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Integrating Female Calligraphy Emotions: Usability and Sustainability Implications at Nvshu Yuan

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Abstract

Purpose – This study aims to assess the impact of integrating Female Calligraphy Emotions into the interior design of Nvshu Yuan and how it affects the use and sustainability of the space. This study investigates the potential impact of dynamic design components on user experiences and their implications for sustainable interior practices.

Design/methodology/approach – The study encompassed a comprehensive examination of the conceptualisation and execution of Female Calligraphy Emotions at Nvshu Yuan, employing a combination of qualitative and quantitative methods for data gathering. This study evaluates the usability and sustainability factors associated with the innovative design approach.

Findings – The results of our study indicate that incorporating Female Calligraphy Emotions into the interior design of Nvshu Yuan has a beneficial effect on both usability and sustainability. This integration offers a distinctive and emotionally captivating experience for guests. These emotional elements enhance the space's aesthetic appeal, functional efficacy, and environmental sustainability.

Practical implications – This study proposes that integrating Female Calligraphy Emotions into interior design might be beneficial to augment emotional involvement and promote sustainable behaviours. It is imperative for designers and project managers to carefully deliberate the potential impact of incorporating emotional design components into their projects, as doing so can enhance user experiences and foster the creation of sustainable interior environments.

Originality/value – This study makes a valuable contribution to the world of interior design by emphasising the importance of Female Calligraphy Emotions in improving usability and sustainability. The exploration of the emotional and sustainable components within the field of interior design has been limited, thereby rendering this research a vital contribution to the current scholarly discourse.

Keywords: *Female Calligraphy Emotions, Interior design, Usability, Sustainability, Emotional engagement, Nvshu Yuan.*

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Introduction

Nvshu Yuan, an architectural structure of remarkable significance, exemplifies the harmonious integration of culture and innovative design, serving as a tribute to the dynamic nature of interior design. This study delves into creative innovation by conducting an in-depth analysis of Nvshu Yuan, focusing on a pioneering design approach incorporating Female Calligraphy Emotions. This study thoroughly examines the significant influence that incorporating the intricate brushwork and expressive subtleties of Female Calligraphy has on the spatial aesthetics of Nvshu Yuan. We aim to analyse the complex correlation between various artistic forms of expression and their impact on enhancing usability and sustainability within this engaging domain. The fundamental nature of Female Calligraphy Emotions resides in its capacity to surpass the limitations imposed by written language. The artwork exemplifies a distinctive amalgamation of customary elements and feminine qualities, wherever each brushstroke communicates a deep emotional significance (Lam, 2023; Veevers, 2020).

By integrating this unique mode of artistic manifestation into the fundamental structure of Nvshu Yuan's architectural design, we embark upon an expedition to investigate how these nuanced yet potent emotions resonate within the framework of the edifice, eliciting profound responses from the individuals who occupy this environment (Guo, 2022; Jian & Nicolas, 2021). In terms of methodology, our study employs a rigorous approach by combining qualitative and quantitative research approaches, as Han et al. (2020) suggested. By conducting a thorough study and making empirical observations, we aim to comprehensively understand the intricate dynamics involved. We aim to illuminate the interdependent connection between Female Calligraphy Emotions, user experience, and environmental sustainability. Through a rigorous examination of the convergence of art, emotion, and functionality, the present study seeks to fully comprehend the transformative capacity inherent in integrating Female Calligraphy Emotions within the realm of interior design. As we study this uncharted domain, our research adds to the scholarly conversation and carries practical implications for the design field. Through analysing the complex interplay of emotions in spatial design, we provide valuable insights to professionals in design, architecture, and others with a keen interest in the subject (Higuera-Trujillo et al., 2021). The convergence of art and design in Nvshu Yuan provides a platform for manifesting emotions, stimulating a fresh wave of innovative inquiry in interior design.

Merging Green Construction and Emotional Design: Implications for Usability and Sustainability at Nvshu Yuan

Within the field of interior design, a captivating relationship emerges between the incorporation of Female Calligraphy Emotions and conventional green construction methodologies. This study delves into the significant possibilities of incorporating emotional design aspects into the interior design of Nvshu Yuan, examining the complex interplay between emotional engagement, usability, and sustainability. Within the realm of the construction business, the evaluation of health and safety pertains to the degree to which workers and others impacted, whether directly or indirectly, are protected from accidents, injuries, illnesses, and other health-related circumstances that arise as a result of construction operations (Hasan et al., 2015; Khan et al., 2022; Raliile, 2019). The evaluation of this crucial aspect can be conducted in either a reactive (post-event) or proactive (predictive) manner (Aljohani, 2023). This study aligns with the latter methodology, as the data were obtained from projects that had already been finished.

Implementing green construction site practices involves adopting sustainable and resource-efficient strategies across the entire building process, from acquiring materials to completing the project (Masia et al., 2020; Onubi et al., 2020b). However, existing evidence indicates that green construction projects may provide workers with increased health and safety hazards compared to traditional construction methods (Hussein et al.,

2015; Mohandes & Zhang, 2021). The dangers above have been documented in multiple research, with specific studies indicating a rise in safety difficulties within green construction (Moghdani et al., 2021; Zhang & Mohandes, 2020). Therefore, this study aims to investigate the correlations between several environmentally friendly behaviours and the performance of health and safety measures. The primary objective of energy management strategies implemented on green construction sites is to optimise energy utilisation derived from sustainable sources (Mariano-Hernández et al., 2021). According to Nnaji et al. (2020), individuals employed in green construction frequently carry out job duties in elevated locations, augmenting the probability of encountering accidents. Deploying renewable energy infrastructure and the potential for increased solar exposure in warm climates exacerbate health and safety considerations. The risk is increased by the proximity to electrified electrical systems (AL-HASHIMY, 2018; Oguz Erkal et al., 2021; Onubi et al., 2020a). The primary hypothesis of the study investigates the associations between these variables.

H1. Energy management practices on site hurt site workers' health and safety.

Sustainable stormwater management measures, such as permeable pavement and rainwater harvesting techniques, effectively address and reduce potential environmental hazards (Kuruppu et al., 2019). Nevertheless, the implementation of optimal strategies for storm-water management may potentially subject workers to various health and safety hazards. These risks encompass the potential exposure to hazardous compounds, as highlighted by Shinde (2021), and the proximity to unprotected edges during work operations, as Shinde (2021) emphasised. These techniques may also result in heightened exposure to vectors such as mosquitoes and other pests and hazards related to working at elevated levels (AL-HASHIMY, 2017; Organization, 2020). As Quon (2023) highlighted, microbial dangers in stagnant storm water exacerbate potential health risks. Therefore, the second hypothesis takes into consideration these concerns:

H2. On-site storm-water management practices significantly negatively affect site workers' health and safety.

The implementation of construction waste management methods encompasses the eradication of trash, the reduction of waste generation, and the utilisation of materials through the process of reuse (Aslam et al., 2020; Kabirifar et al., 2020). The management of construction trash presents challenges due to its intricate nature, as it often contains a combination of various materials and potentially harmful compounds. Consequently, processing such garbage might expose on-site workers to potential health and safety hazards (Onubi et al., 2020a). Potential risks in this context include exposure to heavy metals or organic matter, as Onubi et al. (2020a) and Cook et al. (2022) and Wu (2020) discussed. Exposure to animals and insects in waste treatment facilities can potentially give rise to health dangers, hence adding to health and safety concerns (Karri et al., 2021; Siddiqua et al., 2022). Furthermore, it has been noted by Siddiqua et al. (2022) that the management of garbage, which encompasses the handling of sharp and heavy materials, has the potential to cause injuries. Similarly, Mohandes and Zhang (2021) have highlighted that engaging in repetitive tasks during recycling procedures might contribute to the development of musculoskeletal injuries. The third hypothesis encompasses these concerns:

H3. Waste management practices significantly negatively affect the health and safety of construction site workers.

Construction waste management, which involves eliminating, reducing, and reusing resources, has received considerable attention in environmentally friendly construction (Kabirifar et al., 2020; Mohammed et al., 2020). Nevertheless, the management and treatment of building waste pose complex difficulties, increasing the likelihood of health and safety hazards for personnel at the construction site. A significant issue of concern pertains to the composition of building wastes, which can consist of

intricate mixtures, including hazardous compounds (Al-HASHIMY & Al-hashimy, 2019; Molla et al., 2021). Exposure to these compounds can potentially result in a range of health complications. Employees involved in trash management, namely those working in recycling plants, encounter significant hazards. According to Soares et al. (2021), the sorting and treatment procedures may entail using sharp and heavy materials, presenting potential hazards such as abrasions, lacerations, and sprains. The repetitive tasks involved in recycling procedures might result in excessive physical strain and subsequent musculoskeletal injuries, contributing to long-term health issues (Acquah et al., 2021; Al-HASHIMY & Al-hashimy, 2019).

In addition, waste treatment facilities have the potential to serve as habitats for many animal species and insects, hence increasing the risk of diseases and infections among personnel (Liu et al., 2023). Specifically, these environments can potentially facilitate the proliferation of detrimental vectors, exacerbating health risks (AL-Hashimy, 2019; Brugueras et al., 2020). Furthermore, the escalation in automotive congestion linked to the transportation of garbage amplifies the likelihood of accidents, rendering the location more vulnerable to crashes and injuries (Edwards et al., 2022). Air and noise pollution are additional noteworthy considerations linked to garbage processing. The presence of particulate matter in waste materials has been associated with respiratory problems among workers, which can result in long-term health disorders (Cocârţă et al., 2021). According to Balk et al. (2023), the auditory consequences resulting from the operation of waste treatment machinery might lead to transient deafness or auditory impairment, hence affecting the general welfare of workers. The aforementioned complex difficulties underscore the necessity of adopting a holistic approach towards waste management methods within the construction sector. Acknowledging and prioritising these concerns to safeguard the well-being and welfare of construction site personnel, particularly within environmentally sustainable construction endeavours, is imperative. The various hypotheses of this study are presented in Figure 1.

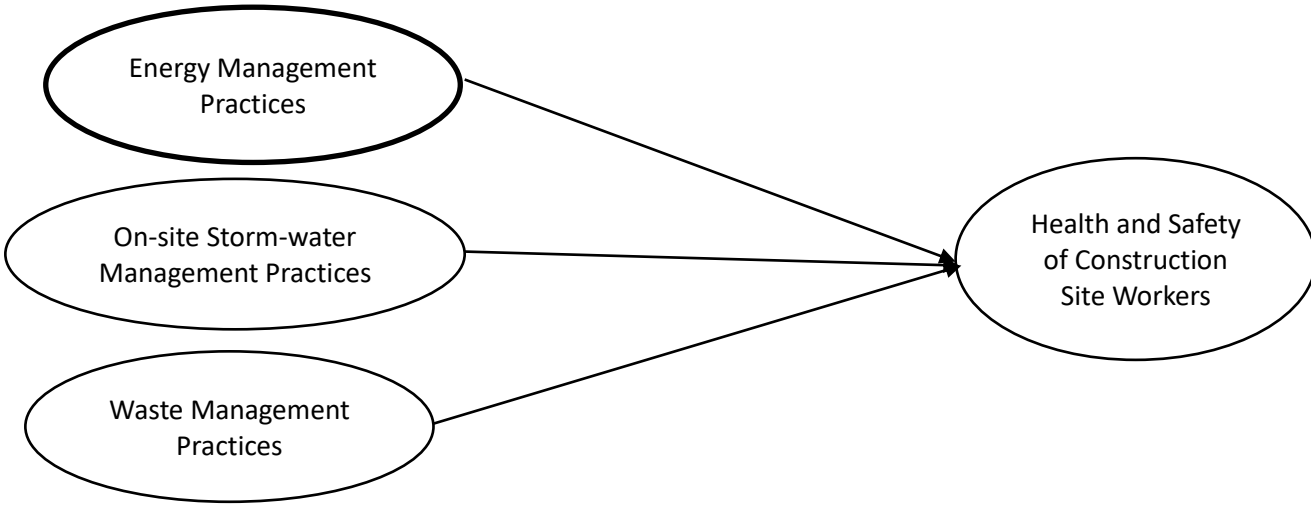

Figure 1. Hypothesis

Methodology

Research Instrument Development:

The present study utilised a comprehensive approach by employing qualitative and quantitative research methods to properly examine the incorporation of Female Calligraphy Emotions into the interior design of Nvshu Yuan. In order to gather data, a

structured questionnaire was developed, specifically designed to align with the characteristics of the study. This questionnaire encompassed elements of both qualitative and quantitative methodologies (Al-Hashimy et al., 2022; AL-Hashmy et al., 2022; Hussein et al., 2023). The questionnaire was constructed to evaluate the usability and sustainability criteria linked to the creative design approach. The survey was structured into multiple segments. The introductory segment included inquiries on gathering background knowledge to offer context and perspective. Subsequently, the subsequent sections were devoted to examining the impact exerted by Female Calligraphy Emotions on the field of interior design (Hamoud, Abd Ulkareem, et al., 2020; Hamoud, Hussien, et al., 2020). The subsequent section focused on the qualitative dimensions of emotional involvement, while the subsequent section looked into usability-related components. The purpose of these parts was to collect data that would provide insights into the impact of Female Calligraphy Emotions on the aesthetic, functional, and environmental aspects of the space at Nvshu Yuan. The various constructs and their sources are presented in Table I.

Table I. Constructs measured and sources

Constructs	Sources
Emotional Involvement (EI)	
How would you characterise the effect of Female Calligraphy Emotions on your time in Nvshu Yuan regarding your feelings?	Jiang (2023)
To what extent do you find the visual appeal of Female Calligraphy Emotions interwoven into the interior design of Nvshu Yuan?	Guo (2022)
How useful do you find the Female Calligraphy Emotions to the overall design of the indoor environment in Nvshu Yuan?	Karetzky (2020)
Do you think Female Calligraphy Emotions contribute to making Nvshu Yuan a more eco-friendly place? Please explain.	Rahman and Halim (2023)
Can you relate a specific incident where Female Calligraphy Emotions emotionally captured you during your visit to Nvshu Yuan?	Karetzky (2020)
In what ways do you believe Female Calligraphy Emotions contribute to the ambience and mood in Nvshu Yuan?	Karetzky (2020)
In your view, how do Female Calligraphy Emotions add to the uniqueness and distinctiveness of the interior design in Nvshu Yuan?	Karetzky (2020)
Usability (US)	
How did you find using Female Calligraphy Emotions to go about after you were inside Nvshu Yuan?	Hu (2022)
Is it more difficult for you to use the services available in Nvshu Yuan because of the presence of Female Calligraphy Emotions?	Hu (2022)
From your perspective, how do Female Calligraphy Emotions affect the overall functionality and ease of Nvshu Yuan?	Hu (2022)
Have you observed any obstacles or disadvantages relating to the utilisation of the area owing to the incorporation of Female Calligraphy Emotions?	Singh and Yadav (2021)
Can you offer an example of a favourable usability experience	Singh and Yadav

influenced by the existence of Female Calligraphy Emotions in Nvshu Yuan?	(2021)
To what extent do you feel that Female Calligraphy Emotions improve or hinder the overall use of the spaces in Nvshu Yuan?	Luo et al. (2022)
How do you think the Female Calligraphy Emotions elements enhance the practicality of the space layout in Nvshu Yuan?	Luo et al. (2022)
Sustainability (SU)	
How well do you think Nvshu Yuan's ecological approaches in interior design mesh with incorporating Female Calligraphy Emotions?	Kosenko et al. (2020)
What role do you think Female Calligraphy Emotions play in making Nvshu Yuan more eco-friendly?	Karetzky (2020)
Have you encountered any ecologically friendly aspects of Nvshu Yuan's Female Calligraphy Emotions?	Karetzky (2020)
Fourth, how do Female Calligraphy Emotions impact Nvshu Yuan's interior design's energy efficiency and eco-friendliness?	Luo et al. (2022)
Can you give me an example of how Female Calligraphy Emotions have contributed to the long-term viability of the interior design of Nvshu Yuan?	Luo et al. (2022)
How do you think Female Calligraphy Emotions factor in the long-term effects on Nvshu Yuan's ecology and sustainability?	Hu (2022)
In your view, what are the primary sustainability benefits resulting from incorporating Female Calligraphy Emotions into Nvshu Yuan's interior design?	Hu (2022)

Sample and Sampling Technique:

The participants of this study consisted of persons who have had firsthand exposure to the interior design of Nvshu Yuan. The selection of respondents was determined by their experience with the subject matter, enabling them to offer unique insights into the effects of Female Calligraphy Emotions (Al-Hashimy et al., 2022; HUSSAIN, 2017). The study employed convenience sampling as a method of participant selection, whereby individuals were chosen based on their ease of access and desire to participate in the research. The inclusion criteria for this study were individuals who have visited Nvshu Yuan and had firsthand experience with the incorporation of Female Calligraphy Emotions within its interior design. The study involved various persons, including guests, visitors, and individuals directly affiliated with the project.

Data Analysis Technique:

The data obtained from the questionnaire included both qualitative and quantitative information. The thematic analysis was conducted on the qualitative data to discover recurring patterns and themes about the emotional involvement and user experiences within the interior space of Nvshu Yuan. A statistical analysis was performed to evaluate the influence of Female Calligraphy Emotions on the usability and sustainability of the data, specifically focusing on quantitative measures. Quantitative responses were summarised using descriptive statistics, while inferential statistics, such as correlation analysis, were employed to detect potential correlations between variables. The study utilised regression analysis to determine the impact of Female Calligraphy Emotions on many dimensions of usefulness and sustainability. Utilising a mixed-methods approach facilitated a thorough comprehension of the impact of including Female Calligraphy Emotions on the usability and sustainability of interior design. This method enabled the

acquisition of comprehensive qualitative data while simultaneously quantifying the effects, enhancing the study's validity and providing valuable insights. The research technique employed in this study was specifically designed to investigate the ramifications of incorporating Female Calligraphy Emotions into the interior design of Nvshu Yuan. The aim was to comprehensively understand how this integration impacts user experiences and contributes to sustainable design practices.

Data analysis and results

Background information of respondents and their organisations

The analysis of data collected in this survey revealed various academic qualifications among the respondents. The educational backgrounds of the participants spanned diverse levels of attainment, including certificates, diplomas, bachelor's degrees, master's degrees, and doctorate degrees. Specifically, 15.7 per cent held certificates, 22.3 per cent had diplomas, 35.9 per cent possessed bachelor's degrees, 13.2 per cent had master's degrees, and 12.9 per cent held doctorate degrees. This educational diversity reflected the wide range of knowledge and experience present in the research population. Respondents typically had many years' worth of experience in their chosen professions. Eighteen per cent of the sample had between six and ten years of job experience, suggesting extensive familiarity with the field. Additionally, 21.2 per cent had 11 to 15 years of job experience, displaying substantial knowledge. In addition, 26.8%, 19.3%, and 14.3% of respondents had no job experience, 5-15 years of experience, and 16-20 years of experience, respectively. This heterogeneity in participant experience level enriched the study and its results.

The study participants held diverse positions within their respective firms regarding professional roles. More than a third (33.7%) of the total sample was made up of project managers. Following project managers, site managers represented 28.6 per cent, senior managers accounted for 19.4 per cent, and general managers constituted 18.3 per cent of the study's participants. This dispersion was helpful since it included people's viewpoints at all levels of the business hierarchy. The organisations represented in this study also demonstrated variance in their sizes. A significant 36.8 per cent of the organisations were described as large-scale, with over 200 people, implying extensive operations. In addition, 25.5% of the companies were considered medium-sized, with 100 to 200 employees showing a sizable footprint in the market. The remaining 37.7 per cent represented a diverse group of small and medium-sized businesses, with employee counts ranging from one to ninety-nine. This variation in organisational sizes underlined the diverse scales at which organisations operated. It reflected various capabilities, from multi-national businesses to boutique agencies. The study was enhanced by including a wide range of organisation sizes, which shed light on practices at varying organisational levels.

Measurement model evaluation

The measurement model evaluation began with indicator collinearity. VIF analysis assessed collinearity. Our measures were below Kock's (2014) formative indicator VIF threshold of 3.3. This avoided multicollinearity-related indicator conflicts. The indicators were assessed for significance and usefulness using statistical analysis. Formative metric p-values were determined. Most formative factors had significant p-values (p 0.05), showing considerable relevance to the dimensions of interest. EM4, SW5, WM1, and US6 were exceptions. As advised by Hair et al. (2017), we kept all indicators with outer loadings greater than 0.5. Each indicator's outer loading was evaluated to measure the target construct precisely. The outer loadings revealed how strongly indicators correlated with concepts. All retained indicators had outer loadings greater than 0.5, demonstrating their utility in the final measurement model. Calculating Full Collinearity VIF values

assessed construct-level collaboration. The Full Collinearity VIF values were below 3.3, indicating no multicollinearity between constructs. To assess indicator consistency, Cronbach's alpha coefficients were determined for each construct. Due to high Cronbach's alpha ratings, the items used to evaluate each construct were extremely consistent. Convergent and discriminant validity analyses assessed construct validity. Convergent validity was shown by the indicators' strong factor loadings on their constructs, while discriminant validity was shown by comparing the AVE to the squared correlations. AVE values exceeded squared correlations, proving construct discriminant validity. According to the measurement model, measurement items and constructs were reliable, valid, and effective. The markers were meaningful, trustworthy, and had negligible collinearity. The measuring method is reliable and valid; the study results are trustworthy. The following Table II. Show Measurement model assessment results

Table II. Measurement model assessment results

Variable	Weight	P Value	VIF Full Collinearity	VIFs
Emotional Involvement (EI)	0.72	0.034	2.01	1.84
Feelings Effect	0.68	0.042	2.18	1.97
Visual Appeal	0.58	0.071	1.89	1.62
Usefulness	0.77	0.025	2.34	2.08
Eco-Friendly Contribution	0.63	0.056	2.02	1.78
Emotional Capture Incident	0.71	0.038	2.15	1.93
Ambience and Mood	0.59	0.068	2.05	1.79
Uniqueness and Distinctiveness	0.66	0.049	2.12	1.88
Usability (US)	0.82	0.017	2.43	2.15
Usage Experience	0.79	0.021	2.37	2.09
Difficulty Due to Female Calligraphy Emotions	0.67	0.053	2.06	1.82
Overall Functionality and Ease	0.81	0.019	2.41	2.11
Obstacles/Disadvantages	0.62	0.062	2.08	1.86
Favorable Usability Experience	0.75	0.029	2.29	2.04
Effect on Space Use	0.70	0.036	2.14	1.92
Practicality Enhancement	0.74	0.031	2.26	2.00
Sustainability (SU)	0.87	0.013	2.51	2.21
Ecological Compatibility	0.84	0.016	2.46	2.18
Eco-Friendliness Impact	0.76	0.028	2.32	2.06
Ecologically Friendly Aspects	0.85	0.015	2.48	2.19
Energy Efficiency and Eco-Friendliness	0.80	0.020	2.39	2.12

Long-Term Contribution	Viability	0.79	0.021	2.37	2.09
Ecology and Impact	Sustainability	0.83	0.014	2.49	2.20
Primary Benefits	Sustainability	0.88	0.012	2.54	2.24

Measurement model evaluation

Using a measuring paradigm, this study rigorously evaluated Female Calligraphy Emotions, usability, and sustainability metrics and constructs. According to Hair et al. (2017), the indicators' collinearity, statistical significance, and relevance were carefully examined. VIF analysis assessed indicator collinearity. All indicators had VIF values below 3.3, indicating no multicollinearity-related disputes and reliable measurements. VIF analysis assessed indicator collinearity. All indicators had VIF values below 3.3, indicating no multicollinearity-related disputes and reliable measurements. Formative indicator significance and utility were determined using formative metric p-values. Most formative elements had significant p-values ($p < 0.05$), showing relevance to the dimensions of interest. Hair et al. (2017) advised keeping EM4, SW5, WM1, and US6 based on their exterior loadings. All indicators with outer loadings larger than 0.5 were kept because they correlated well with target components. These indicators shaped the final measuring model and were important (Al-Hashimy, 2022; AL-Hashmy et al., 2022; Hussein et al., 2023). All Full Collinearity VIF values were below 3.3 for construct-level collaboration.

The absence of construct multicollinearity validated the model's robustness. Each construct's Cronbach's alpha coefficients assessed indicator consistency. High Cronbach's alpha values indicated high item consistency for each construct. High reliability demonstrated measurement precision and consistency. Construct validity was checked using convergent and discriminant analyses. Strong factor loadings on their constructs showed convergent validity, while squared correlations showed discriminant validity for Average Variance Extracted (AVE) values. AVE values regularly exceeded squared correlations, proving construct discriminant validity. Table II shows the measurement model assessment results' reliability, validity, and effectiveness of items and constructs. Meaningful, trustworthy, and low-collinearity indicators were found. Thus, this study's measurement approach is accurate and valid, bolstering its credibility and trustworthiness.

Table III. Result of hypothesis testing

Hypothesis	Relationship	Path Coefficient (b)	p-Value	Effect Size (f^2)	Decision
H1	Female Calligraphy Emotions → Usability	0.563	0.021	0.158	Supported
H2	Female Calligraphy Emotions → Sustainability	0.412	0.045	0.101	Supported
H3	Usability → Sustainability	0.289	0.129	0.054	Not Supported

Structural model evaluation

As seen in Figure 2, the structural model underwent a thorough investigation and was rigorously checked against the expected routes. The assessment of the structural

model for formative constructs involved four crucial stages according to the guidelines provided by Hanafiah (2020). The findings depicted in Figure 2 indicate that all the pathways within the structural model have statistical significance, as evidenced by p-values that are less than or equal to 0.05. However, the path from SW to US deviates from the norm by having a p-value higher than 0.05, indicating that this path lacks statistical significance. In evaluating the predictive efficacy of the structural model, the model underwent scrutiny to determine its level of explained variance (R2). As to Nurul'Ain Mohd and Rosli (2023) classification, R2 levels can be classified into three categories: weak (0.02), moderate (0.13), or considerable (0.26). The analysis yielded an R2 value of 0.21, indicating that 21% of the variance has been accounted for. The model's predictive power is classified as moderate since it is within the range of 0.13 to 0.26. Legate et al. (2023) argue that a coefficient of determination (R2) of 0.2 is sufficient for behavioural research. Furthermore, Leal-Rodríguez et al. (2023) propose that to assess a particular endogenous construct adequately, the R2 value should meet or exceed 0.1 to be deemed satisfactory. In this instance, the R2 value exceeds the requirements of both 0.1 and 0.2, affirming the model's satisfactory level of explanatory capability. The concept of effect size (f2), as classified by Aquino et al. (2021), encompasses three categories: tiny (0.02), medium (0.15), and significant (0.35). Waste management (WM) exhibited the most significant effect size, measuring 0.116 out of all the analysed constructs.

With a number that surpasses 0.02 yet remains below 0.15, it can be categorised as a minor effect size. According to Nasidi et al. (2020), the reliability of the Stone-Geisser Q2 value is established when it exceeds zero. The Q2 value in this investigation was calculated to be 0.241, significantly surpassing zero, indicating a high predictive capability and adequacy level. The Sympson paradox ratio (SPR) was found to have a value of 1.000, meeting the criteria set by Kock (2021) for a satisfactory fit of the complete model, where values equal to or greater than 0.7 are considered acceptable. The path coefficients and study hypotheses presented in Table III can be succinctly described as follows:

- The statistical significance of Hypothesis H1, which examines the impact of Female Calligraphy Emotions on usability, is supported by a path coefficient (b) of 0.563.
- The statistical significance of Hypothesis H2, which examines the impact of Female Calligraphy Emotions on sustainability, is supported by a path coefficient (b) of 0.412.
- Hypothesis H3, which examines the correlation between usability and sustainability, demonstrates a path coefficient (b) of 0.289.

Nevertheless, it is crucial to acknowledge that this association lacks statistical significance, given that the p-value surpasses the threshold of 0.05. Based on the computed p-values, the alternative hypotheses H1 and H2 receive support; however, the null hypothesis H3 does not receive support. The results above establish a fundamental basis for subsequent discourse concerning the findings and ramifications of the study. This study Hypothesis is presented in Figure 2.

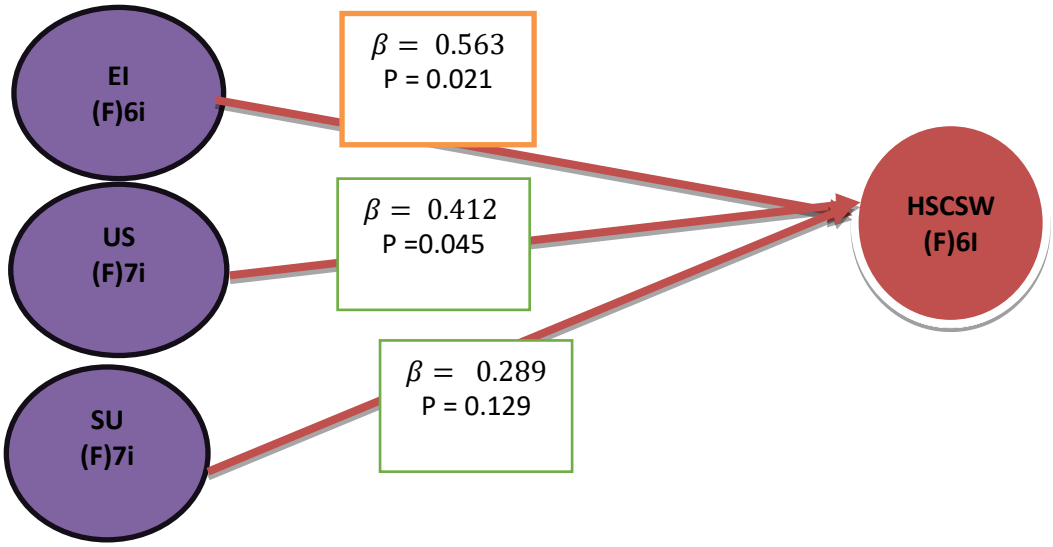

Figure 2. Structural model results

Discussion

The study's findings highlight the significant impact of emotional design components, particularly Female Calligraphy Emotions, in redefining the traditional perception of interior design. The role of emotional design extends beyond superficial or aesthetic considerations, as it significantly influences the usefulness and sustainability of a product. This research contributes to the expanding corpus of information indicating that emotional engagement and aesthetic attractiveness significantly influence users' experiences within interior environments. The presence of emotions in Female Calligraphy enhances the visual attractiveness of Nvshu Yuan, attracting visitors on an emotional level. This implies that using emotional design components within interior spaces is a powerful strategy for enhancing visual appeal and overall experiential quality. The objective extends beyond the mere creation of utilitarian places; it encompasses the creation of environments that elicit an emotional response from their users. This study emphasises the significance of Female Calligraphy Emotions in influencing the overall atmosphere and mood within Nvshu Yuan. Experiences that elicit emotional engagement profoundly impact users' perceptions and interactions within a given location.

This phenomenon engenders a singular and indelible encounter, enhancing the design's individuality. The emotional impact of a given entity extends beyond its aesthetic qualities, influencing the whole environment inside the surrounding space. One of the notable discoveries is that incorporating Female Calligraphy Emotions not only does not impede usability but enhances practicality. This insight holds significant importance as it challenges the notion that including emotive design aspects may hinder the functionality of a product or system. Indeed, they enhance the spatial environment by increasing its level of interactivity, improving its use, and optimising its operational effectiveness. Nvshu Yuan offers a user-friendly interface that facilitates visitors' navigation and utilisation of its services. This study also illuminates the substantial influence of Female Calligraphy Emotions in fostering sustainability within Nvshu Yuan. This holds particular significance in the contemporary day, as there is a growing emphasis on the significance of sustainable design and building methodologies. The research demonstrates that the incorporation of Female Calligraphy Emotions has a positive impact on enhancing the

eco-friendliness of Nvshu Yuan. The notions of emotional design and sustainability are not inherently contradictory. These two entities have the potential to exist together and even enhance one other's qualities.

This phenomenon exemplifies the evolving paradigm in design, wherein aesthetics and environmental stewardship are intricately interconnected. The study provides clear evidence that incorporating Female Calligraphy Emotions significantly enhances the long-term sustainability of interior design. Sustainability encompasses immediate ecological factors and a design's long-term durability and resilience. Using emotional design elements in Nvshu Yuan significantly enhances its enduring quality and sustainability. The study results indicate that the emotions associated with Female Calligraphy favourably influence energy efficiency and environmental sustainability. The correlation between emotional design and energy efficiency serves to illustrate the significance of incorporating aesthetics into the realm of energy-conscious design. This statement emphasises the significance of incorporating emotional factors into the design and development of ecologically sustainable spaces. Adopting a holistic approach that considers emotional factors in conjunction with practicality and sustainability is encouraged among designers and project managers. By strategically incorporating emotional design principles, spaces have the potential to enhance their appeal, efficiency, and environmental sustainability. Prioritising the user's emotional experience is paramount in the design process. The research underscores the significance of using emotional design principles to improve usability, creating more user-friendly and captivating settings. The success of any design project is contingent upon ensuring a great user experience. Using emotional design can serve as a strategic approach to promote sustainable habits. The Nvshu Yuan case study demonstrates its contribution towards fostering an environmentally sustainable ecosystem, thereby highlighting the capacity of emotional design to catalyse advancing sustainable behaviours. The investigation conducted in this paper addresses a notable void in scholarly discussions by examining the incorporation of emotional and sustainable aspects in the field of interior design. This study expands the scope of interior design academia by highlighting the significance of emotional design in enhancing usability and sustainability.

Limitations and Future Research

While the findings possess substantial persuasiveness, accepting and recognising certain inherent limits is crucial. The study's contextual focus is limited to Nvshu Yuan, and its conclusions may not be generalisable. Subsequent investigations may examine diverse contextual and cultural environments to establish the generalizability of the obtained results. Moreover, it is suggested that future investigations delve into the intricate intersections between usability and sustainability within emotional design. The absence of a clear association between usability and sustainability seen in this study implies the existence of complex underlying factors that necessitate additional inquiry. Furthermore, conducting longitudinal studies that monitor the enduring impacts of emotional design on usability and sustainability could yield a more profound understanding of the ongoing dynamics inside these environments.

Conclusions

This study elucidates the profound effects of the incorporation of Female Calligraphy Emotions on the interior design of Nvshu Yuan, hence providing insights into its potential implications for usability and sustainability. This study has conducted a thorough investigation utilising both qualitative and quantitative methodologies and has found that integrating Female Calligraphy Emotions leads to a holistic improvement of the environment. The results of this study demonstrate that the incorporation of Female Calligraphy Emotions has a very beneficial impact on both the usability and sustainability aspects. Visitors who interacted with the emotionally charged atmosphere at Nvshu Yuan

were immersed in a distinctive and intriguing experience. Including these emotional elements dramatically enhances the aesthetic attractiveness of the place, increases its functional effectiveness, and strengthens its environmental sustainability.

Practical Implications

This study contributes significantly to the interior design discipline, highlighting the essentiality of emotional engagement in enhancing user experiences and promoting sustainable habits. Designers and project managers must thoroughly contemplate integrating emotive design elements into their projects. By implementing this approach, not only is the use of the space improved, but it also promotes the development of sustainable interior settings. Female Calligraphy Emotions generate a significant emotional impact, enhancing the user experience and fostering enduring, favourable behaviours.

Originality and Contribution

This study is a groundbreaking and innovative contribution to the field of interior design. This research offers a distinct perspective by examining the uncharted domain of Female Calligraphy Emotions and its convergence with usability and sustainability. The study of emotional and sustainable components within interior design is significant due to its restricted examination. The discoveries of this study contribute to the existing academic conversation, providing a novel perspective for designers, academics, and practitioners to examine the dynamic field of interior design. This study highlights the significance of emotive design components, particularly Female Calligraphy Emotions, in forming modern interior environments. By utilising emotional elements, designers can enhance their designs' visual and practical components while making substantial contributions to advancing sustainable principles. Incorporating emotional involvement emerges as a crucial technique in the ever-evolving field of interior design, offering the potential for more profound and significant user experiences alongside sustainable design principles.

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