principles which are digital creative relevant curriculum. The expectation and vision of university can be reflected in developing students who mastered various new technologies to meet each job and solve the problems facing the digital age (Bangkok University, 2019).

Not only the curriculum in the class of action based learning for creativity, but also the creative environment and learning resources, Bangkok University continues to improve the education ecosystem, including laboratories, creative stage and learning corners, studios and modern operating equipment, in an atmosphere that encourages creativity, and digital resources.

The new teaching practice combines creativity with Bangkok University technology to make the future of Bangkok University students open minded and more creative. This new practice and academic environment can effectively respond to the challenges posed by a powerful digital world (Bangkok University, 2019).

As a result, in international college, there is the need of development the creative space design of the library which will enhance students’ creativity and innovation consciousness, allowing students to combine theoretical knowledge with

new technologies in the library, give full play to creativity, and adapt to the challenges of the digital age.

The reason behind the creativity spaces are building learners' mood or state affects learning or creativity. Virtual spaces include not only the connections between local individuals and groups, but also the wider community established through a global network (Martin, 2010). Learners can gain opportunities through various forms of interaction, but learners have greater freedom to connect and track interests and groups of interests in a virtual environment while co-working is considered social work stations to gather people, emphasizing interaction with other users (Spinuzzi, 2012).

A new concept of creative community and university library (2015) emphasizes that a real community includes people from different sectors who have different interests and abilities, work on different projects, but come together to use the same space and tools and share informally working days as they learn from each other in discussions.

So far, in 2020, Bangkok University has complete supporting facilities, and the library has about 200,000 books, which can allow about 3,000 people to read and creative research at a time (Bangkok University, n.d.).

However, there are fewer exploratory analyses of creative spaces in libraries and fewer results, a certain scientific analysis system has not yet been formed (Inthara, 2016). Changes in reader behavior in the information age have also changed the demand for library creative space. For example, the learning behaviors of learners and researchers are no longer simply defined as individual self-study behaviors in self-study rooms, but include leisure behaviors, communicative behaviors, research

behaviors, and creative practical behaviors (Pauline Atherton, 2013).

These diversified learning behaviors have led to changes in the library creative space and its personalized forms, especially in the field of organization and academic online learning, in response to the needs of architectural space (Lev, 2016). Thus, the Bangkok University needs an exploratory analysis of library use of crowd behavior patterns can further recognize the changing needs of creative space.

As a result, the research is aimed to respond the agreement and ideas about existing library of City campus Bangkok University and what's the good recommendation on Bangkok University creative space design of the library will help increase the creators and creative learners which is unique branding of the university among Thai universities. At the end the researcher will be able to answer what kind of library design analysis mechanism that can promote Bangkok University agreement and campus image and make its vision to be creativity colleges become distinguish colleges in Asia.

## **1.2 Research Questions**

Now, the question is how to analyze the design of the creative space of the BU Library to improve the agreement and innovative learning ability of BU Library users? Therefore, my research questions are as follows:

- 1) How to use the exploratory mixed methodology to identify need of being the creative space design of the BU Library?
- 2) Which's area to develop existing Bangkok University's library to serve need of students' creative space?
- 3) What's the area of service improvement to make more students to use libraries as a creative space?

Bangkok University is a creative university designed to provide students with visionary knowledge to adapt to a changing society. The BU Library has always been regarded as a learning and practical base for Bangkok University students, as the BU Library is a collection of books, periodicals and literary works. It has accumulated a lot of knowledge in the theory of creative space design and accumulated some experience in practice (Saengkaew, 2018). However, from the current perspective, the official analysis and evaluation is mainly based on the number of collections and building area, but the actual analysis and evaluation of creative space based on the BU Library is still insufficient. Because the lack of exploratory analysis, it is not possible to report in time users' problems when using the library creative space.

### **1.3 Research Objective**

The objective of this research is discover the creative needs and suggestions of users when they use the library creative space. Through summing up some of the user's feelings about the use of the creative space and suggestions, put forward some optimization strategies for the creative design of the BU Library.

This research aims to exploratory analysis of the needs of the BU Library redesigned as a creative space and BU Library user. Use the results and recommendations of this analysis as a guide for the re-planning and design of the BU Library to better serve users.

In order to improve the creative space environment of the library, make it consistent with the current educational goals, adapt to the current changes in library's creative space. This research takes the creative space of the BU Library as the research object and conducts an exploratory analysis. At the same time, the BU Library will receive suggestions on how to meet the needs of international students.

And save operating costs through its creative space.

#### **1.4 Research Content Framework**

This independent study is divided into 5 chapters, firstly Raise Question (Chapters 1 and 2), then Analyze Question (Chapters 3 and 4) and Summary Question (Chapter 5).

CHAPTER 1 INTRODUCTION. The research background of independent study is expounded, and research questions and research objectives are put forward.

CHAPTER 2 LITERATURE REVIEW. Read the literature related to the research topic of the IS. Furthermore, the theoretical basis of the research is summarized, namely the concepts of creative space theory, community theory and exploratory analysis etc.

CHAPTER 3 METHODOLOGY. It introduces the steps of mixed method design, and introduces the survey objects of quantitative and qualitative methods and the development and quality of some descriptive tools.

CHAPTER 4 DATA ANALYSIS. This chapter mainly conducts statistical analysis on the questionnaire result data, including descriptive statistics, frequency, and mean and standard deviation statistics.

CHAPTER 5 CONCLUSION & DISCUSSION. In this chapter is composed of the summary of research and discussion, and its implication and recommendations for future research.

This IS research content framework is shown in Figure 1.1. It is divided into three parts and 5 chapters.

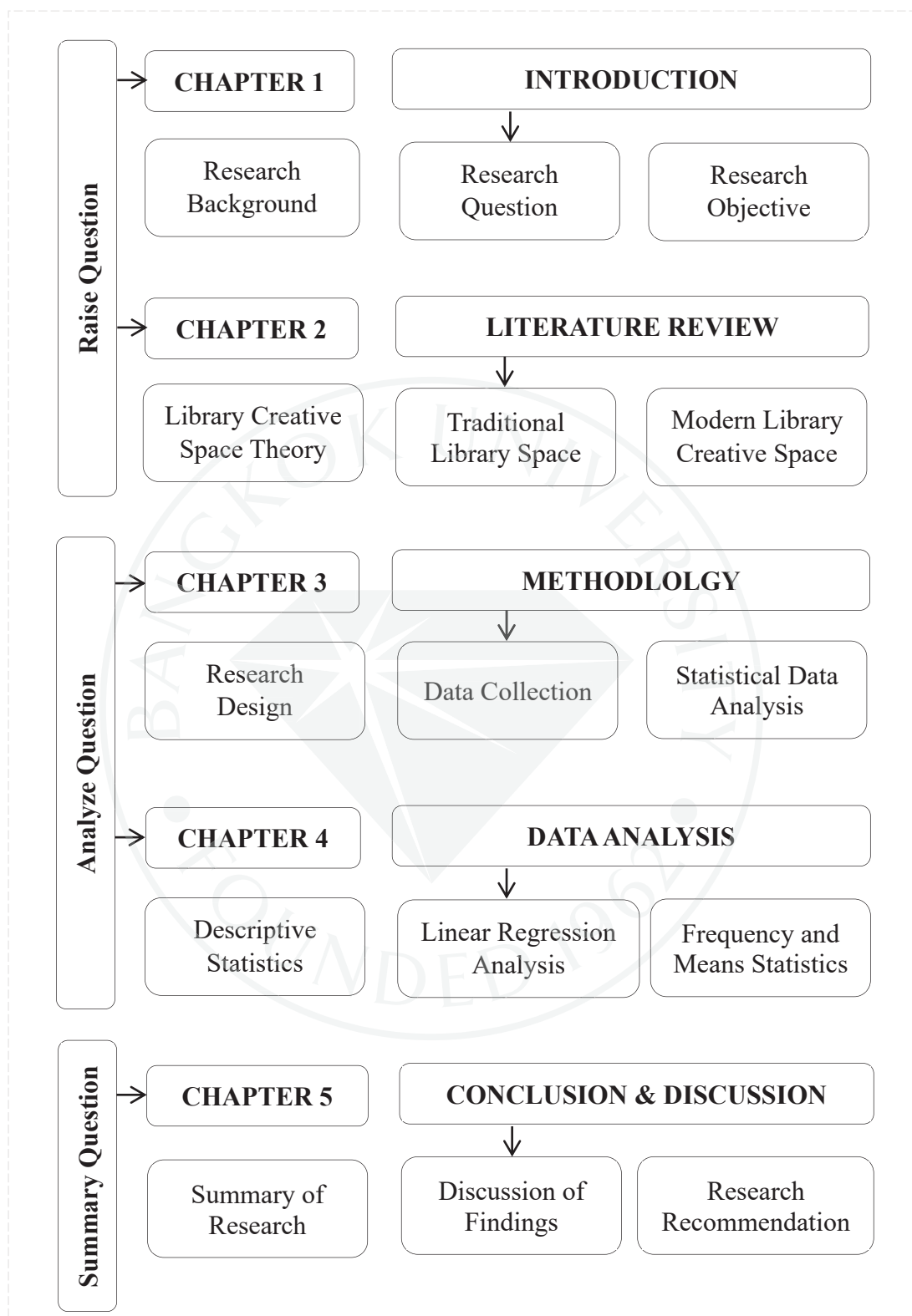


Figure 1.1: Independent Study Content Framework



## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Library Creative Spaces Theory Research

From the literature reviews of several researches and publications regarding the Creative Space the key concepts are by follows:

##### 2.1.1 Library creative space concept

Since 2006, the theory of library creative space has basically introduced in many leading and international organization. In 2010, Paul Martin (2010) divided creative space concept into 3 dimensions which are 1) physical space 2) psychological space and 3) virtual space. All these "Creative Spaces" may affect users' theoretical knowledge learning or practical innovation ability.

Physical space can be defined as the environment in which learning and creation take place. This may vary depending on personal preferences and needs. Importantly, the physical space supports the learning or creative process and does not require a fixed lecture hall, but only a way for learners to participate (Martin, 2010). This means that physical space is not only an environment for learning knowledge, but also an environment for creating knowledge. It is the basis for learning and creating knowledge.

The psychological space of learning and creativity depends on many characteristics of individuals and their working, social and learning environment. The learner's personal values, beliefs, and perspectives come from the cultural influence of family, friends, religion, society, gender, profession, discipline, and biographical experience. These form the basis of filters, and learners can use personal choice to decide how to participate in a learning activity or creative process. Learner mood or

state affects learning or creativity (Martin, 2010). This view emphasizes that learners may use personal values to decide how to participate in the entire process of learning or creation, so the learner's emotional factors may affect the process of learning and creating knowledge.

Virtual spaces include not only the connections between local individuals and groups, but also the wider community established through a global network. Learners can gain opportunities through various forms of interaction, but learners have greater freedom to connect and track interests and groups of interests in a virtual environment (Martin, 2010). In this form of space, individuals and groups can form a global community, and interact in this "big community", and choose to participate in their favorite interest groups to achieve their own learning and creativity.

In conclusion, Creative space means the library spaces that using in effective learning and promotion creative ideation and behaviors. The uniqueness is virtual learning with creative and leisure experiences with nice and beautiful environment. Individuals and groups learn and experience creativity through interaction in the global online community.

The physical space in the creative space of the library provides the environment for library users to learn and create knowledge. It is the basis for library users to learn and create. Therefore, when designing the physical space of the library, the first thing to think about How to plan and layout the creative space of the library is conducive to users' learning and creation.

Regarding the visual experience and psychological feelings of library users in the creative space, the creative space designer analyzed and concluded that the learner's emotions may affect the entire process of learning and creation. Therefore,

when designing a library creative space, the visual experience and psychological feelings of library users must be considered.

The virtual space of the library emphasizes the concept of global community. Library users conduct extensive exchanges and interactions in the communities established by the global network and freely choose the groups they are interested in to achieve their own learning and creativity.

The three dimensions of the library creative space are all centered on library users, analyzing a series of processes of user learning and creation, and the psychological feelings and interactions in this process.

In addition, Katy M. (2010) divides modern library space into two aspects: one is the space used to carry out traditional library services, such as library space, exhibition space, technical equipment, and office space. The second is based on the concept of innovative services. The resulting new library space, such as learning space, creative space, leisure space, and experience space.

As for the space served by traditional libraries, library designers have already begun to plan the corresponding technical equipment space and exhibition space in the library design process at an early stage.

As for library spaces based on innovative services such as learning spaces and creative spaces, as early as the 1970s, library designers began to pay attention to the personal learning area of the library, and discussed the planning and design of the area. Beginning in the 21st century, the internal creative spaces of many libraries have been redesigned and adjusted, and the concept of community has been incorporated into the design process. This research will introduce the concept of library community, traditional library service space, and modern library innovative

service space in detail.

### 2.1.2 Library community concept

For the Library community concept, a deeper understanding of the concept of the library community are mentioned in several researches and papers by follows:

Co-working is considered social work, emphasizing interaction with other users (Spinuzzi, 2012). A new university library (2015) emphasizes that a real community includes people from different sectors who have different interests and abilities, work on different projects, but come together to use the same space and tools and share informally Working days as they learn from each other in discussions. Communities in co-working spaces have functions such as sharing, belonging, reciprocity and trust, as well as ideas, innovations and other communities open to newcomers (Rus & Orel, 2015).

Merkel (2015) pointed out that the physical design of shared spaces plays an important role in transforming spaces into office spaces. As a result, co-working spaces often also provide participatory activities to enhance collaboration, sharing of ideas, and mutual support among space users (Laing, 2013). The concept of library community refers to the common working space of library.

In conclusion, in this research, the concept of library community emphasizes that different people interact, communicate, and discuss in learning to achieve the sharing and mutual benefit of ideas and innovations. Library users may come from different professions, different grades, and different positions. Due to different interests and different work content, how to share and reciprocate ideas and innovations in the library community? An issue that designers of this library creative space need to consider. The physical community is actually the co-working area of the library,

where people can support and collaborate with each other, study and work together using the same space and tools. It is open to users at any time.

### 2.1.3 Library physical space research

In recent years, library space design has paid more attention to measures such as lighting and noise. The article *Natural light design for an ancient building: A case study* (2008) provides qualitative and quantitative analysis methods for natural lighting design in libraries. The article *Noise management in twenty-first century libraries: Case studies of four U.S. academic institutions* (2014) discusses how to minimize noise to fit the space required for individual learning and group discussions. And the article *Reducing noise in the academic library: The effectiveness of installing noise meters* (2016) discusses how to reduce college library noise, which uses electronic noise monitors to control library noise.

For example, in the study of daylight in the library space, Halil suggested that in addition to the good amount of natural light, direct sunlight should be controlled to stop glare, overheating and disturbing thermal comfort in spaces, especially during the summer. Also, providing good visual contact with the outside and reflection coefficient of interior surfaces are important. Figure 2.1 shows appropriate reflection factors for library spaces. The appropriate amount is 70 to 90 percent for ceilings, 30 to 50 percent for floor, 40 to 60 percent for walls and over 20 percent for educational boards.

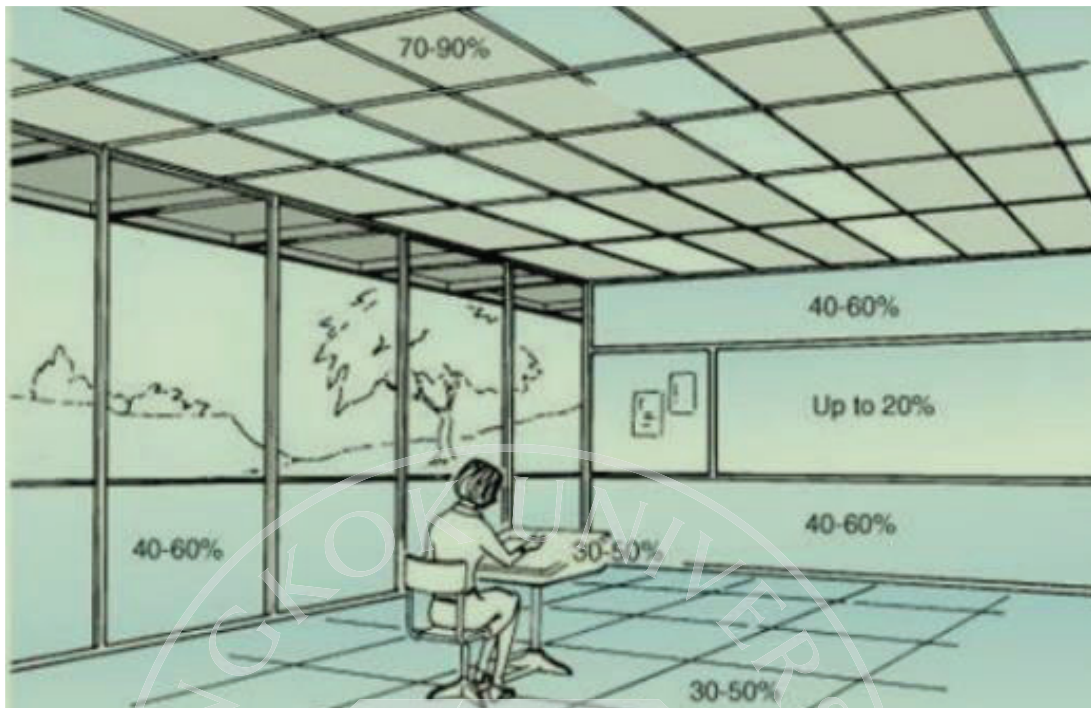


Figure 2.1: Appropriate Reflection Factors for Library Spaces. (Halil, 2019)

Search and find literature, and research literature related to library physical space planning and design. Table 2.1 shows the results of some literature related to library physical space planning and design.

Table 2.1: Literature Research Related to Library Physical Space Design

Author, Year	Paper Name	Main Research Contents
(Cohen, 1980)	Designing and space planning for libraries: A behavioral guide	Research on Library User Behavior and Library Building Space Design and Planning
(William & Sannwald, 2009)	Checklist of Library Building Design Considerations	Reference Manual for Library Architectural Design

(Continued)

Table 2.1 (Continued): Literature Research Related to Library Physical Space Design

Author, Year	Paper Name	Main Research Contents
(Edwards & Fisher, 2009)	Libraries and learning resource centers	Library building design case
(Carla & Rachele, 2008)	Natural light design for an ancient building: A case study	A qualitative and quantitative method is proposed for the natural lighting design of the building, and a case of a public library is used as the research object.
(Janet & Darla, 2014)	Noise Management in Twenty-First Century Libraries: Case Studies of Four U.S. Academic Institutions	The best noise management measures are to minimize noise to fit the space required for individual learning and group discussions.
(Aremu & Saka, 2015)	Indoor Noise in Academic Libraries: A Case Study of University of Ilorin Main Library, Nigeria	Evaluate the Ilorin Library in Nigeria using questionnaires and sound data testing methods.
(Jessica, Andrea, Miller-Nesbitt, & Sarah, 2016)	Reducing noise in the academic library: the effectiveness of installing noise meters	How Noise Sign is reducing library noise.

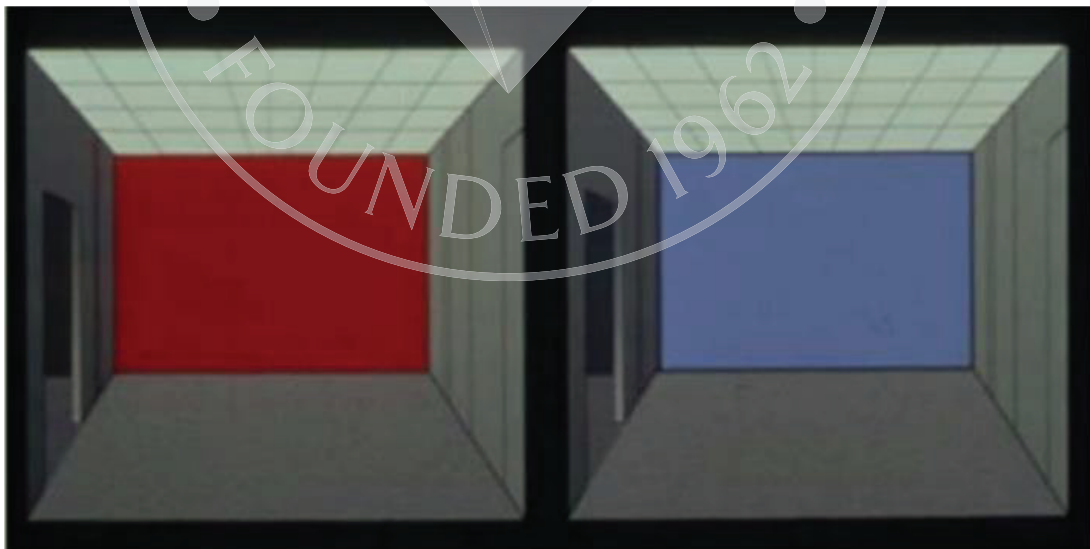
In conclusion Library Physical Space Research, in this research, library designers not only paid attention to how to lay out the physical space of the library, but also paid attention to how to light and reduce noise in the creative space of the



library. The designers have taken a series of measures in response to issues such as lighting and noise, all to bring better visual and psychological experiences and feelings to library users. It increases the user's agreement with the library's creative space, and it has important reference value for the subsequent re-planning and design of the library's creative space.

#### 2.1.4 Library psychological space research

The following literature describes how the spatial color of the library affects users' psychological feelings. The library space is a closed space, so the color and lighting of the space greatly affect people's psychology. Lighting is important when reinforcing spatial perception of color. The combination of light and color creates spatial settings such as mood and atmosphere (Abbas, 2006). Figure 2.2 shows the light and color characteristics of the space environment.



Warm colors tend to advance

Cool colors tend to recede

Figure 2.2: Psychological Effects of Light and Color on Space User (Abbas, 2006).



This study shows how the color of space affects the behavior of people's psychologically. Warm colors can make people tend to advance, while cool colors can make people tend to recede. This psychological change is caused by people's visual perception of space. Color has many attributes, all of which have different behavioral tendencies. Moderate use of different colors, and according to the use of function and space, can have a deep psychological presence. Therefore, when designing the creative space of the library, light and color can be combined to adjust the user's visual experience and psychological feelings, thereby creating a better creative space atmosphere.

#### 2.1.5 Library community space service research

Space as a service. So how to plan and design the creative service space of the library? The answer to this question can be obtained from the following literature analysis.

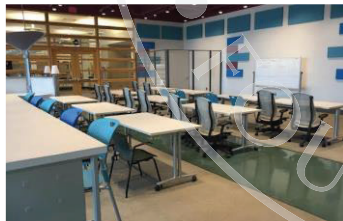
Library service spaces are offered as services in which users gain access to a physical and social environment (Balakrishnan, Muthaly, & Leenders, 2016), which is often accomplished by selecting a suitable membership plan (Spinuzzi, 2012). The co-working space offer consists, at the very least, of physical infrastructure (shared working areas, social interaction areas, and teamwork rooms / meeting / conference), technological infrastructure (internet connectivity, printers and scanners) and services (events, networking and procurement, refreshments, cleaning and security) (Avdikos & Kalogeresis, 2017).

Figure 2.3 shows how the library provides community service space, including shared working area, social interaction area, internet office area.

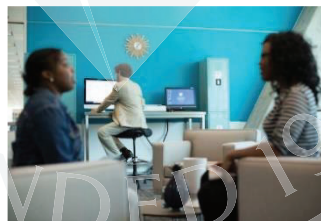
The first picture shows the public workspace of the creative space of the library. Its goal is to provide accessible business training to the community, shared office space and manufacturer equipment.

The second picture shows the social interaction area of the library creative space. It provides professionals with a common work space that is easily accessible and can replace noisy and crowded coffee shops. The library already provides free wireless Internet access, parking, toilets, and printing facilities on site, so it is very appropriate to create this new space.

The third picture shows the Internet office area of the creative space of the library. It provides services for library users who need creative space to create and collaborate on. In a vibrant space, people can do all kinds of things, use their own laptops, or organize a research group in a conference room.



Public Working Area



Social Interaction Area



Internet Office Area

Figure 2.3: Co-working Spaces and Business Incubators in Libraries That

Support Local Workers. Retrieved from

<https://www.shareable.net/5-coworking-spaces-and-business-incubators-in-libraries-that-support-local-workers/>

Based on the above literature summary and analysis of Figure 2.3, the conclusion of the library community space service can be drawn. The library community space provides some services such as physical space sharing and social interaction. In the community space of the library, work areas that can be shared and devices such as printers. Can also be shared, and Internet work can also be achieved. This requires designing public work areas, social interaction areas, and Internet office areas in the community service space of the library, and providing furniture and information technology (IT) equipment, proportional Wi-Fi, printers, computers, etc.

## **2.2 Traditional Library Space Research**

The development process of early library construction and design can be summarized as follows:

During the European Renaissance Movement, various European countries initiated a boom in building libraries, and various royal libraries, public libraries, and university libraries have sprung up all over Europe. The early prototype of the university library was formed in this period. During this period, book collection and reading were still in the same space, forming an ancient "open-shelf reading" method.

In the middle of the 19th century, this was an important stage in the history of library development. The library began to adopt "closed bookshelf management". The building was divided into three parts according to different functions: a collection area, a reading area and a book processing area. In 1854, the French National Library designed and created a three-segment space layout form of "collecting, borrowing, and reading".

In the early days, designers made space planning in the process of designing the library. Cohen (1980) emphasized the user's behavioral impact in his monograph *Design and space planning for library: A behavioral guild*. The spatial planning of the library building.

After decades of research and development, a series of library building design patterns have evolved. Briam Edwards (2009) introduced the current library design patterns in the form of cases in his book *Libraries and learning resource centers*. At the same time, Sannwald's *Checklist of library building design considerations* (2009) became a reference manual for library building design, which analyzed the user's needs for library space.

The space setting of traditional libraries is mainly based on the collection of books. However modern libraries focus on designing creative spaces as users use creative spaces more and more frequently.

### **2.3 Modern Library Creative Space Research**

Reading and collating the literature on library space in recent decades, you can find the process of the development and layout of library space.

Since the 1970s, the library's spatial layout is designed to set up individual study rooms, group discussion areas, and leisure reading areas in large spaces. At the beginning of the 21st century, in order to promote the overall performance of the library, the internal space layout of the library was redesigned and adjusted. Until now, the concept of community has been incorporated into the creative space design process of the library, and elements such as creative discussion and creative sharing have been added to create a diverse creative space that promotes communication and sharing.

The space setting of traditional libraries is mainly based on collection of books, but modern libraries are user-centered and pay more attention to designing creative learning spaces and creative shared spaces. Such creative spaces also have higher use time and frequency. Table 2.2 outlines the functional zoning of creative spaces in modern libraries.

Table 2.2: Functional Zoning of Creative Spaces in Modern Libraries

Functional Division	Space Use	Space Classification
Entrance	Readers entrance	Guidance area, Guidance area.
Service Area	Search bibliography, consult, borrow.	Consultation area.
Public Area	Reading books, searching electronic resources.	Public reading area.
Creative Learning Space	Learn. Provide materials, tools, technology.	Self-study space, Technology experience space.
Creative Sharing Space	Discussion, collaborative learning, academic conferences, and teaching training.	Community space. Discussion space. Cooperation space.
Creative Exhibition Space	Creative idea displays. Exhibition.	Creative exhibition space.
Book Collection Area	Store books.	Book storage area with bookshelf.
Equipment Area	Store library core equipment.	Core equipment area.
Business Area	Business handling.	Business handling area.
Office Area	Administration Office.	Office area.

As the planning and design of the new space, the functions of the modern library's creative learning space, creative shared space, and creative display space are different, but they are closely related. Figure 2.4 details the relationship between the library zones and creative spaces.

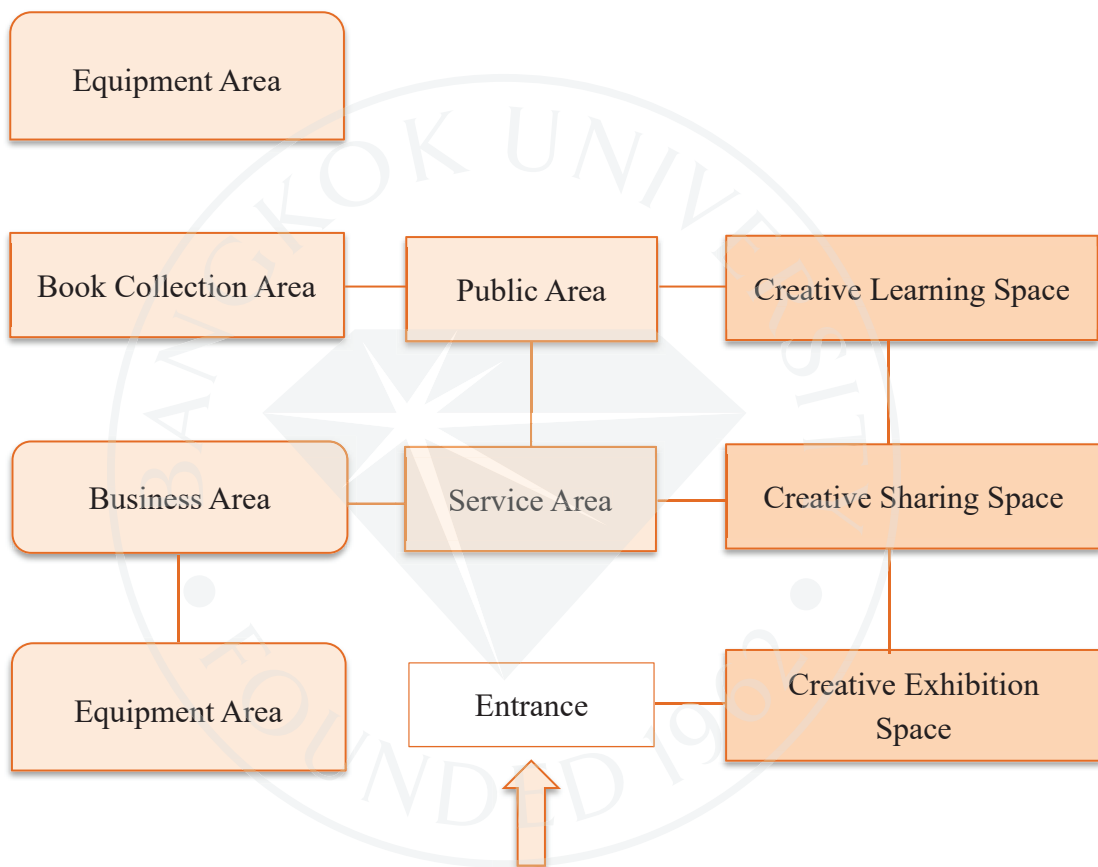


Figure 2.4: Relationship Between Library Area and Creative Space

Through the introduction of Figure 2.4, it can be analyzed that the modern library creative spaces mainly include creative learning spaces, creative sharing spaces and creative display spaces, etc. The design of these creative spaces needs to meet the needs of today's library users to achieve the modern library design standards to satisfy library users.

The planning and design effects of creative learning space, creative sharing space, and creative exhibition space are shown in Figure 2.5.



Creative Learning Space

Creative Sharing Space

Creative Exhibition Space

Figure 2.5: Modern Library Creative Space. Retrieved from

<http://www.interior.arch.chula.ac.th/showcase/detail.php?i=192>

In summary, from the above literature analysis and summary, it can be judged that most library creative space design only stays in the theoretical research stage, and rarely analyzes and evaluates the actual use and agreement of library users with creative space.

#### 2.4 Position and Conceptual Design of BU Library Creative Space

According to current scholars' views on library creation space and the concept of using creation space as a place for learning and innovation, library creation space can be divided into physical space, psychological space, community space, personal learning space, and multi-person space. People discuss space, create space for innovation, etc.

From the literature analysis above, it can be seen that researchers are trying to divide and classify library creative spaces, but the design of library creative spaces needs to be based on actual surveys and analysis to obtain better results and more effective results.

Through the above literatures, the positioning and conceptual creative space of the BU library in this study are designed, as shown in Figure 2.6. It is a conceptual creative space design based on the above literature research. The following chapters will conduct specific investigations and statistical analysis around this positioning and design.

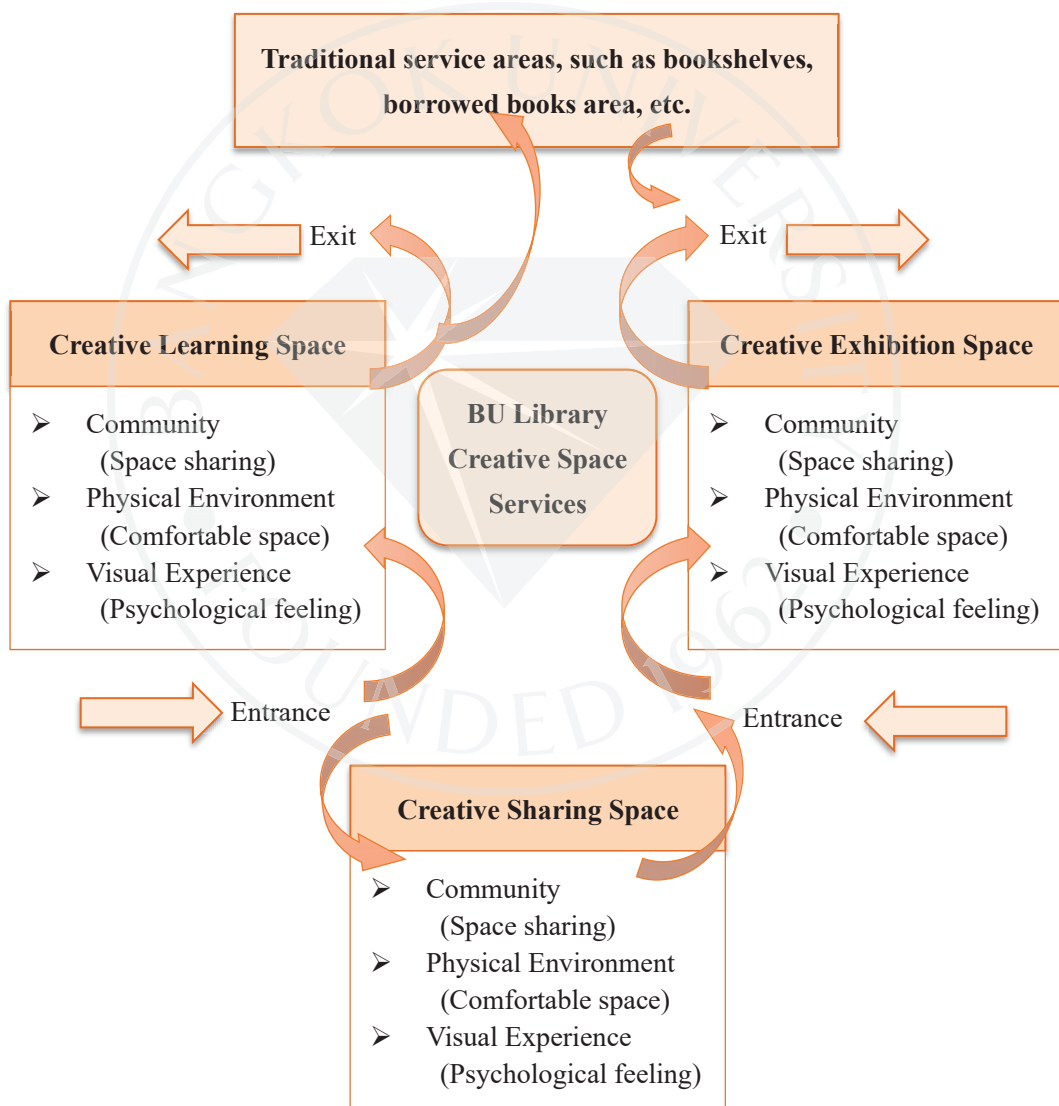


Figure 2.6: Position and Conceptual Design of BU Library Creative Space



## **CHAPTER 3**

### **METHODOLOGY**

This chapter discusses the used Descriptive Method of research. The second section describes the steps of explorative mixed-method design both. The third part describes the populations of the respondents for both quantitative and qualitative approach. Subsequent sections describe the tools development and its quality.

#### **3.1 Explorative Mixed-Method**

1) Qualitative analysis. Use induction, analysis and comprehensive methods to process the various materials obtained in order to understand the nature of things and reveal the internal laws.

2) Quantitative analysis. It can make people's understanding of the research object more precise, so as to reveal the law more scientifically and predict the development trend of things.

This research is based on an exploratory mixed-method, combining qualitative analysis and quantitative analysis. First, qualitative analysis is performed, and then quantitative analysis is performed based on the corresponding results of the qualitative analysis, and finally, the corresponding conclusions are drawn based on the integration of qualitative analysis and quantitative analysis data. This research is based on in-depth interviews with representative research objects among library users. According to the respondents' answers, understand the current situation and problems of the library's creative space and some suggestions for improvement. Based on qualitative analysis and summary interview data, create a library creative space user agreement questionnaire with multiple evaluation indicators, and distribute the questionnaire online to users to fill out to obtain comprehensive

evaluation data of library users' agreement for statistical analysis and summary.

This combination of interview (Qualitative analysis) and questionnaire (Quantitative analysis) is an explorative mixed-method. Figure 3.1 describes the research process of the explorative mixed-method.

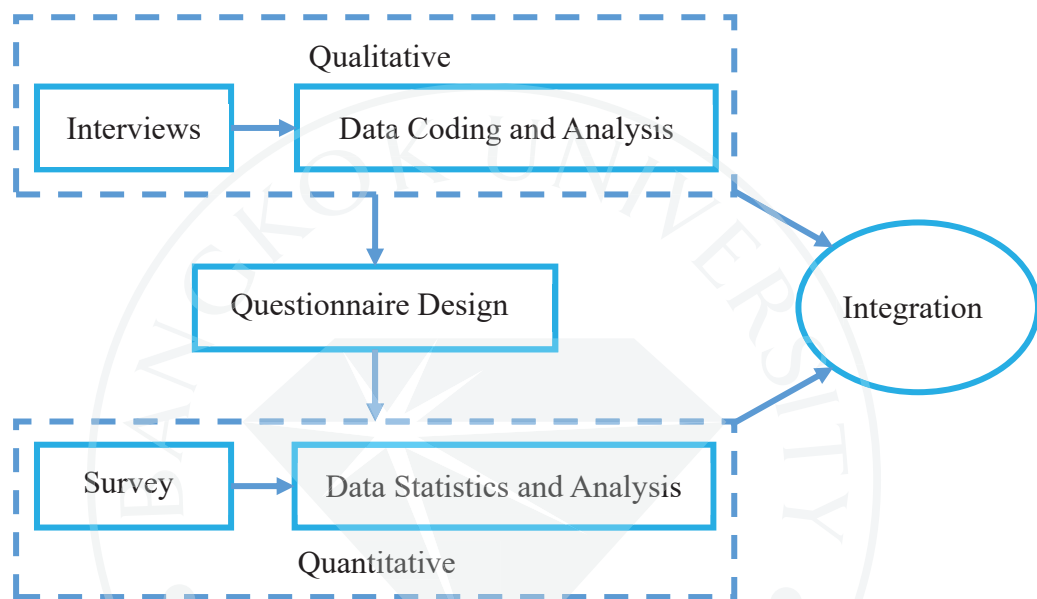


Figure 3.1: Research Process of the Explorative Mixed-method

### 3.2 Research Design

The proponents used Interview with narrative coding to develop ground finding and questionnaires. By doing the mixed method research, the research design framework and variables to be interview guideline based on literature review literature reviews and existing Bangkok University library and creative space problem.

This section will determine user agreement indicators by applying best practices in creative spaces as a benchmark for library space design compare to existing Bangkok university library.

The determination of user agreement index is a complex and difficult process, which requires reading a large number of documents and searching for related literatures, and requires public interviews to initially confirm keywords related to the creative space of the library. So as to determine the conceptual framework of this IS and produce a comprehensive and meaningful library creative space questionnaire.

For quantitative design, gathering and coding and categorizing the qualitative results and framework possible variables and parameters to assess students' agreement and opinion.

In order to design open interviews and determine user agreement indicators for library creative spaces, this chapter mainly conducts exploratory research according to the following steps:

- 1) According to the theme and research questions of this IS, a preliminary understanding of the actual use of users in the library, their behavior habits and psychological needs, and summarize some keywords. For example: library lighting, library creative space, color mix of library creative space, the impact of space environment on learners' psychological feeling, community library space and so on.

- 2) Search and read the corresponding keywords in a large number of documents, and search for corresponding keywords through search tools such as Google, to find the commonality and corresponding points of library creative space design in various related materials. And design open interview questions through these keywords.

- 3) The keywords, articles, literature and other materials recorded and compiled are presented in the form of tables. And design a list of interview questions.

- 4) Interview library users, analyze the keywords of the interview records, and then try to summarize and classify the keywords according to the literature. For

example, the lighting and air circulation of the library are classified as physical environment spaces, the color and shape of the library are classified as psychological perception spaces, and the multi-person discussion space is classified as a community-based space. Exploratory analysis of the classification of keywords to verify the correctness and reliability of the classification, and determine the evaluation index of library space user agreement, to complete the conceptual framework of this IS.

5) Produce user agreement questionnaire for BU library creative space. Based on the interview data and variable keywords, the questions and contents of the user agreement questionnaire in the creative space of the BU Library were designed.

The process and steps of the exploratory research on the user agreement index of the creative space of the BU Library are shown in Figure 3.2.

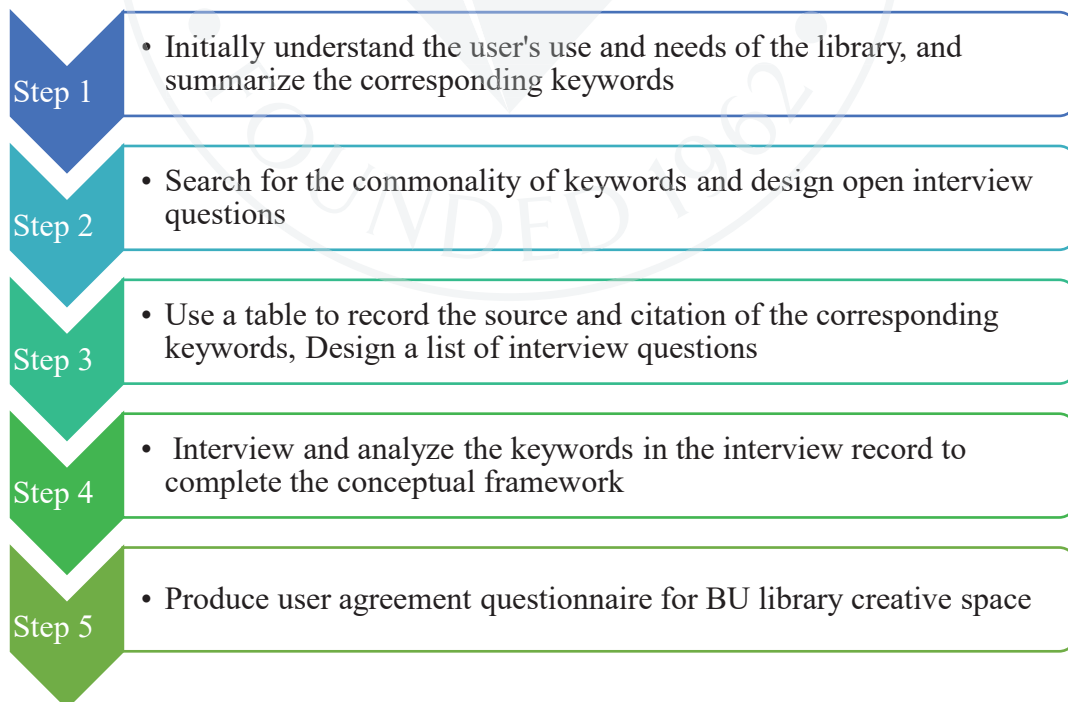


Figure 3.2: Steps to Determine User Agreement of Library Creative Space

### 3.3 Data Collection

#### 3.3.1 Keyword collection

Based on the theme and research questions of this IS, the actual usage of library users, and their behaviors, and psychological needs, and summarize some keywords.

Table 3.1 summarizes the keywords and details of articles and literature related to library creative spaces.

Table 3.1: Finding Keywords Related to Library Creative Space

Variables	Items (Keywords)	Related Articles & Literature	
		Author, Year	Title
Furniture & Equipment (IV1)	Reading Tables	(Jean, 2020)	Choosing library furniture
	Sofas		
	Chairs		
	Power Outlets	(Millard, 2019)	Modern library equipment
	Water Dispensers		
	Vending machine		
	Lockers		
Cafes			
Library Opening Hours (IV2)	Daytime Opening Hours	(Johnson, 2016)	The right place at the right time: Creative spaces in libraries
	Night Opening Hours		
	Weekends Opening Hours		
Information Technology (IT) (IV3)	Computers	(Buchel & Kipp, 2018)	Investigation of Library Communities on Flickr
	Wi-Fi		
	Network Sockets		
	Printers		
	Projectors		
	Microphones		

(Continued)

Table 3.1 (Continued): Finding Keywords Related to Library Creative Space

Variables	Items (Keywords)	Related Articles & Literature	
		Author, Year	Title
	Book Borrowing & Returning System	(Misha Ketchell, 2015)	Turning a page: downsizing the campus book collections
Library space layout (IV4)	Warm Lighting	(Karaseva, 2019)	Traditions and innovations in lighting of libraries
	Air Circulation Fresh	(Cheong & Riffat, 1993)	Ventilation and air quality in a library building
	Temperature & Humidity	(Karaseva, 2019)	Traditions and innovations in lighting of libraries
Learning Space & Resources (IV5)	Quiet Personal Reading Room	(Massis, 2012)	In the library: Quiet space endures
	Public Reading Room	(Wang & Wei, 2019)	Research on Library functional layout based on Intelligent occupying system
	Books & Media	(Robert, 2014)	A Review of “The Transformed Library: E-Books, Expertise, and Evolution”
	E-books		
Leisure Area (IV6)	Gaming Zone	(Velmurugan & Senthur, 2019)	Open Libraries: Role and Functions
	Movie Zone		

(Continued)

Table 3.1 (Continued): Keywords statistics related to library creative space

Variables	Items (Keywords)	Related Articles & Literature	
		Author, Year	Title
Display Area ( IV7 )	Demo Hall	(Jean, 2020)	Choosing library furniture
	Exhibition Zone		
	Discussion Room		
Visual Experience ( IV8 )	Space Color & Modeling	(Liu & Chen, 2015)	The study on color design of the interior space
	Space Size & Comfort	(Gander, 2016)	How architecture uses space, light and material to affect your mood
	Bookshelves & Books Placement		
Landscape Decoration ( IV9 )	Potted Plants	(Pluchak, 2014)	Innovations in Scholarly Communication: The Library Landscape
	Glass Curtain Wall		
	Acoustic Panels		
Creative Inspiration ( IV10 )	Wall Painting	(Katy, 2018)	Defining Library Space and Service Models for Library Creative Spaces
	Display Wall		
	Whiteboards		
	Creative Practice Room		

### 3.3.2 Qualitative Analysis

Qualitative research uses semi-structured questionnaires and prepares some specific questions so that researchers can guide the interview towards the goal of the research.

Based on the keyword statistics in Table 3.1 and the classification of modern library creative spaces, ten interview questions were designed to form a semi-structured interview questionnaire. In the questionnaire, the corresponding

pictures of the creative space of the library were designed to enable the interviewees to understand the questions and communicate better.

The main sample questions included in the semi-structured interview questionnaire are as follows:

QUESTION 1: How about Mood and tone interior design and furniture and equipment should be provided to the BU Library to meet user creativity needs?

QUESTION 2: How do you think the creative space of the BU Library should be designed to meet expectations?

QUESTION 3: If you were the management of International campus which color, shape, and landscape decoration of the creative space of the BU Library so that users have a better visual experience?

QUESTION 4: What kind of learning space do you think the BU library should have? How to design the leisure area of the BU library?

QUESTION 5: How to plan display to promoting knowledge management creative culture? I.e. Exchange. Creative Forum. Creative working. Speakers give lectures on commercial and marketable creations weekly or monthly.

QUESTION 6: How to design the public reading area, communication area and discussion room of the BU Library? What kind of creative environment should the BU library provide to stimulate users' creativity?

QUESTION 7: What it hardware and software resources should be deployed to libraries to meet user needs? Such as projector, microphones, printers, Book Borrowing & Returning System, etc.

QUESTION 8: What do you think is the reasonable opening time of the BU Library? Why? Please make reasonable suggestions.



QUESTION 9: Please make your suggestions about designing creative spaces for the BU Library.

QUESTION 10: What other suggestions do you have for the design of the creative space of the BU Library?

A detailed form of the qualitative interview guide is presented in Appendix A, and a detailed form of the narrative coding and theme from raw data interview is presented in Appendix C.

The interview was conducted from April 5th to 8th, 2020. 4 students were interviewed and talked with each interviewee for 15-20 minutes. All of their answers were recorded.

The interview was conducted from April 5th to 8th, 2020. 4 students were interviewed and talked with each interviewee for 15-20 minutes. All of their answers were recorded.

This study collected a large amount of original interview data through semi-structured interviews. Then mark the relevant key sentences of the creative space of the BU library in the original interview record, and perform narrative coding, classification and summary according to it. Appendix B provides the respondents' raw recorded data when interviewed and keyword tag numbers.

The detailed format of the narrative codes and topics in the original interview data will be provided in the next chapter. It shows the entire process of sexual narrative coding of the original interview data.

According to the narrative coding, classification and theme of the original record of the interview, search and count the keywords and key sentences, and obtain the qualitative research findings of the BU library as a creative space from these

keywords and key sentences, Table 3.2 highlights the specific qualitative research results.

Table 3.2: Qualitative finding on BU Library Creative Space

Qualitative Findings From Question 1	
1. Digital -book spaces serving facility.	4. The creative spaces are isolated from each other without affecting each other.
2. Reasonable seat setting and book shelf placement for readers.	5. Furniture that comfort the reading.
3. Private area without noise distraction for creative thinking.	6. Wi-Fi, water dispenser and other basic service facilities.
Qualitative Findings From Question 2	
1. Enough natural light and good ventilation.	3. Warm colors make people more relaxed and comfortable.
2. All glass decoration.	4. Round tables and creative sharing walls better express ideas.
Qualitative Findings From Question 3	
1. Art exhibitions and galleries make people more relaxed.	3. Geometrically symmetrical furniture is more creative.
2. The design is simple, bright, elegant and artistic.	
Qualitative Findings From Question 4	
1. Equipment and services such as sports equipment and food.	3. Sufficient lockers, sockets, coffee tables and other furniture and equipment.
2. Separate English listening learning space and independent tables, chairs and sofas.	4. Electronic product creative space.

(Continued)

Table 3.2 (Continued): Qualitative finding on BU Library Creative Space

Qualitative Findings From Question 5	
1. Space where items can be placed.	4. Unique artworks help inspire inspiration.
2. The exhibition area can display works and convey inspiration.	5. Reading communities, innovative knowledge and cultural speech contests.
3. The decoration of the "family style" theme elements.	
Qualitative Findings From Question 6	
1. Public reading area should be quiet and soundproofed.	3. There are many puzzle games in the entertainment area.
2. The discussion area has some paper, pen, whiteboard and more power outlets, network sockets.	4. Creative space colors should be matched, and there are decorative artworks.
Qualitative Findings From Question 7	
1. The creative space on each floor has basic service facilities such as Wi-Fi, mobile phone charging area, and reception room.	2. Provide PC and mobile phone charging plugs and other equipment.
	3. Provide basic services .
Qualitative Findings From Question 8	
1. Open earlier and postpone closing time at night.	3. Flexible arrangement of library opening hours, preferably 24 hours.
2. Special time periods such as exams can postpone closing time.	
Qualitative Findings From Question 9	
1. Buy some creative furniture.	4. Bookshelves and desks are staggered to give users a better visual experience.
2. Design independent space and some private rooms.	5. The seats should not be too dense, but sufficient for readers.
3. Do not place the sofa near the stairs.	

(Continued)

Table 3.2 (Continued): Qualitative finding on BU Library Creative Space

Qualitative Findings From Question 10	
1. The library APP program provides services such as viewing books and booking rooms.	3. Design small rooms that can release emotions.
2. The E-book can be accessed directly.	4. Need to set up signs and suggestion boxes, etc.

### 3.3.3 Conceptual Framework

This research is set to "Library Community Service", "Creative Learning Space in the Physical Environment", and "Psychological Feeling Space". Table 3.3 shows the classification names of the independent variables of the library creative space and the literature statistics.

Table 3.3: Categorical Name of the Independent Variables

Category Name	Related Articles & Literature	
	Author, Year	Title
Psychological Feeling Space	(Tay,2016)	"Sensory" in Library Spaces at SMU Libraries
Library Community Service	(Buchel & Kipp, 2018)	Investigation of library communities on Flickr
Creative Learning Space in the Physical Environment	(Wijesooriya, 2018)	Creative space: Can the physical environment impact creativity?
	(Amlinsky, 2016)	Library building space design for current information environment
	(Haggag,2013)	The Psychological Feeling towards the Art Work

Next, this research will discuss the theoretical framework of the BU Library creative space, based on the concepts and theories of Chapter 2 and the results of qualitative analysis. Modern libraries can be divided into creative learning spaces, creative shared spaces and creative display spaces. The design of these creative spaces needs to meet the needs of today's library users to achieve the modern library design Standards to satisfy library users.

Therefore, the theoretical framework of this research was determined through the relationship between creative space and space service type. The relationship between them is shown in Figure 3.3.

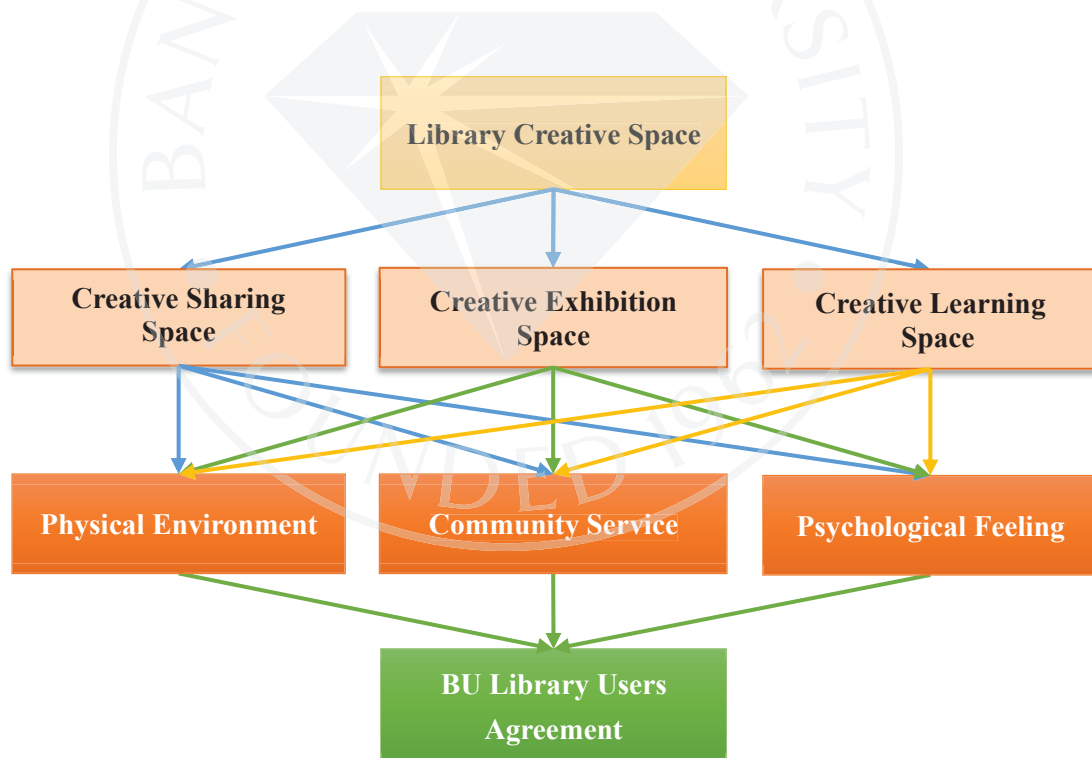


Figure 3.3: The Theoretical Framework of BU Library Creative Space

According to the results of the above analysis, the conceptual framework of this IS can be summarized. There are 50 independent variables, these independent

variables are divided into ten subcategories. The specific conceptual framework is shown in Figure 3.4. The specific conceptual framework is shown in Figure 3.4.

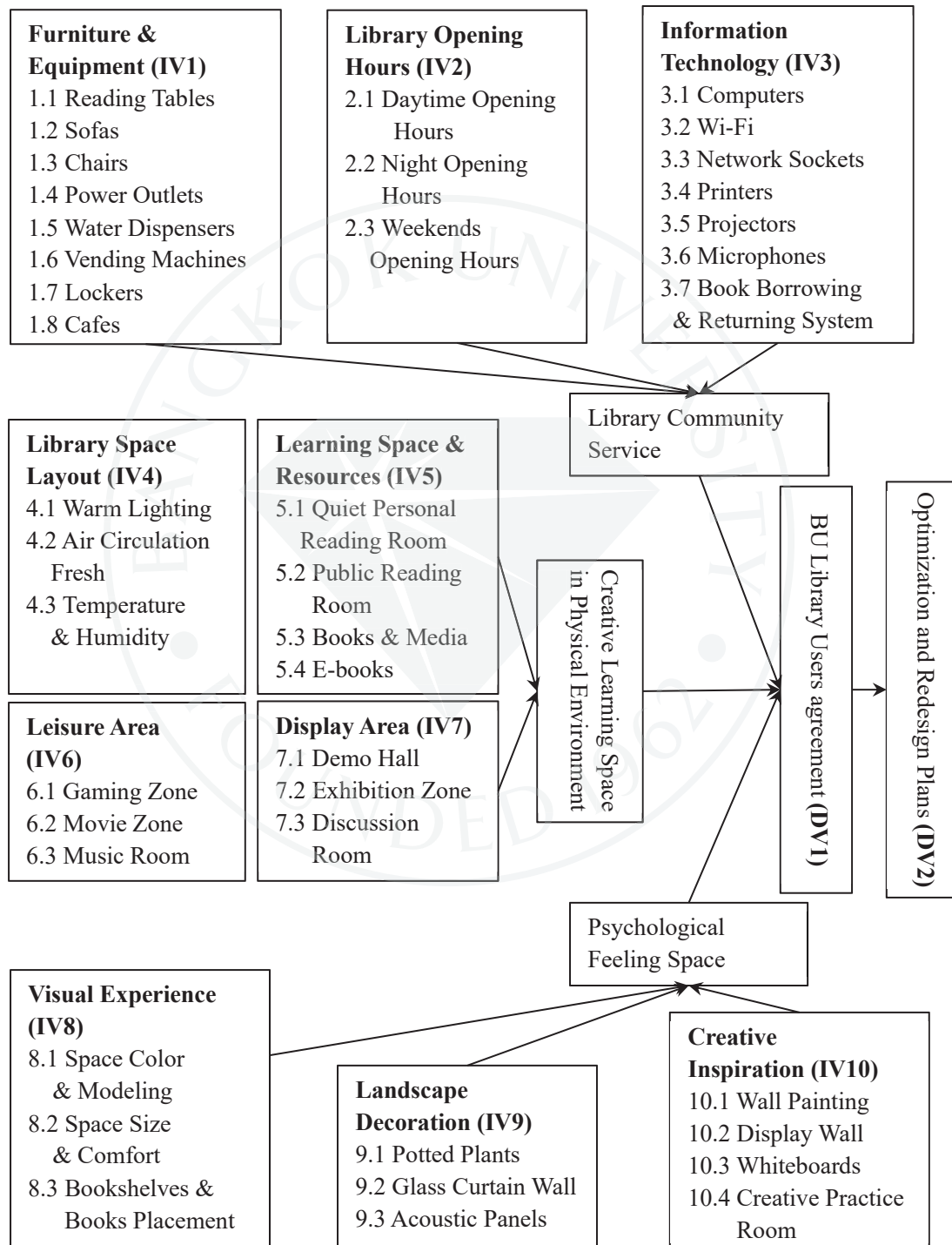


Figure 3.4: Conceptual Framework of the Independent Study

### 3.3.4 Quantitative Analysis

This IS uses Likert scale to design a questionnaire for users in BU Library.

Likert scale is very suitable for digging into a specific subject in depth, find out people's views on this subject in detail, and it is suitable for professional statistical analysis methods such as frequency analysis and average calculation

(WallStreetMojo, 2016). It is composed of a set of statements, each of which has five types of answers: "Very agreed", "Agreed", "Neutral", "Disagreed", and "Very disagreed", which are scored as 5 points, 4 points, 3 points, 2 points, and 1 point. Count the total attitude score of each respondent. The total score can indicate his agreement or different status at this level. In general, the survey results are expressed as the average of each evaluation index. The standard template of the Likert scale is shown in Figure 3.5.

Numbering	1	2	3	4	5
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I like Stock Market					
I like Stocks					
I Like Money					
I Like Return					
<b>Total</b>	<b>4</b>	<b>8</b>	<b>12</b>	<b>16</b>	<b>20</b>

Figure 3.5: Five Point Likert Scale. (WallStreetMojo, 2016).

Retrieved from <https://www.wallstreetmojo.com/likert-scale/>

This IS use the categories and independent variables determined in the qualitative analysis to construct the questionnaire of this independent study.

According to the classification and independent variables in Figure 3.4, the content

of the questionnaire includes social demographics, user preference of BU Library creative space, and agreement evaluation indicators and rating scale.

The template of BU Library creative space user agreement questionnaire is shown in Table 3.4. The detailed format of BU Library creative space user agreement questionnaire is provided in Appendix D.

Table 3.4: BU Library Creative Space User Agreement Questionnaire

Demographics	Questions and Answer Choices					
Frequency	How often you go to the BU Library?					
Residence Time	How long do you usually stay in the BU Library?					
Purpose	What is your purpose of going to the BU Library?					
Variables	Evaluation Indicators	Rating Scales				
		5	4	3	2	1
Variable classification	QUESTION 1:					
	QUESTION 2:					
	QUESTION 3:					

### 3.4 Statistical Data Analysis

#### 3.4.1 Sampling

##### 1) Qualitative Research Sampling

The 4 specific research samples from and interviews are selected by specific sampling method and they are Master degree students from Bangkok University's international colleges to test the questions and discover unknown finding.

##### 2) Quantitative Research Sampling

In order to better collect the sample data of the questionnaire, this IS using the free



online survey link provided by the "WENJUANXING" online survey webpage, an online survey questionnaire was created and published so that respondents could access, and fill out and submit the survey questionnaire online.

For the bachelor degree users, 59 specific samples are chosen with the minimum 10 times usage and 1 year of experience in using Rangsit campus's library of Bangkok University. For the background of 59 samples are Chinese International colleges students.

The data collection via online survey from April 17, 2020 to April 20, 2020, 59 valid questionnaire samples were collected. There are 44 English link samples and 15 Chinese link samples.

#### 3.4.2 Research Tools

This independent study applies only quantitative research to statistical analysis.

##### 1) Quality of the tools and validity

For this IS survey based online, the researchers have developed totally 37 items and send for 4 experts to revised its languages and give score for Content validity (IOC) 1,0 score. The item with over 75% are acceptable items to be in the survey.

##### 2) Paper based and online survey

For the effectiveness of the data collection during 2 months COVID 19 outbreak and generate the Bilingual survey online both Chinese and English versions to ensure the respondents have comprehensive understanding.

3) Finally, 37 items are qualified to be questionnaires and the overall online survey are in the Chinese questionnaire link "<https://www.wjx.cn/jq/71713073.aspx>" and the English questionnaire link "<https://www.wjx.cn/jq/71728154.aspx>".

### 3.4.3 Statistic Application

This IS only analyzing quantitative research applied statistical data. Mainly use descriptive statistics frequency mean and standard deviation.

The descriptive statistics frequency mean mainly uses three functions: frequency, descriptive, and exploration.

1) Frequencies. The frequency option can output the main indicators of the continuous and concentrated trend of continuous variables, as well as the histogram, mean, and skewness of the distribution. In addition, the main role of this process is to output the frequency table.

2) Descriptive. The descriptive option normalizes the data and save as new variables.

3) Explore. The explore option based on descriptive statistics on the original data, further describing the data, and providing more detailed results.

4) T-test and ANOVA are excluded in this research analysis chapter 4 and 5 due to the sample sizes are lower than 120 research respondent, however, the analysis output has been shown from merely significant level for future data collection in appendix E.

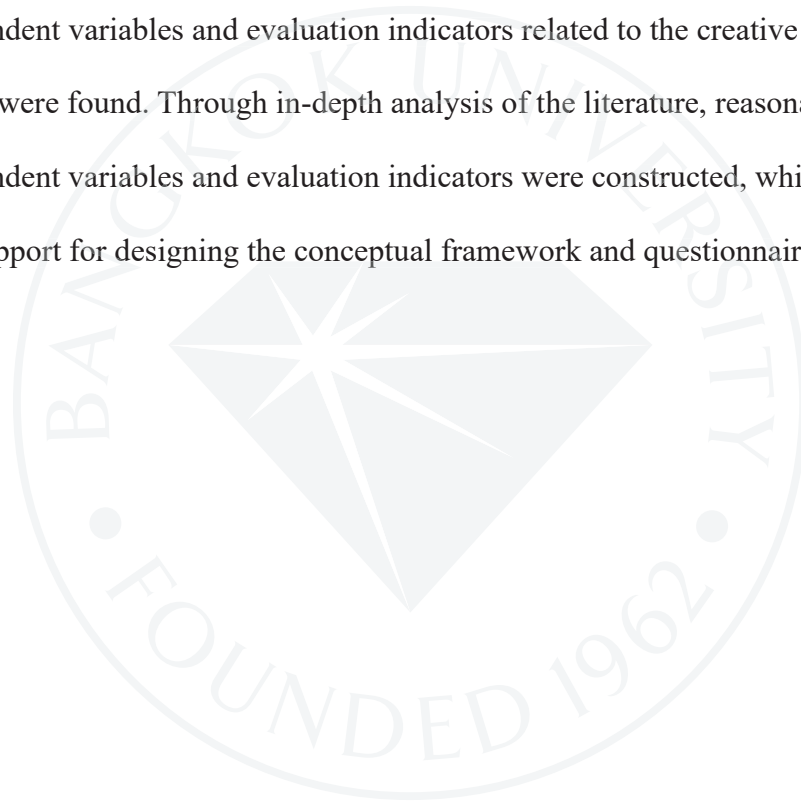
This independent study uses SPSS and EXCEL to explorative analyze the questionnaire data.

SPSS is a program for statistical analysis of sampled data. This independent study mainly uses the data of the SPSS software statistical questionnaire, and conducts exploratory analysis of the data through the powerful functions of SPSS to draw some results and conclusions.

### 3.5 Summary

Selecting and determining independent variables, dependent variables, and evaluation indicators, and establishing an evaluation system are key and important tasks.

The evaluation system of this independent study is based on the basic principles of objectivity and practicality. Through literature research and interviews, the independent variables and evaluation indicators related to the creative space of the library were found. Through in-depth analysis of the literature, reasonable independent variables and evaluation indicators were constructed, which provided data support for designing the conceptual framework and questionnaire.



## CHAPTER 4

### DATA ANALYSIS

#### 4.1 Narrative Coding and Theme from Raw Data Interview

Through the data classification analysis of qualitative interviews, the conclusion of BU library creative space was found. They are consistent with the concepts and conclusions of the BU Library creative space mentioned in Chapter 2.

A detailed form of the narrative coding and theme from raw data interview is presented in Appendix C.

#### 4.2 Descriptive Statistics of Respondents' Demographic

Table 4.2.1 summarizes the descriptive demographic characteristics of all respondents.

As shown in Table 4.2.1, the respondents were 59 in total, and 8 male respondents (13.56%), 51 female respondents (86.44%).

Table 4.2.1: Descriptive Summary of the Respondents

Demographic Variable	Items	N	Percentage
Gender	Male	8	13.56
	Female	51	86.44
		59	100.00
Frequency of visit the BU Library	Everyday	1	1.69
	5 - 6 times a week	3	5.08
	3 - 4 times a week	25	42.37
	1 - 2 times a week	27	45.76
	Never	3	5.08
		59	100.00

(Continued)

Table 4.2.1 (Continued): Descriptive Summary of the Respondents

Residence time in the BU Library	More than 6 hours	0	0.00
	3 - 6 hours	8	13.56
	1 - 3 hours	43	72.88
	0.5 - 1 hour	5	8.47
	Within half an hour	3	5.08
		59	100.00
The purpose of visiting the BU Library	Reading and self-study	6	10.17
	Borrow books and access electronic materials	2	3.39
	Group discussion and creative exchange	41	69.49
	Develop creative activities and participate in creative design	3	5.08
	Creative practice and creative display	7	11.86
		59	100.00

The demographic characteristics of all respondents are summarized in Table 4.2.1. It highlights the frequency of respondents visit the BU Library, staying time in the BU Library and the purpose of visiting the BU Library.

#### 4.2.1 Frequency of respondents visit the BU Library

According to Table 4.2.1, 5.08% of the respondents have never visited the BU Library. 45.76% of the respondents visit the BU Library 1-2 times a week, and 42.37% of the respondents visit the BU Library 3-4 times a week, 5.08% of the respondents visit the BU Library 5-6 times a week. 1.69% of the respondents visit the BU Library every day. It can be seen that most of the respondents visiting the BU Library 1-2 times a week, followed by 3-4 times.

This research use SPSS software to perform cross-tab analysis on the variables "Frequency of visit the BU Library" and "Gender". The statistical results are shown in Table 4.2.2.

Table 4.2.2: Frequency of Visit the BU Library \* Gender Cross-tabulation

		Gender		Total
		Male	Female	
Frequency of visit the BU Library	Everyday	0.00%	1.96%	1.69%
	5-6 times a week	0.00%	5.88%	5.08%
	3-4 times a week	50.00%	41.18%	42.37%
	1-2 times a week	50.00%	45.10%	45.76%
	Never	0.00%	5.88%	5.08%
Total		100.0%	100.00%	100.0%

According to Table 4.2.2, among female respondents, most female visit the BU Library 1-2 times a week (45.10%), followed by 3-4 times a week (41.18%) and 5-6 times a week (5.88%). Some female respondents never visited the BU Library (5.88%), and a small number of female visit the BU Library every day (1.96%). Among the male respondents, the most male visit the BU Library 1-2 times a week (50.00%), and 3-4 times a week, and the fewest male visit the BU Library 3-4 times a week. (10.99 %). This may mean that male and female keep to visit the BU Library 1-2 times a week.

#### 4.2.2 Residence time of the respondents in the BU Library

According to the analysis in Table 4.2.1, 8.47% of the respondents stayed in the BU Library for 0.5-1 hours, 72.88% of the respondents stayed in the BU Library for 1-3 hours, and 13.56% of the respondents stayed in the BU Library for 3-6 hours,

0.00% of the respondents stayed in the BU Library for more than 6 hours, and 5.08% of the respondents stayed in the BU Library for less than half an hour.

This research use SPSS software to perform cross-tab analysis on the variables "Residence time in the BU Library" and "Gender". The statistical result data are shown in Table 4.2.3.

Table 4.2.3: Residence Time in the BU Library \* Gender Cross-tabulation

		Gender		Total
		Male	Female	
Residence time in the BU Library	More than 6 hours	0.00%	0.00%	0.00%
	3 - 6 hours	50.00%	7.84%	13.56%
	1 - 3 hours	50.00%	76.47%	72.88%
	0.5 - 1 hour	0.00%	9.80%	8.47%
	Within half an hour	0.00%	5.88%	5.08%
Total		100.0%	100.00%	100.00%

According to Table 4.2.3, most female respondents stayed in the BU library for 1-3 hours (76.47%), then 0.5-1 hours (9.80%) and 3-6 hours (7.84%), and while most male respondents the length of stay in the BU Library is 3-6 hours (50.00%), and stay in the BU Library for 1-3 hours (50.00%). This may mean that most female stay in the BU Library for 1-3 hours, while the male staying time in the BU Library is balanced between 1-3 hours and 3-6 hours. In conclusion, there are 2 major group of users, staying 1-3 hours and 3-6 hours to be our representatives.

#### 4.2.3 The purpose of the respondents to visit the BU Library

Table 4.2.1 highlights the purpose of the respondents to visit the BU Library.

10.17% of the respondents visited the BU Library for reading and self-study, 3.39%

of the respondents visited the BU Library to borrow books and obtain electronic materials, and 69.49% of the respondents visited the BU Library for group discussion and exchange ideas. 5.08% of respondents visited the BU Library to carry out creative activities and participate in creative design. 11.86% of the respondents visited the BU Library for creative practice, creative display or other activities.

The research use SPSS software to perform cross-tab analysis on the variables "purpose of accessing BU library" and "gender". The statistical results of the analysis are shown in Table 4.2.4.

Table 4.2.4: The Purpose of Visiting the BU Library \* Gender Cross-tabulation

		Gender		Total
		Male	Female	
The purpose of visiting the BU Library	Reading and self-study	12.50%	9.80%	10.17%
	Borrow books and access electronic materials	0.00%	3.92%	3.39%
	Group discussion and creative exchange	87.50%	66.67%	69.49%
	Develop creative activities and participate in creative design	0.00%	5.88%	5.08%
	Creative practice and creative display	0.00%	13.73%	11.86%
Total		100.0%	100.0%	100.0%

According to Table 4.2.4, most female respondents visited the BU Library to group discuss and creative exchange (66.67%), followed by creative practice and creative display (13.73%), reading and self-study (9.80%), and develop creative activities and participate in creative design (5.88%). while the purpose of most male respondents visiting the BU Library is group discussion and exchange of ideas (87.50%), followed by reading and self-study (12.50%). This may mean that male



and female use the BU Library mostly for group discussions and creative exchanges, it accounts for 69.49% of the total number of respondents. And some female respondents visit the BU Library for creative practice and creative display, it accounts for 11.86% of the total number of respondents.

In conclusion, the BU Library is supposed to be is group discussion and exchange of ideas (87.50%) and ideation for creative spaces.

#### 4.2.4 Statistical analysis of correlation of demographic variables

In order to understand whether there is a correlation between the demographic variables "Frequency of visit the BU Library", "Residence time in the BU Library" and "Gender", use the SPSS software for correlation analysis on demographic variables "gender", "Frequency of the BU Library", and "Residence time in the BU Library". The results are shown in Table 4.2.5.

Table 4.2.5: The Correlation between Gender and Visit Frequency and Length of Stay in University Library

		Gender	Frequency of the BU Library	Residence time in the BU Library
Gender	Pearson Correlation	1	-.014	.336**
	Sig. (2-tailed)		.919	.009
	N	59	59	59
Frequency of visit the BU Library	Pearson Correlation	-.014	1	.406**
	Sig. (2-tailed)	.919		.001
	N	59	59	59
Residence time in the BU Library	Pearson Correlation	.336**	.406**	1
	Sig. (2-tailed)	.009	.001	
	N	59	59	59

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 4.2.5 shows, there are significant correlation between the variables "Gender", "Frequency of visit the BU Library" and "Residence time in the BU Library". Among them, the correlation between the variable "Residence time in the BU Library" and "Frequency of visit the BU Library" is very significant (Sig = 0.001 < 0.05), and the correlation between "Residence time in the BU Library" and "Gender" is also very significant (Sig = 0.009 < 0.05).

In conclusion, residence time in the BU Library is significantly different among genders at 0.01 and 0.05 level. The female gender has Frequency of visit the BU Library higher than male at Correlation .406 \*\*. The female gender has higher Residence time in the BU Library Correlation .336\*\*.

### 4.3 Descriptive Statistics of Respondents' Agreement

This IS use SPSS software to count the mean and standard deviation of variables in the creative space of the BU library, and the mean of the sorted variables (descending order), the variable with the mean of the top 6 are "Display Wall", "Glass Curtain Wall", "Wall Painting", "Cafes", "Gaming Zone", and "Power Outlets", which may mean that users of the BU Library six creative space variables have higher attention and agreement (Mean = 2.31 - 2.39).

However, the variable whose mean ranks in the last 6 are "Public Reading Room", "Tables, Chairs and Sofas", "Printers", "Book Borrowing & Returning System", "Warm Lighting", and "Wi-Fi", which may mean that the users of BU Library have a lower level of attention and agreement on these six creative space variables (Mean = 1.51 - 1.98).

The mean and standard deviation of each variable in the creative space of the

BU Library will be displayed in Appendix E in tabular form.

Next, this IS will compare and analyze the average and standard deviation of each variable in the creative space of BU Library in detail.

Table 4.3.1: Mean and Standard Deviation of Respondents' Agreement

Variables	Mean	S.D
Display Wall, Glass Curtain Wall, Wall Painting, Cafes, Gaming Zone, Power Outlets	2.31 - 2.39	.910 - 1.074
Demo Hall, Exhibition Zone, Potted Plants, Water Dispensers, Acoustic Panels, Books & E-books, Discussion Room, Bookshelves & Books Placement	2.24 - 2.29	.872 - 1.084
Creative Practice Room, Night Opening Hours, Computers, Space Size & Comfort, Temperature & Humidity, Space Color & Modeling, Daytime Opening Hours	2.10 - 2.17	.781 - .950
Movie Zone, Music Room, Quiet Personal Reading Room, Weekends Opening Hours, Overall creative space, Air Circulation Fresh	2.02 - 2.08	.682 - .988
Public Reading Room, Tables, Chairs and Sofas, Printers, Book Borrowing & Returning System, Warm Lighting, Wi-Fi	1.51 - 1.98	.791 - .944

The mean of respondents' agreement with the variable "Display Wall" is 2.39, and the standard deviation is 0.910. The mean of agreement with the variable "Glass Curtain Wall" is 2.36, and the standard deviation is 0.961. The mean of agreement

with the variable "Wall Painting" is 2.32, and the standard deviation is 1.074. The mean of agreement with the variable "Cafes" is 2.31, and the standard deviation is 1.004. The mean of agreement with the variable "Game Zone" is 2.31, and the standard deviation is 0.951. The mean of agreement with the variable "Power Outlets" is 2.31, and the standard deviation is 0.933. In terms of mean, the mean of the agreement of these 6 variables is greater than 2.30 (Mean = 2.31 - 2.39). As shown in Figure 4.3.1.

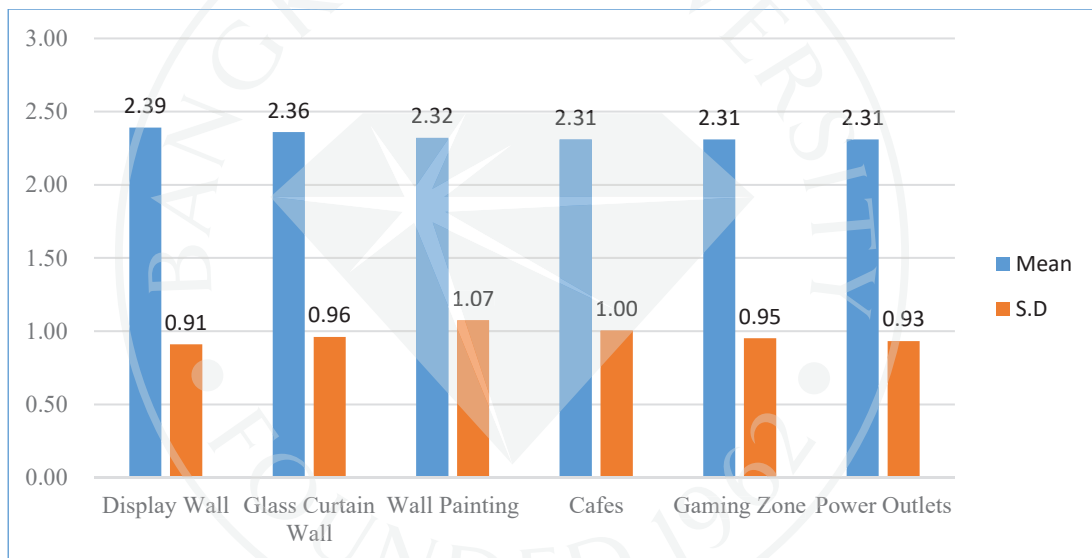


Figure 4.3.1: Mean and S.D of Respondents' Agreement (Mean=2.31-2.39)

Besides, the mean of respondents' agreement with the variable "Demo Hall" is 2.29, and the standard deviation is 0.872. The mean of agreement with the variable "Exhibition Hall" is 2.29, and the standard deviation is 0.948. The mean of agreement with the variable "Potted Plants" is 2.29, and the standard deviation is 0.966. The mean of agreement with the variable "Water Dispensers" is 2.29, and the standard deviation is 1.084. The mean of agreement with the variable "Acoustic

Panels" is 2.27, and the standard deviation is 0.925. The mean of agreement with the variable "Books & E-books" is 2.25, and the standard deviation is 0.921. The mean of agreement with the variable "Discussion Room" is 2.25, and the standard deviation is 0.921. The mean of agreement with the variable " Bookshelves & Books Placement " is 2.24, and the standard deviation is 1.040. From the mean, the mean of the agreement of these 8 variables is greater than 2.20 (Mean = 2.24 - 2.29). As shown in Figure 4.3.2.

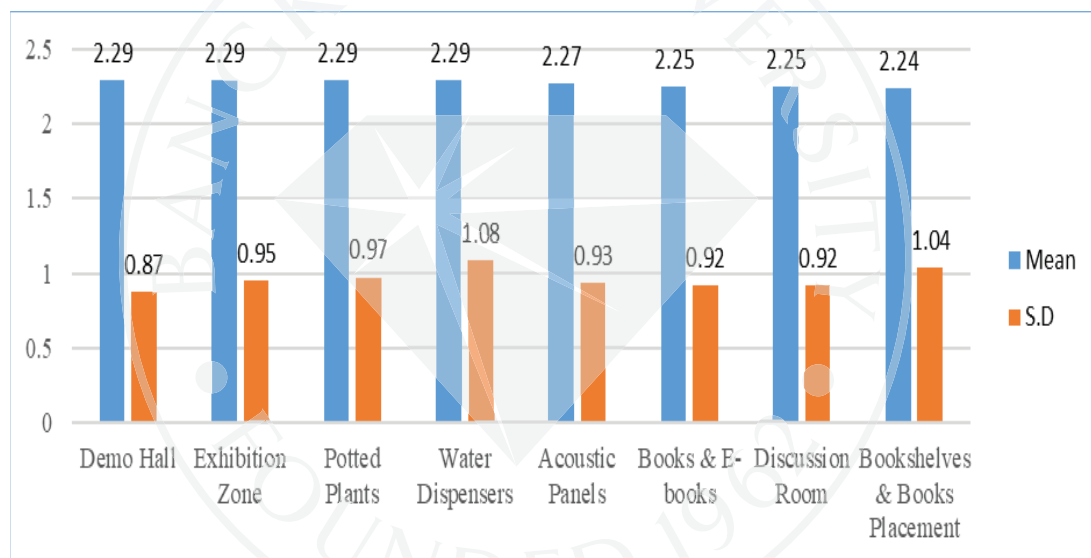


Figure 4.3.2: Mean and S.D of Respondents' Agreement (Mean=2.24-2.29)

In addition, the mean of respondents' agreement with the variable "Creative Practice Room" is 2.17, and the standard deviation is 0.834. The mean of agreement with the variable "Night Opening Hours" is 2.17, and the standard deviation is 0.950. The mean of agreement with the variable "Computers" is 2.15, and the standard deviation is 0.867. The mean of agreement with the variable "Space Size & Comfort" is 2.10, and the standard deviation is 0.824. The mean of agreement with the variable

"Temperature & Humidity" is 2.10, and the standard deviation is 0.941. The mean of agreement with the variable "Space Color & Modeling" is 2.10, and the standard deviation is 0.781. The mean of agreement with the variable "Daytime Opening Hours" is 2.10, and the standard deviation is 0.803. From the mean, the mean of the agreement of these 7 variables is not less than 2.10 (Mean = 2.10 - 2.17). As shown in Figure 4.3.3.

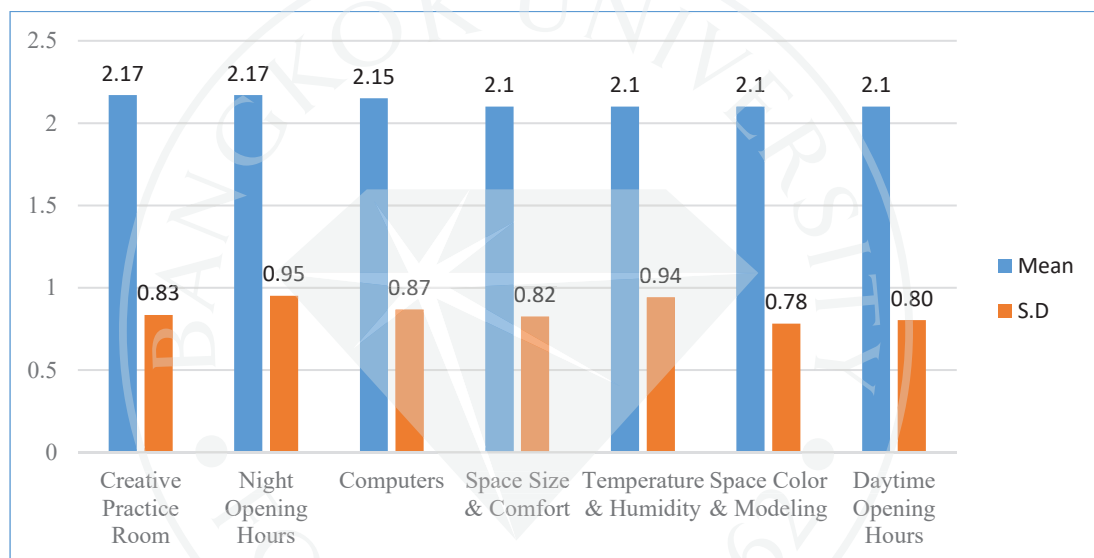


Figure 4.3.3: Mean and S.D of Respondents' Agreement (Mean=2.10-2.17)

The mean of respondents' agreement with the variable "Movie Zone" is 2.08, and the standard deviation is 0.988. The mean of agreement with the variable "Music Room" is 2.08, and the standard deviation is 0.836. The mean of agreement with the variable "Quiet Personal Reading Room" is 2.08, and the standard deviation is 0.952. The mean of agreement with the variable "Weekends Opening Hours" is 2.07, and the standard deviation is 0.926. The mean of agreement with the variable "Overall creative space" is 2.02, and the standard deviation is 0.682. The mean of agreement

with the variable "Air Circulation Fresh" is 2.02, and the standard deviation is 0.820. In terms of mean, the mean of the agreement of these 6 variables is greater than 2.00 (Mean = 2.02 - 2.08). As shown in Figure 4.3.4.

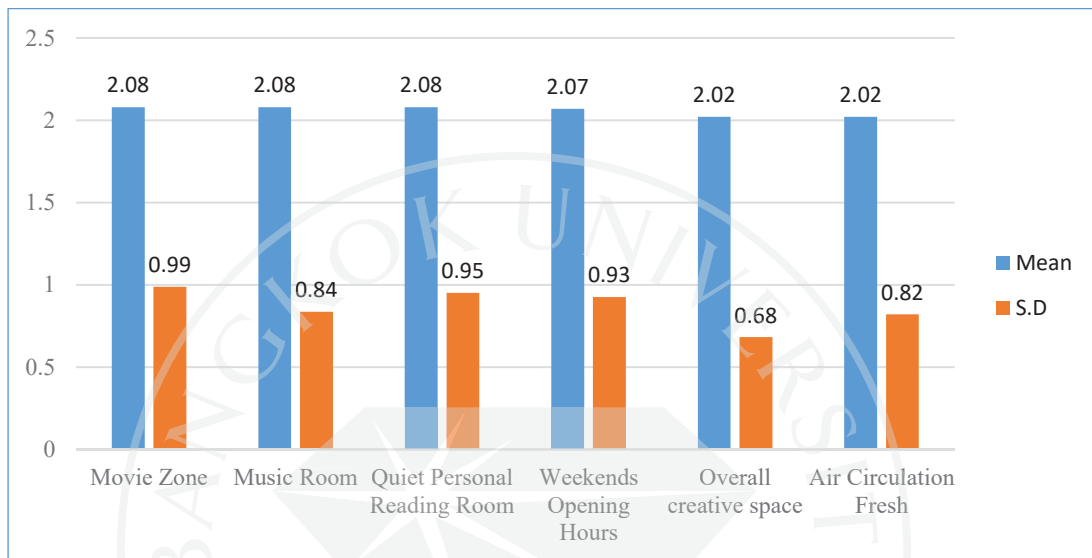


Figure 4.3.4: Mean and S.D of Respondents' Agreement (Mean=2.02-2.08)

Moreover, the mean of respondents' agreement with the variable "Public Reading Room" is 1.98, and the standard deviation is 0.919. The mean of agreement with the variable "Tables, Chairs and Sofas" is 1.97, and the standard deviation is 0.928. The mean of agreement with the variable "Printers" is 1.93, and the standard deviation is 0.944. The mean of agreement with the variable "Book Borrowing & Returning System" is 1.92, and the standard deviation is 0.794. The mean of agreement with the variable "Warm Lighting" is 1.83, and the standard deviation is 0.791. The mean of agreement with the variable "Wi-Fi" is 1.51, and the standard deviation is 0.838. In terms of mean, the mean of the agreement of these 6 variables is greater than 1.50 (Mean = 1.51 - 1.98). As shown in Figure 4.3.5.

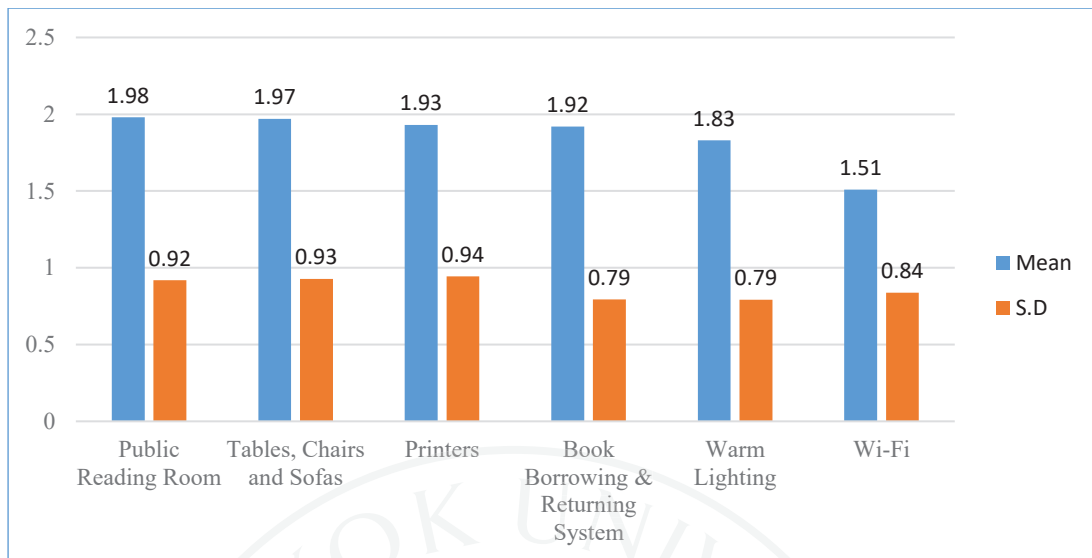


Figure 4.3.5: Mean and S.D of Respondents' Agreement (Mean=1.51-1.98)

In sum, it can be seen from the results of the mean of respondents' agreement in Table 4.3.1, the highest agreement mean is the "Display Wall" variable (Mean = 2.39), followed by "Glass Curtain Wall" (Mean = 2.36), "Wall Painting" (Mean = 2.32), and "Cafes" (Mean = 2.31). It seems to indicate that respondents are generally more agreement with these variables. The lowest mean of agreement is the "Wi-Fi" variable (Mean = 1.51), and the mean of agreement of the "Warm Lighting" (Mean = 1.83), "Book Borrowing & Returning System" (Mean = 1.92), and "Printers" (Mean = 1.93) variables is also low. This seems to indicate that the respondents' overall agreement with these variables is low. The mean of agreement of other variables is between 1.95 and 2.30.

As the result highlighted in Table 4.3.1, among all variables, the top six variables with the highest mean are the display wall (Mean =  $2.39 \pm 0.910$ ), glass curtain wall (Mean =  $2.36 \pm 0.961$ ), wall painting (Mean =  $2.32 \pm 1.074$ ), cafes (Mean =  $2.31 \pm 1.004$ ), game zones (Mean =  $2.31 \pm 0.951$ ), and power outlets (Mean =  $2.31 \pm 0.933$ ).



This may indicate that the display wall and glass curtain wall of the creative space of the BU Library can improve the creative ability of users. And cafes, display wall, and game zones play a very important role in inspiring creativity. The power socket meets the user's creative requirements.

In conclusion, all factors and variables have to be improved to make BU Library become "Preferable Creative Space".

#### 4.4 Linear Regression Analysis of Respondents' Agreement

Use SPSS software to perform linear regression analysis on user agreement variables, where the dependent variable is "Y", the purpose is to study the effect of multiple independent variables on the dependent variable "Y". The results of the analysis are shown in Table 4.4.1, Figure 4.4.1, and Figure 4.4.3.

Table 4.4.1: Linear Regression Analysis of Variables (Coefficients<sup>a</sup>)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.323	.186		1.737	.088
Discussion Room	.313	.073	.422	4.282	.000
Potted Plants	.284	.069	.402	4.093	.000
Weekends Opening Hours	.248	.062	.337	3.985	.000
Glass Curtain Wall	-.299	.073	-.421	-4.106	.000
Exhibition Zone	.225	.070	.313	3.200	.002
Computers	.179	.064	.228	2.788	.007
Display Wall	-.156	.074	-.208	-2.112	.040

a. Dependent Variable: Overall Creative Space

"Sig" in Table 4.4.1 indicates the influence degree of independent variable on dependent variable, and  $\text{Sig} < 0.05$  indicates significant influence. The smaller the Sig value, the more significant the influence. From the result data, it can be seen that the Sig values in the Table 4.4.1 are all less than 0.05, indicating that the independent variable has a significant impact on the dependent variable.

The most significant influence on the dependent variable "Overall Creative Space" is the independent variable "Discussion Room" ( $\text{Sig} = 0.000 < 0.05$ ), "Potted Plants" ( $\text{Sig} = 0.000 < 0.05$ ), "Weekends Opening Hours" ( $\text{Sig} = 0.000 < 0.05$ ), "Glass Curtain Wall" ( $\text{Sig} = 0.000 < 0.05$ ), followed by "Exhibition Zone" ( $\text{Sig} = 0.002 < 0.05$ ), "Computers" ( $\text{Sig} = 0.007 < 0.05$ ), "Display Wall" ( $\text{Sig} = 0.040 < 0.05$ ).

"B" in Table 4.4.1 represents the coefficients of each independent variable in the regression equation, and the negative value indicates that the independent variable has a significant adverse effect on the dependent variable. According to the result data, the independent variables "Glass Curtain Wall" ( $B = -0.299$ ) and "Display Wall" ( $B = -0.156$ ) have a significant adverse effect on the dependent variable "Overall Creative Space", while other independent variables have a significant positive effect on the dependent variable "Overall Creative Space".

The value of "Beta" in Table 4.4.1 reflects the influence of each independent variable on the dependent variable "Overall Creative Space". The greater the value of "Beta", the greater the influence on the dependent variable. According to the data in the table, the independent variable "Discussion Room" ( $\text{Meta}=0.422$ ) has the greatest influence on the dependent variable "Overall Creative Space", followed by "Glass Curtain Wall" ( $\text{Meta}=-0.421$ ) and "Potted Plants" ( $\text{Meta}=0.402$ ). The independent

variable "Display Wall" (Meta=-0.208) had the least influence.

#### 4.5 The Frequency and Mean of Respondents' Agreement

4.5.1 Do you think the comfort of tables, chairs and sofas will affect your creative mood?

According to Table A1 of Appendix G, most respondents disagreed (38.98%) and very disagreed (35.59%) with the "Tables, Chairs and Sofas", followed by respondents chose "Neutral" (20.34%). Only a few respondents were agreed (3.39%) and very agreed (1.69%).

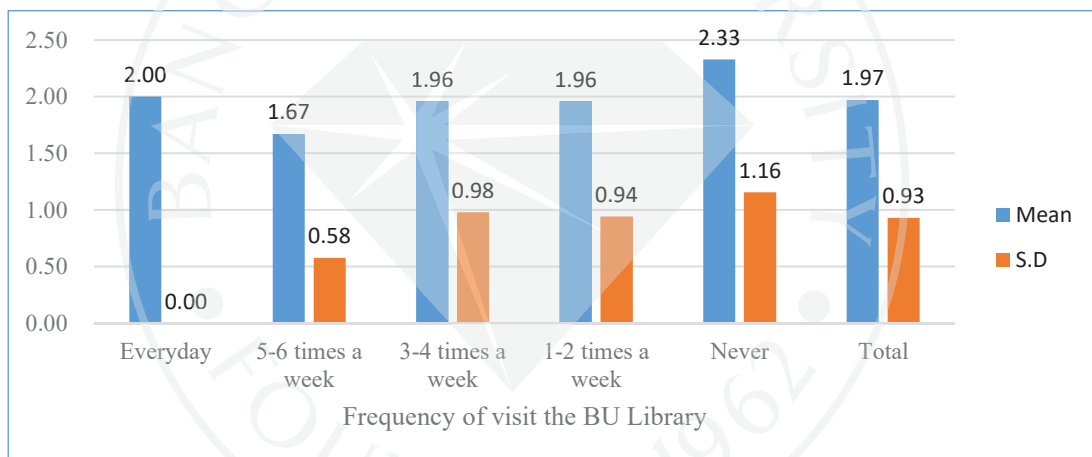


Figure 4.5.1: Does the Comfort of the Table Affect Your Creative Mood?

The results in Figure 4.5.1 show that the mean of the frequency of visiting the BU library (1-2 times) is 1.96, and the standard deviation is 0.94. The mean of 3-4 times is 1.96, and the standard deviation is 0.98. The mean of 5-6 times is 1.67, and standard deviation is 0.58. The mean of everyday is 2.00, and the standard deviation is 0.00. In sum, the overall mean is 1.97 and the standard deviation is 0.93. Among the respondents who visited the BU Library, every day is the highest mean (Mean =  $2.00 \pm 0.00$ ). It means all groups not that much concern on comfort of tables, chairs

and sofas will affect creative mood.

#### 4.5.2 Do you think amount of power outlets supply affect your creative process?

According to Table A2 of Appendix G, most respondents disagreed (38.98%) and very disagreed (20.34%) with the "Power Outlets", followed by respondents chose "Neutral" (32.20%). Only a few respondents were agreed (6.78%) and very agreed (1.69%).

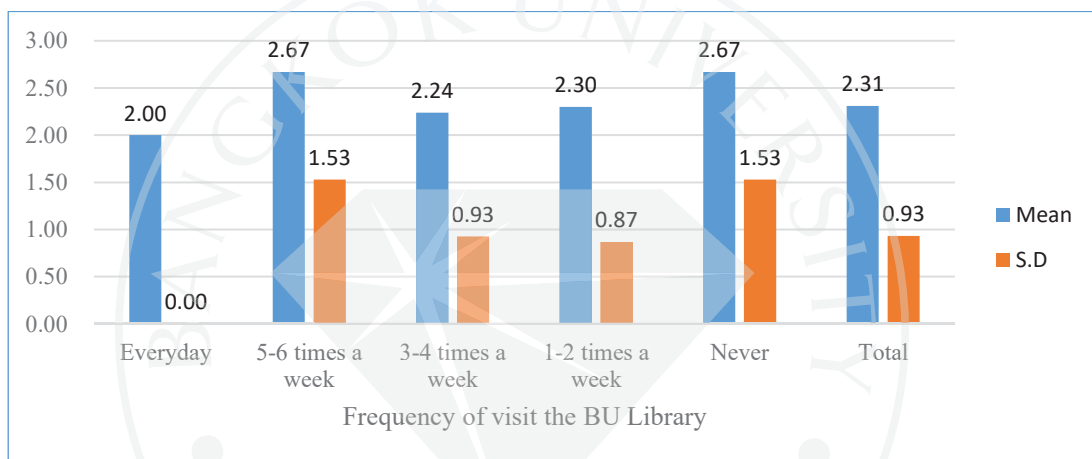


Figure 4.5.2: Will the Supply of Sockets Affect Your Creative Process?

The results in Figure 4.5.2 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.30, and the standard deviation is 0.87. The mean of 3-4 times is 2.24, and the standard deviation is 0.93. The mean of 5-6 times is 2.67, and standard deviation is 1.53. The mean of everyday is 2.00, and the standard deviation is 0.00. In sum, the overall mean is 2.31 and the standard deviation is 0.93. Among the respondents who visited the BU Library, 5-6 times a week and who never visited library is the highest mean (Mean =  $2.67 \pm 1.53$ ) agree on slightly need of power outlets supply.

4.5.3 If the BU Library has a water dispenser or drinking room, will your creative mood be better?

According to Table A3 of Appendix G, most respondents disagreed (47.46%) and very disagreed (22.03%) with the "Water Dispensers", followed by respondents chose "Neutral" (15.25%). Only a few respondents were agreed (10.17%) and very agreed (5.08%).

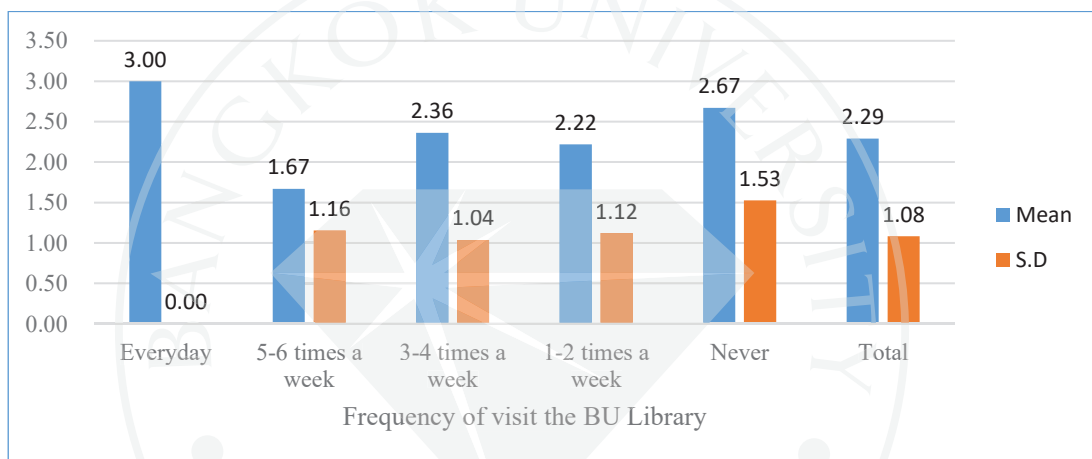


Figure 4.5.3: If the BU Library Has a Water Dispenser or Drinking Room, Will Your Creative Mood Be Better?

The results in Figure 4.5.3 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.22, and the standard deviation is 1.21. The mean of 3-4 times is 2.36, and the standard deviation is 1.04. The mean of 5-6 times is 1.67, and standard deviation is 1.16. The mean of everyday is 3.00, and the standard deviation is 0.00. In sum, the overall mean is 2.29 and the standard deviation is 1.08. Among the respondents who visited the BU Library, every day is the highest mean (Mean =  $3.00 \pm 0.00$ ). It means everyday user moderate need for a water dispenser or drinking room, will users' creative mood be better.

4.5.4 Do you think studying in the coffee room of the BU library can better inspire your creativity?

According to Table A4 of Appendix G, most respondents disagreed with the "Cafes" (42.37%), followed by respondents chose "Neutral" (28.81%), and some respondents even very disagreed (20.34%). Only a few respondents agreed (3.39%) and very agreed (5.08%).

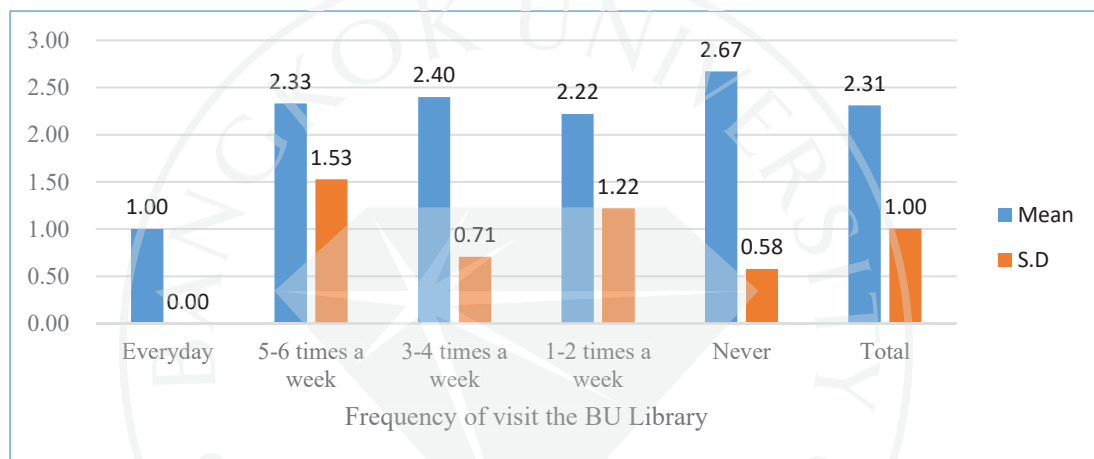


Figure 4.5.4: Do You Think Studying in the Coffee Room of the BU Library Can Better Inspire Your Creativity?

The results in Figure 4.5.4 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.22, and the standard deviation is 1.21. The mean of 3-4 times is 2.40, and the standard deviation is 0.71. The mean of 5-6 times is 2.33, and standard deviation is 1.53. The mean of everyday is 1.00, and the standard deviation is 0.00. In sum, the overall mean is 2.31 and the standard deviation is 1.00. Among the respondents who visited the BU Library, who never used library is the highest mean (Mean = 2.40 ± 0.71). It means who never used might need coffee room and corners to build their creative mood be better, and can attract them to use library as

creative space.

4.5.5 Whether the BU Library's daytime opening hours meet your creative process?

According to Table A5 of Appendix G, most respondents disagreed with the "Daytime Opening Hours" (40.68%), followed by respondents chose "Neutral" (32.20%), and some respondents even very disagreed (25.42%). Only a few respondents agreed (1.69%). No one chose "Very agreed".

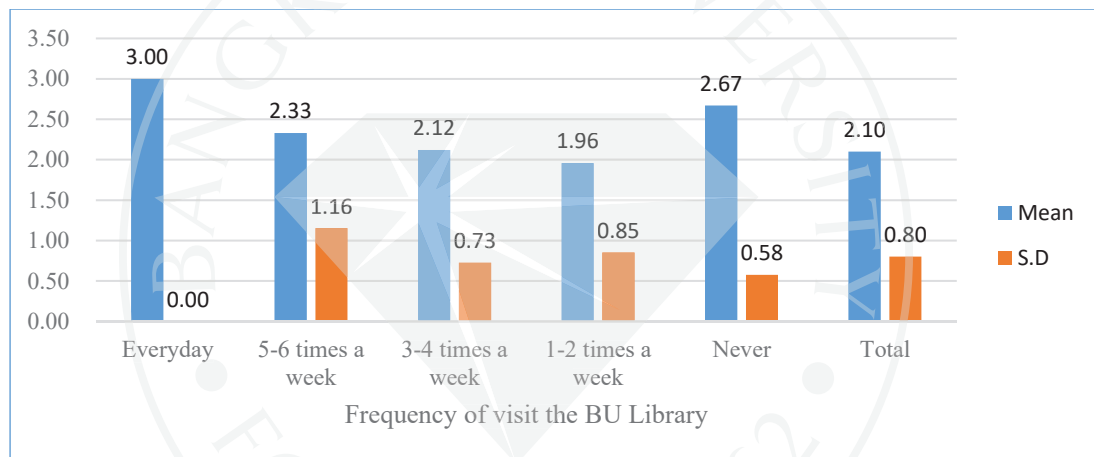


Figure 4.5.5: Whether the BU Library's Daytime Opening Hours Meet Your Creative Process?

The results in Figure 4.5.5 show that the mean of the frequency of visiting the BU library (1-2 times) is 1.96, and the standard deviation is 0.85. The mean of 3-4 times is 2.12, and the standard deviation is 0.73. The mean of 5-6 times is 2.33, and standard deviation is 1.16. The mean of everyday is 3.00, and the standard deviation is 0.00. In sum, the overall mean is 2.10 and the standard deviation is 0.80. Among the respondents who visited the BU Library, every day users are the highest mean (Mean =  $3.00 \pm 0.00$ ). It means everyday users need day time opening.

#### 4.5.6 If open the BU library at night improve your creative thinking?

According to Table A6 of Appendix G, most respondents chose "Neutral" (38.98%) with the "Night Opening Hours", followed by respondents chose "Very disagreed" (32.20%), and some respondents disagreed (23.73%). Only a few respondents agreed (5.08%). No one chose "Very agreed".

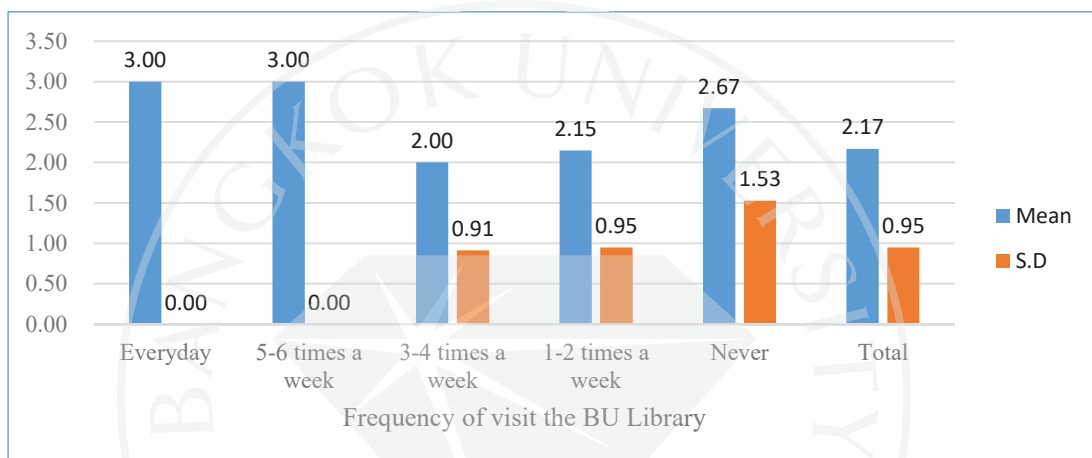


Figure 4.5.6: Can opening the Library at Night Improve Your Creative Thinking?

The results in Figure 4.5.6 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.15, and the standard deviation is 0.95. The mean of 3-4 times is 2.00 and the standard deviation is 0.91. The mean of 5-6 times is 3.00, and standard deviation is 0.00. The mean of everyday is 3.00, and the standard deviation is 0.00. In sum, the overall mean is 2.17 and the standard deviation is 0.95. Among the respondents who visited the BU Library, 5-6 times a week and everyday users are the highest mean (Mean =  $3.00 \pm 0.00$ ). It means that frequent users need night time opening to improve creative thinking.



4.5.7 If the BU Library is also open on weekends, can you better complete your creative tasks?

According to Table A7 of Appendix G, most respondents very disagreed (33.90%) and disagreed (30.51%) with the "Weekends Opening Hours", followed by respondents chose "Neutral" (30.51%). Only a few respondents were agreed (5.08%). No one chose "Very agreed".

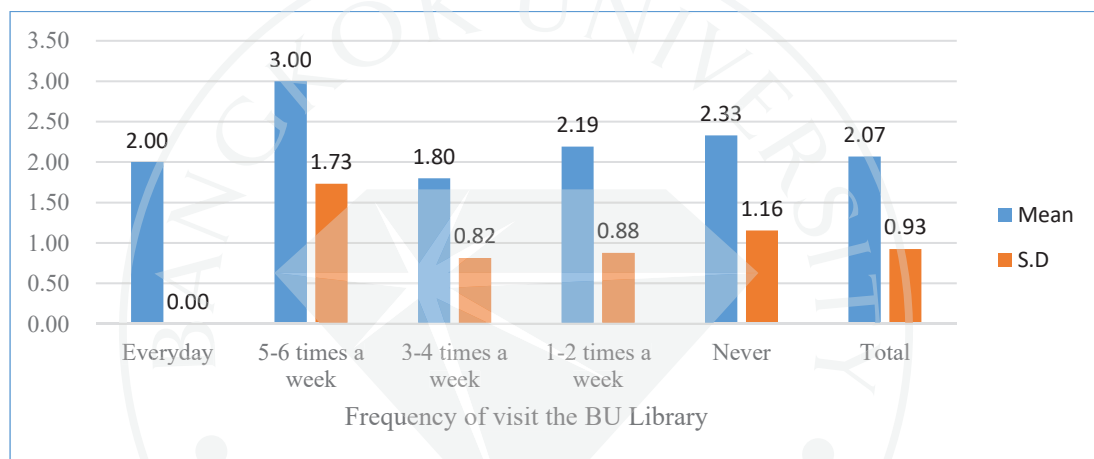


Figure 4.5.7: If the BU Library is Also Open on Weekends, Can You Better Complete Your Creative Tasks?

The results in Figure 4.5.7 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.19, and the standard deviation is 0.88. The mean of 3-4 times is 1.80 and the standard deviation is 0.82. The mean of 5-6 times is 3.00, and standard deviation is 1.73. The mean of everyday is 2.00, and the standard deviation is 0.00. In sum, the overall mean is 2.07 and the standard deviation is 0.93. Among the respondents who visited the BU Library, 5-6 times a week is the highest mean (Mean =  $3.00 \pm 1.73$ ). Everyday users not that concern on weekend usage because they use library by daily as work station but 5-6 times a week think open on weekend

days support their creative tasks.

4.5.8 Can the computers in the BU Library help you accomplish your creative tasks better?

According to Table A8 of Appendix G, most respondents disagreed (38.98%) with the "Computers", followed by respondents chose "Neutral" (30.51%) and "Very disagreed "(25.42%). Only a few respondents were agreed (5.08%). No one chose "Very agreed".

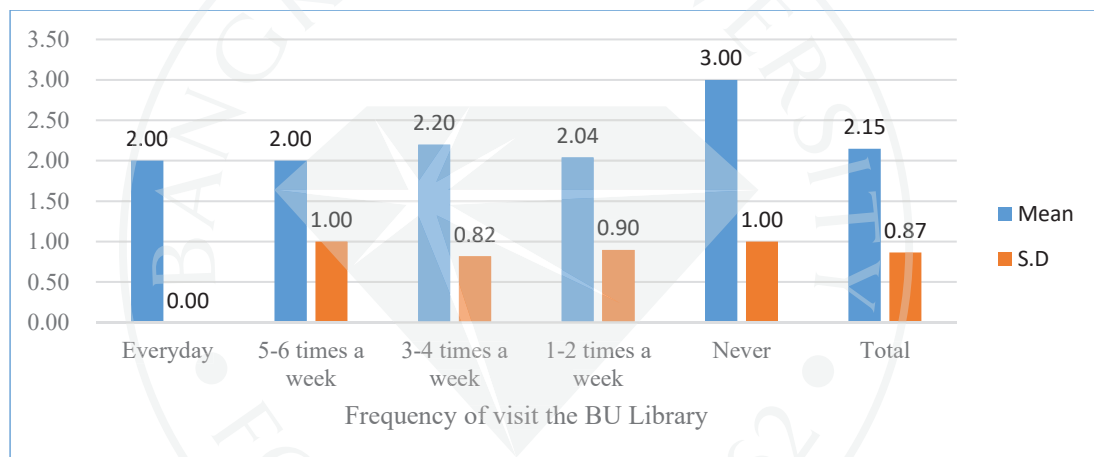


Figure 4.5.8: Can the Computers in the BU Library Help You Accomplish Your Creative Tasks Better?

The results in Figure 4.5.8 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.04, and the standard deviation is 0.90. The mean of 3-4 times is 2.20 and the standard deviation is 0.82. The mean of 5-6 times is 2.00, and standard deviation is 1.00. The mean of everyday is 2.00, and the standard deviation is 0.00. In sum, the overall mean is 2.15 and the standard deviation is 0.87. Among the respondents who visited the BU Library, who never visited library is the highest

mean (Mean =  $3.00 \pm 1.00$ ). It implies that who never visited need more computer for their usage in library.

4.5.9 If the BU library provides free Wi-Fi, do you think it can make you better complete creative tasks?

According to Table A9 of Appendix G, most respondents very disagreed (67.80%) and disagreed (16.95%) with the "Wi-Fi", followed by respondents chose "Neutral" (11.86%). Only a few respondents were agreed (3.39%). No one chose "Very agreed".

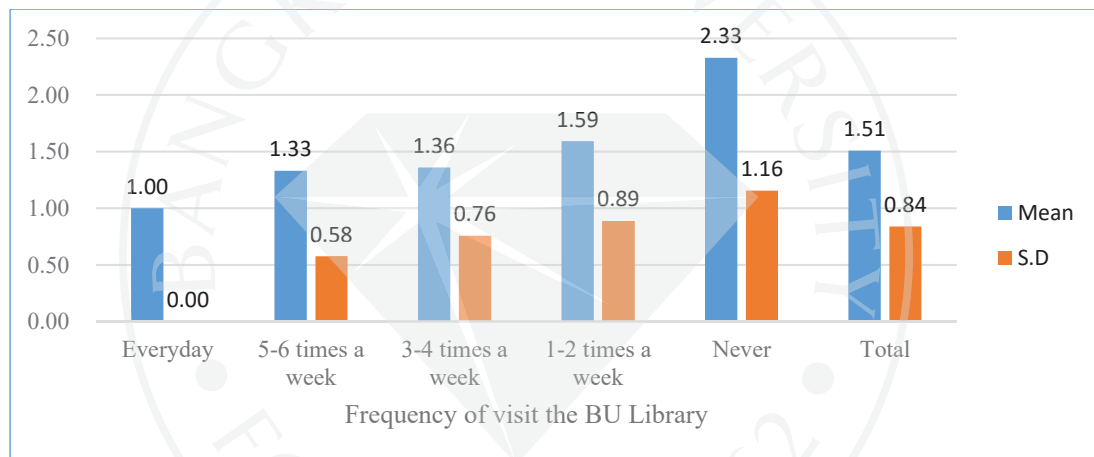


Figure 4.5.9: If the BU Library Provides Free Wi-Fi, Do You Think It Can Make You Better Complete Creative Tasks?

The results in Figure 4.5.9 show that the mean of the frequency of visiting the BU library (1-2 times) is 1.59, and the standard deviation is 0.89. The mean of 3-4 times is 1.36 and the standard deviation is 0.76. The mean of 5-6 times is 1.33, and standard deviation is 0.58. The mean of everyday is 1.00, and the standard deviation is 0.00. In sum, the overall mean is 1.51 and the standard deviation is 0.84. Among the respondents who visited the BU Library, who never visited library is the highest mean need for Wi-Fi (Mean =  $2.33 \pm 0.89$ ). It can imply they preferred free Wi-Fi to

attract them to use library.

4.5.10 Can the printer equipment in the BU Library bring benefits to your creative process?

According to Table A10 of Appendix G, most respondents very disagreed (40.68%) and disagreed (32.20%) with the "Printers", followed by respondents chose "Neutral" (20.34%). Only a few respondents were agreed (6.78%). No one chose "Very agreed".

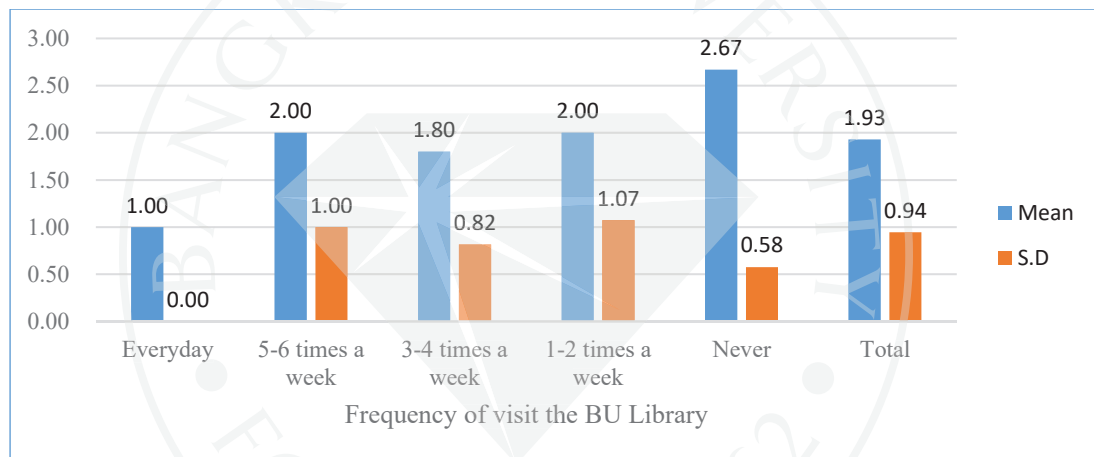


Figure 4.5.10: Can the Printer Equipment in the BU Library Bring Benefits to Your Creative Process?

The results in Figure 4.5.10 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.00, and the standard deviation is 1.07. The mean of 3-4 times is 1.80 and the standard deviation is 0.82. The mean of 5-6 times is 2.00, and standard deviation is 1.00. The mean of everyday is 1.00, and the standard deviation is 0.00. In sum, the overall mean is 1.93 and the standard deviation is 0.94. Among the respondents who visited the BU Library, 5 Among the respondents who visited the BU Library, who never visited library preferred the printer equipment is the

highest mean (Mean =  $2.67 \pm 0.58$ ). It can imply they preferred printers to attract them to use library.

4.5.11 If the BU Library install a fully automated Book Borrowing & Returning System, will it save your creative time?

According to Table A11 of Appendix G, most respondents disagreed (37.79%) and very disagreed (35.59%) with the "Book Borrowing & Returning System", followed by respondents chose "Neutral" (27.12%). No one chose "Agreed" and "Very agreed".

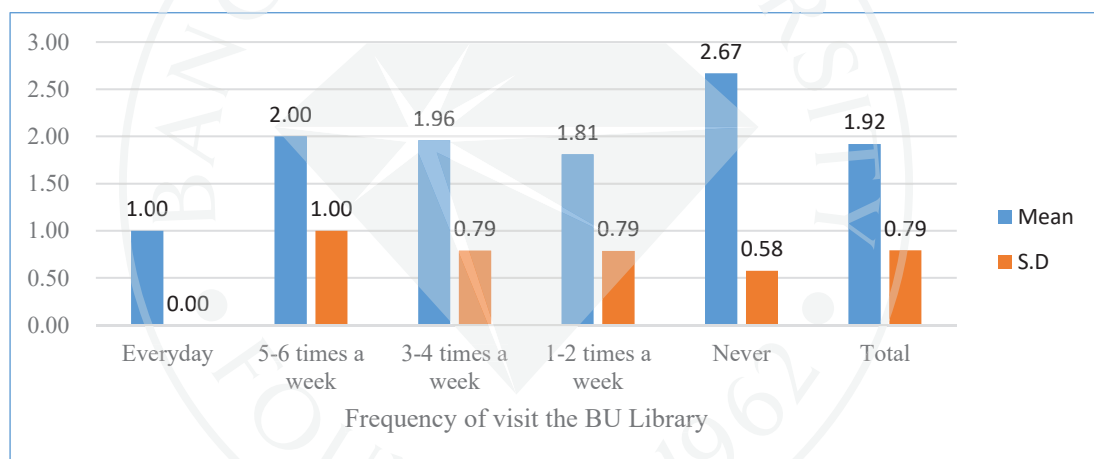


Figure 4.5.11: If the BU Library Install a Fully Automated Book Borrowing & Returning System, Will It Save Your Creative Time?

The results in Figure 4.5.11 show that the mean of the frequency of visiting the BU library (1-2 times) is 1.81, and the standard deviation is 0.79. The mean of 3-4 times is 1.96 and the standard deviation is 0.79. The mean of 5-6 times is 2.00, and standard deviation is 1.00. The mean of everyday is 1.00, and the standard deviation is 0.00. In sum, the overall mean is 1.92 and the standard deviation is 0.79. Among the respondents who visited the BU Library, who never visited library preferred the

automated Book Borrowing & Returning System is the highest mean (Mean =  $2.67 \pm 0.58$ ). It can imply they preferred automated Book Borrowing & Returning System to attract them to use library.

4.5.12 Will the warm and comfortable lighting of BU Library make your creative mood better?

According to Table A12 of Appendix G, most respondents disagreed (45.76%) and very disagreed (37.29%) with the "Warm Lighting", followed by respondents chose "Neutral" (11.86%). Only a few respondents were agreed (3.39%). No one chose "Very agreed".

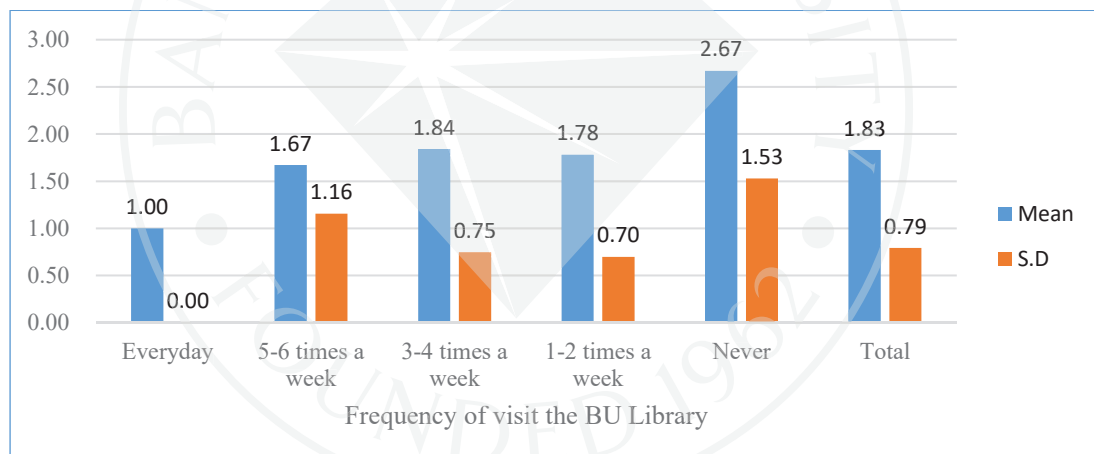


Figure 4.5.12: Will the Warm and Comfortable Lighting of BU Library Make Your Creative Mood Better?

The results in Figure 4.5.12 show that the mean of the frequency of visiting the BU library (1-2 times) is 1.78, and the standard deviation is 0.70. The mean of 3-4 times is 1.84 and the standard deviation is 0.75. The mean of 5-6 times is 1.67, and standard deviation is 1.16. The mean of everyday is 1.00, and the standard deviation is 0.00. In sum, the overall mean is 1.83 and the standard deviation is 0.79. Among

the respondents who visited the BU Library, 3-4 times a week is the highest mean (Mean =  $1.84 \pm 0.75$ ). It means that respondents who have never visited the library also believe that lighting affects the mood of creation (Mean =  $2.67 \pm 1.53$ ).

#### 4.5.13 Does indoor air circulation make your creative mood better?

According to Table A13 of Appendix G, most respondents disagreed (44.07%) and very disagreed (28.81%) with the "Air Circulation Fresh", followed by respondents chose "Neutral" (23.73%). Only a few respondents were agreed (3.39%). No one chose "Very agreed".

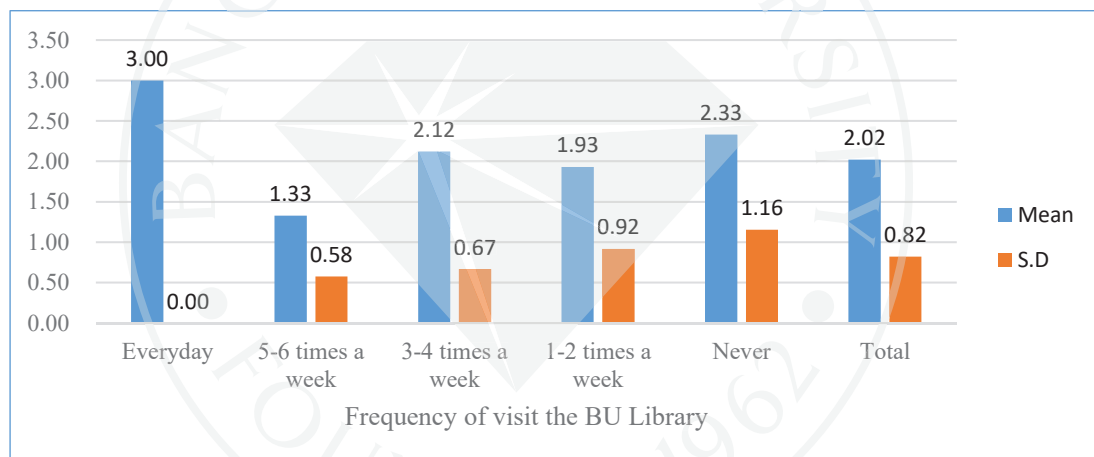


Figure 4.5.13: Does Indoor Air Circulation Make Your Creative Mood Better?

The results in Figure 4.5.13 show that the mean of the frequency of visiting the BU library (1-2 times) is 1.93, and the standard deviation is 0.92. The mean of 3-4 times is 2.12 and the standard deviation is 0.67. The mean of 5-6 times is 1.33, and standard deviation is 0.58. The mean of everyday is 3.00, and the standard deviation is 0.00. In sum, the overall mean is 2.02 and the standard deviation is 0.82. Among the respondents who visited the BU Library, every day is the highest mean (Mean =  $3.00 \pm 0.00$ ). It means everyday users need indoor air circulation make your creative

mood better.

4.5.14 Will comfortable indoor temperature and humidity affect your creative behavior?

According to Table A14 of Appendix G, most respondents disagreed (35.59%) and very disagreed (30.51%) with the "Temperature & Humidity", followed by respondents chose "Neutral" (28.81%). Only a few respondents were agreed (3.39%) and very agreed (1.69%).

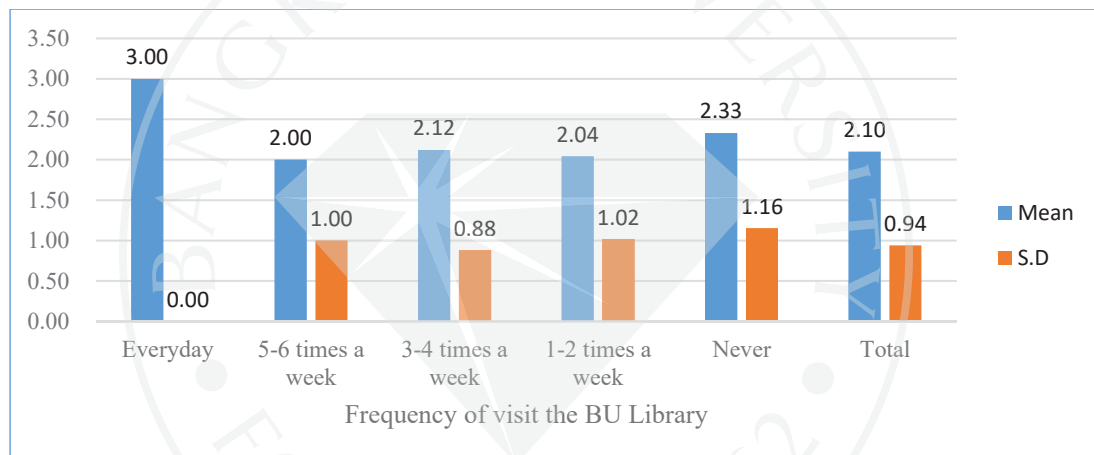


Figure 4.5.14: Will Comfortable Indoor Temperature and Humidity Affect Your Creative Behavior?

The results in Figure 4.5.14 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.04, and the standard deviation is 1.02. The mean of 3-4 times is 2.12 and the standard deviation is 0.88. The mean of 5-6 times is 2.00, and standard deviation is 1.00. The mean of everyday is 3.00, and the standard deviation is 0.00. In sum, the overall mean is 2.10 and the standard deviation is 0.94. Among the respondents who visited the BU Library, every day is the highest mean (Mean =  $3.00 \pm 0.00$ ). It means everyday users need comfortable indoor temperature and



humidity which affect your creative behavior.

4.5.15 Will the size and quietness of the personal reading room in BU Library affect your creative thinking?

According to Table A15 of Appendix G, most respondents very disagreed (33.90%) and disagreed (28.81%) with the "Quiet Personal Reading Room", followed by respondents chose "Neutral" (33.90%). Only a few respondents were agreed (1.69%) and very agreed (1.69%).

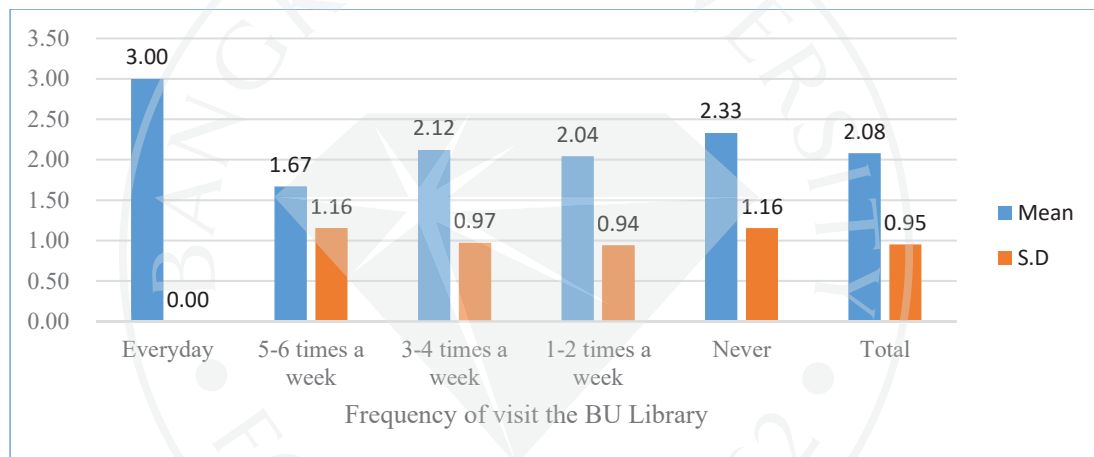


Figure 4.5.15: Will the Size and Quietness of the Personal Reading Room in BU Library Affect Your Creative Thinking?

The results in Figure 4.5.15 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.04, and the standard deviation is 0.94. The mean of 3-4 times is 2.12 and the standard deviation is 0.97. The mean of 5-6 times is 1.67, and standard deviation is 1.16. The mean of everyday is 3.00, and the standard deviation is 0.00. In sum, the overall mean is 1.92 and the standard deviation is 0.79. Among the respondents who visited the BU Library, every day is the highest mean (Mean =  $3.00 \pm 0.00$ ). It means everyday users need more quiet places to promote their

creative thinking.

4.5.16 Will the noise in the public reading room of the BU library affect your creative mood?

According to Table A16 of Appendix G, most respondents disagreed (35.59%) and very disagreed (35.59%) with the "Public Reading Room", followed by respondents chose "Neutral" (25.42%). Only a few respondents were agreed (1.69%) and very agreed (1.69%).

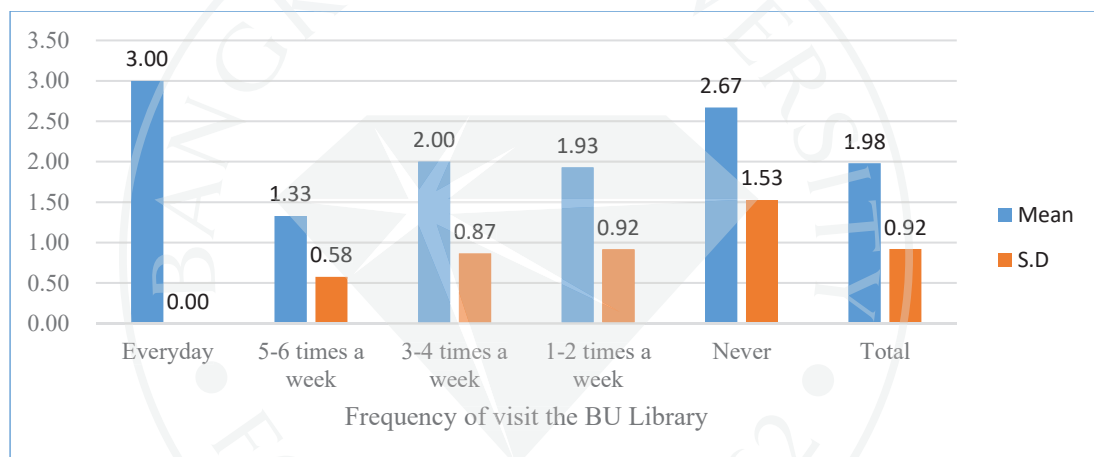


Figure 4.5.16: Will the Noise in the Public Reading Room of the BU Library Affect Your Creative Mood?

The results in Figure 4.5.16 show that the mean of the frequency of visiting the BU library (1-2 times) is 1.93, and the standard deviation is 0.92. The mean of 3-4 times is 2.00 and the standard deviation is 0.87. The mean of 5-6 times is 1.38, and standard deviation is 0.58. The mean of everyday is 3.00, and the standard deviation is 0.00. In sum, the overall mean is 1.98 and the standard deviation is 0.92. Among the respondents who visited the BU Library, every day is the highest mean (Mean =  $3.00 \pm 0.00$ ). It means every day users concern most a lot about voice control.

Despite never visited library but the students also agreed that noise is obstacles of creativity.

4.5.17 Is the books and e-books provided by BU Library improve your creative ability?

According to Table A17 of Appendix G, most respondents disagreed (47.46%) with the "Books & E-books", followed by respondents chose "Neutral" (27.12%) and "Very disagreed" (18.64%). Only a few respondents were agreed (3.39%) and very agreed (3.39%).

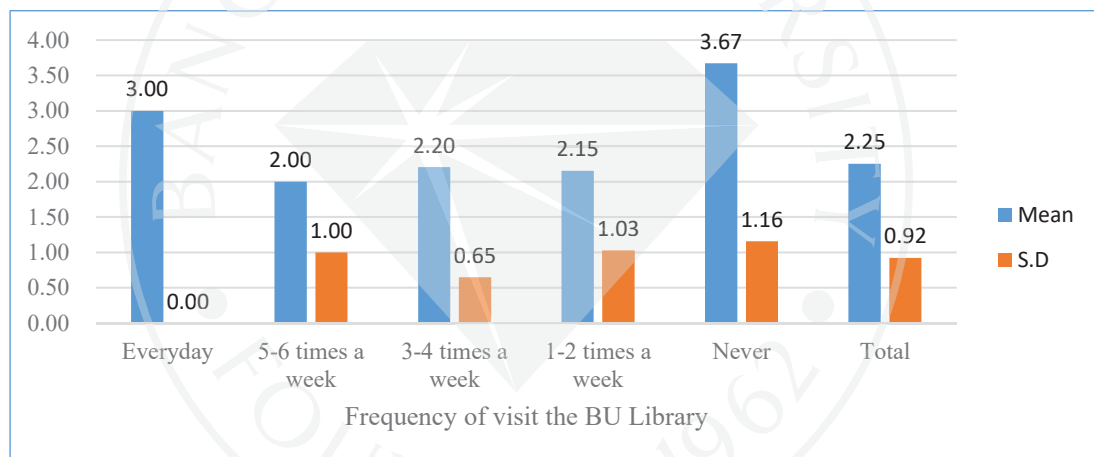


Figure 4.5.17: Is the Books and E-books Provided by BU Library Improve Your Creative Ability?

The results in Figure 4.5.17 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.15, and the standard deviation is 1.03. The mean of 3-4 times is 2.20 and the standard deviation is 0.65. The mean of 5-6 times is 2.00, and standard deviation is 1.00. The mean of everyday is 3.00, and the standard deviation is 0.00. In sum, the overall mean is 2.25 and the standard deviation is 0.92. Among the respondents who visited the BU Library, every day is the highest mean (Mean =

3.00 ± 0.00). It means who never visited library love e-book and it support creativity (Mean=3.67 ± 1.16).

4.5.18 Can the puzzle games in the games zone help you increase your sense of creativity?

According to Table A18 of Appendix G, most respondents choose "Neutral" (38.98%) with the "Gaming Zone", followed by respondents choose "Disagreed" (33.90%), and some respondents very disagreed (22.03%). Only a few respondents very agreed (3.39%) and agreed (1.69%).

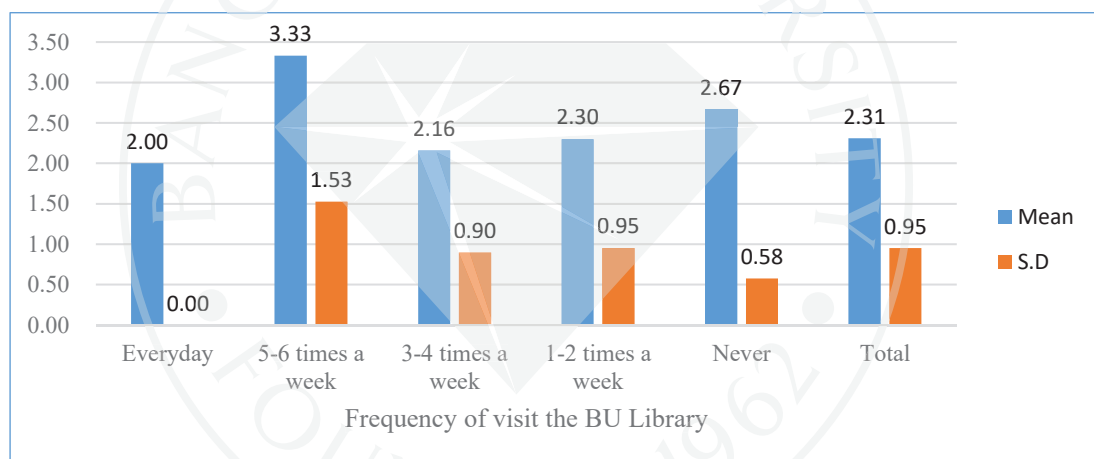


Figure 4.5.18: Can the Puzzle Games in the Games Zone Help You Increase Your Sense of Creativity?

The results in Figure 4.5.18 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.30, and the standard deviation is 0.95. The mean of 3-4 times is 2.16 and the standard deviation is 0.90. The mean of 5-6 times is 3.33, and standard deviation is 1.53. The mean of everyday is 2.00, and the standard deviation is 0.00. In sum, the overall mean is 2.31 and the standard deviation is 0.95. Among the respondents who visited the BU Library, 5-6 times a week is the highest mean

(Mean =  $3.33 \pm 1.53$ ). It means frequent users need more games and puzzle during using services.

4.5.19 Do educational videos and movies in the movie zone help your creative process?

According to Table A19 of Appendix G, most respondents disagreed (37.29%) and very disagreed (32.20%) with the "Movie Zone", followed by respondents chose "Neutral" (22.03%). Only a few respondents were agreed (6.78%), and very agreed (1.69%).

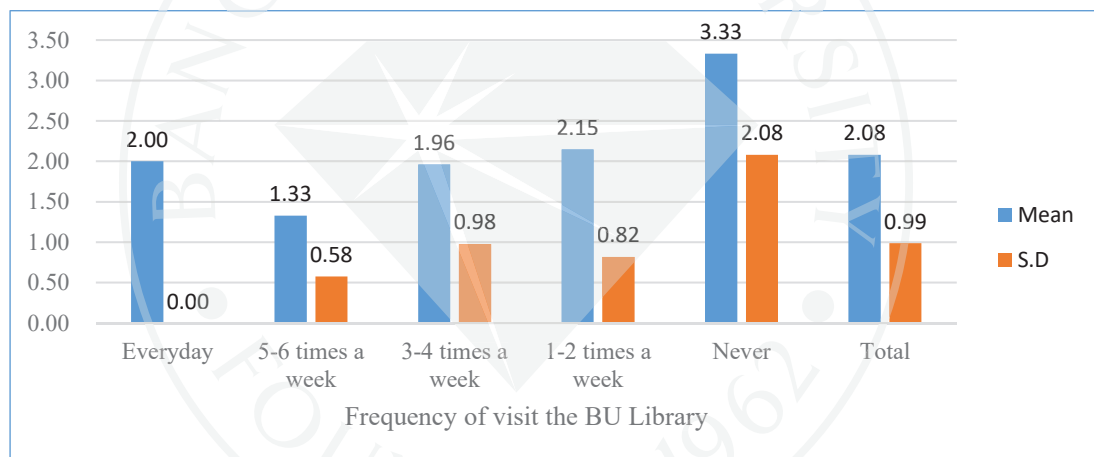


Figure 4.5.19: Do Movies in the Movie Zone Help Your Creative Process?

The results in Figure 4.5.19 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.15, and the standard deviation is 0.82. The mean of 3-4 times is 1.96 and the standard deviation is 0.98. The mean of 5-6 times is 1.33, and standard deviation is 0.58. The mean of everyday is 2.00, and the standard deviation is 0.00. In sum, the overall mean is 2.08 and the standard deviation is 0.99. Among the respondents who visited the BU Library, who never visited library has the highest mean (Mean =  $3.33 \pm 2.08$ ). It means who never visited library need more videos and

movies to promote more creative process.

#### 4.5.20 Can those music in the music room inspire your creative inspiration?

According to Table A20 of Appendix G, most respondents disagreed (40.68%) and very disagreed (27.12%) with the "Music Room", followed by respondents chose "Neutral" (28.81%). Only a few respondents were agreed (3.39%). No one chose "Very agreed".

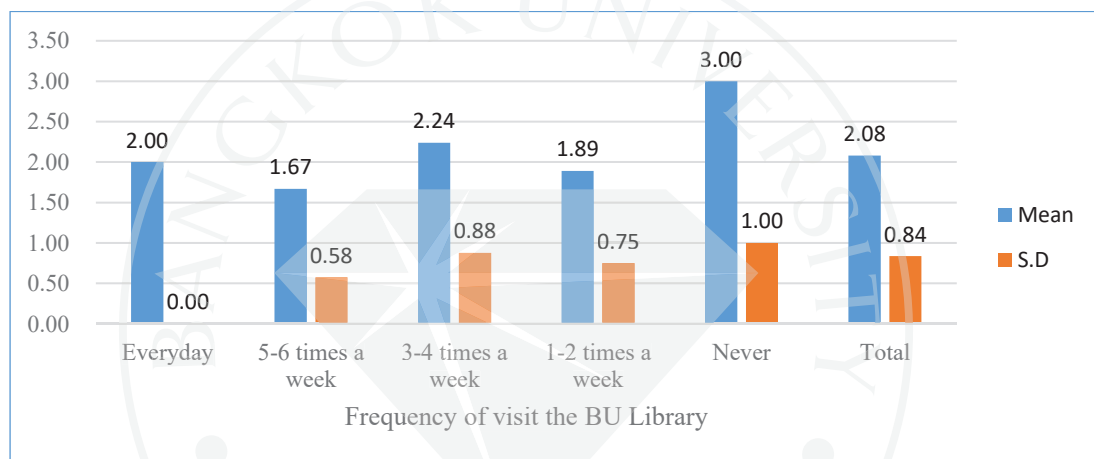


Figure 4.5.20: Can Music in Music Room Inspire Your Creative Inspiration?

The results in Figure 4.5.20 show that the mean of the frequency of visiting the BU library (1-2 times) is 1.89, and the standard deviation is 0.75. The mean of 3-4 times is 2.24 and the standard deviation is 0.88. The mean of 5-6 times is 1.68, and standard deviation is 0.58. The mean of everyday is 2.00, and the standard deviation is 0.00. In sum, the overall mean is 2.08 and the standard deviation is 0.84. Among the respondents who visited the BU Library, who never visited library has the highest mean (Mean = 3.00 ± 1.00). It means that who never visited library needs more music rooms to attract them to creative space in library. The traditional library media is not their interest.

4.5.21 Can the size and layout of the demo hall of the BU Library meet support your creative tasks?

According to Table A21 of Appendix G, most respondents chose "Neutral" (40.68%) with the "Demo Hall", followed by respondents chose "Disagreed" (32.20%), and some respondents very disagreed (22.03%). Only a few respondents agreed (5.08%). No one chose "Very agreed".

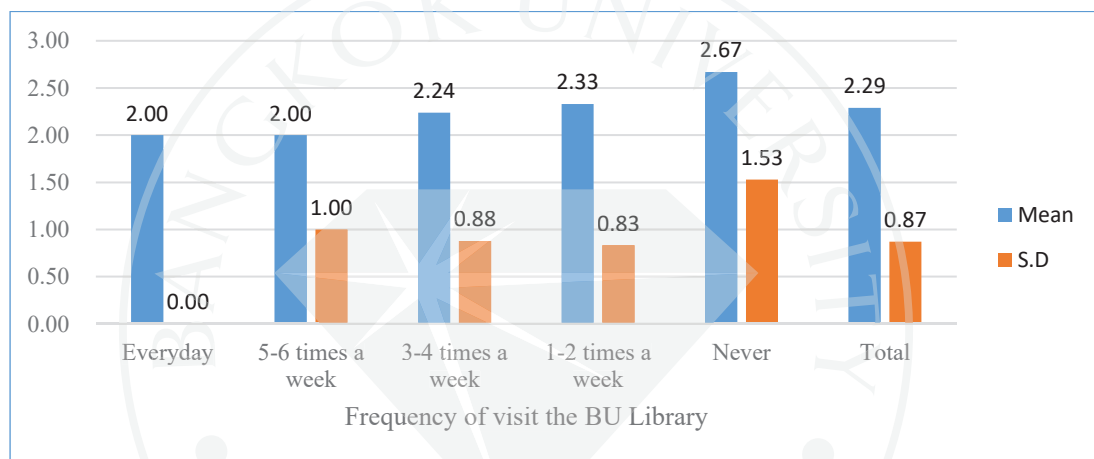


Figure 4.5.21: Can the Size and Layout of the Demo Hall of The BU Library Meet Support Your Creative Tasks?

The results in Figure 4.5.21 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.33, and the standard deviation is 0.83. The mean of 3-4 times is 2.24 and the standard deviation is 0.88. The mean of 5-6 times is 2.00, and standard deviation is 1.00. The mean of everyday is 2.00, and the standard deviation is 0.00. In sum, the overall mean is 2.29 and the standard deviation is 0.87. Among the respondents who visited the BU Library, who never visited library has the highest mean (Mean = 2.33 ± 0.83). It means if the hall and layout is larger, they might more attracted to use library as creative spaces over than outside library.

4.5.22 Can the design of the exhibition zone of the BU Library simplify your creative process?

According to Table A22 of Appendix G, most respondents choose "Neutral" (37.29%) with the "Exhibition Zone", followed by respondents chose "Disagreed" (35.09%), and some respondents very disagreed (22.03%). Only a few respondents agreed (1.69%) and very agreed (3.39%).

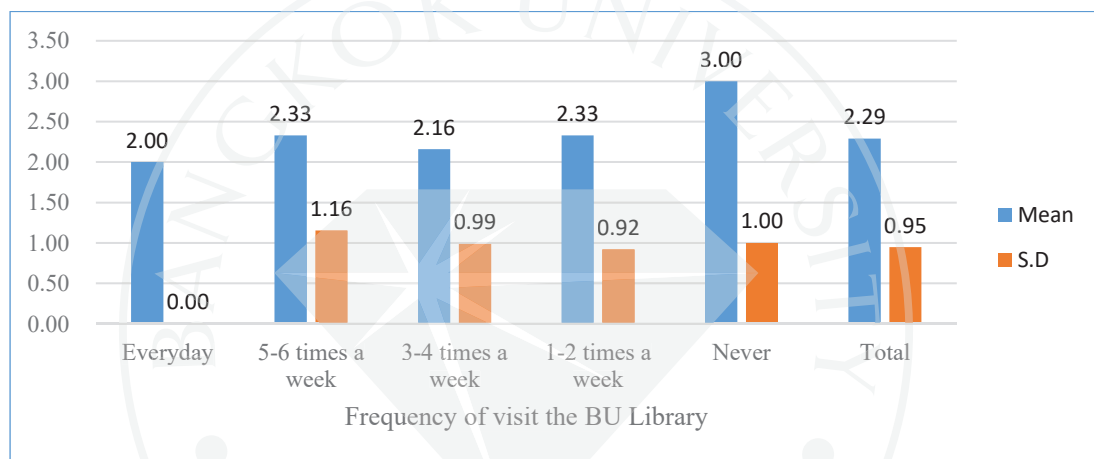


Figure 4.5.22: Can the Design of the Exhibition Zone of the BU Library Simplify Your Creative Process?

The results in Figure 4.5.22 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.33, and the standard deviation is 0.92. The mean of 3-4 times is 2.16 and the standard deviation is 0.99. The mean of 5-6 times is 2.33, and standard deviation is 1.16. The mean of everyday is 2.00, and the standard deviation is 0.00. In sum, the overall mean is 2.29 and the standard deviation is 0.95. Among the respondents who visited the BU Library, who never visited library has the highest mean (Mean = 3.00 ± 1.00). It means that if there is improvement of design of the exhibition zone in Rangsit campus, then, who never visited library will be attractive.



#### 4.5.23 Will the soundproofing and layout of the discussion room of the BU Library affect your creative mood?

According to Table A23 of Appendix G, most respondents disagreed (38.98%) with the "Discussion Room", followed by respondents chose "Neutral" (32.20%) and "Very disagreed" (22.03%). Only a few respondents were agreed (5.08%), and very agreed (1.69%).

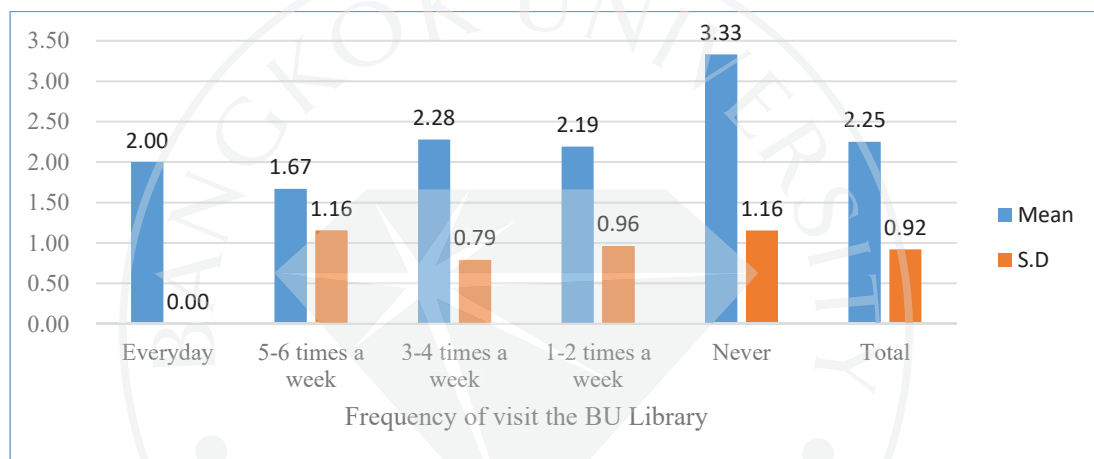


Figure 4.5.23: Will the Soundproofing and Layout of the Discussion Room of the BU Library Affect Your Creative Mood?

The results in Figure 4.5.23 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.19, and the standard deviation is 0.96. The mean of 3-4 times is 2.28 and the standard deviation is 0.79. The mean of 5-6 times is 1.67, and standard deviation is 1.16. The mean of everyday is 2.00, and the standard deviation is 0.00. In sum, the overall mean is 2.25 and the standard deviation is 0.92.

Respondents who never visited library has the highest mean (Mean =  $3.33 \pm 1.16$ ). It means if Rangsit campus can control the noise with soundproofing and layout of the discussion room, then the library can attract more students to use creative spaces.

#### 4.5.24 Will the colors and design shapes used in the creative space of the BU Library affect your creative mood?

According to Table A24 of Appendix G, most respondents disagreed (38.98%) with the "Space Color & Modeling", followed by respondents chose "Neutral" (35.59%) and "Very disagreed" (25.42%). No one chose "agreed" and no one chose "Very agreed".

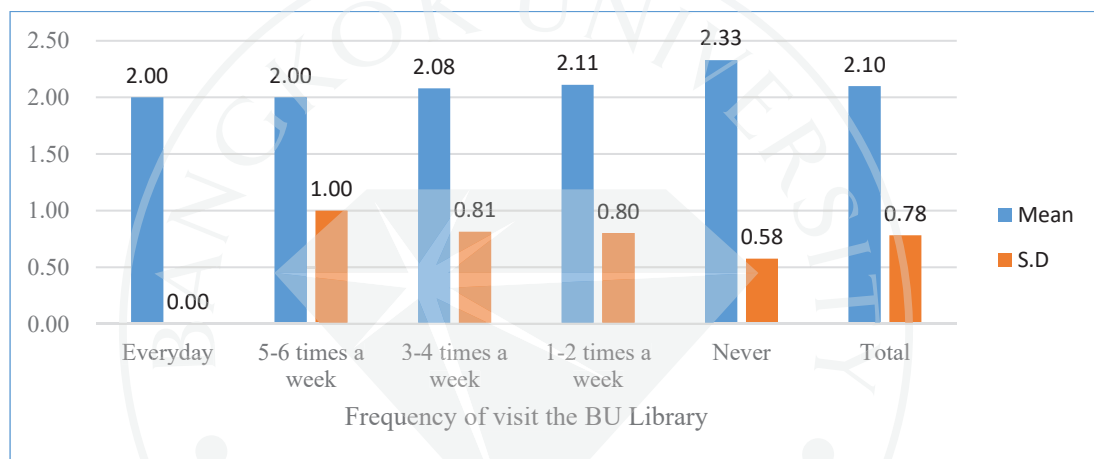


Figure 4.5.24: Will the Colors and Design Shapes Used in the Creative Space of the BU Library Affect Your Creative Mood?

The results in Figure 4.5.24 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.11, and the standard deviation is 0.80. The mean of 3-4 times is 2.08 and the standard deviation is 0.81. The mean of 5-6 times is 2.00, and standard deviation is 1.00. The mean of everyday is 2.00, and the standard deviation is 0.00. In sum, the overall mean is 2.10 and the standard deviation is 0.78. Among the respondents who visited the BU Library, who never visited library has the highest mean (Mean =  $2.33 \pm 0.58$ ). It means if Rangsit campus use the right colors and design shapes for creative space of the BU Library can promote the creativity of the

learners.

4.5.25 Will the size and comfort of the creative space in the BU Library affect your creative behavior?

According to Table A25 of Appendix G, most respondents disagreed (42.37%) with the "Space Size & Comfort", followed by respondents chose "Neutral" (28.81%) and "Very disagreed" (25.42%). Only a few respondents were agreed (3.39%). No one chose "Very agreed".

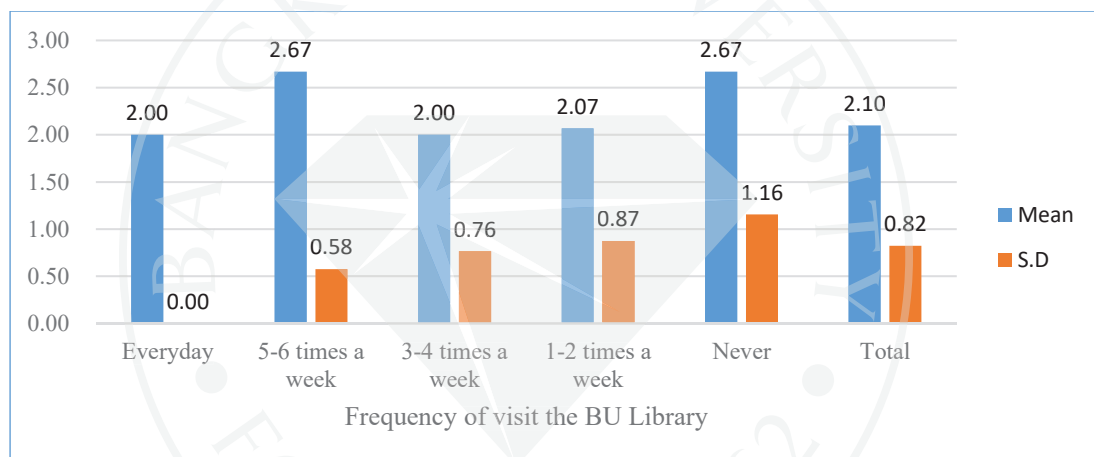


Figure 4.5.25: Will the Size and Comfort of the Creative Space in the BU Library Affect Your Creative Behavior?

The results in Figure 4.5.25 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.07, and the standard deviation is 0.87. The mean of 3-4 times is 2.00 and the standard deviation is 0.76. The mean of 5-6 times is 2.67, and standard deviation is 0.58. The mean of everyday is 2.00, and the standard deviation is 0.00. In sum, the overall mean is 1.92 and the standard deviation is 0.79.

Respondents who 5-6 times a week is the highest mean as well as who never used library at all (Mean =  $2.67 \pm 1.16$ ). It means if Rangsit campus improve size and

comfort of the creative space, then it can promote the creativity of the learners.

4.5.26 Will the bookshelves and books placement of the BU Library affect your creative process?

According to Table A26 of Appendix G, most respondents chose "Neutral" (37.29%) with the "Bookshelves & Books Placement", followed by respondents chose "Very Disagreed" (32.20%), and some respondents disagreed (22.03%). Only a few respondents agreed (6.78%) and very agreed (1.69%).

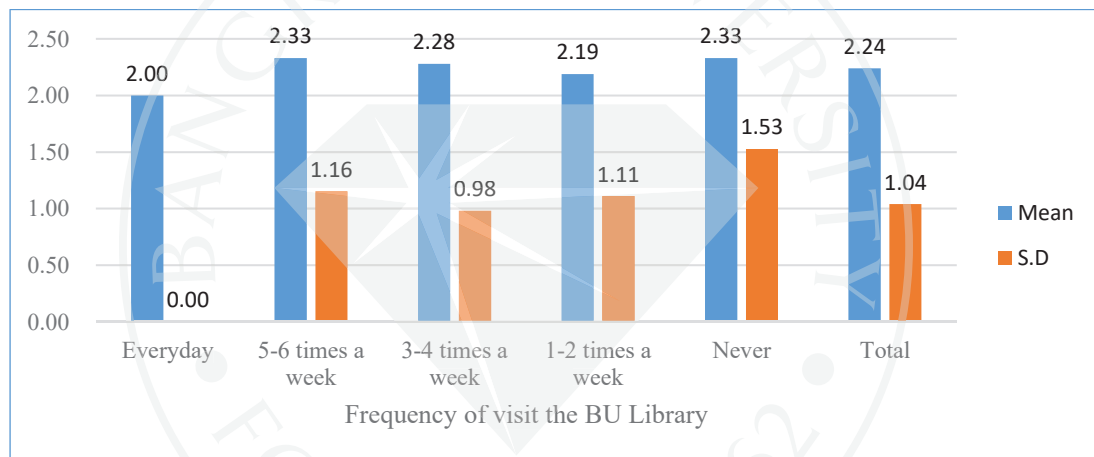


Figure 4.5.26: Will the Bookshelves and Books Placement of the BU Library Affect Your Creative Process?

The results in Figure 4.5.26 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.19, and the standard deviation is 1.11. The mean of 3-4 times is 2.28 and the standard deviation is 0.98. The mean of 5-6 times is 2.33, and standard deviation is 1.16. The mean of everyday is 2.00, and the standard deviation is 0.00. In sum, the overall mean is 2.24 and the standard deviation is 1.04.

Respondents who 5-6 times a week and never used library are the highest mean. It

means if Rangsit campus improve the bookshelves and books placement of the BU Library, then it can promote the creativity of the learners.

#### 4.5.27 The more potted plants in BU Library, the better your creative mood?

According to Table A27 of Appendix G, most respondents disagreed (42.37%) and very disagreed (20.34%) with the "Potted Plants", followed by respondents chose "Neutral" (28.81%). Only a few respondents were agreed (5.08%) and very agreed (3.39%).

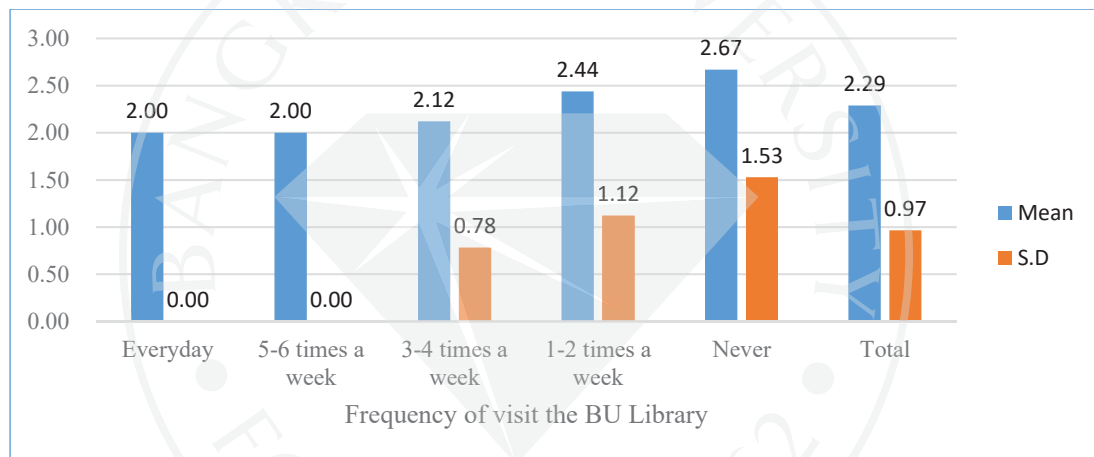


Figure 4.5.27: The More Potted Plants, the Better Your Creative Mood?

The results in Figure 4.5.27 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.44, and the standard deviation is 1.12. The mean of 3-4 times is 2.12 and the standard deviation is 0.78. The mean of 5-6 times is 2.00, and standard deviation is 1.00. The mean of everyday is 2.00, and the standard deviation is 0.00. In sum, the overall mean is 2.29 and the standard deviation is 0.97. Among the respondents who visited the BU Library, who never visited library has the highest mean (Mean =  $2.67 \pm 1.53$ ). It means if Rangsit campus improve more potted plants of the BU Library, then it can promote the creativity of the learners.

4.5.28 If the BU library uses glass curtain walls, can it better meet your creative needs?

According to Table A28 of Appendix G, most respondents chose "Disagreed" (35.59%) with the "Glass Curtain Wall", followed by respondents chose "Neutral" (33.90%), and some respondents very disagreed (20.34%). Only a few respondents agreed (8.47%) and very agreed (1.69%).

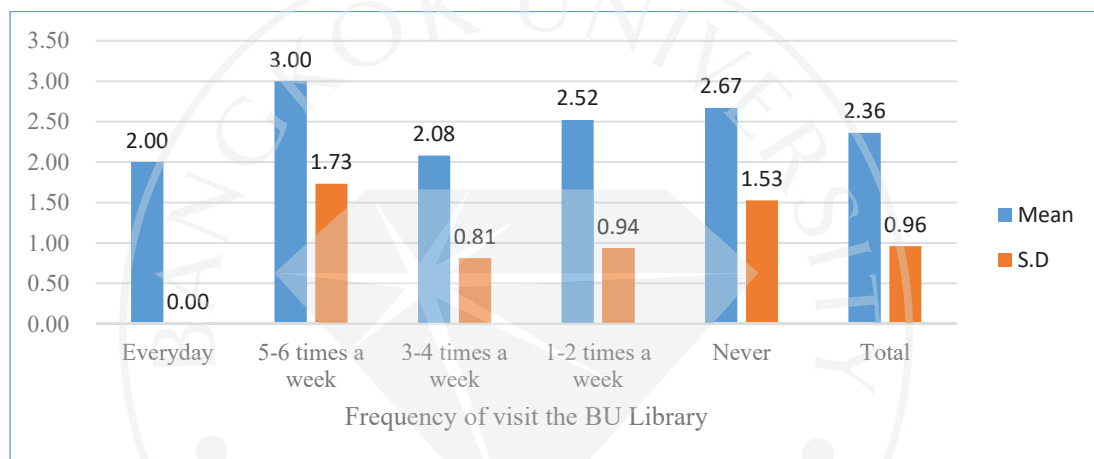


Figure 4.5.28: If the BU Library Uses Glass Curtain Walls, Can It Better Meet Your Creative Needs?

The results in Figure 4.5.28 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.52, and the standard deviation is 0.94. The mean of 3-4 times is 2.08 and the standard deviation is 0.81. The mean of 5-6 times is 3.00, and standard deviation is 1.73. The mean of everyday is 2.00, and the standard deviation is 0.00. In sum, the overall mean is 2.36 and the standard deviation is 0.96. Among the respondents who visited the BU Library, 5-6 times a week is the highest mean (Mean =  $3.00 \pm 1.73$ ). It means frequent users preferred the uses glass curtain walls, which make creative atmosphere.

4.5.29 Does the sound insulation effect of the BU library meet your creative requirements?

According to Table A29 of Appendix G, most respondents chose "Disagreed" (37.29%) with the "Acoustic Panels", followed by respondents chose "Neutral" (33.90%), and some respondents very disagreed (22.03%). Only a few respondents agreed (5.08%) and very agreed (1.69%).

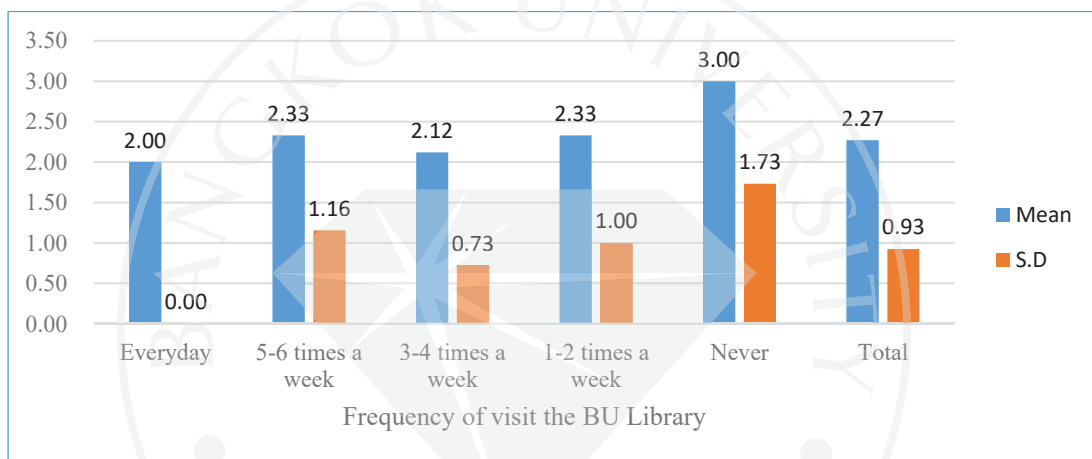


Figure 4.5.29: Does the Sound Insulation Effect of the BU Library Meet Your Creative Requirements?

The results in Figure 4.5.29 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.33, and the standard deviation is 1.00. The mean of 3-4 times is 2.12 and the standard deviation is 0.73. The mean of 5-6 times is 2.33, and standard deviation is 1.16. The mean of everyday is 1.00, and the standard deviation is 0.00. In sum, the overall mean is 2.27 and the standard deviation is 0.93. Among the respondents who visited the BU Library, who never visited library has the highest mean (Mean = 3.00 ± 1.73). If the library improves "Acoustic Panels", the learner can be more creative at library.

4.5.30 Do you think the tone of the wall painting in the BU library can inspire more creative ideas?

According to Table A30 of Appendix G, most respondents chose "Disagreed" (33.90%) with the "Wall Painting", followed by respondents chose "Neutral" (27.12%), and some respondents very disagreed (25.42%). Only a few respondents agreed (10.17%) and very agreed (3.39%).

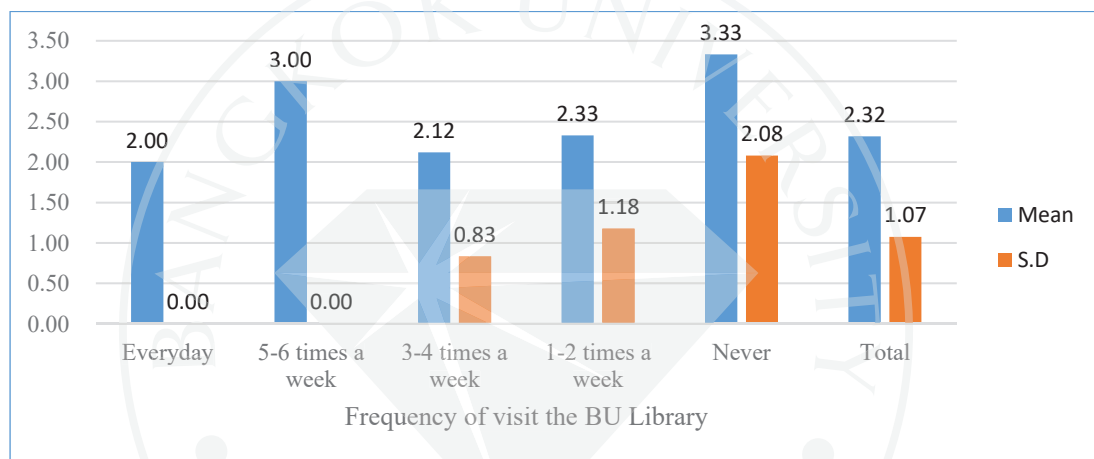


Figure 4.5.30: Do You Think the Tone of the Wall Painting in the BU Library Can Inspire More Creative Ideas?

The results in Figure 4.5.30 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.33, and the standard deviation is 1.18. The mean of 3-4 times is 2.12 and the standard deviation is 0.83. The mean of 5-6 times is 3.00, and standard deviation is 0.00. The mean of everyday is 2.00, and the standard deviation is 0.00. In sum, the overall mean is 1.92 and the standard deviation is 0.79. Among the respondents who visited the BU Library, who never used library has the highest mean (Mean = 3.33 ± 2.08). It means who never visited library has the highest mean (Mean = 3.00 ± 1.73). If the library improves "tone of the wall painting in the BU



library", the learner can be more creative at library.

4.5.31 Do you think the display wall of the BU library can improve your creative ability?

According to Table A31 of Appendix G, most respondents chose "Disagreed" (40.68%) with the "Display Wall", followed by respondents chose "Neutral" (37.29%), and some respondents very disagreed (15.25%). Only a few respondents agreed (3.39%) and very agreed (3.39%).

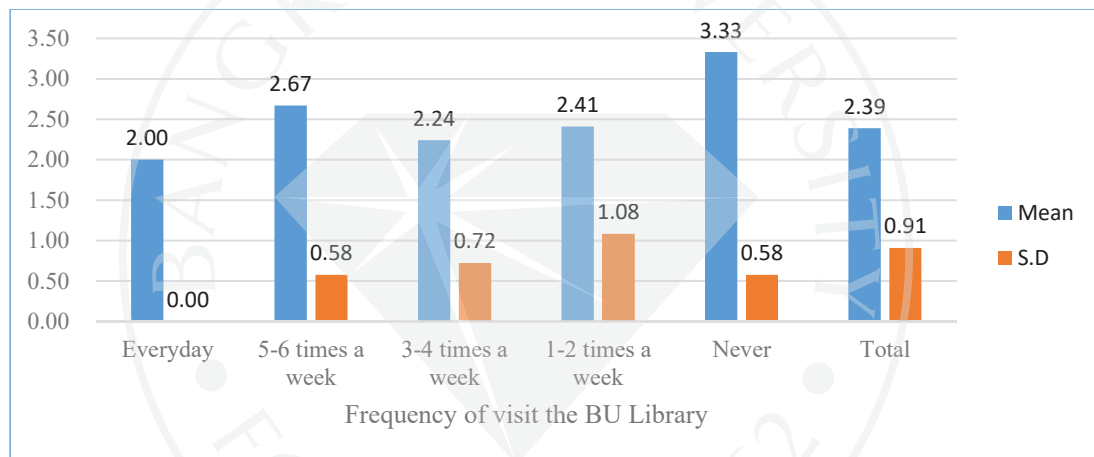


Figure 4.5.31: Do You Think the Display Wall of the BU Library Can Improve Your Creative Ability?

The results in Figure 4.5.31 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.41, and the standard deviation is 1.08. The mean of 3-4 times is 2.24 and the standard deviation is 0.72. The mean of 5-6 times is 2.67, and standard deviation is 0.58. The mean of everyday is 2.00, and the standard deviation is 0.00. In sum, the overall mean is 2.39 and the standard deviation is 0.91. Among the respondents who visited the BU Library, who never visit library has the highest mean (Mean = 3.33 ± 0.58). It means who never visited library can be attracted more

if the display wall of the BU library is improved, their creativity level will be increased.

#### 4.5.32 Can the library's creative practice room improve your creative thinking?

According to Table A32 of Appendix G, most respondents chose "Disagreed" (44.07%) with the "Creative Practice Room", followed by respondents chose "Neutral" (28.81%), and some respondents very disagreed (22.03%). Only a few respondents agreed (5.08%). No one chose "Very agreed".

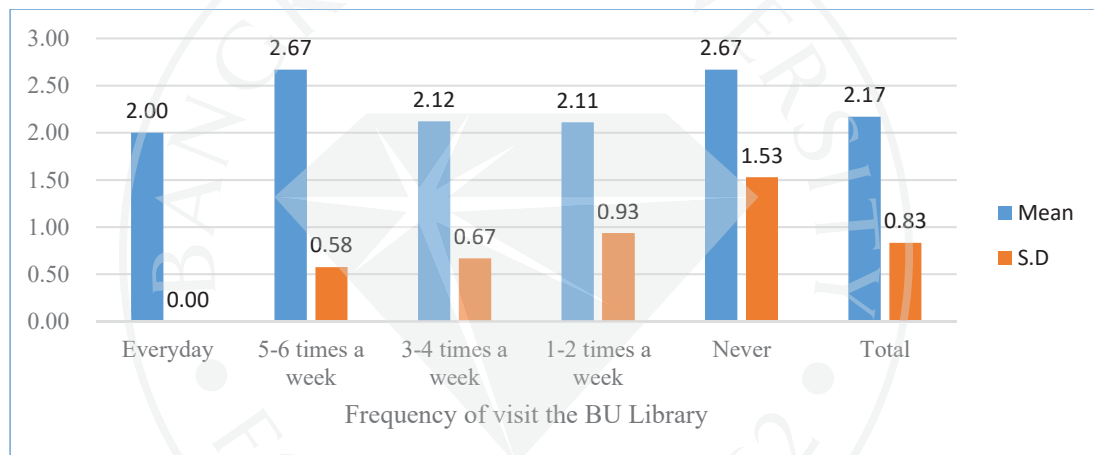


Figure 4.5.32: Can a Creative Practice Room Improve Your Creative Thinking?

The results in Figure 4.5.32 show that the mean of the frequency of visiting the BU library (1-2 times) is 2.11, and the standard deviation is 0.93. The mean of 3-4 times is 2.12 and the standard deviation is 0.67. The mean of 5-6 times is 2.67, and standard deviation is 0.58. The mean of everyday is 2.00, and the standard deviation is 0.00. In sum, the overall mean is 2.17 and the standard deviation is 0.83. Among the respondents who visited the BU Library, 5-6 times a week is the highest mean (Mean =  $2.67 \pm 0.58$ ), as well as who never visited library (Mean =  $2.67 \pm 1.53$ ). It means both frequent users and whom rarely visit also need creative practice room to

perform their group tasks.

#### 4.5.33 Are you agree with the overall creative space of the BU Library?

According to Table A33 of Appendix G, most respondents expressed disagreement (54.24%) and very disagreement (22.03%) with the "Overall creative space", followed by respondents chose "Neutral" (23.73%). No one chose "Agreed" and "Very agreed".

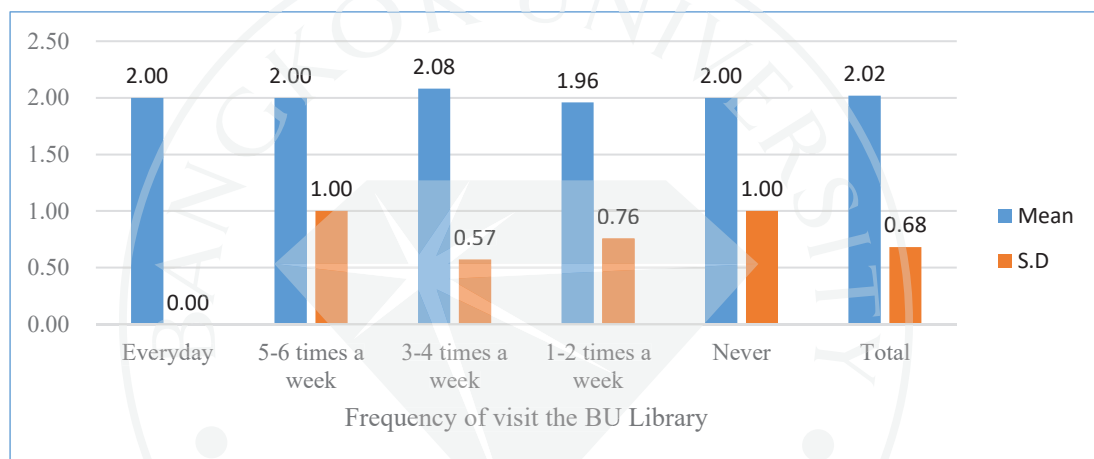


Figure 4.5.33: Are You Agree with the Overall Design Creative Space of the BU Library?

The results in Figure 4.5.33 show that the mean of the frequency of visiting the BU library (1-2 times) is 1.96, and the standard deviation is 0.76. The mean of 3-4 times is 2.08 and the standard deviation is 0.57. The mean of 5-6 times is 2.00, and standard deviation is 1.00. The mean of everyday is 2.00, and the standard deviation is 0.00.

In sum, the overall mean is 2.02 and the standard deviation is 0.68. Among the

respondents who visited the BU Library, 3-4 times a week is the highest mean (Mean =  $2.08 \pm 0.57$ ). But on average of all groups of users are disagreed with existing library.



## CHAPTER 5

### CONCLUSION & DISCUSSION

This chapter is composed of the summary of research and discussion and IS research implication and recommendations for future research.

#### 5.1 Summary of Research

This IS study it is found that overall agreement of Bangkok university's library to existing library are lower than average. In order to develop creative spaces for international colleges both The Bangkok University's library for a city campus.

- 1) There is a great demand for creative forums, and most students hope to improve their creativity and have own idols from good creative speakers.
- 2) The exhibition and display in the exhibition hall can improve the creativity of users, such as wall painting, mural painting and art exhibition. They allow users to be influenced by art and get more creative ideas.
- 3) Group discussion and exchange of ideas are the items most selected by users, so more discussion rooms in the creative space will make the BU library more popular with users.
- 4) The public reading area with larger area and wider view is favored by many users.
- 5) As for the design and architecture and atmosphere are varied by group of students, but for the average score of lighting and e-book resources are critical factors that encourage creative behaviors and creative learning for students.
- 6) The university has to solve core services operations. If the library's opening is extended in midnight time that students think it will help improve their

creativity, for Rangsit campus also think opening on weekend suits to students' life style.

- 7) Whether in the cafe, in the leisure zone, or in the public reading space, it should be soundproof and free from too much noise.
- 8) If the lighting, color, furniture, creative exhibition area and group discussion room of the overall creative space inside the library are more creative, the user agreement will be higher.
- 9) The highest scores of existing libraries which not required improvement are air conditioner and Wi-Fi and librarian and coffee bars that already pretty good for users' creative spaces.

In conclusion, all 9 finding and summary would guide us how to develop existing library to be creative space library.

However, overall users disagreed of existing library when collected 59 questionnaires in Rangsit campus, but there is variation among the types of users in Rangsit's campus library among frequent users VS who never and rarely visited library. However, when the data are categorized by type of users by frequency of their visit. There is more detail for frequent users by follows:

- 1) All groups not that much concern on comfort of tables, chairs and sofas will affect creative mood.
- 2) The frequent users 5-6 times a week and who never visited library is the highest agree on slightly need of power outlets supply
- 3) Everyday user moderate need for a water dispenser or drinking room, will your creative mood be better.

- 4) Who never used might need coffee room and corners to build their creative mood be better, and can attract them to use library as creative space.
- 5) Everyday users need day time opening.
- 6) Frequent users need night time opening to improve your creative thinking
- 7) Everyday users not that concern on weekend usage because they use library by daily as work station but 5-6 times a week users think open on weekend days support their creative tasks.
- 8) Who never visited need more computer for their usage in library.
- 9) Who never visited library preferred free Wi-Fi to attract them to use library.
- 10) Who never visited library preferred the printer equipment is the highest mean. It can imply they preferred printers to attract them to use library.
- 11) The respondents who visited the BU Library, who never visited library preferred the automated Book Borrowing & Returning System It can imply they preferred automated Book Borrowing & Returning System to attract them to use library.
- 12) Everyday users need indoor air circulation make your creative mood better.
- 13) Everyday users need comfortable indoor temperature and humidity which affect your creative behavior.
- 14) Everyday users need more quiet places to promote their creative thinking.
- 15) Every day users concern most a lot about voice control. Despite never visited library but the students also agreed that noise is obstacles of creativity.
- 16) Who never visited library love e-book and it support creativity.
- 17) The frequent users need more games and puzzle during using services etc. as per in detail of chapter 4.

## 5.2 Discussion and Interpretation of Findings

From our main 5 parts of research findings comparing to other previous researchers and articles in Chapter 2 it's found as follows:

The university, especially in City Campus has to solve core services operations, for example, the opening hours of the library can be 24 hours. The findings are consistent with the previous practice of Harvard university's life style of students (Fishburn, 2008) that innovation would come at night time and weekend day the services hours would promote and support creativity level. If Bangkok university open 8am-4pm, the resources are not fit to users' life styles.

As for the design and architecture and atmosphere are varied by group of students, the everyday and frequent users think all improve aspect mentioned in research can support their creativity, but for the average score of lighting and e-book resources are critical factors that encourage creative behaviors and creative learning for students. The findings are consistent with Abbas (2006) that color and floor plan lay out and wall painting effect to moods of creative of learners. If Bangkok University use Earth tone color, and design with curve design wall, roof, desk. The users will feel more creative and perform creative task easier than traditional design.

For the functionality of the furniture of library should have stairs for laptop and or small table not only sofa. The city campus need noise control during the walk path. The finding is consistent with best practice of IKEA furniture or William and Sannwald (2018) that designed the right proposition and length of furniture fit to students reading and working posture would promote long period of reading.

The creative forum is on high demand and most of students want to improve themselves to be more creative and have own idols from good creative speakers. The



finding is consistent with the internal BU communications and activities and university values to promote creative society (Bangkok University, 2020).

### **5.3 Significance of the Study**

In order to improve the creative space environment of the library, this IS conducted an online questionnaire survey based on in-depth interviews with representative research objects, exploratory analysis of user agreement of the BU library creative space, and obtained many findings, for example, users have a high degree of agreement on creative forums, creative displays and group creative discussions. Based on these findings, corresponding countermeasures and suggestions are put forward. It provides a basis for redesigning the creative space of the BU library.

### **5.4 Recommendations for Further Research**

The research recommendations are as follows:

- 1) In order to develop creative space, the art design and architect design are crucial for mood and tones. The designer and interior must test the users' preferences with picture and photo to choose first.
- 2) Exhibition users' creative design, organize creative competitions and small lectures to create an interactive atmosphere for discussion, which can attract more users to participate in creative design.
- 3) Provide creative exhibition boards and creative exhibition walls in the creative exhibition hall, and integrate with interior decoration, green potted plants and furniture. And provide some VR in the exhibition hall to allow users to experience and form an experiential creative exchanges.

- 4) The freely movable and combined tables, chairs and sofas in the creative space will be very popular with users. Place markers, whiteboards, etc. in the discussion room, and users hope that the discussion room can support aloud creative behaviors such as reading aloud, team communication.
- 5) The public reading area is arranged close to the glass curtain wall, which is very suitable for the user's choice, and has good natural ventilation and lighting.
- 6) The colors of the creative space can be based on the warm colors preferred by the user, with white lighting.
- 7) The lighting and furniture need some samples to test using by 4-10 hours' study to check its comfort ability.
- 8) In order to better serve creative space users, it is recommended to open the BU library 24 hours and provide enough computers for users to search for e-books and materials.
- 9) Each creative space area is separated by components such as partition walls and sound insulation panels, and the city campus need noise control during the walk path.

The future researches should add on more research design by follows:

- 1) Different major i.e. IT and BBA are required to be more another 120 samples to measure the different of usage purpose of library.
- 2) Should get more nationalities involved as research participants.
- 3) Should compare among City and Rangsit campus of Bangkok University.
- 4) Should compare among every day user, 4-5 times a week frequent users.

## BIBLIOGRAPHY

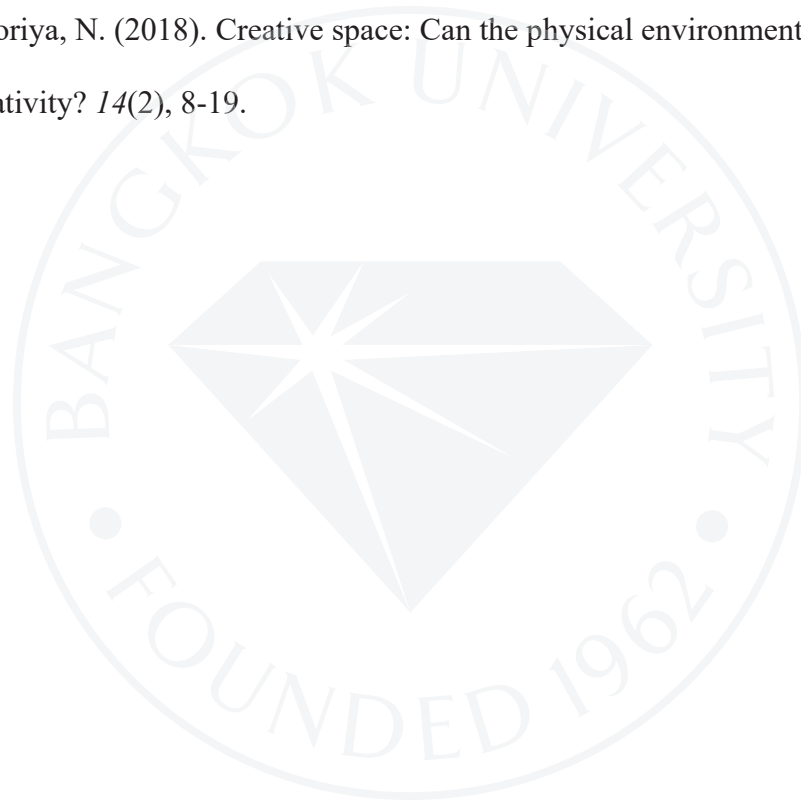
- Abbas. (2006). Psychological effects of light and color on space users. *School of Electrical and Computer Engineering, RMIT University*, 21(4), 3-9.
- Amlinsky, L. (2016). Library building space design for current information environment. *Scientific and Technical Libraries*, 3(2), 83-88.
- Aremu, A.S., Omoniyi, J.O. & Saka, T. (2015). Indoor noise in academic libraries: A case study of university of Ilorin main library, Nigeria. *Afr. J. Lib*, 21(6), 3-7.
- Avdikos, V., & Kalogeresis, A. (2017). Socio-economic profile and working conditions of freelancers in co-working spaces and work collectives: Evidence from the design sector in Greece, *12*(3), 18-19.
- Bangkok University. (2019). Bangkok University ready to cope with the digital world. Creative learning thinks ahead of the future. Retrieved from <https://www.bu.ac.th/th/bu-magazine/view/335/> [Accessed Jan. 8, 2020].
- Bangkok University. (2019). Ten outstanding features focusing on creating quality students at Bangkok University. Retrieved from <https://www.bu.ac.th/th/bu-magazine/view/352/> [Accessed Jan. 8, 2020].
- Bangkok University. (n.d.). Library Orientation. Retrieved from <http://library.bu.ac.th/index.php/en/about-us/library> [Accessed Jan. 10, 2020].
- Balakrishnan, B.K.P.D., Muthaly, S. & Leenders, M. (2016). Insights from Co-working spaces as unique service organizations: The role of physical and social elements, *32*(5), 21-29.
- Buchel & Kipp. (2018). Investigation of library communities on Flickr, *3*, 15-21.

- Balocco, C. & Calzolari, R. (2008). Natural light design for an ancient building: A case study. *Journal of Cultural Heritage*, Retrieved from <https://doi.org/10.1016/j.culher.2007.07.007>
- Cheong, K.W. & Riffat, S.B. (1993). Ventilation and air quality in a library building. *Building Services Engineering Research and Technology*, 14(2), 3-12.
- Cochrane, P.A. (2013). Knowledge space revisited: Challenges for twenty-first century library and information science researchers. *Library Trends*, 62(2), 34-35.
- Cohen, A. & Cohen, E. (1980). Designing and space planning for libraries: A behavioral guide. *Designing and Space Planning for Libraries*, 87(2), 26-32.
- Edwards, B. & Fisher, B. (2009). Libraries and learning resource centers. *The Architects' Handbook*, 56(5), 253-260.
- Fishburn, D. (2008). Governance at Harvard University Library. *Digital Convergence-Libraries of the Future*, 13(2), 25-27.
- Haggag, H., Amany, H. & Bakr, D. (2013). The psychological feeling towards the art work, 54(5), 30-97.
- Liu, H. & Chen, F. (2015). The study on color design of the interior space in the high school library. Retrieved from <https://download.atlantis-press.com/article/25845404.pdf>
- Franks, J.E. & Asher, D.C. (2014). Noise management in twenty-first century libraries: Case studies of four U.S. academic institutions. *New Review of Academic Librarianship*, 15(2), 8-11.

- Lange, J., Miller-Nesbitt, A. & Severson, S. (2016). Reducing noise in the academic library: The effectiveness of installing noise meters. *Library Hi Tech*, 93(2), 2-15.
- Johnson, E. (2016). The right place at the right time: Creative spaces in libraries, Retrieved from Doi:10.1108/S0732-067120160000036001
- Mahraj, K. (2010). Using information expertise to enhance massive open online courses. *Public Services Quarterly*, 78(4), 112-127.
- Gander, K. (2016). How architecture uses space, light and material to affect your mood. Retrieved from <https://www.independent.co.uk/life-style/design/how-architecture-uses-space-light-and-material-to-affect-your-mood-american-institute-architects-a6985986.html> [Accessed Jan. 12, 2020].
- Karaseva, L.V. (2019). Traditions and innovations in lighting of libraries. *IOP Conference Series: Materials Science and Engineering*, 42(3), 12-34.
- Laing, A. (2013), Work and workplaces in the digital city. *Centre for Urban Real Estate, Columbia University, Columbia*, 36(6), 68-117.
- Massis, B.E. (2012). In the library: Quiet space endures. *New Library World*, 5-13.
- Merkel, J. (2015). Co-working in the city. *Ephemera: Theory & Politics in Organization*, 18(3), 15-21.
- Millard, P. (2019). Modern library equipment. *SERBIULA*, 91(5), 13-56.
- Ketchell, M. (2015). Turning a page: Downsizing the campus book collections. Retrieved from <http://theconversation.com/turning-a-page-downsizing-the-campus-book-collections-45808> [Accessed Jan. 5, 2020].

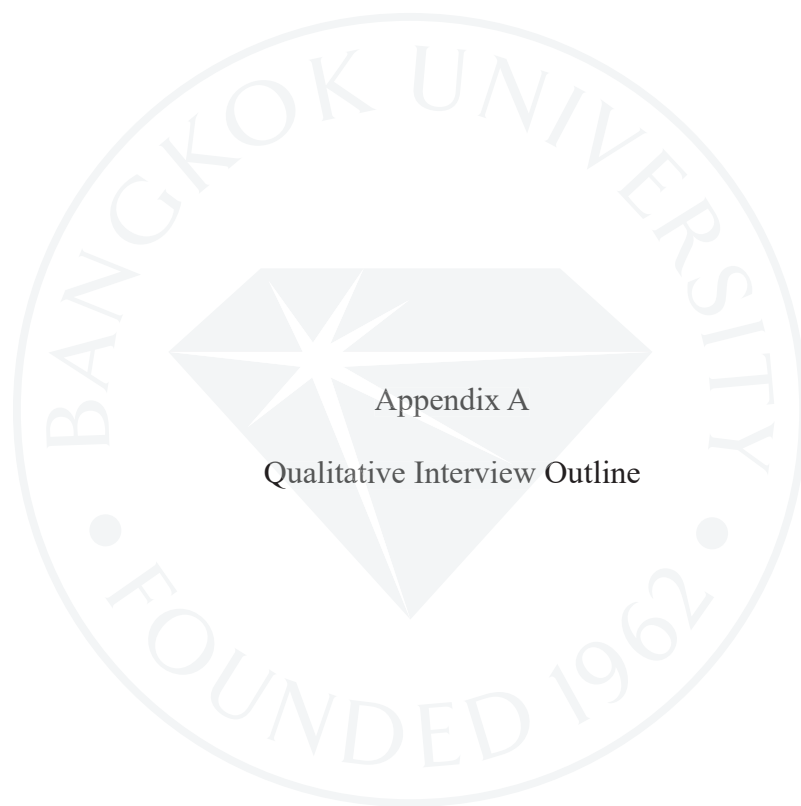
- Saengkaew, N. (2018). The adaptation of usage area within library a case study of library building: Rajamangala University of Technology Thanyaburi. Retrieved from <http://dspace.bu.ac.th/handle/123456789/3380>.
- Paul Martin. (2010). *Making space for creativity*. UK: Creativity Center, University of Brighton, 5(2), 89-102.
- Pluchak, T. (2014). Innovations in scholarly communication: The Library Landscape, 17(2), 23-30.
- Inthara, R. (2016). The assessment of fine art students' agreement with the use of The Surut osathanugrah Library building, Bangkok University. Retrieved from <http://dspace.bu.ac.th/handle/123456789/1943>.
- Rus, A. & Orel, M. (2015). Co-working: A community of work. *Teorija in Praksa*, 8, 5-16.
- Spinuzzi, C. (2012). Working alone together: Co-working as emergent collaborative activity. *Journal of Business and Technical Communication*, 26(4), 6-9.
- Sykes, J. (2020). Choosing library furniture, 15(2), 12-17.
- Tay, A. (2016). "Sensory" in library spaces at SMU Libraries. *Singapore Journal of Library and Information Management*, 45. 61-73.
- Vander Hart, R.J. (2014). A review of "The Transformed Library: E-Books, Expertise, and Evolution". *Journal of Web Librarianship*, 23(3), 8-19.
- Velmurugan, S. (2019). Open libraries: Role and functions. Retrieved from [https://www.researchgate.net/publication/336511822\\_Open\\_Libraries\\_Role\\_and\\_Functions](https://www.researchgate.net/publication/336511822_Open_Libraries_Role_and_Functions)
- WallStreetMojo. (2016). Five point Likert Scale. Retrieved from <https://www.wallstreetmojo.com/likert-scale/> [Accessed Dec. 28, 2019].

- Wang, Y. & Wei, Y. (2019). Research on library functional layout based on intelligent occupying system. *Journal of Physics: Conference Series*, 17, 2-9.
- Webb, K. (2018). Defining library space and service models for library creative Spaces, *17(2)*, 3-7.
- Sannwald, W.W. (2009). Checklist of library building design considerations. *American: ALA Editions*, 17(2), 6-19.
- Wijesooriya, N. (2018). Creative space: Can the physical environment impact creativity? *14(2)*, 8-19.









Appendix A

Qualitative Interview Outline



**Master in  
Business Innovation**



THIS INTERVIEW QUESTIONS ARE A PART OF INDEPENDENT STUDY  
EXPLORATORY ANALYSIS OF BU LIBRARY REDESIGN TO BECOME A  
CREATIVE SPACE. 2020 BY Zongwei Li.

Name:

Gender:

Email:

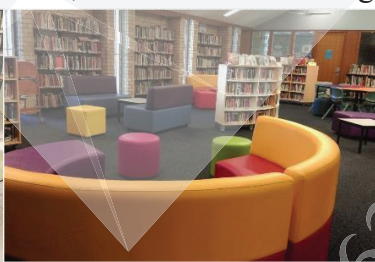
Date(DD/MM/YYYY):

1. Figures 1.1-1.9 are 9 schematic diagrams of ideal library furniture and equipment placement. Do you think which one 1.1-1.9 is increase your creativity at work most?

How about Mood and tone interior design and furniture and equipment should be provided to the BU Library to meet user creativity needs? Such as desks, sofas, bookshelves, power sockets, Wi-Fi, rest areas etc. Please give your suggestion.



1.1 Tables & Chairs



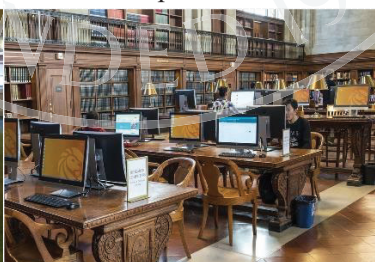
1.2 Furniture placement



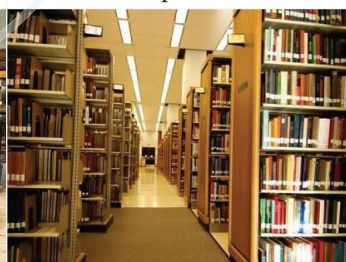
1.3 Furniture placement



1.4 Equipment placement



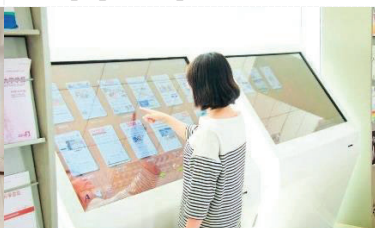
1.5 Equipment placement



1.6 Bookshelves



1.7 Bookshelves



1.8 E-books



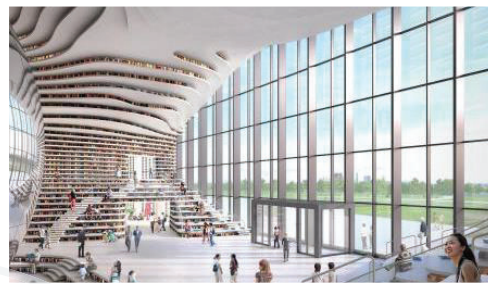
1.9 Furniture placement

2. Figures 2.1-2.4 are 4 schematic diagrams about library lighting and ventilation design. Which diagrams do you like? Why?

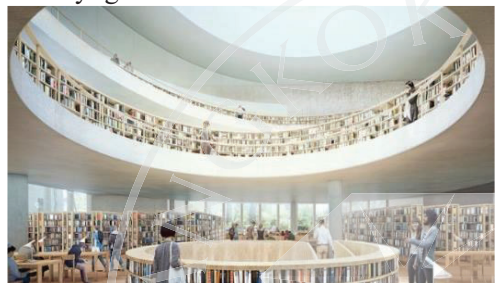
How do you think the creative space of the BU Library should be designed to meet expectations?



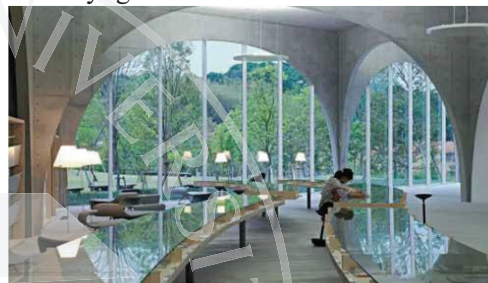
2.1 Daylight & Entilation



2.2 Daylight & Entilation



2.3 Sufficient light



2.4 Natural light

3. Figures 3.1-3.6 are six diagrams about the color and decoration of the creative space of the library. Which diagrams do you like but which do you dislike? Why?

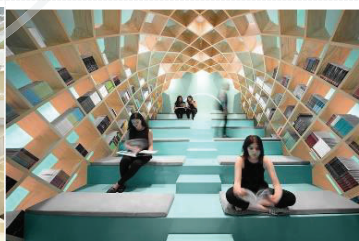
If you were the management of International campus which color, shape, and landscape decoration of the creative space of the BU Library so that users have a better visual experience?



3.1 Mural



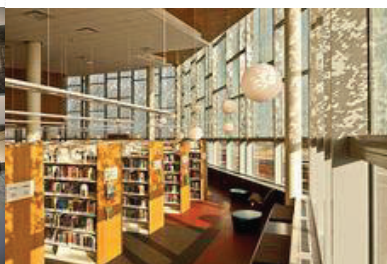
3.2 Color & Decoration



3.3 Color & Shape



3.4 Mural and Gallery



3.5 Glass curtain wall



3.6 Furniture color



4. Figures 4.1-4.6 are 6 schematic reading and researching for creative innovation and leisure areas in the library. Which diagrams do you prefer? Why?

What kind of learning space do you think the BU library should have? How to design the leisure area of the BU library?



4.1 Reading zone

4.2 Reading corner

4.3 Reading corner



4.4 Music and movie room

4.5 Casual cafe

4.6 Music and games room

5. Figures 5.1-5.6 are six schematic diagrams of the library knowledge and creative sharing experience area. Which diagrams do you prefer? Why?

How to plan display to promoting knowledge management creative culture? I.e.

Exchange. Creative Forum. Creative working. Speakers give lectures on commercial and marketable creations weekly or monthly.



5.1 Creative inspiration

5.2 Exchange and share

5.3 Creative experience



5.4 Demo hall

5.5 Creative exhibition

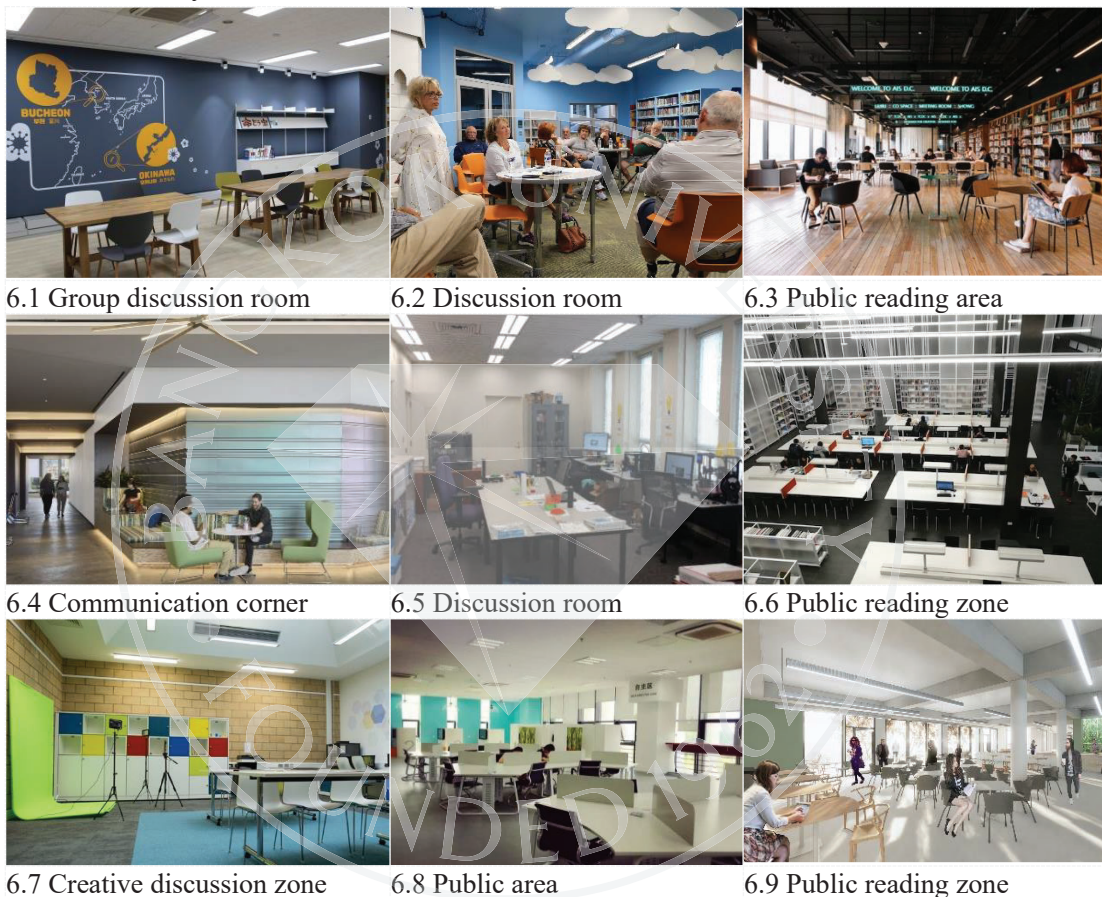
5.6 Creative practice

6. Figures 6.1-6.9 are nine diagrams of the library's discussion area, public reading area, and creative inspiration area.

Which diagrams do you prefer but which do you dislike? Why?

How to design the public reading area, communication area and discussion room of the BU Library?

What kind of creative environment should the BU library provide to stimulate users' creativity?



7. What hardware and software resources should be deployed to libraries to meet user needs? Such as projector, microphones, printers, Book Borrowing & Returning System, etc.

8. What do you think is the reasonable opening time of the BU Library? Why? Please make reasonable suggestions.



9. Figures 9.1-9.5 are the floor plans of the five libraries. What spatial planning and design do you think is more reasonable? Which are not reasonable? why? Please make your suggestions about designing creative spaces for the BU Library.



9.1 The overall effect of creative space



9.2 Stairs and lighting effects



9.3 Regional planning



9.4 Regional planning



9.5 Area design

10. What other suggestions do you have for the design of the creative space of the BU Library? Such as service, management and so on. Please give more suggestions.

Thank you.





Master in  
Business Innovation



**QUESTION1: Figures 1.1-1.9 are 9 schematic diagrams of ideal library furniture and equipment placement.**

**Do you think which one 1.1-1.9 is increase your creativity at work most?**

**Why?**

**How about Mood and tone interior design and furniture and equipment should be provided to the BU Library to meet user creativity needs? Such as desks, sofas, bookshelves, power sockets, Wi-Fi, rest areas etc. Please give your suggestion.**

**Respondent 1 Answers:**

I think Figure 1.3 can improve the work ability most. Its interior design **keeps the distance between the book and the study area very good (1.1.1)**. When you need to find a book temporarily when you are studying, you can quickly reach the book area, and **it is isolated from the walking area (1.1.2)** to avoid the impact of people walking which can distract students.

It is hoped that **there are multiple choices** for the location of the learning area, which can be provided for multiple people to study together and personally. The distance between the learning zone and the learning zone is moderate.

Some Advices:

- 1) **(1.1.3) Install a lot of sockets each study area, which is convenient** for students to use computers and **charge** mobile phones and other equipment.
- 2) **(1.1.4) The rest area needs to be divided into quieter areas** to avoid mutual influence.
- 3) **(1.1.5) The location of the rest area provides shared earphones and data cables** to avoid the impact of external sounds when some students rest.
- 4) **(1.1.6) Drinking water and vending machines** can be provided in the rest area to reduce students bringing too much into the library.

**Respondent 2 Answers:**

Figure 1.1, the environment is suitable, the tables and chairs are neatly arranged, it looks clean and tidy, it is easy for people to calm down and think about the problem. Next to the table and chairs is a **bookshelf full of books (2.1.1)**, which can be **convenient** when you need to find information.

Figure 1.5, to improve the creativity of work. Its environment is too crowded but **orderly**, improving its learning or work efficiency. Such an environment makes it easier for us to start creative thinking.



I think it is necessary to add desks, power outlets, wireless network and other facilities (2.1.2). Furniture such as desks and sofas can give people a certain sense of intimacy and comfort (2.1.3) and are more convenient for personal writing (2.1.4). Power sockets and wireless networks can provide network and power to mobile phones and laptops.

Some people need a comfortable environment when creating, followed by quiet, so it is recommended to separate the office area from the rest area (2.1.5). The friendly environment can make people happier. It is better to add some green potted plants beside the soft sofa.

### Respondent 3 Answers:

Figures 1.1, 1.2, 1.3, 1.9, which belong to the reading environment where people coexist, thus creating a library atmosphere.

Among them, Figure 1.1 belongs to the classic environment, but the movement of personnel is likely to affect other people. And when users want to maintain a space and a relatively quiet environment when reading, most people will choose to sit down at a position, causing some seats to be vacant (3.1.1).

Figure 1.2 belongs to a semi-open sofa chair (3.1.2). Figure 1.2 different seating styles improve comfortability, but when there is no table, it is easy to make people feel tired (3.1.3), and the duration of reading time will be reduced. The energy time becomes shorter.

Figure 1.3 belongs to the conventional sofa chair with handles, the handle of the seat sofa can let people relax properly.

The BU library should not only provide mood and tone interior design and furniture and equipment, but also be reader-centric, so that people have more reading choices and creative development opportunities, and also need an electronic library (3.1.4) to meet the user's reading needs and fully demonstrate the main points of the library's knowledge, inspiration, exploration and learning environment.

### Respondent 4 Answers:

Figure 1.3 is very convenient when we are looking for books, and its chair is more comfortable (4.1.1) for us to read and study.

Figure 1.4, there are not too many people annoying and crowding (4.1.2) when studying, and it can stimulate your own inspiration when creating.

I think when designing the BU library, there should be some personal desks, because I don't like sitting with strangers next to me while reading and creating. There should be a power socket next to the desk, and the library should provide free Wi-Fi (4.1.3) to facilitate the Internet to find information.

Some rest seats should be added on both sides of the space (4.1.4) to allow a short rest in this area.



**Master in  
Business Innovation**



**IKI-SEA**  
THE INSTITUTE FOR  
KNOWLEDGE & INNOVATION  
SOUTH-EAST ASIA  
BANGKOK UNIVERSITY

**QUESTION 2. Figures 2.1-2.4 are 4 schematic diagrams about library lighting and ventilation design. Which diagrams do you like? Why? How do you think the creative space of the BU Library should be designed to meet expectations?**

**Respondent 1 Answers:**

I prefer Figure 2.3. It has **good lighting and will not be exposed to sunlight (1.2.1)**.

The **design of the round** can make people **feel more spacious (1.2.2)**, and at the same time it is **more convenient to take books**.

**The roof provides light sources, and the surrounding walls also have bright windows (1.2.3)** to ensure the lighting of the study area.

Some opinions and expectations. 1) It is best to **ensure that the learning area and the book area are separated by a distance (1.2.4)** to facilitate access to books.

Ensure that **the learning area is adequate** and the learning area has **sufficient lighting**. Try to avoid the situation where some people in the learning area do not go.

Make reasonable use of space, **add some bookshelves, etc. in an empty location (1.2.5)**.

Figure 2.2 is too empty. The space in the study area is too small and **the book is easily damaged by direct sunlight (1.2.6)**.

**Respondent 2 Answers:**

Like Figure 2.2 and Figure 2.3, because they have good light, sufficient brightness, the room is empty, and **the air is easy to circulate (2.2.1)**. Students who are in the library **for a long time are prone to myopia if the light is not enough (2.2.2)**.

**Can put some books around the big space**, the placement and classification of the books will be clear at a glance, which is convenient for readers to take.

I think the classification and placement of books must be convenient for readers to find and access.

**The super-large space can be divided into many small spaces**, and then **each space has similar books, and the same books are placed on a shelf (2.2.3)**.

**Respondent 3 Answers:**

I like the style and design of 2.2. Compared with the books sleeping there, **the library is a "new world" (3.2.1)**.

I like the **"glass library" where all the glass is installed on the outer wall (3.2.2)**, it more reflects the values of the natural environment and books, and integrates with advanced architectural styles to form a modern, open, inspirational and creative place for users to enjoy reading better. It is the best environment to explore, study and experience the fun of reading.

I think the creative space of the BU library should **refer to more well-known architectural styles, such as "Apple Park", etc. (3.2.3)**, which can reflect and consolidate the dedication, aesthetics and pursuit of the campus to the library.

On the one hand, showing the school's iconic features and zooming to different scales in different spaces is a display of self, which more reflects BU's expression of the library's concept and pursuit.

#### **Respondent 4 Answers:**

I like Figure 2.2. Because it gives me a sense of **sunshine and brightness**, the library should be a place with plenty of sunlight and light. **Reading in a well-lit environment is a good protection for our eyes (4.2.1)**.

I think the paints used for decoration in creative spaces should use warm colors instead of cool colors. **Warm colors make people look more relaxed and comfortable (4.2.2)**. Warm colors can effectively stimulate users' active thinking and interest in reading.

I think **the light in the library should be mild, better for the eyes, and artistic (4.2.3)**. **A round table can be placed in the creative space (4.2.4)** to provide users with discussions and write down their own ideas.

At the same time, **a sharing board can be placed as a creative sharing wall (4.2.5)** to share everyone's ideas.



**QUESTION 3. Figures 3.1-3.6 are six diagrams about the color and decoration of the creative space of the library.**

**Which diagrams do you like but which do you dislike? Why?**

**If you were the management of International campus which color, shape, and landscape decoration of the creative space of the BU Library so that users have a better visual experience?**

**Respondent 1 Answers:**

Like figures 3.2, 3.4, 3.5, dislike figures are 3.1, 3.6.

**1) The decoration in Figure 3.4 is more inclined to art exhibitions and galleries, which makes people more relaxed visually (1.3.1).**

**2) Too many colors in Figures 3.6 can easily cause visual fatigue (1.3.2).**

**3) The light in Figure 3.2 is sufficient, the decoration is light and elegant, and the colors with higher brightness are used to make the space brighter (1.3.3) when there is light.**

**4) The color tone in Figure 3.5 is comfortable, and the decoration of similar colors complements the quiet and elegant style of the library, which will not cause fatigue easily.**

**Colors prefer dark colors, wood color bookshelves, and the shape is mainly round (1.3.4). All reading rooms are equipped with large glass windows (1.3.5), not only can it increase daylight, but you can also enjoy the green natural scenery outside while reading.**

**Respondent 2 Answers:**

The atmosphere expressed in Figures 3.2 to 3.6, each with its own advantages, can give the library a **different finishing touch**. It can give people a lot of new knowledge and develop the imagination of readers. But don't like 3.1.

**Figures 3.2 simple design, Figures 3.3 fresh environment brought by unconventional corridors, Figures 3.4 artistic atmosphere, Figures 3.5 transparent indoor and outdoor connection (2.3.1).**

In Figures 3.1, people are a little dazzled, and feel that **the entire environment is too complicated, so the library is more to promote a simple style, so that people can quietly put into reading (2.3.2).**

According to the individual, **the colors of the BU library are as simple and beautiful as possible (2.3.3).** Without destroying the library reading atmosphere, the library is given **innovation and freshness**, such as the combination of 3.2 and 3.3. In the landscape decoration, the type and style of 3.5 is enough.

The colors of the creative space of the BU library should be some **warm colors**. Landscape decoration can **put some masterpieces, portraits of celebrities (2.3.4), etc.**

#### **Respondent 3 Answers:**

I like Figures 3.3, 3.5, 3.6, and I don't like Figures 3.1 and 3.4. **The architecture in Figure 3.3 is full of creative design sense to guide readers who lack creative inspiration (3.3.1). Figures 3.5 and 3.6 are decorated with geometrically symmetrical, and they are very creative (3.3.2).** They give me the feeling that they are holy places for reading. During the reading process, I feel that the world belongs to me and I **have a sense of belonging.**

The colors in Figures 3.1 and 3.4 are relatively cool. Figure 3.1 uses a large number of murals, using mythological murals, and it is like a Roman church, which did not provide me with too much creative inspiration. Figure 3.4 **uses an off-white hue, giving me a feeling of memory,** as if I came to the museum.

The colors of creative spaces should be **warm tones**, and they should be reasonably matched with bright colors. The shape can be **combined with geometric objects to make bookcases, tables and chairs (3.3.3), etc. The combined equipment** can be refreshing, make people **feel full of creativity**, and at the same time inspire users' creative inspiration. Landscape decoration can use **some famous architectural photos** and pictures with a wide view, such as hanging **a picture of the sea (3.3.4).** They allow us to expand **our horizons and our mood will become more comfortable.**

#### **Respondent 4 Answers:**

Figures 3.2 and 3.4, 3.5, and 3.6 are better; Figures 3.1 and 3.3 do not like it; the design of Figures 3.2, 3.4, and 3.5 makes people feel quiet, comfortable, and pleasant, which can inspire greater inspiration for creation. **These creative spaces are designed with less mobility of people, which helps to think and focus on creation (4.3.1).**

The interior design in Figure 3.3 makes people feel nervous. **I think the interior of the creative space can be matched with three colors of blue, green and orange. Cross-matching can make people produce better emotions (4.3.2).** Because these three colors represent joy, flexibility, harmony, relaxation, confidence, and thinking.

Can be **matched with triangular bookshelf. The landscape can be matched according to these three colors (4.3.3).** I think it is better to match blue and green, because **when reading, it will make people feel happy and achieve better visual effects.**



**QUESTION 4. Figures 4.1-4.6 are 6 schematic reading and researching for creative innovation and leisure areas in the library.**

**Which diagrams do you prefer? Why?**

**What kind of learning space do you think the BU library should have? How to design the leisure area of the BU library?**

**Respondent 1 Answers:**

I prefer 4.2. Because most readers do not know each other, and Figure 4.2 provides an isolated area, which is a good "noisy baffle" for readers who like to be quiet (1.4.1). For readers who like to study together, they sit on the same Studying together at the table is a good choice (1.4.2).

BU library should have some separate English listening learning space (1.4.3). Each floor is equipped with a computer to search for information and books.

Each floor library must have a separate discussion room (1.4.4), and sound insulation is very good.

The distance between study rooms is a bit farther and will not affect each other. Each floor has drinking water equipment (supplied ice water, room temperature water and boiling water) (1.4.5), and the library information platform should be open to readers.

**Respondent 2 Answers:**

I prefer Figures 4.2 and 4.3 because they emphasize personal space and are not disturbed by other people's discussions, or when they have some personal affairs, they can also be solved and handled well, and the tones feel comfortable, and you will not feel depressed.

I think part of the study area of the BU library is private tables and chairs, which can ensure independent learning and reduce interference (2.4.1). And provide closed single training room, multi-person seminar rooms, open seminar tables, open study tables (2.4.2).

The overall feeling is very comfortable, with plenty of light and transparency. Enough lockers need to be provided to avoid placing too many items on the tables and chairs (2.4.3).

Several sockets are installed under the table or seat in the leisure area, adding sofas, coffee tables (2.4.4), etc., to create a comfortable and free rest environment.



There are sofas, tables, you can drink coffee, you can talk normally, this area requires **good sound insulation**.

#### **Respondent 3 Answers:**

I like the independent space environment of Figure 4.2 and Figure 4.3, **users can immerse themselves in electronic products without communicating with others (3.4.1)**. Figure 4.4 You can watch TV and take a break after you are tired of studying.

For the creative spaces in Figure 4.4 and Figure 4.6, they are independent environments, where **people can immerse themselves in their own world. This is an immersive experience (3.4.2)**.

BU library leisure space design needs to integrate with the library's own environment. **Set up the spaces shown in Figure 4.4 and 4.6** without affecting the outside leisure area. While chatting with your good friends, you can listen to music and enjoy your own space. At the same time, **we can watch videos in this creative space to learn (3.4.3)**.

**A drinking area can be set up in the leisure area (3.4.4)** so that we can drink water without wasting our study time.

#### **Respondent 4 Answers:**

I like the creative and creative spaces in Figures 4.1, 4.3 and 4.5. In the creative space in Figure 4.1, you can read better and discuss with the people around you. Figure 4.3 **can make my thinking more active, and friends or teams can discuss each other. I think in the library (4.4.1)**.

There **should not be too many seats**, so it is quieter and I can concentrate on the perfect creation.

I like Figures 4.5 and 4.6 for leisure places. **Figure 4.5 provides some diets, and I can choose to eat desserts to make me happy (4.4.2)**. Figure 4.6 has music and games. **When we are tired while studying, we can listen to music and play games to relax (4.4.3)**.

The design of the BU library creative space should be combined with the design concepts of Figures 4.1, 4.3, 4.5, and 4.6.

**Appropriate sports equipment** should be placed in the leisure area, such as **dumbbell, grips, hula hoop and other items (4.4.4)**.



**QUESTION 5.** Figures 5.1-5.6 are six schematic diagrams of the library knowledge and creative sharing experience area, display area, and practice area.

**Which diagrams do you prefer? Why?**

**How to plan display to promoting knowledge management creative culture? I.e. Exchange. Creative Forum. Creative working. Speakers give lectures on commercial and marketable creations weekly or monthly.**

**Respondent 1 Answers:**

I like Figure 5.2, because Figure 5.2 not only has enough coexistence environment, but also **enough place for materials to be placed, it is easy for the people discussing to find what they are looking for (1.5.1)**. The area where knowledge and ideas are shared should be in a **relatively relaxed state**.

It is difficult to have inspiration when the environment is tense. The environment in Figure 5.2 as a whole feels more relaxed and more conducive to the exchange of knowledge and inspiration.

Everyday reader communication and discussion, **everyone's creativity can play a role, and readers can exchange ideas (1.5.2)**. Setting up a forum provides an opportunity and platform to showcase creativity.

For the display area, I prefer Figure 5.5, **the design idea of the display area is to show the public personal ideas, it will share and transmit our inspiration (1.5.3)**.

**Respondent 2 Answers:**

Figures 5.1, 5.4, and 5.5 are good choices. Because **we can share a good idea, and discussing among the groups can stimulate the imagination of each member (2.5.1)**.

Figure 5.4. First, because **the small round table can be used for discussion, there are definitely excellent works that must be shared with others and given to others (2.5.2)**.

The projector just can show and share particularly excellent works to everyone in this space. We can make a chart for people to watch, or make a video to show its content.

After a good plan has been proposed and requisitioned, we can participate in the **exhibition and invite many people to visit (2.5.3)**. We can also plan lectures on **intellectual business activities and discuss how to carry out an innovative culture of intellectual management (2.5.4)**.



**Respondent 3 Answers:**

I like 5.1, 5.2, 5.4. Highlighted the person-to-person communication. People are social in nature, but they are also unique individuals.

In Figure 5.1, people are happy, so that different people can sit together, there is no distance, and the expansion of the topic is improved, which is better for communicating topics.

In 5.1, we pay attention to the communication and interaction between people. In the 5.2 creative space, **a theme element similar to "family" is created (3.5.1)**, so that there is no distance between people, and everyone is integrated into the new environment.

The 5.4 also has its own style. It is in the form of PPT and small meetings to let everyone discuss their views and reflect their opinions in an orderly manner, similar to a conference room.

**The creative space can be filled with strange and inspiring artworks (3.5.2).** It is helpful for inspiring thinking and can activate inspiration.

**The BU library should flexibly use the features and styles of Figures 5.1, 5.2, and 5.4 for combination (3.5.3).** There is not only room for discussion but also space for sharing ideas.

**Respondent 4 Answers:**

I like pictures 5.1, 5.2, 5.5, because the atmosphere in these pictures is very strong, everyone is brave to express their opinions, they **use the group discussion** method, this method can make different ideas collide and friction A different spark.

**There can be a book exchange meeting held by the library once a week (4.5.1), or students can form a community and organize internal exchanges (4.5.2).**

At the same time, the library can **hold speech contests at regular intervals (4.5.3)** and set up some reward mechanisms to stimulate students' interest in speech and reading. It would be better if students could **organize and hold reading exchanges (4.5.4)** by themselves.

**Can holding an exchange would allow different people to express their opinions (4.5.5),** making the reading method more flexible.



**QUESTION 6.** Figures 6.1-6.9 are nine diagrams of the library's discussion area, public reading area, and creative inspiration area.

Which diagrams do you prefer but which do you dislike? Why?

How to design the public reading area, communication area and discussion room of the BU Library?

What kind of creative environment should the BU library provide to stimulate users' creativity?

#### Respondent 1 Answers:

Like 6.3 but don't like 6.5. I think **the public reading area should also be quiet**. It only takes two or three people to discuss, **not too many people to discuss together (1.6.1)**, and the 6.3 environment is wider and brighter, and the 6.5 **space is too narrow and crowded**, which affects the reading experience.

The above three space areas **all have sound insulation problems**, and **sound insulation boards need to be added (1.6.2)** to public reading positions. **There should be more discussion rooms in the communication area (1.6.3)**, and they will not be affected by each other. There should be **more power sockets and network sockets and more books in the discussion area (1.6.4)**.

Provide a comfortable environment, **integrate books and nature (1.6.5)**, and stimulate creativity and observation.

Provide a tense environment. It is easier to improve learning or work efficiency in a stressful environment.

#### Respondent 2 Answers:

Like Figures 6.2, 6.3 and 6.9, dislike 6.6 and 6.8, because the discussion area should be a large space to facilitate more readers to participate in the discussion. The public reading area should be **relatively quiet and need sound insulation to prevent disturbing others (2.6.1)**.

Figure 6.3 The warm tone atmosphere makes people feel comfortable and easier to create inspiration. When reading, we need enough light, and the **distance to the bookshelf is very close (2.6.2)**, which is convenient for finding books.

There should be more books in the public reading area, set up **some tripod-shaped bookshelf**, some tables and chairs next to it, with **three colors of blue**,

**blue and orange, it looks comfortable.** The discussion room can be designed as shown in Figure 6.2, with **three colors of blue, green, and orange at the same time, which shows harmony and warmth (2.6.3).** The room should be accompanied by **some famous celebrity sentence banners (2.6.4).**

In addition, **more colorful ornaments can be added,** so that it does not appear monotonous, and it also encourages readers to boldly imagine, thereby stimulating the creativity of users.

### **Respondent 3 Answers:**

I prefer the 6.2 library discussion area, because this space gives me **a feeling of being at home,** and free discussions can communicate with each other, listen to each other, and communicate with each other. I prefer the creative inspiration room of 6.7. **Its different colors and different decorations can inspire people's brains to exert their imagination (3.6.1),** and the decoration style can inspire readers. Do not like the creative inspiration room of 6.9, this is more **monotonous,**

The design of the public reading area requires a larger space to accommodate more readers / scholars, and the distance between each seat is arranged to be too wide. **The discussion area should be designed to have a family feel (3.6.2),** so that each discussant has a sense of intimacy and is more courageous in expressing his inner thoughts. **The creative inspiration room should be designed with different styles (3.6.3),** different feelings.

Provide **some peculiar artworks, such as statues, portraits, crafts ... or some creative plants (3.6.4),** which can make Readers produce what they imagine.

### **Respondent 4 Answers:**

I like Figures 6.2, 6.1, 6.3, 6.8, and 6.9. The creative spaces in Figures 6.3, 6.8 and 6.9 are spacious, and **the distance between two adjacent seats is appropriate (4.6.1),** providing a quiet and comfortable reading environment for readers.

The internal space should also provide bookshelves and books. It is best to **provide some paper, pens, whiteboards (4.6.2),** etc., to facilitate recording during discussions. A projector should be provided to facilitate the display of the completed copy to others.

The BU library **can buy some books that can exercise ideas and stimulate people's creativity, and provide users with opportunities to read and practice (4.6.3).** **The entertainment area provides educational puzzle games, such as building blocks and Rubik's cube (4.6.4).** The game can not only arouse people's interest, but also exercise their creativity.



**QUESTION 7. What hardware and software resources should be deployed to libraries to meet user needs? Such as Wi-Fi, projector, microphones, printers, Book Borrowing & Returning System, etc.**

**Respondent 1 Answers:**

Wi-Fi is a must (1.7.1), as is a printer. **Each floor of the BU Library should provide a book search system (1.7.2)** to facilitate retrieval of book materials.

**Respondent 2 Answers:**

Wi-Fi, projectors, printers, book borrowing and return systems should be deployed to libraries (2.7.1).

**Deploy Wi-Fi to the library to facilitate students to watch learning videos (2.7.2), projectors and printers can be used by some students for reading and discussion (2.7.3).**

**Respondent 3 Answers:**

I think Wi-Fi can be deployed so that some students need to use a computer or mobile phone in the library to check the problem.

**The book borrowing and return system facilitates free borrowing and return of books, saving a lot of time (3.7.1).**

Can provide **some PC and mobile phone charging plugs (3.7.2)**, because some students need these when reading. Sometimes we stay in the library all day, if there is a charging plug, we can avoid the trouble of draining the power of the computer or mobile phone.

I think it is necessary to **provide more printer and more printing room to Users (3.7.3).**

**Respondent 4 Answers:**

Wi-Fi, projector, computer, book borrowing and return system are the most basic. I think there **should be a reception room on every floor (4.7.1)** of the BU library. And **provide a mobile phone charging area on each floor (4.7.2).**

**The book borrowing and returning system is preferably fully automatic (4.7.3),** which can save readers time to borrow and return books.



**Master in  
Business Innovation**



**QUESTION 8. What do you think is the reasonable opening time of the BU Library? Why?**

**Please make reasonable suggestions.**

**Respondent 1 Answers:**

**Open 24 hours**, because I hope that the BU library can give each reader a place of spiritual sustenance, and can enter the library to **read, think and practice at any time (1.8.1)**.

**Respondent 2 Answers:**

I think the reasonable opening time of the library is **8:00-22:00**, because **the morning is a good learning time (2.8.1)**, people will seize the morning time to study, and the evening is the best time for review.

People think have a quiet and comfortable environment to review what you have learned in one day.

Suggestion:

1. **Can close a little later during the final exam period (2.8.2).**
2. **Many libraries are open 24 hours. I hope the BU Library can consider opening 24 hours (2.8.3).**

**Respondent 3 Answers:**

Opening hours: **8:00 to 23:00**. Because this time we are all in learning time, we need a learning environment. **Some people like to study at night (3.8.1)**, so the library can be open until night. At the same time, **the opening hours of the library can be flexible and changeable (3.8.2)**.

**Respondent 4 Answers:**

The opening hours of the library are **from 7:00 am to 23:00 pm**. I think it is more reasonable. If you open the door at 7 am, it is convenient for people who like to learn early.

For me, **I will go to the library to read in the morning (4.8.1)**. It closes at 23 pm, and reminding readers to take a break early.



**QUESTION 9.** Figures 9.1-9.5 are the floor plans of the five libraries. What spatial planning and design do you think is more reasonable? Which are not reasonable? why?

Please make your suggestions about designing creative spaces for the BU Library.

**Respondent 1 Answers:**

I think 9.1 and 9.2 are more reasonable. Because they have **many patterns and many areas**, they make full use of the space, and divide the space reasonably, making reading more comfortable. When designing a creative space, it is necessary to **design some independent private space, pay attention to the space distance and sound insulation (1.9.1).**

Figure 9.2 can be used to classify books. **The book categories on each floor are different (1.9.2).**

It is convenient for us to find books, and we can also carry out clear book classification.

The spatial distribution of Figure 9.2 **can also have many seats for us to read and learn (1.9.3).**

**Respondent 2 Answers:**

I think the spatial planning and design of Figures 9.1 and 9.3 are more reasonable. There are many types of learning seats available in Figure 9.1.

**The distance between the book storage and the learning position is just right (2.9.1). The semi-circular bookshelf divides the area into semi-arc closed spaces (2.9.2),** which improves the privacy of the space.

Similarly, the design of Figure 9.3 is also similar to that of Figure 9.1, and the lighting and ventilation effects are better. **It adds some single reading tables and double reading tables (2.9.3)** to provide readers with more choices.

**Large-space bookshelves and desks are staggered and will not be crowded (2.9.4),** making it more convenient for users.

**Respondent 3 Answers:**

I think the space planning and design of Figure 9.4 is more reasonable, because the space is large enough, the mobility of people is very small, and it also looks very comfortable. The table is round, and reading will not affect each other.

Books are placed side by side, it is easy to find the book you want, and find a seat at any time to sit down.

I don't like the space planning and design of Figure 9.5, because **there are no books in the reading area, so it is inconvenient to find books (3.9.1).**

Suggestion:

I think the space planning can be larger, it will not make people feel depressed, and **the seats should not be too dense, otherwise it will affect other readers (3.9.2). The decoration is more comfortable so that people can immerse themselves in reading (3.9.3).**

#### **Respondent 4 Answers:**

Figure 9.5 sets up an **electronic public reading area**. In this area, both electronic reading and paper reading can be performed.

The distance between the front row positions is also appropriate, and generally does not affect the neighboring people. At the same time, **a discussion room and a separate reading room are also set up**, and the functions are relatively complete. The library design meets my needs.

In Figure 9.2, **the sofa is placed near the stairs, and people will make noise when walking on the stairs (4.9.1)**, which will disturb the readers sitting on the sofa.

Suggestion:

1) More public discussion areas and discussion rooms can be set up in the creative space of the library, allowing more people's thinking to collide.

2) **A private discussion room can be provided for teams that need private discussions (4.9.2)** to prevent others from stealing the team's ideas.

3) **Buy some creative furniture, such as furniture made up of geometric shapes (4.9.3).**





**QUESTION 10. What other suggestions do you have for the design of the creative space of the BU Library? Such as service, management and so on. Please give more suggestions.**

**Respondent 1 Answers:**

1. **An emotional consultation room can be set on the top floor of the library, which is open (1.10.1).** There are many emotional books in this room.
2. It is recommended that the BU library be **open 24 hours (1.10.2).**
3. **Many places in the library are equipped with machines that automatically return books, which is convenient and time-saving (1.10.3).**
4. There should be partitions between the discussion areas.

**Respondent 2 Answers:**

- We can check the book status through the BU library APP program (2.10.1).**  
 In terms of management, it is best to **clearly divide the book category area and make the sign obvious (2.10.2).**  
 BU Library can **place several book search machines** to facilitate book search.  
**Provide a small compartment that can express bad emotions (2.10.3), and provide some creative tables,** such as building blocks game tables.

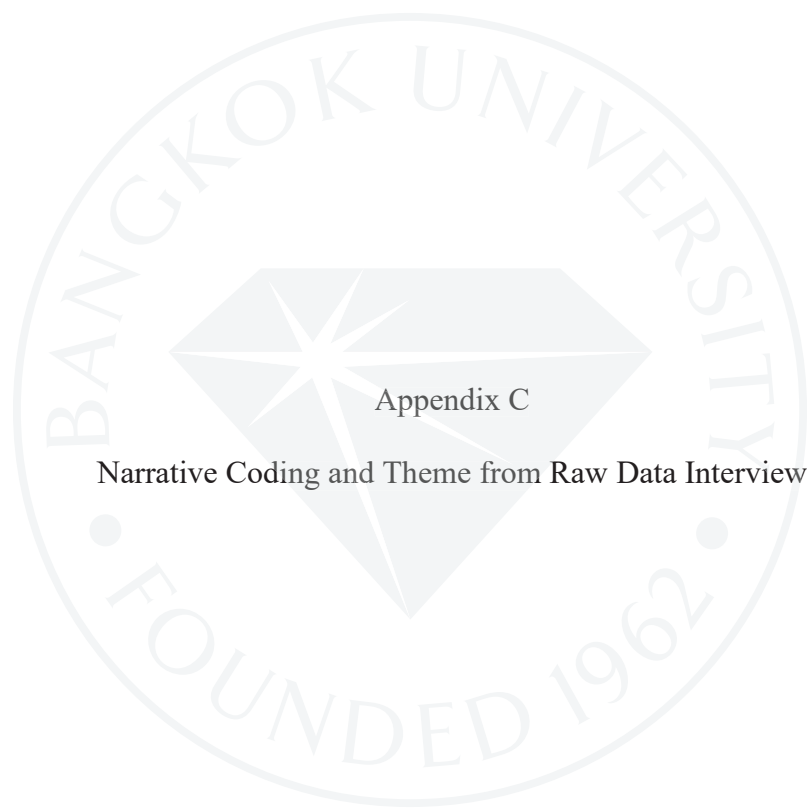
**Respondent 3 Answers:**

1. I hope the library **staff can guide students to find the books (3.10.1)** we need.
2. I hope to **provide a drinking room (3.10.2)** for students who study in the library all day long.
3. It is hoped that **the reading area and the bookshelf area of the library can be reasonably integrated (3.10.3).**
4. **We can book books online and book locations online (3.10.4). Direct access to E-books (3.10.5),** it will be more convenient.

**Respondent 4 Answers:**

1. **Place a suggestion box at the entrance of the library (4.10.1)** to collect readers' feedback on the library's creative space design.
2. The library can regularly **organize some reading sharing sessions, creative competitions (4.10.2)** and other activities to stimulate readers' interest in reading and improve readers' innovative spirit.
3. **Some major books, library guide maps, etc. can be placed next to the library's main aisle (4.10.3).**





Appendix C

Narrative Coding and Theme from Raw Data Interview



QUESTION 1: How about Mood and tone interior design and furniture and equipment should be provided to the BU Library to meet user creativity needs?

Respondent 1 interview dialogues	Respondent 2 interview dialogues	Respondent 3 interview dialogues	Respondent 4 interview dialogues	Narrative Coding	Categorizing / Theme
1.1.1 Keeps the distance between the book. 1.1.2 It is isolated from the walking area. 1.1.3 Install a lot of sockets each study area, which is convenient. 1.1.4 The rest area needs to be divided into quieter areas. 1.1.5 Provides shared earphones and data cables. 1.1.6 Drinking water and vending machines.	2.1.1 Bookshelf full of books. 2.1.2 Add desks, power outlets, wireless network and other facilities. 2.1.3 Furniture such as desks and sofas can give people a certain sense of intimacy and comfort. 2.1.4 More convenient for personal writing. 2.1.5 Separate the office area from the rest area.	3.1.1 Causing some seats to be vacant. 3.1.2 A semi-open sofa chair, different seating styles improve comfortability. 3.1.3 There is no table, it is easy to make people feel tired and the duration of reading time will be reduced. 3.1.4 Need an electronic library.	4.1.1 Chair is more comfortable for us to read and study. 4.1.2 There are not too many people annoying and crowding. 4.1.3 provide free Wi-Fi to facilitate the Internet to find information . 4.1.4 Some rest seats should be added on both sides of the space to allow a short rest in this area.	Sofa with chair semi table for long period reading and give a sense of intimacy. Not too crowded. Separated from walking path and areas. Separate the office area from the rest area. Can't have too many empty seats. There are some seats for short rest. There are bookshelves full of books next to the tables and chairs.	Furniture that comfort the reading. Reasonable seat setting and book shelf placement for readers. Private area without noise distraction for creative thinking The creative spaces are isolated from each other without affecting each other. Digital -book spaces serving facility. Wi-Fi, water dispenser and other basic service facilities.

QUESTION 2: How do you think the creative space of the BU Library should be designed to meet expectations?

Respondent 1 interview dialogues	Respondent 2 interview dialogues	Respondent 3 interview dialogues	Respondent 4 interview dialogues	Narrative Coding	Categorizing / Theme
<p>1.2.1 Lighting and will not be exposed to sunlight.</p> <p>1.2.2 The design of the round can feel more spacious.</p> <p>1.2.3 Surrounding have bright windows.</p> <p>1.2.4 Learning area and the book area are separated by a distance.</p> <p>1.2.5 Add some bookshelves, in an empty location.</p> <p>1.2.6 The book of the study area is easily damaged by direct sunlight.</p>	<p>2.2.1 They have good light, sufficient brightness, the room is empty, and the air is easy to circulate.</p> <p>2.2.2 Students who are in the library for a long time are prone to myopia if the light is not enough.</p> <p>2.2.3 The super-large space can be divided into many small spaces, and then each space has similar books, and the same books are placed on a shelf.</p>	<p>3.2.1 Compared with the books sleeping there, the library is a "new world".</p> <p>3.2.2 I like the "glass library" where all the glass is installed on the outer wall.</p> <p>3.2.3 Refer to more well-known architectural styles, such as "Apple Park", etc.</p>	<p>4.2.1 Reading in a well-lit environment is a good protection for our eyes.</p> <p>4.2.2 Warm colors make people look more relaxed.</p> <p>4.2.3 The light in the library should be mild, better for the eyes, and artistic.</p> <p>4.2.4 A round table can be placed in the creative space.</p> <p>4.2.5 A sharing board can be placed as a creative sharing wall.</p>	<p>Natural light but no direct sunlight. Insufficient light can easily cause reader fatigue. The circular creative space feels more spacious. The outer walls are all decorated with glass, bright and comfortable. Warm colors relax people. Divide large space into small space. Put similar books on the same shelf. Round tables and creative sharing walls.</p>	<p>Enough natural light and good ventilation. All glass decoration. Warm colors make people more relaxed and comfortable. Round tables and creative sharing walls better express ideas.</p>

QUESTION 3: If you were the management of International campus which color, shape, and landscape decoration of the creative space of the BU Library so that users have a better visual experience?

Respondent 1 interview dialogues	Respondent 2 interview dialogues	Respondent 3 interview dialogues	Respondent 4 interview dialogues	Narrative Coding	Categorizing / Theme
<p>1.3.1 More inclined to art exhibitions and galleries.</p> <p>1.3.2 Too many colors can easily cause visual fatigue.</p> <p>1.3.3 The decoration is light and elegant, and the colors with higher brightness are used.</p> <p>1.3.4 Wood color bookshelves, and the shape is mainly round.</p> <p>1.3.5 All reading rooms are equipped with large glass windows.</p>	<p>2.3.1 Hallway has an artistic atmosphere and transparent connection between indoor and outdoor.</p> <p>2.3.2 The library is more to promote a simple style, so that people can quietly put into reading.</p> <p>2.3.3 The colors of the BU library are as simple.</p> <p>2.3.4 Landscape decoration can put some masterpieces, portraits of celebrities, etc.</p>	<p>3.3.1 The architecture is full of creative design sense to guide readers who lack creative inspiration.</p> <p>3.3.2 Decorated symmetrical.</p> <p>3.3.3 The shape can be combined with geometric objects. The combined equipment can be refreshing.</p> <p>3.3.4 Landscape decoration can use some famous architectural photos.</p>	<p>4.3.1 These creative spaces are designed with less mobility of people, which helps to think and focus on creation.</p> <p>4.3.2 The interior of the creative space can be matched with three colors of blue, green and orange. Cross-matching can make people produce better emotions.</p> <p>4.3.3 The landscape can be matched according to these three colors.</p>	<p>Art exhibitions and galleries. The color should not be too much. The decoration is bright and elegant, and the bookshelves are colored in wood. Equipped with large glass windows. Simple design, pay attention to artistic atmosphere. Furniture with geometrically symmetrical combinations is more creative.</p>	<p>Art exhibitions and galleries make people more relaxed. The design is simple, bright, elegant and artistic. Freely combined furniture is more creative.</p>

QUESTION 4: What kind of learning space do you think the BU library should have?

How to design the leisure area of the BU library?

Respondent 1 interview dialogues	Respondent 2 interview dialogues	Respondent 3 interview dialogues	Respondent 4 interview dialogues	Narrative Coding	Categorizing / Theme
<p>1.4.1 Provides an isolated area, which is a good noisy baffle for readers who like to be quiet.</p> <p>1.4.2 For readers who like to study together, they sit on the same Studying together at the table.</p> <p>1.4.3 Have some separate English listening learning space.</p> <p>1.4.4 Each floor library must have a separate discussion room.</p> <p>1.4.5 Each floor has drinking water equipment.</p>	<p>2.4.1 Part of the study area of the BU library is private tables and chairs.</p> <p>2.4.2 Provide closed single training room, multi-person seminar rooms.</p> <p>2.4.3 Enough lockers need to be provided to avoid placing too many items on the tables and chairs.</p> <p>2.4.4 Several sockets are installed under the table or seat in the leisure area.</p>	<p>3.4.1 Users can immerse themselves in electronic products without communicating with others.</p> <p>3.4.2 People can immerse themselves in their own world. This is an immersive experience.</p> <p>3.4.3 We can watch videos in this creative space to learn.</p> <p>3.4.4 A drinking area can be set up in the leisure area so that we can drink water without wasting our study time.</p>	<p>4.4.1 Can make my thinking more active, and friends or teams can discuss each other.</p> <p>4.4.2 provides some diets, and I can choose to eat desserts to make me happy.</p> <p>4.4.3 We can listen to music and play games to relax.</p> <p>4.4.4 Appropriate sports equipment should be placed in the leisure area, such as dumbbell, grips, hula hoop and other items.</p>	<p>Provide a separate area for readers who like quietness, and a large reading table.</p> <p>Some separate English listening space.</p> <p>Each floor provides drinking water equipment and some food.</p> <p>The study area provides independent tables and chairs.</p> <p>Provide enough lockers.</p> <p>Enjoy in the creative electronics space.</p>	<p>Equipment and services such as sports equipment and food.</p> <p>Separate English listening learning space and independent tables and chairs.</p> <p>Sufficient lockers, sockets, coffee tables and other furniture and equipment.</p> <p>Electronic product creative space.</p>

QUESTION 5: How to plan display to promoting knowledge management creative culture? I.e. Exchange. Creative Forum. Creative working. Speakers give lectures on commercial and marketable creations weekly or monthly.

Respondent 1 interview dialogues	Respondent 2 interview dialogues	Respondent 3 interview dialogues	Respondent 4 interview dialogues	Narrative Coding	Categorizing / Theme
<p>1.5.1 Enough place for materials to be placed, it is easy for the people discussing to find what they are looking for.</p> <p>1.5.2 Everyday reader communication and discussion, everyone's creativity can play a role, and readers can exchange ideas.</p> <p>1.5.3 The design idea of the display area is to show the public personal ideas, it will share and transmit our inspiration.</p>	<p>2.5.1 Can share a good idea, and discussing among the groups can stimulate the imagination of each member.</p> <p>2.5.2 The small round table, there are definitely excellent works that must be shared with others and given to others.</p> <p>2.5.3 Can participate in the exhibition.</p> <p>2.5.4 Plan lectures on intellectual business activities and discuss how to carry out an innovative culture of intellectual management</p>	<p>3.5.1 A theme element similar to "family" is created.</p> <p>3.5.2 The creative space can be filled with strange and inspiring artworks. It is helpful for inspiring thinking and can activate inspiration.</p> <p>3.5.3 The BU library should flexibly use the features and styles of Figures 5.1, 5.2, and 5.4 for combination. There is not only room for discussion but also space for sharing ideas.</p>	<p>4.5.1 Can be a book exchange meeting held by the library once a week.</p> <p>4.5.2 Students can form a community and organize internal exchanges.</p> <p>4.5.3 Can hold speech contests at regular intervals and set up some reward mechanisms.</p> <p>4.5.4 Students could organize and hold reading exchanges by themselves.</p> <p>4.5.5 Can holding an exchange would allow different people to express their opinions.</p>	<p>Provide a service space for placing creative practice materials and user items. The exhibition area can share and transfer ideas and inspirations Exhibit our own works in the exhibition are. The creative space creates a "family style" theme element. Unique artwork helps inspire inspiration. Reading clubs, and regularly holding exchange meetings.</p>	<p>Service space where items can be placed. The exhibition area can display works, share and convey inspiration. The decoration of the "family style" theme elements. Unique artworks help inspire inspiration. Reading clubs and reading communities, innovative knowledge and cultural speech contests can showcase and promote innovative culture.</p>

QUESTION 6: How to design the public reading area, communication area and discussion room of the BU Library? What kind of creative environment should the BU library provide to stimulate users' creativity?

Respondent 1 interview dialogues	Respondent 2 interview dialogues	Respondent 3 interview dialogues	Respondent 4 interview dialogues	Narrative Coding	Categorizing / Theme
<p>1.6.1 The public reading area not too many people.</p> <p>1.6.2 Space areas all have sound insulation problems, and sound insulation boards.</p> <p>1.6.3 More discussion rooms.</p> <p>1.6.4 More power sockets and network sockets and more books in the discussion area.</p> <p>1.6.5 Provide a comfortable environment, integrate books and nature.</p>	<p>2.6.1 The public reading area should be relatively quiet and need sound insulation.</p> <p>2.6.2 Enough light, and the distance to the bookshelf is very close, which is convenient for finding books.</p> <p>2.6.3 Three colors of blue, green, and orange.</p> <p>2.6.4 The room should be accompanied by some famous celebrity sentence banners.</p>	<p>3.6.1 Its different colors and different decorations can inspire people's brains, and the decoration style can inspire readers.</p> <p>3.6.2 The discussion area should be designed to have a family feel.</p> <p>3.6.3 The creative inspiration room should be designed.</p> <p>3.6.4 Provide some peculiar artworks, such as statues, portraits, crafts.</p>	<p>4.6.1 The distance between two adjacent seats is appropriate.</p> <p>4.6.2 It is best to provide some paper, pens, whiteboards</p> <p>4.6.3 Can buy some books that can exercise ideas and stimulate people's creativity.</p> <p>4.6.4 The entertainment area provides educational puzzle games, such as building blocks and Rubik's cube.</p>	<p>Can add some soundproof boards in the public area.</p> <p>The design of the discussion area should have a family atmosphere, and provide some whiteboard and more power sockets.</p> <p>The creative space uses three colors of blue, green and orange, showing harmony.</p> <p>Leisure area provides educational puzzle games.</p> <p>Provide decorative artwork.</p>	<p>Public reading area should be quiet and soundproofed.</p> <p>The discussion area has some paper, pen, whiteboard and more power outlets, network sockets.</p> <p>There are many puzzle games in the entertainment area.</p> <p>Creative space colors should be matched, and there are decorative artworks, such as crafts and creative plants.</p>



QUESTION 7: What hardware and software resources should be deployed to libraries to meet user needs? Such as projector, microphones, printers, Book Borrowing & Returning System, etc.

Respondent 1 interview dialogues	Respondent 2 interview dialogues	Respondent 3 interview dialogues	Respondent 4 interview dialogues	Narrative Coding	Categorizing / Theme
<p>1.7.1 Wi-Fi is a must</p> <p>1.7.2 Each floor of the BU Library should provide a book search system to facilitate retrieval of book materials.</p>	<p>2.7.1 Wi-Fi, projectors, printers, book borrowing and return systems should be deployed to libraries.</p> <p>2.7.2 Deploy Wi-Fi to the library to facilitate students to watch learning videos.</p> <p>2.7.3 Projectors and printers can be used by some students for reading and discussion.</p>	<p>3.7.1 The book borrowing and return system facilitates free borrowing and return of books.</p> <p>3.7.2 Can provide some PC and mobile phone charging plugs. If there is a charging plug, avoid the trouble of draining the power of the computer or mobile phone.</p> <p>3.7.3 Provide a printing room and a printing room.</p>	<p>4.7.1 I think there should be a reception room on every floor of the BU library.</p> <p>4.7.2 provide a mobile phone charging area on each floor.</p> <p>4.7.3 The book borrowing and returning system is preferably fully automatic, which can save readers time to borrow and return books.</p>	<p>Each floor has fully automatic book borrowing and returning system, mobile phone charging area, Wi-Fi, reception room and other service facilities. Provide some PC and mobile phone charging plugs, and provide printing services.</p>	<p>The creative space on each floor has basic service facilities such as Wi-Fi, mobile phone charging area, and reception room. Provide PC and mobile phone charging plugs and other equipment. Provide basic services such as printing.</p>



QUESTION 8: What do you think is the reasonable opening time of the BU Library? Why? Please make reasonable suggestions.

Respondent 1 interview dialogues	Respondent 2 interview dialogues	Respondent 3 interview dialogues	Respondent 4 interview dialogues	Narrative Coding	Categorizing / Theme
1.8.1 Open 24 hours, because I hope that the BU Library can give each reader a place of spiritual sustenance, and can enter the library to read, think and practice at any time.	2.8.1 Opening time of the library is 8:00-22:00, because the morning is a good learning time. People will seize the morning time to study, people also think have a quiet and comfortable environment. 2.8.2 Can close a little later during the final exam period. 2.8.3 Hope the BU Library can consider opening 24 hours.	3.8.1 Opening hours: 8:00 to 23:00. Because this time we are all in learning time, we need a learning environment. Some people like to study at night. 3.8.2 The opening hours of the library can be flexible and changeable.	4.8.1 The opening hours of the library are from 7:00 am to 23:00 pm. If you open the door at 7 am, it is convenient for people who like to learn early. I will go to the library to read in the morning.	The opening hours of the library need to be flexible, preferably 24 hours. Some people like to go to the library to read in the morning, while others like to go to the evening. Special time periods can postpone closing time, such as final exam time period, competition preparation time period, etc.	Flexible arrangement of library opening hours, preferably 24 hours. Open earlier and postpone closing time at night. Special time periods such as exams can postpone closing time.

QUESTION 9: Please make your suggestions about designing creative spaces for the BU Library.

Respondent 1 interview dialogues	Respondent 2 interview dialogues	Respondent 3 interview dialogues	Respondent 4 interview dialogues	Narrative Coding	Categorizing / Theme
<p>1.9.1 It is necessary to design some independent private space, pay attention to the space distance and sound insulation.</p> <p>1.9.2 The book categories on each floor are different. It is convenient for us to find books.</p> <p>1.9.3 Can also have many seats for us to read and learn.</p>	<p>2.9.1 The distance between the book storage and the learning position is just right.</p> <p>2.9.2 The semi-circular bookshelf divides the area into semi-arc closed spaces.</p> <p>2.9.3 Add some single reading tables and double reading tables.</p> <p>2.9.4 Large-space bookshelves and desks are staggered and will not be crowded, making it more convenient for users.</p>	<p>3.9.1 there are no books in the reading area, so it is inconvenient to find books.</p> <p>3.9.2 The seats should not be too dense, otherwise it will affect other readers.</p> <p>3.9.3 The decoration is more comfortable so that people can immerse themselves in reading.</p>	<p>4.9.1 Sofa is placed near the stairs, and people will make noise when walking on the stairs, which will disturb the readers sitting on the sofa.</p> <p>4.9.2 Private discussion room can be provided for teams that need private discussions to prevent others from stealing the team's ideas.</p> <p>4.9.3 Buy some creative furniture, such as furniture made up of geometric shapes.</p>	<p>Provide independent space and private discussion room. Bookshelves and desks are staggered, and the seats should not be too dense, but sufficient for readers. The sofa is placed near the stairs, and the noise when people walk the stairs will affect the reader. Buy some creative furniture, such as furniture made up of geometric shapes.</p>	<p>Buy some creative furniture. Design independent space and some private rooms. Bookshelves and desks are staggered to give users a better visual experience. The seats should not be too dense, but sufficient for readers. Do not place the sofa near the stairs.</p>

QUESTION 10: What other suggestions do you have for the design of the creative space of the BU Library? Such as service, management and so on. Please give more suggestions.

Respondent 1 interview dialogues	Respondent 2 interview dialogues	Respondent 3 interview dialogues	Respondent 4 interview dialogues	Narrative Coding	Categorizing / Theme
<p>1.10.1 An emotional consultation room can be set on the top floor of the library, which is open.</p> <p>1.10.2 It is recommended that the BU library be open 24 hours, then the library manager's duty time is arranged correctly and effectively.</p> <p>1.10.3 Many places in the library are equipped with machines that automatically return books, which is convenient and time-saving.</p>	<p>2.10.1 We can check the book status through the BU library APP program.</p> <p>2.10.2 Clearly divide the book category area and make the sign obvious.</p> <p>2.10.3 Provide a small compartment that can express bad emotions.</p>	<p>3.10.1 I hope the library staff can guide students to find the books we need.</p> <p>3.10.2 provide a drinking room for students who study in the library all day long.</p> <p>3.10.3 the reading area and the bookshelf area of the library can be reasonably integrated.</p> <p>3.10.4 We can book books online and book locations online.</p> <p>3.10.5 Direct access to E-books.</p>	<p>4.10.1 Place a suggestion box at the entrance of the library to collect readers' feedback on the library's creative space design, library service management, and shelf placement.</p> <p>4.10.2 The library can regularly organize some reading sharing sessions, creative competitions.</p> <p>4.10.3 Some major books, library guide maps, etc. can be placed next to the library's main aisle.</p>	<p>Check the status of books and reserve seats or rooms online through the library APP program.</p> <p>Set up an open emotional consultation room or a small room that can express bad emotions.</p> <p>Place a suggestion box at the entrance of the library.</p> <p>The E-book can be accessed directly.</p> <p>Some signs can be placed beside the passage.</p>	<p>The library APP program provides services such as viewing books and booking rooms.</p> <p>Design small rooms that can release emotions.</p> <p>Need to set up signs and suggestion boxes, etc.</p> <p>The E-book can be accessed directly</p>



Appendix D

BU Library User Agreement Questionnaire



THIS QUESTIONNAIRE ARE A PART OF INDEPENDENT STUDY (IS) EXPLORATIVE ANALYSIS OF BU LIBRARY REDESIGN TO BECOME A CREATIVE SPACE. 2020 BY Zongwei Li.

**Direction:**

1. Please fill out the following questionnaire according to the facts, and mark 'X' on the 'O' of the answer options and the 'Rating Scales' column.
2. For the agreement evaluation index, please score according to the actual situation.

Name:

Gender:

Email:

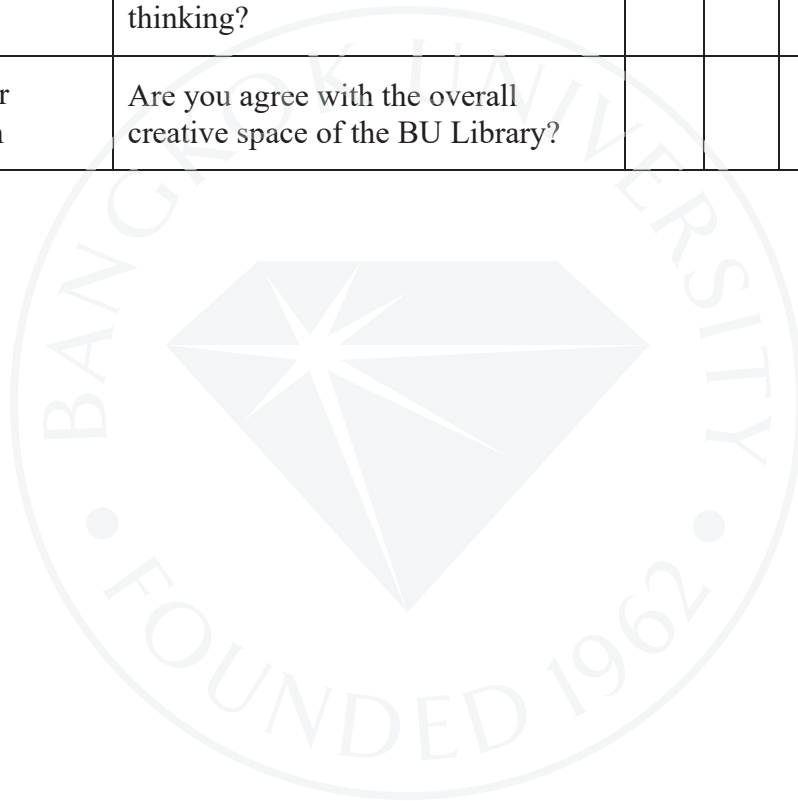
Date(DD/MM/YYYY):

Demographics	Questions and Answer Choices
Frequency	How often you go to the BU Library? <input type="radio"/> Everyday <input type="radio"/> 5 - 6 times a week <input type="radio"/> 3 - 4 times a week <input type="radio"/> 1 - 2 times a week <input type="radio"/> Never
Residence Time	How long do you usually stay in the BU Library? <input type="radio"/> More than 6 hours <input type="radio"/> 3 - 6 hours <input type="radio"/> 1 - 3 hours <input type="radio"/> 0.5 - 1 hour <input type="radio"/> Within half an hour
Purpose	What is your purpose of going to the BU Library? <input type="radio"/> Reading and self-study <input type="radio"/> Borrow books and access electronic materials <input type="radio"/> Group discussion and creative exchange <input type="radio"/> Develop creative activities and participate in creative design <input type="radio"/> Creative practice and creative display

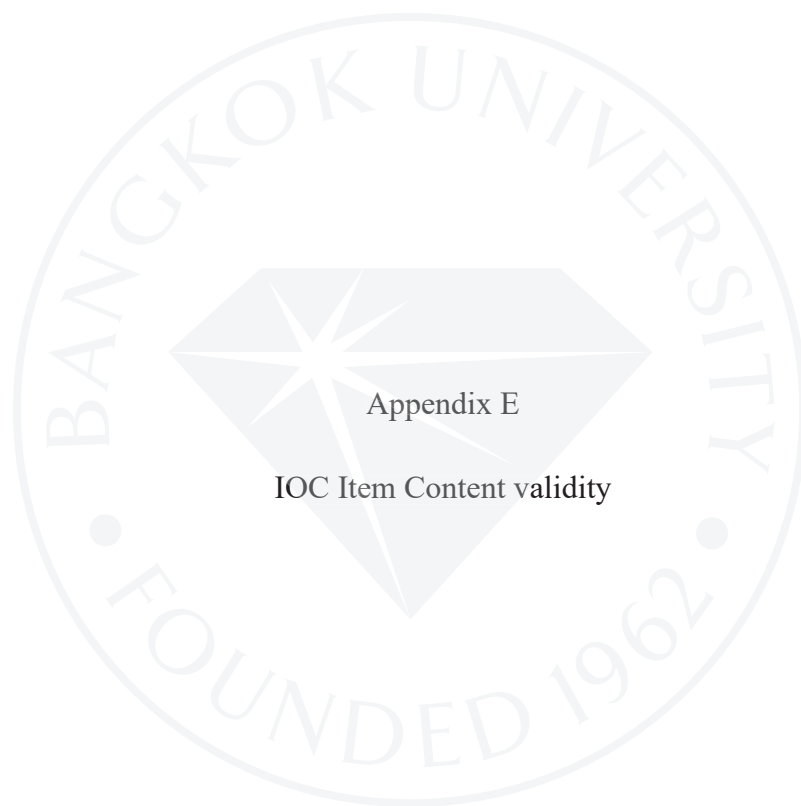
Variables	Evaluation Indicators	Rating Scales				
		5	4	3	2	1
Furniture & Equipment	Do you think the comfort of tables, chairs and sofas will affect your creative mood?					
	Will the number and arrangement of power outlets affect your creative process?					
	If the BU Library has a water dispenser or drinking room, will your creative mood be better?					
	Do you think studying in the coffee room of the BU library can better inspire your creativity?					
Library Opening Hours	Whether the BU Library's daytime opening hours meet your creative process?					
	Will opening the BU library at night improve your creative thinking?					
	If the BU Library is also open on weekends, can you better complete your creative tasks?					
Information Technology (IT)	Can the computers in the BU Library help you accomplish your creative tasks better?					
	If the BU library provides free Wi-Fi, do you think it can make you better complete creative tasks?					
	Can the printer equipment in the BU Library bring benefits to your creative process?					
	If the BU Library install a fully automated Book Borrowing & Returning System, will it save your creative time?					
Library Space Layout	Will the warm and comfortable lighting of BU Library make your creative mood better?					
	Does indoor air circulation make your creative mood better?					
	Will comfortable indoor temperature and humidity affect your creative behavior?					
Learning Space &	Will the size and quietness of the personal reading room in BU Library affect your creative thinking?					

Variables	Evaluation Indicators	Rating Scales				
		5	4	3	2	1
Resources	Will the noise in the public reading room of the BU library affect your creative mood?					
	Can the books and e-books provided by BU Library improve your creative ability?					
Leisure Area	Can the puzzle games in the games zone help you increase your sense of creativity?					
	Do educational videos and movies in the movie zone help your creative process?					
	Can those music in the music room inspire your creative inspiration?					
Display Area	Can the size and layout of the demo hall of the BU Library meet your creative tasks?					
	Can the design of the exhibition zone of the BU Library simplify your creative process?					
	Will the soundproofing and layout of the discussion room of the BU library affect your creative mood?					
Visual Experience	Will the colors and design shapes used in the creative space of the BU Library affect your creative mood?					
	Will the size and comfort of the creative space in the BU Library affect your creative behavior?					
	Will the bookshelves and books placement of the BU Library affect your creative process?					
Landscape Decoration	The more potted plants in BU Library, the better your creative mood?					
	If the BU library uses glass curtain walls, can it better meet your creative needs?					
	Does the sound insulation effect of the BU library meet your creative requirements?					

Variables	Evaluation Indicators	Rating Scales				
		5	4	3	2	1
Creative Inspiration	Do you think the tone of the wall painting in the BU library can inspire more creative ideas?					
	Do you think the display wall of the BU library can improve your creative ability?					
	Can the library's creative practice room improve your creative thinking?					
Master Design	Are you agree with the overall creative space of the BU Library?					







## IOC Item Content Validity

**Title:** Explorative Analysis of BU Library Redesign to Become a Creative Space.

**Objective:** Use qualitative analysis and quantitative analysis methods to conduct an exploratory analysis of the creative space of the BU library, to obtain the user's evaluation results of the creative space of the BU Library. By summing up some of the user's feelings about the use of the creative space and suggestions, put forward some optimization strategies for the creative design of the BU Library.

**Student ID:** 7620202338      **Student Name:** Zongwei Li

Date of Collection 14th April 2020

Questions	Expert 1	Comment & Suggestion
	Dr. Attapong Sritatalalai	
1. How often you go to the BU Library?	1	
2. How long do you usually stay in the BU Library?	1	
3. What is your purpose of going to the BU Library?	1	
4. Do you think the comfort of tables, chairs and sofas will affect your creative mood?	1	
5. <del>Will</del> the number and arrangement of power outlets affect your creative process?	0	Do you think amount of power outlets, supply affect your creative process?
6. If the BU Library has a water dispenser or drinking room, will your creative mood be better?	1	
7. Do you think studying in the coffee room of the BU library can better inspire your creativity?	1	
8. Whether the BU Library's daytime opening hours meet your creative process?	1	
9. <del>Would opening</del> the BU library at night improve your	0	If open the BU library at night improve your creative thinking?

Questions	Expert 1	Comment & Suggestion
	Dr. Attapong Sritalalai	
creative thinking?		
10. If the BU Library is also open on weekends, can you better complete your creative tasks?	1	
11. Can the computers in the BU Library help you accomplish your creative tasks better?	1	
12. If the BU library provides free Wi-Fi, do you think it can make you better complete creative tasks?		
13. Can the printer equipment in the BU Library bring benefits to your creative process?	1	
14. If the BU Library install a fully automated Book Borrowing & Returning System, will it save your creative time?	1	
15. Would the warm and comfortable lighting of BU Library make your creative mood better?	1	
16. Does indoor air circulation make your creative mood better?	1	
17. Would comfortable indoor temperature and humidity affect your creative behavior?	1	
18. Would the size and quietness of the personal reading room in BU Library affect your creative thinking?		
19. Would the noise in the public reading room of the BU library affect your creative mood?	1	

Questions	Expert 1	Comment & Suggestion
	Dr. Attapong Sritalalai	
20. Can the books and e-books provided by BU Library improve your creative ability?	1	
21. Can the puzzle games in the games zone help you increase your sense of creativity?	1	
22. Do educational videos and movies in the movie zone help your creative process?	1	
23. Can those music in the music room inspire your creative inspiration?	1	
24. Can the size and layout of the demo hall of the BU Library meet your creative tasks?	1	
25. Can the design of the exhibition zone of the BU Library simplify your creative process?	1	
26. Would the soundproofing and layout of the discussion room of the BU library affect your creative mood?	1	
27. Would the colors and design shapes used in the creative space of the BU Library affect your creative mood?	1	
28. Would the size and comfort of the creative space in the BU Library affect your creative behavior?	1	
29. Would the bookshelves and books placement of the BU Library affect your creative process?	1	
30. The more potted plants in BU Library, the better your creative mood?	1	

Questions	Expert 1	Comment & Suggestion
	Dr. Attapong Sritalalai	
31. If the BU library uses glass curtain walls, can it better meet your creative needs?	1	
32. Does the sound insulation effect of the BU library meet your creative requirements?	1	
33. Do you think the tone of the wall painting in the BU library can inspire more creative ideas?	1	
34. Do you think the display wall of the BU library can improve your creative ability?	1	
35. Can the library's creative practice room improve your creative thinking?	1	
36. Are you agree with the overall creative space of the BU Library?	1	

Approved and Endorsed:



( Dr. Attapong Sritalalai )

Contact Number:

Lecturer: China Market Modern Tourism and Education

Rajamangala University of Technology Tawan-Ok : Chakrabongse Bhuvanarth Campus

## IOC Item Content Validity

**Title:** Explorative Analysis of BU Library Redesign to Become a Creative Space.

**Objective:** Use qualitative analysis and quantitative analysis methods to conduct an exploratory analysis of the creative space of the BU library, to obtain the user's evaluation results of the creative space of the BU Library. By summing up some of the user's feelings about the use of the creative space and suggestions, put forward some optimization strategies for the creative design of the BU Library.

**Student ID:** 7620202338      **Student Name:** Zongwei Li

Date of Collection 14th April 2020

Questions	Expert 2	Comment & Suggestion
	Dr. Peppim Phuangsuwan	
1. How often you go to the BU Library?	1	
2. How long do you usually stay in the BU Library?	1	
3. What is your purpose of going to the BU Library?	1	
4. Do you think the comfort of tables, chairs and sofas will affect your creative mood?	1	
5. Will the number and arrangement of power outlets affect your creative process?	1	
6. If the BU Library has a water dispenser or drinking room, will your creative mood be better?	1	
7. Do you think studying in the coffee room of the BU library can better inspire your creativity?	1	
8. Whether the BU Library's daytime opening hours meet your creative process?	1	
9. Will opening the BU library at night improve your	1	

Questions	Expert 2	Comment & Suggestion
	Dr. Penpin Phuangsuwan	
creative thinking?		
10. If the BU Library is also open on weekends, can you better complete your creative tasks?	1	
11. Can the computers in the BU Library help you accomplish your creative tasks better?	1	
12. If the BU library provides free Wi-Fi, do you think it can make you better complete creative tasks?	1	
13. Can the printer equipment in the BU Library bring benefits to your creative process?	1	
14. If the BU Library install a fully automated Book Borrowing & Returning System, will it save your creative time?	1	
15. Would the warm and comfortable lighting of BU Library make your creative mood better?	1	
16. Does indoor air circulation make your creative mood better?	1	
17. Would comfortable indoor temperature and humidity affect your creative behavior?	1	
18. Would the size and quietness of the personal reading room in BU Library affect your creative thinking?	1	
19. Would the noise in the public reading room of the BU library affect your creative	1	

Questions	Expert 2	Comment & Suggestion
	Dr. Penpin Phuangsuwan	
mood?		
20. Can the books and e-books provided by BU Library improve your creative ability?	1	
21. Can the puzzle games in the games zone help you increase your sense of creativity?	1	
22. Do educational videos and movies in the movie zone help your creative process?	1	
23. Can those music in the music room inspire your creative inspiration?	1	
24. Can the size and layout of the demo hall of the BU Library meet your creative tasks?	1	
25. Can the design of the exhibition zone of the BU Library simplify your creative process?	1	
26. Would the soundproofing and layout of the discussion room of the BU library affect your creative mood?	1	
27. Would the colors and design shapes used in the creative space of the BU Library affect your creative mood?	1	
28. Would the size and comfort of the creative space in the BU Library affect your creative behavior?	1	
29. Would the bookshelves and books placement of the BU Library affect your creative process?	1	



Questions	Expert 2	Comment & Suggestion
	Dr.Penpim Phuangsuwan	
30. The more potted plants in BU Library, the better your creative mood?	1	
31. If the BU library uses glass curtain walls, can it better meet your creative needs?	1	
32. Does the sound insulation effect of the BU library meet your creative requirements?	1	
33. Do you think the tone of the wall painting in the BU library can inspire more creative ideas?	1	
34. Do you think the display wall of the BU library can improve your creative ability?	1	
35. Can the library's creative practice room improve your creative thinking?	1	
36. Are you agree with the overall creative space of the BU Library?	1	

Approved and Endorsed:



.....  
(Dr.Penpim Phuangsuwan )

Contact Number

Lecturer: Chief Educational Services and Knowledge Sharing  
CMBKK - University of Phayao Bilder - University of Phayao

.....



## IOC Item Content Validity

**Title:** Explorative Analysis of BU Library Redesign to Become a Creative Space.

**Objective:** Use qualitative analysis and quantitative analysis methods to conduct an exploratory analysis of the creative space of the BU library, to obtain the user's evaluation results of the creative space of the BU Library. By summing up some of the user's feelings about the use of the creative space and suggestions, put forward some optimization strategies for the creative design of the BU Library.

**Student ID:** 7620202338      **Student Name:** Zongwei Li

Date of Collection 14th April 2020

Questions	Expert 3	Comment & Suggestion
	Sasipannudech Nipon Asst. Prof. Dr.	
1. How often you go to the BU Library?	1	
2. How long do you usually stay in the BU Library?	1	
3. What is your purpose of going to the BU Library?		
4. Do you think the comfort of tables, chairs and sofas will affect your creative mood?	1	
5. Will the number and arrangement of power outlets affect your creative process?	1	
6. If the BU Library has a water dispenser or drinking room, will your creative mood be better?	1	
7. Do you think studying in the coffee room of the BU library can better inspire your creativity?	1	
8. Whether the BU Library's daytime opening hours meet your creative process?	1	
9. Will opening the BU library at night improve your	1	

Questions	Expert 3	Comment & Suggestion
	Asst.Prof.Dr. Nipon Sasipandech	
creative thinking?		
10. If the BU Library is also open on weekends, can you better complete your creative tasks?	1	
11. Can the computers in the BU Library help you accomplish your creative tasks better?	1	
12. If the BU library provides free Wi-Fi, do you think it can make you better complete creative tasks?	1	
13. Can the printer equipment in the BU Library bring benefits to your creative process?	1	
14. If the BU Library install a fully automated Book Borrowing & Returning System, will it save your creative time?	1	
15. Would the warm and comfortable lighting of BU Library make your creative mood better?	1	
16. Does indoor air circulation make your creative mood better?	1	
17. Would comfortable indoor temperature and humidity affect your creative behavior?	1	
18. Would the size and quietness of the personal reading room in BU Library affect your creative thinking?	1	
19. Would the noise in the public reading room of the BU library affect your creative	1	

Questions	Expert 3	Comment & Suggestion
	Asst.Prof.Dr. Nipon Sasipandech	
mood?		
20. Can the books and e-books provided by BU Library improve your creative ability?	1	
21. Can the puzzle games in the games zone help you increase your sense of creativity?	1	
22. Do educational videos and movies in the movie zone help your creative process?	1	
23. Can those music in the music room inspire your creative inspiration?	1	
24. Can the size and layout of the demo hall of the BU Library meet your creative tasks?		
25. Can the design of the exhibition zone of the BU Library simplify your creative process?	1	
26. Would the soundproofing and layout of the discussion room of the BU library affect your creative mood?	1	
27. Would the colors and design shapes used in the creative space of the BU Library affect your creative mood?	1	
28. Would the size and comfort of the creative space in the BU Library affect your creative behavior?	1	
29. Would the bookshelves and books placement of the BU Library affect your creative process?	1	

Questions	Expert 3	Comment & Suggestion
	Asst.Prof.Dr. Nipon Sasipanudech	
30. The more potted plants in BU Library, the better your creative mood?	1	
31. If the BU library uses glass curtain walls, can it better meet your creative needs?	1	
32. Does the sound insulation effect of the BU library meet your creative requirements?	1	
33. Do you think the tone of the wall painting in the BU library can inspire more creative ideas?	1	
34. Do you think the display wall of the BU library can improve your creative ability?	1	
35. Can the library's creative practice room improve your creative thinking?	1	
36. Are you agree with the overall creative space of the BU Library?	1	

Approved and Endorsed:



-----  
( Asst.Prof.Dr. Nipon Sasipanudech )

Contact Number:

Lecturer: Chinese Philosophy and Literature and e-learning  
Faculty of Liberal Arts: Thammasat University

-----



## IOC Item Content Validity

**Title:** Explorative Analysis of BU Library Redesign to Become a Creative Space.

**Objective:** Use qualitative analysis and quantitative analysis methods to conduct an exploratory analysis of the creative space of the BU library, to obtain the user's evaluation results of the creative space of the BU Library. By summing up some of the user's feelings about the use of the creative space and suggestions, put forward some optimization strategies for the creative design of the BU Library.

**Student ID:** 7620202338      **Student Name:** Zongwei Li

Date of Collection 14th April 2020

Questions	Expert 4	Comment & Suggestion
	Dr. Thanaphum. Pongsangiam	
1. How often you go to the BU Library?	1	
2. How long do you usually stay in the BU Library?	1	
3. What is your purpose of going to the BU Library?	1	
4. Do you think the comfort of tables, chairs and sofas will affect your creative mood?	0	Grammar correction is needed
5. <del>Will</del> the number and arrangement of power outlets affect your creative process?	0	Grammar correction is needed
6. If the BU Library has a water dispenser or drinking room, will your creative mood be better?	1	
7. Do you think studying in the coffee room of the BU library can better inspire your creativity?	1	
8. Whether the BU Library's daytime opening hours meet your creative process?	1	

Questions	Expert 4	Comment & Suggestion
	Dr. Thanaphum. Pongsangiam	
9. Will opening the BU library at night improve your creative thinking?	1	
10. If the BU Library is also open on weekends, can you better complete your creative tasks?	1	
11. Can the computers in the BU Library help you accomplish your creative tasks better?	1	
12. If the BU library provides free Wi-Fi, do you think it can make you better complete creative tasks?	1	
13. Can the printer equipment in the BU Library bring benefits to your creative process?	1	
14. If the BU Library install a fully automated Book Borrowing & Returning System, will it save your creative time?	1	
15. Would the warm and comfortable lighting of BU Library make your creative mood better?	1	
16. Does indoor air circulation make your creative mood better?	1	
17. Would comfortable indoor temperature and humidity affect your creative behavior?	1	
18. Would the size and quietness of the personal reading room in BU Library affect your creative thinking?	1	
19. Would the noise in the public reading room of the BU	1	

Questions	Expert 4	Comment & Suggestion
	Dr. Thanaphum. Pongsangiam	
library affect your creative mood?		
20. Can the books and e-books provided by BU Library improve your creative ability?	0	Is the books and e-books provided by BU Library improve your creative ability?
21. Can the puzzle games in the games zone help you increase your sense of creativity?	1	
22. Do educational videos and movies in the movie zone help your creative process?	1	
23. Can those music in the music room inspire your creative inspiration?	1	
24. Can the size and layout of the demo hall of the BU Library meet your creative tasks?	0	Can the size and layout of the demo hall of the BU Library <del>meet</del> support your creative tasks?
25. Can the design of the exhibition zone of the BU Library simplify your creative process?	1	
26. Would the soundproofing and layout of the discussion room of the BU library affect your creative mood?	1	
27. Would the colors and design shapes used in the creative space of the BU Library affect your creative mood?	1	
28. Would the size and comfort of the creative space in the BU Library affect your creative behavior?	1	
29. Would the bookshelves and books placement of the BU Library affect your creative process?	1	



Questions	Expert 4	Comment & Suggestion
	Dr. Thanaphum. Pongsangiam	
30. The more potted plants in BU Library, the better your creative mood?	1	
31. If the BU library uses glass curtain walls, can it better meet your creative needs?	1	
32. Does the sound insulation effect of the BU library meet your creative requirements?	1	
33. Do you think the tone of the wall painting in the BU library can inspire more creative ideas?	1	
34. Do you think the display wall of the BU library can improve your creative ability?	1	
35. Can the library's creative practice room improve your creative thinking?	1	
36. Are you agree with the overall creative space of the BU Library?	1	

Approved and Endorsed:



-----  
( Dr.Thanaphum. Pongsangiam )

Contact Number:

Lecturer: Chief of Tourism Management

Rajamangala University of Technology Suvarnabhumi

---



**Master in  
Business Innovation**



**IKI-SEA**  
THE INSTITUTE FOR  
KNOWLEDGE & INNOVATION  
SOUTH-EAST ASIA  
BANGKOK UNIVERSITY

## IOC score table

Item	Question	Expert 1	Expert 2	Expert 3	Expert 4	IOC Score	Comment
		Dr. Attapong Sritalalai	Dr. Penpim Phuangsuwan	Asst.Prof. Dr. Nipon Sasipannudech	Dr. Thanaphum. Pongsangiam		
1	How often you go to the BU Library?	1	1	1	1	1.00	
2	How long do you usually stay in the BU Library?	1	1	1	1	1.00	
3	What is your purpose of going to the BU Library?	1	1	1	1	1.00	
4	Do you think the comfort of tables, chairs and sofas will affect your creative mood?	1	1	1	0	.75	Grammar correction is needed
5	Will the number and arrangement of power outlets affect your creative process?	0	1	1	1	.75	Do you think amount of power outlets, supply affect your creative process?
6	If the BU Library has a water dispenser or drinking room, will your creative mood be better?	1	1	1	1	1.00	
7	Do you think studying in the coffee room of the BU library can better inspire your creativity?	1	1	1	1	1.00	
8	Whether the BU Library's daytime opening hours meet your creative process?	1	1	1	1	1.00	
9	Will opening the BU library at night improve your creative thinking?	0	1	1	1	.75	If open the BU library at night improve your creative thinking?
10	If the BU Library is also open on weekends, can you better complete your creative tasks?	1	1	1	1	1.00	
11	Can the computers in the BU Library help you	1	1	1	1	1.00	

Item	Question	Expert 1	Expert 2	Expert 3	Expert 4	IOC	Comment
	accomplish your creative tasks better?						
12	If the BU library provides free Wi-Fi, do you think it can make you better complete creative tasks?	1	1	1	1	1.00	
13	Can the printer equipment in the BU Library bring benefits to your creative process?	1	1	1	1	1.00	
14	If the BU Library install a fully automated Book Borrowing & Returning System, will it save your creative time?	1	1	1	1	1.00	
15	Will the warm and comfortable lighting of BU Library make your creative mood better?	1	1	1	1	1.00	
16	Does indoor air circulation make your creative mood better?	1	1	1	1	1.00	
17	Will comfortable indoor temperature and humidity affect your creative behavior?	1	1	1	1	1.00	
18	Will the size and quietness of the personal reading room in BU Library affect your creative thinking?	1	1	1	1	1.00	
19	Will the noise in the public reading room of the BU library affect your creative mood?	1	1	1	1	1.00	
20	Can the books and e-books provided by BU Library improve your creative ability?	1	1	1	0	.75	Is the books and e-books provided by BU Library improve your creative ability?
21	Can the puzzle games in the games zone help you increase your sense of creativity?	1	1	1	1	1.00	
22	Do educational videos and movies in the movie zone help your creative process?	1	1	1	1	1.00	
23	Can those music in the music room inspire your creative inspiration?	1	1	1	1	1.00	

Item	Question	Expert 1	Expert 2	Expert 3	Expert 4	IOC	Comment
24	Can the size and layout of the demo hall of the BU Library meet your creative tasks?	1	1	1	0	.75	Can the size and layout of the demo hall of the BU Library meet support your creative tasks?
25	Can the design of the exhibition zone of the BU Library simplify your creative process?	1	1	1	1	1.00	
26	Will the soundproofing and layout of the discussion room of the BU library affect your creative mood?	1	1	1	1	1.00	
27	Will the colors and design shapes used in the creative space of the BU Library affect your creative mood?	1	1	1	1	1.00	
28	Will the size and comfort of the creative space in the BU Library affect your creative behavior?	1	1	1	1	1.00	
29	Will the bookshelves and books placement of the BU Library affect your creative process?	1	1	1	1	1.00	
30	The more potted plants in BU Library, the better your creative mood?	1	1	1	1	1.00	
31	If the BU library uses glass curtain walls, can it better meet your creative needs?	1	1	1	1	1.00	
32	Does the sound insulation effect of the BU library meet your creative requirements?	1	1	1	1	1.00	
33	Do you think the tone of the wall painting in the BU library can inspire more creative ideas?	1	1	1	1	1.00	
34	Do you think the display wall of the BU library can improve your creative ability?	1	1	1	1	1.00	
35	Can the library's creative practice room improve your creative thinking?	1	1	1	1	1.00	
36	Are you agree with the overall creative space of the BU Library?	1	1	1	1	1.00	



14<sup>th</sup> April, 2020

**Dear Dr. Attapong Sritalalai,**

**Subject Expert for IOC Item Content Validity**

My name is Dr. Varalee Chinerawat, Lecturer of MBI program The Institute for Knowledge and Innovation Southeast Asia of Bangkok University (IKI-SEA).

I would like to invite you to be tool validation expert for IS study of our international student, Mr. Zongwei Li who effected from COVID 19 and delayed his data collection in urgent need for his graduation in May, 2020.

**The IS Title: Explorative Analysis of BU Library Redesign to Become a**

**Creative Space.**

Please print and sign and scan it back to my email [varalee.c@bu.ac.th](mailto:varalee.c@bu.ac.th). For Original document with signature, we will wait until free of COVID 19 situation.

If you have any question, please do not hesitate contact me at +66 812787871  
Best Regards,



Dr. Varalee Chinerawat

IKI-SEA

The Institute for Knowledge and Innovation – South-East Asia (IKI-SEA)  
Bangkok University - Rama 4 Road – Klong Toey - Bangkok – 10110 – Thailand  
Phone: +668 1 278 7871  
[varalee.c@bu.ac.th](mailto:varalee.c@bu.ac.th) | Internet: <http://www.iki-sea.org>



**Master In  
Business Innovation**



14<sup>th</sup> April, 2020

**Dear Dr. Penpim Phuangsuan,**

**Subject Expert for IOC Item Content Validity**

My name is Dr. Varalee Chinerawat, Lecturer of MBI program The Institute for Knowledge and Innovation Southeast Asia of Bangkok University (IKI-SEA).

I would like to invite you to be tool validation expert for IS study of our international student, Mr. Zongwei Li who effected from COVID 19 and delayed his data collection in urgent need for his graduation in May, 2020.

**The IS Title: Explorative Analysis of BU Library Redesign to Become a**



**Creative Space.**

Please print and sign and scan it back to my email [varalee.c@bu.ac.th](mailto:varalee.c@bu.ac.th). For Original document with signature, we will wait until free of COVID 19 situation.

If you have any question, please do not hesitate contact me at +66 812787871  
Best Regards,

Dr. Varalee Chinerawat  
IKI-SEA

The Institute for Knowledge and Innovation – South-East Asia (IKI-SEA)  
Bangkok University - Rama 4 Road – Klong Toey - Bangkok – 10110 – Thailand  
Phone: +668 1 278 7871  
[varalee.c@bu.ac.th](mailto:varalee.c@bu.ac.th) | Internet: <http://www.iki-sea.org>



14<sup>th</sup> April, 2020

**Dear Assistant Professor Dr. Nipon Sasipanudech,**  
**Subject Expert for IOC Item Content Validity**

My name is Dr. Varalee Chinerawat, Lecturer of MBI program The Institute for Knowledge and Innovation Southeast Asia of Bangkok University (IKI-SEA).


I would like to invite you to be tool validation expert for IS study of our international student, Mr. Zongwei Li who effected from COVID 19 and delayed his data collection in urgent need for his graduation in May, 2020.

**The IS Title: Explorative Analysis of BU Library Redesign to Become a**

**Creative Space.**

Please print and sign and scan it back to my email [varalee.c@bu.ac.th](mailto:varalee.c@bu.ac.th). For Original document with signature, we will wait until free of COVID 19 situation.

If you have any question, please do not hesitate contact me at +66 812787871  
Best Regards,



Dr. Varalee Chinerawat  
IKI-SEA

The Institute for Knowledge and Innovation – South-East Asia (IKI-SEA)  
Bangkok University - Rama 4 Road – Klong Toey - Bangkok – 10110 – Thailand  
Phone: +668 1 278 7871  
[varalee.c@bu.ac.th](mailto:varalee.c@bu.ac.th) | Internet: <http://www.iki-sea.org>



14<sup>th</sup> April, 2020

**Dear Dr. Thanaphum. Pongsangiam,**

**Subject Expert for IOC Item Content Validity**

My name is Dr. Varalee Chinerawat, Lecturer of MBI program The Institute for Knowledge and Innovation Southeast Asia of Bangkok University (IKI-SEA).

I would like to invite you to be tool validation expert for IS study of our international student, Mr. Zongwei Li who effected from COVID 19 and delayed his data collection in urgent need for his graduation in May, 2020.

**The IS Title: Explorative Analysis of BU Library Redesign to Become a**



### Creative Space.

Please print and sign and scan it back to my email [varalee.c@bu.ac.th](mailto:varalee.c@bu.ac.th). For Original document with signature, we will wait until free of COVID 19 situation.

If you have any question, please do not hesitate contact me at +66 812787871  
Best Regards,

Dr. Varalee Chinerawat  
IKI-SEA

The Institute for Knowledge and Innovation – South-East Asia (IKI-SEA)  
Bangkok University - Rama 4 Road – Klong Toey - Bangkok – 10110 – Thailand  
Phone: +668 1 278 7871  
[varalee.c@bu.ac.th](mailto:varalee.c@bu.ac.th) | Internet: <http://www.iki-sea.org>



14<sup>th</sup> April, 2020

Dear Dr. Arjarn Renuka,

My name is Dr. Varalee Chinerawat (Pearl) IKI-SEA 's lecturer of Chinese students program in innovation.

Since the COVID 19 issues our 2 students are unable to find questionnaire samples within timeline (Mid of April) for graduation.

My Chinese students just come to Thailand for 2 months cannot go out from the dorm for 45 days, and if we take it longer they might fail for graduation in May, 2020.

Mr. Zongwei Li **need online survey samples at least 33 people** (We provide both

English version, Chinese version for samples to choose their language).

He will send the link of 'QENJUANXING' online survey tomorrow. If you have any question, please do not hesitate contact me at +66 812787871

Best Regards,



Dr. Varalee Chinerawat

IKI-SEA

The Institute for Knowledge and Innovation – South-East Asia (IKI-SEA)  
 Bangkok University - Rama 4 Road – Klong Toey - Bangkok – 10110 – Thailand  
 Phone: +668 1 278 7871  
 varalee.c@bu.ac.th | Internet: <http://www.iki-sea.org>



**Master in  
Business Innovation**



14<sup>th</sup> April, 2020

Dear Dr. Arjarn Renuka,

My name is Zongwei Li. I am a student of Master of Business Innovation at Bangkok University.

Due to the impact of the COVID 19 epidemic, I encountered difficulties in collecting data from the IS (Topic: Explorative Analysis of BU Library Redesign to Become a Creative Space) questionnaire. In order to successfully graduate and obtain a degree in May of this year, I must collect at least 33 online samples of the questionnaire before April 15-25, 2020. Can you assign students of any of your degrees in the university to answer the 38 online surveys of my questionnaire within

15 minutes? Thank you!

Chinese version questionnaire link: <https://www.wjx.cn/jq/71713073.aspx>,

English version questionnaire link: <https://www.wjx.cn/jq/71728154.aspx>.

The content of the Chinese version questionnaire and the English version questionnaire are the same, so you can choose any version of the questionnaire to answer. If you have any questions, please contact me.

Zongwei Li

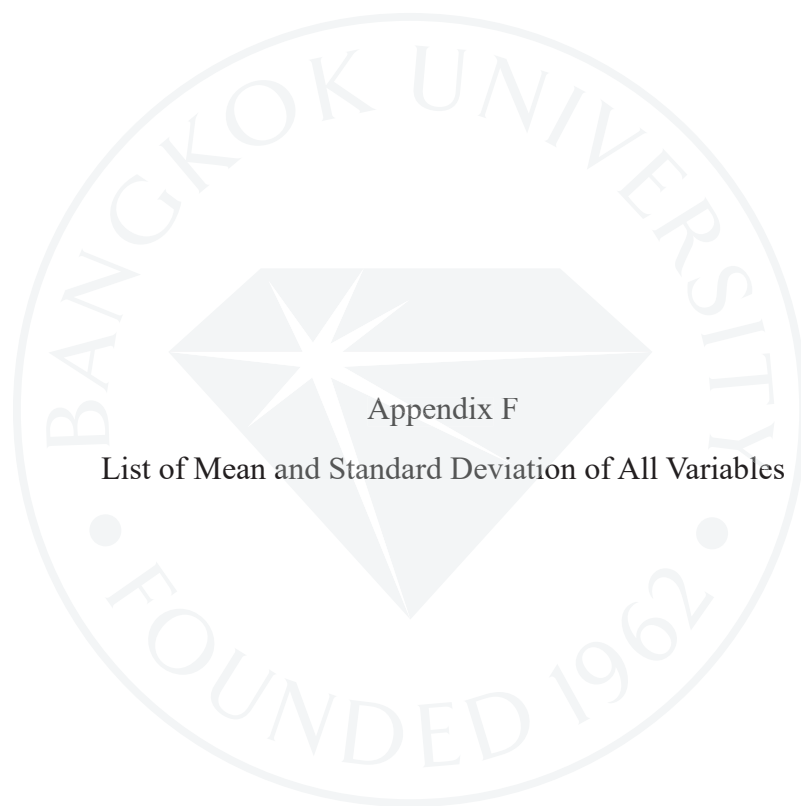
Email: [1301431931@qq.com](mailto:1301431931@qq.com)

QQ: 1301431931

WeChat ID: lizongwei66

Line ID: lizongwei66





Appendix F

List of Mean and Standard Deviation of All Variables



**Master in  
Business Innovation**



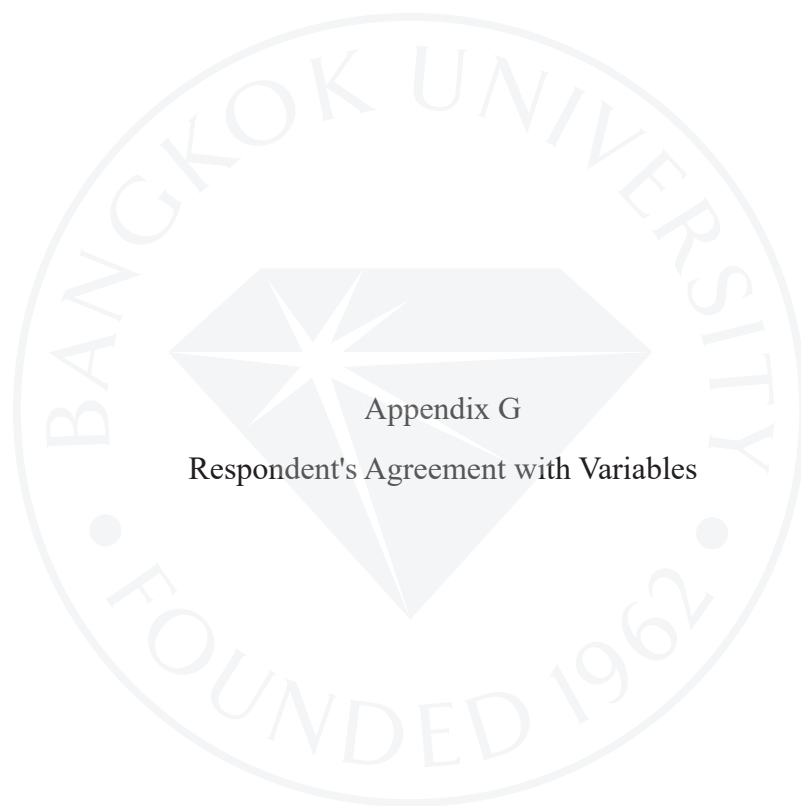
Variable	Mean	Std. Deviation	N
Display Wall	2.39	.910	59
Glass Curtain Wall	2.36	.961	59
Wall Painting	2.32	1.074	59
Cafes	2.31	1.004	59
Gaming Zone	2.31	.951	59
Power Outlets	2.31	.933	59
	(2.31 -2.39)		
Demo Hall	2.29	.872	59
Exhibition Zone	2.29	.948	59
Potted Plants	2.29	.966	59
Water Dispensers	2.29	1.084	59
Acoustic Panels	2.27	.925	59
Books & E-books	2.25	.921	59
Discussion Room	2.25	.921	59
Bookshelves & Books Placement	2.24	1.040	59
	( 2.24 - 2.29 )		
Creative Practice Room	2.17	.834	59
Night Opening Hours	2.17	.950	59
Computers	2.15	.867	59
Space Size & Comfort	2.10	.824	59
Temperature & Humidity	2.10	.941	59
Space Color & Modeling	2.10	.781	59
Daytime Opening Hours	2.10	.803	59
	( 2.10 - 2.17 )		



**Master in  
Business Innovation**



Variable	Mean	Std. Deviation	N
Movie Zone	2.08	.988	59
Music Room	2.08	.836	59
Quiet Personal Reading Room	2.08	.952	59
Weekends Opening Hours	2.07	.926	59
Overall creative space	2.02	.682	59
Air Circulation Fresh	2.02	.820	59
	( 2.02 - 2.08 )		
Public Reading Room	1.98	.919	59
Tables, Chairs and Sofas	1.97	.928	59
Printers	1.93	.944	59
Book Borrowing & Returning System	1.92	.794	59
Warm Lighting	1.83	.791	59
Wi-Fi	1.51	.838	59
	( 1.51 - 1.98 )		



Appendix G

Respondent's Agreement with Variables



Table A1: Respondents' agreement with "Tables, Chairs and Sofas"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	21	35.59	35.59	35.59
Disagreed	23	38.98	38.98	74.58
Neutral	12	20.34	20.34	94.92
Agreed	2	3.39	3.39	98.31
Very agreed	1	1.69	1.69	100.00
Total	59	100.00	100.00	

Table A2: Respondents' agreement with "Power Outlets"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	12	20.34	20.34	20.34
Disagreed	23	38.98	38.98	59.32
Neutral	19	32.20	32.20	91.53
Agreed	4	6.78	6.78	98.31
Very agreed	1	1.69	1.69	100.00
Total	59	100.00	100.00	

Table A3: Respondents' agreement with "Water Dispensers"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	13	22.03	22.03	22.03
Disagreed	28	47.46	47.46	69.49
Neutral	9	15.25	15.25	84.75
Agreed	6	10.17	10.17	94.92
Very agreed	3	5.08	5.08	100.00
Total	59	100.00	100.00	



Table A4: Respondents' agreement with "Cafes"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	12	20.34	20.34	20.34
Disagreed	25	42.37	42.37	62.71
Neutral	17	28.81	28.81	91.53
Agreed	2	3.39	3.39	94.92
Very agreed	3	5.08	5.08	100.00
Total	59	100.00	100.00	

Table A5: Respondents' agreement with "Daytime Opening Hours"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	15	25.42	25.42	25.42
Disagreed	24	40.68	40.68	66.10
Neutral	19	32.20	32.20	98.31
Agreed	1	1.69	1.69	100.00
Very agreed	0	0.00	0.00	
Total	59	100.00	100.00	

Table A6: Respondents' agreement with "Night Opening Hours"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	19	32.20	32.20	32.20
Disagreed	14	23.73	23.73	55.93
Neutral	23	38.98	38.98	94.92
Agreed	3	5.08	5.08	100.00
Very agreed	0	0.00	0.00	
Total	59	100.00	100.00	

Table A7: Respondents' agreement with "Weekends Opening Hours"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	20	33.90	33.90	33.90
Disagreed	18	30.51	30.51	64.41
Neutral	18	30.51	30.51	94.92
Agreed	3	5.08	5.08	100.00
Very agreed	0	0.00	0.00	
Total	59	100.00	100.00	

Table A8: Respondents' agreement with "Computers"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	15	25.42	25.42	25.42
Disagreed	23	38.98	38.98	64.41
Neutral	18	30.51	30.51	94.92
Agreed	3	5.08	5.08	100.00
Very agreed	0	0.00	0.00	
Total	59	100.00	100.00	

Table A9: Respondents' agreement with "Wi-Fi"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	40	67.80	67.80	67.80
Disagreed	10	16.95	16.95	84.75
Neutral	7	11.86	11.86	96.61
Agreed	2	3.39	3.39	100.00
Very agreed	0	0.00	0.00	
Total	59	100.00	100.00	

Table A10: Respondents' agreement with "Printers"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	24	40.68	40.68	40.68
Disagreed	19	32.20	32.20	72.88
Neutral	12	20.34	20.34	93.22
Agreed	4	6.78	6.78	100.00
Very agreed	0	0.00	0.00	
Total	59	100.00	100.00	

Table A11: Respondents' agreement with "Book Borrowing &amp; Returning System"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	21	35.59	35.59	35.59
Disagreed	22	37.29	37.29	72.88
Neutral	16	27.12	27.12	100.00
Agreed	0	0.00	0.00	
Very agreed	0	0.00	0.00	
Total	59	100.00	100.00	

Table A12: Respondents' agreement with "Warm Lighting"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	22	37.29	37.29	37.29
Disagreed	27	45.76	45.76	83.05
Neutral	8	13.56	13.56	96.61
Agreed	2	3.39	3.39	100.00
Very agreed	0	0.00	0.00	
Total	59	100.00	100.00	

Table A13: Respondents' agreement with "Air Circulation Fresh"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	17	28.81	28.81	28.81
Disagreed	26	44.07	44.07	72.88
Neutral	14	23.73	23.73	96.61
Agreed	2	3.39	3.39	100.00
Very agreed	0	0.00	0.00	
Total	59	100.00	100.00	

Table A14: Respondents' agreement with "Temperature &amp; Humidity"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	18	30.51	30.51	30.51
Disagreed	21	35.59	35.59	66.10
Neutral	17	28.81	28.81	94.92
Agreed	2	3.39	3.39	98.31
Very agreed	1	1.69	1.69	100.00
Total	59	100.00	100.00	

Table A15: Respondents' agreement with "Quiet Personal Reading Room"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	20	33.90	33.90	33.90
Disagreed	17	28.81	28.81	62.71
Neutral	20	33.90	33.90	96.61
Agreed	1	1.69	1.69	98.31
Very agreed	1	1.69	1.69	100.00
Total	59	100.00	100.00	

Table A16: Respondents' agreement with "Public Reading Room"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	21	35.59	35.59	35.59
Disagreed	21	35.59	35.59	71.19
Neutral	15	25.42	25.42	96.61
Agreed	1	1.69	1.69	98.31
Very agreed	1	1.69	1.69	100.00
Total	59	100.00	100.00	

Table A17: Respondents' agreement with "Books &amp; E-books"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	11	18.64	18.64	18.64
Disagreed	28	47.46	47.46	66.10
Neutral	16	27.12	27.12	93.22
Agreed	2	3.39	3.39	96.61
Very agreed	2	3.39	3.39	100.00
Total	59	100.00	100.00	

Table A18: Respondents' agreement with "Gaming Zone"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	13	22.03	22.03	22.03
Disagreed	20	33.90	33.90	55.93
Neutral	23	38.98	38.98	94.92
Agreed	1	1.69	1.69	96.61
Very agreed	2	3.39	3.39	100.00
Total	59	100.00	100.00	

Table A19: Respondents' agreement with "Movie Zone"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	19	32.20	32.20	32.20
Disagreed	22	37.29	37.29	69.49
Neutral	13	22.03	22.03	91.53
Agreed	4	6.78	6.78	98.31
Very agreed	1	1.69	1.69	100.00
Total	59	100.00	100.00	

Table A20: Respondents' agreement with "Music Room"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	16	27.12	27.12	27.12
Disagreed	24	40.68	40.68	67.80
Neutral	17	28.81	28.81	96.61
Agreed	2	3.39	3.39	100.00
Very agreed	0	0.00	0.00	
Total	59	100.00	100.00	

Table A21: The frequency agreement with "Demo Hall"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	13	22.03	22.03	22.03
Disagreed	19	32.20	32.20	54.24
Neutral	24	40.68	40.68	94.92
Agreed	3	5.08	5.08	100.00
Very agreed	0	0.00	0.00	
Total	59	100.00	100.00	

Table A22: Respondents' agreement with "Exhibition Zone"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	13	22.03	22.03	22.03
Disagreed	21	35.59	35.59	57.63
Neutral	22	37.29	37.29	94.92
Agreed	1	1.69	1.69	96.61
Very agreed	2	3.39	3.39	100.00
Total	59	100.00	100.00	

Table A23: Respondents' agreement with "Discussion Room"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	13	22.03	22.03	22.03
Disagreed	23	38.98	38.98	61.02
Neutral	19	32.20	32.20	93.22
Agreed	3	5.08	5.08	98.31
Very agreed	1	1.69	1.69	100.00
Total	59	100.00	100.00	

Table A24: Respondents' agreement with "Space Color &amp; Modeling"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	15	25.42	25.42	25.42
Disagreed	23	38.98	38.98	64.41
Neutral	21	35.59	35.59	100.00
Agreed	0	0.00	0.00	
Very agreed	0	0.00	0.00	
Total	59	100.00	100.00	

Table A25: Respondents' agreement with "Space Size &amp; Comfort"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	15	25.42	25.42	25.42
Disagreed	25	42.37	42.37	67.80
Neutral	17	28.81	28.81	96.61
Agreed	2	3.39	3.39	100.00
Very agreed	0	0.00	0.00	
Total	59	100.00	100.00	

Table A26: Respondents' agreement with "Bookshelves &amp; Books Placement"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	19	32.20	32.20	32.20
Disagreed	13	22.03	22.03	54.24
Neutral	22	37.29	37.29	91.53
Agreed	4	6.78	6.78	98.31
Very agreed	1	1.69	1.69	100.00
Total	59	100.00	100.00	

Table A27: Respondents' agreement with "Potted Plants"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	12	20.34	20.34	20.34
Disagreed	25	42.37	42.37	62.71
Neutral	17	28.81	28.81	91.53
Agreed	3	5.08	5.08	96.61
Very agreed	2	3.39	3.39	100.00
Total	59	100.00	100.00	



Table A28: Respondents' agreement with "Glass Curtain Wall"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	12	20.34	20.34	20.34
Disagreed	21	35.59	35.59	55.93
Neutral	20	33.90	33.90	89.83
Agreed	5	8.47	8.47	98.31
Very agreed	1	1.69	1.69	100.00
Total	59	100.00	100.00	

Table A29: Respondents' agreement with "Acoustic Panels"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	13	22.03	22.03	22.03
Disagreed	22	37.29	37.29	59.32
Neutral	20	33.90	33.90	93.22
Agreed	3	5.08	5.08	98.31
Very agreed	1	1.69	1.69	100.00
Total	59	100.00	100.00	

Table A30: The frequency of respondents' agreement with "Wall Painting"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	15	25.42	25.42	25.42
Disagreed	20	33.90	33.90	59.32
Neutral	16	27.12	27.12	86.44
Agreed	6	10.17	10.17	96.61
Very agreed	2	3.39	3.39	100.00
Total	59	100.00	100.00	

Table A31: Respondents' agreement with "Display Wall"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	9	15.25	15.25	15.25
Disagreed	24	40.68	40.68	55.93
Neutral	22	37.29	37.29	93.22
Agreed	2	3.39	3.39	96.61
Very agreed	2	3.39	3.39	100.00
Total	59	100.00	100.00	

Table A32: Respondents' agreement with "Creative Practice Room"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	13	22.03	22.03	22.03
Disagreed	26	44.07	44.07	66.10
Neutral	17	28.81	28.81	94.92
Agreed	3	5.08	5.08	100.00
Very agreed	0	0.00	0.00	
Total	59	100.00	100.00	

Table A33: Respondents' agreement with "Overall creative space"

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very disagreed	13	22.03	22.03	22.03
Disagreed	32	54.24	54.24	76.27
Neutral	14	23.73	23.73	100.00
Agreed	0	0.00	0.00	
Very agreed	0	0.00	0.00	
Total	59	100.00	100.00	

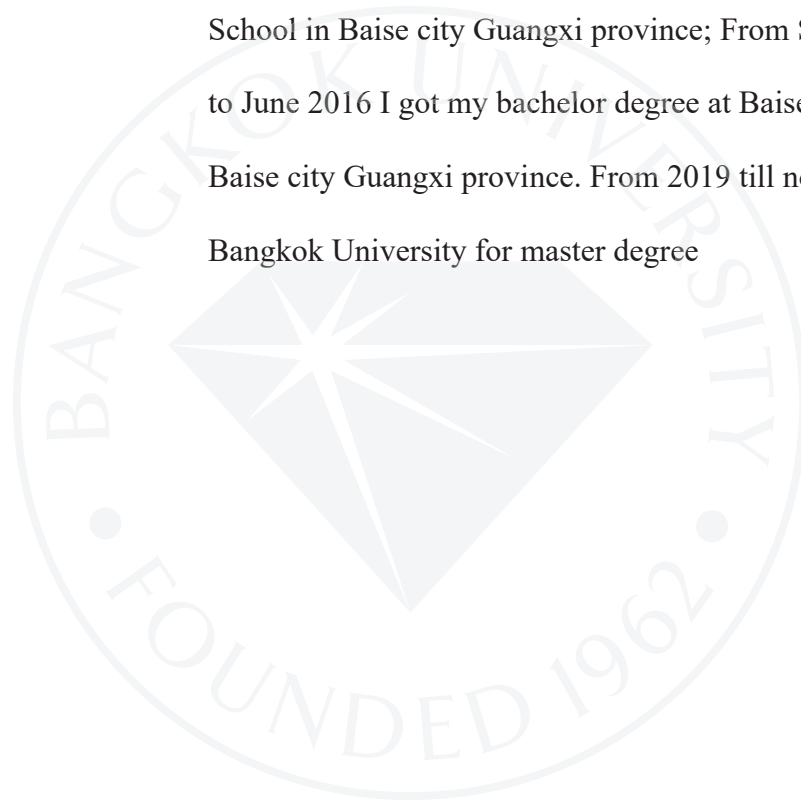
## BIODATA

Name: Mr. Zongwei Li

Permanent Address: No. 701, Longjing Street, Youjiang District, Baise City, Guangxi  
Province, China

Email: 1301431931@qq.com / li.zong@bumail.net

Education Background: From September 2009 to June 2012 I studied at Lingyun High  
School in Baise city Guangxi province; From September 2012  
to June 2016 I got my bachelor degree at Baise University in  
Baise city Guangxi province. From 2019 till now studying at  
Bangkok University for master degree



**Bangkok University**

**License Agreement of Dissertation/Thesis/ Report of Senior Project**

Day 17 Month December Year 2020

Mr./ Mrs./Ms Zongwei Li now living at \_\_\_\_\_  
Soi \_\_\_\_\_ Street Longjing East Road  
Sub-district Longjing District Youjiang, Baise  
Province Guangxi, China Postal Code 533000 being a Bangkok  
University student, student ID 7620202338

Degree level  Bachelor  Master  Doctorate  
Program MBI Department IKI-SEA School Graduate School  
hereafter referred to as "the licensor"

Bangkok University 119 Rama 4 Road, Klong-Toey, Bangkok 10110 hereafter referred  
to as "the licensee"

Both parties have agreed on the following terms and conditions:

1. The licensor certifies that he/she is the author and possesses the exclusive rights of  
dissertation/thesis/report of senior project entitled  
EXPLORATIVE ANALYSIS OF BU LIBRARY REDESIGN TO BECAME A CREATIVE  
SPACE: FROM BU INTERNATIONAL STUDENTS POINT OF VIEW

submitted in partial fulfillment of the requirement for the Degree Master of Management  
(Business Innovation)  
of Bangkok University (hereafter referred to as "dissertation/thesis/ report of senior  
project").

2. The licensor grants to the licensee an indefinite and royalty free license of his/her  
dissertation/thesis/report of senior project to reproduce, adapt, distribute, rent out the  
original or copy of the manuscript.

3. In case of any dispute in the copyright of the dissertation/thesis/report of senior  
project between the licensor and others, or between the licensee and others, or any  
other inconveniences in regard to the copyright that prevent the licensee from  
reproducing, adapting or distributing the manuscript, the licensor agrees to indemnify  
the licensee against any damage incurred.

This agreement is prepared in duplicate identical wording for two copies. Both parties have read and fully understand its contents and agree to comply with the above terms and conditions. Each party shall retain one signed copy of the agreement.

\_\_\_\_\_  
( [REDACTED] ) Licensor

\_\_\_\_\_  
( [REDACTED] ) Licensee  
Dr. Attipa Julpisit  
Director, Library

\_\_\_\_\_  
( [REDACTED] ) Witness  
Mr. Virat Rattakorn  
Dean, Graduate School

\_\_\_\_\_  
( SUPAPORN SURSOONGNEN ) Witness

