

Exploring Seating Design to Reflect Thai Identity and Enhance Functionality in Public Spaces

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Abstract

Public seating is a vital element in spaces such as hospitals, train stations, airports, parks, and shopping malls, serving diverse user needs, including relaxation, waiting, and engaging in activities. However, current seating designs often fail to address the cultural needs and behaviors of Thai users, particularly in situations requiring prolonged waiting. These designs frequently lack comfort, aesthetic appeal, and cultural identity, leaving users feeling fatigued, stressed, and unable to fully relax. This article proposes a public seating design approach that reflects Thai identity by studying sitting behaviors in public spaces and integrating traditional Thai sitting postures such as cross-legged and lotus-legged positions-with contemporary ergonomic standards. This approach aims to balance comfort and cultural relevance. The design also incorporates traditional Thai elements with modern aesthetics, such as clean lines, contemporary forms, and suitable materials, to create functional seating solutions that cater to daily needs. The research employs a comprehensive design process, including user behavior analysis, creating and testing 3D prototypes, and using international seating dimension standards. The resulting seating prototypes combine Thai identity with contemporary needs, offering ease of use while enhancing cultural value. This innovative public seating design enhances comfort, reduces stress during waiting, and delivers a uniquely Thai experience in public spaces. By blending Thai cultural elements with international design standards, the outcomes improve user satisfaction and engagement across various contexts while preserving and promoting cultural values that remain significant in modern Thai society.

Keywords: Public Seating, Thai Sitting Posture, Relaxation

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Introduction

Public seats refer to seating installed or used in public areas, both indoor and outdoor spaces. Ofisu (2020) mentions that public chairs are everywhere, including offices, department stores, schools, bus stops, and public parks. The goal of public seating is to provide comfort and relaxation for people using or waiting in a space. These seats are often designed to suit their specific use and the environment in which they are located, taking into consideration factors such as the number of people using the area, durability, and aesthetic design that complements the location.

This study aims to develop a design model for public seating in indoor public spaces which serve as multi-purpose environments for relaxation, socializing, and waiting. Seating plays a crucial role in enhancing user satisfaction and promoting long-term engagement with the environment by emphasizing comfort, suitability for use, and alignment with cultural context to improve the overall user experience.

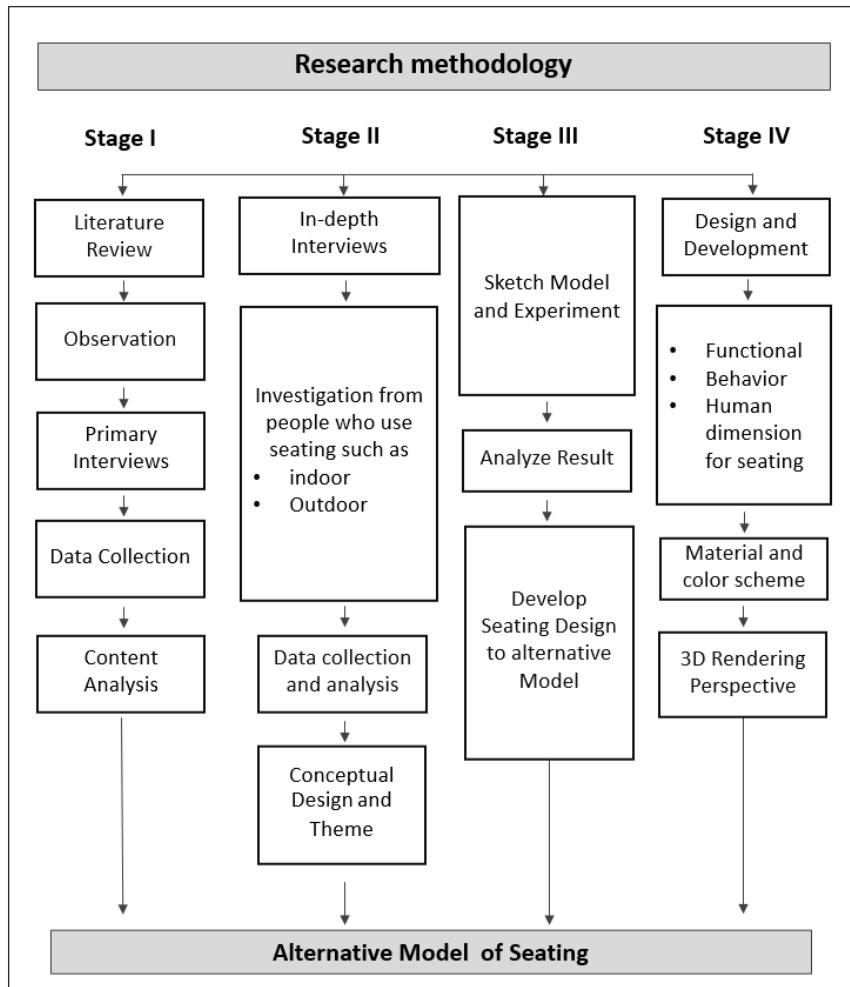
To meet the needs of Thai users, seating designs should align with the spatial context and reflect Thai cultural behaviors, ensuring they resonate with users' expectations. Ergonomic support is essential to provide effective body support, enhancing comfort and relaxation for long-term usability. Flexibility in movement should be considered to accommodate diverse sitting postures and behaviors, increasing user satisfaction and adaptability to various scenarios.

The integration of technology is also vital in modern seating designs. Features such as dedicated spaces for mobile phones or tablets should be included to align with current user expectations and daily technological needs. This integration will enhance the overall user experience, making the seating both functional and adaptable to contemporary lifestyles.

This study focuses on (1) observation of public seating in both indoor and outdoor locations to understand the function design of public seating. (2) analysis of Thai people's sitting behaviors and postures to understand dimensions and function requirements and cultural influences that can inform design directions. (3) Development and testing of a 3D prototype of a seating solution reflecting Thai sitting posture and furniture, to be created for indoor public spaces.

These efforts aim to achieve a balance of aesthetic appeal, ergonomic functionality, and cultural appropriateness while addressing modern technological demands. The ultimate objective is to create innovative and immersive seating experiences for users in public spaces.

Research Methodology



Finding

Public Seating

Various public seating styles are abundant and extend beyond traditional chairs. Installations in public spaces are diverse and adaptable to meet citizens' needs in every scenario. Apart from chairs, seating formats such as mats, floors, or sofas are also utilized to accommodate people seeking relaxation or engaging in various activities. The availability of diverse public seating effectively enriches community life by enhancing its diversity and enriching people's experiences.

These public seats are often designed with the user's comfort and relaxation in mind. Whether it's providing a soft surface for sitting on a mat or installing sofas that offer ample space for perfect relaxation. Moreover, having flexible public seating that can be adjusted according to the situation enhances social connections and fosters community relationships, promoting efficiency and cooperation in daily life to the fullest.

When discussing public chairs, most people have encountered them in various places and likely sat in them at some point. Public chairs play a crucial role in daily life, as they are indispensable in numerous activities such as waiting for buses, queuing in stores, and relaxing in parks. They are versatile and can be found in various locations including offices, department stores, schools, bus stops, parks, and companies, tailored to suit their respective environments. (Ofisu, 2020).

Today, public seating must cater to behavioral needs, functionality, and the activities that will occur within appropriately sized. Public seating in places where long waits are common, such as hospitals, train stations, airports, electric train stations, parks, and department stores, often lacks aesthetic appeal and comfort. This can lead to fatigue and stress among users who need to sit for extended periods. Furthermore, in some locations, public seating may not be diverse or aligned with the cultural and seating preferences of Thai users.

Developing public seating to align with the cultural diversity and behavioral needs of Thai people today is crucial. This ensures convenient use for all users and addresses specific area requirements. By designing public seats that accommodate Thai sitting behaviors in each location, users can feel relaxed and comfortable while waiting. The design should support sitting and waiting in a manner that suits each public area, creating an inviting environment that resonates with Thai cultural norms. This approach allows service users to experience Thai-style relaxation and engage in various activities happily. Continuously enhancing and adapting public seat designs to meet the needs and usage habits of Thai people can effectively create a positive experience for all users.

Thai sitting posture in indoor and outdoor public seating areas

The general sitting position of Thai people Sitting style Behavior in using various public seats. In park seating, we can observe comfortable sitting behavior and relaxation among those who come to unwind. In addition to enjoying nature, some people often engage in additional activities such as reading books, having conversations, listening to music, and more.



Figure 1 Lumphini Park.

Source: Krungsri Plearn Plearn (2024)



Figure 2 Close to nature Relieve fatigue with 5 simple activities at Suan Rot Fai.

Source: The Gen C, 2019

In addition to seats in public parks, the author surveyed public seating in various locations to understand the sitting behavior and needs of users. For example, the picture below shows public seating at a hospital.



Figure 3 Public seating in Hospital

Source: Author

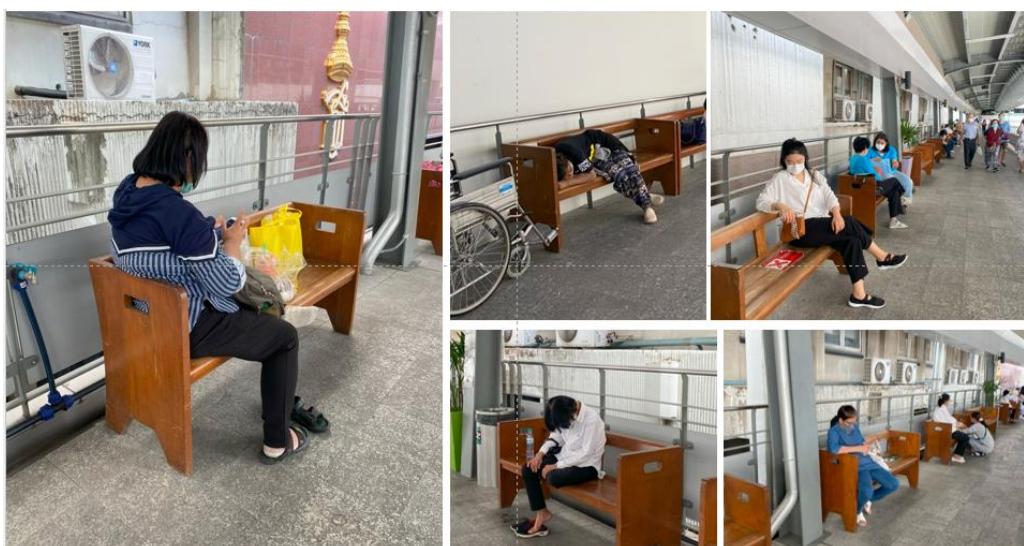


Figure 4 Public seating in Hospital

Source: Author

From surveying various public seating areas to understand user needs and the sitting conditions of these places, it has been observed that certain behaviors indicate inconvenience or dissatisfaction with the seating. The example picture above shows a public waiting area in a hospital. Here, users exhibit various sitting behaviors such as leaning, stretching their feet, or waiting for extended periods. In some cases, users might need to use public seats for eating or accommodate a wheelchair for a patient. However, most of these seats are uncomfortable, leading to boredom,

stress, and fatigue among users who have to wait for long periods. It may be necessary to improve or arrange the seats to be more comfortable and suitable for different situations.

A survey of public seating in shopping mall areas involves examining the seating arrangements to assess their comfort, functionality, and aesthetics. This includes observing user behavior, identifying common seating preferences, and understanding how these spaces are utilized for various activities such as resting, socializing, and waiting.



Figure 5 Public seating in Shopping Mall

Source: Author

From surveying the seating in shopping malls, it was found that these seats are often designed to be more comfortable and aesthetically pleasing than other public seats. They typically use high-quality materials and are designed to perfectly match the atmosphere and interior decor of the shopping center. Additionally, to meet the needs of diverse users, shopping mall seating often includes features such as battery charging points or power sources. This allows users to charge and use their phones at all times, making it extremely convenient for guests while waiting or relaxing. However, shopping centers continually develop and improve these facilities to meet the evolving needs and convenience of customers in an era where technology plays a crucial role in daily life.

Human Dimension scale for seating

Human scale is the practice of measuring and designing things to match the physical characteristics of humans. This includes ranges of time, speed, weight, temperature, force, energy,

pressure, distance, attention span and perception that humans can comfortably or safely withstand. (Spacey, 2016).

Using chairs in everyday life for various activities such as working in the office, eating, studying, and watching television requires consideration of ergonomics to maintain comfort and health. While sitting, the back muscles have to work hard because the weight of the upper body is transferred to the hips and thighs. Prolonged sitting increases pressure on the spinal discs (intervertebral discs, which act as shock absorbers between the vertebrae and are flexible). Additionally, while sitting, blood pools in the legs and feet due to gravity, causing blood to flow back to the heart more slowly. (Tansura, 2019)

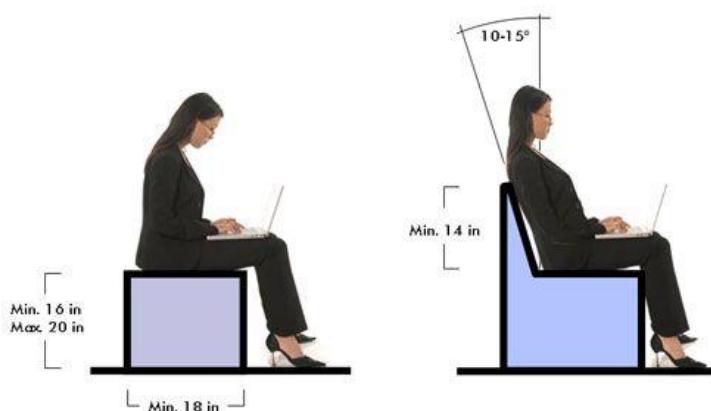


Figure 6 built-in bench seat dimensions

Source: Pinterest, 2024

Seat height is one of the most important factors affecting human posture and comfort. Therefore, it is necessary to determine standard sizes for chair height to ensure that people achieve the most appropriate and comfortable sitting position in various situations. Data collection from field visits to study the public seating behavior of Thai people in various places for analysis is as follows.

Behavior Analysis

From the survey on the behavior of Thai people using public seats in various places, both outside and inside the building, it was found that there were different behaviors in using public seats, reflecting the different cultures and thoughts of Thai people in each situation. In some places, such as shopping malls, hospitals, or public parks, Thai people still prefer to sit on the floor or mats rather than on chairs. Even when sitting on chairs, they still lift their legs in a comfortable Thai sitting position, which is a trend that is linked to convenience and relaxation in ancient Thai culture.

In addition, the survey also found that some places should have facilities, such as mobile phone charging points so that users can use their phones conveniently while waiting or resting. The

development and improvement of facilities in these public places is therefore very important in meeting the needs and satisfaction of users.

From visiting various areas to study the behavior of Thai people in using public seats, it was found that the overall behavior of sitting and waiting is primarily categorized as follows:

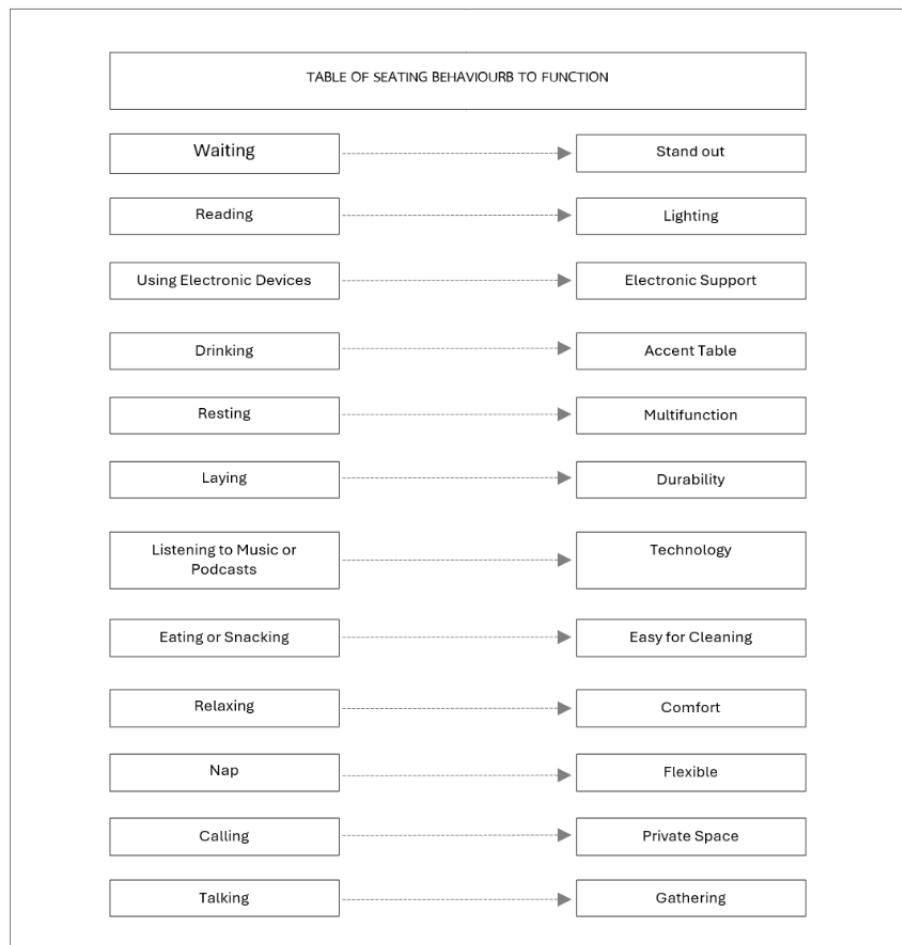


Figure 7 Table of the behavior

Source: Author

Function Needs, functions that must be inserted for to accommodate and promote the use of public seats as follows:

Seating Behavior	Function	Required Support/Features
Waiting	Provides temporary seating for short durations in public or private spaces	Comfort with moderate back support, often modular for flexible use
Reading	Encourages focus and comfort for extended periods of sitting	Ergonomic back support, armrests, adjustable seating for posture
Using Electronic Devices	Supports activities requiring focus and hand use (typing, holding devices)	Lumbar support, armrests, inclined seating, screen height consideration
Drinking	Provides a stable, relaxed seating arrangement for casual socializing or brief breaks	Comfortable seating, side tables for placing drinks, armrests
Resting	Allows relaxation and unwinding, typically in informal settings	Reclining backrest, soft cushions, footrests, head support
Laying	Provides full-body support for rest or sleep	Fully reclining feature, extended surface (like lounge chairs), padding
Listening to Music	Enhances relaxation, potentially with a focus on comfort and immersion	Reclining backrest, cushions, possibly integrated sound systems
Eating or Snacking	Supports casual dining or snacking experiences	Moderate back support, easy to clean, access to tables
Relaxing	Offers a tranquil experience, allowing users to destress	Reclining features, soft materials, possibly rocking or motion options
Nap	Full-body rest and support for temporary sleeping	Reclining or laying seating, pillows, cushioned surfaces
Calling	Provides moderate comfort while users engage in phone conversations	Simple seating with back support, armrests optional
Talking	Encourages interaction in social settings, supporting casual or formal conversations	Seating arranged in a circle or facing, with armrests for comfort

Figure 8 Table of the behavior

Source: Author

Design Framework

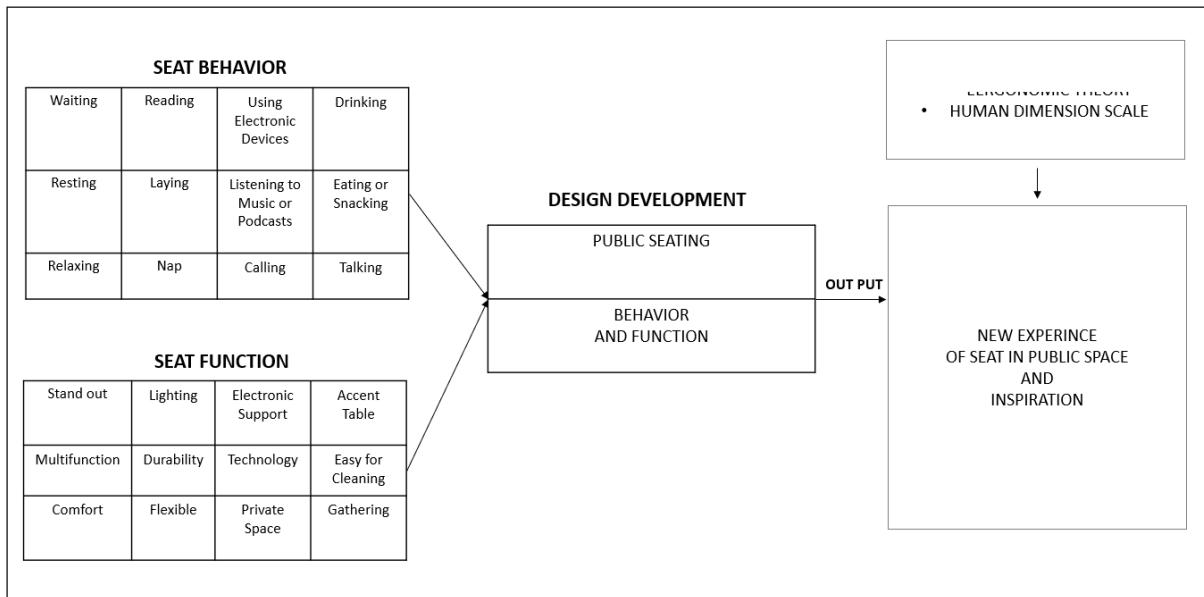


Figure 9 Design Framework

Source: Author

Concept Development

Designing a new experience of seating in public spaces involves a thoughtful, multi-step process that combines creativity, functionality, and user-centric principles.

Generate Design Concepts to develop design concepts that address user needs, aesthetic considerations, and functional requirements. Utilize sketching and digital tools to visualize these ideas. Adding technology Integration: Explore how smart technologies, such as wireless connectivity and interactive features, can be incorporated into the seating design to enhance the user experience.

Sustainability Considerations by selecting sustainable materials and processes to minimize environmental impact. Consider the entire lifecycle of the seating, including maintenance, durability, and end-of-life recycling.

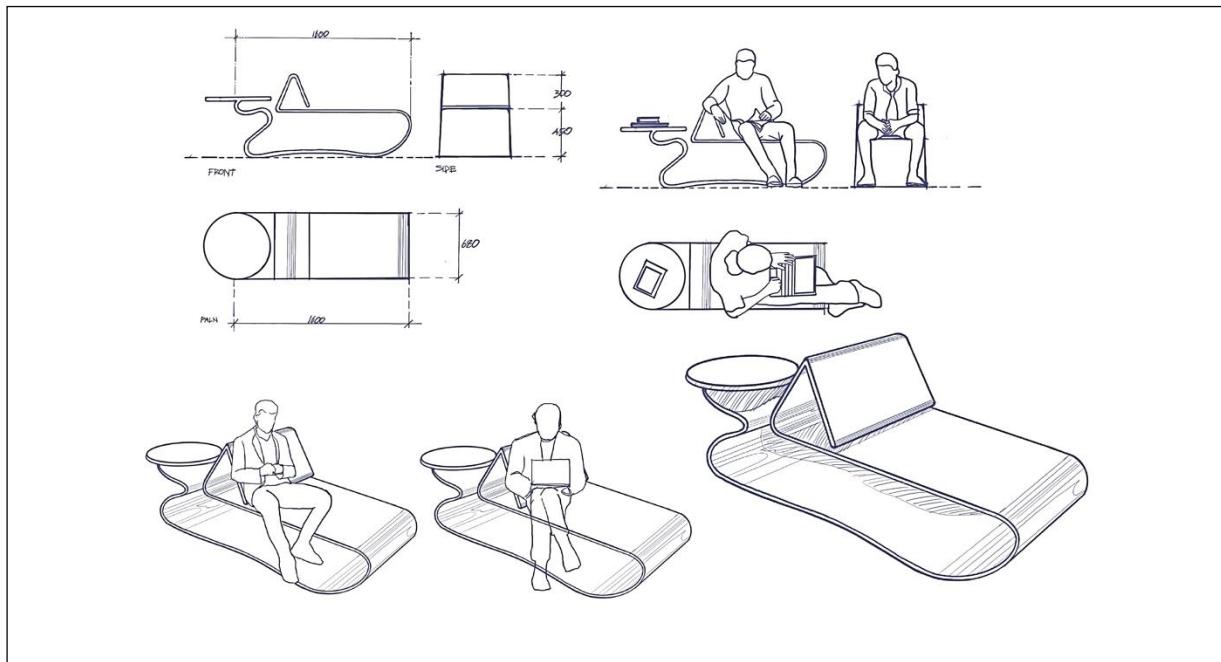


Figure 10 Design Development

Source: Author

New experience of seat in public space and Design Refinement for next state

Prototyping by creating physical or digital prototypes of the seating designs to test and evaluate comfort, ergonomics, and functionality.

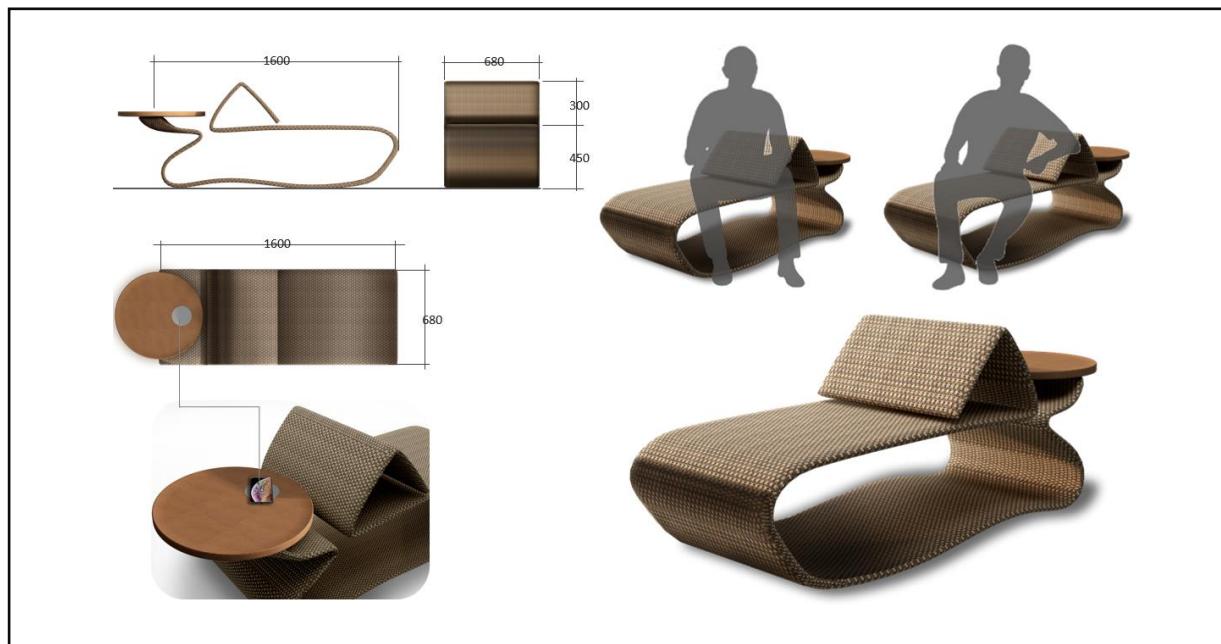


Figure 11 Design new model

Source: Author

Discussion

The study of Thai people's behavior in using public seats in various areas has provided valuable insights into the development and design of seating that meets the needs of diverse users in general public spaces, including shopping malls, parks, and other community areas. The findings emphasize the need to create more comfortable, user-friendly seating areas that cater to specific cultural and practical requirements.

The design process began with an analysis of data collected from field visits. This involved observing and documenting the ways users interacted with public seats and identifying challenges such as discomfort, limited functionality, and inadequate alignment with cultural practices. To address these issues, the design process integrated the Human dimension for seating, cultural considerations, and technological advancements to develop seating solutions that enhance usability and satisfaction.

The newly designed chairs aim to meet these needs in several ways. The seating is designed to support diverse body postures and movements, such as backrests, and armrests. These improvements aim to align with Thai sitting culture, offering options for both traditional and contemporary postures. Additionally, the integration of technology, such as USB charging ports and wireless connectivity, ensures that the seating accommodates the increasing use of electronic devices in public spaces.

The materials used in the design were selected for their durability and aesthetic appeal, ensuring longevity in high-traffic public areas while maintaining a culturally inspired design. Materials like Artificial rattan not only provide comfort but also withstand prolonged use in indoor and semi-outdoor environments.

The suitability of these seats extends to a variety of public areas. Shopping malls benefit from flexible seating arrangements that allow users to relax during shopping or socializing, recreational areas can integrate these seats into shaded or open-air zones, providing comfortable spots for rest and activities.

In conclusion, this approach reflects a comprehensive perspective on public seating development that prioritizes user comfort, satisfaction, and cultural relevance. By incorporating human dimensions for seating support, technological integration, and diverse designs suitable for various user groups, the proposed seating solutions aim to improve the overall quality of life and convenience for public space users. These findings highlight the importance of thoughtful design that aligns with users' behaviors and Thai cultural expectations, ultimately creating a more functional and enjoyable public seating experience.

Suggestion

Based on the findings, the researcher offers the following recommendations to enhance the functionality, safety, and cultural relevance of seating designs while promoting future research and practical improvements. These suggestions aim to guide agencies, organizations, and researchers in creating public seating that aligns with user needs, encourages efficient use, and reflects Thai identity.

1. Adding Functionality and Comfort: Seating should prioritize user comfort and usability by incorporating features such as armrests, grips, or reclining options. These additions allow users to sit comfortably, maintain balance, and enjoy prolonged use without strain. The design should also accommodate diverse user groups, such as older adults or families, by providing spacious and adjustable seating.

2. Improving Safety: Public seating must ensure user safety by utilizing non-slip materials on seating surfaces to minimize the risk of slipping. Structural designs should feature smooth shapes and rounded edges to reduce the likelihood of accidents from sharp corners. Incorporating sturdy, durable materials will further enhance safety.

3. Use of Technology to Enhance Efficiency: Modern technology can improve seating experiences by integrating features such as automated adjustment systems that adapt to individual postures and preferences. Wireless internet capabilities and charging ports for electronic devices can support users in staying connected while waiting or relaxing. These innovations can be particularly effective in shopping malls, transportation hubs, and recreational areas where prolonged usage is common.

4. Providing Services and Communication: Communication systems can be embedded in seating to display real-time information about seat availability or provide notifications. Additional amenities, such as free Wi-Fi or touchscreens for navigation and services, can greatly enhance the user experience. These features support user convenience and create a more interactive and engaging public space.

5. Environmentally Friendly Use: Designing with sustainability in mind involves selecting eco-friendly materials, such as recycled wood, bamboo, or biodegradable composites, to reduce environmental impact. Ventilation systems that rely on passive designs or natural airflow can improve cleanliness and air quality in indoor seating areas. Promoting sustainable practices ensures that seating designs align with modern environmental concerns.

6. Recommendations for Future Research: Further studies should explore the long-term impact of integrating traditional Thai design elements with modern features to evaluate their effectiveness in promoting cultural identity. Investigations into user feedback on specific ergonomic and technological features will also provide actionable insights for refining designs. Comparative

studies across different public spaces, such as urban and rural settings, can help identify unique needs and challenges, enabling tailored solutions.

These recommendations aim to create public seating solutions that enhance user satisfaction, functionality, and safety while reflecting Thai cultural values and supporting environmental sustainability. Future research and continued innovation in this field can lead to more inclusive and impactful designs that enrich public spaces.

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