crafting the future

SUSTAINABLE STRATEGIES FOR THE CREATIVE INDUSTRIES

Crafting The Future
Sustainable Strategies For The Creative Industries

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opening
REMARKS BY THE CHAIRMAN

We have come to see the Creative and Sustainability Industry as an exciting and novel issue to discuss. In this International Conference where we can openly research and discuss various multidisciplinary subjects, we are putting forward the topic in the hope that we can come up with outstanding new ideas to inspire, especially in the issues of *Historical Approach for Sustainable Creative Industry Resources, Innovation and Technology for Sustainable Design, Good Design Through Green Design, Sustainable Entrepreneurship in Creative Industries, Material Exploration and Craftsmanship for Sustainable Design, as well as Education for Sustainable Creative Industries.*

These topics discuss current challenges and solutions, how the creative industry might contribute to achieve sustainable development goals and also the steps taken in the midst of post-pandemic recovery.

Our sincerest gratitude for the keynote speakers, presenters, participants, reviewers and moderators, academic partners as well as the organizer, all of whom have shaped this event as a stage where everyone can share and create a learning community related to the creative industry.

Going forward, we hope that these activities do not only stop here but continue to pave the way and give positive contribution towards the creative industry.

We also hope that by reading this proceeding you will be inspired. Enjoy this proceeding and see you in the next Sustainability in Creative Industries International Conference!

Dr. Astrid Kusumowidagdo
Conference Chair,
Dean of School of Creative Industry,
Universitas Ciputra, Indonesia

preface

It's an honor for us to welcome you to the **1st International Conference ENVISION 2022 in Universitas Ciputra,** Indonesia. We hope this conference will become a platform to bring together academics, researchers and practitioners to exchange ideas and share experiences from their research in creative industry, and also to discuss challenges faced and to come up with the possible solutions.

Sustainable in Creative Industry will be the main topic in this conference ENVISION 2022. The sustainability concept was developed by Gro Harlem Brudtland - chairman of the World Commission on Environment and Development. It refers to the ability to fulfil current needs without compromising that of future generations to fulfil their needs. Sustainability concept is a socio-ecology process that does not stop at one point, but it continues dynamically and produces an ongoing system in the long run. The sustainability issue should be tackled together from socio, economic and environmental point of view by way of improving creativity and innovation. Creative industry sector can contribute to the economy when the global economy is experiencing a downturn due to COVID-19 global pandemic. Creative industry needs synergy from both inventors and investors in ideas, contributions and sharing of experiences to improve further.

There are 6 sessions in this conference:
1. Design Approaches for Sustainable Creative Industries
2. Historical Approach for Sustainable Creative Industry Resources
3. Innovation and Technology for Sustainable Design
4. Sustainable Entrepreneurship in Creative Industries
5. Material Exploration and Craftsmanship for Sustainability
6. Education for Sustainable Creative Industries

The response we got from the call for papers was tremendous, both locally and abroad. We hope you would have a technically rewarding experience and new knowledge from our keynote speakers and participants from various institutions and countries.

We would like to express our gratitude and appreciation to the organizers, program committee members and all reviewers who have helped to keep up the high quality of the published papers. Special thanks go to IEREK and UC Publisher.

We would also like to thank all writers who have contributed their research to this conference. With all your support and participation, we are confident that this conference will continue its success for a long time. We look forward to seeing all of you next year.

Enrico
Co-Chair

Rahayu Budhi Handayani
Co-Chair

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The Love Triangle of Sustainability, Materials

Ruth Oppusunggu

ruth.oppusunggu@lecturer.uph.edu, Universitas Pelita Harapan

Abstract

The concept of sustainability is a discourse that we need to study and apply. Therefore, in the Interior Design Study Program, this opportunity is in the final studio, which provides a comprehensive occasion for students to conceptualize and measure the application of sustainability to their design. Accordingly, this paper is a note on measuring sustainability in their final studio, an interior design for the Dian Harapan School in Karawang, Banten. Besides that, the school design was the authors' collaboration with the Pelita Harapan Foundation in determining the final design. In addition to exploring sustainability, cost efficiency is also a consideration in research, especially from the perspective of collaborators. The authors review these two considerations in another equivalent existing school, namely the Dian Harapan School in Mentawai, Banten, for the authors to understand the tendency of both. This study measures materials in interior construction -floors, walls, ceilings- based on 13 sustainability criteria, the basic parameters of the green building councils in many countries. The authors develop each benchmark of the 13 criteria from various journals and references. This research provides an opportunity for the authors to explore and experience the basis for determining a sustainability criterion. At the end of the paper, the authors conclude the relationship between

sustainability and cost efficiency of interior materials in the design they have accomplished.

Keywords:
School design development; sustainable materials; cost-efficiency design

1.1. Introduction

Interior design is part of building and construction. Together, the last two are responsible for 39% of all carbon emissions in the world. 28% comes from operational emissions, and the remaining 11% is from embodied carbon emissions associated with materials and construction processes throughout the whole building lifecycle (World_Green_Building_Council, 2019). Therefore, we need a sustainable design that seeks to reduce the negative impacts on our environments, eliminate resources, and promote interaction between people and the natural environment (Kilmer & Kilmer, 2014, pp. 2-4). There are several steps in interior design that can minimize the environmental impact, and one of them is choosing sustainable materials (Ballast, 2013, pp. 10.09-10.16). And materials are important for interior design because materials are the basic substances for creating interior construction, giving form and shape, variety, and distinction to space experience (Kilmer & Kilmer, 2014, p. 373). Therefore, sustainable materials are an important subject from conceptualization to review in the interior design study. Whereas students learn to apply sustainable materials in the design stage, and they learn to criticize their sustainable materials application in the review stage, like this research paper. In this way, students will experience a full iterative design study.

This paper discusses the sustainable material applications to the interior design of new schools, namely the Dian Harapan School in Karawang, Banten. The authors, as the interior designers,

collaborated with the school foundation. The authors attached the importance of sustainable materials, while the foundation attached the importance of economical materials. The design was part of the authors' final project and only reached the design development stage. The authors also review the material application of the existing school in Mentawai, Banten, under the same school foundation to understand the economic concern.

1.2. Literature Review

This paper is based on qualitative research as the authors attempt to identify the design results based on subjectivity and theories and to explore the authors' reflection (Pearce, 2012, p. 129) on sustainable material applications to school interior design. Sustainable design considers the full life cycle of the building and the material, including the impact of material extraction through its fabrication, installation, operation, maintenance, and disposal. These considerations are contained in 13 criteria of sustainability, which are embodied energy, renewable materials, recycled content, energy efficiency, use of local materials, durability, low volatile organic compound (VOC), low toxicity, moisture problems, water conservation, maintainability, the potential for reuse and recycle, reusability (Ballast, 2013, pp. 10.02-10.10). The authors collect and analyze sustainable material applications on the floors, walls, and ceilings. Because interior space within an architectural building is defined by interior elements of floors, walls, and ceilings (Ching & Binggeli, 2012, p. 148). And this paper focuses on the classroom material applications because the classrooms are the main space of any school.
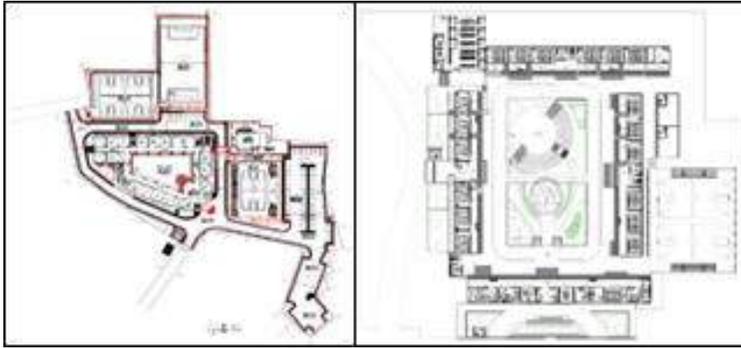
Figure 1.1 The Site Plans. Left SDH Mentawai. Right SDH Karawang
(Source: SDH Mentawai; Finley. 2022)

1.3. Methodology

The authors compare classroom material applications between two schools, regardless of the classroom area. Analysis is carried on materials with largest volume. The 13 criteria is a measuring tool of how sustainable is a material. The more a material meets the criteria, the more sustainable it is. The authors define indicators of each criterion based on sustainable blogs, e-journals, and online product websites. Colors represent sustainability content. Green is sustainable, blue has some sustainability, and pink has no sustainability. To save space and time, this paper only presents one material indicator-making. Afterward, the data analysis is described within tables and points and then tabulated for conclusions.

1.4. Discussion

Figure 1.2 The Classrooms. Left SDH Mentawai. Right SDH Karawang
(Source: Oppusunggu; Finley. 2022)

Based on the school foundation input, the authors choose materials with the largest volume. They are as written below.

1. Floor materials. SDH Mentawai applies 600x600 mm Sandimas Atlanta ceramic tiles. SDH Karwang applies 500x500 mm Roman Austin White ceramic tiles and 200x600 mm Taco Vynil Warm Cherry tiles.
2. Wall materials. SDH Mentawai uses red bricks and Jayaboard Sheetrock Gypsum dry walls. SDH Karawang uses concrete walls.
3. Ceiling materials. SDH Mentawai uses Armstrong Classic Lite RH 99 acoustic panels. SDH Karawang uses Jayaboard Sheetrock Gypsum ceiling panels.
4. Taco will be the representative material in how the authors making the indicators for each criterion, as shown below.

Table 1.1 Indicators for 13 Sustainable Materials

No.	Sustainable criteria	Indicators	Sources
1	Renewable materials (RM)	Chroline is found in salt and renewable	https://www.whatisvinyl.com/ https://www.chlorineinstitute.org/stewardship/chlorine /chlorine-manufacture/
2	Energy efficiency (EEF)	Can be used for natural insulator	https://jabaras.com/blog/jabaras-flooring/energy-effici
3	Use of local materials (ULM)	Available within radius of 804 km	A nearby (15 km) shop sells Taco
4	Maintability (M)	Can be cleaned with a mop withou any chemicals	https://www.brentcarpets.co.uk/news/advantages-vin
5	Reusability (R)	Can be removed and reinstall	https://www.nielsenbrosflooring.com/blog/articles/Ca n-vinyl-plank-flooring-be-removed-and-reinstalled#:~:text=Yes%2C%20both%20vinyl%20plank%20floorin g,end%20up%20in%20the%20landfil
6	Recycle content (RC)	Half of the content can be recycled	https://homesteady.com/12003352/are-pvc-blinds-da
7	Durability (D)	Durable for 5-20 years, withstanding 130 kg/m2	https://www.carpetcaptain.com/flooring-options/most-durable-flooring/ https://www.bhhomeinspections.com/building-materi
8	Moisture problems (MP)	Water resistant, but not fungus resistant	https://www.bestlaminate.com/blog/how-do-i-clean-m
9	Water conservation (WC)	Needs water for polyurethane layer-making	https://www.urbansurfaces.com/2018/12/21/how-viny l-flooring-is-made/#:~:text=The%20manufacturing %2 0process%20begins%20with,it's%20also%20cut%20 into%20sheets.
10	Potential for reuse and recycling (PRR)	Complicated recycle process	https://homesteady.com/12003352/are-pvc-blinds-da
11	Embodied energy (EEN)	144.7 MJ/kg for processing	https://www.sciencedirect.com/topics/engineering/em
12	Low VOC content (LVOC)	using toxic adhesives	https://www.ewg.org/healthyhomeguide/flooring/#:~:t
13	Low toxicity (LT)	Produce dioxin gas in manufacture process	

	Fully sustainable (1 point)		Some contain sustainable (0.5 point)		Not sustainability (0 point)

After the authors analyze a material based on the indicators of a criterion, the author can determine whether the material meets this criteria. A bubble represents a criterion, and color represents material sustainable level, as shown in Table 1.1. As shown on Image 3, the authors arrange the criterion bubbles in the same sustainability groups, then assign and accumulate points for each material. The number of points helps the authors to see which material is more sustainabile than the others. If we agree that a material meets 70% of the 13 criteria or reaches a value of ≥ 9 points, then the material is sustainable. Based on the material analysis mapping on Image 1.3, two SDH Mentawai materials (ceramic tiles and red bricks) meet the sustainability criteria. Meanwhile two SDH Karawang materials (ceramic tiles, concrete walls) also meet the criteria.

We also include the unit price of each material to illustrate the economic value. However, the price per floor unit has different content from the price per wall and ceiling unit due to the various data sources. The price per floor unit includes the installation price. The price per wall and ceiling unit only exclude the the installation price. The economical floor material is ceramic floor, the lowest price for wall material is red brick, and the best economic value for ceiling material is gypsum board. The highest level of sustainable material is ceramic tiles although the price is the highest in floor material grouping. The lowest level of sustainable materials are gypsum board and acoustic panels with relatively expensive price.

Figure 1.3 Material Analysis Mapping

(Source: Oppusunggu. 2022)

1.5. Conclusion

Here, we can conclude several things

- Sustainable materials can come with a high price, especially at the initial cost. But the maintenance and operational costs drop significantly,
- Materials, sustainability, and cost efficiency -especially for maintenance and operational costs- are related and influence each other,
- Sustainable materials should become the main consideration for school buildings and interiors not only because they are environmentally friendly but also cost efficient,
- We can find reuse, maintainability, use of local materials, and energy efficiency as the most common sustainable criteria in school materials. Schools tend to reuse and maintain the existing materials in line with their needs to make efficient expenditures. The use of the local criterion

of a material is not always in line with its embodied energy criterion. The level of energy efficiency of material can come from its part of building design passive, whether to filter energy transfer or enhance natural lighting,

- There is good chemistry between materials, sustainability, and cost efficiency for environmentally friendly school interior design and construction,

- As a part of the iterative course in interior design study, the authors as students can learn a complete design process from conceptualization to criticism and refinement on how sustainability can be applied, measured, and managed,

- For further studies, it is possible to research more interior materials, build a set of plausible yet simple indicators, apply the green building councils rating system, or simplify the rating system for handy sustainable measurement for interior design student's projects.

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Analysis of Social Change Approach to Nursing Home Design

Andreas Handoyo

andreas.handoyo@uph.edu, Universitas Pelita Harapan

Abstract

In 2050, Indonesia will have a demographic bonus for the elderly population above 60 to reach 81 million people. This situation deserves attention to avoid the *"kodokushi"* phenomenon like in Japan. *"Kodokushi"* is a phenomenon where many elderly people in Japan die alone, and it was only a few days after their death. Indonesia has several similar cases, while the quantity is still not as much as in Japan. *Kodokushi* in Indonesia needs to be anticipated so that Indonesia can minimize the impact of the demographic benefits. The elderly group requires four aspects in their daily life, namely: biological, psychological, social, and economic aspects. However, in designing a residence for the elderly, psychological and social aspects are often neglected. The design of the space program and the physical form of the building does not pay attention to the social interactions needed by the elderly. Based on the explanation above, this study aims to explore the theory of social changes in the elderly. That way, planning and designing facilities for the elderly such as elderly housing, remains balanced by paying attention to psychological and social aspects. Thus applying the theory of social changes will assist in forming space and design programs in Elderly Housing as a place to live for the elderly who pay attention to spatial and programmatic needs. This research measure qualitatively the importance of the four aspects needed by the elderly. As a result, the movement and

mobility of the elderly is one of the essential factors in planning and designing facilities for the elderly.

Keywords:

Elderly, Elderly Housing, Social Changes, Psychology Aspects

2.1 Introduction

From 2012 to 2031, Indonesia will experience a demographic bonus, where the Indonesian population of productive age increases rapidly. People of productive age will enter the elderly group, where the percentage of older people in Indonesia will increase to 80 million by 2050 (Kemenkeu, 2015). The number of older people in Indonesia is experiencing a decline in their quality of life. Many older people in Indonesia still live in inadequate conditions for their needs. The Central Statistics Agency (BPS) noted that the percentage of the elderly population had been more than 10% since 2020 and estimated that this percentage will increase to 12.5% in the next five years and will continue to increase to 41 million people (16.6). %) in 2035, and to 80 million people (33.2%) in 2050 (Databoks, 2021).

"Kodokushi" is a phenomenon caused by the large number of elderly people in Japan who die alone, and it is only known a few days after their death. With the issue of increasing the number of older people in the coming year, several similar cases have occurred in Indonesia, such as the case in Jakarta (elderly found dead in boarding room in Cilandak, South Jakarta, 2021), in Makassar, (elderly found dead alone in house, 2021), and Bogor, (poor, two days alone at an elderly home in Bogor) Killed in the Room - Bogor Issue. 2021). This phenomenon has happened in

Japan, where too many older people have been found dead on their own.

The elderly is often associated with physical, psychological, and social health problems (Bodeker et al., 2020). This research aims to help improve the quality of life of the elderly by meeting the needs of the elderly in physical, psychological, and social aspects in a dwelling. The problems of the elderly related to these three aspects were solved through a designed design strategy. Thus, this research can help determine what aspects of social changes are needed for the psychological, social, and physical improvement of the elderly and what spatial and spatial programs can answer social challenges in Elderly Housing.

2.2. Study of Social Changes Theory in Elderly Housing

Social changes for older people require them to adapt their roles between family and work. The elderly are often seen as people who face adjustment problems because of the changing roles they experience. The loss of a role has many consequences; loss of independence, identity, personal satisfaction, ability to carry out daily activities, and sense of personal responsibility (Hooyman et al., 2008). Social changes are related to several theories; disengagement, activity, and continuity theory, which can explain how changes in the way of interacting with other people and the elderly environment (Perkins, 2013). From each of these theories, several spatial criteria adapt to the changing roles experienced by the elderly. It also helps the designer to understand the mindset of the elderly. Elderly housing is a place to live for the elderly who are still relatively healthy and do not require strict medical attention. Elderly housing, or what can be called retirement home or senior housing, can be categorized as an assisted living facility where the elderly can live individually or together, getting attention and

assistance in their daily activities. The loss of a role has many consequences; loss of independence, identity, personal satisfaction, ability to carry out daily activities, and a sense of personal responsibility (Hooyman, et al., 2008). Therefore, the elderly need assistance in the process of changing their roles.

Disengagement Theory

As they age, some individuals will withdraw from specific roles and responsibilities. Disengagement or disengagement in a healthy role must occur from themselves, where they must determine the pace. For example, a grandmother who used to be used to preparing food every day and has now given up that role so that cooking is no longer necessary for her social role, still needs a kitchen space in her home. Forcing to break away by designing a place to live that does not have a kitchen can hinder the success of aging (Perkins, 2013). That way, the design of the elderly residents must be able to provide control over their daily habits. They have access to flexible schedules and rules, private spaces, and public spaces to meet with family and friends. The circulation path is no exception, which makes it easy to reach activity spaces in communal spaces, libraries, and others.

Activity Theory

In addition to releasing the role (disengagement), the elderly still want to find a new role. A person who retired from a company executive will look for another role, such as chairman of an organization. In other cases, they choose to learn a musical instrument or complete their studies (Perkins, 2013). They should be allowed to carry out these new roles and responsibilities. With this explanation, the design of facilities for the elderly to live in must meet their learning needs. First, learning can be done remotely by providing a computer room and similar technology. Second, practical learning suitable for hobbies or involves the community,

such as a performance room, sewing room, gardening, cooking room, and others.

Continuity Theory

The elderly tends to like to surround themselves with familiar items and have a connection with their routines to strengthen their self-image. For example, a widower or widow used to sleep with their partner will want a large mattress. Perkins (2013) wrote that the elderly adapts to physical changes, situations, and life experiences in different ways so that the transition to a new place of residence still represents their previous life. One way to maintain continuity is to give the elderly control over life changes while maintaining their mental health (Steptoe, A., & Appels, 1989). So, the design of the residence for the elderly must be flexible. Therefore, the occupants can arrange the layout according to their preferences and reflect their lifestyle.

2.3. Supporting Theory

In addition to social changes, several other theories and concepts provide criteria that discuss spatial forms to complement the theories of social changes that only talk about programs. Several standards become criteria in building residential houses for the elderly. Criteria from the theory of basic needs and health criteria become essential variables in designing the form and layout. In addition to social changes, the concept of indoor & outdoor environments also discusses criteria in terms of programs, but this concept explains the quality of indoor and outdoor, which is not present in social changes.

Table 2.1 Summary of supporting theory

Reference	Theory/ Concept	Notes
Building Type Basics for Senior Living	Basic Needs	Space based on spatial safety and comfort for the elderly.
	Disengagement	Helping the elderly with changing roles with a space design approach that can support the process.
	Activity	Providing space for seniors who want to have new activities to create new roles for them.
	Continuity	Make the atmosphere in residence more familiar, which is related to the previous lifestyle of the elderly.
Sustainable Design for The Elderly: Senior Housing Design Guidelines	Indoor	The rooms meet the needs of privacy, social interaction, direction, security, disability mobilization, and emergencies in the building.
	Outdoor	Outdoor areas are accessible and safe for the elderly to access.
Architectural design strategies for infection prevention and control (IPC) in health-care facilities: towards curbing the spread of Covid-19	Spatial Health	The design Considers health security related to the ongoing pandemic by paying attention to natural ventilation and natural lighting and providing distance to implement social distancing.

The design criteria for the facility space for the elderly can at least meet their needs in adapting. Familiar design elements and attributes will help transition to a new environment without feeling alienated. By eliminating the components of the same variable, six design variables are obtained, namely: space for socializing & intergeneration programs, clear direction system, a sense of security in a private space, units that can be customized according

to the elderly's lifestyle, easy outdoor access, safety in outdoor area, and shading.
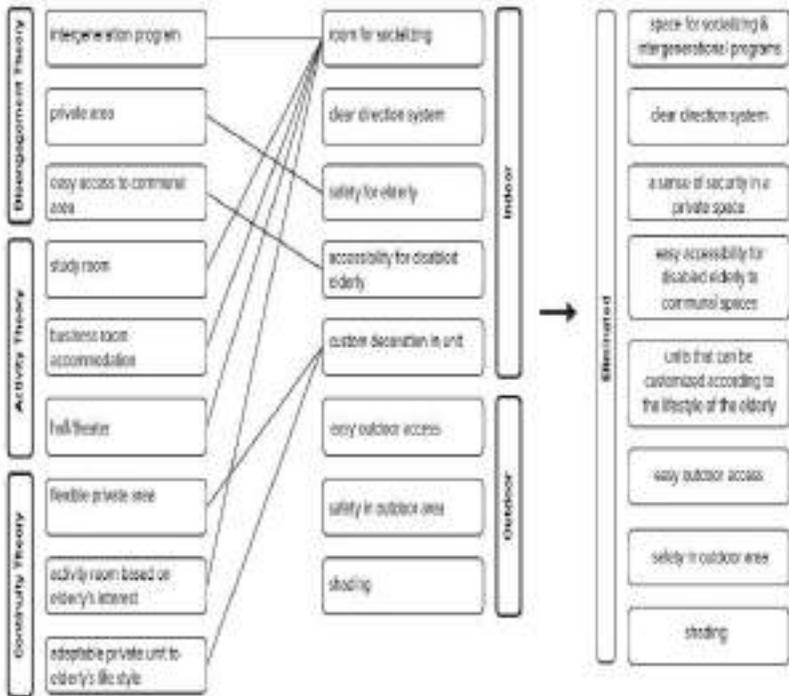

Figure 2.1 Criteria and frameworks of Social Changes Theory

This variable has a number of design criteria for each that have an impact on the elderly's social change adaptation process See Tables 2.2.

Table 2.2 Relation of Variables and Criteria of Design

Variables	Criteria
Space for socializing & intergeneration programs	Socialization space with a symmetrical shape, provide a bathroom inside socializing area, utilizing sensor technology, minimize edges and corners in social spaces, minimal distance between social spaces, enough lighting, provide tactile information to steer into intergenerational space, provide an opening for sunlight to enter the space to socialize, provide openings for natural ventilation in social spaces, sufficient social space to implement social distancing.
Clear direction system	Provide landmarks as wayfinding, clear direction to the bathroom, utilizing sensor technology in the direction system, minimal signage distance, directing system with sufficient lighting, guidance system by utilizing tactile information, direction system that can be seen clearly without having to approach.
A sense of security in a private space	Provide a sense of security in a space that has a symmetrical shape, provide a sense of security in the bathroom, utilize sensor technology for emergencies, minimize edges and corners to make the space safer for seniors, provide sufficient lighting in the room to provide a sense of security, provide an opening for sunlight, provide openings for natural ventilation, provide a sense of security by maintaining a distance between residents.
Easy accessibility for disabled elderly to communal spaces	Accessibility for disabled elderly in shaded outdoor areas, accessibility for the elderly in the bathroom, utilizing sensor technology to facilitate the accessibility of the elderly, repeating/symmetrical spaces & landmarks, facilitate the accessibility of elderly people with disabilities by providing minimal distance between spaces, accessibility for the elderly with disabilities with sufficient dimensions to implement social distancing.
Units that can be customized according to the elderly's lifestyle	Symmetrical shape of the unit, certain bathroom layout that can adapt to the lifestyle of the elderly, units with minimal edges and corners, sufficient lighting interior lighting, architecture-interior attributes with tactile information, an opening for sunlight, openings for natural air/ventilation.

Easy outdoor access	Symmetrical outdoor access, access to a shaded outdoor area, outdoor access with minimal edges and corners⌷provide minimal distance to access the outdoor area more easily, outdoor access with sufficient lighting, provide tactile information on access to outdoor areas, provide an opening for sunlight to enter on access to the outdoor area, provide openings for natural ventilation to enter the access to the outdoor area, outdoor access with sufficient dementia to implement social distancing.
Safety in outdoor area	Symmetrical shape of the outdoor area to provide a sense of security, provide a sense of security by shading the outdoor area, minimize edges and corners in outdoor areas, sufficient lighting in the outdoor area to provide a sense of security, the application of social distancing in outdoor areas for the safety of the elderly.
Shading	Sun shade with symmetrical shape, provide shade for outdoor areas, sun shade with sensor technology.

2.4. Research Method

This study uses a qualitative method by analyzing several precedent studies. The object of the precedent study is an elderly facility designed to accommodate the activity needs of the elderly. The selected examples are a selection of assessments regarding design criteria with spatial quality programs and how these criteria accommodate the activities and needs of the elderly based on the framework in Tables 2.2

− Case Study Kampung Admiralty Nursing Home

The Admiralty Village is a mix-use¬ building. Each existing space program supports the needs of the elderly. The primary needs of this facility are to accommodate in this facility include daily routines and medical and social activities. Room programming of Kampung Admiralty seems to focus on improving the psychological and social aspects of the elderly. This Admiralty Village divides the layout into three zonings, a community plaza intended to be a

communal and commercial space, a health center to meet the medical needs of the elderly, and an apartment area where the elderly reside. In addition, there is also a community garden that utilizes the rooftop area of the building to have optimum green open space.

Providing lots of access to outdoor areas, having enough vegetation, and providing a health center for the elderly can provide a sense of security and comfort for residents. Residents can easily access all their needs by providing these facilities in one building. Then in the context of a pandemic, this building is also sufficient to meet the criteria in preventing virus transmission by providing enough open areas so that it has an area with sufficient natural ventilation to have circulation for air change and sufficient sun exposure.

- Case Study Hargo Dedali Nursing Home

Panti Werdha Hargo Dedali, is located in East Surabaya. This orphanage is a social institution to improve the living standards of the elderly physically and spiritually and be a substitute for the family in providing care and care for them. This orphanage is specifically for older women aged 60 and over who do not suffer from chronic/infectious diseases. This nursing home has office space, a waiting room, a meeting hall, 12 bedrooms, 16 bathrooms, a dining room, a treatment room, a garden, and a guard post.

The assessment of Kampung Admiralty and Hargo Dedali was carried out by assigning a number to each design criteria according to Table 2.2. Observations focused on the existence of design criteria, function, effectiveness, maintenance, and aesthetic value. See Table 2.3.

Table 2.2 Scoring Table of Preedens

Variabel	Numbers of Criteria	Point Scale
Space for socializing & intergeneration programs	10	1 point: Criteria exist but not working
Clear direction system	7	2 points: Exist, works, but not very effective
A sense of security in a private space	8	3 points: Exist, function, effective, but not maintained
Easy accessibility for disabled elderly to communal spaces	6	
Units that can be customized according to the elderly's lifestyle	7	4 points: Exists, functions, is effective, maintained, has no aesthetic value
Easy outdoor access	9	5 points: Exists, functions, is effective, maintained, has aesthetic value
Safety in outdoor area	5	
Shading	3	

2.5. Result and Discussion

Kampung Admiralty is quite good at meeting the criteria of the three theories of social changes by providing complete facilities for the elderly, where there is a community plaza whose hall can be used as a multi-function area to a place for elderly activities such as gymnastics. Kampung Admiralty has an inter-generational program, where many of the grandchildren of the elderly who live in Admiralty Village are entrusted to a day-care facility also available in this building. So that the elderly can spend time with their grandchildren after finishing day-care. Meeting the social needs of the elderly in this building is quite good by having an intergenerational program, providing a library, hall, and community garden, and providing empty apartments so that the elderly can fill in with their furniture and personal belongings according to the criteria table above. Providing lots of access to outdoor areas,

having enough vegetation, and providing a health center for the elderly, can provide a sense of security and comfort for residents. By providing these facilities in one building, the occupants' needs are fulfilled to the maximum, which will also impact the changing roles experienced.

Then from the observation of the object study, the Hargo Dedali Panti entirely meets the criteria of several variables. The space for socialization and intergenerational programs at this orphanage is placed at the area's core so that access is relatively easy to find and the distance from each room is not too far. Besides that, the mass form of this orphanage consists of several masses, thus creating a fair amount of open area, allowing these rooms to have natural light and ventilation. Then by having the mass division by categorizing corridors with the condition of the elderly living in this orphanage. Lorong Melati, is inhabited by mothers who have a healthy physical condition. The bedrooms in Lorong Mawar are inhabited by mothers who are physically unwell and need treatment.

Meanwhile, elderly mothers reside in the bedroom in Lorong Kenanga. These hallways connect the outdoor access, which is quite a lot; the elderly can easily interact with anyone in the corridor. The outdoor area in this orphanage is also quite well designed, seen by providing railings to help the elderly when walking, the dimensions of the corridors that are wide enough for wheelchair users, and the housing that is integrated with corridor categorization so that each bedroom can directly access the open area.

The assessment in this precedent study was carried out through observations from direct observation, photos, videos, and articles describing the building. The value obtained is the total fulfillment of the presence or absence of each criterion in this building.

Table 2.3 Criteria Comparison of Kampung Admiralty and Hargo Dedali Nursing Homes

Variables	Kampung Admiralty Nursing Homes		Hargo Dedali Nursing Homes	
	Criteria that meet	Score	Criteria that meet	Score
Space for socializing & intergeneration programs	7/10 (60%)	32/50	8/10 (80%)	27/50
Clear direction system	3/7 (43%)	14/35	6/7 (86%)	16/35
A sense of security in a private space	5/8 (63%)	18/40	6/8 (75%)	17/40
Easy accessibility for disabled elderly to communal spaces	3/6 (50%)	15/30	5/6 (83%)	13/30
Units that can be customized according to the elderly's lifestyle	6/7 (86%)	23/35	7/7 (100%)	9/35
Easy outdoor access	8/9 (88%)	29/45	8/9 (100%)	34/45
Safety in outdoor area	5/5 (100%)	21/25	5/5 (100%)	13/25
Shading	2/3 (67%)	8/15	2/3 (67%)	6/15
Average	70,88%	160/275 (58%)	86,38%	135/275 (49%)

Nursing home facilities with many facilities are not commensurate with the quality of the room. Although Kampung Admiralty has fewer variables (70.88%) than Hargo Dedali (86.38%), the results are inversely proportional to the quality of the existing criteria. Kampung Admiralty recorded 160 points, while Hargo Dedali only recorded 135 of 275 points. From these results, involvement in the facility will not be effective if it is not used by the

occupants. Kampung Admiralty almost outperformed every nursing home design variable. Even so, several variables have values that are not much different, including socialization space, wayfinding, and space privatization. Outdoor facilities, ease of accessibility, and comfort in using shadows are still considered relatively the same. Both see an important continuity between the treatment of space and outdoor space.

The biggest advantage of Kampung Admiralty lies in the assessment of unit customization, which is more flexible to accommodate the activities and activities of the elderly. Second, the shape of the Admiralty Village is designed in such a way that access to air, and light ventilation is maximized in the building. In fact, the effectiveness of ventilation can still be adapted during the pandemic, so there is not much change in the layout. This is supported by an interview with resident Hargo Dedali who said that they needed social facilities more than for individual activities. If possible, self-development activities that are carried out individually can be carried out in open places or spaces that allow them to socialize. The elderly need companions and friends who provide a calm and relaxed atmosphere and are not rushed or rushed. The elderly like to be visited by children. In line with Bodeker's (2020) what happened in Taipei and China, the elderly identify children as the most important source of objective and subjective support, apart from spouses and relatives.

2.6. Conclusion

In time everyone who reaches certain age will experience a change of roles. Everyone will adapt to entering a new role in a new environment. Appropriate spatial and spatial programs can help this transition process, especially in terms of psychological, social, and physical. Some of the things identified to reduce the adverse effects of this transition include daily activities, habits, and preferences. A

successful design provides peace for residents because the process of changing social roles can be carried out smoothly. Psychologically, it is important how parents see and feel there is a part of themselves in the past in a new place. Moving and adapting to a new place does not guarantee that everything will be exactly the same as in the old place. However, the elderly residents do not feel that an important part of themselves is missing. The need for contact and social interaction is also fulfilled, both with fellow nursing home residents or visiting family and other colleagues. Parents need spaces as means to channel their habits, hobbies, and hobbies as an extension of their previous daily life. In the midst of physical limitations and mobilization, designs that empathize with the elderly consider not only aesthetics but also spatial qualities that can provide positivism during the transition and living process.

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3

Public Space as Urban Cultural and Tourism Education Facility with Historical Atmosphere (Case Study: Old City Area of Jakarta)

Silviana Tahalea

silviana@trisakti.ac.id, Universitas Trisakti

Abstract

Old City area, which is a part of Jakarta City has become the symbol of Batavia historical greatness. Batavia is also known as the Queen of The East due to its beauty (Brill, 1993). From its long historical record and the abundant number of historical heritages, Old City area revitalization efforts have become a priority in DKI Jakarta Governor's work programs. Based on Law Number 26 Year 2007 regarding Landscapes, Jakarta should own 30% of green open spaces from its administrative area. However, Jakarta only provides 10% of green open spaces. The small amount can also be seen in Old City area with small portion of green open space or public area. Old City area of Jakarta is now filled with illegal dwellings and abandoned buildings which often used by migrant communities as their residences. This situation creates irregularity and discomforts for the people. Old City area is a cultural heritage area, which often utilized as gathering area for artists with routine activities such as photographers, mural artists, and theatrical actors. However, these communities are often face difficulties due to limited facilities in the area. Based on the policy analysis on historical cultural heritage preservation of Old City area in Jakarta, we can conclude that the aim of revitalization efforts is to provide

public open spaces by optimizing their functions, comforts, while also bringing back historical heritage atmosphere. The goal of this design is to shape interaction spaces pattern which is in accordance with the local art communities so that they can have their own working spaces. The method utilized in this research was a qualitative descriptive and case study methods, which were implemented at Old City area. The revitalization of Old City area in Jakarta has the potential to improve it as urban tourism and art education, which is also integrated with green open space that functions as social space. The involvement of communities in the area is also important to assist the organizing, driving, and supervising efforts of public areas.

Keywords:

Public area; art education; urban tourism; historical heritage.

3.1. Introduction

The Old City of Jakarta (Indonesian: *Kota Tua Jakarta*) is known as a reflection of the historical heritage of the founding of the city of Jakarta, where buildings tell stories about the power that once existed in this area that had experienced both external and internal influences. The transfer of power from the two kingdoms and the colonial period left heritage buildings that should be preserved. The efforts of the DKI Jakarta Government in maintaining historical buildings in the Old City area have never stopped. Revitalization is a priority for every governor of DKI Jakarta in charge. The Old City of Jakarta is located in West Jakarta which is also a business center because it is adjacent to Chinatown, where most of the people trade. Based on data from the DKI Jakarta Government, the Old City area (Old Batavia) was once a symbol of glory. This area has undergone several changes in power. Those that once controlled this area were the Tarumanegara Kingdom, the Sunda-Pajajaran Kingdom, the Banten-Jayakarta Sultanate, the

VOC, and the Dutch East Indies. The existence of the Sunda Kelapa port as the main gateway for the entry of merchant ships at that time made the Old City a center of the economy. The Old City was located close to the Sunda Kelapa port – an entry point for merchants from various countries. However, it was also the entry point of the colonizers into Batavia. This area then developed towards the center of current West Jakarta.

The discourse to revitalize the Old City of Jakarta as a tourist space has been promoted for a long time. Efforts to revive and make the Old City a heritage tourism area have been carried out by holding various events both on a national and international scale in this area. According to the results of a preliminary study by the researchers, the Old City is now experiencing serious problems. Some of its areas are now disorganized, slums, and have lots of squatters. In addition, thuggery often occurs in this area. This causes inconvenience to the surrounding community because this area becomes scary and indirectly loses its beauty. Referring to the results of the policy analysis, the objective of the policy to support the preservation of the historic environment of the Old City of Jakarta is to create a public open space by optimizing function, user comfort, and regional continuity with a maritime image because it is located in the Sunda Kelapa Port zone surrounded by heritage buildings (Dewi, 2009). According to Dewi, based on the Draft of the Master Plan of the Old City of Jakarta published in 2007, the area consists of 5 zones, namely as follows.

a. Sunda Kelapa Zone,
b. Fatahillah Zone,
c. Chinatown Zona,
d. Pekojan Zone, and
e. Rejuvenation Zone.

Special areas in these zones have a higher historical value than other areas in the radius of the Old City of Jakarta because those areas are highly limited in their development. The problems are that the area is disorganized & slum, has lots of illegal dwellings, and lacks public green open space that can be used for the activity, education, and tourism facilities. According to data from the Indonesian Environmental Forum (Indonesian: *Wahana Lingkungan Hidup Indonesia* (WALHI)), one of the largest environmental movement organizations in Indonesia, the number of public open spaces in Jakarta has only reached 9% of the minimum 30% of green land that is ideally possessed by a city. Based on these data, Jakarta lacks public green open space.

Everyone on this earth undeniably makes use of public spaces after leaving their homes. They may use sidewalks, streets, parks, and open spaces between buildings that function to connect those buildings. Public space is an area where we also often spend time in everyday life. However, designers or architects in most cases only think about the main building. Things outside the main building sometimes get neglected or are only considered after the main building is completed. Despite that, in the current era, many changes have occurred. Many people have paid attention to the comfort of public spaces and take advantage of them as areas to rest and work.

According to Gaventa (2006:31), public spaces include plazas, streetscapes, walkways, parks, and others that can be adapted to the needs of the local community and can be used by the general public. Public space is an open space, which is a location that is planned because of the need for meeting places and joint activities in the open area. Public space is part of an environment that has a pattern. Principally, public space can be considered as a place that can accommodate certain activities of humans both individually and in groups.

To create a city that has characteristics, humanism and spirituality are not only limited to spatial planning and city buildings because if they are the only thing that becomes the main point, then the characteristics of a city will be lost, just creating a metropolis with silence. To realize a city that grows and develops into an education center, an information center, a growth center, a center of change, a center of appreciation, and a center for the development of moral values, its citizens must have basic human qualities. These qualities will become the main points to establishing human civilization. These basic qualities are as follows.

a. The city must be inhabited by a community of philosophers whose young people formulate concepts of ideology, constitutional conceptions, and other philosophical sciences,

b. Whose artists have creativity and characteristics that will shape the character and characteristics of society,

c. Whose technocrats will influence the development of the economy, improve the political system, and accelerate the growth of life in a better direction based on science and technology, and

d. Whose businessmen tend to influence the urbanization process quickly by expanding their wings in trade and services in urban areas by building offices, factories, and other business centers.

Urban planning is also related to spatial planning which includes economic, social, and cultural factors which are usually not related to the visual quality of the environment. Activities carried out in urban areas are also diverse, divided into formal and informal activities. The examples of formal activities are as follows.

a) Commercial activities, which include various trade scales, such as stalls, kiosks, markets, shops, supermarkets, and malls.
b) Residential activities, which include various types of housing and settlements from simple houses to luxury homes.
c) Industrial activities, which include small, medium, and large industries.
d) Public activities, which include various buildings or land used for the public interest.

The Intan City Park area is a historic urban area. This area is still part of the Old City of Jakarta. This area is in the process of being revitalized by the DKI Jakarta Government to restore the existing historical nuance. Therefore, it is necessary to pay attention to the design of new buildings that act as one of the conservation efforts with the concept of historic urban areas. According to Alexander Papageorgiou (1970) in the book "*Continuity and Change: Preservation in City Planning*", there are two criteria to determine an area a historical urban area, namely as follows.

a) Uniqueness in its urban composition, and
b) Architectural quality and geographical locality.

Furthermore, the aspects that need to be preserved and protected from an area that is part of a cultural heritage area are aspects of historic monuments that have historical, scientific, and cultural meanings. According to Sir Bernhard Feiden (1994) in the book "*Conservation of Historic Buildings*", in the context of conservation, several things also need to be considered, namely as follows.

1. Damage prevention with good maintenance, supervision, and management.

2. Efforts to preserve the original condition. Thus, the construction or repair must refer to the original condition.
3. Consolidation of the physical materials of a building. In principle, it is an effort to strengthen the building's resistance to damage.
4. Restoration: efforts to rebuild in line with its original forms based on evidence of the authenticity of forms, materials, and designs.
5. Rehabilitation: efforts to maximize the usefulness of building functions. One of the methods is adaptively changing the building so that it can be used with new, more modern functions.
6. Reproduction: attempts to replace parts of historic monuments that have been damaged or lost.
7. Reconstruction: an effort to rebuild a building or place that has been lost or heavily damaged based on sufficient evidence.

Based on the fulfillment of city quality points and urban activities, the role of the artists is very important in terms of creativity and the characteristics that will shape the character and characteristics of the society. Therefore, in this study, the authors will discuss the design of green open public spaces in the Old City of Jakarta so that it can be used as an area of art education and tourism for the people of Jakarta.

The Old City of Jakarta is a heritage area that continues to attract the attention of the people of Jakarta to visit. However, the physical condition of this area still needs a lot of improvement in terms of facilities and infrastructure to meet the criteria of a city with excellent characteristics. In the area of the Old City of Jakarta, we can easily find the activities of art communities, such as painting communities, photography communities, and music & theater arts communities. However, these communities do not have the facilities

to carry out their activities although they are also the main attraction of the Old City. Therefore, the authors are interested to provide facilities for this active art community so that people can learn art and witness art activities.

According to expert research, this kind of facility is necessary for urban people to remain optimistic and attached to the values that are being promoted in a place. The event that has proven this argument is the "*Sunday Morning*" event in Yogyakarta. Therefore, the Old City area needs to be revitalized by involving the artistic community, especially those from the local community. This collaborative concept is often referred to as community-based tourism. In this concept, the community is involved in the design of the area, particularly related to earning income, job opportunities, and the preservation of the environment and local indigenous culture which in turn fosters the identity and pride of the local people (Setyaningsih, 2015).

To respond to this revitalization discourse to become an integrated tourist area and maintain the historical values of the glory of the city of Jakarta in the Batavia era, it is necessary to create a public open space by optimizing function, user comfort, and regional continuity by carrying a maritime image with its suspension bridge and the Sunda Kelapa port zone (Euis Puspita, 2009). Considering many complex problems stated above, this study attempts to analyze the potential of four main aspects in revitalizing the Old City. The four aspects include the role of mural painting in public space, the role of informative signage, the incorporation of vintage visual elements with colonial patterns, and green open spaces as places for art education and tourism while maintaining the colonial theme as a form of preserving heritage elements.

The purpose of this design is to form a pattern of interaction space according to the character of the local community and the

millennial generation so that this generation is interested in getting to know the culture and character of a place. In the process of designing the spatial pattern, communal characteristics and regional patterns in the Old City become the basis or inspiration for creating a public green open space concept, in which its design must be in harmony with the theme of the Old City area. Based on the problems identified, the research team limited the problems to the design of the area. Some of the problems that become the research focus are the physical aspects of building architecture, aesthetic aspects of the design, and tourism aspects related to changing the irregular environmental functions in the Old City into a tourist area. In more detail, the problem in this study is formulated in the following points: (1) How to restore the historical value of the Old City by converting historical heritage buildings into new landmarks and tourist focus in Jakarta? (2) How to create a public space that can facilitate the local art community?

3.2. Public Space

Concerning open space performance facilities that can be used for routine artistic events, the role of the public space has been further investigated based on the theory of the role of the public space, as put forward by Carmona *et al.* (2008), namely as follows.

a. Economy:

- Giving a positive value to the property value.
- Boosting economic performance.
- Being able to be good business.

b. Health:

- Encouraging people to be active in physical movement.
- Providing information and formal space for sports activities.

- Reducing stress.

c. Social:

- Providing space for social interaction and learning process for all ages.
- Reducing the risk of crime and anti-social behavior.
- Encouraging and improving community life.
- Encouraging intercultural interaction.

In terms of its function, public space can facilitate the need for meetings and joint activities, allowing meetings between humans to interact and carry out joint activities while bringing up a creative process. According to Utami Munandar (1999), one of the things that encourage the creative process can come from within us or from the surrounding environment. Here, the environment is a public space that can inspire ideas for its users to do productive things in a creative process. In addition, public space must have several criteria, namely the ability to work and generate new creativity. Moreover, public space must also be able to be a place to show or exhibit creative works so that these works may get direct appreciation from the public.

In line with the government's plan to make the Old City area a cultural tourism destination, Intan City Park as a part of the Old City has considerable potential to fulfill the plan. The attractiveness of the bridge in the Intan City Park is often expressed with the phrase "*Het Indische Bouwen*" meaning a combination of modern Western structures and techniques with local and traditional forms. Because of being surrounded by colonial-style buildings that have beauty and splendor, the area has an attraction to be developed with a colonial-style concept. By considering the existing reality, the Intan City Park area is plausible to be transformed into a tourist area. By reviving this area, it is expected that it can form a pattern of interaction space that is in line with the character of the existing

local community and the millennial generation so that this generation can be interested in getting to know the culture and character of a place. In the process of designing spatial patterns, communal characteristics and regional patterns in the Intan City Park area become the basis or inspiration for creating a space concept, in which its design must be in harmony with the Intan City Park area or the location around the revitalization area. The place can be designed to introduce the culture and character of a place through an art activity so that it can become a place for performances and education that share experiences. Through this design, the introduction of tourist characteristics and visitors in a certain place can be increased. The concept of working with the community is often also called community-based tourism. In this concept, we can directly involve the community in the area design process, especially related to earning income, job opportunities, and the preservation of the environment and local indigenous culture which in turn fosters the identity and pride of the local people that grows as a result of increased tourism activities (Setyaningsih, 2010:20).

Community-based tourism is a sustainable development by embracing the community as the main actor through community empowerment in various tourism activities. Therefore, the maximum benefit of tourism is intended for the surrounding community so that it will not cause friction with the local community. The main target of the cultural-based tourism concept is the development of tourism and improving the welfare of local communities (Arifin, 2017:122).

The use of open space is as follows:

a. Private open space: an open space that only certain people can access, such as a yard.

b. Common open space: an open space that can be accessed by anyone.

c. Linear open space: an open space in the form of lines, such as boulevards, streets, and pedestrian walkways.

Many countries in the world are starting to increase open space or public space as part of the construction of an area or building. One of the reasons is that global warming has become a topic that is often discussed. Many activities carried out by humans contribute to increasing the effects of global warming. For this reason, scientists and artists have begun to pay attention to the material in the process of making a product to be more environmentally friendly. Likewise in the field of architecture, architects have begun to design buildings and use sustainable and environmentally friendly materials which are commonly referred to as eco-friendly.

This eco-friendly design pays great attention to the concept of technology and space utilization for the public interest. According to Edwards (2001:27), the concept of eco-friendly buildings usually supports a healthy lifestyle both physically and mentally, such as paying attention to airflow, making lots of air ventilation, and getting lots of sunlight. Space utilization strategies, both for cultivation areas and protected areas, need to be done creatively. This is one step to reducing temperature changes both locally and globally.

According to Gehl (2008), public spaces must be able to provide protection, comfort, and enjoyment. Meanwhile, Carr *et al.* (1992) provided important points for an ideal public space, namely as follows.

1. Comfort: the main point that encourages a person to decide whether to use/live in a public space or not.

2. Relaxation: the fulfillment of needs that include mental comfort. To achieve this need in urban areas, ecological

elements (e.g., trees, plants, and water) can become the main factors that can support a person to relax.

Figure 3.1. Plaza

(Source: https://www.archdaily.com/943348/v-plaza-urban-development-3deluxe

The recommendation above depicts a casual atmosphere to enjoy an open space that has ecological elements. We may see a seating level with a modern, integrated, friendly, and eco-friendly urban atmosphere.

3. Passive Engagement: the need for a person to enjoy the surrounding public space without having to always be involved in direct interaction with other users. Elements that support the creation of passive engagement can be in the form of performances, exhibitions, interesting murals, or other interesting activities.

Figure 3.2. Kumulo 1
(Source: https://manual.co.id/directory/kumulo/)

The recommendation above is a facility that can be provided for the community so that they can enjoy public space without having to be involved in direct interaction with the people around them. Activities that can be done are watching music practice, paying attention to the art community sketching, and others.

4. Active Engagement: the need to involve direct physical experience with the place and people. This need is in the form of social interaction which involves direct contact, either with friends, family, or the existing community.

Figure 3.3. Kumulo 2
(Source: https://manual.co.id/directory/kumulo/)

The recommendation above is a compound facility located in Kumulo, BSD. A compound is a separate building that is located close together as a place to hold workshops or regular meetings for local communities. In this compound, the community can be actively involved in regular training or workshops organized by the existing communities. This compound can also be used as a business space for the surrounding community.

5. Discovery: the desire to try new experiences provided in a place. This need can be in the form of concerts, festivals, art exhibitions, theaters, markets, community activities, and others which are usually seasonal. A good public space can invite individuals to have activities in that space.

Figure 3.4. Pubic plaza
(Source: https://www.pinterest.com/ngaichuen/urban-design-public-space/)

Figure 3.5. Kumulo Flex Space
(Source: https://manual.co.id/directory/kumulo/)

The recommendation is a terraced open space facility that can be used to sit and watch performances or other activities organized by the local community. There is also a flex space or function room that is large enough to hold larger events, such as

exhibitions, seminars, study rooms, and other community gatherings.

Considering the economic point of view proposed by Carmona *et al.* (2008), an area should also give a positive value to the property and encourage economic performance. If it is associated with the science of architectural photography, the planning of buildings that are attractive and aesthetically pleasing from a photographic point of view also needs to be considered. Architectural photography has an important role in the socialization and introduction of an area to the general public. If an area is built thematically, then the area can become an aesthetic photographic object. Thus, the photos obtained from the area can increase property values, making the area possess the potential to become a tourist area.

Considering the development of digital photography and social media nowadays, the aesthetic value of a building and area has a big influence on someone's desire to take pictures of the building object. Like the Old City with colonial-themed buildings that attract many tourists and become a photographic object for many communities, the Intan City Park area can also be projected to be the same as the Old City of Jakarta. It is because the role of photography or specifically architectural photography is very large in promoting an area.

Another example that we can analyze is the Chinatown culinary area (Pantjoran) PIK which is a culinary area with an interesting concept. Visitors can feel directly the atmosphere of Chinatown which is very thick with many decorative lanterns, murals, and ornament details that represent Chinese culture. Some of the murals and the ornaments displayed are intended to educate the public about Chinese culture. Thematic buildings like this attract

a lot of visitors to come either to enjoy culinary delights or just take pictures for social media purposes.

Figure 3.6. Gate of Pantjoran PIK
Source: Personal documentation
https://www.kompas.com/food/read/2020/11/23/161412175/pantjoran-pik-
resmi-dibuka-destinasi-kuliner-baru-di-jakarta-utara?page=all

Social interaction is the essence of social life because, without interaction, there can be no life. Social interaction in the public space creates a sense of community, as seen from the role of the public space based on activities in the public space. The presence of a planned public space will create the dynamics and effectiveness of the utilization of the public space. One of the activities that can bring the dynamics to life is art activities involving the art community.

One component of society that can support the dynamics of public space is the art community. The art-and-culture community is one of the most active types of community, has a lot of mass, and has the potential to revive an area. For this reason, the authors need to document the art communities in the Intan City Park area so that these communities can help revive existing public spaces. The design of public spaces is expected to be in line with the character of the existing local community so that it can later be

managed organically by the local community. Some of the advantages of involving local communities in the management of public spaces are:

1. Planning for the procurement of facilities is good and adequate to meet the needs of the community in the Intan City Park area.
2. Organizing the use of public space facilities is more regular and on target because local people know best about their needs.
3. The movement of activities is easier because all activities that run should be for the entertainment and convenience of the local community.
4. Supervision of the use/licensing and maintenance of public spaces is usually one of the most difficult obstacles to overcome if it is left to a supervisory unit. Conversely, if it is carried out together with community involvement, it will be easier.

The presence of the communities can also revive the tourism potential in the Intan City Park area. Community-based tourism has a better chance of being able to develop sustainable and periodic small-scale tourist objects and attractions. Therefore, it can be managed by local communities and entrepreneurs, making it have a minimal socio-cultural impact and a greater chance of being accepted by society. With the involvement of local communities in the management of the area, it is expected that it will reduce the complicated bureaucracy and illegal fees that usually occur in many tourist attractions and public places in Jakarta. Eventually, this will have an impact on the enthusiasm of other communities outside the area to organize or join local communities so that the atmosphere becomes more dynamic.

Empowerment of local communities in this area is very useful in increasing tourist attraction or the local community and the general public involvement through activities they carry out regularly. In addition, historical buildings around the area indirectly also empower the community through the tourism sector and contribute to improving the local community economy. According to Arida (2016:35), community empowerment through the tourism sector is a process of building and restoring people's confidence that they can build their local and cultural potential to become a tourist attraction in meeting basic needs and achieving a better life that develops continuously and sustainably.

The local communities in the area around Intan City Park and the Old City of Jakarta have different backgrounds of involvement. Some of them participate spontaneously. Some others involve themselves due to encouragement. Based on data that the authors obtained unofficially or from the results of searching on digital search engines, the local communities categorized as spontaneous participants are the Manusia Batu Community (established in 2013), Lingkar Rupa Community (established in 2010), Pencak Silat Cakra Buana Community (established in 1978), Sunda Kelapa Heritage Community (established in 2012), Chinatown Art-and-Culture Community (established in 2015), and Sahabat Budaya Community (established in 2011). Meanwhile, the local communities categorized as encouraged participants are Paguyuban Onthel Wisata Kota Tua and Jelajah Budaya Community. The presence of Paguyuban Onthel Wisata Kota Tua was encouraged by the Local Working Group (LWG) which was established by the Destination Management Organization (DMO) for the Old City in 2012. Meanwhile, the presence of the Jelajah Budaya Community was encouraged by the Mandiri Museum in 2005. Data on local communities that are officially registered with the DKI Jakarta Government were not found by the authors. It would be better if

these communities were officially registered with the relevant agencies.

The DKI Jakarta Government has indeed planned to make the Old City a center for education and arts by revitalizing the PPI building on Jalan Malaka which is widely known as the Cipta Niaga building which has become a place for art, music, theater, and film communities by collaborating with academics from Jakarta Institute of Arts (Indonesian: *Institut Kesenian Jakarta*). This collaboration with academics is to ensure that the program activities held are of high quality and sustainable. This can also be applied in the open space of the Intan City Park area by embracing the local art community and academics. Thus, the activities held will be more focused and sustainable. For this reason, official data are highly needed, especially those concerning the art community in the Intan City Park area. One of the art communities is Perupa Kota Tua Community which is a group of painters who usually paint and sell their paintings along the sidewalks in the Glodok area. It will be more orderly if the community is given adequate space in the Intan City Park area to make the open space in this park livelier. The Perupa Kota Tua Community can collaborate with academics in the arts to create activity and training programs for the local community and the general public so that the aspects of the economy, education, and arts are fulfilled. Opening public spaces to facilitate formal art classes for academics is also a good step to fulfilling discovery and active engagement points from public open spaces.

3.3. The Concept of Supporting Facilities

Supporting facilities that may promote water recreation areas are those making people relaxed and enjoy the surrounding view, such as the following.

a) Garden chairs along the river with materials that are suitable for their designation.

b) Garden lights with several types of shapes that match the characteristics of water recreation facilities. In addition to serving as artificial lighting at night, they also have aesthetic elements.

c) The cleanliness system which requires special handling to keep the environment clean by providing trash cans at several points.

d) Signages which are designed to provide information, placed in a strategic location (e.g., road intersections), and made with materials that are in line with the design theme.

e) Landscape systems for supporting water recreation facilities by providing the impression of being one with nature. It can also function as a guide and improve natural beauty at the same time (Hendrawaty, 2017).

3.4. Recommended Outdoor Spatial Concept

As discussed in the concept of open space and the criteria for green open space that meet the basic standards, the authors make recommendations for the realization of green open spaces in the Intan City Park area where there is idle land from PT. KAI that can be used as a public green open space that can facilitate the activities of the local art community, thereby attracting tourists with routine activities from the community. The recommended locations are as follows.

Figure 3.7. Location of green open space
Source: Personal documentation

The picture above is a recommendation for green open space to be placed. Green open space is set in this area because it is very close to the iconic location of the Old City, namely the Intan City Park Bridge, making people able to enjoy green open space while visiting the icons and historical relics of the Old City area. The location of the open space is also set next to the Kali Besar canal, making it close to the ecological element in the form of water flow which is expected to meet the relaxation criteria. Undeniably, the Kali Besar canal needs a revitalization effort by the DKI Jakarta Government so that it is more comfortable for users of green open spaces. The extensive area of green open space also helps fulfill the percentage of green open areas that should be based on the provisions of the Directorate General of Spatial Planning, which is 30% of the total area.

The authors recommend that green open spaces must be able to facilitate the art community in the Intan City Park area so that the community can carry out activities in the green open space. Activities in open spaces will also be more dynamic if the art

community can make regular programs, not only as a means of recreation but also as a means of art education. The figure below is an image of green open space recommendations to meet the green open space standard criteria according to Stephen Carr: active engagement, passive engagement, and discovery.

Figure 3.8. Green open space recommendation
Source: Personal documentation

Active engagement activities can be fulfilled by having a compound area as a secretariat or activity center for the art community. In this compound area, the art community can hold small-scale training or exhibit their work. Bench areas for drawing together or learning to sketch can make green open spaces users interact. In Jakarta, there are quite many schools or higher education institutions that have art lessons or art and drawing courses so the facilities provided by this green open space are expected to accommodate their needs. The authors also recommend having a flex space or a large multipurpose room that

can be used as areas of study, seminar, and exhibition for the art community and other art education institutions. This flex space can also be managed for commercial and educational purposes. Art exhibition activities can invite people's attention to come to appreciate artworks while enjoying green open space facilities. Enjoying art exhibitions can facilitate passive engagement criteria and the art activities carried out can be an element of discovery for visitors.

The following picture is a recommendation to facilitate the stage art community and to meet the criteria of active engagement, passive engagement, and discovery.

Figure 3.9. Green open space recommendation
Source: Personal documentation

The recommendation above is a mini outdoor amphitheater. This facility can accommodate the needs of the music, theater, and dance communities in the Intan City Park area. Regular performances from the community can invite art activists and the public to visit. When not having a show, this amphitheater can be

used as a seating area for visitors. In addition, this area can also be used as a drawing area for art activists.

As we know, open space performance areas are rarely found in Jakarta. In other words, this facility is undoubtedly an attraction for this green open space.

Figure 3.10. Green open space recommendation
Source: Personal documentation

The picture above is a recommendation for green open space to meet the criteria for green open space standards according to Stephen Carr, namely active engagement, passive engagement, and discovery. The wall behind the compound area and flex space can be used as an open space mural. This mural or wall painting activity is also one of the activities favored by students, young people, and art activists. Mural images have also been widely used as decorations in commercial places. This open space mural will also invite the attention of the wider community, especially as a tourist attraction. With the proliferation of selfie culture and the need to upload content on social media, a facility like this can certainly attract the attention of many visitors. This open space area can also

be used as a means of education and practicing drawing murals for local communities and other art institutions in Jakarta.

The authors also provide recommendations to continue to include elements of architectural decoration and thematic green open space interiors. Due to the location of the Intan City Park which is still an integral part of the Old City area, the colonial decoration elements can be used to remain united with the colonial nuance that is thick in this area.

Figure 3.11. Green open space recommendation
Source: Personal documentation

The picture above is a recommendation for green open space to meet the standard criteria for green open space according to Stephen Carr, namely relaxation and comfort. More sitting areas, sports facilities, and playgrounds can be provided in this area. In general, exercising is one of the reasons why people go to open spaces or parks. The children's play area is also a facility that should be provided considering the lack of a children's play area in the Intan City Park area. In this area, ecological elements can be

added to support the feeling of relaxation when visiting the park, such as shady trees that suit the climate in the area around Intan City Park. Elements related to water such as fountains or fish ponds can also support feelings of relaxation.

To realize an ideal green open space, it must involve many elements such as the landscaping section. If this recommendation is approved, the authors will collaborate with many qualified institutions in the field of landscaping.

3.5. Conclusions

Recommendations to restore the historical value of the Old City through converting historical heritage buildings into new landmarks and tourist locations in Jakarta by presenting public spaces must be able to provide protection, comfort, and enjoyment for visitors and people living near the area.

The recommendations are to create public spaces that can facilitate the local art community by presenting space as an area to make unforgettable experiences and evoke memories of the architectural beauty of colonial-style buildings with iconic forms of historic aesthetic visual elements. For this reason, public space planning must be carried out in an integrated manner by involving the local community. The involvement of existing communities to help organize, mobilize, and supervise the use of public spaces can make activities in public spaces occur regularly so that public spaces may become comfortable for the public to visit.

The Intan City Park area is a historic urban area. It is still part of the Old City of Jakarta which is an area that is in the process of being revitalized by the DKI Jakarta Government to restore the existing historical nuance. Therefore, it is necessary to pay attention to the design of new buildings, which becomes one of the conservation efforts, by considering the concept of historic urban

areas. In the Intan City Park area, it is planned to build a mixed-use area that has the potential to become an entertainment and tourism area. Here, the entertainment area is a public space that can serve as a social space that can invite many people from outside to visit. Public space is an open spot, which is an area planned because of the need for meeting places and joint activities in the open air. Public space is also part of an environment that has a pattern. Principally, public space can be considered as a place that can accommodate certain activities of humans both individually and in groups.

The development of public spaces must also pay attention to the material used, thereby making the final results more environmentally friendly. The eco-friendly design is very suitable for the concept of public facilities by taking into account the concept of technology and space utilization for the public interest. For this reason, public space planning must be carried out carefully by involving the local community. The involvement of the existing communities is also important to help organize, mobilize, and supervise the use of public space. The community also may make activities in public spaces occur regularly so that public spaces become comfortable for the public to visit. In addition, public space must also be able to be a place to show or a place to exhibit creative works so that they get direct appreciation from the community.

Considering the economic point of view proposed by Carmona *et al.* (2008), an area should also give a positive value to the property and encourage economic performance. If it is associated with the science of architectural photography, the planning of buildings that are attractive and aesthetically pleasing from a photographic point of view also needs to be considered. If an area is built thematically, then the area can become an aesthetic photographic object. Thus, the photos obtained from the area can

increase property values, making the area possess the potential to become a tourist area.

One component of society that can support the dynamics of public space is the art community. The art-and-culture community is one of the most active types of community, has a lot of mass, and has the potential to revive an area. Empowerment of local communities in an area is very useful in increasing tourist attraction or the local community and the general public involvement through activities they carry out regularly. In addition, historical buildings around the area indirectly also empower the community through the tourism sector and contribute to improving the local community economy. Opening public spaces to facilitate formal art classes for academics is also a good step to fulfilling discovery and active engagement points from public open spaces.

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4

Investigating Clutter in Domestic Spaces for Better Interior Health and Comfort

Hana Rusy

dahanafsr@telkomuniversity.ac.id, Telkom University

Abstract

The size of houses in big cities in Indonesia in the past years keeps shrinking due to housing affordability and land availability. There are more people from mid-range society whose houses are smaller than their parent's houses where they were used to live in. The problem arises when they have adapted the behavior in domestic space from their parents, but their space is limited. Thus, clutter is found in many houses and affects the interior health and comfort. However, interior health and comfort (IHC) is one of the aspects that contribute to building's sustainable design and worth a concern from the domestic level. This paper investigates the spots of clutter in domestic spaces with using an empirical research method. There are 30 participants in the research who volunteered in finding unused material belongings in their houses that have become clutter and documenting the process to create a before-and-after evidence. In the end, it is found that kitchen and communal areas are prone to become places of clutter.

Keywords:

Clutter; Domestic Space; Interior Health and Comfort

4.1. Introduction

Minimalist houses in Indonesia have received a huge interest especially in capital cities or other big cities. The houses arose as a response to land scarcity in urban areas and to the decreasing financial capacity of the current generation. With sizes ranging between 36 to 45 square meters, minimalist houses tend to have smaller sizes than houses in common, which makes them more affordable and receive a lot of attention in the housing market. With such a small size, minimalist houses usually accommodate two bedrooms, a common room or a living room, a bathroom, and a kitchen, which can be separated from other rooms or inserted together in the common room (Putra et al., 2016). Regardless of the size, minimalist houses still need to serve occupants' activities just like any other houses, such as resting after daily work, sleeping, doing interaction between occupants, working and studying, and many other home activities, all of which also demand interior comfort(Evans, 2020; Fessel, 2020; Stănciulescu, 2020).

The more activities inside the house are usually followed by items to support those activities(Adediran et al., 2020; Rogers & Power, 2020). We need a bed to sleep, we need sheets for our beds, we need plates and cutleries to eat, we need a desk to work, we need a stove and utensils to cook, etc. Gradually, we accumulate items and store them inside the house. When the size of the house is limited, then the problem arises. If the item accumulation is not balanced by sorting out the used item off the house, the house will become overloaded by material possessions, untidy or even chaotic. The occupants might feel that their house is too small and plan to make a house renovation to add the second layer of the floor. However, renovation takes another cost and is not suitable for all occupants equally. Moreover, when the house mass is enlarged after renovation, it will impact its surrounding as well. The visual will change and the mass might block the sunlight to their neighborhood.

Overall, the comfort of the house is affected and needs to be addressed as an issue(Fivanda & Ismanto, 2021; Rusyda et al., 2018; Stănciulescu, 2020; Suryo, 2017). When it is not treated, it may threaten the health of the occupants. Therefore, a sustainable concept is required in approaching this matter.

Sustainable design is a design approach that focuses not only on the building and its surroundings on a large scale, but also on the comfort of the interior level of a building in the long term. Sustainable design in Indonesia is rated by Green Building Council Indonesia (GBCI) and has a specific category for homes, called Green ship Rating Tools Homes. The tools evaluate a house in terms of its achievements towards green design, consisting of criteria: Appropriate Site Development, Energy Efficiency and Conservation, Water Conservation, Material Resources and Cycle, Indoor Health and Comfort, and Building and Enviromental Management (Green Building Council Indonesia, 2014). The evaluation on Interior Health and Comfort holds the highest percentage to score the rate as it directly impacts the users of the building. The most frequent case that occurs when a building lacks this aspect is a temporary disease called Sick Building Syndrome (SBS). SBS is a syndrome when occupants feel sick in their physical body, such as sneezing, headache, or some other symptoms of allergies, when being inside the building for a certain time, but the sickness disappears soon after they get out (Adiningsih & Hairuddin, 2021; Aditama & Sita L. Andarini, 2022). It happens as a result of pollutants or pathogens that are trapped inside the building due to poor air circulation, unsuitable interior materials on furniture or finishings, wrong placements of openings, or too many items inside the rooms that become places for bacterias of fungi. In a small house, the placement of openings does not really affect the interior when the area is less than 10 square meters (Edge, 2019), but the more crucial thing lies on the existence of material items.

Material chaos inside the house usually happens as a result of accumulative material possession (Akhmadi & Setiamurti Rahardjo, 2020), which tends to happen unconsciously or prone to negotiation by the occupants. Unlike unwanted noises or thermal and lighting discomfort, the existence of material possession does not disturb the occupants directly. But when the accumulation is neglected, there comes dust, fungi, or even pests that may create Sick Building Syndrome (SBS). So, prevention is necessary by treating material possessions accordingly. Keeping the room tidy and clutter-free is mandatory in order to keep the interior of the house healthy. However, keeping the entire house tidy is challenging for busy occupants, especially those who cannot afford hiring a domestic helper. So we investigate house samples to find out which rooms are prone to clutter and require priority to take action.

4.2. Method

This research involved 30 respondents who were guided to investigate their own houses. From those respondents, we collected data from houses ranging from sizes 21 to 45 square meters. Since different houses have different numbers of rooms, we only observed rooms found in every house, such as bedrooms, common room, living room, dining room, and kitchen, all of which represent private, public, and service areas. Each side of the room was documented through photos to get the picture of visual composition between the circulation space and the size of material items. The data were analyzed using empirical methods based on anthropometric comfort, and grouped based on the level of clutter to identify which rooms are prone to chaos and what possibly become the reasons behind the clutter.

4.3. Result and Discussion

Most houses from our respondents are placed inside a neighborhood, designed by a housing developer. Generally, those houses have similar sizes to their neighbors as well as typical layouts and facades. Some samples of the house had been modified or renovated. These happened to houses with more numbers of households compared to houses that are still in their original forms. Modified houses usually already have more areas for rooms, but to keep the research focused, we only discuss the rooms that are found in either modified or original houses. From the collected data, it is found that there are three areas inside the houses where clutter exists; (1) living room, (2) master bedroom, and (3) kitchen area.

Living room in a small sized house is usually placed in a public area. Although its main function is to accommodate the occupants when they want to gather and have interaction between each other, which should be private, but, welcoming guests by inviting them into the house is a part of Indonesian culture. When the house does not have a separated room spared for this, then the living room also serves this function. So, we usually find this room as the first room right after the main entrance. Mixing the purpose of being public and private at the same time is not ideal. Therefore clutter is easily spotted in this area.

The second room is the main bedroom. No matter how small the house is, the housing developer usually keeps inserting two bedrooms to get to the selling market. As a result, the size of the bedrooms can be less than the standardized requirement. When the sizes of the bedrooms are equal, usually the main bedroom is the one placed in the front of the house. And when the sizes are different, the main bedroom is the one with a slightly bigger size than the other one. In our sample, the sizes of the main bedroom

are ranging between 7 to 9 meter squares. With such a limited size, it serves not only as a place to sleep. Since there is not much space available in the other rooms, homeowners usually store their private belongings inside their bedrooms, such as clothes, jewelry, documents, and some private collections. When the living room feels too public, some people also like to work inside the bedroom to get privacy. So it is common to have a desk with the workstation inside the bedroom.

The last room with clutter is the kitchen area. Depending on the size and layout, some houses have it separated with the dining area, but some houses merge kitchen and dining into the same room. Houses with total areas ranging from 36 to 46 square meters usually have both kitchen and dining area, even though the dining area might only fit for a half-sized dining table, but the houses around 21 meter squares only provide the kitchen, so the homeowners eat in the living room or modify the space to make a dining area.

From three areas as mentioned above, we collected items inside the room which created clutter and measured the volume. Next we measured the size of the circulation area. From those data, we could see how clutter affects interior circulation inside the house. The simulation is seen on the graphic below:
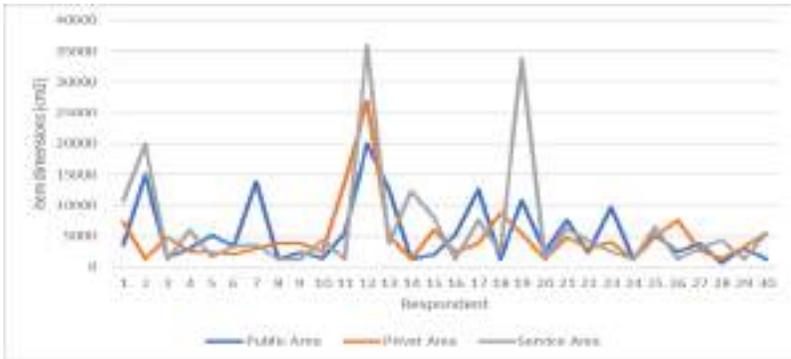
Figure 4.1 Dimensions of clutter in the circulation area

It is seen from the graphic that the service area, represented by the kitchen and dining area, seems to experience more chaos. The accumulation measurement of the clutter's size can reach to 35000 cm2 or equal to 3.5 meter squares that block the circulation in that area. Meanwhile the average size of the clutter is 6500 cm2 or equal to 10 boxes of instant noodle carton packaging. According to the homeowners, the service area is like a practical place when they need to find a place to store something and they cannot think of any other specific room. They tend to search for an area which is not really seen and will not disturb an aesthetic part of the house when it becomes untidy. So, they instantly go to the service area where apparently only the kitchen is there.

Even so, the public area, represented by the living room, also has a significant accumulative size of clutter. Its size on average is 5400 cm2 or as big as 8 boxes of instant noodle carton packaging. The reason behind the clutter is that the house does not have a designated spot or compartmentalized furniture to store private things that are not accommodated in the private area. Several also mention the difficulties to sort items as the main issue between occupants, especially when the room has to become multifunctional as a guest room, family room, and dining room at the same time.

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The private area has the smallest accumulative size of clutter, which is 4800 cm2 or equal to 7 boxes of instant noodle carton packaging. The private area, represented by the master bedroom usually has compartments that makes the storage of material possessions tidy. A bedroom is usually complemented by a cupboard that can be a wardrobe and miscellaneous storage. The furniture has a vertical model that saves a lot of circulation space. So even though there are numerous categories of items, people can still move more comfortably inside the bedroom compared to in the living room or in the kitchen. So, comparing three areas in our research samples, the service area, especially the kitchen, needs more attention in the aspect of planning the storage.

4.4. Conclusion

Chaos in small houses occurs as a result of clutter that unconsciously remains inside the houses when the homeowners rarely use their material belongings. It creates indoor pollution from dust, fungi, virus, bacteria, or pests that bring discomfort when doing activities inside the house and may impact occupants' health. The existence of clutter also disturbs indoor circulation as it blocks the area of movements, and it is majorly found in the service area, especially in the kitchen, or kitchen and dining room when they are merged together. This area is usually placed at the back of the house and is easily neglected by the homeowners. The next area where clutter is found is in the living room as a public area due to its lack of compartmentalized furniture to store items accordingly. However, there is only a slight difference in accumulation of clutter size in this area compared to the kitchen area and the bedroom, the room with the least amount of clutter that blocks the circulation. In conclusion, managing material possessions and planning the storage system in the kitchen, living room and bedroom are crucial to support interior health and comfort.

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Food Park as An Alternative to The Development of Places to Eat in Post-Covid-19 Pandemic

Niken Savitri

niken.savitri@ciputra.ac.id, Universitas Ciputra Makassar

Abstract

The Covid-19 pandemic has disrupted economic stability in various countries in the world and has finally affected business in certain sectors, including restaurants. Regulations for social distancing and staying at home make it difficult for the restaurant business to survive because consumers only make a purchase online. More income from restaurants comes from dining in. Therefore, an effort is needed to make consumers feel safe to eat outside the home. One of the obstacles that cause consumers to feel hesitant to eat outside the home is because of the fear of contracting the virus. In the new normal period, where the trend of virus transmission has begun to decline, consumers have started to fill restaurants again. Boredom from the pandemic situation has made consumers choose to start eating out and choose restaurants with open areas as a means of entertainment and relaxation. A food park is a type of restaurant that can be developed during the post-Covid-19 pandemic. This study uses the qualitative with a descriptive approach. The purpose of this research is to provide an overview of alternative restaurants that are preferred by consumers and the development carried out in them for the needs of the post-Covid-19 pandemic.

5.1. Introduction

The Covid-19 pandemic has caused various psychological impacts, including feelings of concern and fear of contracting the virus. In addition, the impact of the stay-at-home regulation causes various kinds of unpleasant psychological symptoms for consumers. The government forced individuals to stay at home, resulting the boredom and increased stress and anxiety levels (Thakur V, 2020 in Alhusseini, 2020). Security is the basic human need to feel comfortable in carrying out daily activities, including eating outside of the home. Safety for eating out includes the safety of eating places, hygienic and non-toxic food ingredients, cleanliness, and being safe from disease. The lack of a sense of security to eat out due to the Covid-19 virus causes consumers to be reluctant to go to a place to eat if they feel it is not important. Purchasing food online or take away cannot cover operational costs, so many places to eat are closed during the pandemic. Restaurant entrepreneurs strive so that consumer safety, restaurant entrepreneurs implement health protocols by following government regulations. In addition, cleanliness of dining areas, sanitation, cleanliness and compliance of staff in implementing health protocols, and distance settings are the concerns of the restaurant entrepreneurs so that visitors do not eat close together. Adaptation of eating behavior outside the home and new marketing strategies are still being carried out to survive the pandemic. An open place is considered to be used as a concept for a place to eat during the Covid-19 pandemic and new normal. Boredom, stress, and depression due to limited social relationships cause customers to need other places besides at home. Eating out can be an option to overcome boredom because it is one entertainment that can create a sensation of pleasure and

satisfaction (Martin, 1995, Warde and Martens, 2000). Places to eat become a means for consumers to socialize and relax. A place with an open space concept is an alternative choice for consumers to socialize and reduce stress due to boredom caused by the quarantine fatigue due to being in the room for too long. Quarantine fatigue motivates consumers to go out looking for a new atmosphere from things that limit their space during the pandemic (Zaveri, 2020 in Wei, et al, 2021).

Eating out by utilizing the outdoor area has been around for a long time. Since ancient times, due to trade and economic developments, human mobility has increased and the need for socialization, trade, diplomacy, war, and religious activities has increased (Rawson and Shore, 2019). The restaurant business is growing well with various types. In ancient China, for example, there were many eateries selling regional specialties and taverns. The place to eat is in the form of stalls and outlets that are not too big, so sometimes they use the yard or the road as a place to eat. In Italy, eating out with the concept of al fresco dining has been around for a long time. Al fresco dining is the concept of eating outdoors like a picnic in the open. During the pandemic, the concept of eating like this is done to fulfill the desire to eat outside the home but still be safe from the risk of transmitting the virus. In Indonesia, the concept of eating with a picnic in an open area has been carried out by utilizing open land, park, or urban forest. This concept generally has several outlets that sell several menus at once so that consumers are free to choose what food they like to eat on the spot. During the pandemic, this concept turned out to be something that attracted consumers to eat at the place because it was considered safer from the transmission of the Covid-19 virus. Some entrepreneurs who have capital take advantage of the outdoor area as a place to eat by renting out several outlets to culinary entrepreneurs to open their businesses there so that consumers have many choices of food when visiting the place. The concept is

called a food park or food space which generally targets young adults as their target consumers. Food Park is an area for eating outside the home that has outlets to sell food where this area has a green open area for relaxing, socializing, and doing other activities besides eating. During the pandemic, this is important to apply digital technology to avoid transmission of the virus, namely by using digital applications and checking the temperature. In addition, payment transactions can use digital money or e-wallet so that they can be done completely cashless. Therefore, before developing this type of dining area, first, as a preliminary study, to find out the responses of young adult consumers regarding food parks and their perceptions of safety against the Covid-19 virus during the normal period.

5.2. Literature Review

a. Eating Out

Eating outside is no longer done to fulfill physical needs, but has also been associated with other meanings such as a symbol of social status. According to Warde and Martens, eating out is also related to socialization, related to buying and selling transactions, food menus prepared by other people, related to special activities, and related to how the food is served (Warde and Martens, 2000). Warde and Martens also stated that consumers' motivation to eat out is for pleasure, leisure, and necessity. Cousins, Lilycrap, and Weekes (2014) stated that consumers generally seek satisfaction when eating out. There are several aspects that encourage consumer satisfaction, including:

- Physiological, the need to satisfy hunger and thirst.
- Economy, the need to get value from the place to eat.
- Social, the need to socialize with friends, relatives, and coworkers.

- Psychology, the need for recognition, praise, the need to fulfill a lifestyle, and others.
- Convenience, the need to eat out because can't eat at home, for example, shopping, work, recreation, and so on.

The motivation of people to eat out is for fun, coming suddenly because of hunger and thirst, for socializing, and for business purposes. However, eating out is mostly done for socialization (Sharif, Jamil, and Nasir, 2017). The activity of eating out for urban people is no longer only to fulfill hunger and thirst but also to consume other aspects to satisfy their desires. In addition, the need for restaurant consumption may be driven by various factors, such as having quick meals, celebrating special occasions, entertaining business clients, etc (Chua, et al, 2020). The hedonistic lifestyle which is generally adopted by urban people makes them consume time and place for their pleasure. An impressive place, has a close tradition, and has a memory of being their choice to visit. In fact, consumers often create a place in the form of a community for them to gather and socialize. In addition to place and time, consumers also often consume the value and meaning of an object to fulfill certain wants or needs. For example, for eating out, consumers will choose a place that fits their budget but is able to provide pleasure and can even increase their social status if they show off these activities on social media. Consumers also consume the importance of a brand and how they are crazy about it (Desmond, 2003). A brand can raise its self-image in the eyes of the public so that it can strengthen its identity and self-image in public. The spread of Covid-19 and its fluctuating conditions have made consumers consider eating out for health reasons. Buying food online and take away is commonplace to comply with stay-at-home and social distancing rules.

Consumer behavior encircles the upcoming behavioral intention and post-visit evaluation. The post-visit evaluation covers

perceived quality, experience, value, and satisfaction. Consumer behavior varies on the choice of place to visit, assessment, and behavioral intentions. (Chen, 2007 in Rajput, 2020). Costumer satisfaction contains feelings of pleasure and well-being. Customer satisfaction develops from gaining what costumer expect from the service. Food quality, restaurant service quality, and physical environment quality is a factor that supports consumer satisfaction. A satisfactory restaurant experience can enhance the revisit intention of the customer. Positive Word of Mouth (WOM) is generated when customers are not only satisfied with the brand but they demand a superior core offering and high level of service. (Sivadas, 2017 in Rajput, 2020).

b. The safety of the place to eat during the new normal

The term new normal generally refers to a new order in response to a crisis situation. The new normal is a form of change that is triggered by a crisis and the adaptation of a new system that can prevent a reoccurrence or prepare for a crisis situation (Mas'udi, 2020). During the new normal period, places to eat have re-opened but with some special provisions. Referring to the NRA (National Restaurant Association) there are several provisions that must be complied with by eating places, including food safety, periodic cleaning, monitoring and employee hygiene, social distancing, and effective ventilation arrangements (ServSave, 2020). Security is a basic human need that must be met in daily activities. In Maslow's hierarchy, the need for security occupies the second level from the bottom, which means it is an important need that must be met. Security from crime, viruses, disease, and toxic materials is something that must be met so that human life can reach a good level. In addition, humans as social beings actually also need the means to socialize. Eating out has been a means of socialization for a long time. People's motivation to eat out is not only to fulfill physical needs but also as a means of relaxation, pleasure, fulfilling

tastes, and interacting with other people (Park, 2004 in Akova, 2017).

Before Covid-19, several pieces of research have stated that food quality, service quality, and physical environment are the three main factors that affect consumers' behavior when going to a restaurant. Tiedt (2020) found that among the elements which influence customer satisfaction, cleanliness has achieved the highest percentage during the pandemic. Basically, consumers like a clean and comfortable environment. An attractive environment can encourage consumers to come back. Therefore the presence of the music, temperature, and smell settings are very important to set the ambiance. The factor of the set layout of the room is important in how the furniture has placed in the room so that consumers get a pleasant experience. In addition, Yuksel (cited by Josiam et al, 2014) shows that hygiene and cleanliness also contribute to the level of pleasure. Customer satisfaction is defined by all the positive feelings when they leave after a visit, such as happiness, acceptance, relief, delight, and pleasure. (Rahman et al, 2012). In addition, customer satisfaction has become the most essential factor in deciding whether a business is profitable or not (Sabir et al, 2014). In eating out, the safety factor is also important so that consumers can carry out their activities safely and comfortably. During the Covid-19 pandemic, it is very important to pay attention to the safety of the transmission of the virus so that consumers can eat well. According to the NRA (National Restaurant Association), restaurant safety during the Covid-19 pandemic must meet the following requirements:

- Food hygiene and how it is served cleanly and safely.
- Hygiene, sanitation, and cleaning with disinfectant.
- Health and hygiene of restaurant employees and regular employee health monitoring.
- Social Distancing

- Effective Ventilation

Cleanliness is very important in a restaurant business because it can affect consumer perceptions of eating on the spot. This cleanliness must include everything in the dining area, not only from the place but also from food, cutlery, staff, and the availability of facilities for washing hands, and so on. In addition to cleanliness, crowded places to eat can also affect consumer perceptions of eating on the spot. There are two dimensions of crowds, spatial distance regulation and social crowding (Blut and Iyer, 2020 in Wang, et al, 2021). In their research, Wang et al found that crowded places to eat can reduce consumers' desire to eat on the spot and order food to eat brought home. This crowded place to eat can cause negative perceptions among consumers because it is considered less safe to eat or wait for food orders. In addition, setting a distance that is too close between one dining table and another can create the impression of being crowded and unsafe. Setting the distance between tables is very important during a pandemic which can convince consumers of the safety of a place to eat. If the distance setting is deemed not possible, the use of partitions can be used to separate the dining area from one another to create a safe impression for consumers. During the pandemic, according to Wei et al, 2021, there are several factors that influence consumers to eat out, including:

- Trust factor to a certain brand
- Some consumers believe that certain restaurant brands have good product quality, good service, and consumer protection standards. This causes confidence to choose a place to eat in accordance with the quality standards of the place to eat.
- Generally, consumers trust restaurants or places to eat that apply health protocols for the health and safety of their consumers.

- Have standards and effective prevention efforts against the Covid-19 virus. Other motivating factors to eat out include the influence of products, advertisements, and buying decisions. The experience factor can be obtained from the surrounding environmental conditions, the quality of the food, the menu offered, and the atmosphere of the place to eat (Kim et al, 2012 in Wei, et al, 2014). Building a positive image is very important for restaurant entrepreneurs to build consumer confidence to want to come to their business.

c. Eating habits in open areas

The habit of eating out has actually been done by people since ancient times. The shape of the place to eat also varies from a closed place, semi-closed, to an open places. The habit of eating in the open has been carried out by Indonesian people in the past as a means of socializing and relaxing. Indonesian culinary culture that is familiar with street food also encourages the presence of various types of places to eat in open areas with easy-to-reach locations. Ease of access, affordable prices, and diverse choices encourage people from various circles to enjoy street food. (Khairatun, 2020). They also do not hesitate to eat in the open area and in some places this has developed into culinary tourism. The opportunity to eat out plays a strong social function that can strengthen the intimacy between family members, friends/colleagues, and fellow diners themselves. For some consumers, eating out is one of the most enjoyable activities they do. This allows eating out to motivate some people to seek relaxation, joy, and escape (Bowen, 2003 in Wijaya, 2019). The phenomenon of places to eat with open areas continues to grow. In addition to street food as a culinary tourism commodity, open concepts such as tent cafes and food parks are used to attract as many consumers as possible.

Figure 5.1 Eating out in open area

Source:https//www.seruni.id, accessed August 10th, 2022

5.3. Research Method

This research is the initial research of the next food park development research. The method used is a qualitative method by obtaining data from literature studies, field observations, and in-depth interviews with several young adults regarding the reasons they choose food parks to eat out and knowing their perceptions of the safety of eating in food parks. This research is qualitative research. A total of 20 young adults aged 20-30 years were gathered and interviewed about the choice of food parks they often visited in Jakarta and the reasons why these food parks attracted their attention. After that, an analysis of what they like and expect when eating at the food park is done. Then from there, conclusions are drawn which are some of the factors that are expected when dining at a food park.

5.4. Discussion

The term "al fresco" comes from the Italian language, meaning "open air". Dining with the concept of al fresco dining shows that eating activities are carried out in the open air. Al fresco dining is a term that refers to eating together outdoors, especially in the open air. In Europe, eating al fresco dining is very popular in

summer when the air temperature and weather are very favorable. It is relaxed in nature, as is the case with garden parties or outdoor dining.

Figure 5.2 Al fresco dining
Source: https//thesimplethings.com, accessed, August 10th, 2022

In European countries, eating activities with this concept are carried out to gather with family, party, celebrate festivals or celebrations, and others. Generally, al fresco dining requires a large space, and cool air, and this is a problem in a big, crowded city like Jakarta, where open space is very limited and the air tends to be hot. The concept of eating in an al fresco style becomes an opportunity during the pandemic and post-pandemic because it is relatively safe from virus transmission with the concept of eating in an open space. Al fresco dining can be done anywhere, from cafes, pubs, and restaurants to parks or gardens, with tables and chairs for dining arranged in such a way that consumers feel comfortable and relaxed. In anticipating the transmission of Covid-19, in 2020, several cities in America implemented al fresco dining as a solution to save the restaurant business, implement social distancing, and save the economy due to the pandemic (NYC Dot, 2021). As an illustration, in New York City, 10,600 restaurants have been running outdoor dining activities since September 2020. The use of tents for outdoor dining has also increased during the pandemic due to restrictions on dining places that can only be occupied with a

capacity of 25%. Previously, a restaurant in New York used sealed plastic tents (bubble dining pods) installed on the pedestrian, sidewalk in front of the restaurant. However, eating in a tent (bubble dining) like this finally got protests from consumers because it was considered ineffective in reducing the spread of the Covid-19 virus. The closed plastic tent allows poor circulation so that it will spread droplets when the consumer eats, drinks, or chats. (Victoria Forster, 2020). This plastic tent for dining in the outdoor area was later updated with a better design for air circulation.

Figure 5.3 Buble pods
Source: https//www.forbess.com

In Indonesia, the habit of eating in open spaces has actually been done for a long time and has even become part of the culture of the Indonesian people. The large number of people who depend on the informal sector due to the large flow of urbanization in Indonesia causes competition to find work in the formal sector. The informal sector, although often underestimated, contributes to reducing the number of unemployed. One of the informal sectors that are often run by urban residents is street vendors. Street vendors (PKL) according to Nugroho (2003:159) are hawkers to carry out commercial activities on the Road Owned Area (DMJ) which is intended for pedestrians. They are called street vendors because they generally used carts that have 3 legs. Damsar (2002:51 in Keban, 2014) argues street vendors are those to carry

out individual or group trading business activities that use public facilities such as sidewalks, roadsides, and so on. Traders who run this business generally use facilities or equipment that are easily moved, dismantled, and use in public facilities. Eating in the area of public facilities such as street vendors is a common practice for consumers in Indonesia, even street vendors are often gathered in certain areas and used as culinary tourism objects. In addition to street vendors, in Indonesia there are places to eat in the form of food courts. *Pujasera* or food courts or hawker centers are usually located in buildings such as malls or office buildings. But now many food courts are outside the building and become culinary tourism destinations or socializing. Generally, food courts have a dining area with a choice of various food outlets so that consumers do not feel bored and have many choices to eat the food they want. Similar to the food court, now there is a food park that offers more experience in consuming food. The food park is an open area with various outlets selling food and beverages. Generally, food parks can be built-in mall areas, parks, or vacant land that is used as culinary tourism spots. Compared to food courts, food parks are generally laid out in an attractive manner and even provide a place for taking pictures, playing, and music entertainment. Some food parks even allow visitors to bring their pets. The concept of eating is generally grabbed to-go, generally not served on a plate. The places to eat are generally limited so that visitors can eat wherever they want.

A total of 20 young adult informants were interviewed to find out their perceptions of eating at a food park during the pandemic and how they perceived their sense of security when they ate at the restaurant. According to sources from several food parks, there are popular in Jakarta and are often visited, namely Tribecca Park in Central Park Mall area, West Jakarta, Thamrin 10 Food and Creative Park in South Jakarta, and Cove at Batavia in Pantai Indah

Kapuk, North Jakarta, as well as their perception of security from the transmission of the Covid-19 virus.

a. Tribecca Park, Central Park Mall, West Jakarta

The food park, which is located in the Central Park Mall area, West Jakarta, has a garden concept with various types of trees with koi fish ponds which are often used as a means of taking pictures for visitors. This place is always crowded with visitors, especially on weekends. Apart from being a place to eat, various activities are often carried out in this place such as sports, art exhibitions, music concerts, bazaars, and walking with pets. The visitors vary from various age segments because it is located in a mall area, but is dominated by young people. To be able to eat at this place visitors must adhere to strict health protocols. Even though they areas in the outdoor area, visitors are required to wear masks and will receive sanctions if they violate these regulations. According to resources, Tribecca Park is a fun food park the visit because of its location inside a mall. The food outlets are quite varied although the prices are quite expensive. This food park is also interesting because visitors are free to do other activities besides eating such as exercising, taking pictures, recreation, and bringing pets. They like to come to the place, especially during the holiday weekends to chat, take pictures, or just enjoy the atmosphere. Generally, the speakers came to the place at the same time and came to the mall for a refreshing. The easy-to-reach location was one of the reasons interviewers liked to visit there. Strict health protocols make visitors less worried about the transmission of the Covid-19 virus. Moreover, they believe in the management of Central Park Mall which will implement strict health protocols for its visitors.

Figure 5.4 Tribecca Park, Central Park Mall
Source: https: www.centralparkjakarta.com (left), www.tribecapark-bp
guide.id (right), accessed December 21st, 2021 Thamrin 10 Food and
Creative Park

This food park is located in the Thamrin office area, in an open area with many outlets selling food. Previously this place was just a parking lot which was later converted into a place to eat. This place is an alternative for visitors who want to hang out at an affordable price compared to eating at restaurants or malls in the Thamrin area. During the day this place is visited by many office workers who want to have lunch, while at night the visitors are more varied. Inside there is a dining area with an Instagrammable spot, and a toilet in the form of a clean truck. Apart from being a place to eat, this food park can be used for exhibitions or music concerts. To anticipate the spread of Covid-19, this place uses a cashless payment system in addition to the health protocols applied for security, such as checking body temperature and using the Covid-19 prevention application.

Figure 5.5 Thamrin 10 Food and Creative Park

Source : https://www.food.detik.com, accessed, December 22nd, 2021

Thamrin 10 Food and Creative Park is an interesting food park to visit because it has affordable food outlets. Its strategic location and being in an office area is an alternative choice for consumers who want to eat out without having to spend a budget too big. The drawback, is the atmosphere, here is quite hot because it is in the city center and the lack of trees there. But at night the atmosphere is more pleasant because of the help of the lighting aspect which makes the place more attractive to take pictures. Because it is an open area, visitors feel safe from the transmission of the Covid-19 virus, supported by the health protocols applied at the place.

b. Cove at Batavia, Pantai Indah Kapuk

Cove at Batavia is a food park that just opened in September 2021 in the Pantai Indah Kapuk area. The place is a retail design concept in an open space in the Golf Island area. The idea for the store building was taken from buildings in Singapore and Los Angeles. Cove at Batavia in Pantai Indah Kapuk occupies an outdoor area of 4555 meters purse. This place is the choice for consumers who want to enjoy seaside views. The visitors come from various generations with various backgrounds, cultures, and lifestyles. Each outlet in this place provides an indoor and outdoor dining area. Its location close to the sea attracts visitors to enjoy the atmosphere. Strictly enforced health protocols. Each visitor must

check with a special barcode in front of the entrance. Visitors are also required to check body temperature, wash their hands, and keep their distance. In the morning and evening, this place is also crowded with visitors who want to exercise while enjoying sunset or sunrise. The number of Instagrammable spots also attracts the attention of visitors to come to the place. Cove at Batavia is a fun food park because it offers a different experience from the concept and location. The location close to the sea makes visitors love the atmosphere it has to offer. The informants argued that its location close to the sea made the atmosphere to hang out more relaxed. They are happy with the concept of a food park that is not too rigid like when eating at a mall or a certain restaurant. They are freer to do other activities besides eating and this can actually make them more comfortable. The varied food outlets also attract them to come even though the outlet is not too big for indoor dining. Strict health protocols also make visitors feel safe to eat at the venue.

Figure 5.6 Cove at Batavia, Pantai Indah Kapuk
Source: https://www.lifestyle.kompas, accessed December 21st, 2021

Table 5.1. Visitor response

	Tribecca Park	Thamrin 10 Food and Creative Park	Cove at Batavia
Food	Varied types of food, prices are a bit expensive	Varied types of food, relatively affordable food prices	The type of food is varied, and the price of food is relatively bit expensive
Service	Service from each restaurant's vendors	Service from each restaurant's vendors	Service from each restaurant's vendors
Atmosphere	Located in a mall area, garden atmosphere with a koi fish pond, there are often events/activities you can walk with the pets.	It is located in an office area, easy to reach. Conditions are a bit hot because there are rare trees.	It is located being by the sea, Instagrammable, can be used for certain events, hanging out, and sports.
Safety	Implement strict safety standards, use the Peduli Lindungi application to protect and are required to wear a mask.	Visitors feel comfortable and not bored. Using the Peduli Lindungi application for safety and wearing mask. The open place makes visitors feel comfortable and not bored.	Using the Peduli Lindungi for safety and wearing a mask.
Response	Visitors feel happy when they are here. Because after shopping they can eat while having fun or socializing. Shopping and eating activities are fun activities for socializing and	Visitors feel happy to be in this place, especially at night because the weather is not too hot. They take advantage of the dining area to socialize and	Visitors feel happy to be in this place because the place is comfortable and Instagrammable. They also often use this place for a walk or exercise. Often take photos at sunset to post on

	recreation to release the boredom felt during the pandemic.	unwind after work. The pandemic situation also makes visitors bored and take advantage of this dining place for socializing and relaxation.	social media. At weekends, visitors take advantage of the time for recreation and socializing.

5.5. Conclusion

Food park are an opportunity for the development of places to eat in the new normal. The psychological impact that occurred during the Covid-19 pandemic caused a strong motivation to eat out. Eating out is not only to fulfill hunger and thirst but also becomes a means of relaxation and socialization due to the prolonged pandemic. This then encourages alternative dining places that try to offer and combine the concept of dining with recreation. The utilization of city parks or attractive environments can be used as land for culinary and recreational tourism in the new normal, for example in a food park concept. Experience is important in a food park design. This experience is obtained by consumers from a varied choice of food outlets, relatively affordable prices, locations with attractive views, relaxing activities that can be done besides eating and drinking such as bringing pets or sports, as well as many spots for taking pictures (Instagrammable). Aspects of the location that is attractive and pleasing to the eye is very important for them because it can cause positive emotions psychologically. From interviews with informants, it was found that young people nowadays like eating activities that are not too rigid, where they can also do other activities such as recreation, sports, arts, bringing pets, and others. Strict health protocols really help consumers not to worry about contracting the-Covid-19 virus, coupled with being in an open area, consumers don't hesitate to eat at that place. Therefore, in the future, this food park concept has the opportunity

to be developed into a dining and recreation area in the middle of the city as an answer to the community's needs for socialization, entertainment, and fun.

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6

Are Students Aware of Privacy Problems on Campus?

Lya Anggraini

lya.anggraini@ciputra.ac.id, Universitas Ciputra Surabaya

Abstract

Campus, in the post-pandemic, prepared to maintain the physical distancing, however, limiting campus goers' interactions is a potential issue related to the problem of privacy. Despite their having social interactions with each other, they also have to interact with lecturers, staff, security guards, and other people within the confined walls such as the student lounge, library, toilet, and inside the elevator. We observed and examined the cases at the University of Ciputra, Surabaya. How students perceive their need for privacy and how they express their awareness were examined through a series of a complex surveys, discussions, presentations, and own interpretations. The physical elements of the chosen areas of interaction were evaluated as they might affect the students' perceptions and achieved privacy. The result indicates how perceived privacy differs greatly particularly shown through individuals' views and expressions, concerning their differences in social proximity and personality. Another result shows that students began to realize that their behavior is mostly a way to control privacy, or cope with, the lack of privacy, and to use it as a strategy to control excessive interaction, in the post-pandemic recovery on the campus ground.

Keywords:
Social proximity; Personality; Behavior control; Achieved privacy

6.1. Background

Universitas Ciputra (UC) in Surabaya, East Java, Indonesia, has allowed and encouraged students to come to campus actively. UC has decided to actively reopen campus for offline learning in attempt of encouraging students to use the campus facility by imposing blended learning on all classes for sophomores and at least two classes for first and. This has become a major step to overcome the pandemic Covid for learning environment, from full study at home (online learning) (Rectorate, Pembelajaran Semester Genap 2021/2022 (in Indonesian). Even Semester 2021/2022 Learning., 2022) to what we called blended learning (online and offline mixed). At least, two classes conducted blended learning (Rectorate, Pembelajaran Semester Genap 2021/2022 (in Indonesian). Even Semester 2021/2022 Learning., 2022). As soon as the ban for study at campus was lifted, students and teachers are required to follow strictly the health protocol, so called 5M in Indonesian, and translated as follow: 1) Wash hands with running water and soap or hand sanitizer, 2) Using 3 ply or 5 ply mask, 3) Maintain a minimum distance of 1 meter, 4) Avoid the crowd, 5) Reduce mobility (Rectorate, Prosedur dan syarat berkegiatan di lingkungan kampus Universitas Ciputra Surabaya, 2022). The following letter simply encouraged us to come to campus particularly those reside in Surabaya and its vicinity, permitted by parents, got vaccinated twice and "must have their own awareness to apply health protocols" referring to 5M (Rectorate, Pembelajaran Semester Gasal 2021/2022 (in Indonesian). Odd Semester 2021/2022 Learning., 2021).

Health protocol including physical distancing continues to be kept, as each institution has different recommendations about campus "save" reopening based on (Lu, et al, 2021). However, students and parents were obviously concern about their safety post pandemic. The practical experience against the happening

inside the campus not limited to virus spreading but also to other health issue, not to mention student well-being, and public health (Lu, et al, 2021). This research tried to figure out two things: the issue of virus spreading from the privacy approach and what other issues student aware of in relation to their own and others' need of privacy, and how they view themselves in coping with current and potential problems of privacy violation.

6.2. Privacy as personal control & planned behavior

Campus ground as facility has become a breeding place for virus spreading. Students and campus staffs were under pressure to follow the rules of offline activities to the point of exhausting. However, the health control and protocol are not easily coerced merely by regulation alone. In many places, where social interactions are diverged and seemingly uncontrolled, the students' own behavior plays major determinant. Community empowerment through governmental imposing resulted in planned behavior to prevent the spreading of the extended version of Covid-19 (Smith & Branscum, 2021). Privacy as planned behavior (Mehdy, Ekstrand, Knijnenburg, & Mehrpouyan, 2021) has the potential for students' self-efficacy both on and off campus ground as they are more aware of their own health risks. Privacy as personal control (Johnson, 1974) by students might force them to follow health protocol, despite health awareness, reinforcing the facts that privacy is part of disease control (Margulis, 2003).

As privacy is a way of controlling rather than preventing interactions (Donald, 2022), it involves both processes, a limitation and a searching for social connection (Altman, 1975), which resulted in the degree of interaction between different types of people in order to get the desired privacy. Thus, the ability to control privacy becomes the crucial (Altman, 1975; Pedersen, 1979, 1999). Thus, to understand students perceptions and plans at the moment

for the more controllable situations of the students behaviors to keep physical distancing, how students of UC with their own words reveal the actual interpretation would be a valuable result.

6.2.1. Interaction among students and with teachers/staffs

A study in Canada to 18-year-old and above respondents shows that perceived Covid-19 related discrimination, fear of infection, prior social distancing behavior, and prior diagnosis of Covid-19 are associated with intentions to social distance (Frounfelker, Santivicca, Li, Miconi, & Venkatesh, 2021). Interaction among students was a complexed situations in that varied backgrounds and the unexceptionable stigma in society on different races issues in Indonesia, they already faced social distance everyday. How someone judges you is shown in how they decide to call you, as part of the language or slang, particularly in Surabaya, where the Chinese Indonesians get along with their strong local terms spreading to the young generations. Believe it or not, their behaviors follow the way they speak (Quora). When the locals speak with the new comers with their local dialects, it means they accept and respect you and people feels that too, and the distance is shortened (Tamariska, 2017). There is no boundary among 'friends' in society, which means the social distancing between friends is blurry, in other words, among students it is difficult to set the distance or boundary since there is the inclination to eliminate it. This is the opposite of controlling behavior.

Among students at UC, apparently, they have concerned of social distances among themselves, with lecturers, campus staffs, up to security guards. Partly, the social distances were based on the underpinning local culture of where the social stratification is not the seniority but more to title/position and wealth. Located in Surabaya, the melting pot of ethnic culture from eastern and middle areas of Indonesia ; students were aware of different personalities,

gestures, and perceptions. In the context of college campus, how students were positioning themselves between the awareness of health protocol and the need to control privacy and the need of social interaction would be the highlight of this paper. The expected results would be to embrace the students and their struggle by finding meaningful results useful for them and teachers/staffs how we could treat and care for our students at campus.

6.3. Methods

6.3.1. Survey and Observation

As the survey was designed as preliminary study, we prepared the questions as hard as we could to attract students' awareness on topic of privacy. Students were simply asked of their honest responds to a set of questionnaires during their time spending on campus. We mention certain places we assume to invoke their thought of privacy needs. Different year of students were asked to participate during classes at one time. After some time, students were asked their reasons behind the responds. We required all students to answer, so the respond rate was high. We don't separate the gender, but further analysis could tell us whether gender is related.

Survey to Multiple-Choice Question (MCQ): we asked students on things that personally would bother them such as smells, unpleasant sound, movement in places that we thought require more privacy than other places inside campus buildings. Survey to Open-Ended Questions (OEQ): we allow students to freely respond to a few questions, either to sum up or to share their thought on privacy condition, to find uniqueness or peculiarity.

We asked students several sets of questions [number in square is the questionnaire number/order, but not necessarily the ordering number to answer] at random order, as binary and open of

total of 25 questions comprising three main topics as elaborated below:

1. Have you ever been bothered by the sound, smell and movement of people in the toilet [1]. I feel disturbed by the staff/OB or lecturer chatting in the toilet, while I'm in the toilet too [2]. I wasn't bothered while on the toilet suddenly a staff came in and they cleaned the floor with a mop, and tried to open the doors [3]. I often get annoyed by the smell of other people in the toilet [5]. Chatting on the toilet? Is it when I chat with friends in the toilet that I don't feel disturbed or disturb other people in the toilet? [6]. Do you need separate toilets for lecturers and students? [7] If you are disturbed by the sound, smell, movement of people in the toilet, what do you do [8].

2. When eating, I'm not too bothered by unknown people because I don't know that person [9]. The cleaning staff or office boy will be considered annoying if they reprimand or teach me to speak [10]. I get annoyed when other students enter my class or my studio [11]. I feel uncomfortable and disturbed when in the studio the lecturer often walks around [12]. Noise while eating, the sound of papaun from the mouth or eating utensils that are issued are quite disturbing to me [13]. Are you annoyed when the cleaning staff enters the cleaning studio? [14]. Presentation situation in a closed classroom/studio and in a semi-open space such as a student lounge, which one has higher privacy? [15]. In a quiet place is relatively more disturbed than in a crowded place [16]. In the elevator, I don't really care to avoid physical contact with strangers, other students, or lecturers [17]. Very congested position in the lift. When there is an unknown student carrying a backpack or a large bag, I feel disturbed when he stands in front of us

    in the elevator [18]. Please share your thoughts or feedback about your privacy and experience during this survey. Thank you [19].

3. Do you think that privacy awareness can prevent us from sexual harassment and conflict with others? [20]. I'm not bothered if my friend holds my hand [21]. Our view when meet other people. Is it polite to look people in the eye? [22]. There is a fact that strangers are less bothered about certain things than people we know, for example, being shy can make us more restrained from making a fuss, getting angry, or immediately reprimanding. Agree? [23]. Relating to morals or social rules and norms. When I'm in the cinema, talking loudly, I don't feel disturbed [24]. I'm more disturbed by noises when I'm in my room and alone than in crowded places [25].

On the results of Multiple-Choice Questions (MCQ) and Open-Ended Questions (OEQ), the response rate is as follow (Table 1). Despite the low response rate for OEQ, we conducted qualitative analysis to draw the meaningful results. For the MCQ we conduct quantitative analysis of sampling distribution and significant differences, and Pearson correlation (Diekhoff, 1992) using statistics in simple excel operation.

Table 6.1 Total Number of Students and The Response Rate

Year of Conduct	Female	Male	Total Response (MCQ)	Total Response (OEQ)	Response Rate (MCQ)	Response Rate (OEQ)	Total Population
2020	19	14	33	22	89%	59%	37
2021	25	19	44	31	92%	65%	48
2022	30	14	44	39	92%	81%	48
Total Number	74	47	121	92	91%	69%	133

Observing the actual condition on campus added to the analysis to support or confirm the students' responses. Students were observed as well as the places in question: toilet, student lounge, library, elevator, classrooms. We simply asked students with regard to the actual condition during their activities at campus emphasizing the concerns over the issues. Students subjected to policy by Rectorate of working or studying from home, and the blended learning, were asked to joined the survey respectively after the Covid19 strike in 2020 to the post pandemic of 2022. We took note of the high school city/origin and their gender as depicted in figure 6.1
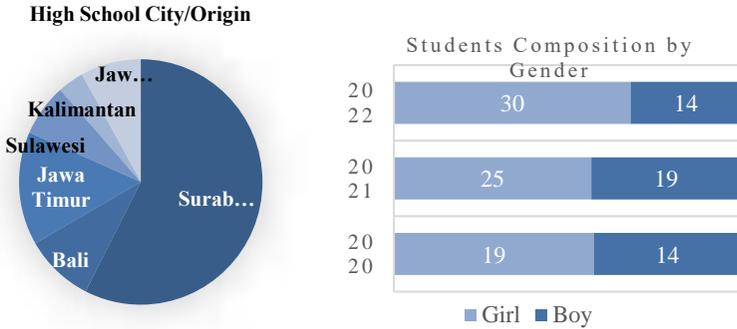
High School City/Origin

Figure 6.1 High School City Origin and Gender Composition

6.3.2. Analysis

Survey in the form of questionnaire results in binary 'yes' or 'no' as quantitative data. Interview results in answers to open-ended questions as qualitative data. As qualitative data, the analysis was using coding, based on the words the students used. As quantitative data, the analysis employs categorization into topics of places related and privacy aspects related, and then a simple percentage is to compare a question related to another. So we could draw conclusions on the awareness on the main topic. We tried to relate as much as possible to not only covid19 and the health protocol at campus, but as far as the student's motivation to come to campus, and the sexual harassment issue, and other related issue to privacy such as 'mind your businesses to conflict, dissension, strife, that could be underrated topic but going on circling in our campus due to uncontrolled behavior or relationship problems. We also gathered additional information on the student's birth place and previous school origins as well as gender information to identify the peculiarity or potentially to commit the stigma over their regional identity or explain their attitude or behavior.

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The classroom designated for architecture students were mainly on the 16th, 17th and 18th floor of the new campus building completed in 2018. There were three elevators at the ground floor lobby stopping at the three floors; one goes straight without stopping with full capacity of 9 persons; one stops at every floor; with full capacity of 9 persons; one is intended to carry larger capacity up to 15 persons. Toilets separated for both male and female were on every floor, next to each other, with one toilet for disable. The elevators as in/out point, next to the toilets, were situated at one end leading to a hall connecting to the classrooms and offices/meeting rooms. The capacity of the classrooms was intended for 30-50 persons. The student lounge was prepared at each floor, located between the classrooms and the elevators/toilets. Everyone needs to go in and out of the floor will pass by the toilet before reaching the elevators. This would make an issue of privacy either from those inside the toilet and those passing by to reach the classrooms or the office rooms. Office boys/girls were actively using the kitchen (by the hall) as their resting place. Everyday mornings and afternoons twice, but sometimes more, they will be busy cleaning the toilets and the hallway. Classrooms and the office rooms were cleaned early and just before the office hour ends. Despite the small space, we all squeezing in those small spaces. This has become the problems with health protocols. We were busy trying to figure out how to keep the health protocol but figuring out it is helpless and almost impossible due to the limited physical conditions. Not to mention the narrow doorways and the hallways. Mobility and commuting between floors are now using stairs, but to reach them from the ground still relies on the elevator. During lunch break, where everybody tries to go down to either ground floor to get out of the building, it took 2-5 minutes just to wait for the elevator. It is impossible to keep 1.5 meters physical distancing anywhere in the building. To avoid the virus spreading inside the room, the

arrangement of tables and chairs should accommodate the proper distance. However, it shows no difference. We identify the physical conditions at places in question: toilet, elevator, classroom, and student lounge (figure 6.2), where green areas indicate circulation; and blue activity. It is still commonly used to gather in a crowd with or without physical distancing after Covid-19 (figure 6.3-4), even though signs of health protocol was posted in the toilet and corridor (figure 6.5).
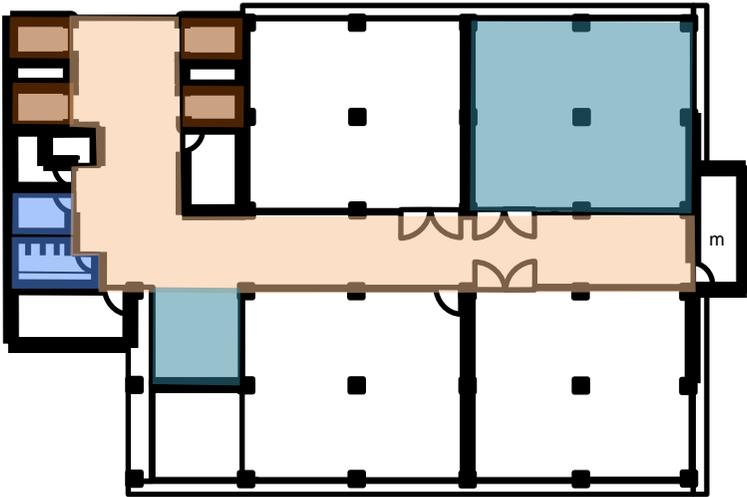

Figure 6.2 Typical Layout of 16th, 17th, and 18th Floor.

Figure 6.3 Situations In The Classroom Before Covid-19 (Left) and After Covid-19 In New Building (Right).

Figure 6.4 Situations in The Corridor (Left) and Student Lounge (Right).

Figure 6.5 Corridors Leading From Lift Area (Left) To The Toilet Area (Middle), Lounge and Classrooms (Right).

6.4. Result and Discussions

6.4.1. Privacy Related to Places

On the results analysis, we found disturbance concerning toilet that the top answers meant for 'either yes or no', while the second said 'yes'. Students were asked in during the time in the classrooms, or anywhere inside the campus buildings, intended for studying. On place with higher privacy, most students show conventional answers, while few answers what they thought differently between classroom, student lounge, and both. The majority answers 'conventionally' assuming that there is more expected privacy in classroom than in the student lounge. However,

it is not necessarily meaning that in student lounge has lower privacy. Interestingly, there are fewer students chose both, considering possible higher privacy in both places.

In conclusions, we noticed and analyzed responses and extracted into 4 topics of privacy related places as follows.

1. Every one of 12 students felt disturbed at least once against smells, unpleasant sound, movement/motions in toilet. Every 1 out of 4 students felt bothered when the staff or office boy greet or talk to us, and twice more students bothered inside the toilet. Talking with each other in the toilet is not disturbing but only slightly more than those who felt the contrary. More students would be preferable to separate toilet for teachers and students. Smell inside the toilet is disturbing for most students, though a few do not feel the same.

2. Inside elevator, every 2 out of 3 students would not bother to avoid the physical contact or keep the distance. Interestingly, only slightly fewer students felt not bothered when a student unknown carried sack or backpack on their back inside the lift.

3. During class, almost half of the students felt bothered if teachers walking around them. When another student walks in, only every 3 persons felt interrupted. Open place such in student lounge and closed room like studio/classroom, students prefer classroom, though there are some chose student lounge. Some students feel bothered when a staff did cleaning, though more did not.

4. In private rooms, more students would not feel disturbed than in public places. In quiet place, someone would not feel bothered than in noisy place. Surprisingly, in public

place such as theatre, talking with loud voice would be rude according to more than 90% students.

After the interview, we found there were some interesting facts on actions or words they when they feel disturbed inside the toilet against smell, sound, and movement of others. There are at least 10 expressions or conducts in students' reply to the open-ended questions on *if you felt disturbed by sound, smell, or movement of people in the toilet, what would you do?*

1. Staying cool; keeping quiet as nothing happens; tolerating as it is a public place.
2. Finding distraction by utilizing cellphone; singing quietly; imagining other things.
3. Getting out of the place or keeping away without using the toilet; find other toilet.
4. Getting out of the place as soon as finished using the toilet.
5. Covering the nose or ears to keep oneself from unpleasant smell or sound; covering with perfume.
6. Saying something as warning nicely without hurting others.
7. Grumbling outwardly or inwardly; feeling angry.
8. More disturbing when the toilet is dirty after the previous user.
9. Choosing violence. (This is supposed to be a joke, so we exclude from further analysis.)

6.4.2. Privacy and the Interrelationship Issue

We compare the results of the questionnaires concerning physical, acoustic, and visual aspects mentioning various settings: theatre, elevator, own room, and campus. We examine how students responded most of the questions related to other people's existence in each setting. Students' responses indicate: (1) privacy

relates to avoidance to sexual harassment and discord; (2) eye contact; (3) noise when being alone than in public place; (4) a stranger inside the elevator; (5) physical contact inside the elevator with stranger, other students, or teachers; (6) physical contact with friend; (7) social norm in a theater; (8) any contact with strangers is more tolerable in any situations; (9) during meals, less disturbed around unacquainted person; (10) meeting someone's eyes is not rude according to most students, but 1 out 5 still don't think so; (11) When asked whether awareness on privacy would keep us from sexual harassment and dissension, 1 out of 7 students do not think so. Touching hands by a friend, only slightly more than half respondents felt offended; (12) any sound coming out of would be troublesome.

Figure below reads as positive responses by the light blue shade; the lighter blue shade says negative; small amount at the top says either positive or negative (figure 6.6).

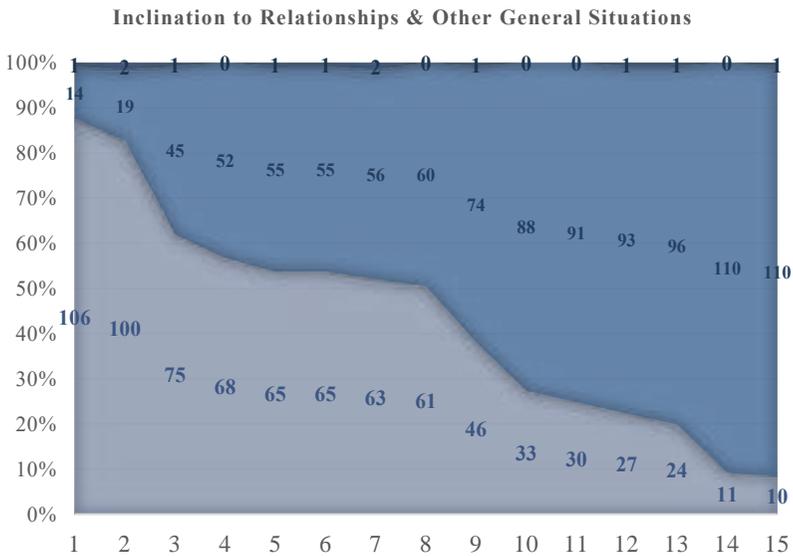**Inclination to Relationships & Other General Situations**

Figure 6.6 The Inclination of Students' Attitude in Every Situation

Related to common norms, students show concerns more leniently if the conditions are required. On the opposite, in general situation, they show in between. Considerably, they agree that privacy's awareness is linked to sexual harassment and discords among themselves; the farther the social relationship the less vulnerable.

6.4.3. Attitudes in Relation to Privacy

On further qualitative analysis, we found some typical words from students' answers to *Share your mind and response on privacy as well as your experience during survey.* These words might be useful for further study. They convey meaning related to privacy in broader and honest view each student freely stated.

"It's just normal," "Not disturbed," "Never thought before," "Just don't bother me," "In average, people around me don't care about the situation," indicates indifference, or unconcern [1]. "Not too bothered by the people around me," "As long as it's within reasonable limits," "Tolerate," indicates acceptance, toleration, or forbearance [2]. "Depends on individual," "Relatively," "Depends on the condition," "Unpredictable," "Depends on people," "Specific," "Each standard," "Cannot be compared," "We're different," "Up to you," also, *"*Overly," "Excessive," indicates *reliance* or *dependency on personal factors* [3]. "Feel more sensitive," "Aware," "More or better understand," "Knowing," "Influence," *D*o not understand; able to appreciate what people do in public; should have realized; should have thought about it first; respected; honor/respect; important/significant indicates *sensibility* [4]; *appreciation of oneself or others' feelings* [5], otherwise *depreciation* [6], and *acknowledgement*, *recognition* [2]. Myself, others, context, state/circumstances, function of space, title/job, toilet, bathroom, bedroom, user, study, and work" indicates *factors of acceptance/avoidance* or *appreciation/depreciation* [7]. "Attitude,

behavior, habits, ways of thinking" indicates how to behave/have certain attitude/comport oneself [8]. "Outlook, personal, public, crowded, crowded, quiet, alone" indicates *rationalization* [9]. "Comfort, health, security, mood, needs, rights, problems, and disputes" indicates *motivations* or *inducement* [10].

Privacy as personal control & planned behavior along with some degree of interaction is un avoided following certain potential problems as sexual harassment, intimacy on campus, and health issue. Therefore, privacy is needed and behavioral control is by far the only solution despite the need to rearrange and added some appliances to support the healthy life and relationship, further to motivate students to keep coming to school even after Covid-19. We recommend to regulate behavior because campus ground is limited in their physical providence to change according to the limitations. The capacity of elevator stated and rules are written, but it is ultimately requiring people's health awareness to keep following them.

Campus ground (UC) post Covid-19 with the current physical condition, situation, & campus rules/management, as we dealt with the virus spreading, mainly concerns with control & protocol during meeting/interaction. There are several things students and staffs on campus ground should be aware of: sensitivity vs 'being sensitive'; privacy awareness to avoid potential sexual harassment; privacy in the toilet for healthy life; privacy to reduce stress per student-teacher relationship.

6.5. Conclusions

Apparently, students are not aware at all to moderate. Student's are more aware of pursuing their social life and rather care of seeking to please others and keeping a good relationship. Therefore, it is perhaps as they say that it is necessary or

unnecessary at the same time to care for our and other's privacy. Interestingly, they do see privacy beyond their selfishness but more as a way to respect others. Seeing how this awareness as a mirror of how to feel and show empathy with one another. For the sake of the learning process, this study could also be one of the ways for students to understand by probing on an issue without we directly telling them how important one is.

We conducted this study in concern with the fact that since early on our education system does not include empathy toward others. Such in privacy, it is really hard to tell and teach without understanding the students' natural way of thinking. It is not to blame the students alone; our society has low to zero awareness of what is human's right and what is empathy means in everyday life. We tend to forget and fail to see the importance; therefore, we ignore. This study is hopefully becoming a preliminary to a deeper and broader study concerning how we could use our physical environment for the benefit of others instead of ourselves. It is time to forsake our ignorance and grasp the learning journey that is meaningful. In the future, deeper and more meaningful topic of study should be incorporated into the curriculum alongside with the touch of humanity. We don't just create rules and impose them to others. First thing first, we have to painstakingly gain others' understanding before we commence with rules and regulations. Now, students' awareness should lead to a healthy life, instead of imposing rules and regulations which will reap more rebellion and regretful action or decision.

Indonesians know the words 'sungkan' and 'risih' which closely means *uneasiness* and *discomfort* toward others during certain conduct or actions. These words were meant to be our boundary in relating with others in public places. So, our common conduct is toward others in basic. We do mind others. We just lack of discipline, ignoring all in the name of freedom, but actually it will

take the toll of our own safety, inner peace, and physical health. Should we impose regulations, we need to approach ourselves first. This study suggests the future planning and design school to incorporate psychological approach (Donald, 2022) to further reducing the discomfort and alienation toward ideal design, not just mere theory of spatial organizations but also considering the psychological immense impacts the design has on the intended users.

How students perceive their need for privacy and how they express their awareness could be differentiated by their behavior. Additionally, the physical design of the interactional area is subject to advantage or disadvantage in achieving privacy. Regardless to how perceived privacy in individuals differ, concerning their differences in social proximity and personality, and other undefined reasons, it is our concern to facilitate and properly conduct for the protection of ourselves and for the sake of others. Therefore, all students altogether should be more aware of their behavior as a way to control privacy, or cope with, the lack of privacy, and to use it as a strategy to control excessive interaction, in the post-pandemic recovery on the campus ground, and other places.

For next study, we suggest to examine if there is an important connection between the answers to the separate toilets and students and other peculiar responds against the students' origin and gender. If there are no significant differences, then, it could be understood as generally speaking to all students ever studying in University of Ciputra, Surabaya. We also notice that in Indonesian language there were ambiguity in using negative questions, so we suggest for next study to reaffirm the answers using positive nuance for affirmation and valid responds.

We realize this study is far from perfectly answering the question, but we plan to analyze students' behavior in real time to

support the more meaningful results in our next study. Despite the shortcoming in preparing for the questionnaires, and the simple analysis we used, hopefully, the results of this study would still help students and teachers in grasping the real situation and students' perception on privacy on campus in order to maintain a healthy life on campus together with all the campus members. Further study is suggested to develop and deepen the meaning of each of the questions, or correlate those questions to gain more meaningful results regarding students' motivation to use campus facility to support higher productivity or happiness and balanced campus life.

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7

Alienation and Corruption as the Unsettling Consequences of Creative Industry

Ferdinand Indrajaya

ferdinand.indrajaya@uph.edu, Universitas Pelita Harapan

Abstract

Historically, there has been a change in understanding the term "creative industry". The earlier account regarding the term was associated with any object which contained cultural, artistic, and entertainment value. Later on, the term itself was understood broader. It was associated with businesses which produce goods and services conveying a more symbolic value rather than material. Nowadays, the term "creative industry" is commonly understood in its emphasis on the intermingling relation between creativity and economic development. Creativity is apprehended as an engine to innovation which shall be advantageous for business and industry. Such advantage is claimed to have its worth in cultivating economic growth. Despite of the different accounts of creative industry, in which, human creativity is viewed as a transformable object to be commodified. It is taken as a commodity which serves the interests of business corporation and industry. This accepted view of creativity as a commodity is actually in line with what is held in corporatism. In and through which, the interests of business, industry, and on a bigger scale, economic growth, are taken

precedence over other human dimensions; which includes creativity. Corporatism itself is an institutionalized form of Neoliberalism which consolidates a belief of how market is the supreme vehicle in obtaining public good. How noble it may sound, such account of creativity is potentially leading to at least two unsettling philosophical consequences, namely alienation and corruption. The appearing of those consequences is inseparable from the scientization of creativity which is presupposed by the creative industry. This article is written as an attempt to highlight those two consequences which are emerging from creative industry's own conviction about creativity. Such highlight is necessary to be taken into concern if we were to sustain creative industry itself.

7.1. Introduction

At the beginning of the introduction in his book entitled "What Money Can't Buy: The Moral Limits of Markets", Michael J. Sandel stated that "there are some things money can't buy, but these days, not many (Sandel, 2012, p. 3). This highlights that almost every aspect of our lives is open to be price tagged; to be monetized, commercialized, commodified, marketized and economized. Market values are becoming more and more valuable than others and economics has become the most triumphing spectacle for our way of being in the current contemporary life setting.

Such economization of the life world through coronating the market over society (even government), has been proclaimed since 1980 by Ronald Reagan and Margaret Thatcher. Subsequently, such spirit was continued by Bill Clinton and Tony Blair in the 1990. Reagan dan Thatcher "proclaimed their conviction that markets, not government, held the key to prosperity and freedom," and such conviction was consolidated by Clinton and Blair who comprehended the market as "the primary means for achieving public goods" (Sandel, 2012, p. 6). Since then, market is not comprehended merely as a particular setting or space for people to conduct their commercial transaction, as understood generally, but such conduct has been infecting or way of being. Commercial transactional activities have been dominating the way we think, behave, and acting in myriad spheres of life. As stated by Sandel that, "market and market-oriented thinking have reached into spheres of life traditionally governed by nonmarket norms. More and more, we are putting a price on noneconomic goods" (Sandel, 2012, p.48). Since then, economics is no longer understood as "the study of the allocation of material goods" (Becker, 1976, p.3), but also immaterial ones.

Recently, economics, through its practical expression in market, has played a more and more prominent role in social and public life. The cost-benefit analysis, the logic of buying and selling, and also the incentivizing have been governing those realms. Those way of thinking captivates us and influences the way we evaluate yet behave towards the immaterial dimensions of our own lives. It is getting a lot more imperialistic without us disquieting or making a fuss out of it; it has been taken for granted. In order to show this, Sandel shows how the economic way of being has

marketized social and public sectors. The market is used to allocate "health, education, public safety, national security, criminal justice, environmental protection, recreation, procreation, and other social goods" (Sandel, 2012, p.8). Even though exaggerative that may sound, but there's actually a truth in it. For example, economic approach that is applied in marriage or divorce and elementary school. The former is exemplified and stated by Becker (1976). He stated that "according to the economic approach, a person decides to marry when the utility expected from marriage exceeds that expected from remaining single or from additional search for a more suitable mate. Similarly, a married person terminates his (or her) marriage when the utility anticipated from becoming single or marrying someone else exceeds the loss in utility from separation, including losses due to physical separation from one's children, division of joint assets, legal fees, and so forth" (Becker, 1976, p. 10). In short, the consideration of getting married or divorced is an economic one. It is, like it or not, influenced by practicing the cost-benefit analysis in a utilitarian fashion. Thus, there is a market for both marriage and divorce.

We can also see how the economic approach towards education as one of the social-public sectors, is applied. In an underachieving Dallas school, the students will get $2 each for a book they have managed to read completely (Ripley, 2010, pp. 44-45). In and through which, reading as one of the academic activities is cultivated. The cultivation of reading is elevated by giving financial incentive to students. This indeed may enhance grades, academic ranking, or even improving school accreditation, but this also implies that the intrinsic drive to read, to learn, and to understand is corrupted by external factor, namely money. Good

grades are no longer the impact of learning that is driven by intrinsic motivation, but it is driven by money through the practice of giving incentive.

As pragmatically applied for marriage-divorce and education, there is also a market for human creativity. Creativity is another immaterial dimension of human life which is also a social one. The social dimension of creativity is inevitably related to its acknowledgement and validation (Cropley, 2011, p. 363). The acknowledgment and validation of it is inescapably social. Considering that the emergence of creativity is made possible from doing things differently, different or even deviating from what has been accepted, it requires social acceptance. To a certain degree, society are prepared to tolerate the different way of doing things. The society, from time to time, is involved in accepting or rejecting such differences. Publicly, people are involved in considering which rules that are still acceptable to be broken and which ones are not. Through their existing norms and prevailing lived traditions, they are engaged in acknowledging whether one thing is considerably creativity or it is evaluated as, for example, perversion or a form of violation. When it comes to its product, a mere novelty is not enough. A creative product so declared must also be communicated to others and, above all, be accepted or at least tolerated in the current context. Such acceptance involves, what Cropley said as "sociocultural validation" (Cropley, 2011, p. 363). Without such social, and also cultural, validation from society, the product might be accepted as simply a production of variability.

Under the heading of creative industry, creativity is apprehended as an engine to serve its market. The existence of this

industry mandates innovation for economic survival (Martiniano, 2016, p. 161). It covers wide range of outputs (from different cultural domains) such as publishing, music, performing arts, advertising, fashion, computer games, photography, architecture, software, arts and crafts, and radio and television production (Ihani et al, 2020, p. 228). The development of creative industry itself is inevitably linked with cultural industry as it is grounded in the industrial revolution during the 19th century (Moore, 2013, p. 740). The term "cultural industry" itself was first used by one German philosopher, Theodor W. Adorno (1903-1969) during the early 1940s. He used the term to replace "mass culture" which he thought was undercut by the rise of industry. According to him, the industry, with its corporate leaders, eradicates any possibility for cultural expression to arise from the masses or society (Horkheimer & Adorno, 2002, p. 115). The "mass culture" was replaced by "cultural industry" to show that the mass culture which has been industrialized is no longer coming from the masses but it is produced for the masses (Moore, 2014, p. 741). In and through which, the focus was shifted. The content of the culture, in a form of artistic expression, is no longer be the focus. What is more prominent is the profit that may emerge from it. The relationship between cultural or artistic producers and consumers becomes the highlight. While the term "industry" does not refer to the production process but to the standardization of the cultural or artistic product and the rationalization of its distribution (Moore, 2014, p. 741). This also implies how the advancement of technological innovations has its significance in transforming cultural and artistic practice as market commodities. Within which, creativity, with its constitutive role regarding cultural and artistic

expression is not only commodified, commercialized, but also corporatized.

The linkage between cultural industry and creative industry is intertwined by their contribution to economic growth. The growing idea concerning creative industries is connected to how culture can contribute to the economy significantly. The concept of creative industries itself has found its popularity in the 1990s and it also takes part in celebrating the digital era (Moore, 2014, p. 744). The definitions of creative industry are inseparable from what has been considered as creative products from time to time and also their entanglement, as mentioned earlier, with the advancement of technological innovation. One definition is coming from the economist, Richard Cave. Cave defined creative industry as those "in which the product or service is the manifestation of the creativity or artistic abilities of an individual or a team" (Cave, 2000, p. 1). The product or service which "is the manifestation of the creativity or artistic abilities," refers to decorative arts, jewelry design, fashion design, and also perfume industries (Friedman & Jones, 2011, p. 237). These are the products which have been categorized as creative products since the nineteenth century until the present day. The ones who link the creative industries with products that have cultural, artistic, or entertaining value will naturally accept such definition. One sociologist, Paul Hirsch, may have offered a definition of the phrase "creative industry" that is more fulfilling. A business that generates goods and services with more symbolic worth rather than just material one is what he refers to as being in the creative industry (Friedman & Jones, 2011, p. 238). For instance, the price of an artwork that contains paint and canvas is not determined by the cost of the materials. It is influenced by other

intangible factors. Intangible factors like beauty as represented by cosmetic industry, pride as advertised by fashion design industry (or nowadays smartphone industry), etc. The later, pride, as one of the intangible factors which influences the price, may be best illustrated by Georg Simmel's account regarding fashion.

German philosopher and sociologist Georg Simmel (1858–1918) once studied the interplay between creativity and commerce in the fashion industry while taking audiences and consumption habits into account. Simmel claims that one fundamental tension, which is quite particular to the social state of humans, is what gives rise to the fashion business. Such fundamental tension comprises of two contradictive tendencies or drives: on the one hand is the tendency from each of us to imitate somebody else, and on the other hand, is the tendency from each of us to distinguish oneself from others. According to Simmel, homo sapiens is driven, among others, by two instincts: one is pushing him to imitate his neighbor, the other one is pushing him to distinguish himself from him or her (Benvenuto, 2000, p. 1). When it comes to fashion, Simmel stated that "fashion represents nothing than one of the many forms of life by the aid of which we seek to combine in uniform spheres of activity the tendency towards social equalization with the desire for individual differentiation and change" (Simmel, 1904, p. 133). From what has been stated, it is clear that there are two forces at play in every social relationship: one is driving us to imitate or bind ourselves to others, and the other is driving us to unbind or distinguish ourselves from others. He subsequently stated that "fashion…is a product of class distinction" (Simmel, 1904, p. 133). Consequently, for the market of fashion industry to exist, such class distinction must be maintained; the social stratum must be

sustained. The social stratum which is constituted by the superior (upper) and inferior (lower) classes should be protected. Fashion facilitates the tensional relationship between the drive to imitate and the desire to distinguish in those two social classes. For example, to signify oneself as a member of upper class, one wears an outfit designed by a prestigious designer. The lower class, on the other hand, is soon driven to imitate it. This opens a possibility for the market to produce low-priced copies for the lower class' member.

From economists' perspective, this fashion phenomena have been labelled as "snob demand" (Benvenuto, 2000, p. 3). According to which, fashion is a market constructed by snobs. A snob, from this perspective, is a consumer who stops buying a product if the price is too low yet if too many people are buying it. This is where pride comes in. Pride, as an intangible aspect of human life, is influential yet instrumentalized by the market. The pride of the snobs to distinguish themselves from the considerably inferior masses or lower class and also the pride of the lower class to be able to imitate the upper class, has its role to determine the price. The economic exploitation of pride in fashion design industry also displays what has been defined by Hirsch regarding creative industry: a business that produce goods and services carrying greater symbolic worth than material one. Reluctance in buying lower price products or the all too popular products, is no longer driven by the product's function (in a utilitarian sense), but by what the product signifies symbolically.

From what have been mentioned, the definitions of creative industry vary from time to time and from country to country. The diversity of its definition is inseparable from not only the

advancement of technology, which is developing from time to time, but also reflects the national legislation governing intellectual property protection (Moore, 2014, p. 744). Nevertheless, there are two things at least the promoters of this industry may agree upon. First, creativity is an immaterial or intangible aspect of human life which can be exploited to serve economic purpose and market interests. Secondly, the establishment of the industry is founded on individual creative talent. This also displays that the economization and marketization of the life world's overall aspects are a possibility. Supported by the Neoliberal doctrinal account, any single thing (immaterial or material, tangible or intangible) that can be commodified, gives birth to its commercialization. Anything that can be commercialized, ushers it to its marketization and whatever thing which can be marketized, is potentially contributing to economic growth. Any contribution which influences the economic growth, must be protected and sustained since it mirrors also the power of a nation. Since the power of a nation is mostly determined by the growth of economy, whatever things which can be monetized, therefore should be monetized. Through which, the "can" has been shifted to the "ought."

7.2. Creativity in Creative Industries

The writing in this section of the article is an attempt to show how creativity is understood under the notion of creative industry and the problems which are arising from it. In order to do this, few philosophical accounts regarding creativity shall be also briefly elaborated as contesting views for the creative industry one. Under the umbrella of the creative industry, creativity is usually linked to either implicit or overt Neoliberal rhetoric. Not merely linked, in a

more assertive claim, Kalin (2016) declared that the view of creativity has been taken over by Neoliberal doctrine (Kalin, 2016, p. 33). Ozgun (2011) also once highlighted creativity, which is binoculared through the lens of creative industry, as part of the economic program within the ideological framework of neoliberalism (Ozgun, 2011, p. 120). The existing discourse regarding creative industries with, inevitably, its understanding of creativity relies its establishment upon such ideological framework.

The term "Neoliberalism" itself alludes to a certain evolving theory of Liberalism. Regarding Liberalism, there are various definitions of the term. There are also several attempts to reunite those various definitions. One attempt that is worth pointed out here comes from Alan Ryan (1993). He defines liberalism as a group of political ideologies that place a strong emphasis on three elements. The first one, it is a theory for individuals. According to which, in essence, "individuals are self-creating", there is "no single good defines successful self-creation, and that taking responsibility for one's own life and making of it what one can is itself part of the good life" (Ryan, 1993, p. 373). Based on this first interpretation of liberalism, people should have the freedom to opt from among various relevant possibilities when making important life decisions. Secondly, Liberalism is also a theory for society. Ryan stated that "the authority of the group over the individual is not absolute, but extends only to the hypothetical terms of a bargain by which individuals agree to accept that authority" (Ryan, 1993, p. 375). The account regarding society is rather an instrumental one. Its authority is agreed as long as it can stand as a device to protect the interests (I.e. property) of the individuals. Lastly, Liberalism is also a theory for the state. The state "must employ as little coercion as possible

in its dealings with its citizens" (Ryan, 1993, p. 376). This indicates that, from a liberalist's perspective, the state's authority should be used sparingly or in a restricted capacity to further the interests of the people. What unites these three theoretical perspectives regarding Liberalism as proposed by Ryan, is the freedom of the individual to fulfill their interests is prominently orbital.

Such account which emphasizes the freedom of the individuals is also applied in Neoliberalism. What slightly different is that the freedom of the individuals is expressed and characterized institutionally by strong private property rights, also by free markets and free trade. Free market and free trade are necessary for each individual to exercise or express his or her freedom. As stated by Harvey (2005), **"**Neoliberalism is in the first instance a theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets and free trade. The role of the state is to create and preserve an institutional framework appropriate to such practices" (Harvey, 2005, p. 2). **Subsequently, he emphasized that "**if markets do not exist (in areas such as land, water, education, health care, social security, or environmental pollution) then they must be created, by state action if necessary" (Harvey, 2005, p. 2). Neoliberalism posits the state no more than the bureaucratic servant for such market to exist. Fundamentally, Neoliberalism is an ideology which triumphalizes the market over the myriad aspects of human life may it be material or immaterial, tangible or intangible, and creativity is one aspect which has been inescapably entangled.

Relying upon Neoliberal doctrinal ideology, creative industry reduces the understanding of creativity as a commodity to serve the market's interests for the sake of economic growth. With its mantra, "innovate of die," creativity is instrumentalized and utilized for economic survival. It is present to solve the challenges which are wrestled by business corporations and industries. The existence of business corporations and industries themselves are prominent and necessary for Neoliberal ideology. The corporatization, commodification, of life's aspects (including creativity) is the feature of Neoliberal project and the ideology itself depends on those corporations as monopolistic yet monolithic economic organizations (Bloom, 2017, p. 75).

The term "innovate" itself refers to a problem-solving activity for the challenges which are found in the marketplace, it refers not to making something novel and original (Martiniano, 2016, 163). Such understanding of innovation is what drives the view of creativity in the framework of creative industries. Creativity, reductively, is explored in order to come up with innovation which sells rather than to interpret culture to the people (Kalin, 2016, p. 37). Its development is rapidly advanced by economists, industries and business corporations, rather than artists or educators (Kalin, 2016, p. 38). This is shown by conflating creativity with innovation as understood by the market. This is actually an irony. The irony is found in marginalizing artists and educators in developing creativity. It is an irony since most of the considerably creative products under the creative industries are basically artistic products born out of

artists or designers whose artistic ideas are influenced by certain school of thoughts.

Regardless such irony, creativity in creative industries still is understood in a corporatistic sense so that it will able to produce such market driven kind of innovation. In order to realize that, creativity should be able to be studied scientifically. Creativity is necessary to be scientized and methodized for the sake of market driven innovation. When creativity can be studied scientifically yet methodologically, anyone who studies it may come up with required innovation. Therefore, anyone can be creative. If anyone can be creative, so does everyone. The expected result of this will surely be prosperable for the market. When creativity can be studied scientifically by everyone, not only that it gives birth to various types of market driven innovation, but also how those innovation or creative products can be reproduced and replicated en masse. This view of scientized creativity is truly held by the promoters of creative industries. The promoters of creative industries believe that everyone can be creative individuals by following certain provided scientific steps, rules, or methods (Martiniano, 2016, p. 163).

Such scientization of creativity is supported by the emergence of creativity studies program. One of the oldest creativity studies programs was born in the USA. It is constructed systematically by SUNY Buffalo State's International Center for Studies in Creativity (ICSC) and once developed Alex F. Osborn (co-founder of advertising agency BBDO) (Martiniano, 2016, p. 176). From such studies, phrases such as "divergent and convergent thinking," "incubation," "forced association," and also "brainstorming" have been floating everywhere and accepted popularly as creative

thinking methods. From the perspective of creative industries, everyone who studies such existing scientific methods for creativity, is able for creative innovation. Nevertheless, this conviction is inevitably leading us to few critical questions regarding creativity. If everyone is able to be creative by performing certain scientific methods, what does it mean to be creative? Or if the so-called creative innovations or products can be reproduced and replicated, is not uniqueness as one characteristic of creativity losing its meaning? Is not corporatized, industrialized, then scientized creativity in creative industries resulted as an oxymoron? In order to reflect (not directly and immediately answer) upon those posed questions, it might be best if we are exposed briefly to few contesting accounts regarding creativity, namely the philosophical ones.

One contesting philosophical account regarding creativity that shall be exposed here is coming from one of the German philosophers, Immanuel Kant (1724-1804). We may find his philosophical view regarding creativity that is related to its product in his book entitled *Critique of Judgment* (1790). According to him, something is considered creative if it is, "exemplary" (Kant, 1987, p. 175). The term "exemplary" is closed to what we know as original, valuable, and also singular. As for the creative individual, or what he called the genius, is inextricably linked to or "belongs to nature" (Kant, 1987, p. 174). In other words, creativity cannot be acquired or studied in the same way that science can (through observing and imitating) since it is a natural feature of the self. This does not mean that Kant's account regarding creativity is up against any rule. According to him, for any creative object to come forth, it must have a rule that precedes it. However, the genius or the creative person creates an original or exemplary work for which there is no set formula. He or she also cannot articulate the rules or methods, as

scientist does, from which the original work or object comes to the surface. Simply put, in Kant's notion of creativity, innovation comes to forth along with its creative object or work and no preceding rule for it can be found (Martiniano, 2016, p. 164). This means that it has a rule on its own. We can see that Kant's conception regarding creativity is significantly richer than the one which is held by the creative industries. His understanding of creativity leaves room for, namely singularity or uniqueness. Since replication or reproduction is a necessary consideration for a creative product in creative industries, it leaves no room for singularity as a criterion for creativity.

Berys Gaut (1958 -), a contemporary American scholar and philosopher of art and creativity, follows Kant in disagreeing the scientization or the methodologization of creativity. According to him, similar with Kant, "creativity is an innate capacity that cannot be learned" (Gaut, 2014, p. 265). He contends that creativity cannot be taught since it is incompatible with imitation or according to established standards (as applied in scientific approach). Also similar with Kant, Gaut also argues that "creativity is a property of agents, not of mere things or plants" (Gaut, 2010, p. 1040); nor industries or market. Creativity, according to him, always comes from an agent's actions yet not every action is counted as creative. There are at least, according to him, four actions that are considerably creative. An action is counted as creative action if it is able to exhibit "a relevant purpose (in not being purely accidental), some degree of understanding (not merely using mechanical search procedures), a degree of judgment (in how to apply a rule, if a rule is involved), and an evaluative ability directed to the task at hand" (Gaut, 2010, p. 1040). "Not merely using mechanical search procedures" and has her or his way in "how to apply a rule, if a rule

is involved" are two characteristics that might be ignored by creative industries about creativity when they try to scientize it for the sake of market's interests.

Another philosophical view regarding creativity that is quite of a contestation to that of creative industries is coming from Maria E. Kronfeldner. She adds another layer to the criterion for creativity, namely spontaneity (Martiniano, 2016, p. 168). This criterion definitely troubles the view of creativity that is held by creative industries. According to the rhetoric of the creative industries, everyone is capable of producing creative innovation if the guidelines and procedures of the creative process are sensible and understandable. This perspective on creativity is known as the anthropological view, according to Kronfeldner, and it maintains that it is both a human condition and a very pervasive activity (Kronfeldner, 2009, p. 578). Kronfelder then argues that the anthropological understanding of creativity frequently results in imitations rather than originality. At this point she shares similar concerns with Kant and Gaut about scientized creativity within the discourse of creative industries. According to her, the creative industries discourse misses one crucial layer to comprehend creativity, namely spontaneity. Creativity, according to her, must be spontaneous. From her perspective, spontaneity is valuable and necessary to signify creativity as truly creative (non-imitative), because spontaneity demands a "certain independence from the intentional control and previously acquired knowledge" (Kronfeldner, 2009, p. 579). This additional criterion of creativity from Kronfeldner provides a firmer based for the unteachability it, even more through

a mechanical-methodological process. It is surely troubling if we want to teach the methods for being spontaneous.

7.3. Alienation and Corruptive Behavior

As mentioned previously, the scientization yet corporatization of creativity is a necessity within the discourse of creative industries which relies its existence on Neoliberal ideology. It is required so that creativity can be actualized as innovative products which opens up a way for commodification. Within the context of creative industries, commodification of creativity which serves the interests of market and also accelerates economic growth is required. The most glaring difference between the commodification of creativity and that of earlier stages of capitalism is perhaps the fact that it touches upon creativity as the most elusive and intangible human quality. In this last part of discussion, the writing tries to show how the commodification of creativity may lead to alienation and potentially nourish corruptive behavior. As an attempt to show such consequences, it may be best to describe what does it mean by commodification.

The term "commodification" refers to a set of processes or activities through which the result of creativity is commercialized so that it is ready for the market (Suarez-Villa, 2009, p. 31). Commercialization itself entails the use of products or services resulted through the exploitation of creativity. The pervasive commodification of creativity to advance corporate power in creative industries is considerably major aspect of Neoliberalism. Creativity, as the most elusive human quality, is colonized by the

market in this new form of liberalism, which was unaffected by earlier stages of capitalism. In this case, the act of commodifying creativity can be the source of alienation. The source of alienation is found in the deliberate alteration of creativity for commercial purpose which constitutes the act of commodification. How is this possible?

Creativity, as elaborated earlier, is an intangible quality that is uniquely human. As Gaut stated, it is the property of the agent and not something else. It entails the capacity to take in already known information and transform it into novel, unpredictable ideas, procedures, rules, formulas, goods, services, instruments, etc. In which, the role of imagination is prominent, for mere absorption of existing information or knowledge cannot be considered as creativity (Suarez-Villa, 2009, p. 34). Under the heading of creative industries, creativity is transformed as a commodity and this potentially stunt the imagination which is crucial for it. Imagination is stunted when its quality is reduced to serve the interest of business corporations and industry. This stunting of imagination, at the end, violates the meaning of creativity itself and carries the seed of alienation. Alienating the creator or creative agent from what really matters to him or her and also from his or her social context.

Within the discourse of creative industries, the creative agent or individual is no longer focusing on cultural or artistic expression. His or her focus is shifted yet entangled with the production-consumption cycle. Whether the cultural or artistic expression is able for replication or en masse reproduction, is a concern that is demanded also from the agent. In this case, he or she is slowly disengaged from what initially matters to him or her.

Disengagement or detachment also happens in the relation between the creative individual with his or her social context. Creativity, as mentioned in the earlier part of the writing, is influenced by its social relation and context. Social acceptance, acknowledgement, and validation of certain act or behavior play a crucial role in fostering creativity. Nevertheless, this social context frequently runs counter to the goal of commodification, which calls for propriety and the extraction of economic value in the shortest amount of time (Suarez-Villa, 2009, p. 34). It is quite often that such situation forces the creative agent to disengage his or her relationship with his or her social milieu that has been the source of support. This kind of alienation has been a source of social pathologies since the industrial revolution era (Suarez-Villa, 2009, p. 33). The commodification of physical labor began in the early stages of the industrial revolution with its factory system. It detached the workers from their social environment and demeaning their identities through manufacturing systems that extracted value through repetitive or mind-numbing activities.

The commodification of creativity is not a mere source for alienation but also opens a possibility for corruptive behavior to be nurtured. The term "corruptive" can not be understood separately from its noun, "corruption." There are at least two descriptions regarding corruption from Gambetta (2002) which may help us to understand this second consequences further. The first one, corruption refers to the deterioration of one's disposition or integrity (Gambetta, 2002, p. 33). The word "integrity" itself refers to a concern to focus on someone's character rather than other principle-based doctrines or ideologies which are external to him or her (Macfarlane, 2004, p. 127). In the case of commodification of

creativity, the principle-based doctrine or ideology refers to creative industries with its Neoliberalism. From this first description of corruption, the commodification of creativity may lead to a corruptive behavior because it potentially deteriorates one's integrity as a creative agent. For example, an artist or designer does not longer care whether he or she loses his or her integrity as an aesthetic subject as long as his or her work is sell-able.

The second view regarding corruption refers to a few practices such as bribery or incentive for the sake of confederation (Gambetta, 2002, p. 33). In the case of commodification of creativity through the discourse of creative industries, financial incentive is given for being creative and it is conducted to confederate creativity with the corporations; with the market. The drive to be creative is no longer intrinsic, but it is ignited extrinsically. There non-economic forms of creative or artistic activities which are conducted not for the sake of getting incentive. For examples, writing a poem for the beloved one, performing a song at school, or producing handicraft as a gift to show one's gratitude. If such activities are monetized (incentivized), it may perverse, corrupt, one's motivation for being creative. One wants to create a creative product is no longer reflecting his disposition as a creative subject, but driven by the financial gain that he or she will get out of it. In this second sense of corruption, a corruptive behavior emerges from incentive awarding.

7.4. Closing Remarks

Under the umbrella of Neoliberalism, we may want to revise the initial statement from Sandel which sounds "there are some things money can't buy, but these days, not many." With

Neoliberalism, we might want to eliminate "but these days, not many." This is reflected by one of the tenets of this doctrinal ideology which states "if markets do not exist…then they must be created, by state action if necessary." Simply put, mediated through Neoliberal doctrine, every aspect of our life can be commodified, marketized, and this will be made possible also nation state with its bureaucratic instruments. Creativity is one immaterial, intangible, aspect of human life that is unable to escape from its grasp. Through the rhetoric of creative industries as one specific mask of Neoliberal doctrine, creativity is commodified. Commodification of creativity itself is an act of creating the market for creativity. At its end, this is constructed systematically for the sake of accelerating and enhancing economic growth. In order to commodify, creativity should be scientized (no matter how oxymoronic this may sound) thus replication, reproduction, of its product or innovation can be made possible. From such act of commodifying, alienation and corruptive behavior emerge as potential (yet practically actualized) consequences.

The Neoliberal indoctrination of creativity, through the discourse of creative industries, shows how the boundary between market economy and market society is blurred. If it is not blurred, one is shifting to another. Market economy is "a tool-a valuable and effective tool-for organizing productive activity" (Sandel, 2012, p. 10). By embracing Neoliberal doctrine, the market economy has shifted into market society. Market society is "a way of life in which market values seep into every aspect of human endeavor" (Sandel, 2012, pp. 10-11). It is a realm of life, where social interactions are

reshaped to reflect the interests of the market. A life that is fertile with alienation and corruption.

7.5. References

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8

Multifunctional Bag Effectiveness Analysis using Time & Motion Study

Yanuar Herlambang

yanuarh@telkomuniversity.ac.id, Telkom University

Abstract

The new normal makes us adapt to a new life, every individual must implement health protocols to prevent transmission. One way to prevent the Covid-19 virus is to bring personal equipment independently, because several public places have implemented a health protocol system, so they do not provide personal items that are used in general, with this of course a container that can accommodate luggage is needed. From this phenomenon, researchers see that the design of a multifunctional bag during this pandemic is very much needed. The data collection method used is a comparative study of several existing products using the time and motion study method. The result is a problem that often arises is overloading which makes the user's bag quickly damaged and sore on the shoulders and compartments that do not meet, these results are used in the development of multifunctional bags with more attention to comfort and features of adding sufficient compartments to help one's activities while doing productive activities at home outside the house.

8.1. Introduction

Seeing the current condition of the Covid-19 pandemic in Indonesia, it has improved a lot. However, the implementation of health protocols will still be carried out, even though the Covid-19 virus case is under control. According to the Minister of Health in the press after the Evaluation Meeting on the Implementation of Restrictions on Community Activities, he said that "Seeing the improvement in the condition of Covid-19, the public is urged to be responsible for their health. Because basically health will be in each individual's hands. After the community is ready to realize what must be done, it is a sign that all will be ready to face the transition period from pandemic to endemic. The key to everything that has been explained is that we remain disciplined in implementing the health protocols that have been formed during this pandemic. By continuing to wear masks in closed rooms or in crowds, washing hands, bringing items that are used personally, and how maintaining other health protocols. It should all have become a necessity and can be used as a healthy culture for everyone. According to Reisa in a press conference at Graha BNPB (2020), with the current situation we really need to implement strict health protocols by bringing some personal equipment in bags such as hand sanitizer, drinking water bottles, worship utensils, eating utensils (spoons, forks, straws and other equipment) and other personal equipment. Some public spaces such as places of worship, shopping places, and other public spaces are starting to not provide facilities that can be used together to prevent the spread of Covid-19. Seeing the above conditions, we can conclude that the bag that can meet the needs of the user is a bag that has a compartment, with extra space to store personal items that must be carried when

doing activities outside the home. In the current transition period, the authors suggest developing a backpack that can make it easier for users to carry their luggage, including carrying luggage that can support health protocols. In this study, the author will design a backpack that can provide easy access to an item to the user. By adding a compartment, it will be adjusted based on the user's needs when carrying goods when doing activities outside the home.

The level of comfort in the backpack itself lies in the ideal weight by considering the contents of the items carried. According to Haworth, the ideal weight of a backpack that does not pose a risk to bone health is the use of a backpack that has a load of 10% of the user's body weight. If it exceeds the recommended maximum load limit, in the long term it can cause the body to lean forward or commonly called kyphosis (Macagno and O'Brien, 2006). This can reduce the level of user comfort while on the move. Basically, every human being will be very satisfied if the product he wears can meet his needs as a facility to support daily activities. Therefore, researchers will design products by looking at the needs and activities of users so that the products to be designed can achieve designs that meet the requirements and needs of users.

In measuring user activity, the author will see how much movement and the length of time it takes to see the effectiveness of existing products. These results will be a reference for designing a backpack to be better. Based on the literature study, an accurate measurement method is needed. It aims to get the right information on the time needed in the movement of each activity to get a product. One method that will be used to measure movement is the motion study method. By using this method, the authors hope that there will

be an increase in the effectiveness of user movement, which will later be used as a comparison with the results to be achieved.

8.2. Literature Review

a. Time and Motion Study

According to Adi (in Harry Wahyudi, 2019: 19), explained that motion and time study is one of the activities that examines the time that will be used by an operator, both in carrying out an activity or activity under normal conditions. Motion studies can be concurrently a theory of movement called movement economics. The study of basic motion is one of a series of basic movements needed for a person when doing work or activities. The study of this motion can be known as "Therblig". Therblig movement can be used as an analysis to produce economic movement elements.

b. Ergonomics

According to Marisha (2016), the normal weight of a backpack that can be used as a reference is 10% of body weight. Because if you carry an excessive load it will cause pain and will also cause abnormalities in the bones such as the spine that will be bent. Therefore it is very important to pay attention to the heavy load on the bag and the contents to be carried. If we take, for example, someone who weighs 50 kg, it is advisable to carry a bag that only weighs 5 kg to maintain comfort and bone health.

8.3. Research Method

Figure 8.1 Research Flowchart

Flow Diagram (flow layout of the work area) working system along with explanations, especially transfers between areas within the workstation, Process Chart (production sequence from start to finish) running work system along with explanations, Analysis (discussion or conclusion from micromotion study data, weaknesses) supporting products/work equipment, etc.)

8.3.1. Data Analysis

a. Flow Activity

Flow activity can be interpreted as a flow of user activities that have been carried out at this time to complete these work activities. Data and processes can be presented as follows:

Figure 8.2 Flow Activity

b. Motion Study

This motion study analysis aims to analyze existing products that already exist in the industry. From this analysis will find points of weakness and strength that can later be used as a design reference. The following motion study analysis will be presented in tabular form:

Tabel 8.1 Motion Study

Photo	Analysis
	At the start, the user opens the backpack that will be worn to carry the luggage
	Carrying main luggage such as electronic items (mobile phone, laptop or ipad), carrying supporting items such as cables, power bank/charger, mouse and others and carrying books such as notes or other books.
	Bringing special needs items into this new normal, for example, such as hand sanitizer, personal eating utensils, worship utensils (*mukenah*), tissue, masks, and so on.
no compartment to store Tumblr	Bring a drinking water container (Tumblr)
	Open and close the bag

c. Flow Chart

A process Chart can also be interpreted as a working map that will be described sequentially and carried out by an operator when carrying out each activity to be studied. The operator referred

to here is a person who often uses a backpack and will carry out activities when opening the bag until it is finished.

Tabel 8.2 Therblig movement

No	Symbol	Activity	Motion	Time
1.		Open the bag	3	12"
			4	12"
2.		User picks up luggage A (laptop/iPad)	3	10"
			4	15"
3.		User picks up luggage B (pouch cable)	3	8"
			3	14"
4.		User picks up luggage C (notebook)	2	10"
			2	12"
5.		User picks up luggage D (wallet)	2	7"
			2	12"
6.		User picks up luggage E (tumblr)	2	20"
			3	16"
7.		User picks up luggage F (hand sanitizer)	4	7"
			5	12"
8.		User picks up luggage G (tissue)	2	7"
			4	16"

#	Symbol	Description	Motion	Time
9.		User picks up luggage H (tableware)	3	7"
			4	15"
10.		User picks up luggage I (worship equipment)	2	9
			2	20
11.		User picks up luggage J *(pouch mask)*	1	7
			3	10
12.		User picks up luggage K (makeup pouch)	4	17
			4	12
13		The user starts to close the bag	3	11"
			3	15"
14		The user wears a bag on his back	3	10"
			4	9"
		Number of Movements	41 motion	
			49 motion	
		Total Time	137"	
			183"	
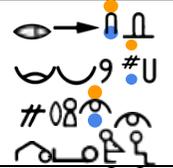
To get a product with good results, it is necessary to design a layout system that can streamline movement. By designing this system, it will be possible to obtain economical movements (Sutalaksana, 1979). The design of this layout (compartment) system will be better if it is arranged properly, following the luggage that has been listed in the results of the questionnaire. By analyzing

the existing product, the author will find out its weak points and strengths. The results of the analysis will produce design decisions. The following is an analysis of the layout of the existing product:

Table 8.3 Compartment Layout

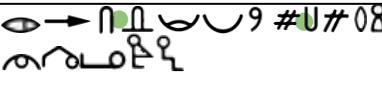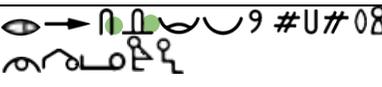| Layout	Deficiency	Advantages
	. There is no place to store a drink bottle.	. A place for dividing things such as books and others with a laptop storage area.
	. Lack of special compartments so things are easy to mix.	. Spacious compartment.
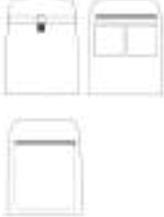
8.4. Result

A. Compartment

Table 8.4 Layout Explanation

Figure	Description
	a. The strap of this backpack adjusts to the user's hand so that it is comfortable to use when you want to use it by hand. Secondly, in the middle of the bag body, there is a compartment with a zipper that is covered with a bag hat. The compartment has a fairly large size and can store various documents or files to be carried. In addition, there are 2 medium-sized pockets to store small items such as coins, keys, or other accessories. On the side of the bag from the design of the backpack, there is a special compartment for storing water bottles for easy retrieving. b. A medium-sized bag compartment that can be filled with electronic items such as a laptop/iPad or

	can be filled with files or documents that must be protected so as not to be mixed with other items. Using a velcro lock system. In addition, there are two medium-sized pockets that can be filled with notes, pouches, or other items. c. There are five rooms of the same and different sizes. First, there are 3 rooms that are the same size. The space can be filled with small items such as spare masks, tissue holders, hand sanitizers, or other items. Second, there is a rectangular room. This pocket can be filled with a power bank, small book, stationery, wallet, or pouch. The locking system used is a zipper. And third, there is a rectangular room. This bag can be filled with a *mukena*, prayer rug, or a place to eat.

B. Time and Motion Study

Table 8.5 Final Therblig Calculation
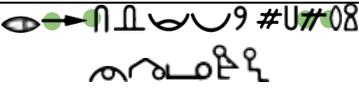
No	Symbol	Activity	Motion	Time
1.		Open the bag	4	3"
2.		User picks up luggage A (laptop/iPad)	2	7"
3.		User picks up luggage B (pouch cable)	2	4"
4.		User picks up luggage C (notebook)	2	4"
5.		User picks up luggage D (wallet)	2	3"
6.		User picks up luggage E (tumbler:")	2	2"
7.		User picks up luggage F (hand sanitizer)	2	4"
8.		User picks up luggage G (tissue)	2	4"
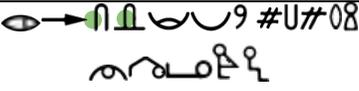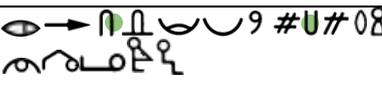
9.	●→ ∩Ω〜〜9 #U# 08 〜〜◌◰◳♀	User picks up luggage H (tableware)	2	7"
10.	●→ ∩Ω〜〜9 #U# 08 〜〜◌◰◳♀	User picks up luggage I (worship equipment)	2	8"
11.	●→ ∩Ω〜〜9 #U# 08 〜〜◌◰◳♀	User picks up luggage J (pouch mask)	2	7"
12.	●→ ∩Ω〜〜9 #U# 08 〜〜◌◰◳♀	User picks up luggage K (makeup pouch)	2	8"
13.	●→∩Ω〜〜9 #U# 08● 〜〜◌◰◳♀	The user starts to close the bag	3	7"
14.	●→ ∩Ω〜〜9 #U# 08 〜〜◌◰◳♀	The users wears a bag on his back	3	10"
	Number of Movements		32 gerakan	
	Total Time		78"	

8.5. Conclusion and recommendations

The design of this backpack is expected to provide an overview of how we can find out how effective the existing bag products are. By knowing the effectiveness of the product, we as users can make activities and work time shorter and more precise. One method that can be used to determine the effectiveness of a product is to use the motion and time study method. This motion

and time study aims to determine the amount of time and movement required by the user when accessing the bag. When a design pays attention to this aspect of motion and study, it is hoped that it can make it easier for users when carrying luggage and doing activities outside the home.

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9

Study of the diaphragm mechanism as a kinetic facade component to reduce solar radiations intensity

Stephanus Indrawan

sindrawan@ciputra.ac.id, Universitas Ciputra Surabaya

Abstract

The background of this writing is the need for effective window openings during the day to respond to the intensity of sunlight in tropical countries with the kinetic concept of the building facade through a diaphragm mechanism. This paper aims to examine the effectiveness of a diaphragm system such as a camera when used as an opening in a wall. The method used is a simulation of the window opening model by mapping the ratio of the window opening to the volume of solar radiation intensity in the field that gets direct sunlight. The intensity of sunlight received in each building area varies greatly. Therefore, use this intensity value as a reference for diaphragm rotation so that the intensity of sunlight entering the building becomes effective and efficient. This simulation shows that the concept of a camera diaphragm can be a filter for openings in buildings. Furthermore, this paper shows that the distribution of radiation values can be a reference parameter for the size of the aperture angle. The next stage requires simulation and testing.

Keywords:

Kinetic concept;solar radiation intensity;diaphragm mechanism

9.1. Introduction

Time, weather, function, and various needs of human activities significantly affect the existence of the building; This influence is dynamic and lasts for various periods. Therefore, buildings need to adapt to these conditions through the principles of climate and energy optimization(Trubiano, 2013). William Zuk and Roger H. Clark 1970 wrote a book called "Kinetic Architecture." They describe a building that can change, such as a flexible pneumatic structure, such as spectator seats in a stadium that can be easily disassembled(Bier & Knight, 2010). The following discussion will examine the concept and definition of kinetic systems in architecture and the history of their development. Then, apply kinetic architectural components with a diaphragm system to respond to climatic conditions, namely reducing the sun's intensity and closing with a conclusion.

9.2. Literature Studies

In human history, buildings are human protective spaces from climatic conditions such as wind, rain, heat of the sun, and snow. The walls of the building function as the outermost layer of human skin that supports it to adapt to comfortable conditions in the building. For tropical areas, modern building construction is a tool to regulate its coolness and humidity. There are five concepts and definitions of climate-related architectural mechanisms: intelligent architecture, interactive architecture, responsive

architecture, adaptive architecture, and kinetic architecture. Intelligent Architecture is the concept of architectural mechanisms that aim to control and manage buildings, from users to utility systems, devices, and building components. Intelligent archtecture concept utilizes high technology to achieve thermal comfort, worker productivity, energy savings, return on investment, and lifestyle efficiency. Buildings systems are HVAC, building structures, lighting control, access control, building security management, property management, communication equipment networks, and energy management. Interactive Architecture is an illustration of an interactive relationship between humans and computers. The building is a scope with several groups of spaces. Scope elements consisting of walls, floors, and ceilings function as interactive media. The concept of Interactive Architecture positions humans not as users but as active participants(Fox, 2009). The base of this concept is two-way communication between humans and building components. The building components consist of input, processing, and output equipment (Dalton et al., 2016). There are three categories of Interactive architectural designs namely, namely: sensible space, thinker spaces, and flexible, responsive spaces. Responsive Architecture is an active building system that can change formation in response to environmental conditions and user activity, with components of an intelligent architectural framework, building systems, and building envelope. The bionic mechanism is a building response to natural conditions in the form of changes in shape and simulation of building performance(Cheng-A & Pan, 2008). The basic design of engineering systems and modern technology (Podborschi & Maxim, 2005) utilizes the concept of

Bionics as a process to study the conditions and performance of nature. In the late 1960s, Nicholas Negroponte introduced the concept of responsive architecture, which defined a responsive environment as an environment that has an active role as an input to complex and straightforward computational concepts of buildings to produce an impact on the Building and the surrounding environment (Thun & Velikov, 2012). Responsive Building does not have to be a product of Smart Architecture, but the response is a product of intelligent processes(Sherbini et al., n.d.). For example, Wall Trombe responds to the heat and cold of the room during winter and slowly releases its heat at night. This process is not the product of an intelligent concept that relies on input data. Adaptive Architecture is a concept of space that adapts through reactions to human activities in a building. The difference is the types of buildings. For example, the adaptation of the residence's occupants will differ from the recreation room users. This adaptive concept revolves around changing interior arrangements, such as multipurpose spaces, into structural ones and varying responses to specific spatial programs and parameters. Time is one of the essential parameters in the concept of adaptive architecture (Fox & Yeh, 2000). Therefore, adaptive architecture is also known as an architectural concept that is responsive to time. The concept of Kinetic Architecture is the design of buildings and their components that can change shape automatically. These changes can follow designers' demands and respond to the surrounding climatic conditions. According to Michael Fox, there are six types of kinetic control systems based on the complexity of the mechanism(Moloney, 2011): Internal controls (there are no direct control nor

mechanism such mechanical hinges), Direct Control (outside energy sources control the movement of components), Indirect control (depending on sensors feedback), Responsive indirect control (depending on multiple sensors feedback), Ubiquitous responsive indirect control (utilizing predictive algorithms as a control system), Heuristic responsive indirect control (utilizing smart algorithms as a control system).

9.3. Short History of Kinetic Architecture

In the historical development of the human need for shelter that is responsive to climate and flexible is very important. The Africans utilize Bedouin tents in their daily activities because they are flexible and adaptable to the desert climate(Kronenburg, 2013). Since 1908 Thomas Gaynor has designed the kinetic concept of the Rotary Building project (Randl, 2008) but did not build it. Then Angelo Invernizzi, in 1935, built a house equipped with a motor that could rotate to suit the user's needs. Along with the passage of time and technological developments in the 1960s, Gordon Pask collaborated with cybernetics and control automation system experts to develop a concentration of interactive architecture research by developing architectural models that utilize occupant response as a design parameter(Pickering, 2010). At the end of the 1970s, more computers became supportive devices for architects to support their work. Of course, this trend changes the traditional work culture to be more advanced. John Frazer, in 1970, took an innovative step by utilizing a microcomputer-based design system as a media design. Jean Nouvel 1987 designed the Institut du

Monde Arabe in Paris with the concept of kinetic architecture. On the south facade of the building, there is a 24x10m area consisting of square modules that resemble traditional Arabic screen patterns. Within each square module is an array of small diaphragms. In the 21st century, many kinetic architectural concepts have been realized, such as the Brisbane airport parking garage by artist Ned Kahn. On the walls of this building, there are installations of 250,000 aluminum panels. The arrangement of these panels moves like calm waves due to the wind. This panel is a filter located in front of a large glass window, causing a dynamic reflection of sunlight into the interior of the space inside (Delana, 2015).

9.4. Design Problem

So far, building simulation devices are static devices such as calculating thermal conductivity and solar radiation. Traditional building simulations are based on static designs and provide recommendations on peak load conditions. However, to account for dynamic building performance, the kinetic system requires analysis under various conditions to get the right size (Selkowitz et al., 2003). Currently, many applications support experimentation by converting data from object modeling software to simulation engines, but this process is still fragmentary. In this flow chart, it can be seen in diagram 9.1 as follows:
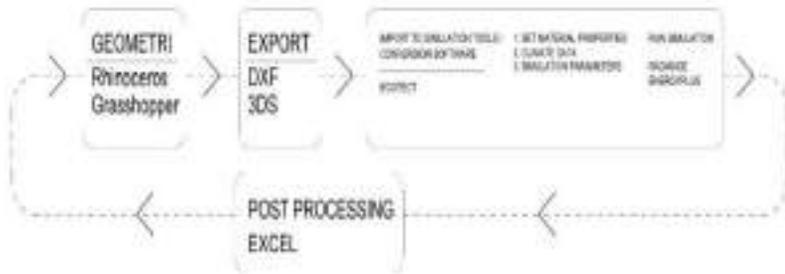
Figure 9.1 Flow Chart

The evaluation process for the kinetic facade evaluates several variables simultaneously. This activity is called Control Virtual Test Bed. This open-source software platform integrates several building energy and control tools such as Energy Plus, TRNSYS, ESP-r, Radiance, Modelica, Fluent, MATLAB, Eco-tech, and others. The simulation process provides space for designers to choose a design proposal through several options, such as understanding a kinetic facade operation that can affect the shape and appearance of the building; exploration of various design alternatives; mapping potential problems that can occur; bridging multidisciplinary possibilities within a project; predict performance outcomes at the early planning stage(Košir, 2016). Therefore, this paper will discuss the relationship between the impact of solar radiation on the open and closed operating systems on the building facade as a case study. The operating system will use the diaphragm model at the Paris Institut du Monde Arabe project. The position of the research is to offer a solution through the validation of building performance with facade kinetics. The mechanism of the Kinetic System is a diaphragm, with the main parameter being the amount of rotation of the opening to the amount of solar radiation received by the surface.

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9.5. Discussion

There are three research steps, namely the first to design a diaphragm mechanism with a parametric approach, the second to conduct a mapping study of solar radiation on the surface of the building, and the third to combine the values of the mapping results. The figure 9.2 shows the distribution of solar radiation in color along with the intensity value, which is the basis for the size of the circle diagram.
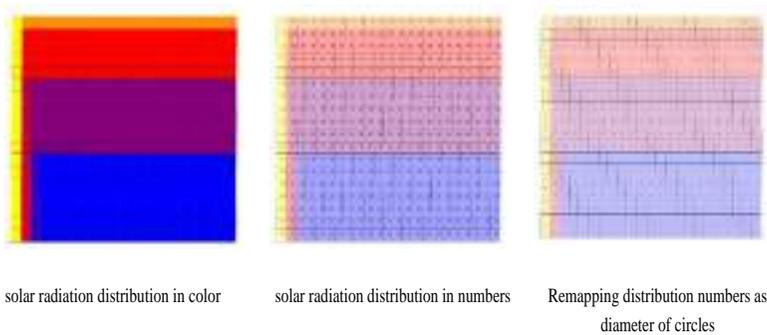

solar radiation distribution in color	solar radiation distribution in numbers	Remapping distribution numbers as diameter of circles

Figure 9.2 The distribution of solar radiation

First, diaphragm planning in figure 9.3 begins to determine the position of scattered objects in a position lined up with one another. Each square module has a diaphragm with ten blades, with 10 points being the center of rotation of each blade. In the initial planning stage, the diaphragm rotation angle parameter is the result of remapping the distance of each center point of the diaphragm to the experimental curve that passes through the diaphragm circuit arrangement.

diaphragm mechanism in zero degree opening

diaphragm mechanism with curve distance as parameter

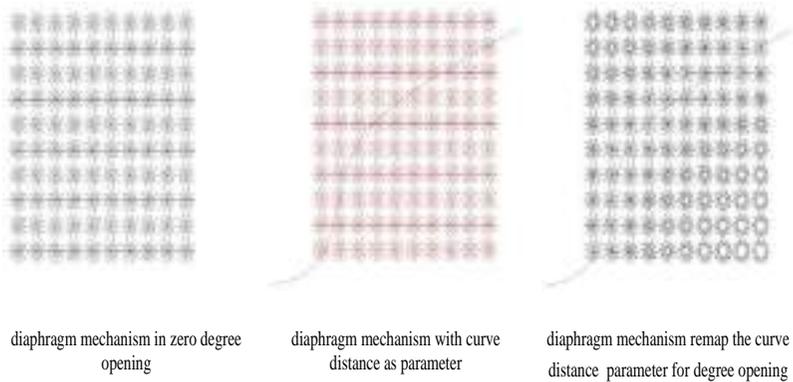diaphragm mechanism remap the curve distance parameter for degree opening

Figure 9.3 Diaphragm Planning

This stage can explain that the remapping results from that distance can be the basis for the large aperture of the diaphragm rotation angle. In the next step, the researchers carried out the stages of analyzing the building model in the surrounding environment. Local climate data becomes the initial data for processing visual sequences based on the Ladybug script. In this section, the distribution of radiation values in the selected field is the target of this activity. The field will show the distribution of solar radiation through color gradations through a mesh with a particular grid. This mesh contains different values of solar radiation in each column. In the last stage, this group of radiation values will become the primary reference number for mapping the minimum and maximum aperture angle factors. The figure 4 shows the gradation of radiation color distribution that is directly proportional to the aperture in each grid.
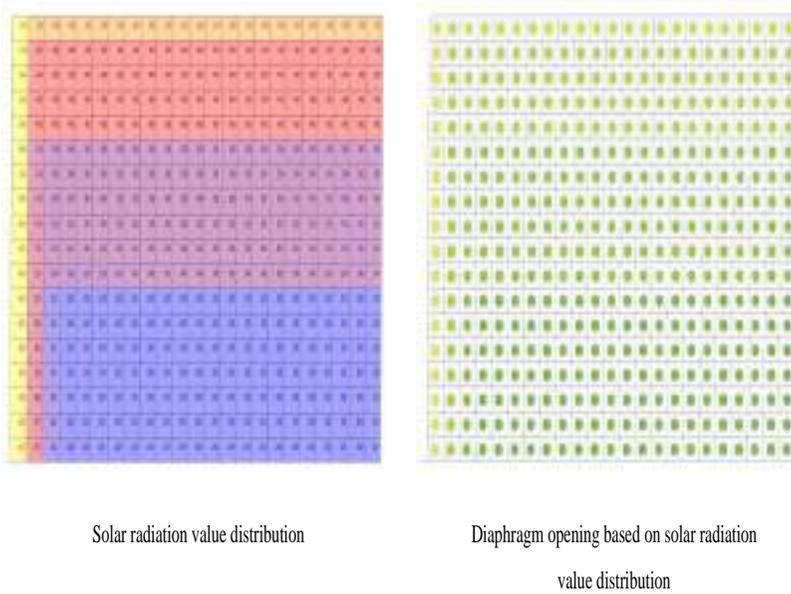
| Solar radiation value distribution | Diaphragm opening based on solar radiation value distribution |

Figure 9.4

9.6. Conclusion

This simulation shows that the concept of a camera diaphragm can be a filter for openings in buildings. Furthermore, this paper shows that the distribution of radiation values can be a reference parameter for the size of the aperture angle. The next stage requires simulation and testing.

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Fish Scale Waste for Fashion Jewelry Material with Surface Embellishment Technique

Susi Hartanto

susi.fdpt@uph.edu, Universitas Pelita Harapan

Abstract

Fish scale has never been widely researched as a raw material for fashion jewelry making. Whereas, its see-through irregular form is a natural uniqueness to be potentially explored. Existing fashion jewelries made of fish scale can be found in eastern part of Indonesia, however come in traditional design and monotonous vivid colors, sadly eliminate its translucent characteristic, and irrelevant to today's fashion jewelry trends and demands. Challenged to bring innovative design and to expose the natural beauty of fish scale, a numerous research was carried out. Explorations such as fish scale collection, cleaning, drying, dent reduction, coloring, sealant, assembly, performed to determine the best techniques to utilize fish scale. Fish scale was best cleaned with water and detergent solution. Fish scale must be dried indoor without direct sun exposure. The best method to reduce dent is pure vinegar solution. Bending and folding fish scale must be made in the same direction as the scale fiber. The best dyes to produce red and yellow are red yeast rice powder and turmeric powder. Synthetic food coloring is best used for blue

color. Surface embellishment technique was chosen for its similar character with fish scale. All types of sequins assembly can be adapted for fish scale assembly, depending on design. Acrylic-based sealant with matte transparent color is the best sealant for fish scale. Applying multi-textured, sculptural, and raw keywords, one collection of fish-scale-based fashion jewelries is made, highlighting all unique characters of fish scale.

Keywords:

Fashion; Jewelry; Fish; Scales; Surface; Embellishment

10.1. Introduction

Indonesia is an archipelago surrounded by water. With a total size of 3.544 million km2, Indonesian waters cover two-thirds of the country. Indonesia has a lot of potential in the fisheries sector, and it has been improving over the past seven years. With a ratio of 40 percent of each fish, growing production indirectly leads to increasing the amount of waste fisheries. Fish waste liquids, such as offal, degrade quickly, whereas waste fish scales are tough and require a long time to degrade. Without proper utilization and disposal, fish scale waste can produce harmful compounds that harm the environment by disrupting marine and terrestrial ecosystems.

Many Indonesians, on the other hand, regarded this waste of fish scales as an opportunity. Fish scales are frequently employed as a handicraft material such as decorations and jewelry by some MSME players in Indonesia, particularly in Ambon and Manado, due to their unique texture and simple

processing procedures. However, the processing and coloring techniques are still inefficient, resulting in a monotonous design. The fish scales utilized in this research are huge scales, such as snapper scales, which are frequently used as handicrafts. Snapper is a fish that can be found in the area where the author resides, specifically in Riau, and will be used as a material in this design. As a result, the goal of this study is to develop an innovative methodology for maximizing the potential of fish scale waste and turning it into fashion jewelry with a more appealing style.

Challenges were also faced throughout the data collection process due to the scarcity of information regarding the material and fish scale jewelry in Indonesia. As a result, the authors conducted an investigation and several testing on the fish scales material in order to better understand the material's features, with the goal that this may aid the design process.

The procedure of this research will be explained in this article. Cleaning, drying, dent reduction, color application, folding, assembly, and sealants were all tested in order to find appropriate procedures for boosting the material's longevity. In this research, surface embellishment was chosen as the processing approach throughout the material exploration. The combination of natural and synthetic food coloring were also used to create a delicate hue on fish scales.

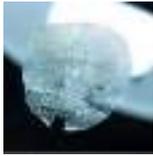### 10.1.1. Materials and Method

Fish scales are a component of the fish that protects the fish's outer dermis layer and allows it to move more fluidly and hydrodynamically. Fish scale is a collection of surface layers that comprise hydroxyapatite, calcium carbonate, and type 1 collagen in parts. Calcium, magnesium, phosphorus, sodium, and sulfur are also found in small concentration. The types of fish scales used in this study were red, black and white snapper. According to the Interagency Taxonomic Information System, red, black, and white snapper are classified as follows:

Although the author acquired some information about the qualities of fish scales from an interview with local fish scale handicraft, direct experience is required to feel and examine the material. As a result, a material analysis is performed, yielding the following results:

Figure 10.1 Raw Unprocessed Fish Scales

Table 10.1 Fish Scales Material Analysis

No.	Parameter	Fish Scales	Potential (Material Exploration Drive)
1.	Transparency	Translucent and see through.	A **colour application test** was necessary to maintain transparency on fish scales.
2.	Surface characteristics	The fish scales that are received are damp, thus the surface is rather flat.	**The drying test** is performed to ensure that the surface remains flat with distinct strokes at the end.
3.	Flexibility	The fish scales that are received are wet and pliable, making them easier to process.	It's necessary to maintain flexibility or reducing properties stiff on the fish scales, so the **dent reduction test** is very important.
4.	Texture	On each sides, there are two different textures. One side is shinier and more slippery, while the other has smoother strokes. Because the texture is so distinct, it will be better exposed.	To make the texture of fish scales stand out, a suitable **assembly test** is required.
5.	Ease of obtain	Fish scales are easily bought in huge quantities from fish sellers.	-

6.	Durability	Fish scales have a high level of resilience. Even if it falls, no scales will be damaged, and it is difficult to split apart even when folded, making it simple to process.	**Fold and dent test** is used to determine the durability of the material.
7.	Aroma	It has a fishy odour to it.	**Cleaning test** to remove the foul smell.
8.	Cleanliness	The author's fish scales are filthy because they are mingled with other fish debris when processed by fish traders.	The material is covered in dirt so **cleaning test** is important.
9.	Water absorption	It have a high adequate water absorption.	Because the material still has water absorption, **drying and sealant test** is necessary.
10.	Color	Colour limitations, has a slightly transparent white tint with white patches in the middle.	To make coloured fish scales that are still translucent, **the colour application test** is needed.
11.	Dimension	1 - 2 cm in length 1 - 2.5 cm in width Thickness ranges from 0.2 to 0.5 mm. The size of the owned items	With **the assembly test,** small fish scales can be arranged into bigger proportions.

		varies, but they are not large.	

Then, according to the following experimental steps, material exploration is carried out:
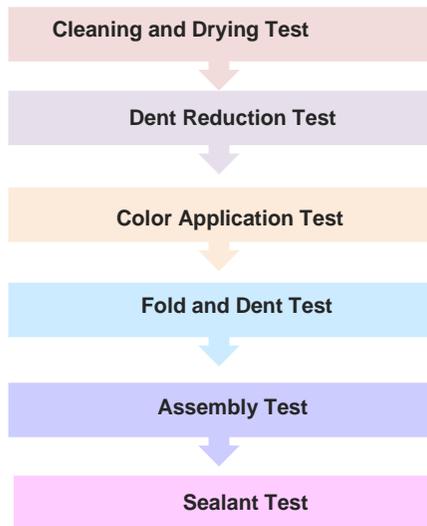

Figure 10.2 Material Exploration Process

10.1.2. Snapper Fish Scales

Scales are parts that serve to protect the outer dermis layer of fish and provide more fluid and hydrodynamic movement in fish (Vernerey, 2010). Fish scales themselves are a collection of surface layers containing hydroxyapatite, calcium carbonate, and on the inside consist of type 1 collagen. Elements such as calcium,

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magnesium, phosphorus, sodium, and sulfur are also present in very small concentrations (Harikrishna, 2017). The resulting fishery waste consists of heads (12.0%), bones (11.7%), fins (3.4%), offal (4.8%), thorns (2.0%), and scales (4.0%). The scales of the fish are like snapper and have a rounded square shape that is hard and not easy to bend. Transparent in a wet state and white when dry. Generally measuring approximately 1 cm and has fine spines at the base. The fish scale material used in this design comes from fish traders in the city of Duri, Riau. Due to the uncertainty of the number and type of fish scales obtained from suppliers, in the future there will be the possibility of the author using several types of fish scales so that the texture they have is also different. Here is a photo of the fish scales that will be used in the current design:

Figure 10.3 Snapper Fish Scales used in the Research

10.1.3 Natural and Synthetic Dyes

Natural dyes are types of dyes obtained from nature such as plants, animals and mineral substances. Its use as a coloring agent has also long been used by humans. In addition to environmentally friendly properties, natural dyes are also

harmless and toxic compared to synthetic dyes. Natural dyes themselves mostly come from plant parts, such as roots, skins, flowers, fruits, seeds, leaves, stems and others. The types of natural dyes are:

Table 10.2. Types of Natural Dyes

Name	Colors	Dyes
Indigo	Blue	Indigofera t.
Berberin	Bright yellow	Berberis aristata
Karotenoid	Reddish-orange	Carrot, tomato
Kuinon	Yellow, red	Walnut shell
Flavonoid	Yellow, orange, red, blue, purple variants	Onion peel, berries, sandalwood, yellow larkspur
Hidropiran	Red	Brazilian wood/ secang
Betalain	Purplish red	Beetroot, dragonfruit.
Tanin	Yellow, brown, grey, black	Avocado seed, oak bark
Klorofil	Green	Suji leaves
Kurkumin	Yellow	Turmeric
Azaphilone	Red	Red yeast rice

Source: Gunawan, Casey. May 2020. "Exploration of Natural Dyes from Plant Parts", Timothy, K.H. May 2004. Journal "Production of Red Yeast Rice Pigment by Monascus".

Synthetic dyes are dyes produced from artificial chemicals with the aim of replacing natural dyes in producing more intense colors and are easy to apply to clothing, medicines, and one of them is food. Synthetic food coloring is one of the fractions of this synthetic dye. In addition to low prices, synthetic food coloring is often used because of the need to make food look attractive and increase taste buds. The following are the types of synthetic food coloring that exist and have been allowed to be used in Indonesia:

Tabel 10.3. Types of Synthtic Food Coloring

Names	Other Names	Colors
Tartrazin CI. No.19140	Quinoline yellow	Yellow
Kuning kuinolin CI. No. 47005	Sunset yellow FCF	Yellow
Karmoisin CI. No. 14720	Azorubine/Carmoisine	Red
Ponceau 4R CI. No. 16255	Cochineal red A	Red
Eritrosin CI. No. 45430	Erythrosine	Cherry Red – pink
Merah allura CI. No. 16035	Allura red AC	Red
Indigotin CI. No. 73015	Indigotine/Indigo carmine	Blue
Biru berlian FCF CI. No. 73015	Brillian blue FCF	Blue
Hijau FCF CI. No. 42053	Fast green FCF	Green
Coklat HT CI. No. 20285	Brown HT	Brown

Source: Food and Drug Supervisory Agency of the Republic of Indonesia, 2013

10.1.4. Dyeing Process

At this stage, the author follows a natural dyeing process in textiles which is then applied to fish scales using food and natural synthetic dyes. This process will later be changed and readjusted to the material of fish scales. For the process of natural dyeing textiles themselves consist of several stages, namely:

- Extraction

This process serves to separate the color pigment from the plant. Generally, extraction is carried out by cutting plants in small sizes which are then boiled (low temperature) or squeezed to that the pigments come out. After that, the extraction results are filtered and then can be used in the dyeing process

- Washing

The textiles are then washed and soaked in a detergent solution to remove impurities and help better color absorption.

- Mordanting

It is a process used to increase the affinity force for dyes in textiles. In other words, mordan is a link between dyestuffs and textiles. Some types of mordants that can be used are metal salts, salts, limes, and so on.

- Immersion

The textile soaked in the dye solution is then stirred. Duration of soaking can be readjusted to the needs of color density. The use of low heat for heating in this stage can also be carried out.

- Rinsing and Drying

The soaked textiles are then rinsed with water until clean, then dried in an area where there is no direct sunlight.

10.1.5. Indonesian Fish Scales Jewelry Industry

Snapper scale jewelry in Indonesia has long existed and developed. Initially, this industry was started in the city of Ambon, Maluku by Theodora de Lima in 2004, a pioneer of fish scale jewelry MSMEs who had also participated in exhibitions for a long time. In addition, this jewelry is also a typical souvenir of Ambon and other North Maluku regions. With the development of this industry, many parties have also participated in opening MSMEs in other Sulawesi areas such as in the city of Manado. In 2017, the Riau islands regional government also began to develop snapper scale jewelry on MSMEs in Tanjung Balai Karimun and Bintan Island. However, the processing and coloring process in the fish scale jewelry industry in Indonesia is not optimal so that the colors and designs produced are also monotonous.

Figure 10. 4 Snapper Fish Scales used in the Research

The authors then made an observation with Mrs. Yannie as the owner of the MSME Yannie Fish Scale Handicraft in order to get information about the processing process and design of the product owned. Observations are carried out via telephone,

accompanied by photos and videos of the production process. MSME Yannie Fishscale Handicraft itself was established in 2012 precisely in Sario Tumpaan Ward 1 Jl. Ahmad Yani 14 Manado city which focuses on the field of snapper scale jewelry. Snapper scales are found in the form of fish market waste in Manado, seeing this he was then interested in processing them into products in the form of jewelry. In addition to the unique shape and texture, he feels that snapper scales have more potential when developed. Often the fish scales are combined also with Manado's signature batik, copper knitted, silk, freshwater pearls and others. In addition to selling jewelry, Mrs. Yannie also received orders from the local city government to make Manado batik necklaces with fish scale decorations. Yannie Fish Scale Handicraft also participated in the In a craft exhibition in 2018 as one of the representatives of North Sulawesi MSMEs in Jakarta. Here are the main points that make up the overall outcome of the interview:

a) After sorting by size, the fish scales are then cleaned using water and detergent several times until the fishy smell disappears.
b) Washed fish scales are then dredged or aerated indoors without solar heat.
c) Wantex is used as a coloring agent applied to fish scales.
d) The method of storing fish scales is only put in a container and can last for many years.

So far, the process of processing fish scales as jewelry is still limited to fish scales being loosened and then given hooks. As for the use of other additional materials such as silk, Manado batik, freshwater pearls, copper wire knitting, etc.

Figure 10.5 Stages of Production of Yannie Fish Scale Handicraft Snapper Scales Jewellery

10.1.6 Surface Embellishment Techniques

The surface embellishment technique utilizes a large amount of sequins and is one of the longest-running garment decorating techniques and is often used in the fashion industry. Similar characteristics of fish scales mainly with plate sequins make it one of the reasons this technique is used. In addition to a fairly simple technical principle, the existence of various types of surface embellishment techniques on sequins has the potential to highlight the characteristics and beauty of fish scales. Compared to the processing technique in fish scale jewelry in general which only utilizes fish scales as beads in small quantities, surface embellishment is able to string fish scales into larger dimensions to the maximum.

Surface Embellishment Technique

One of the longest-running garment decorating techniques that is also often applied in the fashion industry

Similarity of shape and characteristics between sequins and fish scales

Simple techniques that are easy to explore

able to string fish scales with larger dimensions

Figure 10.6 Potential Use of Sequin Technique for Stringing Fish Scales

10.2. Research Method

The design process starts with a search for problem subjects and supporting data, which are subsequently used to inform product development. In order to identify and solve problems, primary and secondary data is also collected.

The primary data of the study were collected by observation, interviews, and surveys in this work, such as :

- Yannie Fish Scale Handicraft Interviews

On October 12th, 2020, observations were taken over the phone with Mrs. Yannie, a craftswoman and owner of this MSME. Yannie Fish Scale Handicraft is a Manado-based company that specializes in snapper scale jewelry. It was formed in 2012 at

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Sario Tumpaan Lingkungan 1 Jl. Ahmad Yani 14 cities. Semi-formal interviews were done with the goal of discussing the materials used in fish scales, processing procedures, products and market. By conducting this interview, the author intends to gain a more in-depth understanding of fish scale, processing processes, and items made from craftsmen with prior expertise in manufacturing similar items, so that the items can be further analyzed.

- Fish Scales Fashion Jewelry in Indonesia Market Surveys

In order to better grasp what should be developed, the author collected several images of fish scale fashion jewelry products in Indonesia.

- Experiment

Material analysis, and 6 stages of exploration to find the best processing techniques suited for fish scales.

In addition, data collected in the secondary data/ literature study discuss:

- Material data: fish scales, natural and synthetic food dye
- Indonesian fish scales jewelry market
- Jewelries: definition, types, uses, materials
- Fashion jewelry trend analysis: close-up, oversized, colorful, unconventional material

Following that, designs are based on material qualities discovered specifically from exploration results, trend research, and the needs of the specified market. Starting with conception, sketching out ideas, sketching out alternatives, finalizing the design, and modeling/prototyping.
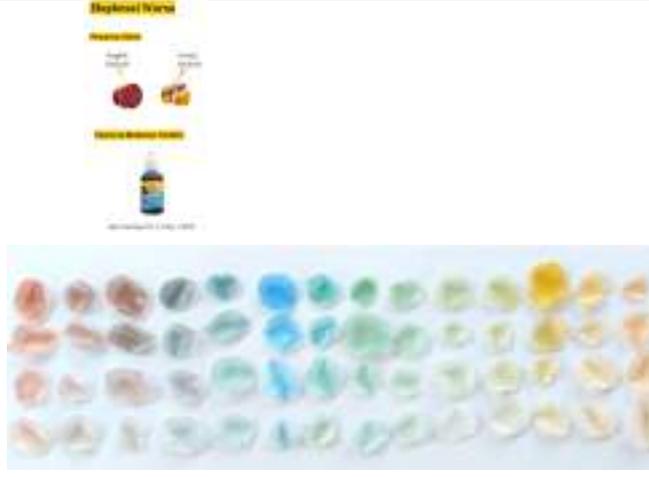
10.3. Result and Discussion

10.3.1. Exploration Summary

The following is summary of the exploration that has been carried out:

Tabel 10.4 Exploration Summary

Tests	Results
Cleaning & Drying	Based on the findings of the foregoing tests, it can be concluded that the ideal cleaning method is to use water and detergent, followed by drying indoors without exposure to direct sunlight (heat can cause significant warping of fish scales, making processing difficult).
Dent Reduction	Soaking fish scales in a pure vinegar solution is the best technique to decrease indentation. Scales that have been soaked have a more translucent and clean appearance. There are no specific indicators in the vinegar soaking approach as to how much less the curvature in the scales has been reduced. When compared to the previous condition, the curvature of fish scales is flatter, but the amount of indentation varies greatly amongst scales. This is also due to the fact that the scales' shape, size, and condition are not always consistent.
Color Application	Red yeast rice, turmeric, and blue synthetic food coloring were employed as dyes. The optimal time to soak is for 10 minutes because it develops translucent and soft-colored fish scales.

Fold and Dent	Fold and bend must be done in the direction of the fish scales fibers. This is to prevent white lines or damage from appearing on the scales' surface. The texture and surface properties of the scales can be more evident when done in the direction of the fiber. However, this strategy can minimize the scale dimensions, increasing the need for a large number of scales.
Assembly	The authors conclude that the entire outcome of the surface embellishment technique explorations can be used and merged into the fashion jewelry design, but that its placement must be appropriately adjusted.
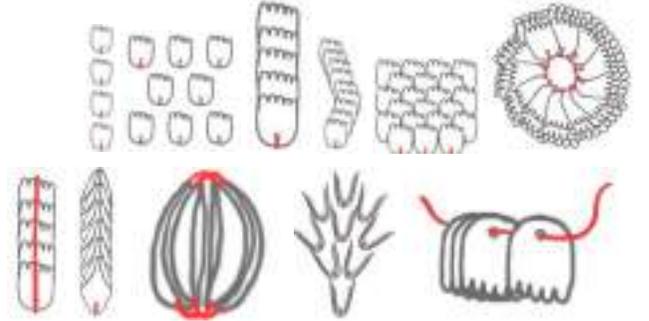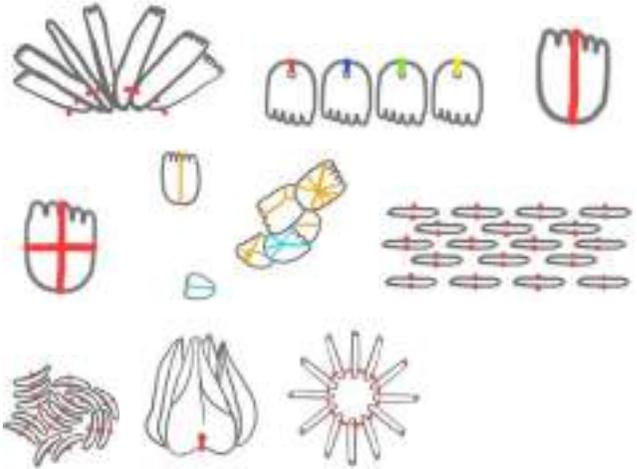
Sealant	The best sealant to use is doff transparent 'pylox' spray paint.

10.3.2 Design Criteria

What: Creating fashion jewelry for women out of fish scales and fabric, which are then assembled with surface embellishment techniques. As an alternative for sequins, fish scales are employed. The design's aesthetics will be adjusted to the material characteristics such as texture and transparency. Natural and synthetic food colors will be used to color the material.

Why: Fish scales are being used as fashion jewelry material. The fish scales jewelry industry in Indonesia has underdeveloped technique, material processing, and design monotony. Because the coloring was excessively intense, it obscured the peculiarities of the fish scales. This leads the author to believe that there is a chance to develop a processing methodology that will maximize the usage of fish scales while also advancing the Indonesian fish scales jewelry sector. The author

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also hopes to enhance public knowledge and appreciation of Indonesian handmade products with this design.

Who: This product is aimed at women between the ages of 20 and 40 who are interested in unconventional fashion jewelry, enjoy unique designs and handcrafted items. Aside from that, it's also for women who prefer to express themselves and are interested in the philosophical meaning of aesthetic objects.

When: Fashion events, fashion shows, competitions, photographs, parties, and other large-scale activities are held to match the clothes worn by the user.

Where: This product is used on the head, neck, arms and legs.

How: This research began with a study on Indonesia's fish scales jewellery industry, surface embellishment technique principle and interviewing Indonesian fish scales fashion jewellery craftsmen. Followed by doing material analyzing, several testing, more explorations on the technique, and user review to gain feedback from the intended audience. Fish scales will be manually sewn on textiles which serve as the base material and arranged into a large dimension. To overcome the limitations of the colour, it will also be coloured using natural and food coloring synthetic dyes based on the results of the colour application test.

10.3.3 Moodboard Theme

The keywords used in this design are multitextured, sculptural, raw and ethereal. Multi-textured depicting character of the product that has several types of textures, shapes and motifs

which will be produced with fish scales material. Sculptural describe the characteristics of products designed to form three-dimensional objects, where the scale material that appears to arise and can be module. Raw shows natural product characteristics and natural. The last keyword ethereal indicates the style of the product; subtle, gentle, and fantasy (not derived from this world).

Figure 10.7 Design Theme Moodboard (Left) & Fairy Reference (Right)

The author raised the topic of Fairy as the main inspiration. The main reason for the use of this topic is because the author feels the similarities between fairy and human (like the modern version). With fairy characteristics that the author believes to be a manifestation of the good qualities that have been possessed by man since beginning. But almost all of us (humans) stay away from our identity we are the good and fall into the bad. Therefore, through this theme, shows the human figure depicted in the as a fairy, returning to being a creature filled with as good as it should be.

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   To better understand the draft concept in detail and in depth, the author then described the fairy sketch as reference from this design. This creature is pictured living in magical forest. As a good being with power magical, fairy has an obligation to maintain and maintain where he lives. Very loving and have a desire to become one with nature so that their bodies are overgrown with tendrils of plants. With the obligations that are owned, fairy use its power to preserve nature as such; grow seeds, animate withered plants, fertilize land, etc. The power is distributed throughout the body, but it is concentrated in the area around the head (which serves as the mind's center), hands, and feet (which serves as a medium of distribution strength in plants), causing plant tendrils to grow more in these three regions. The fairy's senses (eyes, nose, mouth, and ears) are not totally covered by plant tendrils since they need these senses to help maintain nature.

10.3.4 Design Concept

Figure 10.8 Concept Ideas Sketches (Fairy)

The products will be broken down into 2 types namely signature and bread & butter. Both, accentuate the concept of blending in the user's body, but there are differences in the size and purpose of use. Signature; large size, for editorial. Bread & Butter; small size, for daily.

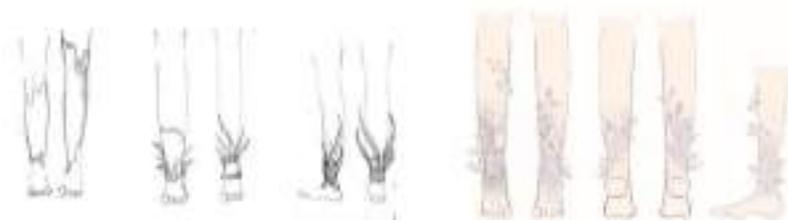Figure 10.9 Design Alternatives (Signature Gloves)
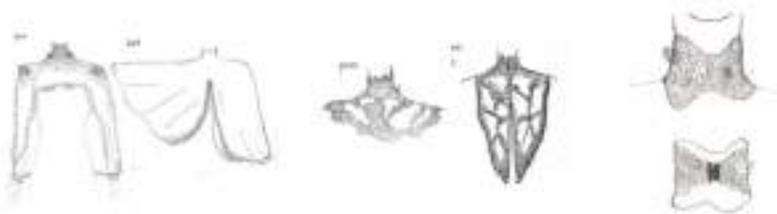
Figure 10.10 Design Alternatives (Signature Ankles)

Figure 10.11 Design Alternatives (Bread & Butter Choker)

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Figure 10.12 Design Alternatives (Bread & Butter Hair Clip)

Figure 10.13 Final Renders (Signature Gloves & Ankles)

Figure 10.14 Final Renders (Bread & Butter Choker & Hair Clip)

10.3.5 Prototype

Figure 10.15 Signature Collection (Gloves)

Figure 10.16 Signature Collection (Ankles)

Figure 10.17 Bread & Butter Collection (Choker)

Figure 10.18 Signature Collection (Hair Clip)

10.3.6 SWOT Analysis

Table 10.5 SWOT Analysis

Strength	Weakness
Using natural materials with a distinct and distinct texture.	Material process involves numerous stages before it is appropriate to use as a jewelry material, the product manufacturing process is highly time demanding.
The first fashion jewelry product to combine fish scales using surface embellishment technique	Although materials are readily available, not all fish scales can be used, necessitating a lengthy sifting process.
Unique design, unlike the fish scales jewelry product in general.	
The color choice are so varied that it can be adjusted to the user's preferences.	When exposed to water, the material will not be destroyed, but it also not waterproof.
Unique fish scale assembly pattern.	Extra product care is required due to the fact that it is made up of textiles and fish scales that can only be cleaned by wiping.
Opportunity	**Threat**
Apply fish scales to other products other than jewelry.	Because the product is handmade, the volume of production is dependent on the craftsman.
Collaborating with local artisans to create fish scale jewelry, as well as hiring, supplying facilities, and honing skills.	There are rivals who make jewelry out of fish scales.
Trying other processing techniques besides surface embellishment on fish scales material.	The presence of jewelry made with surface embellishment techniques that can achieve similar colors and shapes without the use of fish scales.
Investigating new processing technique for damaged fish scales that cannot be utilised with the surface embellishment approach.	Material processing must be meticulous and error-free (material must be replaced with new ones).
Can take inspiration from Indonesian culture as next design theme.	

10.4. Conclusion

This design successfully handled problems discovered in the technique and production process used on fish scale jewelry. The application of surface embellishment techniques allows for the most efficient use of fish scales while maintaining the material's advantages. Aside from being able to effectively exhibit the texture and color of fish scales, surface embellishment techniques expand and diversify jewelry design possibilities. Fish scales with vibrant soft hues and textures that are still clearly visible are produced using a combination of synthetic and natural food coloring techniques and dyes. Multi-textured, sculptural, raw, and ethereal are all terms that come to mind when thinking of this design. This keyword is derived from the features of fish scales material, which has a one-of-a-kind shape and texture and reminds writers of fantasy stuff, such as not being from this world, which is one of the strong reasons why this product is using fairy stories that come from magical forest. The product must be visible, such as fused or grown on the user's body, employing soft colors, and using a variety of surface ornamentation techniques on the scales of fish, according to this design. The author expects that, as a result of this design, fish scale fashion jewelry in Indonesia will become more good and intriguing in the future, as well as interesting in the eyes of our society. Finally, because this project is part of the author's graduation requirements for getting a bachelor of arts, it was completed in a short period of time (6 months) and under the restrictions of the COVID-19 epidemic, preventing it from producing optimal results. This project, which is intended to be carried beyond the time constraints, still has a lot of room for improvement.

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Upcycling Plastic Bags Into Children's Sleep Lamp Using Fusing Techniques

Alvian Setiawan

alvianfsetiawan@telkomuniversity.ac.id, Telkom University

Abstract

Along with the increase in human growth, the increase in humans towards plastic materials causes more and more waste. This provides a loss for the sustainability of human life because plastic is a difficult material and takes a long time to decompose. One type of plastic that is widely used is plastic bags, so this is the focus of this research, namely upcycling plastic bags with the fusing technique by using several heat-conducting devices such as irons, heat guns and ovens. Awareness to protect the environment must be from a young age, the role of parents is the main factor in increasing awareness of the applied environment. The application of the introduction of plastic waste can be used as learning for children from an early age starting at the age of 6 so that children understand to be able to limit the use of plastic bags. This study uses qualitative methods to identify and analyze data related to product needs for children at home through interviews with parents and field observations to determine children's activities at home. The result of this study is the design

of children sleep lamp using upcycling plastic bags. It is also expected to be an approach for children to be more sensitive and responsible

Keywords:
Plastic bags, sleep lamp, upcycling

11.1. Introduction

The accumulation of plastic waste is a problem that cannot be solved with certainty. This is due to the high human consumption of plastic materials. The high demand for plastic because plastic is a material with strong, economical, anti-rust and lightweight materials (Surakusumah, 2008). This problem has resulted in the accumulation of a lot of plastic waste. From the rapid growth of plastic waste, sorting is also very necessary in determining the appropriate processing for plastic waste to reduce/minimize growth. Based on its origin, plastic waste can be divided into industrial and household plastic waste. Regarding household plastic waste, waste is generated from daily human activities such as plastic food containers, drink containers and plastic packaging (Masyruroh dkk, 2021) We know that plastic material is a material that is difficult to decompose, therefore it needs special attention in responding to it. One type of plastic that is difficult to decompose is a plastic bag. This problem is actually a shared responsibility because it is part of self-awareness. Actually, basically sorting waste can be done in a fairly simple way, starting from reducing the use of plastic bags, replacing plastic bags with other bags made of cloth. In order for this to be carried out properly, we must provide early education to children.

Forms of education that are suitable for children can be done by approaching objects that are often used by children. On the basis of this, it is necessary to have a more in-depth study of objects that children often use in their daily lives. One of them is regarding the scope of the bedroom, an object that is always in the bedroom is a night light. Therefore, one of the right solutions to reduce the pile of plastic bag waste is by upcycling the plastic bag waste and utilizing it into the form of a child's night light so that the child will be sensitive to environmental conditions. Sustainable design is the process of maintaining something that already exists and the process is carried out continuously (sustainably) without destroying or massively exploiting existing resources. (Basiago, 1999) defines sustainability as sustaining an entity, process or result over time.

Upcycling is the process of reusing or optimally utilizing waste (garbage) both from production and consumption to be processed into products that have potential and value that can be reused. The process of transforming goods that are no longer used so that they can be processed into goods that are more useful and have a better character is an upcycling process (Suryaningsih, 2020). As for another definition, the upcycling method is a method of maximally utilizing or processing recycled waste to increase the use value of the product through a product regeneration concept approach (Utomo, Kusumarini & S, 2021). The concept aims to increase the use value, aesthetics and economy of a product with the results resulting from the upcycling process being a new and different look from previous products (Hanifah, 2018).

11.2 Methods

Comparative method is a type of method used to find similarities or differences between two or more objects being studied. There is a causal relationship included in the associative formulation, which is asking for the relationship between two or more variables (Sugiyono, 2013).

This method can also be referred to as causal comparative (causal comparative research) or ex post facto research (events that have occurred) about systematic empirical investigations where researchers can direct and regulate the needs of an object of research directly because of the existence of variables that have already occurred. This type of method can be divided into two parts, namely:

a) Hypothesis Research

Hypothesis research allows comparative research by compiling/formulating a hypothesis first and then analyzing it as a consideration for comparative analysis.

b) Non-Hypothesis Research

Non-Hypothesis Research conducts comparative research without having a hypothesis guideline, so that the hypothesis will be determined and compiled based on the results of comparative data analysis of various research objects that have been carried out.

In supporting this method, the writer uses a case study method approach. The approach with the case study method aims to obtain in-depth data about the problems that occur. Case studies can be used by various study programs by using several

sources of information that can be obtained through observations, interviews, documentation, audio-visual materials and reports (Creswell, 2008).

Through previous studies, the upcycling method is considered sufficient to help reduce the buildup of non-biodegradable waste into usable products so that it can support waste reduction efforts by increasing the life of the product by delaying the product into wasted waste. . This method can also reduce the use of new materials and support the concept of sustainable design. upcycling methods applied on a home scale will use less wasted energy compared to those applied on an industrial scale.

11.3 Results and Discussion

There are three major techniques in the upcycling method, namely combining several materials, adding elements and changing the overall shape (Putri & Suhartini, 2018). The fusing technique is a plastic heating technique by combining several plastic sheets into one (Gumulya & Aristanto, 2019). the plastic referred to here is a plastic bag. This fusing technique focuses on the use of thermoplastic plastic materials that melt easily due to heat, one of which is LDPE. The plastic processing process using the fusing technique is very easy to do and requires tools that are easily available. In the application of the fusing technique, the resulting material is in the form of sheets that can be reprocessed into finished products.

Considerations for using the fusing technique:

The use of materials focuses on the type of LDPE plastic in the form of plastic bags.

Plastic material is processed into sheet form.

The main tool used is an iron/hot press/other heat-conducting tool.

Table 11.1 of data mining method

no	step	goal
1	Study of literature	Get literacy data as a theoretical reference that will be used in research
2	observation	Obtain field data in the form of availability of materials and tools
3	Interview	Get data about problems and appropriate needs
4	Documentation	Collecting data in the form of visual materials related to research

The design process to be carried out is to use exploratory method approach. The exploratory design method is a method by which the author can determine the type of variables of a design and measure the effect specifically. The sequence of processes in exploration is as follows.

Table 11.2 of Exploration Process

no	step	goals
1	Parameter	Define parameters in technical analysis upcycling
2	Upcycling technique analysis	Analyzing technique the main upcycling that will be used. Analysis cover needs materials and availability production tools
3	Material processing/exploration process	Get test results try plastic waste material in the form of a sample of test results

From the analysis and exploration carried out, it was found that the fusing technique used was appropriate because:

1. Does not require complex equipment
2. Easy process
3. No expensive fees
4. an be applied at home
5. No waste

The next step is to produce a design solution, at this stage the author makes a design concept as a solution to user needs. Here is the T.O.R (Term OF Reference) of this design:

1. Design Considerations:
a. The product is designed to implement the results of upcycling plastic bags in a child's night lamp design
b. The product is designed to reduce the pile of plastic bag waste that is difficult to decompose
c. Products must be child friendly
2. Design Limitations:

    a. The product is only made specifically for children's night lamp

    b. The product is made from upcycling plastic bag materials

    c. Product dimensions are adjusted to the size of the needs
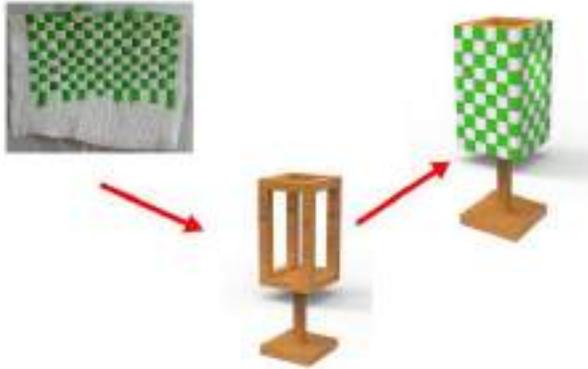
11.4 Conclusion

Figure 11.1 (a) visualization product

In order to reduce the problem of the accumulation of plastic bag waste, it is necessary to educate children, because educating children from an early age on environmental awareness will create a sense of responsibility. An educational approach that is suitable for children regarding plastic bag waste is by implementing the results of upcycling plastic bag waste into objects that are often used by children, one of which is a night lamp. An easy technique for upcycling this plastic bag waste is to use the fusing method because it does not require complex

equipment and costs a lot. So this method can be applied at home using simple equipment.

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12

The use of Ren'py in Making Timun Mas Legend Interactive

Titasari Rahmawati

tita@ikado.ac.id, Institut Informatika Indonesia

Abstract

Science and technology have grown rapidly, where educational media such as books have been replaced with digital alternatives. In this final project, an application titled "Timun Mas" is developed as an alternative mean of moral education media for children aged 3 to 5 years old. This interactive visual novel application takes the theme of the legend Timun Mas, and developed on Android-based smartphones. This application is developed using Ren'py visual novel engine. Some features in this application involves touch and drag gestures which makes the application more interesting to play. In addition, there are interactions within the legend that can affect the legend line according to user's action. Based on the results of Blackbox testing, the application has worked as intended. Furthermore, a usability testing with descriptive statistic analysis has also been conducted. From the usability testing results, the application is deemed viable as an alternative mean of moral education media for children aged 3

to 5 years old. This is proven through the results of the usability testing of the application which has fulfilled all 5 aspects of usability very well.

Keywords:

Timun Mas Legend, Interactive visual novel, Ren'py visual novel engine, Black box testing, Usability testing, descriptive statistic analysis

12.1 Introduction.

The development of science and technology has never experienced a setback, the media of books used for learning is now abandoned, replaced by computer or smartphone media and the internet. However, the presence of smartphones makes learning media easy to reach. One way to attract children's reading interest is by utilizing technology-based learning media in the form of interactive visual novels, which carry elements of legends.

Usually a legend is published through various media, including books, parodies, or in the form of a film. But in general, these media are one-way in the delivery of the legend content contained in the legend. This causes the media to be less interactive and less attractive. Currently, one of the alternative media that can be used besides the above media is visual novel.

A visual novel can be used as an alternative to learning from something, or a visual novel can generate interest in knowing a theme raised in a visual novel. Visual novel has its own advantages in conveying the moral messages of the legend in the

form of audio-visual and can be a medium of delivery that is easy to understand and interesting.

The legend that will be chosen in making this visual novel is the timun mas legend. This legend was appointed because it can tell and teach about the various values of life in this legend, shown through the life of Timun Mas as a virtuous child until his conflict with the giant Buto Ijo. The legend of Timun Mas is interesting to tell because it has a unique legendline and implies moral values.

12.2 Literature Review.

12.2.1 Interactive Visual Novels

A visual novel or sometimes referred to as a sound novel is a form of digital legend telling that is rich in text and images. Visual novels are a type of interactive game that is generally played on a PC desktop. This type of game is based on interactive fiction that displays novel stories in the form of static images, and is equipped with conversation boxes to convey the narration and speech of each character.

Interactive visual novels differ from other types of games in that they also provide dynamic interactions. Most visual novels have multiple legend lines and are multi ending (more than one ending), the gameplay mechanics in this case usually consist of multiple-choice decision points, where the player chooses a direction that will provide a separate legend line for the main character (Ciesla, 2019).

12.2.2. Legend of Timun Mas

According to Rosdianah (2018), fairy tales/Legend are stories that do not really happen or are mere imagination. legend are also not bound by place or time, because legend are told primarily to entertain. However, there are also many legend that contain moral teachings, depict the truth, and some even contain satire.

Legends are stories that do not really happen or are imaginary. Legends are also not reminded by place or time, because they are told primarily to entertain. However, many legends contain moral teachings, depict the truth, and some even contain satire. Although the stories in legends are imaginary, in fact until now we still often. In fact, many legends in Indonesia have developed with various versions of the legend. In this final project, the writer chooses a legend entitled "Timun Mas", this tale comes from East Java.

The timun mas legend comes from East Java. Timun Mas' short legend begins with a widow who lives in a forest named Mbok Rondo. Mbok Rondo felt very lonely and prayed to the gods to give him a child. Through a dream, Mbok Rondo met a giant who gave him a magical cucumber seed. The giant said to Mbok Rondo that by planting the cucumber seeds, he would have a child, but when the child was an adult, Mbok Rondo had to give the child to the giant to eat. Mbok Rondo agreed to the giant's terms, then planted the cucumber seeds in his yard. After a while, the cucumber seeds grow and have very large and golden fruit. When Mbok Rondo picked and cut the cucumber, he was surprised because inside the cucumber there was a baby girl.

Mbok Rondo took care of the baby girl and named her Timun Mas. Timun Mas grew into a beautiful and virtuous girl, so Mbok Rondo loved him very much. However, the day that Mbok Rondo promised to the giant drew closer. Because of his love for Timun Mas, Mbok Rondo asked a hermit on the mountain to help him save Timun Mas from a giant who would come and eat him. The hermit gave 4 bags containing magical items, namely cucumber seeds, needles, salt, and shrimp paste. The hermit said that if the giant came and chased Timun Mas, he had to throw the 4 bags if he wanted to survive the giant.

On the promised day, the giant came and wanted to eat Timun Mas. Mbok Rondo gave the four magic bags to Timun Mas and told him to run away from the giant who was chasing him. Then, Timun Mas threw the magic bags one by one as the giant chased after him. First, Timun Mas threw a bag filled with cucumber seeds, and suddenly a giant cucumber plant grew. But the giant managed to escape from the cucumber plant and continued to chase Timun Mas. After that, Timun Mas threw the second bag containing the needles, and suddenly a forest of sharp bamboo grew that hurt the giant who was chasing him. However, the giant did not give up and continued to chase Timun Mas. Then Timun Mas threw the third bag of salt, and suddenly an ocean appeared that would drown the giant. However, the giant managed to swim and keep chasing Timun Mas. Finally, Timun Mas threw the fourth bag containing the shrimp paste, and suddenly a sea of boiling mud appeared that would drown the giant. The giant could not swim in the boiling mud and died. At the end of the legend, Timun Mas returns and lives happily with Mbok Rondo.

12.2.3 Python Programming Language

Enterprise (2019), python is an interpretive programming language that is considered easy to learn and focuses on code readability. In other words, Python is claimed as a programming language that has programming codes that are very clear, complete, and easy to understand. The main advantage of Python is that it has the power to handle the creation of contemporary applications that contain keywords such as big data, data mining, deep learning, data science, and machine learning. In other words, Python is a simple programming language for making artificial intelligence-based applications.

Python was developed by Guido van Rossum, a Dutch-born programmer, in 1991 at CWI, Amsterdam as a continuation of the ABC programming language. The name Python was chosen by Guido as the name of his language creation because of Guido's love for the television show Monty Python's Flying Circus. Currently, Python development continues to be carried out by a group of programmers coordinated by Guido and the Python Software Foundation. Currently the Python distribution has reached version 3.7

12.2.4 Ren'py

According to Ciesla (2019), Ren'py is a software tool designed exclusively for visual novel programming based on the Python programming language. This software can be downloaded for free and allows the design and creation of commercial visual novels for various types of desktop and mobile systems.

In simple terms, the Ren'py application is divided into 3 important components, namely the launcher, script files, and audiovisual elements. The launcher component functions as a simple project manager that helps users manage projects to be worked on, including creating new projects, editing scripts, and project builds. The following is a display of the launcher component of the Ren'py application:
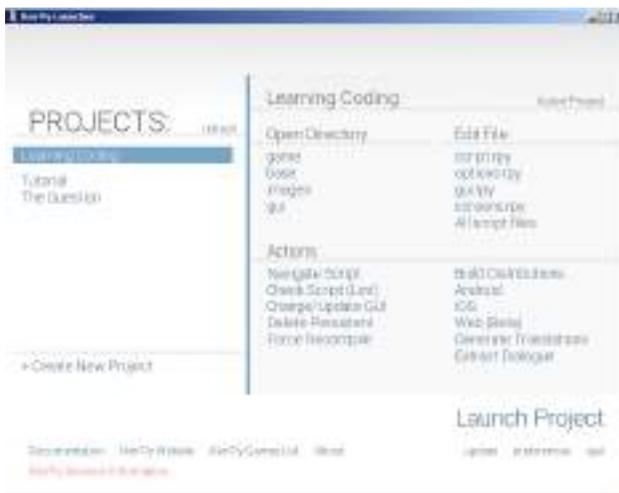

Figure 12.1 Ren'py Launcher Component
Source: Ren'py

The main component of visual novel programming using Ren'py is script files editing. The script file used has the .rpy extension which is a common file extension and can be edited using any text editor application. In this case, Ren'py has the advantage in the ease of editing the scripting file of a visual novel.

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Figure 12.2 Script Editing on rpy Extension Files

Source: Ren'py

12.2.5 Prototyping

According to Ahmed (2016), a prototype is a miniature product that has the same architecture as the perfect product. A prototype is generally used as a demonstration tool that helps users to see an overview of the product to be developed and how the product works.

Prototypes are generally created during a needs analysis and presented to users. This helps users to get an overview of the product to be developed, assess whether the product is working as expected, and whether changes and further development are needed. In this study, the author uses a prototyping method called throwaway prototyping. This method was chosen because it has a small risk in terms of funds and time if there are changes to the prototype made. Here are 2 kinds of prototyping methods in software development, including:

1. Throwaway Prototyping.

    Throwaway Prototyping is a prototyping method used by developing a prototype through several iterations and stages. Iterations carried out include user requirements that will be implemented into the software. Each iteration will be used as a software requirement specification. So that at the final stage of this method all prototypes that have been made will not be used again (throwaway), but the developer will develop a new software that is in accordance with the software requirements specifications that have been obtained previously. This method is the method that will be used by the author in this study.

2. Evolutionary Prototyping.

    Evolutionary prototyping is very different from throwaway prototyping. In this method, the source code used in the prototype iterations that are being developed, will be sorted and used in the development of the perfect software. This key difference means that developers have to spend more money and produce quality prototypes in each iteration, in order to support the end result of a perfect product that fits the needs of the user.

12.2.6 Android

According to Maulana (2018), Android is a mobile-based operating system developed by Google. The operating system can be illustrated as a 'bridge' between the device (device) and its users, so that users can interact with their devices and run applications available on the device.

Android is an operating system that is open source (open source). Called open source because the source code (source

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code) of the Android operating system can be viewed, downloaded, and modified freely. This open source paradigm facilitates the development of Android technology because all interested parties can contribute, both to the development of the operating system and applications.

12.2.7 Human Computer Interaction

According to Supriyanta (2015), human and computer interactions are a relationship between humans and computers that have certain characteristics to achieve a certain goal by running a system that uses an interface.

The purpose of human-computer interaction is to produce a usable and safe system, meaning that the system can function properly. The system is able to develop and improve security (safety), utility (utility), usability (usability), effectiveness (effectiveness) and efficiency (efficiency). The context of the system in question is not only hardware and software, but also includes the environment as a whole, be it the work community organization environment or the family environment. While utility refers to the functionality of the system or the system can increase the effectiveness and efficiency of its work. Usability here means that the system created is easy to use and easy to learn both individually or group.

12.3 Research Methodology

12.3.1 Throwaway Prototyping Method

The following are the stages of developing an Visual Novel Interactive using the Throwaway Prototyping development model:

1. **Planning**: The customer and developer together define the format of the entire software, identify all requirements, and outline the system to be built.
2. **Build Prototype**: . Build prototyping by creating a temporary design that focuses on serving the customer (e.g. with create input and output formats).
3. **Evaluate Prototype**: This evaluation is carried out by the customer whether the prototyping that has been built is in accordance with the customer's wishes.
4. **Coding**: In this stage the agreed prototyping is translated into the appropriate programming language.
5. **Testing System**: After the system has become a ready-to-use software, it must be tested before use.
6. This test is carried out with White Box, Black Box, Base Path, architectural testing and others.
7. **Evaluate System**: The customer evaluates whether the finished system is as expected.

12.3.2 Use Case Diagram

Use case diagrams explain the sequence of activities carried out by actors or actors and the system to achieve certain goals, describe the expected functionality of a system, and represent the interaction between actors or actors with the system. Each use case is equipped with a scenario, the use case scenario is the flow of the use case process from the actor and system side. Use case scenarios are created for each use case (Shalahudin M., 2015).

In this application there is only one actor, namely the player actor. Players can select the start play menu to be able to start the game. On the start menu, the player plays the game according to the created legend line, the created legend line is divided into scene 1, scene 2, scene 3, scene 4, and scene 5. When the game has reached scene 4, players can choose 3 alternative stories. different according to the existing interactive content to determine the ending of the legend.

Then on the main menu there is also a scene selection menu that players use to play certain scenes directly. This menu will display scenes that can be accessed by players. This menu is used to make it easier for players if they want to play certain scenes directly without having to play all the previous scenes from the beginning. Next, players can also access the tutorial menu which contains information about all interactive content in this game application and how to play each of this content. Then there is a gallery menu that contains game pictures and legend character profiles. In this menu the available images will be locked and can only be seen when the player has completed certain scenes in the game. After that, on the main menu there is a menu about us which contains information about the application developer and its sources.

Each use case in the use case diagram that has been made is equipped with a use case scenario, namely the flow of the use case process from the actor and system side. With the use case scenario, it will be easier for us to understand the workflow of each use case. Use case scenarios are generally made for the smallest use case, for example, for generalization, the scenario created is a more specific use case. In this case, the use case scenario will be made based on the 6 smallest use cases in this "Interactive Visual Novel Dongeng Timun Mas" application, namely the Start Playing use case, Selecting Scene use case, Tutorial use case, Gallery use case, use case About Us, and the Quit Game use case. As for the other use cases that are included in the Start Playing use case and the use case Selecting a Scene will also be clarified in the use case scenario below. The normal scenario is the scenario when the system runs normally without any errors or errors. While the alternative scenario is a scenario when the system does not run normally or experiences an error. The normal scenario and the alternative scenario can be more than one. This scenario flow will be the basis for making sequence diagrams/sequence diagrams in the next sub-chapter.
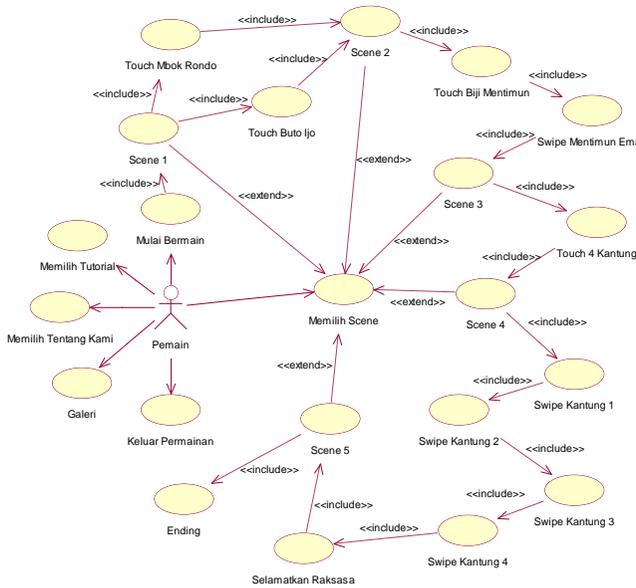
Figure 12.3 Use Case Diagram of the "Timun Mas" Application.

In the HR manager entity, the data provided into the system is the main information data provided by the system in the form of employee information, employee assessment results, approval of permits and leave and the recruitment process. while in the employee role, users will receive notifications on transaction requests and status information including: employee status, attendance information, recapitulation of absenteeism such as leave or permission that was previously submitted as well as employee assessments that have not been carried out. Prospective employees receive new recruitment information, then will send personal data and resumes which will later be assessed and interviewed by the HR manager, prospective employees will also receive notifications whether or not they have been accepted into the company.

12.3.3 Activity Diagram

Activity diagrams describe a series of flow of activities, used to describe activities that are formed in an operation. An activity diagram can be created based on one or more use cases in the use case diagram. The following is an activity diagram of the "Interactive Visual Novel of Timun Mas" application that will be created.

1. Activity Diagram of the "Timun Mas" Game

Is an activity carried out by players to be able to play applications that have been made according to the legendline of the Timun Mas. This activity must be done by the player first to open the scene selection in the scene selection menu and open a collection of images in the gallery menu. Activity Diagram of the game "Timun Mas" explains the flow of players and systems to the final activity from the beginning of the game to the end of the game. When the player runs the application, the main menu will be displayed. After that, the player presses the play button, then the game will start according to the legendline that has been made, which consists of scen1, scene 2, scene 3, scene 4, and scene 5. The activity of selecting the play menu that occurs in the "Timun Mas" application can be described through the activity diagram as follows:

Figure 12.4 Physical Data Model at PT. Cakra Mandala Sakti.

2. Activity Diagram Menu Scene Selection

Is an activity carried out by players to be able to choose the desired scene, to select the desired scene the player must first play the scene in the play menu. The activity of selecting the scene selection menu that occurs in the "Timun Mas" application can be described through the activity diagram as follows:
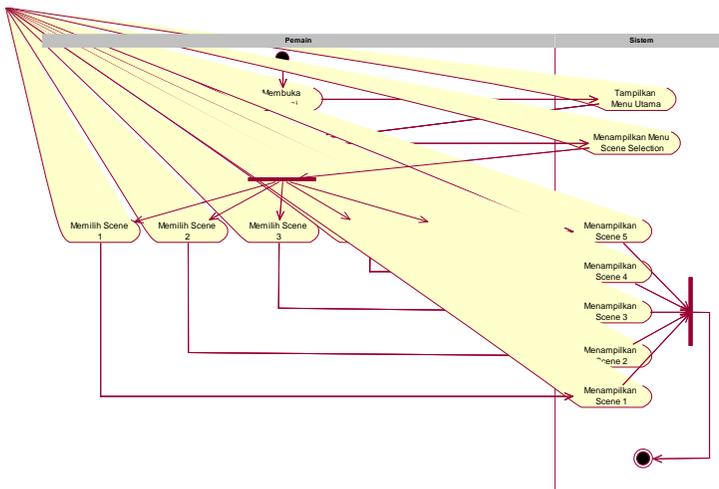

Figure 12. 5 Activity Menu Scene Selection

The activity diagram of the scene selection menu above describes the activities between the player and the system on the scene selection menu. In this menu, players can choose the scene they want, namely scene 1, scene 2, scene 3, scene 4, and scene 5. To be able to choose the scene they want, the player must complete the legend line continuously through the play menu.

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12.3.4 Architectural Design

In this architectural design will be explained about the workflow of the application made. This workflow contains all the interactions that exist in the application between players, the smartphone is used to display the application. Broadly speaking, the flow of the application system can be seen in Figure:
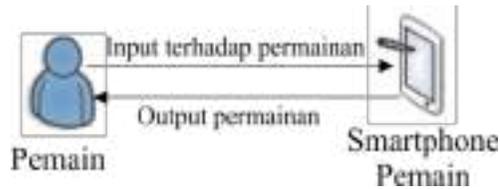

Figure 12.6 Architectural Design of Application "Timun Mas"

Players are the main parties in playing this application where the main device used is a smartphone. Smartphones are used to run this application, players can run the drag, swipe screen, and touch screen features. In game mode, players can interact with the scene to be able to continue the legend. After playing from each player scene, the player can open the skipped scene in the scene selection menu. Players can choose the scene selection menu to play the desired scene, in the application there is also a tutorial and gallery menu.

12.3.5 User and System Requirements

Timun Mas Application has several system features and capabilities that can be divided based on needs including functional requirements and non-functional requirements as follows:

12.3.5.1 Functional Requirements

1. Has features drag, touch, and swipe screen.
2. Has a feature of displaying stories based on images created.
3. Has a voice feature when displaying stories.

12.3.5.2 Non-Functional Requirements

1. Introducing the timun mas legend to children at an early age (3-5 years).
2. Due to the existence of free-to-play games, the application is easy to access anytime and anywhere.
3. The application operation by using the timun mas legend can be used as an alternative to good moral learning media.

12.4 Results and Discussion

In this section is the final result of the design and implementation of visual novel interactive of legend timun mas. This application was developed using the visual novel engine Ren'Py. In its implementation, Ren'Py can be used to develop PC-based desktop applications and Android-based mobile applications. In this study, the author develops an interactive visual novel application for the Timun Mas legend for the Android mobile apps platform. The entire deployment process can be done entirely through the Ren'Py launcher directly. Ren'Py will download all the programs and files needed in the development of the android package needed by the user automatically.

The appearance of the Timun Mas application game can be seen from the results of the application implementation on

Android smartphones. Here you can see the appearances of the Timun Mas application.

Figure 12.7 Main Menu Display

The main menu has a button consisting of a start play button, a scene selection button that is used to select the desired scene, a tutorial button that is used to see how to play this application and a gallery button that is used to view a collection of images in this application. On this menu there is background music entitled musica atmospheric by Mingarelli Patrizio.

Figure 12.8 Tutorial

When the player presses the tutorial button on the main menu, the tutorial menu is displayed by the system. The tutorial menu displays pictures of how to play each interactive content in this application. On this menu there is background music entitled musica atmospheric by Mingarelli Patrizio. In the tutorial menu there is a description of how to play each interactive content in the application. In the lower right corner, there is a back button that serves to return to the main menu.

Figure 12.9 Scene Selection

When the player presses the scene selection button on the main menu, the scene selection menu is displayed by the system. The scene selection menu displays every scene from this application which is used to make it easier for players to choose the scene that has been played.

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Figure 12.10 Scene 1

When the player presses the Start Play button, the scene menu 1displayed by the system. In this scene there is an interaction between the two objects, Mbok Rondo and the Giant. These two objects are the main things to continue the storyline in the next scene. In this menu there is background music entitled forest ambience from freesound.org.

Figure 12.11 Scene 2

In scene 2 there is also interactive content where players must touch the cucumber seeds to plant and water them. Then, players must also swipe or drag on a giant cucumber to split it. Both of these interactive content must be done by players to be able to continue the story to the next scene.

The scene menu is displayed directly by the system after the player play scene 2. This menu can also be accessed directly through the scene selection menu if the player has played this scene before. In this menu there are interactions on 4 objects, namely the cucumber seed bag object, the needle bag object, the salt bag object, and the shrimp paste bag object. The four objects are the main thing to be able to continue the storyline in the next scene. In this menu there is background music entitled forest ambience from freesound.org. The scene 3 menu has the following display:

Figure 12.12 Scene 3

Figure 12.13 Scene 4

The scene menu is displayed directly by the system after the player play scene 3. This menu can also be accessed directly through the scene selection menu if the player has played this scene before. In this menu there are interactions on 4 objects, namely the cucumber seed bag object, the needle bag object, the salt bag object, and the shrimp paste bag object. The four objects are the main thing to be able to continue the storyline in the next scene. In this menu there is background music entitled bunny man chase from freesound.org.

Figure 12.14 Scene 5

The scene menu is displayed directly by the system after the player play scene 4. This menu can also be accessed directly through the scene selection menu if the player has played this scene before. In this menu there is an interaction where the player can choose to save the drowning giant or let it die. The choices made by the player will determine the alternative ending to the story obtained. On this menu there is background music entitled infinite horizon from freesound.org.

12.5. Conclusion

Based on the research and implementation that has been done, several conclusions are obtained from the process of making the Visual Novel Interactive of Timun Mas Legend:

1. The "Timun Mas" application can be an alternative moral learning media that is good for children aged 3 to 5 years, but is most effective and interesting for children aged 5 to 6 years.
2. The "Timun Mas" application can run well, this can be proven from the results of the black box testing that went well.
3. The use of the Ren'py visual novel engine can make it easier to create interactive visual novel applications based on Android and desktop. Especially in the design and deployment stages of flexible and practical applications.

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13

The effect of using social media for innovation opportunity mediated by customer engagement behavior

Cipta Perdana

cipta.perdana@ciputra.ac.id   Indonesia, Universitas Ciputra Makassar

Abstract

In this digitalization era, Business competition is getting tougher so business people need to pay attention to the competitiveness of their products. Utilization of social media is one of the promotional media that is widely used today in the company's marketing activities because social media makes the product range is wider but cost-effective. Studies have found that social media marketing has a positive effect on customer retention (Hanaysha. 2018). For that the purpose of this research is to see the impact of the use of social media by MSMEs which allows opportunities for business innovation from Customer Engagement Behavior. This research is a quantitative research with the Partial Least Square (PLS) method, the research sample is Business owner of MSME in South Sulawesi is practically by referring to rule of thumb of Hair 2013. The result of this study is expected to be able to contribute to MSMEs in creating innovation opportunities through customer engagement behavior.

Keywords

Using Social Media, Innovation Opportunity, Customer Engagement Behavior;

13.1. Background

The era of the Industrial revolution 4.0 is a symbol of the digital revolution which is supported by development of automation technology. The development of an increasingly advanced era is driven by rapidly changing modern technology that is increasingly sophisticated. Some of the popular trends that emerging in this era include the Internet of Things (IoT), cyber physical systems (CPS), Artificial Intelligence (AI), Cloud computing systems, and so on. The digital revolution brings changes that are so fast and affect life man. Through the advancement of technology all things can be easily accessed via the internet. This is supported by the emergence of a new era, namely society 5.0. Era Society 5.0 is a concept initiated by the Japanese state, namely a concept of a capable society solve various challenges and social problems by utilizing various innovations that were born in the era of the industrial revolution 4.0. Basically Industry 4.0 and Society 5.0 are not have significant differences. The concept of the era of society 5.0 complements industry 4.0 and able to change the behavior of society towards a more advanced. According to Pareira et.al (2020) Society 5.0 is more focused on humans themselves, in contrast to the industrial revolution 4.0 which make artificial intelligence its main component. Society 5.0 also focuses on implementation of technology implementation which has six important pillars which

include; infrastructure, innovation technology, Finance, Health care, logistics and Artificial Intelligent. Various new challenges emerge in this era, so that humans, especially business actors, must be ready and able to adapt, especially in the face of various competitive challenges (Ellitan & Anatan, 2020). Business competition in the digital era is getting tougher so that business actors need to pay attention and have competitiveness compared to their competitors. One of the implementation solutions so that business actors can maintain sustainability and have advantages is to innovate. Basically, business actors already have the ability and resources, so they need to find or create opportunities to innovate. This can be done by observing or identifying consumer needs through consumer behavior by utilizing social media. One of the roles of social media is as a promotional medium used today in the company's marketing activities because it can make product reach wider and cost-effective. Hanasya (2018) explains that marketing through social media has a positive effect on customer retention. This of course has been implemented and implemented by business actors, especially MSMEs. In Indonesia, the number of business actors tends to increase, especially after the COVID-19 pandemic. MSMEs are supporting economic growth in Indonesia, especially during the COVID-19 pandemic. The Ministry of Cooperatives and SMEs noted that as of February 2022, 17.25 million MSME players were connected to the digital ecosystem (Kompas.com). This means that most of the MSMEs have gone digital, although on the way there are still many MSMEs that have not been able to optimize the use of digital technology, even though government support has been quite optimal in product development and marketing strategies. The

government invites business actors to switch from conventional to Go Digital, especially in the use of social media as a medium for promoting their business. Yuniarty et al, (2019) stated that there are 18 percent of people who have intermediate internet skills, such as the use of the web or social media. The shift in the Industry 4.0 era to Society 5.0 encourages MSME actors to be able to adapt in seeing opportunities to innovate in the businesses they are involved in. But beyond that, MSME actors are also faced with various challenges that lead to reluctance and even refuse to take the initiative to innovate their products. Departing from the phenomena that have been described previously, the topic raised in this study is how MSME actors can find opportunities to innovate from understanding consumer behavior on social media.

13.2 Theoretical Framework

13.2.1. Social Media

Social media is "those that facilitate online communication, networking, and/or collaboration" Russo, Watkins, Kelly, and Chan (2008). Kaplan and Haenlein (2010) defines social media as "a group of Internet based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content". And Lewis (2010) noted "social media" simply serve as a "label for digital technologies that allow people to connect, interact, produce and share content". According to the Indonesian digital report 2022, since February 2022 in Indonesia there have been 204.7 million internet users, which is equivalent to 73.7% of the

Indonesian population. People spend a lot of time doing online activities to find information about products/services and communicate/interact with other consumers. Companies/business actors respond to this by making social media a component that is integrated with the company's business marketing plan (Stephen, 2016). Howard and Parks (2012) defines social media into three parts:

(a) The information infrastructure and tools used to produce and distribute content.

(b) The content that takes the digital form of personal messages, news, ideas, and cultural products.

(c) The people, organizations, and industries that produce and consume digital content.

13.2.2 Innovation Opportunity

Innovation opportunities can be conceptualized as the potential to create new and valuable products or knowledge (Zheng, Liu & George, 2010). Based on the results of a survey conducted by (Roberts & Pille, 2016) confirmed that 82% of companies use social media to improve their innovation processes. Innovative opportunities should at least following three conceptual elements in order to make it possible to identify, the potential inherent in an idea:

1. An economic value for someone

2. Mobilization of resources

3. Appropriability

13.2.3 Customer Engagement Behavior

Customer engagement behaviors include participation in brand communities, word of mouth recommendations, blog writing, online comments, and suggestions for product (Kar et al., 2020). Customer engagement behavior is related to trust, satisfaction and commitment from customers to a brand or product (e.g., Bolton, Lemon, and Verhoef 2004; Morgan and Hunt 1994; Verhoef, Franses, and Hoekstra 2002). Customer engagement is always measured in the industry about marketing research. According to the Oxford Dictionary (1996) "Engagement" will include: commitment, commitment, dependence, and taking part. All these meanings focus on behavior. Calder and Malthouse (2008) discuss the concept of media engagement, focusing on the psychological experience of consumers when consuming media.

13.2.4 Previous Empirical Studies

The research that became the main reference was Dwivedi, Y. K., Ismagilova, E., Hughes, D. L., Carlson, J., Filieri, R., Jacobson, J., ...& Wang, Y. (2021), with the title Setting the future of digital and social media marketing research: Perspectives and research proposition. It combines several collective insights from experts discussing issues related to digital marketing and social media. There are several propositions offered for further and in-depth research on the possibility of emerging opportunities for innovation from the use of digital and social media marketing which until now have not been researched.

Carlson, J., Rahman, M., Voola, R., & De Vries, N. (2018) with the title Customer engagement behaviors in social media: capturing innovation opportunities. This study investigates how certain online service design characteristics on a brand's social media induce customer value perceptions, which in turn, stimulate customer feedback and collaboration intentions. This study also examines the involvement of consumer behavior on social media on opportunities to innovate, but the sample is limited to customers who use social media Facebook and citizens of the United States only. There are still many limitations presented in this study that they are limited by cross-sectional which adopts subjective survey data to assess consumer perceptions of innovation related to Customer Engagement Behavior. Study can then explore the generalizability of the framework to other countries and social media platforms that are not only limited to one face book media.

The next research adapted was Strategic Direction. (2018) with the title using social media to aid innovation: Factors that help increase customer engagement with the brand. The results of this study found that companies use social media to build brand communities as a means to strengthen innovation. The key to success is to identify factors that enhance customer experience on brand pages thereby increasing engagement rates and stimulating positive brand-related behavior.

Sawhney, M., Verona, G., & Prandelli, E. (2005). With the title Collaborating to create: The Internet as a platform for customer engagement in product innovation. Focus on how the Internet has impacted collaborative innovation processes & key

processes in shared value creation. We outline the distinctive capabilities of the Internet as a platform for customer engagement, including interactivity, enhanced reach, persistence, speed, and flexibility, and suggest that companies can use these capabilities to engage customers in collaborative product innovation through various Internet-based innovations.

Moe, W. W., & Schweidel, D. A. (2017). With the title Opportunities for innovation in social media analytics. In this paper, the authors introduce a framework that views social media data as a source of marketing insights. They then discuss the characteristics of social data that require innovation in the analytical approaches used to obtain actionable marketing insights. The authors identify and outline specific topics that they believe social media analytics can serve as valuable tools for marketers. Social media data can be a source of important consumer insights that can be used to support marketing decisions. In contrast to more traditional ways of gathering insights, social media data is freely provided by consumers themselves, allowing marketers to hear the "voice of consumers" directly.

13.3 Research Method

This Research uses a quantitative apporach. The population on this research are 43 SME actors. This study uses primary data sources. Primary data is data obtained directly from the first hand by the researcher (Sekaran, 2016). Primary data used in the form of survey results through questionnaires distributed to MSMEs. Data analysis method used in this study is the Partial technique Least Square (PLS) using the SmartPLS

software program. According to Abdilah and Jogiyanto (2015), PLS analysis is a multivariate technique that performs comparisons between variables multiple dependent and multiple independent variables. The use of PLS in this study besides being considered normally distributed, one of them is because PLS can be used on small sample size (Hai et al., 2016).
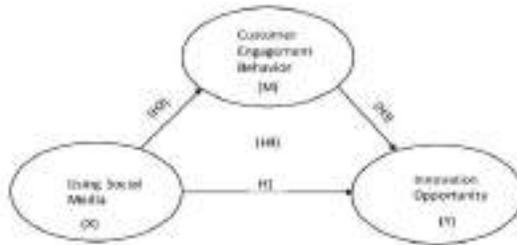

Figure 13.1

Model Based on figure 1, the research seeks to test following hypotheses:

H1: Using social media has a significant influence on the innovation   opportunity

H2: Using social media has a significant influence on customer engagement behavior

H3: Customer engagement behavior has a significant influence on the innovation opportunity

H4: Customer engagement behavior mediating the influence of using social media on the innovation opportunity

13.4. Analysis of Results

13.4.1 Respondent data

Table 13.1 Sample's Demographic

No	Characteristic		Total	Percentage
1	Gender	Man	17	39 %
		Woman	26	61 %
2	Age	30-35	7	17,5 %
		36-40	16	40 %
		41-45	13	32,5 %
		>46	4	10 %
3	Business age	1-5 years	32	74 %
		6-10 years	10	23 %
		> 10 years	1	3 %
4	Type of business	Food/Beverages	19	44 %
		Fashion	23	53 %
		Others	1	3 %

Based on the data in the table above, the respondents in this study were dominated by women (61%). In terms of age, those who are 36-40 (40 %) years old are dominated. Based on the length of business, dominated by those whose business age is 1-5 (74 %) years and the type of business is fashion (53 %).

13.4.2. Measurement model test

After processing the initial data to determine the value of AVE (Average Variance Extracted) and composite reliability. The resulting data is not reliable even though the table shows that the composite reliability value has met, but there are still many

indicators in each variable that do not meet the requirements for the AVE (Average Variance Extracted) value above 0.5. So it is necessary to eliminate several indicators that do not meet the AVE (Average Variance Extracted) value of 0.5. As shown in the following table and data:

Table 13.2 Main effect

	X1	X2	X3	X4	X5	X6	X7	X8	X9	M1	M2	M3	M4	M5	Y1	Y2	Y3	Y4
Outer loading	0,4 37	0,5 63	0,6 61	0,6 23	0,6 28	0,5 80	0,4 44	0,5 84	0,4 95	0,6 66	0,4 29	0,7 21	0,6 36	0,4 94	0,6 53	0,7 29	0,6 02	0,6 60
AVE	0,316									0,359					0,439			
Composite reliability	0,804									0,731					0,757			

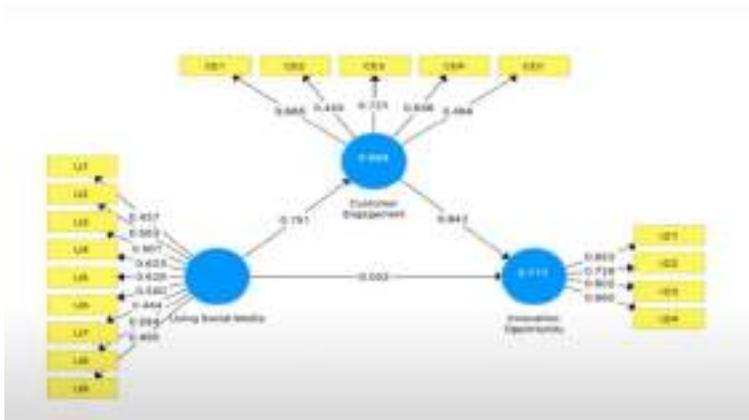Source: Primary data, analyzed

Figure 13.2
Source: Primary data, analyzed

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Based on the results above, it is necessary to carry out further data processing by eliminating several indicators in order to meet the minimum AVE (Average Variance Extracted) value. The following table is an analysis of the reliability and validity of which the indicators have been reduced to the AVE (Average Variance Extracted) criteria above 0.5. Seen in the following table and data the reliability and validity values have met the requirements.

Table 13.3 Measurement model test

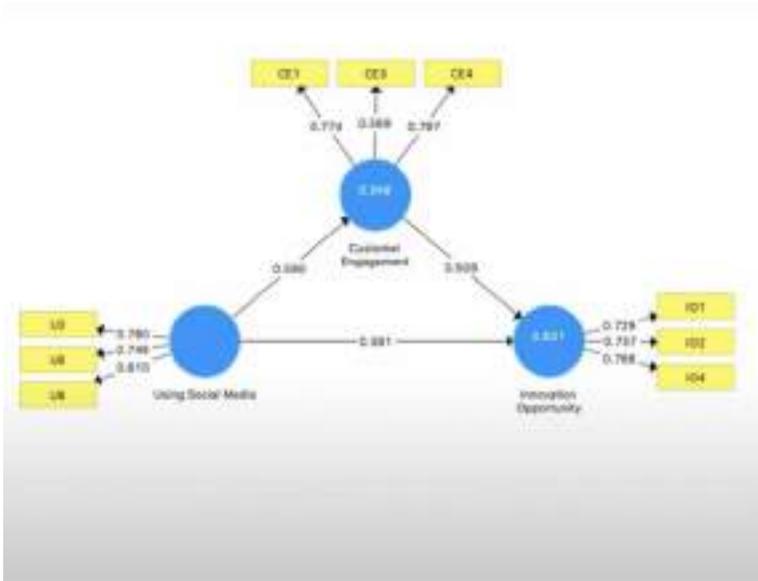|	X3	X6	X8	M1	M3	M4	Y1	Y2	Y4
Outer loading	0,760	0,748	0,610	0,774	0,569	0,797	0,729	0,737	0,768
AVE	0,503			0,520					0,555
Composite reliability	0,751			0,761					0,789

Source: Primary data, analyzed

Figure 13.3 Main effect

There are some indicators that is deleted because it has low loading factor and can't meet the AVE minimum value above 0,5. So that only three indicators remain in each variable that meet the minimum AVE value.

13.4.3 Structural Model

According to Baron & Kenny (1986) If the relationship between variables X and Y is significant, then the variable M act as partial mediation. but if the relationship between variables X and Y is not significant in the model research with mediating variables, then the M variable has a fully metiated.

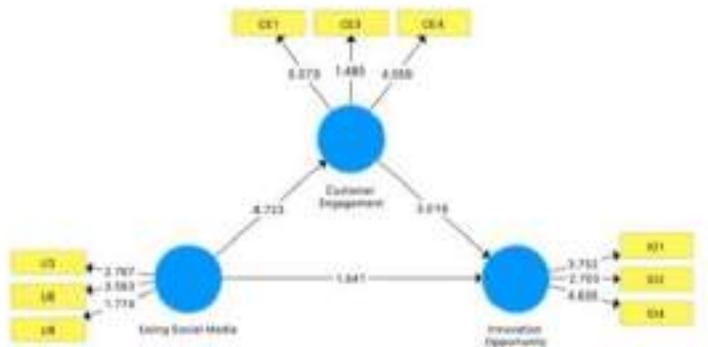The following are the results of the data analysis of this research model:

Figure 13.5 Structural Model (Inner Model)

Table 13.4 Path Coefficient

Path Coefficient					
Variable	Original Sample	Sample Mean	Standard	T Statistic	P Values
M - Y	0,508	0,517	0,168	3,016	0,003
X - M	0,590	0,629	0,125	4,723	0,000
X-Y	0,381	0,347	0,232	1,641	0,101

Based on table 4, Costumer engagement behavior (M) has a significant effect on innovation opportunities (Y) which is indicated by the T-statistic value of 3.016. So, the H3: "Customer engagement behavior has a significant influence on innovation opportunity" is accepted. using social media (X) has a significant effect on customer engagement behavior (M) which can be seen from t-statistic value 4,723. It is means the H2: "Using social

media has a significant effect on customer engagement behavior"
is accepted. But the data above shows that using social media is
not significant with innovation opportunities with a T-statistic value
of only 1.641. It is means the H1: "Using social media has not
significant it is not accepted

Table 13.5 R square

R Square	
Variabel	R square
Customer Engagement (M)	0,348
Innovation Opportunity (Y)	0,631

Source: Primary data, analyzed

R square value is used to explain the mediating and
dependent variable. Based on table 5, customer engagement can
be explained by 0,348 (34,8 %) by innovation opportunity, where
the remaining 65,2 % can be explained by other variable outside
this research model. Innovation opportunity variables can be
explained by 0,631 (63,1 %) by the using social media and
customer engagement behavior variables, while the remaining 37,
9 % can be explained by other variables outside this research
model.

13.4.4 Mediation test

The mediating effect shows the relationship between the independent and dependent variables through connecting or mediating variables. The mediating effect is tested when it is suspected that there is a variable mediation between independent and dependent variables. That is, the influence of the independent variable on the dependent does not occur directly, but through the mediating variable (Hair et al., 2016).

Table 13.6 Spesific indirect effect

Specific indirect effect					
Variable	Orginal Sample	Sample Mean	Standard Deviation	T Statistic	P Values
X-M-Y	0,508	0,517	0,168	3,016	0,003

Source: Primary data, analyzed

After testing simultaneously on the influence of the independent variable and the mediating variable on the dependent variable, found if the relationship between variables X (Using social media) and Y (Innovation opportunity) is not significant (t-statistic < 1.96), So that the variable M becomes fully mediated, based on table 6 the T-statistic value is at 3.016. The H4: "Customer engagement behavior mediating the influence of using social media on the innovation opportunity" is accepted.

13.4.5 Discussion

Based on the results of the data analysis that has been done, there will be several results that will be discussed. The relationship between the indicators of the variables x and y is not significant. Thus showing that: It is not enough to just provide information about business products through social media, it will create innovative ideas, The successful use of social media can create new products as part of innovation, Not only with a complete post about my product on social media is a form of adapting to technological advances. (H4) Opportunities to innovate will be able to be created if there is customer engagement in accessing a brand's social media. The relationship between customer interactions was not sufficient to be the basis for service innovation (Li & Hsu, 2016a; Ma & Qu, 2011).

In contrast to using social media and customer engagement behavior, the results of this research show that there is a significant influence. By providing complete information about products on social media, customers will actively respond on social media, whether it is asking for product information or providing suggestions for product development and business services. The effectiveness of using social media can also be assessed from the active interaction of customers asking about products on social media. Studies across service environments indicate that an engaged customer actively participates in idea generation and collaborative behaviours such as sharing knowledge, ideas and preference information to support the brand (Alexander and Jaakkola, 2016; Gruner et al., 2014).

Consumers are becoming pivotal authors of brand stories by sharing brand experiences via social media, linking consumers and brands (de Vries and Carlson, 2014).

The result of this research indicate a significant relationship between customer engagement behavior and innovation opportunity. By understanding the behavior of customer engagement on social media, we can determine what innovations are appropriate to do to match customer habits when interacting on social media brands. The Internet opens up opportunities for companies to engage customers in collaborative innovation in a number of ways. This enables companies to turn episodic and one-way customer interactions into ongoing dialogues with customers. Through the creation of a virtual customer community, it will enable companies to tap into the social dimension of customer knowledge being shared among groups of customers who share the same interests. And it expands the reach and scope of the company's customer interactions through the use of independent third parties to reach non-customers, competitors or potential customers. The Internet can serve as a powerful platform for enabling collaborative innovation with customers. While customer interaction has always been important in new product development (von Hippel, 1988).

Customer engagement behavior has a full mediated, Because using social media (X) and innovation opportunity (Y) are not significant, they must go through customer engagement behavior to create opportunities for innovation. By providing complete information about business products through social media, customers will actively respond through social media so

that they can create innovative ideas that are in accordance with consumer desires. new product. The widespread deployment of the Internet has greatly enhanced the ability of firms to engage with customers in the product innovation process (Dahan & Hauser, 2002).

13.5 Conclusion

Based on the results of the research, can be conclude that using social media is not significant influence on the innovation opportunity, Using social media has a significant influence on customer engagement behavior, Customer engagement behavior has a significant influence on innovation opportunity, and customer engagement behavior mediates the influence of using social media on innovation opportunity. Therefore, SMEs need to pay attention to strategies or social media activities that can increase customer participation. Without strategies and processes in using social media, the results will not be optimal. Social media collaborative has the potential to support innovation (Dahlander & (Yang Gann, 2010) Kane et al.,2014; Jarvenpaa et al., relation 2015).

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