

國立屏東大學文化創意產業學系

112 學年度第 1 學期第 1 次系務會議紀錄

開會時間：112 年 10 月 23 日（星期一）12 時 30 分

地點：教學科技館 3 樓 303 教室

主席：林思玲主任

紀錄：紀靖茹

出席人員：如簽到名冊

壹、111 學年度第 2 學期第 4 次系務會議（112.7.18）決議執行情形。

案由	決議	執行單位	執行情形
一、本系 112 學年度各項會議代表遴選案。	照案通過。	文化創意產業學系	依會議決議執行。
二、擬調整本系大學部、日間碩士班及碩士在職專班課程結構、課程科目及領域別案。	一、大學部刪除「藝術經紀實務」、「臺灣社會文化」、「創意思考與文化產業」、「中華藝術賞析」、「電腦輔助建築製圖」總計 5 門課程；領域別調整部分原創意媒體與內容設計領域之「表演藝術產業實務」、「電影電視產業」及「流行音樂產業」3 門課調整為產業經營管理領域，文化資產與空間活化領域之「社區營造及地方文化產業」調整為產業經營管理領域；「專題研究」變更為四上四下開課；新增課程請提下次	文化創意產業學系	提第 112 學年度第 1 學期第 1 次院課程委員會會議（112.09.19）審議通過。

	<p>系課程委員會審議。</p> <p>二、日間碩士班刪除「歷史空間再生研究」、「論文寫作」、「創意設計研究」、「文化經濟評估實務」及「全球創意城市與產業群聚研究」總計5門課程，新增課程請提下次系課程委員會審議。</p> <p>三、碩士在職專班刪除「文化產業經濟評估實務」，新增課程請提下次系課程委員會審議。</p> <p>四、大學部領域別項目暫不調整，維持每一科目僅有一項領域別。</p>		
<p>三、本學系 113 學年度學士班、碩士班各入學管道招生名額分配案。</p>	<p>一、依說明一日間學士班 113 年規劃「大學多元入學」分發入學 11 名、繁星推薦 11 名及申請入學 21 名，外加名額「原住民生」繁星推薦 2 名及申請入學 2</p>	<p>文化創意產業學系</p>	<p>依會議決議執行。</p>

	<p>名，總計 47 名。</p> <p>二、日間碩士班 113 年度規劃甄試 7 名 考試 5 名， 總計 12 名。</p> <p>三、暫先不開放 日間學士班 四技二專 「甄選入 學」、「登記 分發入學」 及單獨招生 「特殊選 才」名額之 規劃，俟 113 年調查 114 年招生 名額再行討 論。</p>		
四、擬修訂本系大學部專題研究課程評分要點及評分表案。	修正後通過。	文化創意產業學系	提第 112 學年度第 1 學期第 1 次院務會議 (112.09.26) 審議備查通過。
五、擬新增本系大學部修課成果校外發表活動補助辦法案。	修正後通過。	文化創意產業學系	提第 112 學年度第 1 學期第 1 次院務會議 (112.09.26) 審議備查通過。
六、本學系學士班、日間碩士班及在職專班招生策略案。	<p>請各位老師依上述說明協助執行。另本系擬製作 X 型展架學系簡介，於大學個人申請面試時放置於系館走廊供學生及家長參閱，亦擬於家長休息區撥放學系招生影片，宣傳本系辦學理念與成果，同時亦可向家長宣傳碩士班及在職進修碩士班。大學招生各階段放榜後，先打電話鼓勵遊說錄取學生選擇本系就讀。</p>	文化創意產業學系	依會議決議執行。

貳、主席報告：(略)

參、工作報告：

- 一、112 學年第 2 學期排課現已擬訂，請各位老師確認（如紙本）。
- 二、113 學年度日間碩士甄試，預計於 112 年 11 月 4 日面試。
- 三、113 學年度日間碩士班考試招生，預計 12 月時開始屆時請各位老師協助宣傳。
- 四、關於 113 學年度學科能力測驗，考試時間：113 年 1 月 20 至 1 月 22 日，按全校教師百分比本系需推薦 4 名教師，請各位老師討論以利回傳推薦表至教務處。
- 五、為配合教育部大學招生專業化發展計畫辦公室針對各學系「與高中端互動諮詢情形」之指標，強化學系透過與高中端之共識，進而改善評量尺規與增加招生契機，以利後續追蹤與管考執行情況。學校將依各學系需求安排與高中職校師長進行實地尺規輔導與招生諮詢等交流活動，本系以問卷表單調查各位老師可出席時間，請各位老師協助回覆以利活動安排。

肆、提案討論：

提案一

提案人：葉晉嘉

案由：有關本系大學部【調查研究與資料分析】課程名稱修改及先修課程調整案，請討論。

說明：

- 一、原【調查研究與資料分析】課程名稱更改為【問卷調查與訪談實務】，原課程設有先修科目統計學，然本課程授課教師調整其授課內容，故取消先修之設定。
- 二、大學部課程修訂對照表，如【附件 1】。

擬辦：通過後，提院、校課程委員會討論，於自 112 學年度第 2 學期開始實施，溯及所有在學學生適用。

決議：照案通過。

提案二

提案人：張重金、林思玲

案由：有關本系大學部課程名稱修改案，請討論。

說明：

- 一、原【電腦繪圖】課程名稱更改為【AI 視覺藝術設計】、【數位內容設計實務】課程名稱更改為【AI 數位內容應用實務】及【文化產業英文選讀】課程名稱更改為【文化創意產業英文選讀】。
- 二、大學部課程修訂對照表，如【附件 1】。

擬辦：通過後，提院、校課程委員會討論，於自 112 學年度第 2 學期開始實施，溯及所有在學學生適用。

決議：照案通過。

提案三

提案人：葉晉嘉

案由：有關本系日間碩士班新增【創意城市治理與地方創生個案研究】3 學分課程，請討論。

說明：

- 一、地方創生是國家重要發展政策，也是影響地方發展的重要議題，配合城鄉治理的模式，培養學生具備解決在地問題的能力，能關心與分析地方發展問題，並從實踐的角度完成學習與研究。
- 二、「創意城市治理與地方創生個案研究」新增課程申請表，如【附件 2】。

擬辦：通過後，提院、校課程委員會討論，於自 112 學年度第 2 學期開始實施，溯及所有在學學生適用。

決議：修正後通過。

提案四

提案人：葉晉嘉

案由：有關本系日間碩士班新增【量化與質性軟體應用】3 學分課程，請討論。

說明：

- 一、軟體應用是研究過程中必備的重要工具，無論質性與量性的研究，必須透過客觀之研究工具協助，以達到研究的嚴謹性。
- 二、「量化與質性軟體應用」新增課程申請表，如【附件 3】。

擬辦：通過後，提院、校課程委員會討論，於自 112 學年度第 2 學期開始實施，溯及所有在學學生適用。

決議：修正後通過。

提案五

提案人：葉晉嘉

案由：本學系碩士在職專班新增【資料分析與軟體操作實務】2學分課程，請討論。

說明：

- 一、軟體應用是研究過程中必備的重要工具，無論質性與量性的研究，必須透過客觀之研究工具協助，以達到研究的嚴謹性。
- 二、「資料分析與軟體操作實務」新增課程申請表，如【附件4】。

擬辦：通過後，提院、校課程委員會討論，於自112學年度第2學期開始實施，溯及所有在學學生適用。

決議：修正後通過。

提案六

提案人：林思玲

案由：本系教師申請111學年度教學績優教師遴選案，請討論。

說明：

- 一、本系由林思玲教授1人提出申請。
- 二、本次教學績優教師獎勵申請表經系所檢核無誤，申請資料如【附件5（紙本資料）】。

擬辦：本案經系務會議通過後送院績優遴選委員會會議審議。

決議：照案通過。

提案七

提案人：林思玲、蔡玲瓏

案由：112學年度第1學期申請補助研究成果發表案，請討論。

說明：

- 一、本系由林思玲教授（1件）及蔡玲瓏教授（2件），共2人提出申請。
- 二、申請資料共計3件，如【附件6（紙本資料）】。

擬辦：本案經系務會議通過後，提送院學術委員會會議審議。

決議：照案通過。

提案八

提案人：蔡玲瓏

案由：2024文化創意產業永續發展與前瞻研討會主題及時間，請討論。

說明：

- 一、2024年文化創意產業永續與前瞻學術研討會，預計113年4月20日（六）舉行，地點暫訂教學科技館1樓視訊會議廳。
- 二、本次研討會由蔡玲瓏老師協助規劃主題為「淨零・永續：低碳轉型的文創產業發展」，子題如下：
 - （一）子題一：低碳商機&城鄉發展。
 - （二）子題二：族群文化&低碳生活。
 - （三）子題三：文化資產&氣候行動。
 - （四）子題四：數位內容&科技融合。
- 三、建請各位老師討論活動辦理日期、主題及形式。

決議：照案通過。

提案九

提案人：林思玲

案由：本系推動實習機制等相關事宜，請討論。

說明：

- 一、依本校教育部第二期高等教育深耕計畫，第二期規劃之產學合作連結項下指標執行。
- 二、為符合上述計畫指標之執行，建請各位老師討論如何推動本系實習課程、機制、規範等相關事宜。

決議：

- 一、擬將實習合併於專題研究實施。
- 二、擬新增開設實習相關選修課程。
- 三、上述兩項方案供老師先行檢視，俟下次系務會議再行討論決議。

伍、臨時動議：無。

陸、結語：（略）

柒、散會：同日下午13時30分。

國立屏東大學 文化創意產業學系 112學年度第1學期

第1次系務會議 簽到單

時 間：112年10月23日（星期一）12:30 - 13:30

地 點：教學科技館3樓303教室

序號	出席人員	簽名	備註
1	林思玲 主任	林思玲	
2	施百俊 老師	請假	
3	賀瑞麟 老師	賀瑞麟	
4	葉晉嘉 老師	葉晉嘉	
5	蔡玲瓏 老師	蔡玲瓏	
6	陳運星 老師	請假	
7	朱旭中 老師	朱旭中	
8	張重金 老師	張重金	
9	古淑薰 老師	請假	
10	谷嫚婷 老師	谷嫚婷	
11	碩士班學生代表 許詠涵同學	許詠涵	
12	大學部學生代表 姚成樺同學	姚成樺	
13	紀錄 紀靖茹小姐	紀靖茹	

國立屏東大學文化創意產業學系
大學部課程修訂對照表

附件1

修訂內容						現行內容						說明
課程代碼	課程名稱	學分	時數	必修 選修	備註	課程代碼	課程名稱	學分	時數	必修 選修	備註	
系專業選修課程												
CIM2029	問卷調查與訪談實務 Questionnaire survey and interview practice	3	3	選		CIM2029	調查研究與資料分析 Survey Research Method and Data Analysis	3	3	選	先修 CIM1051 統計學	更改課程名稱及刪除先修
CIM1031	AI 視覺藝術設計 AI Visual Art Design	3	3	選		CIM1031	電腦繪圖 Computer Graphics	3	3	選		更改課程名稱
CIM4061	AI 數位內容應用實務 AI Digital Content Application Practice	3	3	選		CIM4061	數位內容設計實務 Digital Content Design Practices.	3	3	選		更改課程名稱
CIM4009	文化創意產業英文選讀 Selected English Readings for Cultural and Creative Industries	3	3	選		CIM4009	文化產業英文選讀 Selected English Readings on Cultural Industry	3	3	選		更改課程名稱

文化創意產業學系 112 學年度大學部專業課程

一、課程結構與應修學分：

1. 畢業學分數：128 學分
2. 必修學分數：22 學分
3. 選修學分數：78 學分（含自由或跨系(校)選修 20 學分）
【自由選修可選擇非本系開設課程，但通識教育課程不可認列為自由選修學分】
4. 通識學分數：28 學分（須含程式設計課程，通識課程修課相關規定請詳閱本校「通識教育課程修業要點」

二、專業課程架構：(4 領域，每領域至少需修習 12 學分，含必修)

1. 族群與文化素養
2. 文化資產與空間活化
3. 產業經營管理
4. 創意媒體與內容設計

三、修課規範：

1. 本系學生每學期至少需修習 6 學分本系開設課程。第一至第四學年每學期修習學分不得少於 9 學分(含已修足學系規定之科目及學分數，但尚不合畢業之規定者)，不得多於 25 學分。
但學期學業成績平均 80 分以上，次學期得申請超修，經系主任核可後，加選一至二科。
2. 申請預先修讀碩士班之學生，另依本校大學部學生預先修讀碩士班課程辦法相關規定辦理。
3. 本校學生須通過畢業門檻各項規定方可畢業；詳情請參閱通識教育中心相關規定。
4. 依本校「推動程式設計課程實施辦法」第三條規定，107 學年度以後之日間部大學生，畢業前均需選修程式設計課程，否則不得准予畢業；相關修課規定請參閱實施辦法。

四、專業課程列表如下：

領域別	課程代碼	課程名稱	學分	時數	必修 選修	一年級		二年級		三年級		四年級		備註
						上	下	上	下	上	下	上	下	
族群與文化素養	CIM1003	文化人類學 Cultural Anthropology	3	3	選		3 (3)							※4
	CIM6003	哲學與文化議題 Philosophy and Cultural Issues	3	3	選	3 (3)								
	CIM6004	文化創意產業概論 Introduction of Cultural Creative Industries	3	3	必	3 (3)								
	CIM6005	文化行政與政策分析 Studies on Cultural Administration and Policies	3	3	選					3 (3)				※4
	CIM2006	美學 Aesthetics	3	3	選				3 (3)					
	CIM2024	流行文化趨勢 Current of Popular Culture	3	3	選					3 (3)				
	CIM3011	景觀與文化 Landscapes and Culture	3	3	選		3 (3)							※4
	CIM6012	藝術概論 Introduction to the Arts	3	3	選					3 (3)				

[illegible]

領域別	課程代碼	課程名稱	學分	時數	必選修	一年級		二年級		三年級		四年級		備註
						上	下	上	下	上	下	上	下	
	CIM6018	地方創生 Placemaking	3	3	選				3 (3)					※5
	CIM6020	創意群聚與地方再生 Creative clusters and local regeneration	3	3	選						3 (3)			※5
產業經營管理	CIM1050	經濟學 Economics	3	3	必	3 (3)								
	CIM1051	統計學 Statistics	3	3	必		3 (3)							
	CIM2019	廣告與設計行銷 Advertisement and Design Marketing	3	3	選				3 (3)					
	CIM2029	問卷調查與訪談實務 Questionnaire survey and interview practice	3	3	選				3 (3)					先修 CIM1051 統計學
	CIM2039	消費者行為 Consumer Behaviors	3	3	選				3 (3)					
	CIM2063	文化產業個案分析 Case Analysis on Cultural Industries	3	3	選			3 (3)						
	CIM2064	財務管理 Financial Management	3	3	選			3 (3)						
	CIM2066	管理學 Management science	3	3	必	3 (3)								
	CIM3040	美學經濟與創意產業 Economics of Aesthetics & Creative Industries	3	3	選						3 (3)			
	CIM3054	文創產業企劃實務 Practice of Cultural Industries Planning	3	3	必						3 (3)			※1
	CIM3060	人力資源管理 Human Resources Management	3	3	選		3 (3)							
	CIM3061	產品創新與開發 Product Innovation & Development.	3	3	選						3 (3)			
	CIM3068	動漫遊戲產業 Animation , Comics & Games Industries	3	3	選				3 (3)					
	CIM4009	文化創意產業英文選讀 Selected English Readings for Cultural and Creative Industries	3	3	選								3 (3)	
	CIM4057	行銷管理 Marketing Management	3	3	選			3 (3)						
	CIM4062	行銷與公關實務 Marketing and Public Relations Practices	3	3	選				3 (3)					
	CIM4063	整合行銷傳播 Integrated Marketing Communications	3	3	選							3 (3)		

領域別	課程代碼	課程名稱	學分	時數	必修 選修	一年級		二年級		三年級		四年級		備註
						上	下	上	下	上	下	上	下	
	CIM6019	生命產業與文化創意 Life Industries and Cultural Creativity	3	3	選						3 (3)			
	CIM6021	地方事業財務計畫 Local Business Financial Planning	3	3	選							3 (3)		※5
	CIM4002	電影電視產業 Television & Film Industries	3	3	選							3 (3)		
	CIM4006	流行音樂產業 Popular Music Industry	3	3	選								3 (3)	
	CIM2030	表演藝術產業實務 Practice of Performing Arts Industries	3	3	選					3 (3)				
	CIM3032	社區營造及地方文化產業 Community Building and Local Cultural Industries	3	3	選						3 (3)			※4
創意媒體與內容設計	CIM1030	設計素描 Design Drawing	3	3	選	3 (3)								
	CIM1031	AI 視覺藝術設計 AI Visual Art Design	3	3	選	3 (3)								
	CIM2016	基礎設計 Design Basics	3	3	必			3 (3)						
	CIM2018	應用攝影 Applied Photography	3	3	選				3 (3)					
	CIM6006	策展實務 Exhibition Plannings and Practices	3	3	選			3 (3)						
	CIM2050	故事與劇本寫作 Fiction and Play Writing	3	3	選				3 (3)				3 (3)	※2
	CIM2067	影音創作實務 Practicum in Audiovisual Creation	3	3	選				3 (3)					※1 ※2 ※3
	CIM6010	智慧財產權法 Intellectual Property Right Law	3	3	選				3 (3)					
	CIM3006	創意商品設計 Product Design Innovation	3	3	選				3 (3)					※5
	CIM6013	製片與導演實務 Film Production and Directing Practices	3	3	選					3 (3)				※2
	CIM4001	文化經典創意再現 Creative Representation of Cultural Classics	3	3	選						3 (3)			
	CIM4061	AI 數位內容應用實務 AI Digital Content Application Practice	3	3	選						3 (3)			※3 ※6

領域別	課程代碼	課程名稱	學分	時數	必修 選修	一年級		二年級		三年級		四年級		備註
						上	下	上	下	上	下	上	下	
	CIM6014	漫畫與插畫設計 Comics and illustration design	3	3	選						3 (3)			※3
	CIM6016	藝文新聞寫作與報導 Arts and culture reporting	3	3	選								3 (3)	
	CIM6017	表演實務與科技應用 Performance Practice and Technology Application	3	3	選				3 (3)					
	CIM6022	文化傳播與在地實踐 Cultural Communication and Social Practice	3	3	選							3 (3)		※5
	CIM6023	動態視覺設計 Motion graphic design	3	3	選						3 (3)			
	CIM6024	文化創意產業科技應用 Technology Applications in Cultural & Creative Industries	3	3	選					3 (3)				
	CIM6025	文化與數位表現 Culture and Digital Expression	3	3	選					3 (3)				
	CIM6001	教學實務 Teaching Practice	0	0.5	選									學習型 教學助理之學生選課

※1 文化資產保存與文化創意產業應用學程

※2 影視媒體創作應用學分學程

※3 幼兒跨域創意教學學分學程

※4 社會企業與公益創新學分學程

※5 地方創生士學分學程

※6 身心障礙成人照顧創新產業學分學程

國立屏東大學 新增課程申請表

開課單位名稱	文化創意產業學系碩士班			申請日期	112 年 10 月 20 日	
課程中文名稱	創意城市治理與地方創生個案研究			選 修 別	<input type="checkbox"/> 必修 <input checked="" type="checkbox"/> 選修	
課程英文名稱	Case studies on creative urban governance and place making			先修科目	無	
總學分數/時數	3	每學期開課學分數/時數	3	選課人數(限額)	25	
課程類別/學科領域						
預訂開課年級	<input type="checkbox"/> 大學部 <u>一</u> 年級 <u>下</u> 學期 <input checked="" type="checkbox"/> 研究所					
開設本課程需要性	(請詳述開設本課程之背景因素) 地方創生是國家重要發展政策，也是影響地方發展的重要議題，配合城鄉治理的模式，培養學生具備解決在地問題的能力，能關心與分析地方發展問題，並從實踐的角度完成學習與研究。					
開設本課程教師所需之專業背景	(請詳述開課教師所需之專業背景) 具備推動地方創生實務經驗					
本校是否已開設相關課程	<input type="checkbox"/> 是；課程名稱/開課單位： <input checked="" type="checkbox"/> 否					
需配合之儀器設備、圖書及教學資源	<input type="checkbox"/> 有；需求如下： <input checked="" type="checkbox"/> 無特殊需求					

教 學 大 綱	教學目標	(1) 教導學生具備地方創生基本了解 (2) 能進行書報閱讀與評論 (3) 針對地方創生之發展應用於實務層面的規劃 (4) 認識世界上創意城市的治理模式
	課程綱要	第 1 週：預備週 第 2 週：地方創生的日本經驗(一) 第 3 週：地方創生的日本經驗(二) 第 4 週：台灣推動地方創生的歷程(一) 第 5 週：台灣推動地方創生的歷程(二) 第 6 週：國發會地方創生政策介紹(一) 第 7 週：國發會地方創生政策介紹(二) 第 8 週：國發會地方創生政策介紹(三) 第 9 週：期中考 第 10 週：地方創生案例影片(一) 第 11 週：地方創生案例影片(二) 第 12 週：地方創生案例影片(三) 第 13 週：地方創生案例影片(四) 第 14 週：地方創生案例影片(五) 第 15 週：地方創生案例影片(六) 第 16 週：期末考
	核心能力	文化涵養能力：1-2 能執行文化事務政策 產業實踐能力：2-2 能經營行銷文創或客家產業
	授課方式	課堂講授 個案介紹
	評量方式	期中考 40% 期末考 40% 平時成績 20%
	主要讀本	地方創生：觀光、特產、地方品牌的 28 則生存智慧 地方創生：小型城鎮、商店街、返鄉青年的創業 10 鐵則

註：

1. 本案經 112 學年度第 1 學期第 1 次系課程委員會議、____學年度第____學期第____次院（中心）課程委員會議通過（由開課單位填寫）
2. 本案經____學年度第____學期第____次課程委員會議通過（由教務處填寫）

國立屏東大學 新增課程申請表

開課單位名稱	文化創意產業學系碩士班			申請日期	112 年 10 月 20 日
課程中文名稱	量性與質性軟體應用			選 修 別	<input type="checkbox"/> 必修 <input checked="" type="checkbox"/> 選修
課程英文名稱	Quantitative and qualitative software applications			先修科目	無
總學分數/時數	3	每學期開課學分數/時數	3	選課人數(限額)	25
課程類別/學科領域					
預訂開課年級	<input type="checkbox"/> 大學部 <u>一</u> 年級 <u>下</u> 學期 <input checked="" type="checkbox"/> 研究所				
開設本課程需要性	(請詳述開設本課程之背景因素) 軟體應用是研究過程中必備的重要工具，無論質性與量性的研究，必須透過客觀之研究工具協助，以達到研究的嚴謹性。近年來軟體的發展操作越來越方便，能有效輔助學生完成碩士論文，並具備工具效度。				
開設本課程教師所需之專業背景	(請詳述開課教師所需之專業背景) 熟悉質性軟體 Nvivo 與量化軟體 SPSS 具備管理與社會學相關背景				
本校是否已開設相關課程	<input type="checkbox"/> 是；課程名稱/開課單位： <input checked="" type="checkbox"/> 否				
需配合之儀器設備、圖書及教學資源	<input checked="" type="checkbox"/> 有；需求如下： SPSS 軟體與 Nvivo 軟體 電腦教室 <input type="checkbox"/> 無特殊需求				

教 學 大 綱	教學目標	(1) 釐清量化研究工具的應用時機 (2) 懂得依據研究主題使用質性與量化軟體 (3) 學習運用質性與量化軟體操作步驟 (4) 熟悉研究報告撰寫與結果分析
	課程綱要	第 1 週：預備週 第 2 週：量化研究軟體與質性軟體概述 第 3 週：SPSS 上機實作(一) 第 4 週：SPSS 上機實作(二) 第 5 週：SPSS 上機實作(三) 第 6 週：SPSS 上機實作(四) 第 7 週：SPSS 上機實作(五) 第 8 週：SPSS 上機實作(六) 第 9 週：期中考 第 10 週：Nvivo 上機實作(一) 第 11 週：Nvivo 上機實作(二) 第 12 週：Nvivo 上機實作(三) 第 13 週：Nvivo 上機實作(四) 第 14 週：Nvivo 上機實作(五) 第 15 週：Nvivo 上機實作(六) 第 16 週：期末考
	核心能力	獨立研究能力 3-2 能運用研究方法進行研究
	授課方式	課堂講授 實務操作
	評量方式	期中考 40% 期末考 40% 平時成績 20%
主要讀本		NVivo 11 與網路質性研究方法論 SPSS 操作與應用-問卷統計分析實務
註： 1. 本案經 <u>112 學年度第 1 學期第 1 次系課程委員會議</u> 、____學年度第____學期第____次院（中心） 課程委員會議通過（由開課單位填寫） 2. 本案經____學年度第____學期第____次課程委員會議通過（由教務處填寫）		

國立屏東大學 新增課程申請表

開課單位名稱	文化創意產業學系碩士在職專班			申請日期	112 年 10 月 20 日	
課程中文名稱	資料分析與軟體操作實務			選 修 別	<input type="checkbox"/> 必修 <input checked="" type="checkbox"/> 選修	
課程英文名稱	Data analysis and software operation practice			先修科目	無	
總學分數/時數	2	每學期開課學分數/時數	2	選課人數(限額)	25	
課程類別/學科領域						
預訂開課年級	<input type="checkbox"/> 大學部 <u>一</u> 年級 <u>下</u> 學期 <input checked="" type="checkbox"/> 研究所					
開設本課程需要性	(請詳述開設本課程之背景因素) 軟體應用是研究過程中必備的重要工具，無論質性與量性的研究，必須透過客觀之研究工具協助，以達到研究的嚴謹性。近年來軟體的發展操作越來越方便，能有效輔助學生完成碩士論文，並具備工具效度。					
開設本課程教師所需之專業背景	(請詳述開課教師所需之專業背景) 熟悉質性軟體 Nvivo 與量化軟體 SPSS 具備管理與社會學相關背景					
本校是否已開設相關課程	<input type="checkbox"/> 是；課程名稱/開課單位： <input checked="" type="checkbox"/> 否					
需配合之儀器設備、圖書及教學資源	<input checked="" type="checkbox"/> 有；需求如下： SPSS 軟體與 Nvivo 軟體 電腦教室 <input type="checkbox"/> 無特殊需求					

教 學 大 綱	教學目標	(1) 釐清量化研究工具的應用時機 (2) 懂得依據研究主題使用質性與量化軟體 (3) 學習運用質性與量化軟體操作步驟 (4) 熟悉研究報告撰寫與結果分析
	課程綱要	第 1 週：預備週 第 2 週：量化研究軟體與質性軟體概述 第 3 週：資料蒐集方法(一) 第 4 週：資料蒐集方法(一) 第 5 週：資料分析方法(一) 第 6 週：資料分析方法(一) 第 7 週：SPSS 上機實作(一) 第 8 週：SPSS 上機實作(二) 第 9 週：期中考 第 10 週：SPSS 上機實作(三) 第 11 週：SPSS 上機實作(四) 第 12 週：Nvivo 上機實作(一) 第 13 週：Nvivo 上機實作(二) 第 14 週：Nvivo 上機實作(三) 第 15 週：Nvivo 上機實作(四) 第 16 週：期末考
	核心能力	獨立研究能力 3-2 能運用研究方法進行研究
	授課方式	課堂講授 實務操作
	評量方式	期中考 40% 期末考 40% 平時成績 20%
	主要讀本	NVivo 11 與網路質性研究方法論 SPSS 操作與應用-問卷統計分析實務
註： 1. 本案經 <u>112 學年度第 1 學期第 1 次系課程委員會議</u> 、____學年度第____學期第____次院（中心）課程委員會議通過（由開課單位填寫） 2. 本案經____學年度第____學期第____次課程委員會議通過（由教務處填寫）		

國立屏東大學教學績優教師獎勵申請表

姓名	林思玲	職稱	教授	系所	文化創意產業學系	學院	人文社會學院
申請資格	1. <input checked="" type="checkbox"/> 在本校任教滿3年以上：到職日期：2007年8月 2. <input checked="" type="checkbox"/> 通過最近一次教師評鑑者：通過111學年度教師評鑑 3. <input type="checkbox"/> 符合(AACSB)認證之教師資格分類，並完成學習品質保證作業，且繳交改善報告 (註：僅管理學院教師需填寫) 4. <input checked="" type="checkbox"/> 近四個學期每學期教學評量結果總平均達4.00分 5. <input checked="" type="checkbox"/> 系、所或學程推薦：主任或所長核章_____ (註：院聘教師不需填寫此項) 6. <input checked="" type="checkbox"/> 院推薦：院長核章_____						
	教學設計與專業領導(25%)	評分項目	自我檢核	系、所或學程檢核	學院檢核	審委會檢核	教師履歷管理系統佐證資料(自行編號)
	(一)開設創新教學課程						
	1. 獲教育部認證之數位課程						
	2. 開設全英語授課課程	2	2				1-1-2-1 大學部 110 學年第 1 學期 EMI 「文化產業英文選讀」(5 位老師合授) 1-1-2-2 碩士班 110 學年第 2 學期 EMI 「文創產業經營研究」、「整合行銷傳播實務專題」(兩課合開，5 位老師合授) 1-1-2-3 大學部 111 學年第 1 學期 EMI 「文化產業英文選讀」(5 位老師合授) 1-1-2-4 碩士班 111 學年第 2 學期 EMI 「歷史空間再生研究」(5 位老師合授)
	3. 開設遠距教學課程						
4. 開設本校高教深耕計畫	6					1-2-4-1 參與本校高教深耕計畫「地方創生士學分學程」，開設大學部 111 學年第 1 學期「文化資產行銷(3 學分)」 1-2-4-2 參與本校高教深耕計畫「社會企業與公益創新學分學程」，開設大學部 111 學年第 1 學期「社區營造與地方文化產業(3 學分)」	

畫所列 舉之跨 領域相 關課程					
5. 其他(須 提供佐 證資料)					
(二)申請教學計畫					
1. 擔任教 育部相 關創新 課程計 畫主持 人					
2. 擔任海 外實習 計畫主 持人					
3. 擔任教 學改進 計畫、教 學實踐 研究計 畫主持 人					
4. 擔任本 校高教 深耕計 畫(含子 計畫)主 持人					
5. 其他(須	1	1			1-2-5-1 申請文化部文化資產局經費補助辦理「文化資產保存與文化創意產業學分學程」，為本校大武山跨領域學分學程之一。

提供佐證資料)					
(三)推動系所、學程、中心、學院或跨院教師之教學改革與成長活動					
1. 擔任教師專業社群召集人					
2. 擔任校內外教師成長相關活動之主講人					
3. 其他(須提供佐證資料)					
教學設計與專業領導類之各項積點合計乘上25%	2.25	2.25			
教學成果(25%)	(一)教學研究成果發表(下列論文皆須包含申請者教學成果之事實)				
	1. 學術論文被刊登於SCI、SCIE、SSCI、A&HCI、TSSCI、EI、THCI期刊	5	5		2-1-1-1 吳添熹、林思玲*(2022)從社群媒體觀察屏東菸葉廠文化資產保存的民眾參與意見。《建築學報》，第120期，頁79-103。(通訊作者，審稿制學術期刊，收錄於TSSCI資料庫索引)

2. 學術論文被刊登於非屬前述之其他期刊				
3. 國際學術研討會學術論文發表	3	3		2-1-3-1 Lin, S. L. (2021). Toward sustainable heritage conservation: Military dependents village in Taiwan after World War II. International LDE-Heritage conference: Heritage and the Sustainable Development Goals Proceedings (pp. 78-89). ISBN 978-94-6366-356-4. Publisher: TU Delft Open. Paper presented at the meeting of International LDE-Heritage conference: Heritage and the Sustainable Development Goals, November. 26-28, 2019, TU Delft, The Netherlands. Retrieved from BK BOOKS: https://books.bk.tudelft.nl/index.php/press/catalog/book/781 .
4. 國內學術研討會學術論文發表	6	6		2-1-4-1 郭春金、林思玲 (2023)。以無形文化資產保存東港地區六十甲子籤芻議，2023 文化創意產業永續與前瞻學術研討會，國立屏東大學。 2-1-4-2 林思玲 (2023)。屏東客家文化資產保存與永續發展，頁 183-219，《跨界美學 人文風華-曾貴海國際學術研討會論文集》。ISBN:978-986-478-694-7。萬卷樓圖書股份有限公司。本文研討會發表日期為 2021 年 10 月 23 日。 2-1-4-3 洪鈺詒、林思玲 (2023)。彰顯聖域的使命：東港天主堂文化資產的管理維護，頁 121-147，《2022 文化創意產業永續與前瞻學術研討會論文集》。ISBN：978-986-05-9599-4。五南文化廣場。本文研討會發表日期為 2023 年 3 月 26 日。
5. 其他(須提供佐證資料)	2	2		2-1-5-1 出版「地方創生士學分學程」專業書籍「地方創生士：走入在地必備的 12 堂課程」
(二)獲教育界之教學類獎項				
1. 獲國際教學類獎項				
2. 獲全國教學類獎項				

3. 獲校內教學類獎項	3	3			2-2-3-1 獲得 2021 年榮獲國立屏東大學「109 學年度教學績優教師」獎勵
(三)學生學習成效					
1. 學生申請國際競賽獲獎或國際合作計畫案之指導老師					
2. 學生榮獲科技部大專生專題計畫研究創作獎者之指導老師					
3. 學生榮獲科技部大專生專題計畫之指導老師					

4. 學生申請全國性競賽獲獎或全國性合作計畫案之指導老師					
5. 其他(須提供佐證資料)	4	4			2-3-5-1 2023 年 6 月出版大學部魏書華專題研究「阿猴街散策」(國立屏東大學出版)繪本 2-3-5-2 2023 年 6 月出版大學部陳佳喻專題研究「維蹟管家」(國立屏東大學出版)桌遊
教學成果類之各項積點合計乘上 25%	5.75	5.75			
質性成果審核(50%)	<div>受推薦教師須於教學績優教師審議委員會中進行簡報，委員並得提問。受推薦教師本人不克出席時，得另提供錄影檔，惟未出席進行簡報與提問且未提供錄影檔者，視同放棄本獎勵資格。(此項僅限審委會評比)</div>				
質性成果審核類之積點乘上 50%					
實 質 總 積 點 數					

申請教師簽章： 林恩玲

國立屏東大學補助研究成果發表申請表

(每篇請填寫一張申請表)						項次	1
姓名	林思玲	單位	文化創意產業學系	職稱	教授	聯絡電話	分機：0928154899 手機：35700
成果名稱	從社群媒體觀察屏東菸葉廠文化資產保存的民眾參與意見			出版社	臺灣建築學會		
發表處 (期刊名稱、卷數、頁數)	臺灣建築學會「建築學報」，第 120 期，第 79~103 頁，夏季號			發表日期	2022 年 6 月	作者總人數／申請人順位	共 2 人 第 2 順位 或 ■ 通訊作者
該子領域 排名百分比	申請項目			H	金額	二萬元	
若有符合此獎勵要件， 每項再給予該篇所獲獎勵金 5%之額外獎勵金 (請勾選，並填寫下列表單)		<input type="checkbox"/> 研究成果將聯合國 17 項永續發展目標(SDGs)之指標關鍵字納入 <u>標題、摘要或關鍵字</u> 至少一項，再給予該篇所獲獎勵金 5%之額外獎勵金。 <input type="checkbox"/> 研究成果與國外學者共同合著(不含大陸、港、澳地區)，再給予該篇所獲獎勵金 5%之額外獎勵金。					
若有符合下列獎勵要件，每項再給予該篇所獲獎勵金 5%之額外獎勵金(請檢附佐證資料)							
將聯合國 17 項永續發展目標(SDGs)之指標關鍵字納入 <u>標題、摘要或關鍵字</u> 至少一項之情形	符合聯合國 17 項永續發展目標(SDGs)的那一項指標 (請勾選)	<input type="checkbox"/> 1.終結貧窮 (No Poverty) <input type="checkbox"/> 2.零飢餓 (Zero Hunger) <input type="checkbox"/> 3.良好健康與福祉 (Good Health and Well-Being) <input type="checkbox"/> 4.優質教育 (Quality Education) <input type="checkbox"/> 5.性別平等 (Gender Equality) <input type="checkbox"/> 6.潔淨水資源 (Clean Water and Sanitation) <input type="checkbox"/> 7.人人可負擔的永續能源 (Affordable and Clean Energy) <input type="checkbox"/> 8.良好工作及經濟成長 (Decent Work and Economic Growth) <input type="checkbox"/> 9.工業、創新及基礎建設 (Industry, Innovation and Infrastructure) <input type="checkbox"/> 10.減少不平等 (Reduced Inequalities) <input type="checkbox"/> 11.永續城鄉和社會 (Sustainable Cities and Communities) <input type="checkbox"/> 12.負責任消費與生產 (Responsible Consumption and Production) <input type="checkbox"/> 13.氣候行動 (Climate Action) <input type="checkbox"/> 14.海洋生態 (Life Below Water) <input type="checkbox"/> 15.陸域生態 (Life on Land) <input type="checkbox"/> 16.公平、正義與健全制度 (Peace, Justice and Strong Institutions) <input type="checkbox"/> 17.促進目標的夥伴關係 (Partnerships for the Goals)					
	請敘明符合之內容						
與國外學者共同合著(不含大陸、港、澳地區)研究成果之基本資料	合著學者姓名				服務單位		
申請總金額(含額外獎勵金)：13,333 元					申請人簽名：林思玲		

附表 4-2

國立屏東大學補助研究成果發表獎勵補助標準表

項 目			獎勵補助 (最高)
研究成果	A	依據 JCR (Journal Citation Reports) 資料庫相關領域之 SCI、SCIE、SSCI，且在該領域之影響指數 (Impact Factor) 排名屬前 10% 或 AHCI 之期刊論文。	六萬元
	B	依據 JCR (Journal Citation Reports) 資料庫相關領域之 SCI、SCIE、SSCI，且在該領域之影響指數 (Impact Factor) 排名屬前 30% 之期刊論文。	四萬元
	C	依據 JCR (Journal Citation Reports) 資料庫相關領域之 SCI、SCIE、SSCI，且在該領域之影響指數 (Impact Factor) 排名屬前 50% 之期刊論文。	三萬元
	D	獲得國家科學及技術委員會補助之研究專書。	三萬元
	E	依據 JCR (Journal Citation Reports) 資料庫相關領域之 SSCI，且在該領域之影響指數 (Impact Factor) 排名屬前 70% 之期刊論文。	二萬五千元
	F	國家科學及技術委員會社會科學領域 TSSCI、THCI 第一級正式收錄期刊名單者。	二萬五千元
	G	依據 JCR (Journal Citation Reports) 資料庫相關領域之 SCI、SCIE，且在該領域之影響指數 (Impact Factor) 排名屬 50% 以外；SSCI 排名屬 70% 以外之期刊論文。	二萬
	H	發表於 Engineering Index(簡稱 EI) 之期刊(不包含 Proceeding 與 Book series) 或國家科學及技術委員會社會科學領域 TSSCI、THCI 第二級正式收錄期刊名單者。	二萬元
	I	SCOPUS 所收錄之期刊論文(不包含 Conference Proceeding 與 Book series)。	二萬元

備註：

- 一、研究成果將聯合國 17 項永續發展目標(SDGs)之指標關鍵字納入標題、摘要或關鍵字至少一項者，再給予該篇所獲獎勵金 5% 之額外獎勵金。
- 二、研究成果與國外學者合著(不含大陸、港、澳地區)者，再給予該篇所獲獎勵金 5% 之額外獎勵金。
- 三、研究成果論文若為多人作者，其著作之獎勵金按下列公式計算：
 有 i 個人作者， $i=1,2,\dots,n$ ，則第一順位作者或通訊作者得分 n 點，第二順位作者得分 $n-1$ 點，……第 n 順位作者得分 1 點。即：
 第一順位作者或通訊作者的獎勵金 = 原獎勵金 $\times (n / (1+2+\dots+n))$ ，
 第二順位作者的獎勵金 = 原獎勵金 $\times ((n-1) / (1+2+\dots+n))$ ，
 第 n 順位作者的獎勵金 = 原獎勵金 $\times (1 / (1+2+\dots+n))$ 。
- 四、若期刊依作者姓氏英文字母排序者，請檢附該期刊之目錄以茲證明，其獎勵金計算公式：若有 n 個人作者，則每位作者的獎勵金 = 原獎勵金 $\times (1/n)$ 。

● 請檢具下列文件，依各系所規定之期限提出申請：

- 1、申請書(含電子檔)。
- 2、申請項目應附文件檢核表：申請人自行填寫檢核勾選並核章。
- 3、已刊登之著作。
- 4、申請項目之佐證資料：請參照「申請項目應附文件檢核表」檢具。
- 5、檢附填報本校「教師履歷」管理系統之佐證資料。

附表 4-3

國立屏東大學補助研究成果發表獎勵補助檢核表

研究獎勵補助申請項目應檢附之佐證文件一覽表

勾選	項 目	獎勵補助 (最高)	申請應檢附之佐證文件
<input type="checkbox"/>	A 依據 JCR (Journal Citation Reports) 資料庫相關領域之 SCI、SCIE、SSCI，且在該領域之影響指數 (Impact Factor) 排名屬前 10% 或 AHCI 之期刊論文。	六萬元	1、收錄至該學術期刊之證明 (應含申請之論文名稱、作者姓名及期刊出版年、月、卷期數及頁碼)，若無頁碼者，請提供網路連結。 2、SCI、SCIE、SSCI 之期刊收錄至 JCR (Journal Citation Reports) 最新資料庫並排名屬前 10% 之證明。 3、論文全文。
<input type="checkbox"/>	B 依據 JCR (Journal Citation Reports) 資料庫相關領域之 SCI、SCIE、SSCI，且在該領域之影響指數 (Impact Factor) 排名屬前 30% 之期刊論文。	四萬元	1、收錄至該學術期刊之證明 (應含申請之論文名稱、作者姓名及期刊出版年、月、卷期數及頁碼)，若無頁碼者，請提供網路連結。 2、SCI、SCIE、SSCI 之期刊收錄至 JCR (Journal Citation Reports) 最新資料庫並排名屬前 30% 之證明。 3、論文全文。
<input type="checkbox"/>	C 依據 JCR (Journal Citation Reports) 資料庫相關領域之 SCI、SCIE、SSCI，且在該領域之影響指數 (Impact Factor) 排名屬前 50% 之期刊論文。	三萬元	1、收錄至該學術期刊之證明 (應含申請之論文名稱、作者姓名及期刊出版年、月、卷期數及頁碼)，若無頁碼者，請提供網路連結。 2、SCI、SCIE、SSCI 之期刊收錄至 JCR (Journal Citation Reports) 最新資料庫並排名屬前 50% 之證明。 3、論文全文。
<input type="checkbox"/>	D 獲得國家科學及技術委員會補助之研究專書。	三萬元	1、專書封面。 2、專書 ISBN 編碼。 3、專書出版日期。
<input type="checkbox"/>	E 依據 JCR (Journal Citation Reports) 資料庫相關領域之 SSCI，且在該領域之影響指數 (Impact Factor) 排名屬前 70% 之期刊論文。	二萬五千元	1、收錄至該學術期刊之證明 (應含申請之論文名稱、作者姓名及期刊出版年、月、卷期數及頁碼)，若無頁碼者，請提供網路連結。 2、SSCI 之期刊收錄至 JCR (Journal Citation Reports) 最新資料庫並排名屬前 70% 之證明。 3、論文全文。
<input type="checkbox"/>	F 國家科學及技術委員會社會科學領域 TSSCI、THCI 第一級正式收錄期刊名單者。	二萬五千元	1、收錄至該學術期刊之證明 (應含申請之論文名稱、作者姓名及期刊出版年、月、卷期數及頁碼)，若無頁碼者，請提供網路連結。 2、該學術期刊為 TSSCI、THCI 第一級最新一年所收集的期刊之證明。 3、論文全文。

研究獎勵補助申請項目應檢附之佐證文件一覽表

勾選	項 目	獎勵補助 (最高)	申請應檢附之佐證文件
<input type="checkbox"/>	G 依據 JCR (Journal Citation Reports) 資料庫相關領域之 SCI、SCIE，且在該領域之影響指數 (Impact Factor) 排名屬 50%以外；SSCI 排名屬 70%以外之期刊論文。	二萬	1、收錄至該學術期刊之證明 (應含申請之論文名稱、作者姓名及期刊出版年、月、卷期數及頁碼)，若無頁碼者，請提供網路連結。 2、SCI、SCIE 之期刊收錄至 JCR (Journal Citation Reports) 最新資料庫並排名屬 70%以外；SSCI 排名屬 70%以外之證明。 3、論文全文。
<input checked="" type="checkbox"/>	H 發表於 Engineering Index(簡稱 EI) 之期刊(不包含 Proceeding 與 Book series)或國家科學及技術委員會社會科學領域 TSSCI、THCI 第二級正式收錄期刊名單者。	二萬元	1、收錄至該學術期刊之證明 (應含申請之論文名稱、作者姓名及期刊出版年、月、卷期數及頁碼)，若無頁碼者，請提供網路連結。 2、該學術期刊為 EI 或 TSSCI、THCI 第二級最新一年所收集的期刊之證明。 3、論文全文。
<input type="checkbox"/>	I SCOPUS 所收錄之期刊論文(不包含 Conference Proceeding 與 Book series)。	二萬元	1、收錄至該學術期刊之證明 (應含申請之論文名稱、作者姓名及期刊出版年、月、卷期數及頁碼)，若無頁碼者，請提供網路連結。 2、該學術期刊為 SCOPUS 最新一年所收集的期刊之證明。 3、論文全文。
<input type="checkbox"/>	額外項 額外獎勵項，將聯合國 17 項永續發展目標(SDGs)之指標關鍵字納入標題、摘要或關鍵字至少一項，檢附相關佐證資料。		
<input type="checkbox"/>	額外項 額外獎勵項，與國外學者共同合著(不含大陸、港、澳地區)，檢附相關佐證資料。		

申請人簽名： 林恩玲

「教師履歷」管理系統之佐證資料

[T0101S] 履歷資料維護-[期刊論文資料]：112學年第 1 學期

說明

檔案:只可上傳1個檔案,欲更換上傳的檔案,請先刪除舊檔案,再上傳新檔案,單一頁面,上傳的檔案大小加總上限為10MB

新增資料區

*論文名稱:

*發表日期:

*論文收錄分類:

*作者順序:

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*刊物名稱:

*論文出版地類別:

國名:

*論文是否具審核制度:

*跨國(地區)合作類別:

*發表卷數:

*發表期數:

起迄頁數:

*發表型式:

所屬計畫案名稱:

補助單位:

補助金額:

中文摘要:

英文摘要:

參考文獻:

備註:

產生報表時是否列印:

檔案:

代碼	檔案	檔案名稱	檔案
41884	<input type="button" value="下載"/>	1151 屏東茶葉廠建築學報120期刊登文章檔案.pdf	<input type="button" value="刪除"/>

從社群媒體觀察屏東菸葉廠文化資產保存的民眾參與意見¹

吳添熹* 林思玲**

關鍵字：屏東菸葉廠，工業遺產，民眾參與，社群媒體，文化資產，文化遺產，永續

摘要

文化資產永續保存是目前國際間重視的議題，其中民眾參與更是文化資產永續保存不可或缺的部分。民眾參與的首要目的是讓民眾了解文化資產場域保存的意義與價值，因此，民眾對文化資產保存的觀點成為了重要的觀察指標。再者，具文化資產價值的保存與經營，體現在根源於文化資產有形及無形文化資源的應用。本研究的動機，起因於屏東縣政府目前正積極地進行工業遺產屏東菸葉廠文化資產保存的相關工作，因此籌劃了展覽活動，讓民眾有機會進入昔日不易進入菸葉生產場域，促成本研究欲探討該場域文化資產民眾參與的議題。工業遺產是其中一個需要被積極守護的文化資產類別。許多民眾第一次參加體驗屏東菸葉廠這類工業遺產的空間與活動，民眾參加體驗的意見，正好成為本研究可觀察屏東菸葉廠保存是否可提升民眾對於菸葉廠保存的意識，進而分析民眾對於屏東菸葉廠保存再利用的觀點，此為本研究主要目的。當今民眾普遍應用社群媒體發表意見，恰能提供做為民眾體驗文化資產保存的意見發表媒介。

本研究將以屏東菸葉廠作為研究場域，並以 2019 臺灣設計展的舉辦為研究對象，應用質性研究方法中的文獻分析法及觀察研究法，探討當時活動在屏東菸葉廠的民眾體驗情形。本研究使用社群媒體 Google Maps 蒐集民眾對於屏東菸葉廠的評論（包含照片及文字），並進行編碼分析，探討 2019 臺灣設計展的舉辦是否能協助民眾了解屏東菸葉廠的文化資產價值，以及民眾對於屏東菸葉廠保存再利用的看法。本研究發現，2019 臺灣設計展的舉辦有助於民眾認識屏東菸葉廠的文化資產保存意義與價值。而在民眾表達的意見上，本研究也整理出民眾對於屏東菸葉廠的介紹、民眾的感受、正面評語、負面評語，以及民眾的期許等訊息與建議。針對民眾的意見，本研究認為在屏東菸葉廠內活動舉辦地點，要以能協助民眾認識該場域的文化資產保存意義與價值為原則，並且可適時地運用屏東菸葉廠的有形與無形文化資源，強化屏東菸葉廠文化資產價值的詮釋（interpretation），這樣才有助於民眾了解文化資產。另外，針對民眾所提出的意見，本研究也提出幾點建議。在廠區的保存規劃上，在修復上須適時保留工廠昔日作業設施與標語以傳遞工廠氛圍，同時兼顧民眾參觀安全。而在導覽解說方面，可針對導覽志工加強培訓。最後在消息的公告上，可再加強推廣，讓更多人認識屏東菸葉廠及其相關資訊，並且也可以多舉辦與屏東菸葉廠規劃相關的講座及說明會等，讓民眾有更多的機會參與保存。此外，目前屏東菸葉廠的民眾參與，對於包容性的原則著墨較少，未來屏東縣政府在規劃屏東菸葉廠的活化再利用，應適度考慮族群、性別等議題，以強化包容性的文化資產保存永續目標。

Exploring Public Participation and Views on Social Media regarding the Conservation of Cultural Heritage in the Pingtung Tobacco Factory

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KEYWORDS: Pingtung Tobacco Factory, Industrial Heritage, Public Participation, Social Media, Cultural Property, Cultural Heritage, Sustainability

ABSTRACT

Sustainable conservation of cultural heritage is a crucial topic that currently receives substantial attention from international communities. Particularly, public participation is an indispensable part. To facilitate public participation in such conservation, the conservation value of cultural heritage fields must be introduced to the public. Therefore, the public's views regarding the conservation of cultural heritage become an important indicator that is worthy to observe. Furthermore, the conservation and management of cultural heritage value is embodied in the application of tangible and intangible cultural resources rooted in cultural heritage. This motivation of study is that the Pingtung County Government has been actively engaging in the conservation of the industrial heritage in the Pingtung Tobacco Factory, and accordingly designed an exhibition to provide the public with an opportunity to visit the tobacco production factory that could not be easily accessed previously. This prompted this study to explore the issue of public participation in the cultural heritage site. Industrial heritage is a type of cultural heritage that requires protection. Numerous people visited this type of industrial heritage (i.e., the Pingtung Tobacco Factory) for the first time. These people's views of an experience tour can be used to understand whether the conservation of the Pingtung Tobacco Factory raises the public's awareness of preserving tobacco factories and that how the public think of reutilization of the factory. This is the main purpose of this study. The public commonly express their views on social media, including their cultural heritage conservation experience.

In this study, the Pingtung Tobacco Factory served as the research setting and that Taiwan Design Expo'19, along with the qualitative research methods including documental analysis and observation research methods, was used as an example to explore the public's experience in visiting the Pingtung Tobacco Factory. The social media adopted in this study were Google Maps. By collecting people's comments about the Pingtung Tobacco Factory (including photos and texts) and coded them, we analyzed whether Taiwan Design Expo'19 facilitated people's understanding of the conservation value of the cultural heritage and examined their views regarding preserving and reutilizing the factory. The research results revealed that Taiwan Design Expo'19 did facilitate people's understanding of the conservation value of the Pingtung Tobacco Factory. In addition, this study presented how people introduced the factory, their positive and negative comments, and their expectations and suggestions. According to visitors' opinions, this study considered that the locations for holding activities in the Pingtung Tobacco Factory must be those that can assist people in understanding relevant conservation value of cultural heritage; tangible and intangible cultural resources in the locations to strengthen the interpretation of the cultural heritage value of Pingtung Tobacco Factory. This should also be adequately utilized to facilitate people's understanding of cultural heritage. Moreover, on the basis of the public views, this study proposed several suggestions. In the restoration, the old operating facilities and slogans of the factory must be kept in a timely manner to convey the factory atmosphere and that people's safety during their visit must be considered. Regarding visit guidance, volunteer guides should be provided with intensified training. Finally, the Pingtung Tobacco Factory and relevant information should be publicized to help people learn about the factory. Related forums and seminars can also be held to provide people with opportunities to participate in the conservation of the factory. In addition, the current public participation of Pingtung Tobacco Factory pays little attention to the principle of inclusiveness. In the future, when planning the revitalization and reuse of the Pingtung Tobacco Factory, the Pingtung County Government should appropriately consider issues such as ethnicity and gender in order to strengthen the sustainable goal of inclusive cultural heritage conservation.

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一、前言

在國際上，文化遺產的永續發展早已是重要議題。聯合國（United Nations, UN）在 2015 年所發表的《改變我們的世界：2030 年永續發展議程》（Transforming our world: the 2030 Agenda for Sustainable Development）中，提出了 17 個永續發展目標（Sustainable Development Goals, SDGs），其中第 11 個目標，即是達成「使城市和人類住區具有包容性、安全性、韌性和永續性」，而當中又明確指出，達成上述目標的其中一個方式即是「在全球的文化與自然遺產的保護上，進一步努力（United Nations, 2015）。」而國際紀念物與歷史場所委員會（International Council on Monuments and Sites, ICOMOS）為了呼應聯合國永續發展目標，也在 2016 年發表了《文化遺產、聯合國永續發展目標與新都市議程》（Cultural heritage, UN Sustainable Development Goals and the New Urban Agenda），內容除了強調文化遺產為城市永續發展的關鍵要素外，也在議程中提到，「人」是遺產保存維護政策的核心，鼓勵人們參與其中（ICOMOS, 2016）。除了國際上的議程外，過去的研究也表明，若要實現文化遺產的永續發展，須確保與遺產相關的利害關係人參與（Hribar, et al., 2015；Ifko, 2017；Radosavljević, et al., 2019）。由此可知，文化遺產的永續發展已日益重要，且若要有良好的發展，需要有民眾的參與。民眾參與是文化資產永續保存不可或缺的部分。

民眾參與的首要目的是讓民眾了解文化資產場域的價值，因此，民眾對文化資產保存的觀點成為了重要的觀察指標。對於觀察蒐集民眾參與的情形，本研究發現當今民眾普遍應用社群媒體發表意見，恰能提供做為民眾體驗文化資產保存的意見發表媒介。Jenkins（2006）曾說：「網際網路已成為消費者參與的場域。」若將此說法套用到文化遺產的民眾參與上，民眾將參觀文化遺產後的想法分享在社群媒體，也是一種參與現象。而過去的相關文獻也提出，文化遺產的保存若是能透過社群媒體的力量來實現民眾參與，了解大眾的想法，即可為後續的遺產管理提出更完善

的策略，是對文化遺產保存更具包容性的作法（Ginzarly, et al., 2019；Ginzarly, et al., 2019）。因此，文化遺產的保存除了將其再利用外，還需促進民眾參與，使文化遺產的保存更具包容性，以符合聯合國永續發展目標。

工業遺產是屬於文化遺產的其中一個類別。當這些工業遺產的工業機能不再運作，經常因為都市的開發，而遭到拆除的命運。但現今不管是在國際上還是臺灣，大多注意到工業遺產的價值，並呼籲保存。在臺灣，工業遺產是以《文化資產保存法》進行保存，且被保存下來的工業遺產，常與文化創意結合，並再利用為文化創意園區。然而，工業遺產的保存策略並不能只侷限於再利用，而是須思考如何讓更多人參與遺產的維護。尤其工業遺產通常面積廣大，保存後要如何妥善的規劃，以及未來要如何實現永續發展，為現今工業遺產所需面對的重要課題。在此趨勢下，屏東縣政府目前正積極進行工業遺產屏東菸葉廠（圖 1、圖 2）文化資產保存的相關工作，因此籌劃了展覽活動，讓民眾有機會進入昔日不易進入的菸葉生產場域。許多民眾第一次參加體驗屏東菸葉廠這類工業遺產的空間與活動，民眾參加體驗的意見，正好成為本研究可觀察屏東菸葉廠保存是否可提升民眾對於菸葉廠保存的意識，進而分析民眾對於屏東菸葉廠保存再利用的觀點。

屏東菸葉廠是經臺灣《文化資產保存法》所保存的文化資產，分別在 2010 年將廠內四棟建物登錄為歷史建築；以及在 2017 年擴大登錄全廠區為歷史建築。然而，在屏東菸葉廠登錄為文化資產之後，過去僅有部分建物進行短期的活化再利用，鮮少向外界開放。但在 2018 年，屏東菸葉廠因獲文化部「再造歷史現場」計畫的支持，開始執行全廠區的修復及再利用，也陸續舉辦了志工培訓、展覽活動等，正逐步開放於大眾視野。屏東縣政府更於 2019 年舉辦「2019 臺灣設計展」，將屏東菸葉廠規劃為展區之一，此為保存之後最大規模的對外開放活動。因此，本研究將以文化資產的永續發展需要民眾參與作為出發點，透過社群媒體資料分析並輔以參與觀察的研究方法，來探討屏東菸

歷史、藝術、科學等文化價值之有形與無形資產（林思玲，2019）。而臺灣有形與無形文化資產的類型，依據《文化資產保存法》第3條的說明，有形文化資產包括古蹟、歷史建築、紀念建築、聚落建築群、考古遺址、史蹟、文化景觀、古物、自然地景與自然紀念物；無形文化資產則有傳統藝術表演、傳統工藝、口述傳統、民俗、傳統知識與實踐。在國際上，大多使用文化遺產（cultural heritage）一詞，臺灣與國際一樣，文化資產或文化遺產也是區分為有形文化資產或有形文化遺產（tangible cultural heritage）；無形文化資產或

無形文化遺產 (intangible cultural heritage) (林思玲, 2019)。本研究案例為屏東菸葉廠，目前經臺灣的《文化資產保存法》全區登錄為歷史建築，具有文化資產法定身分。在臺灣，像屏東菸葉廠這樣的廠房空間與產業相關設施有時也會被稱為「產業文化資產」；若是在國際上，則可被定義為「工業遺產」或「產業遺產」，兩者的英文皆為 industrial heritage，而本研究在中文的解釋上統一以「工業遺產」稱之。

工業遺產的解釋在相關研究中，大多根據 2003 年國際工業遺產保存委員會 (The International Committee for the Conservation of the Industrial Heritage, TICCIH) 頒布的《下塔吉爾憲章》(The Nizhny Tagil Charter for the Industrial Heritage) 所定義：「工業遺產為具有歷史、技術、社會、建築或科學價值的工業文化遺產，其中包括建築物、機械、工作坊、磨坊、工廠、礦場、加工精煉廠、倉庫、店鋪、能源生產與運輸設備、交通設施，以及用於與工業有關的住房、宗教信仰或教育等社會活動場所 (TICCIH, 2003)」，但其實《下塔吉爾憲章》中對於工業遺產的內涵是採取較宏觀的角度，內容除了包含建物及機械設備外，也包含工業景觀、工業社會所涵蓋之產品、產製過程和工廠相關檔案資料等 (楊敏芝主編, 2014)。除了上述以工業建築與產業相關製程來看工業遺產外，工業遺產也可以加入時間層面來探討。Fu (2016) 與林思玲 (2018) 就曾說明狹義定義下的工業遺產是指 18 世紀工業革命後到現在興建的工業建築物與設施，而廣義定義下的工業遺產則是涉及現代工業與傳統工業的源頭，以及關於科技史上工作技術方面等研究。

文化資產若要妥善保存並延續其傳承意義，很自然地就會連結到永續發展的議題。永續發展的常見定義大多引用自世界環境與發展委員會 (World Commission on Environment and Development, WCED) 在 1987 年所發表的《我們共同的未來》(Our Common Future)，又稱為「布朗特蘭報告書」(Brundtland Report)。當中定義永續發展 (sustainable development) 為既能滿足當前需求的發展，又同時不損害後代滿足其需求的能力 (WCED, 1987)。這樣的概念源自於對

環境的保護 (Soini & Birkeland, 2014)，但後來卻也衍生在經濟與社會發展上。因此現今在探討任何永續發展議題時，通常會包含 3 個層面或支柱 (pillars) 的交互關係，分別為 (1) 環境；(2) 經濟；(3) 社會。

但近年來，越來越多政策和學者提出「文化」作為永續發展的第 4 個支柱 (Guzmán, et al., 2017; Soini & Birkeland, 2014)。同時，卻也有學者認為文化包含在社會層面的永續性 (De Leão Dornelles, et al., 2020)。此時，聯合國提出了與上述不同的觀點，即是把文化當作工具，以促進環境、經濟、社會的永續發展 (United Nations, 2018; 2019)。而這樣子的觀點，在現今城市對於文化遺產的保存策略中，也得到了印證。

Guzmán et al. (2017) 曾分析了 19 份關於文化遺產保存的研究及報告書，進而說明文化遺產保存在城市永續發展的趨勢，研究發現，文化遺產若要達成在城市環境的永續，目前比較接近於以景觀 (landscape) 為基礎的探討，將文化遺產納入更廣泛的城市發展和規劃框架，在空間規劃的同時考慮到環境保護；而在經濟層面的探討，則是文化遺產在城市中常被當作文化資本 (cultural capital)，供旅遊業或是社區發展傳統工藝產業來使用，達成經濟效益；而文化遺產若要達成城市在社會層面的永續，則要能透過文化遺產建立當地社群或民眾的參與，包括參與地方規劃、決策過程等。

民眾參與 (public participation) 一直是促成文化遺產永續發展不可或缺的手段。在最初國際上關心於環境的永續發展時，聯合國所發表的《里約環境與發展宣言》(Rio Declaration on Environment and Development) 就曾提出：藉由民眾參與可以最好地處理環境議題，每個人都應有適當的機會獲得公共當局所持有的環境資訊，包括所在社區的有害物質和活動的資訊，以及參與決策過程的機會 (United Nations, 1992)。若將此概念套用在文化資產的民眾參與，最基本的即是要向民眾提供遺產的相關資訊，以便他們了解遺產保存的問題和價值，進一步的參與則是能提供民眾分享他們觀點的機會，並影響遺產規劃或保存過程的結果 (Dian & Abdullah, 2013)。而就本研究所探

討的「2019 臺灣設計展」，在活動性質上是邀請民眾進入場域參加體驗活動。雖然參加體驗活動並未實質讓民眾參與文化遺產保存經營的規劃，然就 Dian & Abdullah (2013) 的觀點，民眾參加體驗文化遺產相關的活動，藉此有機會能了解文化遺產保存的方式，並表達看法，實質上就是民眾參與的一種形式。

此外，針對文化遺產的永續發展及民眾參與，UNESCO (2015) 也曾提出，世界遺產在追求永續發展的同時，應同時保護遺產的傑出普世價值 (Outstanding Universal Value, OUV)，且在民眾參與的過程中，還須實現對遺產社區以及原住民的充分包容 (inclusion)、尊重 (respect)、公平 (equity)、性別平等 (gender equality)，以及提高生活品質和福祉 (Enhancing quality of life and well-being)。由此更加說明，文化遺產保存的民眾參與，不能忽略掉其場域文化資產保存的意義與價值。

關於文化資產保存意義與價值的理解，Navratil et al. (2018) 曾運用問卷調查，探討民眾對於捷克布爾諾 (Brno) 城市內 4 個工業遺產再利用的想法，研究表明，並不是所有的工業遺產再利用都能得到在地民眾與外來遊客的認同，尤其是對於還有沒有修復或整理好的工業遺產場所，人們對於遺產再利用的看法更顯消極，若要保護城市內其他具歷史、建築或美學價值的文化遺產，則還需要公家機關、地方團體之間交流的努力，提高大眾對於工業遺產價值的了解，才更有可能讓社會關注到文化遺產的保存。

Martinović & Ifko (2018) 也曾提出，民眾參與對於社會層面的永續發展至關重要，並以《布拉憲章》(Burra Charter) 中對於文化遺產的管理為基礎，認為民眾在參與文化遺產時，須先了解遺產的文化意義，研究者選擇了一個穀倉作為實驗基地，邀請當地民眾來現場參加活動，包括研討會、講座、節目、工作坊等，除了在活動中宣導研究場域的意義外，也會運用媒體來傳播，最後再與參加活動的民眾進行問卷調查，了解民眾對於穀倉再利用的看法。研究得出，民眾對於穀倉的再利用表達支持，若工業遺產的再生能透過活動讓當地民眾了解文化遺產的意義，並讓工業遺產

的保存得到民眾的認可，則可藉由工業遺產的再利用達到城市再生的基礎。

透過以上 2 個案例皆說明，工業遺產的再生要先讓民眾了解遺產的價值，才是使工業遺產進一步保存的關鍵。而上述提到的《布拉憲章》，是由澳洲 ICOMOS 最初於 1979 年所發表，而後又分別於 1981 年、1988 年、1999 年、2013 年對憲章進行修訂，以適應新的需求，目前最新的版本為 2013 年。《布拉憲章》中針對具有文化重大意義的場所該如何實施規劃與管理，做了詳盡的說明，並提出了一個實施流程圖（又稱布拉憲章流程），而當中同時也強調，社群和利害關係人的參與應貫穿整個流程 (Australia ICOMOS, 2013)。由此可知，《布拉憲章》中除了強調具有文化重大意義的場所該如何實施規劃與管理外，也重視文化場所的民眾參與。林思玲 (2019) 以國際間對於文化遺產保存強調場所精神 (spirit of place)² 的概念提出，文化資產的有形與無形文化資源，正是保存文化資產價值場域經營的創意來源，有形文化資源包含文化資產場域的建築空間型式、建築構造與裝飾元素；無形文化資源則是文化資產場域的歷史、文化、產業特徵、傳說、故事等。此形成本研究觀察民眾參與屏東菸葉廠活動與意見的重要視角。

2.2 社群媒體資料分析應用於文化資產保存相關研究

文化資產的民眾參與，除了要能讓民眾了解文化資產價值之外，提供民眾發表意見的機會，也是文化資產的民眾參與所需重視的。而透過社群媒體蒐集民眾對於文化遺產的想法，則為達成上述目標的其中一個方式。

社群媒體 (social media) 一詞最早出現的時間點約在 1990 年代，主要與電腦和網際網路的興起有關 (Zhou & Wang, 2014)，被定義為是以 Web 2.0³ 的思想和技術為基礎，並透過網際網路而建立的應用程式，是允許用戶創建和交換內容的平臺 (Kaplan & Haenlein, 2010)。而本研究也透過文獻回顧，整理出現今常見的社群媒體，包括 Facebook、Instagram、Flickr、Twitter、YouTube，甚至是 Wikipedia (維基百科)、

Google Maps 也皆為社群媒體 (Ginzarly, et al., 2019; Farahani, et al., 2018)。

Dijck (2013) 曾指出，與媒體相連的「社會的」(social) 這個字，暗示的是平臺是以用戶為中心的，他們進行社群活動，正如「參與的」一詞強調人的協作一樣。而 Fuchs (2014) 也說明，相較於過去只能單純的從報紙、廣播、電視等大眾媒體觀看和聆聽資訊，無法主動產製和創造文化的情況下，人們在社群媒體上發表一則訊息、文章、照片或影片就會被視為一種「參與式文化」(participatory culture) 的過程。若將以上社群媒體的解釋套用在文化資產的民眾參與，人們在參觀完文化資產後，在社群媒體上發布遺產相關訊息、照片等，也可以是一種民眾參與的現象。因此，目前在文化資產保存的相關研究中，也有研究者運用社群媒體資料來分析大眾所認識的文化資產為何，並指出運用此方法可涵蓋更多人對文化資產的想法，是一個能對文化資產保存更具立即性與包容性的作法。以下將回顧社群媒體資料分析應用於文化資產保存的相關研究。

Farahani et al. (2018) 提出，在現今社會中，人們越來越會使用社群媒體來分享和詮釋他們的遺產旅遊經歷，並指出透過社群媒體所發布的訊息可了解大眾喜歡城市中哪一個遺產場所，且可再運用資料分析出該遺產場所具有哪些較常被關注的特色。研究者以位在伊朗的設拉子 (Shīrāz) 這個歷史古城為例，利用 Instagram、Flickr 和 500px⁴ 三個社群媒體去搜尋民眾在這個城市內，最常拍攝的遺產地點為何，研究者總共挑選了 186 張照片，其中 74 張照片的拍攝地點為當地最著名的「莫克清真寺」(Nasir-al-Molk Mosque)，並接著將這 74 張照片進行編碼分析，得出 4 個大眾對於莫克清真寺所關注的特色，分別以 (1) 空間功能；(2) 空間元素；(3) 氛圍；(4) 顏色和光介紹之，最後研究者整合 4 個特色提出，大眾最喜歡的是清真寺內祈禱的空間，並認為建築內的瓷磚、彩色玻璃、雕刻的柱子最能表達出清真寺的特色，而研究者透過社群媒體的照片也發現，有些照片會特別拍攝穿著特定宗教服裝的人，且會運用自然光投射在清真寺彩色玻

璃上的光影來呈現該場所神聖的氛圍，間接說明了大眾對該場所的認識。另外，研究者也提出，大眾所關注的遺產隨時都有可能變化，但運用大眾不斷的在社群媒體上所更新的訊息，將可以幫助文化遺產的研究人員或城市規劃專家立即性的了解城市的變化。

而 Ginzarly et al. (2019) 提出，城市遺產的保存應採用一種具社會包容性 (social inclusion) 的方法，並以黎巴嫩-的黎波里 (Tripoli) 這個城市為例，思考該城市中以人為本 (people-centered) 的遺產。研究者認為社群媒體對於文化遺產的詮釋有 3 個關鍵作用：

(1) 探索以人為本的遺產的平臺；(2) 內容分享是一種文化表現形式；(3) 能創建共享遺產和人們的集體記憶，因此認為使用社群媒體資料進行分析是一種具包容性的方法，以符合研究者的研究動機。研究者運用 Flickr 檢索有關於研究案例的照片，並將搜尋到的照片依 (1) 拍攝位置 (location)；(2) 呈現場景 (view)；(3) 社群媒體用戶對照片所描寫的標籤 (tag) 進行分類，進而分析出當地居民和遊客對於一個都市地點的偏好、所關注的景觀（表達的是有形遺產或無形遺產），以及人們對於遺產的觀點。研究發現，照片拍攝地點並不能代表此一地點是人們所關注的遺產點，而是照片中的場景才是人們所關注的；另外，透過對場景和標籤的分析還可以揭示當地的日常生活習慣以及其他政治或宗教問題等。最後研究指出，運用社群媒體分析人們的想法，勢必可以幫助遺產專家進一步了解當地遺產所涵蓋的地點與多元屬性，也能使後續的遺產管理更為全面。

Ghermandi et al. (2020) 主要運用社群媒體，分析當地人和國外遊客在墨西哥烏蘇馬辛塔 (Usumacinta) 洪汎區的文化和自然遺產旅遊上的差異。研究者運用 Flickr 搜尋研究區域的照片，先將搜尋到的照片依據用戶的個人資料來區分用戶是本地人還是外國人，再分析用戶照片發布的 (1) 拍攝位置；(2) 拍攝內容 (表達的是文化遺產或是自然遺產)；(3) 標題和標籤文字 (表達的是文化遺產或是自然遺產)。研究發現，當地人與國外遊客所關注遺產旅遊地點不同，國外遊客拜訪的地點僅限於知名且方便到達的地

點，例如參觀當地的文化遺產或是城市中心；而當地人卻比較關注於沿海潟湖、野生動物等自然生態。研究指出，透過社群媒體資料分析可以了解到不同族群在當地旅遊所關注的內容是什麼，為旅遊業提供即時的訊息，改善旅遊決策。另外研究者也提出，不管是本地還是外來遊客，皆可以從當地的自然環境與文化遺產旅遊中得到愉悅感，而旅遊業經營者也能從中獲得經濟利益，若要實現可持續性的旅遊業，則需投資於當地自然環境與文化遺產保護，尤其是在生態和文化都非常脆弱的地方。

綜合以上文獻的討論，本研究將「可了解文化資產價值」視為文化資產的民眾參與所需達成的首要要素，並探討「2019 臺灣設計展」的舉辦，是否有助於參與民眾了解屏東菸葉廠文化資產保存的意義與價值。本研究將運用民眾參觀完屏東菸葉廠並在社群媒體上所發表的公開資料，分析其在屏東菸葉廠內的拍攝位置、照片呈現的場景，以及民眾所發布的文字訊息，來了解民眾對於屏東菸葉廠最關注的地點為哪裡？民眾照片所呈現的場景是關於菸葉廠的有形文化資源或無形文化資源⁵，還是完全無關聯的場景？以及民眾發布的訊息是想表達什麼內容？本研究希望透過民眾參與體驗後所拍攝的照片與文字留言，來了解民眾對於屏東菸葉廠保存的想法。透過民眾所看到的視覺（照片）與心情感受（文字留言），來檢視屏東縣政府辦理此活動是否有讓民眾可以感受到屏東菸葉廠文化資產價值，進而分析在屏東菸葉廠所舉辦的活動是否能協助民眾了解該場域文化資產保存的意義與價值，以及民眾對屏東菸葉廠保存再利用的想法。

三、研究方法

本研究採用質性研究方法中的文獻分析法及觀察研究法，進行資料的蒐集與分析。

3.1 文獻分析法

本研究主要目的為探討屏東菸葉廠的民眾參與情形。而現今網路社群媒體的興起，正是能體現民眾參與的重要工具。因此，本研究採用文獻分析法，將透

過社群媒體的資料，來分析民眾對於屏東菸葉廠保存再利用的想法。本研究採用的社群媒體為 Google Maps，在此平臺上，民眾可為地圖上的每個地標進行評分，並發布文字或照片，進而表達對此一地點的看法。而本研究也將蒐集民眾在屏東菸葉廠的相關地標下（如屏東菸葉廠、屏東菸葉廠中山堂），所發布的評論和照片，作為本研究分析的重要資料，最後再運用質性資料分析軟體 NVivo 12，對這些文字和照片進行編碼與分析。

3.2 觀察研究法

為了深入了解屏東菸葉廠在「2019 臺灣設計展」舉辦期間的民眾參與情形，本研究使用觀察研究法進入研究空間來蒐集資料。「2019 臺灣設計展」的舉辦時間為 2019 年 10 月 5 日至 2019 年 10 月 20 日，本研究將在活動期間，紀錄廠區當時各地點的開放範圍（包含時間與空間）、廠區內各地點所發生的活動（包含展覽、志工導覽、場地布置等），熟知活動舉辦情形，以補充運用社群媒體資料分析的不足。

四、屏東菸葉廠的保存概況

屏東菸葉廠於日治時期 1936 年（昭和 11 年）興建，當時稱為「屏東支局葉煙草再乾燥場」，是一座菸葉加工廠。過去，屏東菸葉廠的員工需到高屏兩地的輔導區指導菸農耕作菸草以及收購菸葉，並將收購的菸葉送往菸葉廠，先進行菸葉的調理⁶，再進行菸葉的除骨與複薰，最後再將加工好的菸葉移至菸葉廠的倉庫進行貯藏。

臺灣過去因受日治時期專賣制度的影響，菸葉的收購受到公賣局的保障，成為過去菸農們的主要經濟來源。然而，臺灣在 2002 年加入世界貿易組織（WTO）後，專賣制度廢除，臺灣菸葉產量逐年減少，而屏東菸葉廠也於同年關廠。歷經數年的閒置後，屏東縣政府於 2010 年率先將廠區內的菸葉除骨加工區、菸葉複薰加工區、鍋爐室、中山堂 4 棟建物登錄為歷史建築，2017 年更擴大將全廠區登錄為歷史建築。在屏東菸葉廠登錄為歷史建築之後，屏東縣政府曾有意將屏東菸

菸廠規劃成文創園區，成為推動屏東文創產業的引擎（楊舒婷，2016）。然而，屏東縣政府對於屏東菸葉廠未來的使用曾歷經多種討論，官方媒體也曾報導屏東菸葉廠將規劃成為國家圖書館南部分館（國圖南館）、博物館等說法。即便如此，在屏東菸葉廠登錄為文化資產保存的這十年間，屏東縣政府依然執行了許多關於屏東菸葉廠的歷史調查、廠區規劃、產業脈絡等計畫。

在屏東菸葉廠的有形文化資源方面，有最早於 2010 年執行的〈屏東菸廠再利用產業文化資產基礎調查〉，針對菸葉廠內的全部建築進行歷史調查、價值判定，並給予再利用建議（國立屏東教育大學臺灣文化產業經營學系，2010）。而 2014 年執行的〈屏東菸廠產業設施研究調查〉則針對當時廠內 4 棟歷史建築進行建物歷史調查、建築測繪、建築損壞調查等，並給予這 4 棟歷史建築本體及生產設備修復上的建議（國立高雄大學永續居住環境科技中心，2014）。以及 2016 年所執行的〈屏東菸廠產業文化資產網絡與展示評估委託專業服務〉，內容聚焦在廠內的菸葉除骨加工區、菸葉複薰加工區進行歷史調查、機具修復評估，並至臺中大里菸葉廠蒐集菸葉加工機具的運作影片，最後提出屏東菸葉廠的文化資產教育及導覽建議（國立屏東大學文化創意產業學系，2016）。

在屏東菸葉廠的無形文化資源方面，有 2015 年執行的〈屏東菸葉廠員工口述訪談及資料蒐集勞務委託案成果報告〉，執行團隊對過去在屏東種菸的老菸農，以及過去在菸葉廠工作的老員工進行口述歷史訪談，為過去屏東菸業的歷史、種菸技術、廠內的工作活動做了詳實的記錄，保存屏東菸業的無形文化（東華印刷局，2015）。而在 2017 年執行的〈屏東菸區產業文化資產網絡資源調查與技術史詮釋初探計畫成果報告—凝視屏東菸區，看見農業科學遺產的技術史之眼〉內容分成 2 冊，第 1 冊針對訪談老員工的資料進行整理，說明了屏東菸區的菸業，菸草耕作、菸田管理、菸葉加工等農業科學知識等（東華印刷局，2017a）；而第 2 冊則是將調查計畫與菸農和菸葉廠老員工的訪談記錄編輯成逐字稿，並在訪問的過程中收錄了菸農

種菸時的老照片、菸葉廠老員工過去在廠內的工作照等等（東華印刷局，2017b）。

除了以上調查報告外，目前在學術論文，甚至是國際刊物上，也都有屏東菸葉廠的影子。楊舒婷（2016）曾探討藝術策展作為屏東菸葉廠的活化再利用，提出藝術並非萬靈丹，但確實可以當作一種方法，而屏東菸葉廠的活化行動還有賴多樣貌的持續開發，成為送給下一代的禮物。而 Lin（2019）則針對臺灣菸葉的歷史脈絡、菸葉廠的功能作了詳細的描述，也提到屏東菸葉廠過去為管制區，導致在地社區對於工廠相當陌生，但現今屏東菸葉廠即將規劃為文化創意園區，期望透過裡面展示的機具，訴說臺灣菸業的歷史，並也希望藉此提升屏東地區的文化氛圍。

另外，本研究也發現，屏東縣政府過去針對屏東菸葉廠的活化再利用，其實也曾辦理過一些民眾參與活動。像是 2015 年曾舉辦「屏東菸葉廠產業文化資產人才培育工作營」，讓參與學員能透過活動了解屏東菸葉廠、屏東菸區的菸業，以及屏東其他文化資產保存案例。以及因獲文化部「再造歷史現場」計畫的補助，在 2018 年辦理的「屏菸，躲貓貓」（圖 3），與 2019 年的「氩氫與腦神經臥體」（圖 4）兩場展覽，讓民眾能透過展覽的互動裝置認識屏東的菸業與屏東菸葉廠。再者，還有 2019 年舉辦的志工培訓營（圖 5），讓過去菸葉廠的員工及社區居民等，可以透過培訓了解菸葉廠的歷史和學習導覽技巧，為屏東菸葉廠注入導覽資源。這些活動可以進入的室內空間大部分會以中山堂、菸葉除骨複薰加工區及 14 號倉庫一樓等空間為主。另外鍋爐室及煙囪、部分的戶外棚架也是人員經常會駐足解說的空間。當時菸葉廠許多空間已閒置多時，沒有整修的情況，主辦單位經常因安全考量沒有讓參加活動的人員進入。然而透過這些活動的舉辦，已經讓參加活動的人員可以一窺部分菸葉廠的產業空間。然而，據本研究觀察，2019 年志工培訓營相關活動結束後，菸葉廠隨即再度封閉進行整修，一般民眾沒有參加活動便沒有機會可以進入。再者，屏東縣政府對於菸葉廠廠區的保存規劃資訊也未有完整地公開給大眾知曉。



圖 3 「屏菸，躲貓貓」展覽運用科技互動設施讓民眾了解臺灣的菸業文化（2018 年拍攝）



綜合以上屏東菸葉廠的相關研究報告與活動辦理，可以得知屏東縣政府採逐步進行的方式辦理菸葉廠文化資產保存的工作，亦有辦理過活動讓民眾可以進入菸葉廠參觀研習。但礙於廠區一直無法全面整修至可安全開放的狀況，除了參與活動的民眾之外，大部分民眾鮮少有機會認識屏東菸葉廠。直到 2019 年臺灣設計展的辦理，廠區才有機會開放較大的範圍供辦理活動及民眾參觀。因此，也形成研究欲利用社群媒體資料分析，探討屏東菸葉廠的民眾參與情形，並有機會了解一般民眾對於屏東菸葉廠的看法。

五、社群媒體資料分析

本研究在 Google Maps 上，蒐集了 45 人對於屏東菸葉廠的評論，並將每個人予以代號表示之(C01~C45)⁷。在分析樣本的選取方面，這 45 人的發文日期皆在 2019 年 10 月，且內容都與設計展的舉辦有關。這 45 則的評論皆包含文字與照片，在文字部分，本研究共萃取出 65 句文字；而在照片的部份則有 333 張，其中有 12 張照片不在屏東菸葉廠拍攝，或無法辨識其拍攝地點。在扣除掉這些照片後，本研究實際進行分析的照片為 321 張。本研究在蒐集完這些文字與照片資料後，將對這些資料進行編碼分析，並分別以：(1) 照



圖 4 「氤氳與腦神經臥體」展覽以菸樓為意象的展覽佈置（2019 年拍攝）

圖 5 志工培訓營帶領民眾參觀屏東菸葉廠（2019 年拍攝）

片拍攝位置分析；(2) 照片拍攝場景分析；(3) 文字留言分析，三個部分介紹之。

5.1 照片拍攝位置分析

在照片拍攝位置方面，本研究分析出民眾最常在屏東菸葉廠及其周圍的 14 個地點進行拍攝。地點的命名與位置是參考大山開發建築師事務所（2019）所繪製的廠區圖（圖 2）。而本研究將進行分析的 321 張照片予以分類後，詳細的拍攝地點，與相對應的拍攝人數、照片數量，以及照片數量百分比（各個地點的照片數量／全部的照片數量），見表 1。

從文獻回顧了解，藉由社群媒體分析各個地點照片數量的多寡，可了解民眾對於遺產所偏好的地點為何（Farahani, et al., 2018）。也就是說，某一地點的照片數越多，代表此一地點為民眾較喜歡的地點；相反地，如果某一地點的照片數越少，則代表民眾較不喜歡那個地點。因此，依據表 1 的整理，每個地點的照片數量，由多到少依序為：1.菸葉複薰加工區；2.中山堂；3.鍋爐室；4.十四號倉庫；5.菸葉除骨加工區；6.T9 棚架；7.菸廠路；8.T10、T11 棚架；9.T12 棚架；10.T5 棚架；11.辦公室；12.T4 棚架；13.T6 棚架；14.十九號倉庫。

而本研究也依據以上地點的照片數量，繪製了一張分級符號圖 (The graduated symbol map)，利用大小不同的圓符號，來表示屏東菸葉廠各地點之間在照片數量上的差異 (圖 6)。分級方式是運用 QGIS 軟體中的 Natural Breaks (Jenks) (自然間斷法) 分類模式進行分類，此方法又可稱為 Jenks Natural Breaks，因為此方法最早的應用可歸因於 Jenks & Caspall (1971)⁸ 的研究 (De Smith, et al., 2018)。此演算法會尋找最自然的數值群組來建立類別，同一類別中的資料集合具有

最小化的標準差，而不同類別的資料集合則具有最大化的標準差⁹。而本研究主要是將資料分成 5 類。

然而，本研究發現，若是依各個地點的拍攝人數來進行排序，民眾最喜歡的地點排序則會變成：1.菸葉複薰加工區；2.十四號倉庫；3.中山堂；4.菸葉除骨加工區；5.T10、T11 棚架；6.T9 棚架；7.菸廠路；8.T12 棚架；9.鍋爐室；10.T5 棚架；11.辦公室；12.T4 棚架；13.T6 棚架；14.十九號倉庫。若綜合照片數量與拍攝人數來看，菸葉複薰加工區依舊是最受歡迎的地點，

表 1 民眾主要拍攝地點、拍攝人數、照片數量與百分比

拍攝地點	拍攝人數 (人)	照片數量 (張)	百分比
菸葉複薰加工區	36	129	40.19%
中山堂	13	36	11.21%
鍋爐室	7	29	9.03%
14 號倉庫	16	26	8.10%
菸葉除骨加工區	10	20	6.23%
T9 棚架	8	15	4.67%
菸廠路	8	12	3.74%
T10、T11 棚架	9	11	3.43%
T12 棚架	8	11	3.43%
T5 棚架	7	9	2.80%
辦公室	6	9	2.80%
T4 棚架	4	6	1.87%
T6 棚架	4	4	1.25%
19 號倉庫	2	4	1.25%

資料來源：本研究整理

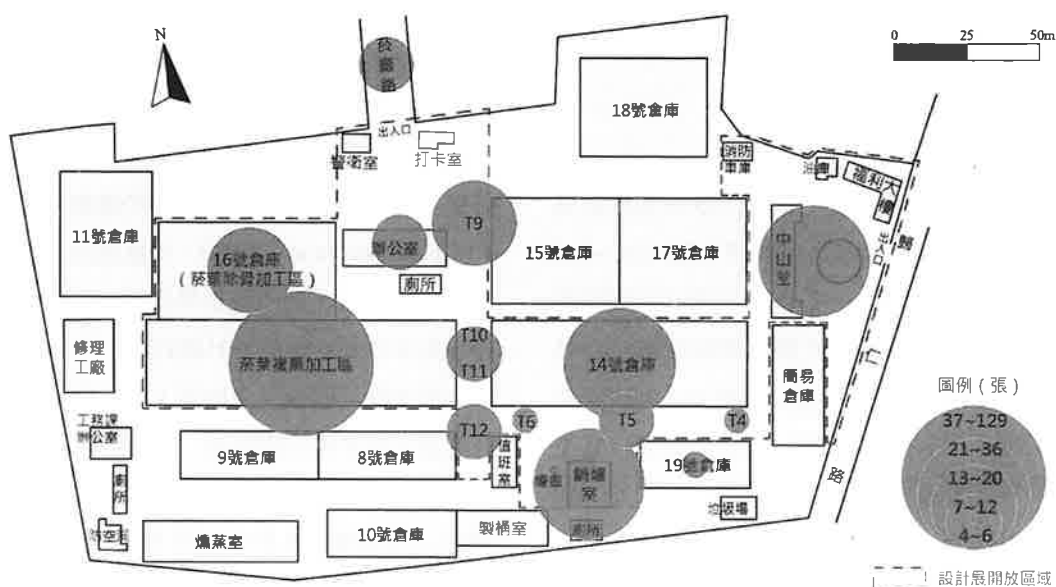


圖 6 設計展期間，屏東菸葉廠各地點照片數量之分級符號圖
(資料來源：本研究繪製)

最不受歡迎的一樣為 19 號倉庫。然而，依據本研究觀察，19 號倉庫並非當時設計展所開放區域，但由於 19 號倉庫為當時設計展活動路線一定會行經的地點，且倉庫外圍並沒有特別加設嚴密的封鎖線，因此民眾還是可以就近拍攝。如果扣除掉不開放的 19 號倉庫，以照片數量來看，T6 棚架會變成民眾最不關注的地點；以拍攝人數來看，T6 及 T4 棚架下的空間則會變成民眾最不關注的地點。

此外，本研究也發現，一樣於設計展所開放，緊鄰於菸葉複薰加工區旁的菸葉除骨加工區，鮮少有人拍攝。這 2 個區域皆是屏東菸葉廠過去進行菸葉加工的重要空間，但菸葉複薰加工區的照片卻遠高於菸葉除骨加工區。而本研究透過觀察發現，原因在於，菸葉除骨加工區在設計展時並非全時段開放，民眾需參加定時導覽才有機會進入菸葉除骨加工區參觀，因此菸葉除骨加工區的照片會比菸葉複薰加工區來的少。

綜合上述，本研究提出，利用社群媒體資料探討民眾對於文化資產場域所偏好地點，還要依當時場域的開放範圍（包含時間及空間範圍）、照片數量與拍攝人數加以評估。而下一節將會探討民眾在屏東菸葉廠各地點的照片所呈現的場景為何，以了解民眾在設計展期間是否能感受到屏東菸葉廠的有形與無形文化資源，還是與菸業文化無關聯的場景，進而分析設計展活動的舉辦，能不能協助民眾了解屏東菸葉廠文化資產保存意義與價值。

5.2 照片拍攝場景分析

在文獻回顧 2.2 節中提到 Ghermandi et al.(2020) 曾運用社群媒體探討民眾所拍攝的照片場景為何，並從中去分析民眾所關注的文化遺產相關事物。為分類及辨識本研究蒐集民眾所拍攝的屏東菸葉廠場景所傳遞的文化資產訊息，本研究採用林思玲（2019）的觀點，將文化資產場域相關的資源分類為有形與無形文化資源兩大類，有形文化資源包含文化資產場域的建築空間型式、建築構造與裝飾元素；無形文化資源則是文化資產場域的歷史、文化、產業特徵、傳說、故事等。林思玲（2019）認為這些文化資產場域的有

形及無形文化資產資源，正是能讓民眾了解文化資產場域價值的重要元素。因此本研究利用這樣的分類方式，將分析民眾在屏東菸葉廠 14 個地點內所拍攝的照片，依照照片所呈現的場景，分類成「有形文化資源」（圖 7、圖 8）、「無形文化資源」（圖 9），以及「與菸業文化無關聯」（圖 10）。有形文化資產包括屏東菸葉廠的建築空間型式、建築構造與裝飾元素，無形文化資源包括屏東菸葉廠的歷史、文化、產業特徵、傳說、故事。利用這樣的分類方式，協助本研究觀察民眾是否關注到屏東菸葉廠文化資產場域中有價值的元素。本研究依民眾在各地點所拍攝的照片給予場景分類後，詳細的分類數量見表 2。

在這進行分析的 321 張照片中，本研究統計，關於有形文化資源的場景所占比為 55.14%；無形文化資源的場景所占比為 13.40%；與菸業文化無關聯的場景所占比為 31.46%。從此資料來看，民眾在菸葉廠所感受到的多為菸葉廠的有形文化資源；其次為與菸業文化無關聯的資訊；最少感受到的則是關於菸葉廠的無形文化資源（圖 11）。因此從中可推論，屏東菸葉廠的有形文化資源是較有機會讓民眾了解菸葉廠文化資產價值的媒介。

即便如此，從表 2 也能看出，這 14 個地點並不一定都能讓人接收到屏東菸葉廠所傳遞的文化資產價值。因此，本研究進一步地將屏東菸葉廠各地點的照片場景分類換算成百分比，並繪製出一張屏東菸葉廠各地點照片場景分類之分級符號圖（圖 12），以更清楚地了解民眾在這 14 個地點中，是否都能接收到屏東菸葉廠所傳遞的文化資產價值。在圖片中，各地點的圓餅圖大小與圖 6 一樣，代表著各地點的照片數量分級。而圓餅圖中的紅色區塊，代表著「有形」文化資源；綠色區塊則代表「無形」文化資源；藍色區塊則代表與菸業文化「無關聯」的照片所占比。

從圖 12 可明顯看出，在本研究所分析出民眾最常拍照的 14 個地點中，菸葉除骨加工區、菸葉複薰加工區、14 號倉庫、辦公室，皆能讓民眾感受到場域的有形及無形文化資源。中山堂、19 號倉庫、菸廠路，以及各棚架下的空間，民眾至少都還能讓感受到其中的

有形或無形文化資源。而鍋爐室所呈現的照片場景，則皆是與菸業文化毫無關聯的資訊。因此從各地點的照片場景來看，本研究推論，民眾在鍋爐室內最不能感受到與菸業相關的文化資源。

然而，鍋爐室的再利用無法向民眾傳遞菸葉廠的文化資產價值，似乎也有跡可循。本研究透過實地觀察發現，因鍋爐室目前已無鍋爐，且在設計展期間，鍋爐室主要是舉辦與原住民文化、海洋文化，及天文教育相關的展覽，因此民眾無法在鍋爐室感受到菸業的無形文化資源。此外，此展覽的布置也幾乎把鍋爐室內的建築空間所遮蓋，因此民眾也無法拍攝此場域的空間型式。除了鍋爐室的內部空間外，鍋爐室外的煙囪也是此場域的重要地標之一（圖 13）。然而，從本研究所蒐集到的照片來看，民眾沒有拍攝到任何一張有鍋爐室煙囪的照片。而本研究也根據觀察，推測出幾點原因，（1）設計展的活動路線無法讓民眾看到煙囪；（2）設計展時所擺設的攤位無法讓民眾注意到煙囪；（3）民眾對於此區域不感興趣等，或是有其他

原因讓民眾無法感受到此場域的有形文化資源。最後，本研究也將以上這 14 個地點的照片場景，依據有形文化資源、無形文化資源，以及與菸業文化無關聯進行分類，並做出更詳細的場景描述，見表 3。

5.3 文字留言分析

在上述已運用社群媒體資料介紹了民眾在屏東菸葉廠最常拍攝的地點，以及民眾在廠內各地點所拍攝的場景，來探討民眾是否能透過菸葉廠的再利用，了解屏東菸葉廠的文化資產價值，以達成文化資產民眾參與的首要目標。但是，透過照片分析只是初步探討，還需要進一步地分析民眾所發布的文字，才能真正的了解民眾的想法，而這也是本研究在文獻回顧時所強調的：「文化資產的民眾參與，要能提供民眾分享自己觀點的機會。」本研究將民眾在社群媒體上所發布的文字內容進行編碼分析後，分成 5 大類，分別為：（1）民眾介紹屏東菸葉廠；（2）民眾的感受；（3）民眾的正面評語；（4）民眾的負面評語；（5）民眾的期許。以下介紹。



圖 7 有形文化資源：民眾與菸葉包裝加工區的機具合影
（採自 Google Maps，林霖拍攝）



圖 8 有形文化資源：T5 棚架下的空間
（採自 Google Maps，Tsai Hellen 拍攝）

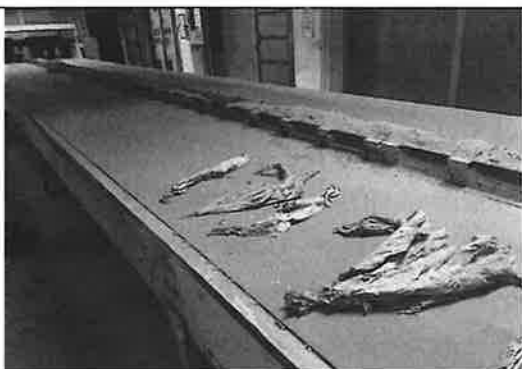


圖 9 無形文化資源：菸葉除骨加工區所擺放的菸葉
（採自 Google Maps，Chih-Ting Peng 拍攝）



圖 10 與菸業文化無關聯：T9 棚架下的小朋友
（採自 Google Maps，Chia - Yin Hwang 拍攝）

表 2 屏東菸葉廠各景點所呈現的場景分類照片數量表

地點	總數 (張)	有形 (張)	無形 (張)	無關聯 (張)
菸葉複薰加工區	129	117	12	0
中山堂	36	13	0	23
鍋爐室	29	0	0	29
14 號倉庫	26	11	15	0
菸葉除骨加工區	20	18	2	0
T9 棚架	15	2	0	13
菸廠路	12	0	4	8
T10、T11 棚架	11	0	8	3
T12 棚架	11	1	0	10
T5 棚架	9	2	0	7
辦公室	9	1	2	6
T4 棚架	6	6	0	0
T6 棚架	4	2	0	2
19 號倉庫	4	4	0	0
總計	321	177	43	101

資料來源：本研究整理

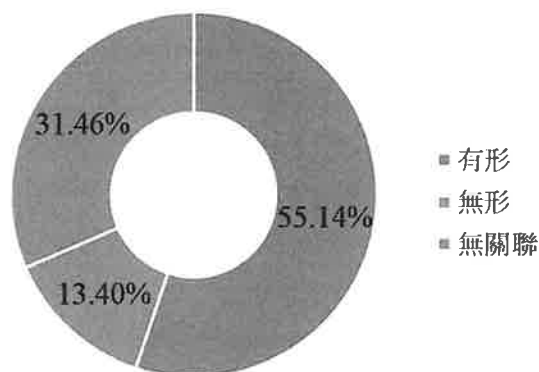


圖 11 屏東菸葉廠所有照片的場景分類百分比
(資料來源：本研究繪製)

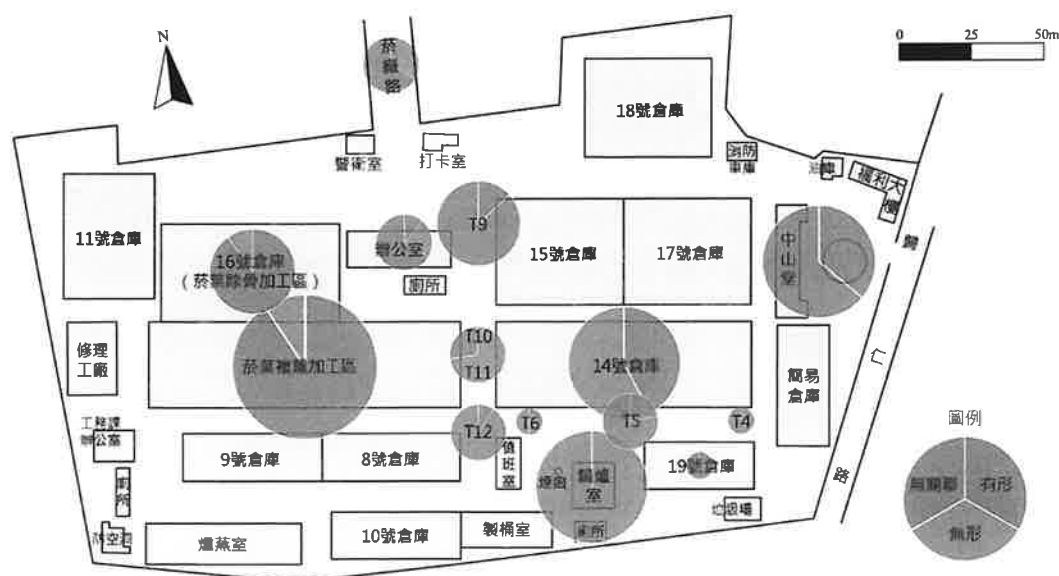


圖 12 屏東菸葉廠各地點照片場景分類之分級符號圖
(資料來源：本研究繪製)

表 3 設計展期間，民眾在屏東菸葉廠各地點所呈現的場景概況

地點	文化創意來源	呈現場景
菸葉複薰加工區	有形文化資源	菸葉複薰加工區的空間型式、菸葉輸送帶、泛黃的棚架、民眾與機具的合影、菸葉包裝機、菸骨乾燥機
	無形文化資源	菸葉裝飾的留言板、導覽教具和菸葉
	與菸業文化無關聯	無
中山堂	有形文化資源	中山堂及其廣場（遠拍）、中山堂外觀（近拍）
	無形文化資源	無
	與菸業文化無關聯	青年設計交流展展示作品、青年設計交流展展覽布置
鍋爐室	有形文化資源	無
	無形文化資源	無
	與菸業文化無關聯	原住民文化展覽、海洋文化展覽、天文教育展覽
14 號倉庫	有形文化資源	14 號倉庫外觀、與 17 號倉庫緊鄰的棚架空間、14 號倉庫內部空間
	無形文化資源	14 號倉庫外的老員工介紹、菸葉廠歷史介紹
	與菸業文化無關聯	無
菸葉除骨加工區	有形文化資源	內部空間：除骨機具、除塵室外觀、建物周圍外觀
	無形文化資源	除骨區所擺放菸葉、菸業歷史介紹
	與菸業文化無關聯	無
T9 棚架	有形文化資源	棚架下空間（包含泛黃的棚架）
	無形文化資源	無
	與菸業文化無關聯	小朋友表演活動、設計展元素
菸廠路	有形文化資源	無
	無形文化資源	菸廠路的椰林大道和設計展廣告
	與菸業文化無關聯	設計展的視覺廣告
T10、T11 棚架	有形文化資源	無
	無形文化資源	菸葉裝飾
	與菸業文化無關聯	設計展人潮或物件
T12 棚架	有形文化資源	已拆除的 T14 棚架
	無形文化資源	無
	與菸業文化無關聯	天文探索球形天幕及小朋友、設計展主題的裝飾
T5 棚架	有形文化資源	T5 棚架型式
	無形文化資源	無
	與菸業文化無關聯	設計展相關物件
辦公室	有形文化資源	辦公室外觀（背面）
	無形文化資源	辦公室前所種植菸草
	與菸業文化無關聯	關於設計展的廣告
T4 棚架	有形文化資源	T4 棚架型式
	無形文化資源	無
	與菸業文化無關聯	無
T6 棚架	有形文化資源	T6 棚架型式
	無形文化資源	無
	與菸業文化無關聯	設計展裝飾藝術
19 號倉庫	有形文化資源	空蕩的倉庫、倉庫外機具
	無形文化資源	無
	與菸業文化無關聯	無

資料來源：本研究整理



圖 13 屏東菸葉廠的鍋爐室外觀及煙囪
(2019 年拍攝)

5.3.1 民眾介紹屏東菸葉廠

透過分析發現，有民眾會在社群媒體上發布關於屏東菸葉廠的歷史介紹。像是以下留言：

屏東菸葉廠，又稱屏東菸廠或歸來菸廠，為屏東縣屏東市一座已關廠的菸草加工廠。其最早為 1936 年設立的「專賣局屏東支局葉菸草再乾燥場」，在戰後作為公賣局屏東菸廠後，所負責屏東菸區的菸草栽種面積在 1970 年代曾達到全臺最大。而台灣在 2002 年加入世界貿易組織後，由於受到進口香菸影響，屏東菸廠隨即於同年關廠¹⁰。(C44)

Old tobacco factory site, back to when there're still tobacco farms in Taiwan, this is an important place to manufacture tobacco. The factory stopped in 1991 when Taiwan government gave up the exclusive right of selling tobacco and alcohol. (C04)

然而，就本研究第四章對於屏東菸葉廠的介紹，以及研究者自身的了解，以上的歷史介紹都有錯誤的地方。像是上述的留言有提到：「屏東菸葉廠，又稱屏東菸廠或歸來菸廠……」但實際上，屏東菸葉廠不等於屏東菸廠或歸來菸廠，菸葉廠是菸葉加工廠（處理原料），而菸廠是製作香菸的工廠（生產成品）。另外有民眾說明臺灣在 1991 年放棄菸酒專賣，菸葉廠也於 1991 年關廠（“The factory stopped in 1991 when Taiwan government gave up the exclusive right of selling tobacco and alcohol”），在時間上也是錯誤的。實際上，

臺灣是在 2002 年停止菸酒專賣，菸酒回歸稅制，而屏東菸葉廠也是於 2002 年關廠。除了歷史介紹外，也有民眾會簡單宣傳屏東菸葉廠，以及說明未來場域規劃，像是以下留言：

算是當地知名的歷史建築可以來走走看看。(C06)

不定時會舉辦活動有空可以去走走。(C23)

保有 1936 菸葉舊廠風貌將規劃為博物館。(C07)

這些留言據本研究自身對於屏東菸葉廠的觀察及了解，較無錯誤。屏東菸葉廠的確為當地的歷史建築，且具有文化資產身分；而屏東菸葉廠也會不定時舉辦活動；最後，屏東菸葉廠在未來的確也會規劃成博物館。因此可從中可推斷民眾有透過廠區的再利用，了解菸葉廠的相關訊息。除了以上介紹外，更有民眾表示，他們是因為設計展，第一次進入屏東菸葉廠。像是以下留言：

這次來看‘超級南’，也是第一次來菸葉廠。(C19)

今天因為來參觀設計展，所以第一次造訪此地。

(C43)

而本研究在設計展期間，也曾與來參觀的遊客交談，那位遊客表示自己是住在附近的民眾，也是因為設計展第一次進來參觀（20191011AM）。因此也印證了本研究在前言所提及的，菸葉廠在過去是個不易進入的場域。綜合以上民眾發表介紹菸葉廠的文句，本研究提出，民眾所表達的訊息不一定為最正確的，但卻以能從中發現民眾對於菸葉廠的了解程度，以及過去菸葉廠與民眾的陌生關係。

5.3.2 民眾的感受

透過分析發現，有許多民眾表示能感受到屏東菸葉廠的歷史、輝煌，甚至是記憶。像是以下留言。

蠻有氣氛跟歷史的痕跡。(C10)

歷史的痕跡不曾鏽去。(C18)

有歷史走過的足跡。(C29)

空間活化，可以看見工業文化史跡。(C40)

歷史的軌跡彷彿在這裡停留了下來，曾有的風華，曾有的滄桑，都可以在這裡細細品嚐。(C34)

斑駁的廠房，陳舊的製菸機械物件，訴說著曾經的

輝煌。(C08)

菸葉廠見證臺灣的歷史風華，那個美好的年代。

(C14)

歷史的記憶。(C15)

台灣煙草已走入歷史來到屏東煙葉成交廠勾起早期煙農民的回憶¹¹。(C38)

從以上留言可得知，民眾多認為這裡是一個能讓人感受到歷史氛圍的地方，當中還提到這裡是一個能勾起菸農回憶的場域。雖然不確定此社群媒體用戶是否過去為菸農，還是他只是將他揣測的想法表達出來。但透過本研究第四章的介紹，此場域確實與過去菸農的生活有所連結，過去屏東菸葉廠的員工會指導屏東菸區的菸農種菸，菸農收成菸葉後，菸葉廠也會派人去收購，而這樣子的菸產業脈絡也是屏東菸葉廠重要的文化資產價值之一。而民眾除了覺得此場域是一個具「歷史」的地方外，菸葉廠的「工業」或是「頹廢」的氛圍，也是民眾所感受到的。像是以下留言：

Walking inside, the cold industrial feeling is strong and intriguing. (C04)

頹廢風！(C30)

此外，屏東菸葉廠也讓人覺得是一個很美的地方。當中更有民眾指出工廠的滄桑斑駁感是適合拍網美照的地方。像是以下留言：

真不知道裡面這麼美。(C27)

這裡有滄桑斑駁感，適合拍網美照～(C20)

很適合拍網美照。(C33)

綜合以上民眾的感受文句，本研究發現，這些留言不一定都能表示民眾有感受到菸葉廠的文化資產價值，但卻說明了有部分民眾喜歡這裡的歷史及舊工廠氛圍，而這也是工業遺產才有的特色之一。因此，未來菸葉廠在進行規劃時，也可適時地保存廠內斑駁、頹廢的元素，讓民眾未來到菸葉廠參觀時，可欣賞到舊工廠的樣貌。

5.3.3 民眾的正面評語

透過文字分析發現，有民眾覺得廠區保存的很好，並認為保存菸葉廠是一個好的開始。像是以下留言：

古色古香，讓我們看到以前的菸廠，保留的很好。

(C26)

廠區保存的很好。(C37)

保持與活化具有歷史軌跡的建築，這是很好的開始。

(C21)

而民眾也認為，透過菸葉廠的保存，除了能讓人了解菸草的歷史、探索過去製菸的流程外，更能透過活動的舉辦，讓本地或是外地人了解屏東的文化與特色。像是以下留言：

可以了解煙草的歷史。(C17)

這裡可以探索香煙的製作過程及歷史。(C42)

其中最亮眼的莫過於當時製作煙草的工廠開放參觀，一方面帶動參與設計展的人們，另一方面讓從各地來參觀的朋友們，也能充分了解屏東在地文化及特色。(C25)

而民眾除了認為廠區的保存很好，保存菸葉廠能讓人了解在地特色外，也提出如果能參加導覽，將會獲取更多，並推薦一定要來參加。像是以下留言：

建議遊客一定要參加導覽行程才不虛此行。(C13)

能搭配導覽更能認識的更多。(C37)

有導覽的活動，一定要參加！(C24)

因此，就以上民眾對於菸葉廠的正面評語，民眾對於菸葉廠的保存是認可的，且認為在活化的過程中，能讓民眾了解菸業的歷史、屏東的在地特色，甚至還在社群媒體上推薦其他人一定要參加導覽行程。由此可知，此次的設計展活動是有讓民眾了解屏東菸葉廠的保存價值與意義，並且在這當中，導覽是讓民眾認識菸葉廠不可或缺的活動之一。這也說明了屏東菸葉廠所規劃的導覽行程，有適時地傳遞屏東菸葉廠的文化資產價值。另外，此次設計展的舉辦也讓許多民眾感到滿意，並給予肯定評語。像是以下留言：

屏東縣政府於菸葉廠舉辦活動！廠地寬敞！逛起來沒有都市的擁擠！適合慢慢欣賞。(C02)

這次和屏東超級南設計展和教育成果展結合辦得很成功。(C03)

感謝台灣設計展帶大家來這裡。(C16)

Good (C36)

[illegible]

(資料來源：本研究繪製)

小學生與老師擺攤與參訪的小朋友互動感覺，非常的棒！（C45）

2019 超極南體驗活動。(C01)

5.3.4 民眾的負面評語

歷史傳統煙葉廠，目前開放參觀廠區內部，覺得好

像也沒有什麼。(C41)

而有些民眾認為，即使廠區開放了，但廠區內的老舊機具讓人覺得有危險性，且在設計展當時並未做好安全措施。

老舊破損的狀態可能具有危險性。(C12)

退休老機台旁邊有畫紅線禁止進入，但沒有拉線圍起來，其實還是有點危險！(C41)

而針對以上情形，據本研究觀察了解，廠區之所以沒有全部開放，是因為當時廠區還在進行修復。而在設計展時所開放的建物，例如中山堂、鍋爐室，以及少數棚架下的空間，都是已經修復好的空間，因此在設計展期間開放給民眾參觀。另外，有民眾提出廠區令人感到危險一事，本研究推測社群媒體用戶說明的地點應該是位在菸葉廠的菸葉除骨加工區，以及菸葉複薰加工區，這 2 個地點是擺放菸葉加工機具的地方，且在設計展開始舉辦前，也都未進行修復，因此民眾會覺得危險。而就本研究觀察，在設計展期間，這些老舊機具的確沒有特別拉線圍起來。因此就危險性這一點來說，確實是這次設計展規劃有所缺失的地方。

再來是關於民眾對於展示題材的負面評語，在這一方面，有民眾認為此次題材有點單調、枯燥。也有民眾認為，除了老建築外，未來活化的核心題材要再延伸。更有民眾認為，此次展覽活動主題叫做「設計展」，但卻無法了解更多關於設計的元素。最後，在正面評語中有提到民眾推薦一定要參加的導覽行程，在這邊卻有民眾認為導覽可以再強化。以下為留言內容：

目前規劃不夠完善，內容有點單調空洞。(C08)

平常沒有導覽的話蠻枯燥的。(C03)

目前除了老建築外，需要些核心題材的延申與支撐，加油。(C21)

若是對於設計方面想多了解的人，並不合適。(C09)

菸葉的製作文化也是很好的教育題材，希望導覽能夠再強化一點。(C12)

以上內容說明了此次設計展的舉辦還是有需要改進的地方，不管是要傳遞菸葉的歷史文化，還是舉辦

與該場域無關聯的活動。此外，在這些負面評語中有提到導覽活動可再強化一事，顯然也指出，並不是所有的導覽行程都能被民眾所認可。而以上的負面評語，本研究也認為，這些評語可作為未來屏東菸葉廠在活動舉辦時的參考建議。

5.5.5 民眾的期許

從圖 14 可看出，民眾除了常發表關於「小朋友」評論，「希望」也是民眾想表達的。像是以下留言：

希望政府好好整理規劃會很好逛的。(C31)

老廠新用希望能持續下去。(C37)

希望一年以後開始重新開放，會有很多新亮點。(C41)

除了以上這些期望，民眾也會進一步地提出相關建議，像是在廠區硬體的部分就有民眾提出：

建議可以規劃廠區一部份供應汽機車停放。(C05)

而在軟體的部分，民眾大多數則是建議可以規劃成文創園區或是其他休閒用途的園區。像是：

可以搭配藝文活動，形成一個藝文特區。(C12)

設立一些有特色的店家，形成一個常設的休閒遊憩場所。(C12)

變成文創園區哦。(C22)

如果像十鼓園區那樣被活化，應該也是不錯的景點。(C32)

此外，民眾也希望可以設立與菸業文化相關的活動。

菸草的種植、菸葉的製作都是很好的體驗活動，希望能夠設立。(C12)

而這樣子的建議，本研究在設計展期間，也有聽到遊客給予類似的意見：「其實菸葉廠內還那麼多空間，機具導覽其實還不足以去完整的訴說菸葉的歷史，希望未來廠區其他空間開放後，菸葉廠能有更多活動或空間能與過去臺灣菸葉的歷史有所連結(20191020PM)¹²。」

綜合上述關於民眾期許的評論，民眾都希望屏東縣政府未來能好好規劃屏東菸葉廠，並給予在規劃上的建議。而針對以上建議，本研究後續的觀察中也發

現，屏東縣政府其實也已有對應之策。像是有民眾說可以規劃停車空間，屏東縣政府現在也已於屏東菸葉廠入口興建立體停車場。在設立相關菸業體驗活動方面，屏東縣政府文化處也曾辦理過，但還是有民眾希望能多加辦理。因此本研究提出，未來屏東縣政府在屏東菸葉廠舉辦活動時，可再加強推廣，讓民眾可以了解屏東菸葉廠保存活動，而這也是本研究認為文化資產的民眾參與所需具備的要素之一。

六、結論與建議

本研究從屏東菸葉廠的保存歷程出發，應用社群媒體資料分析並輔以觀察研究，探討屏東菸葉廠在2019 臺灣設計展舉辦期間的民眾參與情形。

本研究將研究結果分成三方面說明：(1) 照片拍攝位置分析；(2) 照片場景分析；(3) 文字留言分析。從研究結果可得知，在(1) 拍照的位置分析方面，民眾對於屏東菸葉廠內所偏好的地點不同，並歸納出民眾最常拍照的14個地點。而在(2) 照片場景分析方面，本研究依據民眾最常拍照的14個地點分析出，民眾在菸葉廠所感受到的多為菸葉廠的有形文化資源；其次為與菸業文化無關聯的資訊；最少感受到的則是關於菸葉廠的無形文化資源。因此從中可推論，屏東菸葉廠的有形文化資源是較有機會讓民眾了解菸葉廠文化資產價值的媒介。若進一步說明各地點是否都能協助民眾認識菸葉廠的文化資產價值，菸葉除骨加工區、菸葉複薰加工區、14號倉庫、辦公室，皆能讓民眾感受到場域的有形及無形文化資源。中山堂、19號倉庫、菸廠路，以及各棚架下的空間，民眾至少都還能感受到其中的有形或無形文化資源。而鍋爐室所呈現的照片場景，則皆是與菸業文化毫無關聯的資訊。民眾在鍋爐室內最不能感受到與菸業相關的文化資源。最後在(3) 民眾文字留言方面，本研究發現，這些留言不一定都能表示民眾有感受到菸葉廠的文化資產價值，但卻說明了有部分民眾喜歡這裡的歷史及舊工廠氛圍，而這也是工業遺產才有的特色之一。

另外，針對民眾所提出的意見，本研究也提出以下三點建議：(1) 在廠區的保存規劃上，在修復上須

適時保留工廠昔日作業設施與標語以傳遞工廠氛圍，同時兼顧民眾參觀安全。(2) 在導覽解說方面，可針對導覽志工加強培訓。(3) 在消息的公告上，可再加強推廣，讓更多人認識屏東菸葉廠及其相關資訊，並且也可以多舉辦與屏東菸葉廠規劃相關的講座及說明會等，讓民眾有更多的機會參與保存。

為求文化資產價值彰顯與文化資產永續保存，以下二點亦須重視：(1) 本研究從分析中發現，比起菸葉廠的導覽活動，民眾更喜歡的其實是當時設計展廠所舉辦的親子活動或體驗活動。然而，這些活動也皆不是以傳遞屏東菸葉廠的文化資產價值為出發點進行舉辦。本研究認為，在每個地點的活動舉辦上還是要以能協助民眾認識該場域的文化資產價值為原則，並且可適時地運用屏東菸葉廠的有形與無形文化資源，這樣才有助於民眾了解文化資產。在未來經營管理方面，根據本研究圖6所彙整的民眾喜好拍攝的屏東菸葉廠地點，屏東縣政府可以重視這些民眾拍攝的熱點，強化將來對於屏東菸葉廠文化資產價值詮釋(interpretation)的經營，包括教育導覽活動的策劃與執行。(2) 國際上針對文化遺產的民眾參與，須展現包容性的原則。文化資產若要永續發展，在民眾參與方面，還需達到公平、尊重、性別平等，以及提高生活福祉等多項指標。本研究發現，目前屏東菸葉廠的民眾參與，對於包容性的原則著墨較少，未來屏東縣政府在規劃屏東菸葉廠的活化再利用，應適度考慮族群、性別等議題，以強化包容性的文化資產保存永續目標。

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註釋

- ¹本篇論文改寫自 2020 年國立屏東大學文化創意產業學系吳添熹發表的碩士論文〈當菸散去：屏東菸葉廠文化資產保存的民眾參與〉（林思玲教授指導）。
- ²場所精神（spirit of place）是在 2008 年 ICOMOS 所舉辦的第 16 屆大會暨國際科學研討會中提出，會議中所形成的《魁北克宣言》（Québec Declaration）指出，場所精神是由遺產的有形與無形價值所組成，有形的部分包含：建築物、歷史場所、景觀、路徑、物件；無形的部分則包含：記憶、口敘、書面文件、儀式、節慶、傳統知識、價值觀、紋理、顏色、氣味等（ICOMOS，2008）。
- ³Web 2.0 具有 3 個顯著特徵：（1）易於使用；（2）促進社交；（3）為用戶提供免費的發布和生產平臺，允許他們以任何形式上傳圖片、影片或文本形式的內容（Lovink，2011）。
- ⁴500px 是一個照片分享的社群媒體，該網站提供用戶自行選擇免費或付費兩種帳戶類型，攝影師可在這裡出售自己的照片，讓喜歡的用戶可以購買。網址：<https://web.500px.com/>。
- ⁵林思玲（2019：125）曾提出，文化資產場域的有形與無形文化資源，是能讓民眾了解文化資產價值的重要來源，而有形文化資源包含文化資產場域的建築空間型式、建築構造與裝飾元素；無形文化資源則是文化資產場域的歷史、文化、產業特徵、傳說、故事等。
- ⁶菸葉調理：即為判斷/鑑定菸葉之等級，將同等級的分在一起。而等級的分類主要是分為厚、薄兩類，接著再各分成 1 至 7 等以及等外 8 個等級，合計 16 個等級（張崑振，2013：43）。

⁷本研究以”C”作為代碼，取自於英文 Code 的縮寫。

⁸詳細書目資料為 Jenks, G. F., & Caspall, F. C. (1971). ERROR ON CHOROPLETHIC MAPS: DEFINITION, MEASUREMENT, REDUCTION. *Annals of the Association of American Geographers*, 61(2), 217-244。

⁹ QGIS Tutorials and Tips—基本向量資料樣式設定。讀取於 2020 年 6 月 4 日，取自 http://www.qgistutorials.com/zh_TW/docs/basic_vector_styling.html。

¹⁰據本研究搜尋，此段文字可能取自於維基百科對於屏東菸葉廠的介紹。詳閱 <https://zh.wikipedia.org/wiki/%E5%B1%8F%E6%9D%B1%E8%8F%B8%E8%91%89%E5%BB%A0>。

¹¹民眾留言將「菸」寫成「煙」，本研究保留民眾留言原字，以下民眾留言皆同。

¹²此段訪談為本研究進行現場觀察時所訪問參觀民眾的回答內容，(20191020PM) 為訪談日期與時間，表示 2019 年 10 月 20 日下午。

國立屏東大學補助研究成果發表申請表

(每篇請填寫一張申請表)

項次

1

姓名	蔡玲瓏	單位	文創系	職稱	教授	聯絡電話	分機：35753 手機：0910840696
成果名稱	Mobile payment adoption at the pre-purchase stage			出版社	Inderscience Publishers		
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該子領域 排名百分比	75/96	申請項目	G	金額	20000 元		
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2021	78/95	Q4	18.42	<div></div>
2020	77/95	Q4	19.47	<div></div>
2019	61/92	Q3	34.24	<div></div>
2018	N/A	N/A	N/A	<div></div>

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<input checked="" type="checkbox"/>	G 依據 JCR (Journal Citation Reports) 資料庫相關領域之 SCI、SCIE，且在該領域之影響指數 (Impact Factor) 排名屬 50%以外；SSCI 排名屬 70%以外之期刊論文。	二萬	1、收錄至該學術期刊之證明 (應含申請之論文名稱、作者姓名及期刊出版年、月、卷期數及頁碼)，若無頁碼者，請提供網路連結。 2、SCI、SCIE 之期刊收錄至 JCR (Journal Citation Reports) 最新資料庫並排名屬 70%以外；SSCI 排名屬 70%以外之證明。 3、論文全文。
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<input type="checkbox"/>	額外項	額外獎勵項，將聯合國 17 項永續發展目標(SDGs)之指標關鍵字納入標題、摘要或關鍵字至少一項，檢附相關佐證資料。	
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Mobile payment adoption at the pre-purchase stage

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Abstract: Although several studies have examined adoption of mobile commerce, only a few have considered mobile payment (MP) adoption at the pre-purchase encounter stage. The following study aims to investigate MP usage intention at the pre-purchase stage. A questionnaire based on the extended unified theory of acceptance and use of technology (UTAUT) model was issued to 550 Taiwanese mobile phone users. Results show that at the pre-purchase stage, effort expectancy, performance expectancy, and perceived value are the three major predictors of intention to use MP. It was also found that facilitating conditions and self-efficacy are significant predictors of effort expectancy, perceived benefits have a positive impact on perceived value, and that perceived risks have a negative influence on perceived value. Importantly, effort expectancy was also found to mediate facilitating conditions and performance expectancy, as well as self-efficacy and performance expectancy.

Keywords: mobile payment; unified theory of acceptance and use of technology; UTAUT; service encounter; pre-purchase stage; usage intention.

Reference to this paper should be made as follows: Tsai, L.L. and Loncar, M. (2022) 'Mobile payment adoption at the pre-purchase stage', *Int. J. Mobile Communications*, Vol. 20, No. 6, pp.680–702.

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1 Introduction

Two decades ago, the majority of shoppers completed their purchases using either cash or credit cards; with the recent development of mobile and wireless technology, however, consumers now have numerous options for making payments. Commerce payment options are transitioning from entering credit card PIN numbers to confirm completed transactions, to utilising consumer's mobile devices, such as tablets or smart phones, in order to connect to various payment systems (Hamidi and Safareeyeh, 2019; Makanyeza, 2017; Pham and Ho, 2015). Through use of near field communication (NFC) technology, many apps, such as Apple Pay, Google Pay, and Samsung Pay, offer convenient mobile payment (MP) solutions for purchases (Taylor, 2016). Indeed the proliferation of smartphones, tablets, and other mobile devices has facilitated the promise of M-commerce. However, besides a few Asian countries, including China, South Korea, and Singapore, the traditional payment models of cash and credit cards are still the most frequently used forms of payment.

For example, in Taiwan, MP is still not a preferred method for daily purchases. According to Taiwan's Financial Supervisory Commission, Taiwan's MP penetration rate is only 26%, much lower than South Korea (77%), Hong Kong (65%), China (56%), and Singapore (53%) (FSC, 2016). Even provided a convenient MP environment, consumer adoption of MP services in Taiwan has lagged behind expectations. This is also true in the United States; despite the fact that mobile service providers such as mobile network operators and financial institutions have zealously built up the necessary infrastructure and made the effort to foster customers' adoption of MP services, consumer payment habits are still deeply attached to cash and plastic cards (Park et al., 2019).

Yang (2010) posits that in order to comprehend consumers' adoption of a new technology, we must understand their needs and expectations. The majority of studies investigating the adoption of mobile commerce have relied on versions of the technology acceptance model (TAM) or unified theory of acceptance and use of technology (UTAUT) theoretical models. Musa et al. (2015) used UTAUT models to study the willingness of residents of Qatar to use MP devices. Results showed that social influence (SI), performance expectancy (PE) and perceived information security had a direct impact on intention to use. Wang and Dai (2020), in their study investigating adoption of MP at retail stores in China, combined TAM's constructs of perceived usefulness (PU) and perceived ease of use (PEOU) with UTAUT's SI, finding that PU and SI had a direct impact on the usage intention (UI) of MP. Finally, in a study on mobile banking, Ahmed et al. (2017) adapted UTAUT to include elements of the task-technology fit (TTF) and technology characteristics (TEC) models. In implementing M-Banking, they found SI to be the most important factor.

Although informative, these studies did not consider the effect of stage of service on the adoption of MP. Lovelock and Wirtz (2007) proposed the three-stage model of

service consumption, which conceptualises three stages that consumers undergo when engaging in a service: the pre-purchase stage, the service encounter stage, and the post-encounter stage. In the pre-purchase stage, “a need arousal triggers consumers to start searching for information and evaluate alternatives before they make a purchase decision” (p.107). The service encounter stage involves all the complex dealings expected and encountered with a service provider transaction. Finally, the final stage of service consumption is ‘the post-encounter stage and involves consumers’ behavioural and attitudinal responses to the service experience’ (p.116).

Song and Yoo (2016) argue that consumers’ expectations are powerfully shaped throughout the pre-purchase stage; when consumers have already decided not to adopt a technology in the pre-purchase stage, they will naturally not progress to the following service encounter and post-purchase stages. Although vitally important, little effort has been devoted to understanding technology adoption at the pre-purchase stage. In order to address this critical gap in the literature supporting technology acceptance of MP, there is a need to further investigate the pre-purchase stage, and specifically, to identify the exact antecedents that could influence consumers’ decisions before a service encounter. The purpose of the following research is to define and examine what factors determine consumers’ intention to use MP at the pre-purchase stage.

In order to meet this objective, the following research adopts UTAUT, a widely used predicting theory, as basis to develop and test a more appropriate consumer adoption model for MP. In order to customise the theoretical perspective, this study combines UTAUT’s constructs of PE, effort expectancy (EE) and facilitating conditions (FC) and adds the constructs of self-efficacy (SE), perceived value (PV), perceived benefits (PB), and perceived risks (PR), which are believed to be crucial constructs in understanding and predicting consumer behaviour at the pre-purchase stage of MP services. Previous research has examined the relationship among FC, EE, PE, and SE and proved a direct relationship (Amoroso and Magnier-Watanabe, 2012; Sung et al., 2015; Verkijika and De Wet, 2018); however, the nature of the indirect relationship among these constructs, which is of considerable importance, has so far been neglected. In order to fill this research gap, the present study also investigates the nature of the indirect relationship between EE, FC, and PE, as well as EE, SE, and PE.

The paper is organised as follows: Section 1 provides the introduction and rationale for the study. Section 2 provides the relevant background information needed to frame the study, as well as describes the proposed model and hypotheses development. Section 3 introduces the methodology used in the study. Section 4 presents the results of the measurement and structural models, and in Section 5, results are further analysed and discussed. Finally, in Section 6, limitations and suggestions for further studies are identified and theoretical and practical implications are provided.

2 Background and model development

2.1 Stages of service encounters

Lovelock and Wirtz (2007) proposed three stages that consumers undergo when consuming services: the pre-purchase stage, the service encounter stage, and the post-encounter stage. At the pre-purchase or pre-encounter stage, consumers search for information and assess options. This stage includes the anticipation of environmental

factors (Coye, 2004) as well as mental and behaviour factors (Brodie et al., 2011). The service encounter stage is where the consumers interact with and hopefully engage with service providers in a reciprocal relationship. Finally, the post-encounter stage is formed through an evaluation of service performance that greatly affects sense of satisfaction. Often these post-purchase outcomes are explored through the constructs of perceived service quality, customer satisfaction, and newer constructs such as consumer delight and perceived service value (Lovelock and Wirtz, 2007).

Of all three stages, however, it is likely that the pre-purchase stage is most significant. Huang and Dubinsky (2014, p.213) argue that customer satisfaction is not only evaluated at the post-purchase stage; rather, it is 'an on-going evaluation of activities occurring in the shopping process'. The pre-purchase stage is extremely complex and important because consumers will evaluate services and information about the products, as well as anticipate performance and effort involved in using a service before purchasing. If they are not satisfied at the pre-purchase stage, they will not advance to future stages.

Matt and Hess (2016) posit that the rise of internet-enabled technologies has significantly changed the customer's evaluation perception toward products during pre-purchase stage. Küster et al. (2016) argued that pre-purchase services, such as support for merchandise search and appraisal, can have a stronger impact than product pricing. Other important pre-purchase services include payment and billing mechanisms, delivery arrangements, and security and privacy policies. Chae et al. (2006) confirmed that customers seek out information from their memory and the environment to form pre-purchase satisfaction. If consumers are highly satisfied at the pre-purchase stage, these experiences are stored in their memory and become intrinsic motivation to continue to use a service (Park et al., 2015).

In their mixed-method study examining tourists' choice of hotels based on brochures, Huertas-Garcia et al. (2014) found that price, advertisement size (quarter or half page), and hotel's starred rating (4 or 5) were three factors that affected PV in the pre-purchase stage. Song and Yoo (2016), in their study exploring the influence of social media at the pre-purchase stage, specified that customers at the pre-purchase stage need more information to assist them to make decisions. When evaluating intangible experience goods such as financial products, which consumers encounter with high uncertainty and risks while making their purchasing decisions, consumers tend to seek for more data at the pre-purchase stage (Berger and Messerschmidt, 2009).

Drawing on expectation disconfirmation theory, Hsu et al. (2016) proposed that consumers form an attitude at the pre-purchase stage that is related to the expectation of a special attribute, which in turn influences, via the theory of reasoned action (TRA) (Fishbein and Ajzen, 1977), purchase intention. Song and Yoo (2016) also illustrated how customers' expectations at the pre-purchase stage are influenced by new information gained during searches. These expectations become a standard to compare with real performance; as a result, they affect satisfaction of the service. Finally, Huang and Dubinsky (2014) found that evaluations that occur in the pre-purchase stage were significant; specifically, purchase intention, loyalty intention, and perceived service quality were all found to be associated with pre-purchase satisfaction.

2.2 Technology adoption models: TAM and UTAUT

In understanding MP adoption at the pre-purchase stage, comprehending a number of different technology adoption models, such as UTAUT and TAM, as well as the

constructs that compose these models, can help us better comprehend MP adoption at the pre-purchase stage. Fishbein and Ajzen (1977) articulated TRA, which posits that individual behaviour is driven by behaviour intentions. Attitude toward subjective norms, behaviour, and perceived behavioural control together influence an individual's behavioural intentions and behaviours. Davis (1989) simplified the conceptual framework of the TRA and developed TAM, which combined TRA's multiple attitude constructs – attitude, attitudinal belief, subjective norm, and normative belief – into two new constructs: PEOU and PU.

TAM's key constructs of PEOU and PU are simple to understand and easy to examine in practice; as a result, TAM eventually became the gold standard for examining end-user technology acceptance intention. TAM has been widely applied among information systems (IS) theories, in order to investigate users' acceptance and usage of technology in different contexts and different industries (Dajani and Yaseen, 2016; Naicker and Van Der Merwe, 2018; Usoro et al., 2010). However, the limitations of TAM, particularly on the basis of extensibility and explanatory power have been remarked (Benbasat and Barki, 2007). It is generally held that TAM is able to account for 40% of variance in UI and behaviour.

Due to the insufficient explanatory power in behaviour intention of TAM, Venkatesh et al. (2003) developed UTAUT. It was developed through the synthesis of eight models, including TRA, TAM, MM, TPB, C-TAM-TPB, MPCU, IDT, and SCT. Compared to other theoretical models, UTAUT increases the predictive ability of intention on user's behaviour to roughly 70% of variance in UI. UTAUT consists of four predictors of intention and usage: PE, EE, FC, and SI. The ubiquity of these determinants is evidenced by several investigations on the use of various technologies, such as RFID-enabled services (Nysveen and Pedersen, 2016), tourist mapping apps (Gupta and Dogra, 2017), and e-learning systems (Wang, 2016).

2.3 Proposed model and development of hypotheses

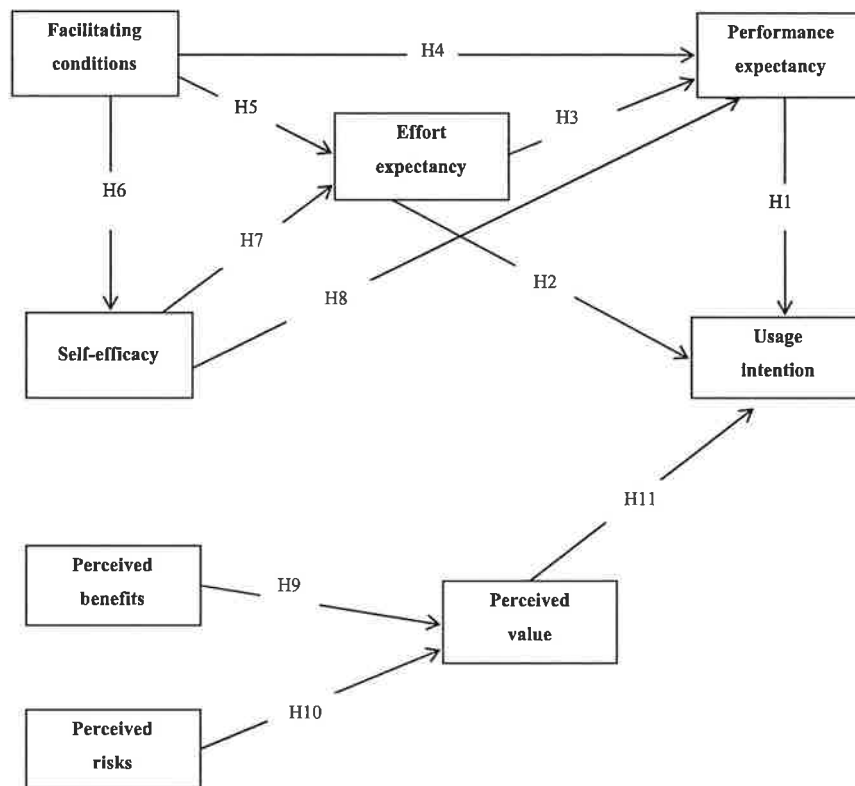
In order to examine more precisely the underlying aspects that affect consumers' adoption of MP services at the pre-purchase level, this study proposes a new model based on UTAUT and modified with additional constructs (see Figure 1). As for UTAUT, three of the four main determinants – PE, EE, and FC, were all included in the new model. The construct of SI was excluded because in Taiwan, there seems to be little social pressure to adopt MP, as has been shown in previous studies (e.g., Rizkyandy et al., 2018).

2.3.1 UTAUT: PE

Based on the UTAUT model, before consumers utilise MP, they would usually anticipate the benefits of using this technology. PE, which is similar to TAM's construct of PU, is the extent to which an individual considers that applying the technology will be helpful in accomplishing task performance (Venkatesh et al., 2003). Broadly speaking, if customers realise that adopting a new technology will make their life more convenient, they will be more willing to adopt the technology. Previous researchers (Alalwan et al., 2017; Morosan and DeFranco, 2016; Wang et al., 2017) demonstrated that there is a strong link between users' intention to adopt MP and PE. Therefore, we hypothesise that:

H1 PE has a positive effect on intention to use MP.

Figure 1 Research framework of the study



2.3.2 UTAUT: EE

Venkatesh et al. (2003) articulated that EE is derived from the TAM construct of PEOU; in this study, EE could be manifested as the ability to accomplish the operation of MP with minimal effort. Pandey and Chawla (2019) examined adoption of m-commerce in India and showed that EE is a significant predictor of intention to adopt m-commerce. If consumers perceive an easier operating process, they will be more likely to adopt the new technology (Teo et al., 2015; Verkijika, 2018). Hence, we posit the following hypothesis:

H2 EE has a positive effect on intention to use MP.

In TAM (Davis, 1989), PEOU influences PU. Since UTAUT is derived from TAM and EE could be expected to influence PE. Previous studies that examined the relationship between EE and PE obtained similar results (Galluch and Thatcher, 2011; Wang et al., 2017). As such, this study hypothesises that:

H3 EE has a positive effect on PE.

2.3.3 UTAUT: FC

In the following study, FC are defined as the quality of environment and support service providers afford (Triandis, 1980). In the research conceptualising information technology

usage, Taylor and Todd (1995) regarded FC as a perceived behaviour control factor. Venkatesh et al. (2012, p.159) viewed FC as “the consumers’ perceptions of the resources and support available to perform the behaviour”. The prerequisite for consumers to adopt m-commerce is the support of the service providers including available resources and environmental facilities (Verkijika, 2018). Yang and Forney (2013) examined consumer technology anxiety and found that FC has a positive relationship with PE. Prior research (Alrawashdeh et al., 2012; Dwivedi et al., 2017) explored how potential users perceived that environmental support and infrastructure provided by the organiser may assist them to accomplish a task; thus, FC positively affected EE. Venkatesh and Bala (2008) considered that knowledge repository and user training could build up FC and thus increase computer SE. Kumi et al. (2012) investigated the impact of FC toward iPad adoption, and confirmed a positive relationship between FC and computer SE.

Thus, the following hypotheses are posited:

H4 FC have a positive effect on PE.

H5 FC have a positive effect on EE.

H6 FC have a positive effect on SE.

Several additional constructs not found in UTAUT are illuminative when considering what might influence consumer adoption at the pre-purchase stage. Thus, the following constructs were added to the newly developed model.

2.3.4 Self-efficacy

SE, as defined by Bandura (1977), refers to individuals’ belief that they possess the capability and resources required to perform a particular task effectively. Roy Chowdhury et al. (2014) regarded mobile commerce as a self-service technology, i.e., consumers accomplish the service by themselves. Compared to traditional full service, customers need to make more effort under technology-based self-service (Van Beuningen et al., 2009). Therefore, an individual’s belief in their innate ability, that is SE, could help improve their transaction efficiency.

Susanto et al. (2016) found that SE could build up an individual’s confidence to perform activities; it could also help an individual to overcome difficulties that may arise, prompting a person to use all kinds of endeavours to complete a task. Sung et al. (2015) recognised that SE could positively influence PE. Chan et al. (2010) posited that users with higher SE possibly perceived less effort to utilise a new technology. Alshare et al. (2015) found that the evaluation of users’ abilities to carry out technical endeavours will affect their perception of the degree of EE. Against this background, the following hypotheses are proposed:

H7 SE has a positive effect on EE.

H8 SE has a positive effect on PE.

2.3.5 Perceived benefits

In a purchasing environment, consumers seek specific advantages from a product solution and view the product as a set of features that bring benefits (Kotler and Armstrong, 2010). Kim et al. (2007) suggested that customers evaluated benefit elements of

usefulness and enjoyment before making a purchase decision. Therefore, they categorised customer PB into utilitarian and hedonic benefits. Chen et al. (2017) inspected the behaviour of consumers' hotel reservations and found that consumers had to make decisions judging from limited evidence provided by the hotel website and that PB had some impact on value assessment. Wiegard and Breitner (2017) investigated the adoption of pay-as-you-live (PAYL) service and showed that PB is positively associated with PV. On this basis, it is hypothesised that:

H9 PB have a positive effect on customer's PV of using MP.

2.3.6 *Perceived risks*

Wrong decisions and uncertain outcomes are regarded as two major factors of PR (Taylor, 1974). PR has been shown to have great impact on customer's online buying decisions (Antony et al., 2006). If customers believe online shopping is more risky than traditional shopping, they will be unwilling to buy on the web. Snoj et al. (2004) regarded risk as a subjective assessment toward the unexpected failing or problem with a product or service. PR has a negative relationship with PV. Yang et al. (2015) utilised a five-dimensional measurement to evaluate PR in MP acceptance and found both perceived performance risk and perceived financial risk had a negative impact on PV. Thus, the following hypothesis is examined:

H10 PR have a negative effect on customer's PV of using MP.

2.3.7 *Perceived value*

PV is conceptualised as a combination of PR and benefits (PB). PB positively affects PV, while PR has a significant negative relationship toward PV (Gan and Wang, 2017). Jayawardhena (2010) suggested that at the pre-purchase stage, a 'PV' exists. Consumers will judge the service value from the combination of PB and PR (Li et al., 2016). If the PB are high and PR are low, customers will likely have a high PV of the service; thus, they will be more apt to utilise the service. If the PB are low and PR are high, customers will likely have a low PV of the service, and as a result, be less likely to use the service.

It is natural for customers to evaluate products or services before payment; as a result, PV has a great influence over UI and decision to purchase. Hsiao (2011) found internet users PV of social networking sites (SNSs) positively affected intention to continue to pay for social network advanced features. Gan and Wang (2017) employed PV to evaluate purchase intention in social commerce circumstances. Customer PV is based on PB (hedonic, utilitarian, and social values) and PR. Wiegard and Breitner (2017) advocated that PV is negatively influenced by privacy risk and positively influenced by individuals' PB. The authors also proved that PV is a predictor toward consumer's adoption of PAYL service using wearable technologies. Based on these studies, we propose the following hypothesis:

H11 PV has a positive effect on intention to use MP.

2.3.8 *The mediating effect of EE*

Amoroso and Magnier-Watanabe (2012) constructed and examined a model for a mobile wallet and found FC positively affected PE and that EE positively associated with PE.

Verkijika and De Wet (2018) in their study of in e-government adoption also found a positive relationship between FC and EE and that EE was positively related to PE. In addition, Yang and Forney (2013) confirmed that FC influenced PE; as a result, it may be possible that FC indirectly affects PE through EE. Sung et al. (2015) examined intention to use mobile learning service and discovered that SE positively affected EE, EE positively affected PE, and that SE positively affected PE directly. Since the research detailed above suggests that EE could be mediating the relationship between FC and PE, we believe that there exists a possibility that EE may also be mediating the relationship between SE and PE. Since no previous studies have examined this mediating relationship, the current study aims to identify the mediation effect; thus, we hypothesise the following:

H12 EE positively mediates the relationship between FC and PE.

H13 EE positively mediates the relationship between SE and PE.

3 Methodology

The following research used Taiwanese mobile phone users as subjects and examined their UI toward MP at the pre-purchase stage. The researchers first developed the research model through examining current literature on MP technology adoption, then developed a questionnaire survey as instrument based on the newly developed model.

3.1 Measurement development

Smartphones are the device used to perform MP; therefore, our target population is Taiwanese adult smartphone owners. An online survey was designed using Google Sheets, and the link for the survey was shared via convenience sampling with several LINE and Facebook groups in Taiwan; thus, a diverse convenience sample of potential MP users was established. Besides the demographic section, items in the questionnaire utilised a five-point Likert scale. The questionnaire was originally designed in English, checked by a native speaker English professor, and then translated back to Chinese by the researchers, including native Chinese and English speakers. A pilot study was executed among 12 respondents who represented potential MP users. Through this procedure, ambiguous items were revised or removed, and the clarity of items was ensured.

Table 1 Questionnaire items used in the survey

Construct	Source
Effort expectancy	Venkatesh et al. (2003)
Performance expectancy	Venkatesh et al. (2003)
Facilitating conditions	Venkatesh et al. (2003)
Self-efficacy	Sung et al. (2015)
Perceived benefits	Wiegard and Breitner (2017)
Perceived risks	Lu and Lin (2012)
Perceived value	Wiegard and Breitner (2017)
Usage intention	Venkatesh et al. (2003)

The research model includes eight constructs, and measurement items were developed by adopting scales that had been validated in previous studies (see Table 1). EE, PE, FC, and UI were adapted from Venkatesh et al. (2003). Items for measuring PB and PV were adopted from Wiegard and Breitner (2017). Items to measure SE were modified from Sung et al. (2015). Measures for PR were altered from Lu and Lin (2012). Appendix provides a detailed list of the indicators measured in each of these constructs.

Table 2 Respondent characteristics

<i>Characteristics</i>	<i>Responses (N = 550)</i>	<i>Percentage</i>
Gender		
Male	253	46%
Female	297	54%
Age		
20 years and less	41	7.5%
21–29	113	20.5%
30–39	98	17.8%
40–49	103	18.7%
50–59	132	24.0%
60 years and above	63	11.5%
Income (USD, monthly)		
Below 1,000	180	32.7%
1,001–2,000	114	20.7%
2,001–3,000	106	19.3%
3,001–4,000	85	15.5%
4,001–5,000	29	5.3%
5,001 and above	36	6.5%
Education		
Junior high school or less	5	0.9%
High school	56	10.2%
Some college	77	14.0%
Bachelor's degree	271	49.3%
Graduate degree	141	25.6%

3.2 Data collection

Target participants were adult users of mobile phones in Taiwan because they have the potential to use MP. Invitation messages were posted on social network-related forum websites, specifically the 'open platform club' and 'MP information' groups in Facebook and 'mobile discussion board' and 'life information exchange' groups in Line, for over a four-week period. Because of the lack of a sampling frame, this study used non-probability, convenience sampling. For the purpose of this study, 605 responses were collected. Each response was scrutinised and improper responses – having the same answer for every question – as well as incomplete responses were all excluded from our

sample. In total, 550 respondents successfully completed the questionnaire and were included in the sample. Profiles of these 550 respondents are summarised in Table 2. Among the 550 respondents, the majority of respondents were female 297 (54%) and 253 (46%) were male. Respondents were generally evenly distributed and reflective of the demographics of Taiwan. As for age, 7.5% were 18–20, 20.5% were 21–29, 17.8% were 30–39, 18.7% were 40–49, 24% were 50–59, and 11.5% were above 60 years of age. Most were well-educated, with 88.9% of them having a college or graduate degree. Overall, 72.7% of respondents had a monthly income of less than US\$3,000 (see Table 2).

3.3 Data analysis

In this study, the partial least squares structural equation modelling (PLS-SEM) – was utilised to evaluate the latent constructs, and the software SMART PLS3.0 was used as a statistical tool to validate the dataset and test hypotheses. The theory was measured by the convergence validity and discriminant validity. Henseler et al. (2009) suggested that PLS-SEM is a suitable method for examining covariance-based structure models. This study utilised a two-step process to evaluate outer and inner models. After having validated the model, the regression was adopted to measure the influence by evaluating the R-square value of dependent variables. The standardised path coefficients were calculated to measure the contribution of each independent variable on the dependent variable.

4 Results

4.1 Measurement model

The software Smart PLS3.0 was chosen to test the research model. The measurement model was tested by evaluating the validity (convergent and discriminant) and reliability (construct and indicator) of the proposed model. Several quality criteria were utilised to assess the constructs, including Cronbach's alpha, average variance extracted (AVE), composite reliability (CR), and factor loadings.

Confirmatory approach was conducted to measure the reliability, convergent validity, and discriminant validity. Based on criteria suggested by Fornell and Larcker (1981) and Hair et al. (2014), the evaluation was examined according to three criteria:

- 1 factor loadings of the indicators should be above 0.7
- 2 AVE should be above 0.5 for all constructs
- 3 composite reliability of various dimensions should be above 0.7.

As shown in Table 3, all the factor loadings ranged from 0.727 to 0.947, and as a result, exceeded 0.7, showing high convergent validity. The AVE, which ranged from 0.749 to 0.855, also passed the 0.5 threshold, confirming convergent validity. Finally, composite reliability of the constructs ranged from 0.899 to 0.952, well above the 0.7 threshold. In addition, Table 3 also shows the Cronbach's alpha scores, which ranged between 0.832 and 0.933, well above the recommended level of 0.7 (Nunnally, 1978), showing good to excellent internal consistency. The high construct discriminant validity is revealed in

Table 4, in which all the square roots of AVE are greater than the correlations between any two constructs.

Table 3 Reliability and validity of the measurements

<i>Construct</i>	<i>Items</i>	<i>Loading</i>	<i>AVE</i>	<i>C.R.</i>	<i>Cronbach's α</i>	<i>R²</i>
Effort expectancy	1	0.904	0.810	0.928	0.883	0.371
	2	0.898				
	3	0.898				
Performance expectancy	1	0.888	0.749	0.899	0.832	0.521
	2	0.886				
	3	0.820				
Facilitating conditions	1	0.916	0.834	0.952	0.933	----
	2	0.907				
	3	0.947				
	4	0.881				
Self-efficacy	1	0.926	0.833	0.952	0.933	0.665
	2	0.921				
	3	0.900				
	4	0.904				
Perceived benefits	1	0.903	0.751	0.923	0.887	----
	2	0.910				
	3	0.913				
	4	0.727				
Perceived risks	1	0.903	0.806	0.943	0.920	
	2	0.911				
	3	0.900				
	4	0.875				
Perceived value	1	0.898	0.798	0.922	0.873	0.435
	2	0.909				
	3	0.873				
Usage intention	1	0.931	0.855	0.947	0.915	0.601
	2	0.933				
	3	0.910				

4.2 Structural model

Figure 2 illustrates the explained variance R^2 in the endogenous variables and path coefficients. The R^2 value is based on an assessment criterion recommended by Cohen (1988), where 0.26 is considered as substantial, 0.13 moderate, and 0.02 weak. Since all the percentages of variances explained are greater than or equal to 26%, the R^2 values of endogenous constructs illustrate and reflect the predictive power of the research model. As indicated by the coefficient of determination (R^2) obtained, our model explains 36.6%

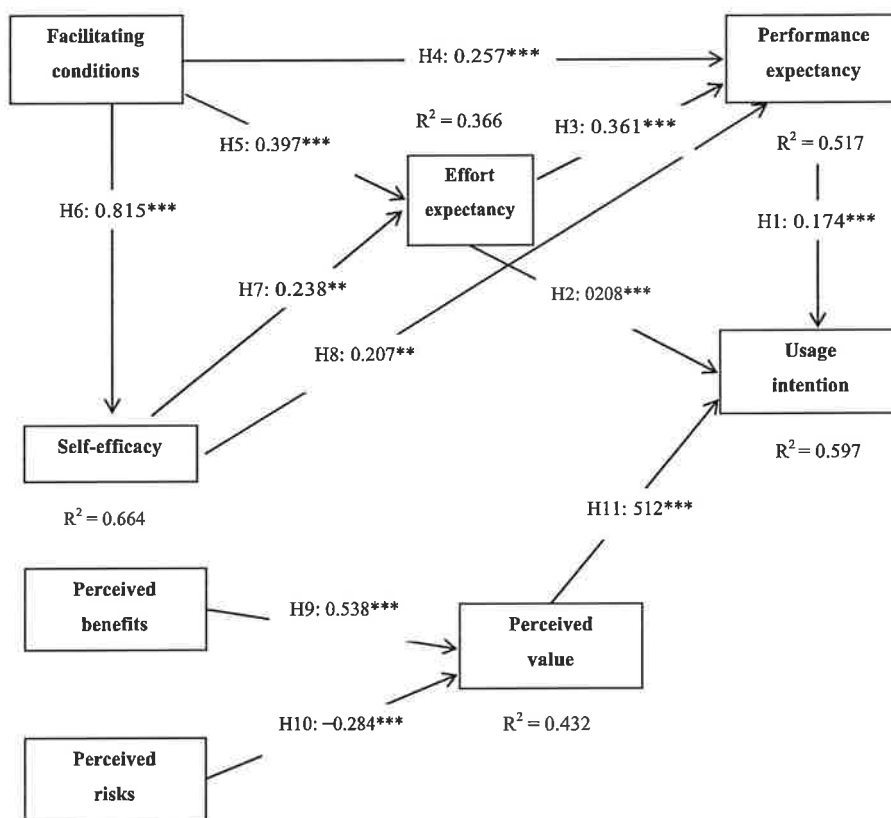
in EE, 51.7% in PE, 43.2% in PV, 66.4% in SE, and 59.7% in UI, resulting in high explanatory power.

Table 4 Correlation matrix and square root of AVE

Construct	1	2	3	4	5	6	7	8
EE	<i>0.900</i>							
FC	0.591	<i>0.913</i>						
UI	0.595	0.753	<i>0.925</i>					
PB	0.639	0.688	0.631	<i>0.867</i>				
PR	-0.261	-0.334	-0.389	-0.210	<i>0.898</i>			
PV	0.544	0.674	0.725	0.597	-0.397	<i>0.893</i>		
PE	0.629	0.639	0.601	0.760	-0.222	0.580	<i>0.866</i>	
SE	0.562	0.815	0.643	0.699	-0.297	0.597	0.619	<i>0.913</i>

Notes: EE = effort expectancy, FC = facilitating conditions, UI = usage intention, PB = perceived benefits, PR = perceived risks, PV = perceived value, PE = performance expectancy, SE = self-efficacy and italic values indicate the square root of the AVE.

Figure 2 Model testing results



Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 5 shows the path coefficients along with respective *t*-values and *p*-values of all hypotheses. All hypotheses were found to be significant, with most, including H1–H6 and H9–H11, found to be extremely significant ($p < 0.001$): H1–H6 (H1: PE on UI, $p = 0.000$; H2: EE on PE, $p = 0.000$; H3: EE on UI, $p = 0.000$; H4: FC on PE, $p = 0.000$; H5: FC on EE, $p = 0.000$; H6: FC on SE, $p = 0.000$) and H9–H11 (H9: PB on PV, $p = 0.000$; H10: PR on PV, $p = 0.000$; H11: PV on UI, $p = 0.000$) found to be extremely significant ($p < 0.001$), and H7 (SE on EE, $p = 0.003$) and H8 (SE on PE, $p = 0.001$) found to be very significant.

Table 5 Summary of hypotheses

<i>Hypothesis</i>	<i>Coefficients</i>	<i>t-values</i>	<i>p-values</i>
H1: Performance expectancy → usage intention	0.174***	4.13	0.000
H2: Effort expectancy → performance expectancy	0.208***	4.690	0.000
H3: Effort expectancy → usage intention	0.361***	8.342	0.000
H4: Facilitating conditions → performance expectancy	0.257***	4.303	0.000
H5: Facilitating conditions → effort expectancy	0.397***	5.059	0.000
H6: Facilitating conditions → self efficacy	0.815***	42.104	0.000
H7: Self efficacy → effort expectancy	0.238**	2.943	0.003
H8: Self efficacy → performance expectancy	0.207**	3.206	0.001
H9: Perceived benefits → perceived value	0.538***	16.536	0.000
H10: Perceived risks → perceived value	−0.284***	10.086	0.000
H11: Perceived value → usage intention	0.512***	12.431	0.000

Note: $p < 0.05$ = significant (*); $p < 0.01$ = very significant (**) and $p < 0.001$ = extremely significant (***).

As for the predictors of PE; all predictors, including EE ($\beta = 0.361$, $t = 8.342$, $p < 0.001$), FC ($\beta = 0.257$, $t = 4.303$, $p < 0.001$), and SE ($\beta = 0.207$, $t = 3.206$, $p < 0.005$) were found to have had a positive effect. FC was also found to be positively related to SE ($\beta = 0.815$, $t = 42.104$, $p < 0.001$). Moreover, results show that FC ($\beta = 0.397$, $t = 5.059$, $p < 0.001$) and SE ($\beta = 0.238$, $t = 2.943$, $p < 0.005$) had a significant and positive effect on EE. Thus, H2, H4, H5, H6, H7, and H8 were supported.

Results also indicate that PB ($\beta = 0.538$, $t = 16.536$, $p < 0.001$) had a positive and significant influence on PV. As expected, PR ($\beta = -0.284$, $t = 10.086$, $p < 0.001$) had a negative and significant influence on PV. Thus, H9, and H10 were also supported. Finally, we assessed the predictors of UI and found that EE ($\beta = 0.208$, $t = 4.690$, $p < 0.001$), PE ($\beta = 0.174$, $t = 4.130$, $p < 0.001$) and PV ($\beta = 0.512$, $t = 12.431$, $p < 0.001$) had positive and significant impacts on UI. Thus, H1, H3, and H11 were supported. Results of all hypotheses testing are summarised in Table 5.

4.3 Mediation analysis

As EE was found to have a significant indirect relationship – the main requirement for mediation – between FC and PE, as well as SE and PE, non-parametric bootstrapping analyses were conducted as suggested by Nitzi et al. (2016). Table 6 illustrates the analysis of mediation, showing that (A) the indirect effect of FC on PE is positive and significant (IE = 0.382 and *t*-value = 7.030) at $p < 0.001$, and that the interval confidence

was different from zero (0.085, 0.214); (B) the indirect effect of SE on PE is positive and significant (IE = 0.086 and t -value = 2.770) at $p < 0.05$, and that the interval confidence was different from zero (0.029, 0.152). The variance accounted for (VAF) value, which represents the proportion of a total effect that is mediated by an indirect effect, is determined by calculating the ratio of the indirect-to-total effect (Nitzl and Hirsch, 2016). This ratio helps establish the extent of the mediation effect. Table 6 shows a VAF of 59.78% for the indirect path of (FC \rightarrow EE \rightarrow PE) and a VAF of 29.35% for the indirect path of (SE \rightarrow EE \rightarrow PE). As recommended by Hair et al. (2014), Table 6 reveals that 59.78% of the effect of FC on PE is explained via EE. This result also shows that 29.35% of SE on PE is explained via EE mediation. Since the value of VAF is between 20% and 80%, EE is found to partially mediate the relationship between FC and PE. Moreover, EE also partially mediates the relationship between SE and PE.

Table 6 Mediation analysis

	Direct effect		Indirect effect		Total effect
Effect of	coeff.	t-value	coeff.	t-value	
FC → EE → PE	0.257	4.184***	0.382	7.030***	0.639
SE → EE → PE	0.207	3.120**	0.086	2.770**	0.293
	95% confidence intervals		VAF (%)	Interpretation	Conclusion
Effect of					
FC → EE → PE	[0.085, 0.214]		59.78	Partial mediation	H12 supported
SE → EE → PE	[0.029, 0.152]		29.35	Partial mediation	H13 supported

Notes: VAF = variance accounted for; * $|t| \geq 1.96$ at $p = 0.05$ level; ** $|t| \geq 2.58$ at $p = 0.01$ level; *** $|t| \geq 3.29$ at $p = 0.001$ level. The VAF $\geq 80\%$ indicates full mediation, $20\% \leq \text{VAF} \leq 80\%$ shows partial mediation while VAF $\leq 20\%$ assumes no mediation.

5 Discussion

Our study investigated the antecedents of UI toward MP at the pre-purchase service encounter stage based on the responses from 550 Taiwanese adults who owned mobile phones. Results show substantial support for all hypotheses in the proposed research model, which indicates an exceptional fit of the developed model to the data. Findings confirmed that at the pre-purchase stage, EE, PE, and PV are the three major predictors of UI. Among these factors, PV was found to have the strongest effect on UI, which is supported by a number of previous studies (e.g., Liu et al., 2015; Shaw and Sergueeva, 2019; Yang et al., 2015). In the following section, we will discuss in further detail the relationship of each factor observed in the data.

5.1 EE, PE, and UI

The fact that EE and PE were both found to be significant and had a positive impact on UI of MP is also demonstrated in other findings. For example, Alalwan et al. (2017), in their study on the adoption of mobile banking in Jordan, found a significant relationship between EE and behaviour intention, which is similar to UI. The authors also found that

PE had a direct influence on behaviour intention. In their investigation of human resource information systems (HRIS) for organisation, Jawahar and Harindran (2016) found a direct relationship between behavioural intention and PE and EE. Pandey and Chawla (2019) study of m-commerce acceptance in India also found PE positively influenced adoption levels. In Qasim and Abu-Shanab (2015) investigation of the influence of network externalities on Jordanian citizens MP acceptance, the researchers found, as in the current study, that PE had a positive influence on customers' intention to use MP. Finally, in Wang's (2016) study on e-learning systems in Taiwan's public sector, results similarly showed that PE and EE predicted intention to use e-learning systems.

Other studies, however, showed some contradictory findings. For example, Verkijika (2018), in a study investigating influential factors in adopting m-commerce in Cameroon, did not find that EE and performance were significantly related to UI. This finding may be due to the low e-commerce penetration rate (2%) in Cameroon. Different contexts and cultures may cause different outcomes, as adoption contexts differ widely among countries. As for EE's influence on UI, Pandey and Chawla (2019) found a negative influence on the adoption intention between low and high levels of users. This difference is probably due to the use of different definitions of EE. Contrary to Pandey and Chawla (2019), who defined EE as difficulty of use, the current study considers EE as users' ease of use. As for EE, other researchers (Morosan and DeFranco, 2016; Qasim and Abu-Shanab, 2015) failed to prove that EE was an influential factor toward UI.

5.2 FC and SE

Findings in the current study also confirm that at the pre-purchase stage:

- a FC influences PE, EE, and SE, with the greatest impact on SE.
- b SE influences EE and PE.

These findings are also supported by previous studies (Dwivedi et al., 2017; Kumi et al., 2012; Venkatesh and Bala, 2008; Yang and Forney, 2013).

As for FC, Dwivedi et al. (2017), in their study examining electronic government adoption in India, found that FC had a positive and significant impact on EE. Thus, the researchers suggested that the government should offer better technical support and infrastructure to make users feel easy to access to the system. In addition, Yang and Forney (2013), in their study on mobile shopping, also found FC to be a significant predictor of PE, while Kumi et al. (2012), in their study on iPad adoption, FC had a significant impact on SE.

As for SE, both Chan et al. (2010), in their study of citizens' adoption of an e-government technology, and Nel et al. (2012), in their examination of South African mobile banking, found SE positively influenced EE. Sung et al. (2015), in their study investigating South Korean university students' behavioural intention toward mobile learning services, found SE positively related to EE and PE.

Based on the mediation analysis, our results indicated that EE partially mediates FC and PE. Moreover, we also found that EE plays a partial mediating role in the relationship between SE and PE. These findings enhance our understanding of MP at the pre-purchase stage by illuminating the relationship between FC and PE, as well as the relationship between SE and PE; the influence of the indirect path is stronger than the direct path.

5.3 PB, PR and PV

As for PB and PR at the pre-purchase stage, results showed PB had a positive effect on PV and PR had a negative effect on PV, with PB as more influential. These findings echo those conducted for the adoption of other technologies, such as hotel booking websites (Chen et al., 2017), smart healthcare service (Wiegard and Breitner, 2017), and mobile internet (M-internet) (Kim et al., 2007). For example, Chen et al. (2017) study exploring how different levels of information affects consumers' purchase evaluations and intentions when consumers make reservations on hotel websites also found that PB had a positive influence on value assessment and that PR had a negative influence on value assessment, with PB showing a stronger effect than PR. Wiegard and Breitner (2017), in their study examining German customers adoption of PAYL services, also found that PB had a positive impact on PV while perceived privacy risks had a negative effect on PV; however, the authors found PR more influential than benefits. Finally, in Kim et al. (2007) study investigating the adoption of M-internet as a new information and communication technology (ICT), findings detailed that PB (usefulness and enjoyment) had a positive influence on PV and that perceived sacrifices (perceived fee and technicality) had a negative influence on PV; the construct of perceived sacrifices, similar to Wiegard and Breitner (2017), appeared to have greater effects on PV than PB.

6 Implications and limitations

6.1 Theoretical and practical implications

The present study identified three determinants, including EE, PE, and PV, that display significant influence on consumers' UI toward MP at the pre-purchase stage. As for the construct of EE, it was found to be influenced by FC and SE. While SE is difficult for companies to influence, companies can work to improve FC. For example, in order to improve FC, companies could promote educational materials demonstrating MP usage accessible both online through video presentations and in convenience stores, supermarkets, department stores, shopping centres, chain restaurants, etc. Adding help features in convenience stores might be especially beneficial; as consumption amounts are low but frequency is high, new users might be less intimidated to try the new technology. Since FC was also found to influence PE, improving FC could have double value. Identifying this relationship is helpful for practitioners and marketers in strategy formulation and implementation.

Of all the constructs, PV was found to have the strongest impact on consumers' adoption of MP. To say it in another way, in assessing PV, consumer's consideration of PB and PR are quite powerful. Companies, therefore, should advertise and stress benefits and address consumers' fears about possible risks. As for benefits, companies could emphasise MP convenience, for example, by linking to the affordance of wearable devices, its efficiency in reducing checkout time, saving paper, etc. As for reducing customers' sense of PR, companies could emphasise their safety precautions in protecting personal information as well as affirm the safety of completed transactions.

Moreover, findings complement previous studies which test the mediating role of EE in the UTAUT model. Results reveal the importance of the mediating effect of EE, illuminating how it can lead to enhance the relationship between FC and PE, as well as

the association between SE and PE. This discovery adds a new dimension to the MP context that has substantial theoretical implications for the UTAUT model as well as practical implications for MP providers.

In order to attract consumers, MP firms, more cognisant towards the mediating effect of EE, could simplify the design of an MP; as a result, potential customers' EE would lower, resulting in greater PE; that is, consumers would feel that the MP is more useful and PE will improve.

6.2 Limitations and further studies

Even though the current study tested and confirmed the proposed model and provided some useful insights into understanding of the UI toward MP, there were still several limitations. First, the research model only empirically assessed the pre-encounter stage; making inferences of the findings should be done cautiously. Future research could examine the service encounter stage and the post-encounter stage, to have a deeper understanding of the continuous UI. Second, as the current development of MP differs by country, Taiwan's market is still facing the slow adoption of MP. Paper money and plastic cards are still an indispensable part of daily life. To generalise our model and the findings, future researchers could consider extending the study to other countries. Finally, future studies could consider examining the mediating effects of EE to test different constructs related to MP; this could be helpful in exploring the different perspectives among various MP contexts.

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Appendix

Table A1 Survey items

<i>Construct</i>	<i>Measure item</i>
Performance expectancy	PE1: I expect MP would be useful in my checkout.
	PE2: I expect using MP would enable me to accomplish checkout more quickly.
	PE3: I expect using MP would increase my productivity.
Effort expectancy	EE1: I expect it would be easy for me to become skilful at using MP.
	EE2: I expect MP would be easy to use.
	EE3: I expect learning to operate MP would be easy for me.
Facilitating conditions	FC1: I have the resources necessary to use MP.
	FC2: I have the knowledge necessary to use MP.
	FC3: If I have trouble, I believe someone would be available to assist me with payment difficulties.
Self-efficacy	SE1: I believe I could follow instructions to use MP.
	SE2: I believe I could use MP if someone showed me how to do it.
	SE3: I believe I could use MP if I had seen someone else using it.
	SE4: I believe I could use MP if I had enough time to complete the job.
Perceived benefits	PB1: I believe using MP would enable me to conduct payment quickly.
	PB2: I believe using MP would make it easier to pay bills.
	PB3: I believe using MP would save my time in performing transactions.
	PB4: I believe using MP would save me transaction handling fees.
Perceived risks	PR1: I don't feel safe providing personal information through MP systems.
	PR2: I worry that other people might be able to access my data via MP systems.
	PR3: I don't feel protected when sending confidential information via MP systems.
	PR4: The likelihood that something wrong will happen with MP systems is high.
Perceived value	PC1: Considering all costs and benefits, I believe paying through mobile system is a good value.
	PC2: Considering time and effort, I believe paying through mobile systems is worthwhile.
	PC3: Considering MP fees, I believe paying through mobile systems is a good deal.
	PC4: I believe there are more advantages than disadvantages in using MP.
Usage intention	IU1: I will use MP services in the future.
	IU2: I believe most of my future checkouts will be conducted via MP.
	IU3: I plan to use MP in the next few months.

國立屏東大學補助研究成果發表申請表

(每篇請填寫一張申請表)

項次

1

姓名	蔡玲瓏	單位	文創系	職稱	教授	聯絡電話	分機：35753 手機：0910840696
成果名稱	Factors that influence virtual tourism holistic image: The moderating role of sense of presence			出版社	MDPI		
發表處 (期刊名稱、卷數、頁數)	Sustainability, 14(1), 467			發表日期	Jan. 2, 2022	作者總人數/ 申請人順位	共 1 人 第 1 順位 或 <input type="checkbox"/> 通訊作者
該子領域 排名百分比	48/127	申請項目	C		金額	30000 元	
若有符合此獎勵要件， 每項再給予該篇所獲獎勵金 5%之額外獎勵金 (請勾選，並填寫下列表單)		<input type="checkbox"/> 研究成果將聯合國 17 項永續發展目標(SDGs)之指標關鍵字納入標題、摘要或關鍵字至少一項，再給予該篇所獲獎勵金 5%之額外獎勵金。 <input type="checkbox"/> 研究成果與國外學者共同合著(不含大陸、港、澳地區)，再給予該篇所獲獎勵金 5%之額外獎勵金。					
若有符合下列獎勵要件，每項再給予該篇所獲獎勵金 5%之額外獎勵金(請檢附佐證資料)							
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		請敘明符合之內容					
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CATEGORY

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JCR YEAR	JIF RANK	JIF QUARTILE	JIF PERCENTILE	
2022	114/274	Q2	58.6	<div></div>
2021	133/279	Q2	52.51	<div></div>
2020	124/274	Q2	54.93	<div></div>
2019	120/265	Q2	54.91	<div></div>
2018	105/251	Q2	58.37	<div></div>

JCR YEAR	JIF RANK	JIF QUARTILE	JIF PERCENTILE	
2022	48/127	Q2	62.6	<div></div>
2021	57/128	Q2	55.86	<div></div>
2020	59/125	Q2	53.20	<div></div>
2019	53/123	Q2	57.32	<div></div>
2018	44/116	Q2	62.50	<div></div>

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勾選	項 目	獎勵補助 (最高)	申請應檢附之佐證文件
<input type="checkbox"/>	A 依據 JCR (Journal Citation Reports) 資料庫相關領域之 SCI、SCIE、SSCI，且在該領域之影響指數 (Impact Factor) 排名屬前 10% 或 AHCI 之期刊論文。	六萬元	1、收錄至該學術期刊之證明 (應含申請之論文名稱、作者姓名及期刊出版年、月、卷期數及頁碼)，若無頁碼者，請提供網路連結。 2、SCI、SCIE、SSCI 之期刊收錄至 JCR (Journal Citation Reports) 最新資料庫並排名屬前 10% 之證明。 3、論文全文。
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蔡玲敏

Article

Factors That Influence Virtual Tourism Holistic Image: The Moderating Role of Sense of Presence

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Abstract: The COVID-19 pandemic has dramatically restricted domestic and foreign travel; thus, virtual tourism has become a new option for traveling. As regards virtual tourism, the present study seeks to investigate the effect of tourist involvement on the three components of holistic image, namely cognitive, affective, and conative images; the influence of cognitive, affective, and conative images on the construction of the holistic image; and the moderating effect of sense of presence on the relationships between cognitive, affective, and conative images on the holistic image. Prospective tourists were chosen as research subjects in the present study on non-immersive virtual reality (VR) tourism, or virtual tourism. Participants first watched the 360° VR tour video of *AirPano*. Afterward, they filled out an online questionnaire, of which 386 valid samples were collected for analyses. Results show that tourist involvement considerably affects cognitive, affective, and conative images, which significantly influence the holistic image. Furthermore, a sense of presence was found to positively moderate the relationships between (1) cognitive and holistic, (2) affective and holistic, and (3) conative and holistic images. These results may allow tourism marketing organizations to better understand how to strengthen the holistic image in the context of virtual tourism.

Keywords: tourist involvement; cognitive image; affective image; conative image; holistic image; sense of presence



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1. Introduction

Since the COVID-19 outbreak, people have changed the way they travel: they have cut back their use of public transportation and reduced their travel plans to minimize potential risks due to their perception and anxiety regarding the spread of the disease [1]. Since the beginning of the pandemic, a sudden decline in tourism has been observed, which naturally led to a sharp drop in tourism revenues [2]. The impact has been especially dramatic for international tourism because of the difficulties in dealing with the governmental restrictions of foreign countries and the complexities of different languages and cultures. The spillover effects of the slump in tourism have spread across other related hospitality industries, including airlines, restaurants, gift shops, and others [3]. The behavior change is mainly due to risk perception. The COVID-19 pandemic has significantly increased the perception of the risks of traveling, joining tours, traveling to unfamiliar places, and other general hospitality hazards.

Pappas [4] noted that the tourism industry has gradually rebounded, even during what has been called “post-pandemic”. Indeed, as the tourism industry adjusts to a general improvement in the pandemic, which is largely due to the development of vaccines and other mitigation strategies, such as masks and ventilation, reducing the negative feelings and risk perceptions of tourists is necessary to revitalize tourism. In many countries, destination marketing organizations have implemented measures to reassure travelers by booking their trips through online platforms, purchasing tickets using QR codes, and maintaining social distancing in queuing areas [5]. Although these measures are helpful, exploring additional innovative and comprehensive ways to meet the safety needs of tourists is still necessary [6].

The Internet has increasingly been used during the pandemic as a source of information gathering and as a tool for consumers to communicate with their friends or other tourists. Online channels have become a source of information for tourism planning activities with the development of digital technology. The tourism industry has also undergone a digital transformation such that tourists can experience tourist destinations through virtual reality (VR). Such links to destinations or agents are expected to continue in the post-pandemic era, and travelers are increasingly embracing online consumption patterns [7]. Tour guides could demonstrate remote visitors with local cuisine and culture through online travel conventions, in which visitors can use video communication to strengthen the field experience for tourist destinations despite the restriction of people's movement during the pandemic [8].

Virtual tourism involves no physical contact; consequently, issues with social distancing are absent, which is amenable to life during the pandemic [9]. Virtual tourism also provides an informative perspective, allowing prospective tourists to gain detailed knowledge of the destination and an overview of the destination through guided videos [10]. Thus, virtual tourism has considerable potential to benefit the tourism industry before and after the pandemic. Consumers can be encouraged to travel to tourist destinations worldwide through browsing on the Internet [11]. On-site and virtual tourism are expected to exist simultaneously in the future even after the outbreak ends. In a crisis, virtual tourism can meet the security needs and relieve the pressure of tourism demands. Besides, virtual tourism can also stimulate the imagination of users of on-site destinations and enhance the brand value of destinations [12]. Prospective tourists are visitors interested in tourist destinations or activities [13] and usually have a positive preference for destinations and a high willingness to pay for destinations [14]. Therefore, understanding the disposition and motivation of prospective tourists is important in understanding virtual tourism.

Tourist involvement refers to the degree to which tourists are interested in the activity and the emotions that are elicited by the activity under the context of tourism [15]. Involvement is also a reflection of the emotional state of an activity or experience. The degree of tourist involvement has a significant impact on the destination image [16]. Moreover, involvement is regarded as an antecedent to the image of a tourist destination because a personal special on-site experience will elicit positive emotions, such as joy and pleasure [17]. Travelers with high situational and psychological involvement are generally willing to spend additional time collecting information before departure. In addition to recommending attractions to others, they also have high degrees of intention to revisit the destination. The degree of involvement directly affects the revision of the tourist destination image [18]. The involvement of additional individuals in the destination experience helps provide additional characteristics of the destination. Therefore, the degree of involvement is highly associated with the destination image [19]. Relevant studies also support a positive association between involvement and destination image. One study of wine tourism indicated that the high involvement of an individual in wine products facilitated increased information-seeking regarding wine, and prior knowledge and experience of wine formed cognitive images. High product involvement can also trigger positive emotions, leading to high affective and destination images [20]. Personal involvement in aboriginal festivals positively affects the cognitive, affective, and conative images of participants. The cognitive image is influenced by the information and knowledge of the destination [21]. Photos and emotional messages are conducive to the formation of affective images: obvious individual involvement leads to the formation of a strong affective image [21]. A survey of consumers' choices of travel websites shows that the high involvement of consumers in destination websites will have a positive impact on the cognitive and affective images of the destination, ultimately affecting the holistic image [22].

Early research on the formation of the destination image is based on exploring the mental evolution and tourist experience before, during, or after a tour. Crompton [23] defined destination image as tourists' attitudinal concept towards the destination, which is the sum of their beliefs, ideas, and impressions. Gunn [24] believed that tourists would revise or

change their views on the destination image with their mental accumulation, information acquisition, and travel experience. Later on, Baloglu and McCleary [25] advocated that the destination image is composed of the cognitive and affective image, and pointed out that affective image is influenced by the cognitive image. Prayag [26] stated that although no consensus on the definition of the destination image is available, most researchers generally believe that the destination image comprises the following three image components: cognitive, affective, and conative images. The cognitive image is an impression assessment of the characteristics of the destination, the affective image represents the emotional response of an individual to the destination, and the conative image is the action of an individual based on the knowledge of two preceding components [27]. Pike and Ryan [28] analyzed the market positioning of tourism by comparing cognitive, affective, and conative images. They explored cognitive images from the perspective of an importance–performance analysis and expressed the affective images of tourists considering emotional response, while the likelihood of visiting a destination was the conative image. Other scholars posited that the three destination image components have an interactive relationship. For example, Myers [29] argued that the three destination image components have a sequential influence relationship. Alternatives will be developed after consumers realize their needs, which is the cognitive stage. The affective stage is involved in evaluating the alternatives, while the conative stage emerges when choosing a product. In the study of green hotel issues, Lee et al. [30] also considered that the holistic image, which comprises cognitive, affective, and conative images, was sequentially related.

Agapito et al. [31] explored the interactive influence of the three destination image components and obtained results similar to the previous studies. In addition to the influence of cognitive and affective images on the conative image, the affective image was found to serve a mediating role; that is, the cognitive image influenced the conative image through the affective image. However, other researchers believe in the existence of a parallel relationship, which separately and directly affects the formation of the holistic impression. Although Gartner [32] initially proposed that cognitive, affective, and conative images were hierarchically related, later scholars believed that the three destination image components can be conceptualized as three diverse components that simultaneously affect holistic image [33,34]. In their study of tourists' risk perception, Loureiro and Jesus [35] also agreed with the aforementioned view regarding the three destination image components as variables affecting the holistic image.

Uhm et al. [36] believed that VR environments can enhance the sense of presence of an individual and enable users to have a strong sense of cognitive and affective images. The research of Yung et al. [37] on virtual cruise tourism showed that VR triggers markedly pronounced emotional responses. Spatial presence can provide the participants with a sense of feeling as if they are in a particular destination, thus encouraging strong intentions to travel. Alyahya and McLean [38] divided presence into the perception of arriving and leaving the physical environment and proposed that the sense of presence is a vital factor affecting the behavior and attitude of tourists. Virtual tourism can enhance the sense of immersion of a user, improve the cognitive process of information, and activate mental imagination, thus increasing the perception of presence. Zhang et al. [39] considered that live streaming of tourist locations allows viewers to form an impression of the destination based on the obtained information, while a sense of presence can increase the trust of the destination and provide a comprehensive understanding of the destination. In addition, Yang et al. [40] posited that the VR experience can enhance the sense of presence tourists feel toward these destinations. VR technology-based tourism establishes a sense of presence and creates first impressions of the destination, which then has a strong impact on the satisfaction of virtual tourism. Moreover, such a type of tourism enables tourists to focus on the feeling of being in a certain place, creating a relatively real tourism experience to achieve psychological well-being [40]. Cao et al. [41] studied narrative tourism videos and found that this kind of presentation is similar to transporting tourists to the destination, which can reduce their risk perception. Tourists can have a sense of presence as if they are

in the destination and can immerse themselves in the context of the attraction through the viewing of short videos. Bogicevic et al. [42] stated that presence can increase interactivity, and interactive virtual environments, such as 360° web-based tours, can help travelers replace information searching. The travel experience will be rich, and the travelers will be encouraged to travel when the experience is real. Tussyadiah et al. [43] put participants in a virtual environment where they were walking through a destination and found that the sense of presence positively changed attitudes toward the destination. The ability of individuals to place themselves in the destination also constructs a sense of spatial presence in the virtual setting. Thus, a strong sense of presence increases the interest and favorability of the tourist destination. Consequently, the traveler's intention to visit the attraction will also increase.

Previous studies (e.g., Kuhzady [44]) have shown that tourist involvement has an impact on the holistic image of tourist sites; however, these studies did not involve virtual tourism. Furthermore, past research results reveal that virtual tourism plays an indispensable role in alleviating public demand for tourism under the impact of COVID-19 despite the increased preference of tourists for on-site tourism [39]. Zhang et al. [39] showed that the sense of presence was formed by live streaming assisted viewers in the formation of destination images. However, the moderating effect of presence on the holistic image has not been tested, and investigations have not been conducted in the context of virtual tourism. Thus, this academic gap must be investigated. Therefore, the present study first constructs the influence of tourist involvement on the antecedents of the holistic image, including cognitive, affective, and conative images, based on the characteristics of virtual tourism. This study then investigates the influence of the three destination image components on the formation of the holistic image. In addition, this study seeks to understand effectively the moderating effect of presence on various images of the holistic image in the context of virtual tourism. The validation of the research model is helpful to understand the formation process of virtual tourism images and evaluate the explanatory power of each model component. The results of this study can provide information for tourism operators on handling virtual tourism, finding suitable target markets, understanding the perception of prospective tourists on the holistic image of tourism destinations, and contributing to the development of effective marketing strategies that encourage all types of tourism.

2. Background and Hypotheses

2.1. Virtual Tourism

Virtual tourism is an environment created by computers, allowing users to interact with different stimuli and experience scenery and sound effects through virtual media to achieve the sensation of being in a particular place in reality [45]. Virtual tourism may not be a substitute for live activities but can inspire users to participate in upcoming events [46]. The application of VR in the tourism industry can provide tourists with destination information, enhance the global interactions among consumers, and promote the enjoyment of consumption [47]. Virtual tourism is also a convenient tool that allows users to have an in-depth evaluation without having to arrive at the destination and form their image through this experience, thus influencing the decision of destination selection [11]. The adoption of virtual tourism can improve the "virtual accessibility" for users, providing an option of access for the general public to evaluate when destinations are remote, expensive, or dangerous [48]. Virtual tourism can provide tourists with a complete image of the hotel or destination; thus, people who want to travel can be familiarized with unfamiliar destinations through virtual tourism and reduce the perceived risk or anxiety of tourists [49]. Virtual tourism can even present tourists the opportunity to experience scenic spots and sites that no longer exist [50]. In addition, virtual tourism provides a remarkable contribution to maintaining the sustainability of the environment because it is environmentally friendly [51].

The viewpoints of researchers are similar despite the absence of a consensus on the definition of virtual tourism. Koutsoudis et al. [52] advocated virtual tourism, in which

visitors watch through a computer's Internet connection, use a terminal and a mouse, and interact with the simulated settings. Spielmann and Mantonakis [53] suggested that virtual tourism is a simulated context constructed from a series of images or videos, supplemented by written narration, acoustic guidance, or sound effects, in an attempt to represent the genuine site experience authentically. Kim and Hall [54] revealed that virtual tourism is designed to experience or travel by using VR devices to watch 360° and drone videos to gain the destination information and have fun in tourism-related activities. Virtual tourism can establish a connection with prospective tourists through the 3D virtual world, providing prospective customers with an affluent experience by searching destinations [55]. Beck et al. [56] conducted a detailed classification and definition based on the immersion degree of a user. They considered that VR in the context of tourism aims to create a virtual environment in a 360° or synthetic way, obtain a virtual tourism experience by stimulating the visual senses, and divide the virtual tourism into three (non-, semi-, or fully) immersive virtual tourism classifications. The difference lies in the devices the user utilizes to access the virtual environment. Non-immersive virtual tourism uses computers to watch 360° videos, while semi-immersive virtual tourism projects 360° videos onto a large screen or wall. Fully immersive virtual tourism creates an environment isolated from the real world through head-mounted devices and views from 360° videos in this context. Beck et al. [56] defined that non-immersive virtual tourism uses combined synthetic or 360° realistic content to stimulate the vision and senses of users through the presentation of conventional computer screens to complete their virtual touristic experiences. Zhang et al. [12] believed that virtual tourism contains broad and narrow concepts. In a narrow sense, virtual tourism allows tourists to experience a three-dimensional virtual environment through VR visual technology. In a broad sense, virtual tourism allows tourists to acquire knowledge and information through any access in a non-immersive way. El-said and Aziz [10] considered that virtual tourism is a simulation of existing sites composed of a series of video images. Therefore, virtual tourism referred to in the current study follows the broad definition, conducting a survey of prospective tourists in a non-immersive way of watching 360° videos.

2.2. Tourist Involvement and Destination Image

Molinillo et al. [57] selected three social media sites with high global Internet penetration, including Facebook, YouTube, and Instagram, sharing profiles, photos, and videos on these platforms. The experiment confirmed that the degree of involvement in the Facebook and Instagram groups positively influenced the cognitive and affective images of the destination. Researching tourists and residents in six different locations of China, Wu and Liang [20] revealed that the involvement of wine products had a significant impact on the cognitive and affective images of the tourist destination. Through observations on the mental processing of video tourism, Fu et al. [58] interviewed white-collar workers on the street regarding TV travel programs of reality shows. They concluded that different extents of audience involvement affected their cognitive and affective images of destinations, influencing their behavioral intentions. Moreover, Scarpi et al. [59] noted that the level of event involvement notably affected the intention of non-adjacent tourists to revisit the destination. Thus, speculating that tourist involvement will affect the cognitive, affective, and conative images of the tourist destination is reasonable based on the above study findings. Therefore, the following hypotheses are formally proposed.

Hypothesis 1 (H1). *Tourist involvement positively influences tourists' cognitive image of virtual tourism destinations.*

Hypothesis 2 (H2). *Tourist involvement positively influences tourists' affective image of virtual tourism destinations.*

Hypothesis 3 (H3). *Tourist involvement positively influences tourists' conative image of virtual tourism destinations.*

2.3. Formation of Holistic Image

Sultan et al. [60] indicated that prospective tourists prefer to browse comments and opinions on social media when searching travel information, which can be classified into two categories. Tour-operator-generated content aims to enhance consumers' trust in travel information, while user-generated content attempts to reduce the uncertainty and risk of travel. The two kinds of information content form the holistic image of tourist destinations through the influence of cognitive and affective images. By investigating Eilat visitors and residents, Styliadis et al. [61] found that cognitive and affective images were important antecedents in both groups to shape the holistic image and further influenced subsequent recommendation intentions. The affective image has a stronger effect than the cognitive image in the process of forming the holistic image of tourists. Wang and Hsu [62] surveyed tourists in famous world heritage sites in China, and their results illustrated that cognitive and affective images were two main factors that constituted the holistic image of tourists. Lin et al. [63] inquired residents regarding their viewpoints on natural scenery, developed scenery, and theme parks. The established research model validated that the cognitive and affective images affect the formation of the holistic image. The holistic image of residents among three types of spots will directly cause the difference in the degree of destination preference. Stylos et al. [33] studied revisit intentions and found that the cognitive, affective, and conative images may have different levels of impact on the holistic image of the British and Russian tourists. Their results established that the three destination image components have a direct association with the holistic image, and the holistic image also has a positive and direct influence on the intention of tourists to revisit. Afshardoost and Eshaghi [64] summarized two major views from 87 studies on destination image through a meta-analysis. Some researchers explored the mutual influence between cognitive, affective, and conative images. Conversely, other scholars [33,34] believed that the holistic image is influenced by affective, cognitive, and conative images. The following hypotheses are developed on the basis of the aforementioned reasoning.

Hypothesis 4 (H4). *Tourists' cognitive image positively influences their holistic image of virtual tourism destinations.*

Hypothesis 5 (H5). *Tourists' affective image positively influences their holistic image of virtual tourism destinations.*

Hypothesis 6 (H6). *Tourists' conative image positively influences their holistic image of virtual tourism destinations.*

2.4. Sense of Presence and its Moderating Role

Presence is related to the sensation level of users of "being there" in a virtual setting [65]. A sense of isolation from the real world, usually in the form of human-computer interaction, is felt when the viewer is immersed in a virtual environment. The degree of presence in a VR travel experience depends on the feeling of being in a virtual environment shift from the real world. A consensus on the categories and definitions of presence, which include a sense of presence, spatial presence, telepresence, and social presence, is currently unavailable. Yang et al. [40] proposed that presence should include two types, namely sense of presence and telepresence. The sense of presence is the immersion and experience felt in a virtual environment, while telepresence is the subjective awareness presented in an artificial or remote environment rather than a real one. The sense of presence is measured when users undergo mediated experiences in real and virtual places. If the perception of respondents in a virtual environment is tested, then the telepresence is assessed. Presence and telepresence will influence the affective-motivational state. For example, enjoyment

and involvement are elements of the affective-motivational state. Fraustino et al. [66] considered that spatial presence should include telepresence and spatial presence. The 360° VR video experience can enhance the sense of spatial presence. The sense of spatial presence can be improved through 360°-rich media presentation and immersion, and cognitive and affective responses can be advanced. Zhang et al. [39] believed that social presence comprises the production presence, interaction, and destination image presence, which can further generate trust toward destinations and then influence the visit intention of tourists. The destination image in the context of watching live streaming can be formed from the obtained information.

Previous studies have found that the influence of the sense of presence in the virtual environment can be demonstrated. Wei et al. [67] advocated that users can perceive a high sense of presence in a virtual environment. The perception of presence is likely to elicit emotions, such as happiness and enjoyment, through VR immersion. Alyahya and McLean [38] claimed that VR can advance the sense of presence, and the sense of existence is a psychological state of feeling completely immersed in the virtual world and a feeling of “being there” in the computer-mediated environment. The cognitive processing of mental images can stimulate a high level of presence in the context of a high sensory VR experience. Moreover, the perception of presence will affect the attitude of tourism consumers toward destinations and their intention to visit. Uhm et al. [36] also speculated that emotional stimulation can be enhanced in the VR environment. The sense of presence has a significant impact on the affective results: a strong sense of presence by the user elicits remarkably intense emotions. Yung et al. [68] found that VR enabled prospective travelers to have strong cognitive and affective components of destination images. The sense of presence can also promote the understanding, entertainment, and perception of the destination for prospective travelers. A VR experience provides richer information than traditional media, while the richness of the VR environment contributes to a high sense of presence and affects the cognitive impression of prospective visitors.

In addition, the sense of presence is related to the tourism image of tourists and the holistic image of the destination. Banos et al. [69] believed that presence is a factor of cognition, while immersion is the degree of physical awareness of external information. Experiments of two virtual environments confirmed that affective content and immersion have a significant impact on the sense of presence. Tussyadiah et al. [43] considered that the sense of presence can be classified into two categories of the VR experience: during VR experience and post-VR experience. The sense of presence will affect the enjoyment of VR tourism in the process of experience. In addition, the sense of presence will induce changes in the viewer’s attitude toward the destination and affect their intention of an actual visit in the stage of the post-VR experience. Wu and Lai [70] invited participants to watch the renowned mountain scenery with a 360° panoramic sight. Their results showed that viewers could effectively understand the tourist destination and further develop a positive cognitive image when they had a strong sense of presence. Moreover, the viewer’s sense of presence of scenic spots helps build an affective connection with the destination and form positive affective images. Furthermore, a strong sense of presence that viewers experience contributes to the formation of a fantastic holistic image of the destination. Cao et al. [41] found that the narrative transportation introduced by short tourism videos would affect the sense of presence of prospective tourists toward the destination, and the perceived presence would also influence the narrative persuasion of videos and their destination brand attitudes. Hyun et al. [71] surveyed respondents with various virtual information contents provided on the website, and their results illustrated that telepresence had a direct and significant impact on virtual cognitive and conative images. However, no direct impact on the affective image was observed. The current study reasonably speculates that the effect of the three destination image components on the holistic image could be enhanced when the strength of the sense of presence is relatively high based on the above research findings. Hence, the following hypotheses are proposed.

Hypothesis 7 (H7). *Tourists' sense of presence positively moderates the relationship between destination cognitive and holistic images of tourists.*

Hypothesis 8 (H8). *Tourists' sense of presence positively moderates the relationship between destination affective and holistic images of tourists.*

Hypothesis 9 (H9). *Tourists' sense of presence positively moderates the relationship between destination conative and holistic images of tourists.*

3. Research Methodology

3.1. Survey Procedure

This study attempts to explore the formation process of the holistic image of a tourist destination by immersing prospective tourists in a virtual tourism context through connecting 360° scenic videos. The classification of virtual tourism types by Beck et al. [56] indicated that the viewing mode adopted in the current study is non-immersive virtual tourism because the viewers experience the virtual tourism through their computers. The non-immersed virtual tourism stimulates the visual senses of viewers and provides them with a control measure of the virtual tourism experience considering autonomy to control the 360° video content. The subjects of this study are prospective tourists, representing consumers who have never been to tourist destinations. Therefore, considering the popularity of scenic spots and prioritizing scenic areas that most people have never been to is necessary when selecting videos for respondents to watch. Statistics from the Taiwan Tourist Bureau released in September 2021 reported that only 3000 Taiwanese outbound travelers went to Africa in the past three years. Therefore, the 360° video of “Victoria Falls: The Biggest Waterfall of Africa” by *Airpano* (Figure 1) was selected as the video to be watched before filling out the questionnaire. In addition to the 360° panoramic scenery, the video also has narration and captions to help viewers understand the content of the film. The following filter questions were asked before answering the formal questions to find appropriate respondents as the source of the questionnaire analysis: (1) How long did you watch this video?; (2) Which countries have you traveled to in the last five years?; (3) What kind of scenery does this video show? Respondents were excluded if they had (1) traveled to Africa in the past five years; (2) watched this video for less than two minutes; or (3) failed to name a waterfall as the scenic spot. The respondents were invited to answer the formal questions after completing the filtering items. Those who completed the questionnaire were selected to enter the next analysis stage.



Figure 1. Victoria Falls: the biggest waterfall of Africa.

3.2. Study Measures

This study adopts six constructs based on past studies, and the measurement items of the questionnaire are from past confirmatory results. The structure of the constructs comprises tourist involvement, cognitive image, affective image, conative image, holistic image, and sense of presence. A total of 25 items comprised the survey questionnaire, as presented in Figure 2. Five items were adapted from prior research [44,72] to measure tourist involvement. Four items of the cognitive image from Kim et al. [27] and Kim et al. [73] were used. Four questions were derived from Wu and Liang [20] to evaluate the affective images. Four items were taken from Kim et al. [27] and Styliadis [74] to assess the conative images. Four questions were drawn from prior research [44,75] to measure holistic images. The sense of presence was estimated by utilizing four items derived from Yang et al. [40]. All questions were designed by a seven-point Likert scale ranging from (1) strongly disagree to (7) strongly agree. In addition, six questions regarding personal background were included and listed after the structural questions. The survey items were originally generated in English and then translated into Chinese. The meanings were examined by experts proficient in Chinese and English and revised to conform to the principles of clear meaning and logical reasoning. The questionnaire was then reviewed by three tourism-related researchers, and the statements of the questionnaire were slightly adjusted to improve the content validity of the questionnaire. In addition, the pilot study was conducted by 12 graduate students, who provided comments on the questions and removed ambiguous or inarticulate sentences. The modified version was utilized for the formal survey questionnaire (see Appendix A).

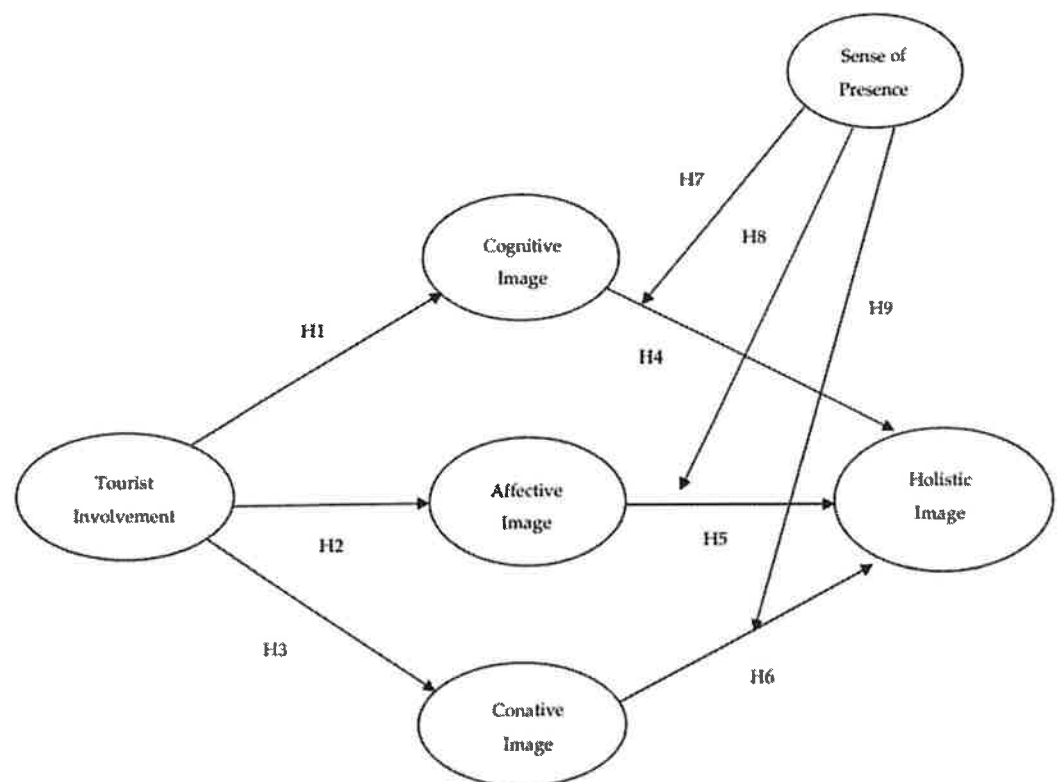


Figure 2. The hypotheses and the research model.

3.3. Data Collection

An online questionnaire was adopted in this study considering the cost and efficiency of the survey implementation and reaching a broad number of tourism consumers. A live survey URL was linked on the travel discussion board and blog, briefly stating the survey for collecting data and offering an invitation for prospective tourists to participate in the survey. Therefore, the respondents could understand that this survey was only to identify

the issues regarding virtual tourism before answering the question, and the questionnaire focused on the Taiwanese above 18 years old. A total of 1245 people responded to the questionnaire in a period of approximately 3.5 months, ranging from July 2021 to October 2021. Respondents must have satisfied the following conditions before the screening questions were provided: (1) watch the video for more than two minutes, (2) no recent travel to Africa in the last five years, and (3) provide the right answer on the scenery theme of waterfalls. A total of 674 people met the requirements of screening in the next phase of the analysis after removing 288 inappropriate answers and incomplete background information. Finally, 386 valid samples were used for the analysis, representing a response rate of 57.3%.

3.4. Data Analysis

The partial least squares structural equation modeling (PLS-SEM) analysis was employed in this study to test the proposed research model and confirm hypotheses for subsequent reasons. First, different from conventional SEM, PLS-SEM has a minimal criteria threshold for sample size, measurement scales, and residual distributions to verify a model with the bootstrap resampling technique as a non-parametric method [76], rather than the covariance-based SEM analyses. Second, the PLS-SEM can simultaneously analyze reflective and formative indicators with second-order factors in the research model [77]. Third, the PLS-SEM is considered to be more suitable for the verification of complex models or a multigroup analysis than conventional SEM [78]. Therefore, SmartPLS 3.2.8 was utilized in this study to analyze the measurement and structural models.

4. Results

4.1. Sample Profile

The survey results indicate that the proportion of male respondents (50.8%) was approximately equal to female respondents (49.2%). Almost three-quarters of the respondents were 26 to 55 years old. More than 80% of respondents had a university degree or above. Approximately 45% had monthly earnings of more than \$2000. Full-time employees accounted for the most earnings (46.6%), followed by part-time employees (16.6%). The highest trip frequency was three to six times (46.1%) per year. Table 1 presents the full profile of the research sample.

4.2. Analysis of the Measurement Model

This study followed the two-step approach of Anderson and Gerbing [79] to verify and test the model. The reliability and validity of the model were examined through the model evaluation of the PLS-SEM [80]. In the measurement model as presented in Table 2, the composite reliability and Cronbach's alpha value of each construct were larger than 0.7 based on the criteria recently recommended by Hair et al. [81]. The item loadings and average variance extracted (AVE) were used for the examination of the evaluation of convergent validity. All the item loadings were larger than 0.70, while the AVE value was larger than 0.50, indicating that the measurement model had high-quality convergent validity. Table 3 reveals that the discriminant validity was tested in accordance with the Fornell–Larcker criterion. The discriminant validity was evaluated by comparing the correlations between structure and AVE value. All structures showed proper discriminant validity because all correlations were lower than the square root of AVE.

Table 1. Respondent profile.

Characteristics	Value	Frequency	Percentage
Gender	Male	196	50.8
	Female	190	49.2
Age	18–25 years	22	5.7
	26–35 years	105	27.2
	36–45 years	81	21.0
	46–55 years	106	27.5
	Above 55	72	18.6
Education	High school or below	53	13.7
	College or university	238	61.7
	Graduate school or above	95	24.6
Monthly Income	Below USD\$ 500	47	12.2
	USD\$ 500–1000	83	21.5
	USD\$ 1000–2000	77	19.9
	USD\$ 2000–3000	93	24.1
	Above USD\$ 3000	86	22.3
Occupation	Student	56	14.5
	Employed full time	180	46.6
	Employed part time	64	16.6
	Unemployed	51	13.2
	Retired	35	9.1
Trip Frequency	Below 2 times per year	103	26.7
	3 to 6 times per year	178	46.1
	7 to 9 times per year	69	17.9
	Above 10 times per year	36	9.3

Table 2. Measurement model assessment.

Construct	Items	Mean	S.D.	Loading	α	AVE	C.R.
Tourist Involvement (Inv)	Inv1	5.48	0.978	0.783	0.830	0.595	0.880
	Inv2	5.63	0.967	0.814			
	Inv3	5.96	0.965	0.735			
	Inv4	6.37	0.852	0.772			
	Inv5	6.18	0.927	0.749			
Cognitive Image (Cog)	Gog1	6.18	0.948	0.899	0.915	0.797	0.940
	Cog2	6.13	0.992	0.912			
	Cog3	6.11	1.015	0.897			
	Cog4	6.24	0.996	0.860			
Affective Image (Aff)	Aff1	5.77	1.076	0.904	0.908	0.784	0.936
	Aff2	5.89	1.036	0.891			
	Aff3	5.64	1.132	0.901			
	Aff4	5.68	1.189	0.846			

Table 2. Cont.

Construct	Items	Mean	S.D.	Loading	α	AVE	C.R.
Conative Image (Con)	Con1	6.19	1.015	0.829	0.886	0.746	0.921
	Con2	6.02	1.044	0.891			
	Con3	5.73	1.296	0.901			
	Con4	5.56	1.034	0.830			
Holistic Image (Hol)	Hol1	5.70	1.240	0.901	0.892	0.756	0.925
	Hol2	5.83	1.099	0.888			
	Hol3	5.86	1.164	0.871			
	Hol4	6.17	1.000	0.813			

Note: α = Cronbach's alpha; AVE = average variance extracted; C.R. = composite reliability; S.D. = standard deviation.

Table 3. Discriminant validity (Fornell–Larcker criterion).

Construct	Aff	Cog	Con	Hol	Inv
Aff	0.886				
Cog	0.690	0.892			
Con	0.668	0.717	0.864		
Hol	0.689	0.703	0.822	0.869	
Inv	0.605	0.704	0.690	0.673	0.771

Note: Bold font = square-root of the AVE. Estimated correlations are under the bold diagonal.

4.3. Analysis of the Structural Model

Six hypotheses were developed on the basis of the research framework for testing. The hypothesis relationships established by the model were evaluated on the basis of the criteria established by Hair et al. [81] considering path coefficients (β), explanatory variances (R^2) of the dependent variables, and significance levels obtained by the bootstrapping resampling method [77]. Table 4 shows that all the p -values were less than 0.05, supporting the hypotheses of the structural model. The results illustrate that tourist involvement was positively correlated with cognitive image ($\beta = 0.704$, $t = 20.945$), affective image ($\beta = 0.605$, $t = 16.279$), and conative image ($\beta = 0.690$, $t = 20.151$), thereby respectively supporting H1, H2, and H3. In addition, the validated data showed that cognitive image ($\beta = 0.150$, $t = 2.902$), affective image ($\beta = 0.196$, $t = 4.192$), and conative image ($\beta = 0.583$, $t = 10.468$), had a significant positive impact on holistic image, thus respectively supporting H4, H5, and H6. Subsequently, the R^2 and Q^2 values of the predictive variables were used to evaluate the predictive power of the model. Results showed that all R^2 values (Cog: 0.496; Aff: 0.366; Con: 0.475; Hol: 0.720) were higher than those recommended by Falk and Miller [82], which means that R^2 should be larger than 0.10. Q^2 was then used to estimate the accuracy of the structural model in predicting the observed values [81]. The results showed that all Stone–Geisser Q^2 values (Cog: 0.389; Aff: 0.282; Con: 0.351; Hol: 0.536) were positive, indicating that the model had sufficient predictive relevance. Finally, the results of H1, H2, H3, and H6 demonstrated strong effects considering the index of f^2 (0.02, small; 0.15, medium; 0.35, strong) according to Cohen [83], and only H4 and H5 demonstrated medium to small effects.

Table 4. Structural model results.

Hypothesis	Paths	β	t-Value	f ²	Remarks
H1	Inv \rightarrow Cog	0.704	20.945 ***	0.983	Supported
H2	Inv \rightarrow Aff	0.605	16.279 ***	0.578	Supported
H3	Inv \rightarrow Con	0.690	20.151 ***	0.907	Supported
H4	Cog \rightarrow Hol	0.150	2.902 **	0.033	Supported
H5	Aff \rightarrow Hol	0.196	4.192 ***	0.063	Supported
H6	Con \rightarrow Hol	0.583	10.468 ***	0.520	Supported

Note: *** $p < 0.01$, ** $p < 0.05$, Cog: $R^2 = 0.496$, $Q^2 = 0.389$; Aff: $R^2 = 0.366$, $Q^2 = 0.282$; Con: $R^2 = 0.475$, $Q^2 = 0.351$; Hol: $R^2 = 0.720$, $Q^2 = 0.536$.

4.4. Moderating Effect

The PLS method suggested by Fassott et al. [84] was employed to verify the moderating effect of the sense of presence in the research model, and hypotheses 7 to 9 were tested as presented in Table 5. First, considering the effect of the cognitive image on the holistic image, a significant effect in the high sense of presence group (0.069, t-value = 2.068, $p < 0.5$) was observed, thus supporting hypothesis 7. Second, in the case of the affective image influencing the holistic image, the affective image had a significant effect in the high sense of presence group (0.069, t-value = 2.068, $p < 0.5$); hence, hypothesis 8 was supported. Last, in the case of the conative image affecting the holistic image, a significant effect was observed in the high sense of presence group (0.100, t-value = 2.389, $p < 0.5$). Consequently, H9 was also confirmed.

Table 5. Moderating effects.

Hypothesis	Paths	β	t-Value	p-Value	Moderation
H7	Pre x Cog \rightarrow Hol	0.069	2.068 *	0.039	Yes
H8	Pre x Aff \rightarrow Hol	0.077	1.990 *	0.047	Yes
H9	Pre x Con \rightarrow Hol	0.100	2.389 *	0.017	Yes

Note: * $p < 0.1$.

5. Discussions

First, the research model is established on the separate influences of cognitive, affective, and conative images on the holistic image [33,34]. One critical antecedent, which is tourist involvement, affects the formulation of the three destination image components. The empirical results illustrate that tourist involvement has robust positive effects on cognitive image ($\beta = 0.704$, $p < 0.001$), affective image ($\beta = 0.605$, $p < 0.001$), and conative image ($\beta = 0.690$, $p < 0.001$). This finding denotes the following: if tourists are interested in or motivated toward a destination, then positive tourism images regarding the vacation place will be formed. Second, cognitive image ($\beta = 0.150$, $p < 0.01$), affective image ($\beta = 0.196$, $p < 0.001$), and conative image ($\beta = 0.583$, $p < 0.001$) have a high impact on the formation of the holistic image. This finding indicates that the three destination image components have positive contributions to the holistic image, especially the conative image, which has the boldest influence on the shape of the holistic image of tourists. In addition, the degree of explanation of the three destination image components indicates that cognitive, affective, and conative images present a solid predictive power ($R^2 = 0.720$) for the holistic images. Third, the findings of the research also identify the moderating role of a sense of presence. Thus, the sense of presence has a positive effect on the relationship between cognition and holistic image, affective and holistic image, as well as conative and holistic image. Furthermore, comparing the two other images (cognitive and affective), the sense of presence has a relatively strong effect ($\beta = 0.100$, $p < 0.05$) on the conative and holistic images. If the sense of presence of prospective tourists is strong when they watch VR videos through

computers, then they may effectively experience the cognitive, affective, and conative images of the tourist destination, improving the holistic image of the tourist destination.

6. Conclusions and Implications

6.1. Conclusions

This study investigates, in the context of COVID-19, the factors related to the formation of prospective tourists' holistic image of virtual tourism destinations. The proposed model is constructed to explore the influence of tourist involvement on the antecedents of holistic image and the influencing factors that shape the holistic image. In addition, this study also explores the moderating effect of sense of presence on the configuration of holistic image. Research findings confirm that holistic image formation is determined by three destination image components: cognitive, affective, and conative. Results also demonstrate that the degree of prospective tourists' involvement can effectively predict these three image components of the holistic tourist destination image. Furthermore, the moderating effect of sense of presence implies that the holistic image of prospective tourists' virtual tourism can be strengthened through the enhancement of a sense of presence.

6.2. Theoretical Implications

Extended from the holistic image formation model [33,34], the researcher explored the impact of tourist involvement as the antecedent on cognitive, affective, and conative images in the context of virtual tourism. Preceding studies related to social media [57] and wine products [20] have investigated the influence of involvement on the tourist destination image but only verified the impact of involvement on cognitive and affective images. Festival research examined the correlation between personal involvement and the three destination image components and found that involvement has an influence on cognitive and affective images but has no significant impact on the conative image [21]. The current study confirmed the positive relationship between tourist involvement in cognitive, affective, and conative images, which had not been identified in previous studies.

The conative image indicates that tourists are actively considering the possibility of taking the present destination as a potential target destination [32]. This possibility implies the expected and ideal future tourism condition of tourists, which can influence their behavior intention. Some studies, particularly on the assessment of the effects of cognitive–affective–conative, have been conducted; most researchers believe that cognitive and affective images jointly affect the formation of the conative image of tourists [27,31,85]. However, past studies found that such a result is rare based on the verified model, wherein the conative image has the strongest influence on the holistic image of tourists [34]. This paper highlights that the conative image should be distinct and imperative and can independently affect the holistic image evaluation of tourist destinations by tourists.

The concept of the holistic image involves the element of tourists' attitude toward the destination reflected on the behavioral intention, which is amenable for evaluation and measurement in the context of tourism [86]. The high mean score of holistic image denotes that prospective tourists are willing to utilize virtual tourism to obtain the outline and concept of the destination. Past research has shown that prospective visitors are most influenced by the holistic image of the destination, which will also influence their intention to spread word-of-mouth [87]. The findings reveal the substantial strength of the research model in interpreting holistic images. That is, cognitive, affective, and conative images obtained through virtual tourism in a non-immersive VR environment can effectively predict the holistic image of prospective tourists on places that present travel opportunities.

Previous investigations on virtual tourism mostly focused on tour experience [40], destination attitude, and travel intention [38,66,67] and only slightly discussed the relationship between presence and destination image. A few studies, such as that of Hyun and O'Keefe [71], found the correlation between telepresence and cognitive and conative images. Wu and Lai [70] recently confirmed that presence can positively affect cognitive, affective, and holistic images, but exploration of the indirect relationship is lacking. This

study confirmed that a sense of presence can positively moderate the relationship between the three destination image components (cognitive, affective, and conative images) and the holistic image. The author believes that this study is the first to apply the sense of presence as a moderator to evaluate its impact on shaping the holistic image, providing a new and insightful initiative on virtual tourism.

6.3. Practical Implications

At the moment, when COVID-19 is still affecting travel activities worldwide, virtual tourism can cater to risk-conscious travelers to have a feeling of tourism without fear [88]. From the perspective of sustainable development, the travel restrictions and lockdowns have shifted the world from over-tourism to under-tourism. However, this phenomenon is not entirely negative because the reduction in global mobility has a positive impact on climate action and carbon diminution [9], moving the world toward sustainable tourism. Tourist involvement can affect the formation of destination images and influence the intention to travel. Virtual tourism can attract people with environmental awareness or those who want to reduce travel risks, encouraging them to replace on-site tourism with virtual tourism. Such a replacement could lessen carbon emissions effectively by reducing mobility and maintaining the ecological condition of the earth, moving toward the ultimate goal of sustainable development.

Tourism managers and destination marketers are devoting all their efforts to promoting tourism attractions to the masses of the world. Enhancing involvement is a good way to advance the destination image. Therefore, destination marketing organizations may consider increasing tourist involvement through appropriate links. Considering improvements in cognitive images, virtual tourism videos in tourist destinations can connect with social media platforms, and the previous experienced visitors could answer relevant questions about the destination, thus allowing prospective tourists to obtain additional information. Considering promoting an affective image, tour operators can exploit interesting travel posts and feature films of tourists in the places they visit to enhance the entertainment of the film to evoke positive feelings from the viewers. Considering conative image enhancement, prospective tourists can have the opportunity to experience local life or cooking displays, such as cuisine teaching and fruit winemaking, allowing tourists to experience local culture and effectively improve their conative image of the destination. Such an opportunity will generate a beneficial holistic image among prospective visitors and gradually build the impression toward the destination worth visiting.

The results of the study confirmed that a sense of presence can be employed to strengthen the relationship between destination image (cognitive, affective, and conative images) and holistic image. Thus, promoting the sense of presence can effectively improve the holistic image of the tourist destination. The sense of presence is a feeling as if one is in the scene of the destination. Therefore, ambient forms of functions can be added to virtual tourism video content to make tourists feel as they were situated in the destination. Tourism promotion agencies can also develop or add virtual tourism functions based on the context when tourists have on-site visits to increase the accessibility; for example, in a virtual tourism context with real-time commentary from local tour guides and immediate access to tour guides. Visitors can take photos of beautiful scenery during the virtual tourism and click to enter local shops to purchase products. Contacting and interacting with residents to exchange life experiences and share cultural activities may also facilitate an enhanced sense of presence just as on the on-site tour.

The pandemic continues, and the world remains in crisis. Virtual tourism provides a timely and temporary solution for prospective tourists. However, the majority of people may still adopt and want to use virtual tourism even after the pandemic. Consequently, on-site tourism is expected to coexist with virtual tourism simultaneously [11,89]. Therefore, formulating marketing strategies for virtual tourism targeting tourism consumers with different functional needs is necessary [89]. The author suggests that destination marketing organizations should properly design the itinerary of virtual tourism for tourists

who take virtual tourism as a substitute for on-site tourism and increase the interaction between tourists and the destination to enhance and generate similar awareness of visitors as on-site tourism. Meanwhile, for tourists who regard virtual tourism as an information search, detailed local information can be provided to satisfy their effort to acquire tourism knowledge.

7. Limitations and Future Research

Similar to any study, some research limitations must be stated. First, the investigation of this study was under an unstable environment during the outbreak of the pandemic. From the sample profile, it can be seen that the majority of respondents (85%) were above college or university education level. This might indicate that those with higher education might be more interested in virtual tourism. It is recommended that future research be extended to discuss this issue. In addition, respondents were from a limited geographical area; thus, it may be problematic to generalize the research model to other countries or regions. Therefore, it is suggested that the proposed model be extended to other regions with different cultural characteristics to verify the generalization extent of the model. Second, computers and mobile phones are the common accesses accepted by most people; thus, such access almost has no time and place limit. Surfing on the Internet has become the major means of searching for travel information during the pandemic [7]. Therefore, this study adopted non-immersive virtual tourism for the investigation to reach the widest range of prospective tourists. The feelings of virtual tourism may vary depending on the device that respondents utilized due to the survey means of the self-reported questionnaire. Future studies are suggested to examine different virtual tourism environments, such as semi-immersive or fully immersive methods, to implement 360° VR video, and compare whether respondents will have different levels of perception on the destination images due to VR devices. Third, the current study only targeted prospective tourists and excluded past tourists who had tourism experience in the destination. Future research can also consider extending the research subject to past tourists and compare differences between the two groups. Fourth, the single factor involvement was employed as the antecedent of the tourist destination image when establishing the model. Future research can supplement other variables, such as familiarity and experience of tourist destinations, which will affect the formation of the tourist destination image. Last, although the research model successfully verified the moderating role of sense of presence, future research can consider using other specific virtual tourism components, such as immersion, interactivity, and imagination, to validate whether these factors can enhance the formation of a holistic image.

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Conflicts of Interest: The author declares no conflict of interest.

Appendix A

Survey Constructs and Items

1. Tourist Involvement (adapted from Altunel & Erkurt, 2015; Kuhzady et al., 2020)
 - (1) I identify with people that join virtual tourism.
 - (2) Travel is very significant for me.
 - (3) Travel matters a lot to me.
 - (4) I find a lot of my life is organized around holiday trips.
 - (5) I like to discuss holiday trips with my friends.

2. Cognitive Image (adapted from Kim et al., 2020; Kim et al., 2017)
 - (1) I gained knowledge from joining this virtual tourism.
 - (2) Joining this virtual tourism was useful to collect information.
 - (3) Joining this virtual tourism provided me with interesting culture events and heritages.
 - (4) Joining this virtual tourism was beneficial and a good value.
3. Affective Image (adapted from Wu & Liang, 2020)
 - (1) I think this virtual tourism was exciting.
 - (2) I think this virtual tourism was an arousing activity.
 - (3) I think this virtual tourism was pleasant.
 - (4) I think this virtual tourism was relaxing.
4. Conative Image (adapted from Kim et al., 2017; Styliadis, 2020)
 - (1) After joining the virtual tourism, I intend to someday visit the target destination.
 - (2) After joining the virtual tourism, I have a willingness to speak positively about the target destination.
 - (3) After joining the virtual tourism, I would recommend the target destination.
 - (4) After joining the virtual tourism, I would encourage my friends to visit the target destination.
5. Holistic Image (adapted from Hernández-Mogollón, 2018; Kuhzady et al., 2020)
 - (1) Virtual tourism builds preferable images of target destinations.
 - (2) Virtual tourism builds favorable images of target destinations.
 - (3) Virtual tourism builds positive images of target destinations.
 - (4) In general, after joining a virtual tourism, I would consider staying at the target destination.
6. Sense of Presence (adapted from Yang et al., 2021)
 - (1) When joining a virtual tourism, I feel the normal experience of being in a tourist destination.
 - (2) When joining a virtual tourism, the destination feels real to me.
 - (3) When I think back about a virtual tourism, the images of the destination seem like places I have visited.
 - (4) While joining a virtual tourism, I often think to myself that I am at the destination.

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