



05-4506832



pustaka.upsi.edu.my



Perpustakaan Tuanku Bainun
Kampus Sultan Abdul Jalil Shah



PustakaTBainun



ptbupsi

EXPLORING YOUNG USER EXPERIENCE
THROUGH GAMIFICATION-BASED PERSONAS
FOR THE PALACE MUSEUM IN BEIJING
USING SERVICE DESIGN
APPROACH



05-4506832



pustaka.upsi.edu.my



Perpustakaan Tuanku Bainun
Kampus Sultan Abdul Jalil Shah



PustakaTBainun



ptbupsi

LIU SHUNLI

SULTAN IDRIS EDUCATION UNIVERSITY

2020



05-4506832



pustaka.upsi.edu.my



Perpustakaan Tuanku Bainun
Kampus Sultan Abdul Jalil Shah



PustakaTBainun



ptbupsi



05-4506832



pustaka.upsi.edu.my



Perpustakaan Tuanku Bainun
Kampus Sultan Abdul Jalil Shah



PustakaTBainun



ptbupsi

EXPLORING YOUNG USER EXPERIENCE THROUGH
GAMIFICATION-BASED PERSONAS FOR THE PALACE MUSEUM
IN BEIJING USING SERVICE DESIGN APPROACH

LIU SHUNLI



05-4506832



pustaka.upsi.edu.my



Perpustakaan Tuanku Bainun
Kampus Sultan Abdul Jalil Shah



PustakaTBainun



ptbupsi

THESIS SUBMITTED IN FULFILLMENT OF THE REQUIREMENT
FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

FACULTY OF ART, COMPUTING & CREATIVE INDUSTRY
SULTAN IDRIS EDUCATION UNIVERSITY

2020



05-4506832



pustaka.upsi.edu.my



Perpustakaan Tuanku Bainun
Kampus Sultan Abdul Jalil Shah



PustakaTBainun



ptbupsi



Please tick (✓)

Project Paper

Masters by Research

Master by Mixed Mode

PhD

✓

INSTITUTE OF GRADUATE STUDIES**DECLARATION OF ORIGINAL WORK**

This declaration is made on the1.....day of.....December.....2020.....

i. Student's Declaration:

I, LIU SHUNLI (P20171000502)
FACULTY OF ART, COMPUTING AND CREATIVE INDUSTRIES (PLEASE
INDICATE STUDENT'S NAME, MATRIC NO. AND FACULTY) hereby declare that the work
entitled EXPLORING YOUNG USER EXPERIENCE THROUGH GAMIFICATION-BASED PERSONAS
FOR THE PALACE MUSEUM IN BEIJING USING SERVICE DESIGN APPROACH is my
original work. I have not copied from any other students' work or from any other sources except
where due reference or acknowledgement is made explicitly in the text, nor has any part been
written for me by another person.

Signature of the student

ii. Supervisor's Declaration:

ASSOCIATE PROF. DR.
I MUHAMMAD ZAFFWAN IDRIS (SUPERVISOR'S NAME) hereby certifies that
the work entitled EXPLORING YOUNG USER EXPERIENCE THROUGH GAMIFICATION-BASED
PERSONAS FOR THE PALACE MUSEUM IN BEIJING USING SERVICE DESIGN APPROACH
.....(TITLE) was prepared by the above named student, and was
submitted to the Institute of Graduate Studies as a * partial/full fulfillment for the conferment
of DOCTOR OF PHILOSOPHY (PLEASE INDICATE
THE DEGREE), and the aforementioned work, to the best of my knowledge, is the said student's
work.

December 1, 2020

Date

Signature of the Supervisor



INSTITUT PENGAJIAN SISWAZAH / INSTITUTE OF GRADUATE STUDIES

BORANG PENGESAHAN PENYERAHAN TESIS/DISERTASI/LAPORAN KERTAS PROJEK DECLARATION OF THESIS/DISSERTATION/PROJECT PAPER FORM

Tajuk / Title: EXPLORING YOUNG USER EXPERIENCE THROUGH
GAMIFICATION-BASED PERSONAS FOR THE PALACE MUSEUM
IN BEIJING USING SERVICE DESIGN APPROACH

No. Matrik / Matric's No.: P20171000502

Saya / I: LIU SHUNLI

(Nama pelajar / Student's Name)

mengaku membenarkan Tesis/Disertasi/Laporan Kertas Projek (Kedoktoran/Sarjana)* ini disimpan di Universiti Pendidikan Sultan Idris (Perpustakaan Tuanku Bainun) dengan syarat-syarat kegunaan seperti berikut:-

acknowledged that Universiti Pendidikan Sultan Idris (Tuanku Bainun Library) reserves the right as follows:-

1. Tesis/Disertasi/Laporan Kertas Projek ini adalah hak milik UPSI.
The thesis is the property of Universiti Pendidikan Sultan Idris
2. Perpustakaan Tuanku Bainun dibenarkan membuat salinan untuk tujuan rujukan dan penyelidikan.
Tuanku Bainun Library has the right to make copies for the purpose of reference and research.
3. Perpustakaan dibenarkan membuat salinan Tesis/Disertasi ini sebagai bahan pertukaran antara Institusi Pengajian Tinggi.
The Library has the right to make copies of the thesis for academic exchange.
4. Sila tandakan (✓) bagi pilihan kategori di bawah / Please tick (✓) for category below:-

☐ **SULIT/CONFIDENTIAL**

Mengandungi maklumat yang berdarjah keselamatan atau kepentingan Malaysia seperti yang termaktub dalam Akta Rahsia Rasmi 1972. / Contains confidential information under the Official Secret Act 1972

☐ **TERHAD/RESTRICTED**

Mengandungi maklumat terhad yang telah ditentukan oleh organisasi/badan di mana penyelidikan ini dijalankan. / Contains restricted information as specified by the organization where research was done.

☒ **TIDAK TERHAD / OPEN ACCESS**

(Tandatangan Pelajar/ Signature)

(Tandatangan Penyelia / Signature of Supervisor)
& (Nama & Cop Rasmi / Name & Official Stamp)

Tarikh: December 1, 2020

Catatan: Jika Tesis/Disertasi ini **SULIT @ TERHAD**, sila lampirkan surat daripada pihak berkuasa/organisasi berkenaan dengan menyatakan sekali sebab dan tempoh laporan ini perlu dikelaskan sebagai **SULIT** dan **TERHAD**.

Notes: If the thesis is CONFIDENTIAL or RESTRICTED, please attach with the letter from the organization with period and reasons for confidentiality or restriction.



ACKNOWLEDGMENT

Thanks for the help of all the people and departments who have guided and supported me, this thesis was completed. In particular, I would like to express my sincere gratitude to my supervisor, Associate Professor Dr. Muhammad Zaffwan Idris, for his insights, patience, supervision, and encouragement. Throughout the research process, he had a significant impact on the progress of my thesis. Likewise, I am grateful to Dr. Matthew Barr of the University of Glasgow for giving me consent to use his online implementation test - The Bartle Test of Gamer Psychology. Thanks also to examiners, classmates, and friends who provided suggestions for this research. My deepest gratitude to the Faculty of Art, Computing & Creative Industry, Sultan Idris Education University, for full support. Indeed, I am grateful to the wisdom of my wife Xi Cuiyu, elderly parents, for supporting my decision to study in Malaysia. Thanks to all for their continuous encouragement and hard work. My most profound salutations to my wife, my ever-loving daughter, who endure with patience in my busiest and most challenging time. My apology for them for the burden. To my daughter, Liu Wancen, I feel ashamed I cannot spend more time with you, but I believe my experience will inspire you to strive for the best life in the future.





ABSTRACT

This study was aimed to explore young users' experiences (UX) through gamification-based personas at the Palace Museum in Beijing using Service Design (SD) approach. By adapting ethnography research design, this study did not only analyze the users' experiences, but also provided insights into the personas' motivation. The exploration of museum UX was based on the employment of two models: the Richard Bartle's four types of players model (gamification-based) and the visit process-based (pre-during-post) model. Using the Bartle Test of Gamer Psychology, the study identified four desirable personas (i.e., Socializer, Explorer, Achiever and Attacker) from 126 candidates, with one participant selected for each type of persona. The data from four personas were collected through three phases (pre-, during-, and post-visit) from both online and offline services at the Palace Museum. This study employed multiple instruments as observation method: video recording, in-depth retrospective interviews and personas' experience cards, mainly for pre and post visits, as well as service safari, shadowing, and images photographed by personas during the site visits. Experience cards and photos were used for recalling past experiences and reducing misunderstandings. Data were analyzed using triangulation through three coding cycles accompanied by quantifying the qualitative data. The data were used to cross-examine the observed situations to capture the reasons behind why personas performed particular behaviors. The findings indicated that each gamification-based persona had a distinct intrinsic motivation such as Explorer-type participant was focusing on knowledge-gathering by unlocking new areas in museum and discovering hidden details. Socializer was preferring on the cooperation and building connections with others. Attacker was keen on taking risks and challenges. Finally, achiever was concentrating on competitive accumulation like gaining ticket discount and souvenirs. Through analyzing the experience data, a model with three clusters emerged, namely 'Functionality', 'Emotionality', and 'Uniqueness' were used by the four personas in describing their museum experiences. As a conclusion, the varied motives of gamification-based personas were found in exploring the museum services. These intrinsic motives include the motivation to discover, to connect, to take new challenges, and to gain rewards. For the implication of the study, a model called museum experience based on Functionality-Emotionality-Uniqueness cluster was formulated and can be used as a new set of guidelines for museum service experience.





MENEROKA PENGALAMAN PENGGUNA MUDA MELALUI PERSONA BERASASKAN GAMIFIKASI UNTUK MUZIUM ISTANA DI BEIJING DENGAN MENGGUNAKAN PENDEKATAN REKA BENTUK PERKHIDMATAN

ABSTRAK

Kajian ini dijalankan untuk meneroka pengalaman pengguna muda (UX) melalui persona berasaskan gamifikasi di Palace Museum, Beijing, menggunakan pendekatan Reka Bentuk Perkhidmatan (Service Design - SD). Dengan menggunakan reka bentuk penyelidikan etnografi, kajian ini bukan sahaja menganalisa pengalaman pengguna, tetapi ia juga memberi pandangan terhadap motivasi persona. Explorasi muzium UX ini adalah berasaskan penggunaan dua model: Richard Bartle's four types of players (berasaskan gamifikasi) dan Visit Process-Based (pra-semasa-pasca). Dengan menggunakan Bartle Test of Gamer Psychology, kajian ini mengenalpasti empat persona (Sosialis, Penjelajah, Pencapai, dan Penyerang) daripada 126 calon, dengan seorang peserta yang dipilih untuk setiap persona. Data daripada empat persona dikumpul melalui tiga fasa (pra-semasa-pasca) melalui perkhidmatan dalam talian dan luar talian di Palace Museum untuk membina kefahaman tentang muzium. Kajian ini menggunakan pelbagai instrumen sebagai kaedah pemerhatian: rakaman video, temuduga retrospektif mendalam dan kad pengalaman persona, terutamanya semasa pra- dan pasca- lawatan, dan juga perkhidmatan safari, bayangan, dan imej yang digambarkan oleh persona semasa lawatan. Kad pengalaman dan foto digunakan untuk mengingat semula pengalaman lalu dan mengurangkan salah faham. Data dianalisa menggunakan triangulasi melalui tiga kitaran pengkodan diikuti dengan menganalisa data kualitatif secara kuantitatif. Data tersebut digunakan untuk pemeriksaan balas pada menelitan situasi bagi mengetahui sebab-sebab mengapa perilaku tertentu itu terjadi. Hasil kajian menunjukkan bahawa setiap persona berasaskan gamifikasi mempunyai motivasi intrinsik yang berbeza, misalnya peserta jenis Penjelajah lebih berfokus kepada penerokaan pengetahuan baharu dan butiran tersembunyi di dalam muzium. Sosialis lebih memilih untuk kerjasama dan membina hubungan dengan orang lain. Penyerang berminat untuk mengambil risiko dan cabaran. Akhirnya, Pencapai menumpukan pada pengumpulan yang kompetitif seperti mendapatkan potongan harga dan cenderahati. Dengan menganalisa data pengalaman, sebuah model yang merangkumi tiga kluster telah dihasilkan iaitu 'Functionality', 'Emotionality', dan 'Uniqueness' yang digunakan oleh keempat-empat persona tersebut bagi menggambarkan pengalaman mereka di muzium. Sebagai kesimpulan, kepelbagaian motif daripada persona berasaskan gamifikasi telah dikenal pasti dalam penerokaan perkhidmatan muzium. Motif intrinsik ini merangkumi motivasi untuk mencari, untuk berhubung, untuk menghadapi cabaran baharu, dan untuk mendapatkan ganjaran. Implikasi daripada penelitian ini, sebuah model pengalaman muzium daripada kluster Functionality-Emotionality-Uniqueness dapat dirumuskan dan boleh digunakan sebagai satu garis panduan baharu dalam pengalaman perkhidmatan muzium.



CONTENTS

	Page
DECLARATION OF ORIGINAL WORK	ii
DECLARATION OF THESIS FORM	iii
ACKNOWLEDGEMENT	iv
ABSTRACT	v
ABSTRAK	vi
TABLE OF CONTENT	vii
LIST OF TABLES	xii
LIST OF FIGURES	xiv
LIST OF ABBREVIATIONS	xviii
APPENDIX LIST	xix
CHAPTER 1 INTRODUCTION	
1.1 Introduction	1
1.2 Background of the Study	5
1.3 Problem Statement	14
1.4 Purpose and Objectives of the Study	21
1.5 Research Questions	23
1.6 Conceptual Framework of Research	23
1.7 Selection of the Case	27
1.8 Operational Definition	31
1.9 Scope and Limitations of the Study	32
1.10 Significance of the Study	33
1.11 Summary	35

CHAPTER 2 LITERATURE REVIEW

2.1	Introduction	37
2.2	Museum	38
2.2.1	Museum Development and Connotation Evolution	38
2.2.2	House Museum in the Museum Diversity Context	42
2.2.3	From Physical Museum to Virtual Museum	44
2.3	User Experience (UX)	51
2.3.1	User-centered User Experience (UX)	52
2.3.2	The Co-experience beyond Individualism	61
2.3.3	Experience Provided by Museum Technology	64
2.3.4	Methods of Investigating User Experience (UX)	69
2.4	Service Design (SD)	73
2.4.1	Interpretation of Service Design (SD)	75
2.4.2	Service Design (SD) in the Museum Context	77
2.4.3	Service Design (SD) as a Holistic Approach	79
2.4.3.1	Service Process-based Model “Pre-During-Post”	79
2.4.3.2	Persona Technique in Service Design (SD)	82
2.5	Gamification and Motivations	90
2.5.1	Gamification	91
2.5.2	The Meaningful Gamification	95
2.5.3	Extrinsic Motivations and Intrinsic Motivations	97
2.5.3.1	Extrinsic Motivations	99
2.5.3.2	Intrinsic Motivations	101
2.5.4	Gamification-based Player Motivations	102

2.6	Summary and Implications	106
-----	--------------------------	-----

CHAPTER 3 RESEARCH METHODOLOGY

3.1	Introduction	110
3.2	Qualitative Research Design	111
3.3	Philosophical Worldview	113
3.4	Strategy of Inquiry	115
3.4.1	Feasibilities of Traditional Ethnography Strategy	115
3.4.2	Challenges with Applying Traditional Ethnography	117
3.4.3	Adaptation of Rapid Ethnography	118
3.5	Selection of Personas	119
3.5.1	Introduction to Selecting Personas	120
3.5.2	Adapting the Bartle Test of Gamer Psychology	126
3.5.3	Persona Selection Procedure	129
3.5.3.1	Classifying Respondents into Four Categories	129
3.5.3.2	Selecting Four Desirable Personas	135
3.5.3.3	Background of the Four Personas	140
3.6	Selection of Touchpoints	143
3.7	Data Collection Procedure	147
3.7.1	Project Briefing Meeting	151
3.7.2	Data Collection: Pre-visit and Post-visit Phases	153
3.7.3	Data Collection: During-visit Phase	162
3.8	Transcribing and Preparing the Data	165
3.8.1	Tools and Techniques for Transcribing Session	165
3.8.1.1	Transcribing Tools	166

3.8.1.2	Transcribing Techniques and Credibility Checking	167
3.9	Data Analysis	174
3.9.1	Importing and Classifying Sources	176
3.9.2	Triangulation in Qualitative Analysis	177
3.9.3	The Coding Cycles	181
3.9.3.1	The First Cycle Coding	183
3.9.3.2	After First Cycle Coding	190
3.9.3.3	The Second Cycle Coding	197
3.9.4	Quantifying the Qualitative Data	205
3.10	Summary	206

CHAPTER 4 FINDINGS

4.1	Introduction	207
4.2	Model that can be Used to Identify the Personas	209
4.3	Museum Service Experiences of the Personas	212
4.3.1	List of Negative Experience of Museum Services	212
4.3.1.1	The Theme “Experience of Functionality”	213
4.3.1.2	The Theme “Experience of Emotionality”	241
4.3.1.3	The Theme “Experience of Uniqueness”	252
4.3.2	List of Positive Experience of Museum Services	255
4.3.2.1	The Theme “Neo-culture Creativity”	255
4.3.2.2	The Theme “Involvement”	263
4.3.3	Description of Specific Motivations for Different Personas to Visit the Museum	268
4.3.3.1	Extrinsic Motivations	269
4.3.3.2	Intrinsic Motivations for Different Personas	272

4.4	A Set of Guidelines	283
4.5	Summary	289

CHAPTER 5 DISCUSSION AND CONCLUSIONS

5.1	Introduction	290
5.2	Discussion of the Research Findings and Conclusions	291
5.2.1	Research Question One	292
5.2.2	Research Question Two	295
5.2.2.1	The Negative Experience	295
5.2.2.2	The Positive Experience	302
5.2.2.3	Motivations of Personas	304
5.2.3	Research Question Three	308
5.3	Overall Conclusion	310
5.4	Implications of the Study	313
5.4.1	Innovative Research Design	314
5.4.2	Helping Similar Museums to Engage Audiences	316
5.5	Limitations and Recommendations for Future Research	317
5.5.1	Size and Scope of Personas	318
5.5.2	The Adapted Rapid Ethnography	319
5.6	Publications	320
5.7	Summary	321

REFERENCE	322
-----------	-----

APPENDIX	348
----------	-----



LIST OF TABLES

Table No.		Page
2.1	Implications of the literature review for this study	107
3.1	An excerpt from the results	133
3.2	Selection criteria of the four desirable personas	137
3.3	Data analysis procedure formulated according to Creswell (2009)	175
3.4	Triangulation of multiple data files for each persona	177
3.5	An excerpt of the working list of 120 codes about negative and positive experiences	187
3.6	An excerpt of the working list of 59 codes for motivations and recommendations	189
3.7	An excerpt of interview transcripts of the persona Explorer (R=Researcher, E=Explorer)	190
3.8	Working list of 27 Categories with 38 dimensions for negative experiences	194
3.9	Working list of 7 categories with ten dimensions for positive experiences	195
3.10	Working list of 4 categories with 34 dimensions for motivations and recommendations	196
3.11	A list of negative experience of museum services	199
3.12	A list of positive experience of museum services	200
3.13	A list of specific motivations for different personas to visit the museum	201
3.14	Touchpoints' experience levels marked by personas	204



4.1	Categories of “Experience of Functionality” with their frequency of mentions	214
4.2	Categories of “Experience of Emotionality” with their frequency of mentions	242
4.3	Categories of “Experience of Uniqueness” with their frequency of mentions	252
4.4	Categories of “Neo-culture Creativity”	256
4.5	Categories of “Involvement”	264
4.6	Motivation of the persona: Explorer	273
4.7	Motivation of the persona: Socializer	277
4.8	Motivation of the persona: Attacker	280
4.9	Motivation of the persona: Achiever	282
5.1	The proportion of the population between different types of players	294
5.2	The worst experiences identified by reviewing the frequency of mentions	295
5.3	The number of mentions for each theme	300



LIST OF FIGURES

No. Figures		Page
1.1	Conceptual framework of the research	24
1.2	The Taihe Hall of the Palace Museum (Source: https://www.dpm.org.cn)	29
1.3	The Palace Museum official website (English version) (Source: https://en.dpm.org.cn)	30
2.1	The project has two editions (Kenderdine, 2013)	49
2.2	The application of 3D reconstructed instruments, animation based on live performance (left); visitor uses the magnifying glass to inspect a musician in the mural (right) (Kenderdine, 2013)	50
2.3	An AR gallery that combines mobile devices (Kenderdine, 2013)	51
2.4	Parking signs were redesigned (before and after) (Source: https://www.interaction-design.org)	55
2.5	Maslow's theory "hierarchy of human needs" (Adapted from Jordan, 2002)	58
2.6	Four levels of UX defined at the Nielsen Norman Group Conference (quality attributes of UX) (Reprinted from Soñez et al., 2013)	59
2.7	The artwork which was stolen or robbed will appear on the empty canvas by watching using smart phone or tablet (Mosa, n.d.)	65
2.8	The original image is automatically extended beyond its borders and covered with the surrounding wall (Hürst et al., 2016)	68
2.9	Three ways to get feedback from the users (Adapted from E. B. N. Sanders, 2002)	70



2.10	Schematics of Likert Scale (above) and Semantic Differential Scale (below) (Adapted from Barbieri et al., 2017)	71
2.11	Three phases of touchpoints in SD theory	81
2.12	Three phases of a museum experience	82
2.13	Four popular market segmentation foundations	84
2.14	Aaker's brand personality model (Stone, 2020)	86
2.15	Brand personality archetypes based on Carl Jung's theory (Stone, 2020)	87
2.16	Detailed understanding of the gamification definition (Adapted from Charalambous, n.d.)	93
2.17	The gamification is different from serious games or design for playful interactions (Deterding et al., 2011)	94
2.18	Types of motivators (Adapted from Post, 2017; Kumar & Herger, 2013)	98
2.19	SAPS Rewards System	100
2.20	The Self-Determination Theory (SDT)	102
2.21	Types of players in gamification (Adapted from Bartle, 2004; Zichermann & Cunningham, 2011)	104
2.22	The framework of gamer psychology	105
3.1	The test results in the form of a screenshot	131
3.2	The persona card: Socializer	140
3.3	The persona card: Explorer	141
3.4	The persona card: Achiever	141
3.5	The persona card: Attacker	142

3.6	Blank experience card: pre-visit	145
3.7	Blank experience card: During-visit	146
3.8	Blank experience card: Post-visit	146
3.9	Triangulated data used in this research	149
3.10	Data collection procedures and SD tools	150
3.11	Two videos combined in one video window (Picture-in-Picture)	158
3.12	Retrospective interviews conducted	159
3.13	Four on-site shadowing videos of four personas	164
3.14	Transcribing key moments in NVivo by adding time stamps	169
3.15	Transcription of photographs	170
3.16	Inviting personas to check interpretations (member checking)	173
3.17	The image photographed by persona – 1 (April 27, 2019)	179
3.18	The image photographed by persona – 2 (April 27, 2019)	180
3.19	The image photographed by persona – 3 (May 11, 2019)	180
3.20	Coding in NVivo	182
3.21	The hierarchy of coding in NVivo	186
3.22	Importance-based classification attempts (tree structure)	192
3.23	Emotional curve based on 12 experience cards	203
4.1	Returning the data segments for the interpreting	209
4.2	The persona selection model was formulated	210
4.3	Guidelines for museum service experience investigation	284

5.1	A preliminary model of the historic house museums experience	297
5.2	Comparison between the models deduced from findings and the model in the literature	298
5.3	An improved framework of instructions for exploring museum service experience	313



LIST OF ABBREVIATIONS

3D	Three Dimensions
APP	Application
AR	Augmented Reality
CAQDAS	Computer-Assisted Qualitative Data Analysis Software
CIS	Corporate Identity System
DEMIST	The International Committee for Historic House Museums
HCI	Human-Computer Interaction
ICOM	International Council of Museums
QR Code	Quick Response Code
SDT	Self-Determination Theory
SD	Service Design
UCD	User-centered Design
UNESCO	The United Nations Educational, Scientific and Cultural Organization
UX	User Experience
VR	Virtual Reality





APPENDIX LIST

- A Participant Consent Form
- B Permission Letter to Use the Bartle Test of Gamer Psychology
- C Questionnaire for Identifying Personas
- D Semi-structured Retrospective Interview Questions
- E Verification of Translation
- F 122 results from 99 initial results by classifying the test results
- G1 Sample Transcript of Phase 1 (pre-visit)
- G2 Sample Transcript of Phase 2 (during-visit)
- G3 Sample Transcript of Phase 3 (post-visit)
- H1 Working List of Codes (Negative and Positive Experiences)
- H2 Working List of Codes (Motivations and Recommendations)





CHAPTER 1

INTRODUCTION



1.1 Introduction

The museum is a crucial factor in the cultivation of the populace, and it can measure the strength of a country to a certain extent (Jian & Li, 2014). In the past half-century, the museum's concept of "exhibit-oriented" has changed from collection-centric to the "visitor-oriented" concept of serving the public (Ji, Feng, & Zhang, 2019; Ma & Cheng, 2019; Deng, 2016; Feng, 2017; An, 2019). In particular, previous research shows that 38.41% of the audiences visit the museum for an experience of entertainment, and this percentage is higher than all other motives such as studying and accompanying others (Li, 2017). Museums in the 21st century must have more





engaging and participative experiences (Museums, 2016). However, the positioning of the museum lacks attention to the attribute of the museum's leisure market, which is a challenge in the 21st century (Espiritu, 2018).

Belenioti and Vassiliadis (2017) recognized that the museum administrators need to improve the museum experience through branding and the experience of museum can be investigated through service design (SD) approach to meet the visitors' needs (French, 2016). Specifically, SD is the design of how service delivers an experience to their customers over time to improve users' or customers' service experiences (Sandoval & Sortland 2013), and it emphasizes the feeling of individuals.

For museums, originating from visitor's experience and centered on the visitor experience, SD is a collection of practices and methods used to solve specific museum problems (French, 2016). Based on the understanding of SD, this research investigated museum experience during the whole service stages of the museum: "pre-visit," "during-visit," and "post-visit," and the research environment includes both "physical" and "virtual."

As just mentioned, SD is to solve specific museum problems. In terms of the degree of Chinese citizens' engagement in the museum, compared with the 3-5 visits per year in developed countries, each citizen in China enters the museum about once every two years on average. It is not because the exhibition is not wonderful, but the museum service cannot better satisfy the visit experience (Bai & Xu, 2017; Liu & Liu,





2017). Especially, in the era of the highly developed internet, due to the monotonous experience provided by museums, people must think twice before entering the museum (Kristianto, Dela, & Santoso, 2018). Although the overall participation is not high, the research on population composition found that the young people have been the main users of museums currently. Fang (2018) and Zhang (2019) presented strong evidence that more than half of visitors to the Palace Museum in Beijing are young people under 30. Similarly, statistics from the Shanxi History Museum and the Capital Museum also showed that the number and frequency of visits to museums by young people under 39 are the most. Fang (2018) also found some museum-themed documentaries and variety shows have also won wide attention from the generation born in the 80s, 90s and 00s (accounting for 97% of the total audience). This shows that young Chinese people determine the future audience of the museum (Izzo, 2017). However, given the low frequency of museum visits in China as a whole, the frequency of visits by young Chinese people is still lower than that of some developed countries, and the habit of young people participating in museums still needs to be cultivated.

In view of the fact that the museum visit experience is still not enough to encourage young people to visit museums frequently, the conclusion is that the monotonous experience of young visitors visiting museums needs to be further enhanced. Studies suggested that gamification can facilitate the improvement of users' engagement and increase the satisfaction of individuals, especially for young museum





visitors (Lans, Ansems, & Khan, 2016; Kristianto et al., 2018; Nofal et al., 2020). As a user research, however, it is undeniable that young visitors are still a large group. Under the guidance of the museum user segmentation concept in museum branding (Espiritu, 2018), combined with the persona technique in SD, Gamification-based persona can be understood as the practice of player type research in the design process of gamified systems for non-gaming environments (Hopfgartner, 2015). As the persona refers a specific fictional person as an archetype to represent a group of people with shared characteristics, in the museum context, Stickdorn, Hormess, Lawrence, and Schneider (2018) proposed that it is beneficial to develop personas to comprehend the wider context of user needs. More importantly, combined with persona technique, it helps to focus on valuable user groups during the SD participation (French, 2016). Faced with issues aforementioned that keep young people engaged in museums, the purpose of this research is to enhance the UX by exploring SD of the Palace Museum to provide stories of how the representative users perceive the museum.

According to Donnelly (2002), the historic house museum has become one of the essential forms of museums. As an explanation, historic house museums range from palaces to cottages, from all periods. It centers on the maintenance, care, and interpretation of either a single, historical residential structure or a complex of structures (DEMHIST, 2018; Donnelly, 2002). In China, a large number of housing museums have received insufficient attention (Guan, 2017). Based on this gap, this





research project involves a historic house museum in Beijing, China, the Palace Museum, otherwise known as the Forbidden City. Founded in 1925, the Palace Museum based on the Forbidden City, the Imperial Palace of the Ming and Qing Dynasties, and it has the largest brick & wood structure architectural complex in the world (<https://www.dpm.org.cn>). Actually, China has four major museums based on imperial palaces: the Palace Museum in Beijing, The Forbidden City of Nanjing, The Shenyang Palace Museum, and the National Palace Museum in Taipei. Among them, the Palace Museum in Beijing has the greatest scale, influence and symbolic significance. In conclusion, this research is expected to enlighten museum administrators and museum user experience (UX) researchers to step up measures in exploring SD of the historic house museum according to young visitors' intrinsic motivations.

1.2 Background of the Study

In the new global economy, the knowledge-based economy has become a central issue in the 21st century (Patomäki, 2019). The populace's cultivation is among the most important factors for measuring the strength of a country (Feng, 2018). In the history of urban development, the museum has been thought of as a key factor in effectively expanding the space for cultural sharing, enhancing the cultivation of the populace, and shaping humanistic spirit (Jian & Li, 2014; Feng, 2018). In the "Front





Line” column of the Art & Design Journal, when discussing the status of museums, the museum specialist demonstrated that the most significant core driving force of a country’s culture is the museum, which is the top of the cultural pyramid (Zhou, 2016).

Cultural strength can indeed show comprehensive national power (Li, 2019). Notwithstanding, in the aspect of attracting new audiences, the museums face challenges that come from the competition both within the nonprofits industry as well as the culture and leisure market industry (Belenioti, Tsourvakas, & Vassiliadis, 2017; Belenioti & Vassiliadis, 2017; Espiritu, 2018). Here is one challenge of the museum:

Gain popularity without being overwhelmed (Sīmansone, Sīmansons, Spurinš, & Klāsons, 2015). For this issue, branding may well include some possible leisure experience qualities (Espiritu, 2018). Despite its increasing competition, museum branding is still a neglected area of research (Espiritu, 2018; Belenioti et al., 2017; Belenioti & Vassiliadis, 2017; Ober-Heilig, Bekmeier-Feuerhahn, & Sikkenga, 2014; Camarero, Garrido, & Vicente, 2010). To a large extent, non-profit organizations, including non-profit museums, hesitate to adopt branding techniques due to seeming too commercial, resource commitment, and other risks (Espiritu, 2018; Belenioti & Vassiliadis, 2017; Kim, 2008; Ritchie, Swami, & Weinberg, 1999).

Despite this reality that non-profit organizations are reluctant to adopt branding strategy, what needs to be acknowledged is the social economy has shifted





from mass production to mass customization (Pallant, Sands, & Karpen, 2020). This is causing young consumers to originate choices to express personality more from symbolic characteristics (image and feel of a brand) (Islam & Rahman, 2016; Neumeier, 2005). Specifically, museum branding refers to creating consumers' perception or impression of the museum (Espiritu, 2018). As Espiritu (2018) concluded that brands lead to differentiation, thereby providing a competitive advantage. For a museum, brands support visitors in their effort to speed up choice-making for visiting or further consumption and decrease the perceived risks of market sharing from nonprofits industry plus the culture and leisure market, and then progressively help museums survive in competitions. Therefore, brands play multiple and critical roles for museums (Lin, 2016; Kim, 2008).



Regarding the brand, the American Marketing Association (AMA, 2017) defined the term brand in 1960 as follows: "A name, term, sign, symbol, or design, or a combination of them which intended to identify the goods or services of one seller or a group of sellers and to differentiate them from those of competitors." This definition emphasizes the concept of corporate identity system (CIS), while the idea of a brand extends far beyond the visual, and brand identity refers to a set of conceptual associations or emotional reactions (Garrett, 2011). Additionally, Neumeier (2005) also defined a brand as:

A brand is a person's gut feeling about a product, service, or company. It is a GUT FEELING because we are all emotional, intuitive beings, despite our





best efforts to be rational. It is a PERSON's gut feeling because, in the end, the brand is defined by individuals, not by companies, markets, or the so-called general public. Each person creates his or her version of it. When enough individuals arrive at the same gut feeling, a company can be said to have a brand. (Neumeier, 2005, p. 2)

Through the above definition, Neumeier believed that the brand is a personal perception, as Wang, Pestana, and Moutinho (2018) as well as Norman (2004) said that brands are all about emotions; they are signifiers of emotional responses. That means different individuals may hold different perceptions for the same product, service, or company. As museum branding, it refers to creating consumers' perception or impression of the museum (Espiritu, 2018). Espiritu (2018) also suggested that the museum should manage its own brand as much as possible, because the audience can define the brand according to their own opinions. Although the companies or organizations cannot control the personal perception version, a company can affect those personal impressions in the way that the company wants individuals to see its brand. This process of brand building is branding (Neumeier, 2005; Holland, 2006). On the contrary, interestingly, other literature gave a different view. According to the Interaction Design Foundation (n.d.), brand experience is not something that can control.

Having defined what is meant by brand, now move on to discuss services in the brand since the concept of branded things has expanded successfully to include services, and non-tangible factors have gradually become elements that differentiate





services (Murphy, 1988; Belenioti & Vassiliadis, 2017; AMA, 2017). Norman (2004) pointed out some brands represent a focus upon service as well as Song, Kim, and Kim (2020) explained how consumer perception of service quality affects brand attitudes. Undoubtedly, in order to build a brand, services need to be designed. Specifically, service design (SD) is the design of how a service delivers an experience to their user or customers over time (Sandoval & Sortland, 2013) to improve their service experiences. Once visitors are attracted by services rather than exhibits, they have the possibility of becoming long-term and regular visitors to the museum (Falk & Dierking, 2013). In principle, all components of the service are more or less intentionally designed, and these important components for supporting service performance are touchpoints (Penin, 2018). According to the principle of touchpoints in SD, the touchpoints is divided into three stages: “pre-service,” “during-service,” and “post-service” (Qin, 2014; Cha, 2015; Liu & Liu, 2017). In the same vein, Falk and Dierking (2013), Liu and Liu (2017) in their study noted that the visitor experience of the museum is divided into three stages: “pre-visit,” “during-visit,” and “post-visit.” These viewpoints coincided with the proposition of French (2016) that the visitor journey begins before the museum visit and continues long after they exit. To sum up, the SD approach “pre-during-post” may help to provide stories of how the users perceive the museum.

In the context of the SD of a museum, although most of the studies focus on “during-visit” of the museum, a few recent studies (e.g., French, 2016) have





recognized the critical role played by “pre-visit” and “post-visit” as just mentioned. Besides, in earlier studies, Kravchyna and Hastings (2002) already found 57% of people visiting museum websites before and after they visit the physical museum. Additionally, according to Thomas and Carey (2005), the survey of 435 respondents found that 67% of them thought visiting a museum website encouraged them to visit the museum physically. It is clear that there is a complementary relationship between the physical museum and the virtual museum, both of which require SD, and online content has influenced the interest in physical visits: a well-designed online museum promotes physical visits, while a low-quality online museum hinders physical visits (Kravchyna & Hastings, 2002; Thomas & Carey, 2005; Marty, 2007).



Returning briefly to the understanding of the SD described earlier, the researcher concluded that what the SD provides is UX. SD is derived from the visitor’s experience and centered on the visitor’s experience (French, 2016). In studies conducted by Harte et al. (2017), UX can be intuitively understood as the views and responses of users due to the use of products or services. As noted by Segelström, Raijmakers, and Holmlid (2009), SD immensely focuses on the experience of individuals in their context during stages of the service design process, which coincided with the statement of French (2016) that intensify the awareness of the visitor-focused experience during three visit phases in the museum context. Therefore, SD can serve as an approach to explore UX for the museum. Further, Camarero, Garrido, and Vicente (2010) concluded that repeating a satisfying experience in future





dates could even serve as a measure of brand equity for cultural organizations. For the museum, it is not only an educational institution, but also provides visitors with experiences such as entertainment (Li, 2017). To attract visitors in the leisure market, other experiential values of museum brand identity ought to be considered to integrate into brand communication by employing the SD. Specifically, over the recent past, modern museums are shifting from being an educational institution to embracing leisure market components. As museums increasingly integrate exhibits with performing arts, entertainment, events, retail, catering, and entertainment, the development trend of museums is to make education and cultural activities inextricably intertwined with commerce and entertainment (Ngwira & Bello, 2018; Chen & Lin, 2018; Aalst & Boogaarts, 2002; Espiritu, 2018).



Until now, this section focused on SD and museum UX, and argued that a desirable experience could serve as a measure of the brand for a museum. However, services tailored to users' unique preferences can more arouse users' continued attention (Akasaki et al., 2016). As Espiritu (2018) stated that museum brands need to be accurate and specifically communicate with designated target groups. Based on this issue, the following will discuss the motivations of young users as user-centric SD immensely focuses on the experience of individuals. The study conducted by Döpker, Brockmann, and Stieglitz (2013, p. 2308) provided different insights for another potential problem: "How can potential visitors be motivated to visit the museum continuously and how can knowledge of the artwork be transferred?" When





it comes to visitors' motivations, the researcher has to reiterate that the participation of the young generation determines the museum's future audience (Izzo, 2017). In view of the fact that many studies in the introduction section have shown that gamification can improve the engagement and satisfaction of young museum visitors, which is consistent with previous authors' opinion that the application of gaming metaphors to real life tasks is beneficial to understanding user motivation, participation, and experience (e.g., Zichermann & Cunningham, 2011; Döpker et al., 2013; Hamari & Koivisto, 2015; Lans et al., 2016; Aalst & Boogaarts, 2002; Koppolu, 2016).



The concept of gamification can be traced back to the late 1800s to the early 1900s, when it was first used in diverse marketing concepts for organizations. For instance, it used to employ rewards to increase customer loyalty (Koppolu, 2016). According to Koppolu (2016)., gamification has attracted widespread attention almost since 2010, and academic research has gradually started since then. Specifically, gamification is the use of elements of game design in non-game contexts (Deterding, Khaled, Nacke, & Dixon, 2011). Drawing on an extensive range of sources, Kocadere and Çağlar (2018) concluded the application of gamification must clearly grasp the player's motivation, and the type of player must be considered in the design (Kocadere & Çağlar, 2018). Consequently, tailoring gamification according to player types is the first step towards personalization (Lopez & Tucker, 2019). By referring to the literature, the Bartle's taxonomy of player types focuses on the intrinsic motives





of people when playing games (Bartle, 1996, 2004). Additionally, Bartle's taxonomy is not only considered the most fundamental method for player type classification (Ferro, Walz, & Greuter, 2013), but also recommended by Werbach and Hunter (2012) for use in gamification to help accomplish something non-gaming. As this research mainly emphasized individuals' distinct motivations rather than the so-called general public, combined with the persona technique, the Bartle's taxonomy of player types (Achievers, Socializers, Explorers, and Killers) as a gamification-based model hopefully enlighten administrators and researchers to understand the issue of museum visitor composition proposed by Tian (2018) by focusing on the museum visitors' distinct intrinsic motivation rather than extrinsic motivation.



In recent years, the interest in museum function adjustment has been increasing. In 2007, the International Council of Museums (ICOM) emphasized in the widely used museum definition that museum functions include education, study, and enjoyment (ICOM, n.d.-a). Over the past century, museums have shown an increased interest in attracting visitors, which is a shift of service concept from the exhibits to the audience, and putting more emphasis on the relationship between the museum and the public.





1.3 Problem Statement

Given all that has mentioned so far, there has been a growing body of literature that recognizes museums are trying to integrate into people's lives. For nearly four decades, in particular, museums around the world have experienced a shift in their focus from "object" to "people" (Shan & Mao, 2016), and attempt to help visitors achieve desirable service experience in branding. In the context of the museum open to the public, however, the museum has not become a place frequently visited by Chinese people. Compared with the average frequency of visiting museums in developed countries three to five times per year, every citizen in China enters the museum about every two years on average (Bai & Xu, 2017; Xu, 2017). In 2015, the China Youth Daily survey showed that only 17.3% of respondents frequented the museum and 61.1% of the respondents occasionally visited, due to lack of affinity for the museum, inconvenient access to information, and weakness of interactive visit (Liu & Liu, 2017).

The causes of these phenomena can be seen as a museum service that does not better satisfy the access experience (Bai & Xu, 2017; Liu & Liu, 2017; Kristianto et al., 2018). In connection with the dual background that the overall museum participation of the Chinese people is not high and young people are currently the main users of museums, previous studies have concluded that the participation of young Chinese people determines the future users of museums (Fang, 2018; Zhang,





2019; Izzo, 2017). Accordingly, it was concluded that the monotonous experience of young Chinese users visiting museums should be further improved to promote museum prosperity.

Belenioti and Vassiliadis (2017) recognized that the museum administrators need to improve the museum experience through branding. To a certain extent, previous studies have misunderstood the significance of the brand (examples below). A considerable literature has grown up around the theme of museum brand in recent years, nevertheless, while most studies in this field have only focused the management, marketing, CIS, activities, and so on (e.g., Ye, 2003; Holland, 2006; Zhang & Wang, 2007; Heding, Knudtzen, and Bjerre, 2009; Heding et al., 2009; Garrett, 2011; Yang, 2017; Zhang, 2018). Researchers must be aware of the fact that a brand is not a product or management product, nor it's a logo or CIS, because (1) marketing means self-affirmation or boasting, while the branding means that the user or customer recognize and praise. Therefore, marketing activities are based on branding; (2) the CIS is just for managing the use of trademarks and trade-dress elements (Neumeier, 2005).

Historically, Massi and Harrison (2009) discussed two different methods of shaping branding: the classic model used in Europe and the modernist model used in Australia. In the classic model, the cultural brand is mainly related to the famous history and heritage of the museum, the museum experience is culturally driven and





non-entertainment driven. On the contrary, for the modernist model, museums usually base their identity on stories rather than history. Therefore, in this case, leisure experience replaces cultural growth experience. Based on this research project, the goal of enhancing museum UX to meet users' demand for entertainment, this investigation follows the modernist model of leisure experience.

Combining the previous analysis on the Chinese young museum visitors, this particularly new issue raises related research questions, namely, how to assist researchers in exploring and enhancing museum service UX to attract young Chinese visitors? As stated by Falk and Dierking (2013) that the biggest challenge of the museum is to access the level of experience and understanding from users precisely since each visitor learns in a different way. Coincidentally, in the 24th general conference of ICOM, Hans-Martin Hinz, the president of ICOM, demonstrated the similar question "What will make museums attractive to visitors and online audiences many years from now?" should be answered (ICOM, 2016). By further understanding the context, it is known that what Hinz said is the experience of users, that is, the feeling of intense emotional excitement described by Ober-Heilig et al. (2014) and Zhou (2014). For this emotional feeling, Kim (2008) has already concluded from the definition of the brand proposed by Neumeier (2005) that whether it is positive or negative, the individual has their perception of products, services, or organizations. In summary, combined with the questions raised by Hinz (ICOM, 2016) and the research of Ober-Heilig, et al. (2014), Falk and Dierking (2013), Neumeier (2005), Kim (2008),





etc., it can be concluded that the main challenge faced by many researchers is understanding the positive and negative UX both on-site and online of the museum. In particular, understanding the user's negative experience especially helps the museum to improve the personal perception.

Returning briefly to the issue of the brand, studies such as that conducted by Murphy (1988), Neumeier (2005), and Camarero et al. (2010) have shown brand is a personal perception in their minds. Progressively, the branded goods have been expanded to include services, and repeating a satisfying experience can serve as a criterion of a brand for cultural organizations. To achieve desirable experiences, branding contains considering in advance of the customers or anticipating and shaping their needs (Murphy, 1988; Kim, 2008; Soñez, Tosello, Martín, & Nacional, 2013). It can be said that successful branding is based on a thorough understanding of user needs. As for the museum, the service is often used as a bridge between the museums and the visitors (Jiang & Zhang, 2016). Further, French (2016) stated that the museum experience can be investigated through a holistic SD approach. Drawing on previous reviews, services are closely related to experiences, and the UX and SD are fundamentally user-centric (Roto, Lee, Mattelmäki, & Zimmerman, 2018; Melnikova & Mitchell, 2018; Pine & Gilmore, 1998). In the past few years, museum strategists have increasingly used the term “experience” (French, 2016). However, there is not much research on the two complementary, especially in the field of museums. In





summary, there has been little systematic research in the field of museum brands using SD methods to explore the UX, which is a research gap.

In the retail, restaurant, and other areas, the SD has been studied by many researchers (Carbone & Haeckel, 1994; Turley & Milliman, 2000; Hoffman & Turley, 2002; Zomerdijk & Voss, 2010; Gibbons, 2017). However, according to an extensive range of sources, much less is discussed how the SD serves the museum experience, especially experience of the whole process of museum service: “pre-visit”, “during-visit”, and “post-visit”. As Falk and Dierking (2013) pointed out that enrich the experience of visitors inside and outside the museum, before and after the visit.

For these “three phases”, Liu and Liu (2017) proposed just a brief overview of museum UX design in the three phases, and there is little supported data. On the contrary, unlike most research that focuses on museum UX throughout the during-visit, another two papers have focused on “pre-visit” and “post-visit” (Kravchyna & Hastings, 2002; Thomas & Carey, 2005). However, far too little attention has been paid to UX in these two studies. On the other hand, these results were based upon data from over ten years ago, and it is unclear if users’ needs are changing.

After pointing out research gaps at the methodological level, the focus shifted to visitors in the branding of museums. Espiritu (2018) stated that museum brands need to be accurate and specifically communicate with designated target groups. In





recent years, the museum has no longer tried to attract the public, because it can be said that there is no “public” anymore. Therefore, museums need to segment visitors to a certain level (Espiritu, 2018). As stated by Akasaki et al. (2016) that services tailored to users’ unique preferences can more arouse users’ continued attention. Therefore, exploring the museum service based on different user motivation is still a knowledge void. Other scholars have also made similar claims. Shen Maosheng, who works at the Emperor Qinshihuang’s Mausoleum Site Museum, believed that the first thing to do is to understand the visitor composition of the museum (Tian, 2018). Coincidentally, Falk and Dierking (2013) also made a similar statement earlier: “it is important to understand who your visitors are and develop an interpretive plan will meet their needs and interests.” According to earlier literature, in the context of museum UX, Neumeier (2005) and Kim (2008) also believed that different individuals determine distinct perceptions. However, in the museum context, the research to date has tended to focus on “the public” rather than the subdivided users; thus, the diverse motivations of different types of visitors are rarely considered. As discussed earlier, the concept of Bartle’s taxonomy of player types in the gamification focuses on the motives of people when playing games (Bartle, 2004). If the player type is used as a model for persona selecting in this study, it is expected to interpret the distinct motivations of different kinds of museum users. Although it was briefly described in the study of Akasaki et al. (2016) how game-based approaches influenced individuals’ motivation to encourage activities in digital services, it was still limited to the field of virtual space.





In terms of choosing a museum, choosing a historic house museum as a case for this research can fill the knowledge void. As mentioned in the Introduction section, it is clear that in China, a large number of housing museums have received insufficient attention (Guan, 2017), although there are huge number of museums exist. Additionally, Vagnone and Ryan (2016) believed that the service provided by some house museums to visitors was merely the “visiting” without paying attention to the importance of providing visitors with a enjoyable experience. Despite this fact, after searching for relevant keywords, the researcher found that little research has been conducted on the service experience of such categories of the museum, especially in China. Based on these analyses, choosing a historic house museum as a case can fill the gap in this area of research.



Last but not least, in the context of the parallel development of physical and online museums, although the pace of digital innovation in museums has grown at a magnificent rate over the past 15 years, the internal practices used to build these experiences have not developed at the same time (French, 2016; Johnson, Becker, & A Freeman, 2013). In the research of MacDonald (2015), searching academic and professional research literature did not produce any guidelines that are clearly related to the UX of museums, especially online museums. In another research (Lin, Fernandez, & Gregor, 2012), the research team has determined a model of online museum enjoyment with four design characteristics and five design principles with user enjoyment, but did not involve concrete practical guidelines. There were also





some studies that are interested in measuring the museum visitors' experience through quantitative methods, lacking depth and details (e.g., Gosling et al., 2016). Other research on museum experience is not user-centric (e.g., MacDonald, 2015). Some are user-centric, but mainly use traditional focus group workshops and interviews as research methods (e.g., Madsen, 2017), which is impossible to provide guidelines in a holistic way. Combining the problem statement just mentioned in this section that the participation of young Chinese determines the future users of the museum, and the fact that the museum service experience investigation lacks guidelines, this study attempts to summarize guidelines for museum service experience investigation for museum professionals to cope with the current museums coordinating online and offline to create the best and most memorable museum experience for the young Chinese visitors.

1.4 Purpose and Objectives of the Study

In the aspect of museum service UX, previous sections conducted general reviews of background and problem. In the first place, it proposed the reality that in the field of museum brands, there has been little systematic research using the SD method to explore the UX. Secondly, the researcher concluded that the main challenge faced by many researchers is determining the positive and negative UX, both on-site and online. Next, the researchers stated that exploring the museum service experience based on





different user motivations is still a gap. In the end, to choose a historic house museum as a case to fill the void in knowledge has been emphasized, and the museum service experience investigation lacks guidelines.

In line with the issues mentioned above, the purpose of this exploratory research is to explore SD of the Palace Museum in Beijing in order to enhance the UX of young Chinese museum users. It is hoped this study provide insights to museum practitioners and scholars to have a better understanding of museum service UX to help develop a better design or research. Further, the following are three main objectives of this study, with sub-objectives attached:



- i. To identify the personas to represent different types of young Chinese visitors of the museum.
- ii. To explore the museum service experiences of the personas.
 - A. To explore the negative experiences.
 - B. To explore the positive experiences.
 - C. To explore motivations for different personas to visit the museum.
- iii. To propose a guideline for museum administrators in order to enhance their users' experience, particularly for the young Chinese visitors.





1.5 Research Questions

Based on these objectives and sub-objectives proposed above, three research questions with their sub-questions pursued hereafter:

- i. Which model can be used to identify the personas to represent different types of young Chinese museum users?
- ii. What are the museum service experiences of the personas?
 - A. For the personas, what are the negative experiences of museum services?
 - B. For the personas, what are the positive experiences of museum services?
 - C. What are the motivations for different personas to visit the museum?
- iii. What are the guidelines that can be used by the museum administrators in order to enhance the young Chinese visitors' user experience?

1.6 Conceptual Framework of Research

Drawing on previous reviews in this chapter into museum brand, SD, UX, as well as users' motivations (Kravchyna & Hastings, 2002; Bartle, 2004; Thomas & Carey,



2005; Döpker et al., 2013; Liu & Liu, 2017), by using SD approach, this study attempted to explore the historic house museum to provide stories of how the representative users experience the museum. To clarify concepts and propose relationships among the ideas, the conceptual framework for this exploratory study was established and presented (Figure 1.1) and this conceptual framework showed the idea of how the research problem will have to be explored.

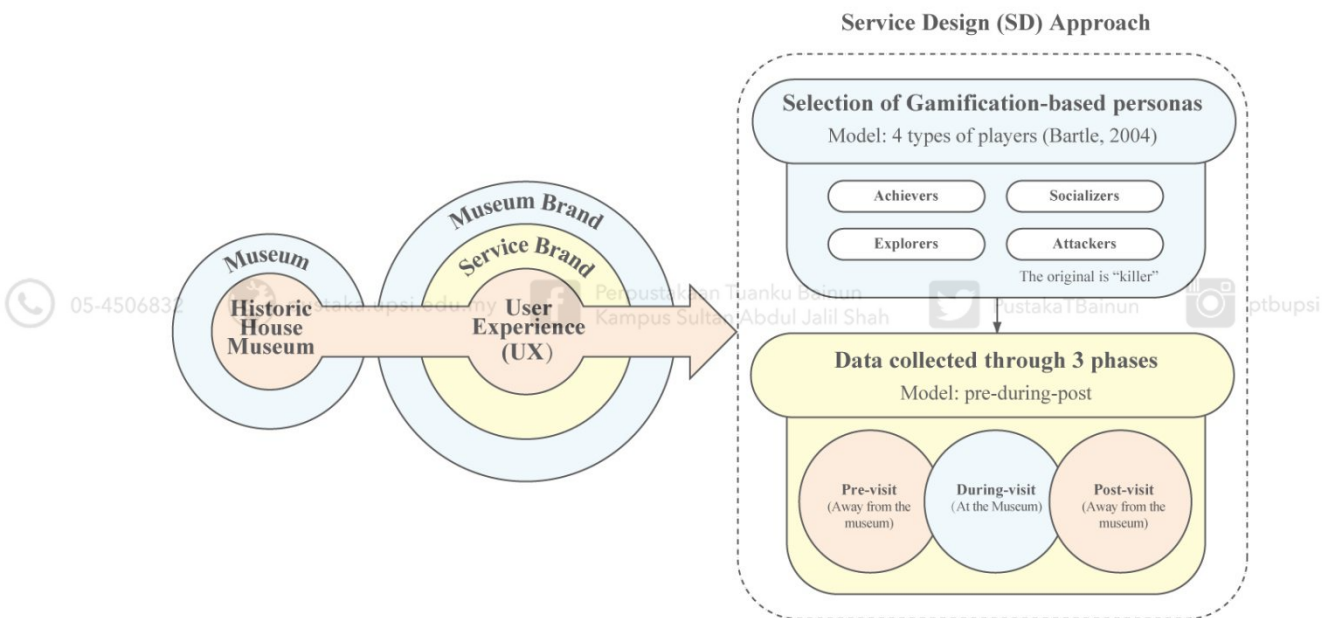


Figure 1.1. Conceptual framework of the research

Look from the circle on the left of the figure, this research started with museums and found in the literature that although the historic house museum has been recognized by the International Council of Museums (ICOM) (DEMHIST, 2018), they have been ignored by the museum evaluation agency. Moreover, there are many such museums in Beijing and even in China, and there is not enough attention to them



in the current research (Gu & Ma, 2017). Therefore, choosing the historic house museum as the research topic is expected to fill the gap in knowledge. In this study, the Palace Museum in Beijing, China was selected.

Then move to the second circle. According to (Li, 2018), brand experience such as senses, emotions, behaviors and intellectual can effectively motivate people to visit and purchase in museums. Nowadays, the concept of brand has covered services and transferred to service brands (Neumeier, 2005; Ahn, KunPark, & Hyun, 2018). Derived from the point of view of Camarero et al. (2010) above, a satisfying experience in future could serve as a measure of brand experience for cultural organizations. This is also the challenge faced by many researchers in the problem statement, which is to identify positive and negative UX on-site and online.

Since the UX and SD are fundamentally user-centric, the SD approach was adopted in this study. Under the SD methods, the goal of research was achieved by two models: the adapted gamification-based persona model “four types of players” (Bartle, 2004), as well as the service process-based model “pre-during-post” (“pre-visit,” “during-visit,” and “post-visit”) (Falk & Dierking, 2013). Among them, the gamification-based model is used to select personas, and the “pre-during-post” model utilized for identifying three visit phase with touchpoints.





As Tian (2018) and Dierking (2013) declared earlier, the first thing a museum needs to do is to understand the composition of visitors and develop a plan that meets their needs and interests. These arguments show that there are gaps in exploring the museum service experience based on different user motivations. By comparing other personality models originated from psychology in Chapter two, this study found that Gamification is a way to increase user engagement by adding game elements, especially attractive to young people (Zichermann & Cunningham, 2011; Hamari & Koivisto, 2015). Thus, since players are passionate about games, if in the context of a museum the motivations for the persona selected based on player psychology to access the museum can be determined, it hopefully provide new insights for enhancing museum experience. Overall, since the player is at the root of the gamification, understanding player motivation is paramount to build a successful gamified system (Zichermann & Cunningham, 2011). Since Bartle's taxonomy is considered to be the most fundamental method of classifying players, using the types of players proposed by Bartle (2004) in gamification to identify personas is efficient to understand the way to enjoy the museum for each of these personas. In this study, the Bartle Test of Gamer Psychology was performed to identify gamers' playing style preference that predominates in a group of players.

To explore SD of the Palace Museum in order to enhance the UX, in particular, this study firstly identified the gamification-based personas to represent different visitors with distinct motivations, then examined both online and offline services of





the Palace Museum throughout “pre-visit,” “during-visit,” and “post-visit” to get a fuller picture of how personas do, say, and think.

1.7 Selection of the Case

Selecting a case is more beneficial when the researcher aspires to detail and depth (Denscombe, 2007), and Bryman (2012) emphasized the selection of cases and units. Based on the aforementioned, this study was to explore the UX of the specific category of historic house museum. For case selection, accordingly, it needs to be defined based on their relevance to concrete problems or theoretical issues studied. As briefly mentioned in the “Introduction” section, this study focuses on a Chinese ancient culture & art museum called the Palace Museum, which is also a representative historic house museum. In particular, the Palace Museum in Beijing has significant advantages in collection quantity and quality, as well as the number of visitors. This section grants discussions of the reason why the Palace Museum was selected as the sites, as well as provides its concise overall introduction.

Concerning the choice of a particular case, the most common justification is the typicality, rather than random selection (Denscombe, 2007). For the specific category of house museum, taking Beijing as an example, among the 151 museums listed in the directory, there are 40 ancient building cultural relics’ protection





institutions. The ancient building in the category of house museum is a massive cultural relic, which is a considerable physical exhibit. As one of the most prestigious historic house museums in China and the world, the Palace Museum is similar in essential aspects with other museums that might have been selected, hence the findings from the case study of the Palace Museum are likely to apply to other similar museums.

According to the definition of house museums proposed by the DEMHIST in the literature chapter, the Palace Museum, also known as the Forbidden City, is fully qualified for the specifications mentioned in the definition. Founded in 1925, the Palace Museum based on the Forbidden City, the Imperial Palace of the Ming (1368 — 1644) and Qing (1644 — 1911) Dynasties. As for the Forbidden City, it is 961 meters long from north to south and 753 meters wide from east to west. The Palace Museum has the largest brick & wood structure architectural complex in the world, and has, as always, carefully preserved the imperial palaces and old treasures left over from the Ming and Qing Dynasties. There are a total of more than 1.86 million precious collections of ancient paintings and calligraphy, ancient artifacts, palace cultural relics, and books & files. In general, the Palace Museum is not only the protection and management institution of architectural complex and palace history in the Forbidden City, but also the collection, research and display institution of ancient Chinese cultural art based on the old cultural relics of the Ming and Qing Dynasties (Figure 1.2).





Figure 1.2. The Taihe Hall of the Palace Museum (Source: <https://www.dpm.org.cn>)

Besides, through the previous investigation (Feng, 2017; An, 2019), at the moment when museums are changing from collections to participation, the researcher learned that the Palace Museum had done an excellent job in online digital services that other historic house museums often overlook. This helps to explore UX in the stages of “pre-visit” and “post-visit”. In the past ten years, the Palace Museum, which entered the information age, has built a “digital palace” in virtual time & space using advanced digital technology and equipment (Figure 1.3). These include online tickets booking, games, panoramic palace, virtual reality (VR) technology, applications (Apps), online mall, and so on. It has become a reality to show distant audiences the rich cultural resources.



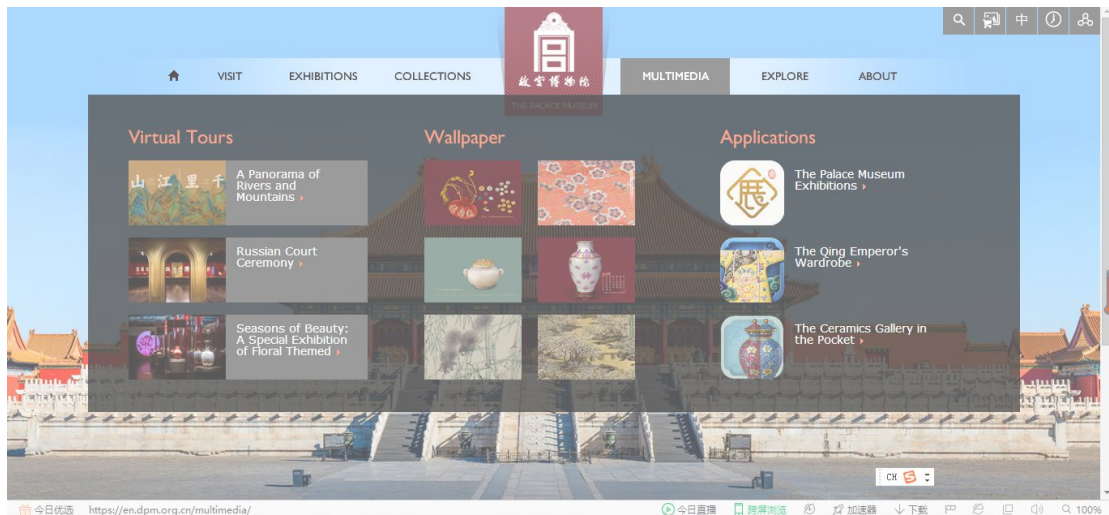


Figure 1.3. The Palace Museum official website (English version) (Source: <https://en.dpm.org.cn>)

In addition to the key features that are consistent with the Historic Houses Museums, the Palace Museum is a popular first-class museum in China. In 1961, the State Council designated these Historic Houses as one of the foremost-protected cultural heritage sites in China, and in 1987 it was listed as a UNESCO (The United Nations Educational, Scientific and Cultural Organization) World Heritage site. These officially granted auras are not the most important, according to Guan (2017), except for a few museums such as the Palace Museum, most museums have a relatively small number of visitors. Given the popularity of the Palace Museum, the findings of its user service experience research were expected to provide the necessary guidelines for other museums.





1.8 Operational Definition

Gamification: Gamification is a way to increase user engagement by adding game elements, and the purpose of using game elements is to help accomplish other things. Briefly, the gamification solves all non-game work problems in life by using the framework of the game.

Historic house museum: House Museums range from palaces to cottages, from all periods. It centers on the maintenance, care, and interpretation of either a single, historical residential structure or a complex of structures (DEMHIST, 2018; Donnelly, 2002, p. 18).

Museum visitor motivation: With respect to museum in this study, visitor motivations are related to a set of needs that cause individuals to engage in museum visits and its activities. Therefore, motivation plays a significant role in influencing museum visit decisions and museum user behavior.



Museum branding: One technique implemented by some museums is branding, defined here as creating a consumer perception or impression of a museum, positioning that museum in the consumer's mind relative to other organizations, and assigning an individual identity to that museum (Espiritu, 2018, p. 1).

Personas: Personas usually represent a group of people with shared interests, common behavior patterns, or demographic and geographical similarities (Stickdorn et al., 2018, pp. 51-52). In the museum context in this study, the selected personas aim to represent different types of museum users with distinct motivations.

Positive/negative experience: One of the essential characteristics of the museum experience is the participation and incorporation of visitors. If the experience provided by the museum is highly integrated with the needs of visitors, then the perception and response generated by the user is a positive experience, and vice versa.

Service design: Service design is the design of how service delivers an experience to their customers over time to improve users' or customers'





service experiences Service design is not a standardized set of tools or an abstracted philosophy. It's a collection of practices and methods applied to solve specific business problems, arising from and centered upon the visitor experience (Sandoval & Sortland 2013; French, 2016).

Touchpoints: In the service design lexicon, the term touchpoint is used to designate the material evidence or material systems that support the service performance. Touchpoints might include anything from physical goods, interior and exterior spaces, printed materials, graphic pieces applied to surfaces of objects or architecture, digital interfaces and devices, furniture and light, uniforms and other garments worn by staff, and even smell and perfumes released in the environment, background music and sounds; and to some extent, the spoke script followed by staff when interacting with users. In principle, all the material components of a service can be subjected to design, and all of them have been designed more or less intentionally, whether or not they involved professional designers (Penin, 2018, p. 35).

User experience: User experience is defined as the perceptions and responses of users that result from their experience of using a product or service (Harte et al., 2017).



1.9 Scope and Limitations of the Study

This study focuses on exploring SD of the Palace Museum in Beijing to have a better understanding of young Chinese users' experience and visit motivation, more specifically on collecting experience data from the user through holistic three visit phases and understand distinct motivations of different personas. According to the definition of young people proposed by the Chinese government document "National Medium and Long-term Youth Development Plan (2016-2025)", this study only covers young people aged 14-35. Therefore, the data collection will be aimed at





young Chinese museum users, the personas are selected from the researcher's undergraduate students in different classes. Meanwhile, based on the research gap, the study is limited to the type of historic house museum. Therefore, the research investigates an ancient house museum in Beijing, China, the Palace Museum.

Although the persona recruiting consideration of the qualitative approach is based on in-depth and detailed information provided by a small number of participants, there are limitations in this study that the number of personas is small (four personas) and the diversity of persona is limited. On the other hand, it cannot be denied that each research method has shortcomings. The touchpoints in this study

were not all selected in the order of the visit, but some key touchpoints were chosen.

Accordingly, this research found that the adapted rapid ethnography has limitations such as insufficient touchpoints, as well as discontinuities and inadequate time for direct observation in the field.

1.10 Significance of the Study

This research would be beneficial to the museum administrators and researchers by providing a reference in exploring the museum SD experience. This study is significant, and it is a unique topic for inquiry since it investigates the museum UX through unusual perspective and cross-knowledge. Recent studies in the field of UX





show that SD and gamification play an important role in exploring of museum's UX (e.g., Döpker et al., 2013). However, many of them are not profound enough, and there is no interdisciplinary research by employing those concepts, or the discussion of gamification is only an external motivation. Until now, most gamification research focuses on game elements or game mechanics, such as points, levels, leader boards, badges, challenges and so on (Deterding et al., 2011). However, the reward-based extrinsic intentions are short-term goals (Deterding et al., 2011; Hamari & Koivisto, 2015; Nicholson, 2015; Tran, 2017). Comparatively, the meaningful gamification is long-term, the intrinsic motivations are more motivated than the external motivations (Nicholson, 2015; Deci and Ryan, 2012). By understanding the museum, brand, SD, UX, as well as identity-based motivation, this research contributes to investigating UX of the museum by understanding young Chinese museum users' intrinsic motivations or preferences. In summary, innovative research framework and research design have not been fully utilized in previous research. Hence, the findings can be applied to develop guidelines for the museum UX investigation.

This research would be also beneficial to a wider range of similar museums engage audiences, thus enhance the cultivation of populace. Because the brand experience is related to the core values of each museum, the situation of each museum is unique. However, as the type of historic house museum, this type of museum has its similarity. Thus, the widespread application of research results is worthy of attention. In particular, there are 34 provincial-level administrative regions in China, and each





province has at least one or several provincial-level museums. Additionally, there are nearly 5,000 museums of various levels in China. For the particular category of house museum, taking Beijing as an example, among the 151 museums listed in the directory, there are 40 ancient building cultural relics' protection institutions (National Cultural Heritage Administration, 2016; Guan, 2017). If it involves all house museums in China, this number will be vast. As a national museum, the study of the Palace Museum experience can set up an example for the type of historic house museums, which means the widespread application of research results is possible. Thereby expand the space for cultural sharing thorough engaging audiences, and enhance the cultivation of populace.



1.11 Summary

Unlike previous studies mentioned just now, this research project examined the problems from a new perspective and tried to find a solution through cross-knowledge. Through adopting the role of SD methods, the purpose of this research is to explore SD of the historic house museum in order to enhance the UX of young Chinese visitors by providing stories of how the representative users experience the museum. It is hoped that this exploratory study into the Palace Museum in Beijing may provide with knowledge of value for those seeking to design desirable UX for a museum. This





chapter also proposed research objectives and research questions, as well as developing a research conceptual framework to guide the research process.

