

THE ROLE OF MANUAL SKETCH UPLOADS ON INSTAGRAM TO UNDERSTANDING PLACE IDENTITIES: A SYSTEMATIC LITERATURE REVIEW

AUGUSTINUS MADYANA PUTRA¹, GAGOEK HARDIMAN², AGUNG BUDI SARDJONO³,
GERALDO FREDO EMOR⁴, EVARISTUS DIDIK MADYATMADJA⁵

¹ Departemen Arsitektur, Fakultas Teknik, Universitas Atma Jaya Yogyakarta, Indonesia

^{2,3} Department of Architecture, Universitas Diponegoro, Semarang, Indonesia

^{4,5} Information Systems Department, School of Information Systems, Bina Nusantara University, Indonesia

E-mail: ¹ madyana.putra@uajy.ac.id, ² gagoe@arsitektur.undip.ac.id, ³ agungbudisardjono@lecturer.undip.ac.id, ⁴ gerald.emor@binus.ac.id, ⁵ emadyatmadja@binus.edu

ABSTRACT

Today, Instagram becomes an option for many people to share their experiences. They uploaded photos and sketches that were related to their experiences. Their sketches are usually captured the uniqueness of a place, which differentiates one place from another. This unique character is a place identity. On the other hand, the rapid development of functional demands can affect the sustainability of place identities. This paper attempted to bridge these problems and potentials through literature reviews. The review results showed that sketches are a very sharp tool in revealing the place identity. Meanwhile, the advancement in information technology through social networking sites (SNS) makes these messages easily and quickly known and evaluated by many parties. The knowledge obtained can be input for many interested parties to manage and well preserve place identities.

Keywords— *Social Networking Sites, Instagram, On The Spot Sketch, Place Identities*

1. INTRODUCTION

The power of 'place' in a city gives a particular meaning to those who experienced it. The uniqueness can be in the form of landscapes, city artefacts (buildings), sensory attractions, and current events. Those identities can distinguish one "place" from another "place". However, in China, the rate of urbanization can threaten the identity of a location or place [1]. Opportunities for managing identity preservation of a 'place' can be made possible with good coordination with stakeholders. Meanwhile, sketching is an excellent strategy to analyze the visual appearance to gain knowledge about the characters of a place [2].

Recently, many visitors do manual sketching on a location as a hobby. They visit a place of interest, select objects, and record them in manual sketches. The manual sketch is the result of careful observation of an existing object [3]. These sketches are usually accompanied by specific

information about the location, atmosphere, and other information (figure 1).

A study by [4] stated that Instagram is the most prominent image-based Social Networking Sites (SNS). Instagram is an application that allows users to share photos and videos, create and share stories, and edit photos to be more attractive. Someone's memory will be appropriately recorded using this application. Various convenience features greatly help Instagram users in expressing emotions in uploaded images [5]. Meanwhile, manual sketches combined with SNS can increase sensitivity to encourage communication and improve student abilities [6]. However, existing studies have not discussed the understanding of place identity associated with the data uploaded by sketchers.

Based on these studies, the systematic literature review aims to answer: do manual sketches uploaded on Instagram provide new knowledge about place identity? At the next stage,

this understanding is expected to help maintain the place identity.

The knowledge obtained from this review article is expected to give a strategic answer regarding the important role of today's information technology in increasing knowledge in the architectural field.



agust_mp

Lebuh China, Georgetown, Penang



Fig. 1. Example of sketching on the spot in the tourism destination

2. BACKGROUND STUDY

An observation image attempts to duplicate a visual image as close as possible to the original data. The data is transferred in the form of signs on working paper sheet [7]. However, this sketching activity has a more profound impact. In line with daily practices, the sharpness of object observation and image representation will improve. An observation of an object through manual sketching can formulate complex visual appearance characters to be better understood [2]. Each person has a specific and unique sketch character that becomes a personal characteristic (figure 2).

A sketch is a very effective medium for thinking and communicating. Several studies stated that the brain helps to process a problem through sketching activity. The simple and ambiguous scribbles help the translation of complex visual messages (processing reason) [8].

Sketching activity can help to create fresh ideas, then added with new details and shapes in short time. Research by [9] showed six tools in the manual sketching process.

2.1. Thinking tool

Sketches are a means to produce, process, create, and test ideas (visual inspiration, developing, finalizing design ideas, imagining,

finalizing observations). Moreover, sketches positively impact design quality and individual experiences [10]. This positive ability is associated with solving a design problem fairly efficiently and creating several alternative solutions with excellent ideas. Finally, the simple image can present something "intangible" to "tangible; "a very important thing in a design thinking process.

2.2. Communication tool

Manual sketches are a medium of communication between designers and themselves or with other designers, owners, and subordinates. The dialogue between them is an attempt to translate abstract ideas into a design and to communicate findings in a group or community.

Strikingly, freehand sketches are essential communication tools at the stage of a design argument construction of new design product (NPD) [11]. These representations can be immediately drawn; thus, they assist planners with creating ground-breaking thought just as to comprehend which NPD issues they need to address. Also, research by [12] stated that sketches are communication tool of someone with unique characters to increase responsiveness and imagination. This helps in improving human-PC cooperation in the geospatial data framework.

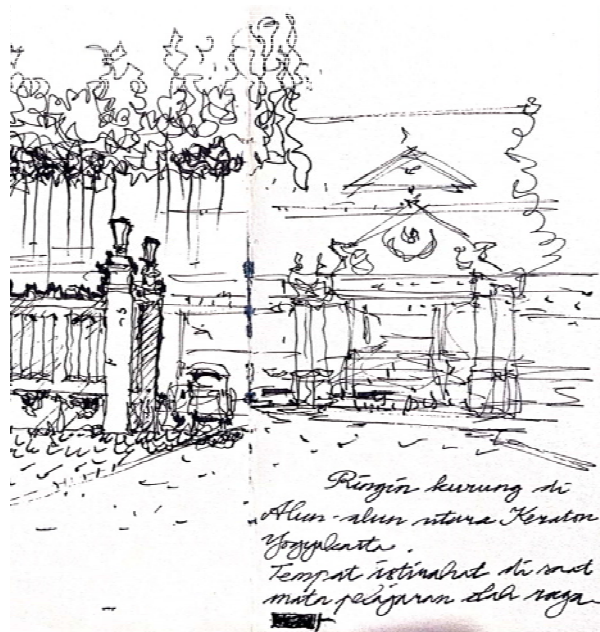


Figure 2. Sketch of the Yogyakarta Kraton (Palace), Indonesia with a brief narrative description at the bottom right corner. This picture is an example of design thinking and communication tool.

2.3. Interpretation, Analysis, and Comparison tool

Sketches help in explaining a design problem, and making it clearly. These diagrammatic drawings help the designer present several design alternatives, select and compare the advantages and disadvantages of one another.

Sketches are utilized to make association among depictive and illustrative information and relate the ideas of capacity and structure [13]. Besides, draws pass on explicit implications dependent on their self-sufficient properties, which rise out of the translation of the connection between components. The way that representations could be made rapidly and effectively makes them an incredible mechanism for investigating and tackling plan issues.

2.4. Expression of Innovation

Each individual's expressions at the early design process will become more apparent because of sketching activity. This activity includes the innovation process and also the expression of ideas. In initial stage, a designer produces several designs that help in crystallizing the design idea in a more definite orthogonal image. The development of computational technology allows the availability of tools that make the crystallization of these ideas more detailed and accurate. However, in the early stage, sketches cannot be replaced by computers [14].

2.5. Exploration and Development tool

Sketches help in exploring design problem to be more specific, finding alternative solutions, and initiating ideas of early designs. The use of sketches in one of the learning stages helps improve learning outcomes [15]. At the next stage, a sketch is an "external representation" of an industrial product design [16].

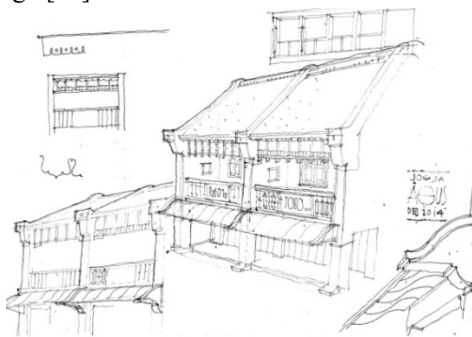


Figure 3. In thinking about a design, architects can do several sketches on one sheet of paper to explore design ideas.

2.6. Documentation tool

Sketches help the good eye-hand coordination. This helps the process of documenting a design work in a worksheet.

The core of documentation activity is understanding important characters of an object. Sketching will help the analysis process of an object (architectural object) more accurately than using photography because it involves memory and judgment. Knowledge of architectural composition such as balance, symmetry, and unity, which are the characteristics of architectural displays, will be read clearly [2].

When people are drawing on the spot, they will observe that place. Drawing/sketching is an expression of experience. By drawing, people will pay more attention and understand the surrounding phenomena [3].

3. RESEARCH METHOD

This research used a systematic literature review, which is used to analyze and review the relationship between uploaded sketches on the spot and place identity. This method aims to summarize the factors that are the relationship between uploaded sketches on the spot and regional identity, based on existing journals. Google Scholar, Science Direct, Springer Link, Emerald, and ACM are online research databases selected for finding related articles (table 1). The five online research databases provide substantial scientific articles and journals from various fields of study, especially those related to personality and design.

Science Direct was chosen because it contains many journals related to scientific and medical research data. Then, Springer Link, ACM and Emerald contain several large diaries from various logical fields, such as business, executive, and brain research. Finally, Google Scholar was chosen because it contains educational journals.

4. RESULT

4.1. Study Found

The keywords Instagram Picture OR Instagram Photo OR Instagram Images AND Freehand Sketch OR Freehand Place Sketch OR Place Identity were used in the first searching, and 163 journals were obtained as a total. These journals were then checked manually whether they are relevant enough with to the topic.

4.2. Candidate Studies

In this stage, the 163 obtained journals can already be adjusted to the topic based on the abstracts and questions in the journals. 51 journals were chosen as the result.

4.3. Selected Studies

The chosen journals or research papers are following these criteria:

1. Focusing on the analysis of the relationship between manual sketch uploads on Instagram and place identities
2. The articles are following the research questions
3. The articles are published between 1996-2020.

Figure 4 shows the result of articles that meet all criteria. Then, Table 1 shows the number of studies that are chosen from online research database platforms.

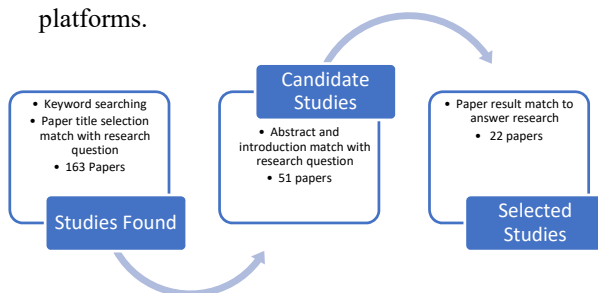


Figure 4. Searching strategy for systematic literature review

Table 1. Number of Studies in Selected Sources

Source	Studies Found	Candidate Studies	Selected Studies
Science Direct	58	29	11
Springer Link	11	5	1
Emerald	4	0	0
Google Scholar	86	15	8
ACM	4	2	2
Total	163	51	22

4.4. Candidate Studies

From 20 selected studies, the participants are 41 authors, six institutions and 21 universities (figure 5). Some authors write more than one research paper, but mostly the authors write one research paper. Those institutions and universities are located in various countries, such as USA, Sweden, Italy, Indonesia, Australia, South Korea, China, Netherlands, Austria, UK, Israel, Japan, Russia, Egypt, Canada, and Turkey (figure 7).

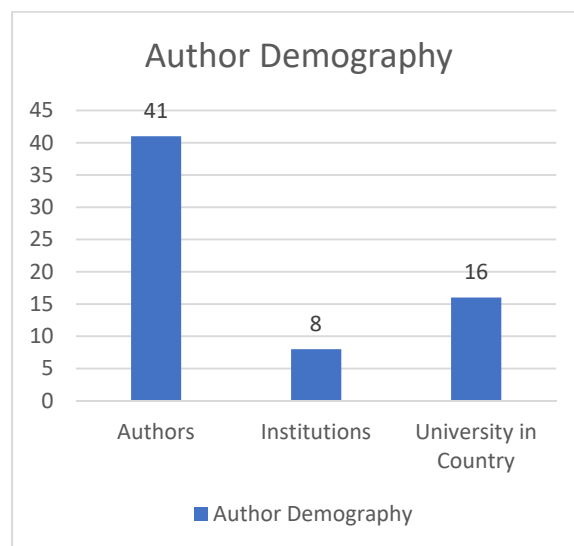


Figure 5. Author Demography

The authors are working in 21 departments: Computer Science & Informatics, Computer Science, Computer Science & Engineering, English Literature, Cultural Studies, Computational Perception, Land Resources Management, Cultural Geography, Agricultural Economics, Industrial Engineering, Interior Design, Environmental Psychology, Computer Science & Technology, Architecture & Built Environment, Architecture & Design, Architecture, Innovation and Management in Tourism, Applied Translation Studies, Business Law, Architectural Engineering, Psychology. Figure 6 shows the academic background of the authors and Figure 8 shows the universities of the country. The selected paper are the papers made between the year 1997 and 2019 as shown in figure 8.

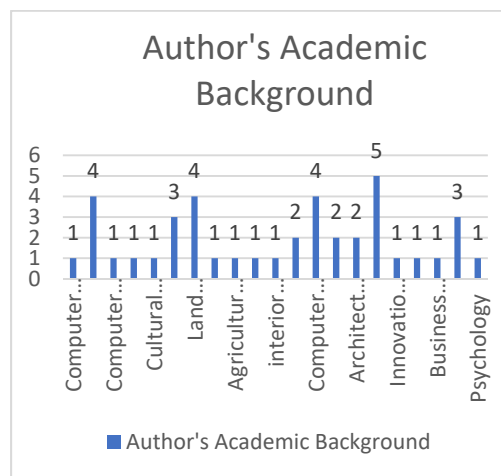


Figure 6. Author's Academic Background

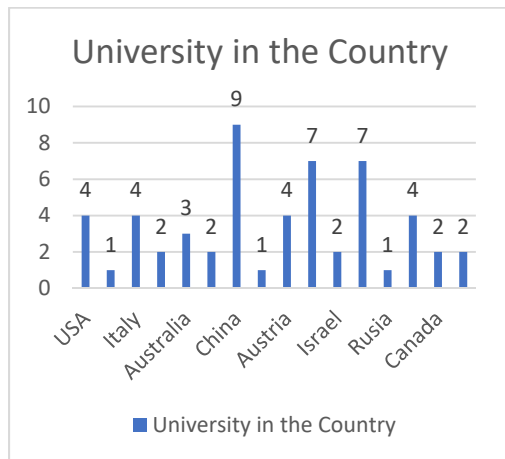


Figure. 7. University in the Country

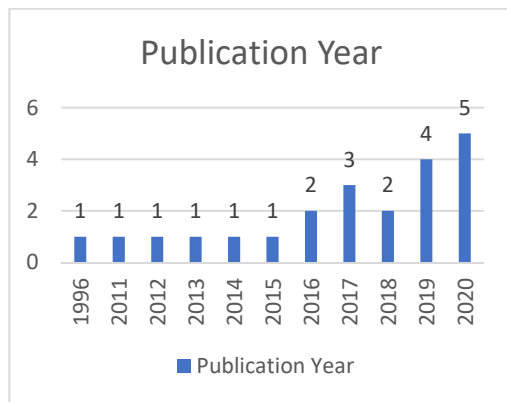


Figure. 8. Publication Year

4.5. Relationship Between Manual Sketch Uploads on Instagram and Place Identities

Place identity is an important thing, which differentiates one place from another. However, this identity is under pressure because of the development of city demands. It is necessary to understand some of the main points that shape place identity to be used as input for city management. Specifically, the research discussion is divided into several points. Those points are the role of sketch on place identities, the role of Instagram in communicating sketches, and the possibility of finding place identity compilers as input for stakeholders.

Sketches are the complete observation effort. This activity can analyse visual display in front of the sketcher. Drawing as a part of observation can be done in the studio or on-the-spot sketch. For some people, on-the-spot sketch has high difficulty. However, the information obtained during on-the-spot sketch is much more complete. Other stimuli

obtained in addition to visual appearance are sound, smell, touch, and other stimuli.

Research by [3] stated several reasons in sketching:

1. Appreciate a place

The object selection was starting from an 'appreciation' for that object. The observation that accompanies the on-the-spot sketch gives certain values that are more encouraging to understand the unique characters of location or place. This authentic experience will provide a unique understanding considering all human senses are working at the same time.

2. Understand the quality of a place

In understanding the quality of a place, someone must observe thoroughly. The presence of outdoor space, building composition, sensory sensation, events (carnival, social scenes, and others) are endless things to explore and understand. This understanding will further cultivate a certain admiration for the place.

Sketch objects typically include outdoor spaces, single buildings, groups of buildings, and landscapes. The sketcher usually gives a narrative on their finished sketch to describe the object, location, time of visit, and other supplementary notes.

Sketching is not only about drawing. This activity trains a person to see something in detail. So, drawing can be directly linked to learning [14]. Also, manual sketches are related to cognitive activity. This explanation corroborates a study by [2] which states that sketches can analyze complex visual displays. Several important patterns of group building arrangement can be clearly defined and stated. Fast drawing on location (on the spot) can record a stronger message than photograph, because the result of visual exposure is a filter of all awareness.

The visual observation, which is assisted by other supportive ambiances, produces a distinctive original image. The parts that are considered unimportant are usually not shown in the sketch, so this simple drawing is the essence of sketchers' thought.

The unique appearance of a place or location is an identity. This component is something that the residents remember.

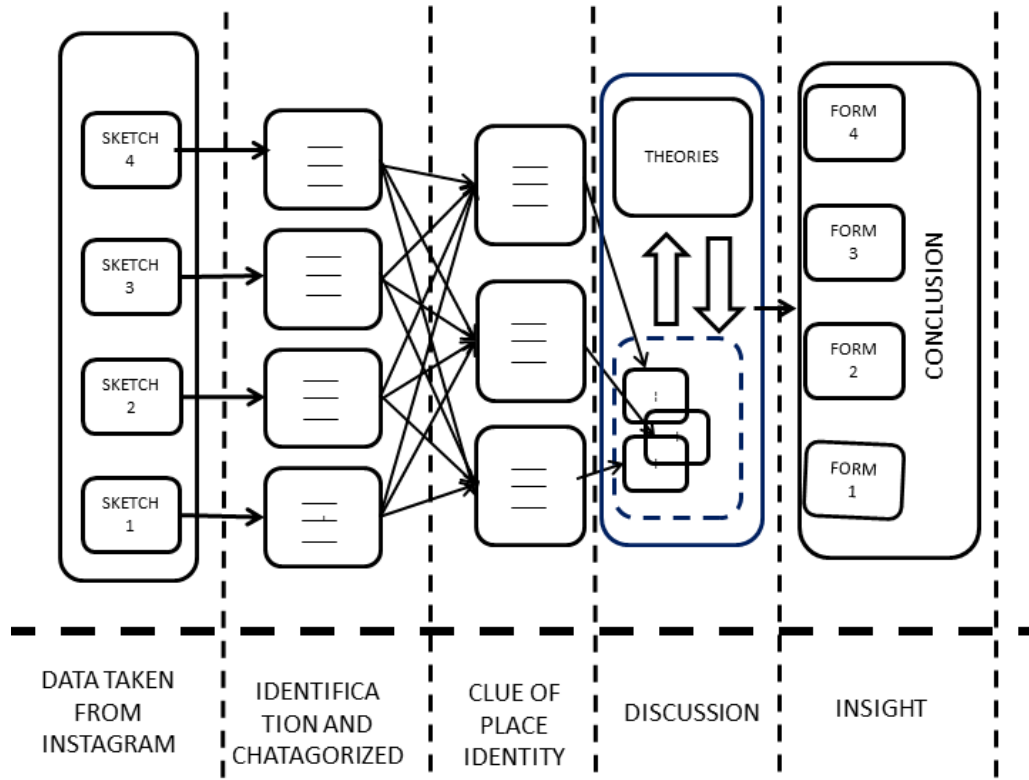


Figure 9. Steps in finding place identities through a sketch uploaded on Instagram

Research by [1] stated two important things that are interrelated. The first thing is the place identity in the form of natural conditions, culture, architecture, and others; which emerged from the discussion results of policymakers and discussions conducted by certain groups such as activists, travel industries, and others. This identity aims to identify one area with another different area. The second thing is the place identity that related to individual experiences toward the place. This identity is very personal and unique. These two things do not stand on their own but depend on each other automatically. A person's perception of place depends on how much the place takes part on their life so that the communication is interpreted as having a special character. Accordingly, people's relationship with places is reflected in the characters they attribute to these spots that are thusly joined into their own personalities.

Refer to research by [3] and research findings of [17] can be stated clearly using sharp media that is a sketch. The uniqueness captured by sketches

can be shared with many people because of the development of information technology.

SNS content can provide a development boost among colleagues. Comments and discussions on the content can also help create more intense communication. Indirectly, the content in the form of visual displays will provide an education for netizens. Based on figure 9, the collection of sketches can explain place identities. Sketches obtained with the same hashtag (can indicate the same location) were collected to be categorized. The first stage is to provide a description of the location and name of a sketch object. Then, it is followed by finding part of an object to be completed in detail. The detailed part is usually the parts that catch the sketchers' eye. If the identified sketches are quite a lot, it can be seen that the object or element is repeated. High frequencies are probably a very distinctive object.

Other data that need to be noted are narrative written on the sketches and netizens' comments. The explanation can be in the form of a location

name, name, criticism, or hope for the object. This information becomes important data that can be analyzed to obtain items that explain the expected aspects of the sketch object.

Typically, Instagram users uploaded several contents, such as architectural buildings, art, dress, instruments, plant science, kid's shows, creatures, food, sports, vehicles, hardware, infants, amusement, adornments, etc [18]. This post is shared with the followers with extreme care. Moreover, the content allows the uploader to communicate with their current networking and other related parties [19].

Overall, those uploaded contents are related to spaces as activity places and records of social life that happened in that places. Closely, this content is a unique identity that will be communicated to other Instagram users. The uploaded image can be in form of photos or sketches. Meanwhile, sketch objects are a careful choice from the sketcher about the uniqueness of place [3]. Moreover, a study by [20] showed the importance of clarity of place identity attitude in enhancing place architecture attitude and managers' identification. Instagram post is not just about functional needs but also reflects certain commitments and experiences.

The elements of a place identity discussed in this paper are: landscape elements [1], architectural elements [2], and the characteristic of social life. These elements will be described as follows:

4.5.1. Landscape Element

Research by [1] stated that landscape element is one of elements that create place identity. Generally, the landscape gives a solid character to the place. This landscape is appearing as vegetation, land contours, rivers, lakes, and others. These landscapes not only contribute visually but also other sensory contributions, such as temperature, scent, sound, and texture. The preservation of these landscapes is usually very vulnerable to the development of the functional demands of the place which are increasingly complex. Thus, information about the landscape condition in a site is important for its sustainability management in the future

4.5.2. Architectural Element

The presence of historical buildings shows a solid identity to a place. The study by [2] explained the process of searching for the uniqueness of the old building façades at Gamal Abdl Naser (GAN) in detail through manual sketches. The elements analyzed are composition, proportion, endings,

window and entrances, demarcation, building heights, ornament and details, and building surface.

Composition means to organize. The composition can be in the form of each element or the overall composition of the building façade. In general, the composition of the old building façades at GAN is divided into three parts: the base, the middle, and the top that equipped with ornaments.

Demarcation is the emphasis of horizontal or vertical lines on the façade. The horizontal line position of the old buildings in GAN aims to reduce the impression of a bulky building.

Proportion is the relation between elements in the façade. The proportion of old building façade in GAN consists of a similar solid void arrangement, although the detail in this solid void is quite varied. Almost all the old buildings used golden section principles in arranging solid void elements on the façade.

Building height is the arrangement of various heights of buildings located in a site. The existing buildings in GAN have an almost consistent height according to its function. These buildings' height ranges from three to four floors. This constant height allows for uniformity as it is viewed from the pedestrian area.

Endings. This component is an important element in building composition to state the ending of the overall composition. The old buildings in GAN end with cornice or cornice with parapet. These two elements can easily be seen from the pedestrian point.

Ornament and details. The old buildings in GAN have very high visual quality detail. The part of building equipped with ornaments and details are brick sill, parapet design, windows, cornice building, decorative column, and entrance. Those elements become the characteristic of building façade and attract the attention of users and visitors.

Windows and Entrance. The pattern that is applied to buildings in GAN tends to form symmetrical patterns. The void is indented, with a void - solid ratio is approximately 25 - 40%.

Building Surface. The buildings' surface in GAN is varied. The application of window details, cornice details, pilasters, columns, and parapets makes the overall composition very rich.

The characteristics of façades in other places will be different. However, the study by [2] can be a reference to look for the distinctive characteristics of architectural façade in other places. The elements that are analyzed and analysis method of each place can be modified according to its place.

The design principles of façade that are found in the old building can become guidance in

designing the new building around the old building. The new building is not duplicating old building, but designing with existing guide will form a unity in the area. The explanation of the findings and the guideline of façade characters is a verbal description and completed with sketches. Sketches help the users to have a clearer picture.

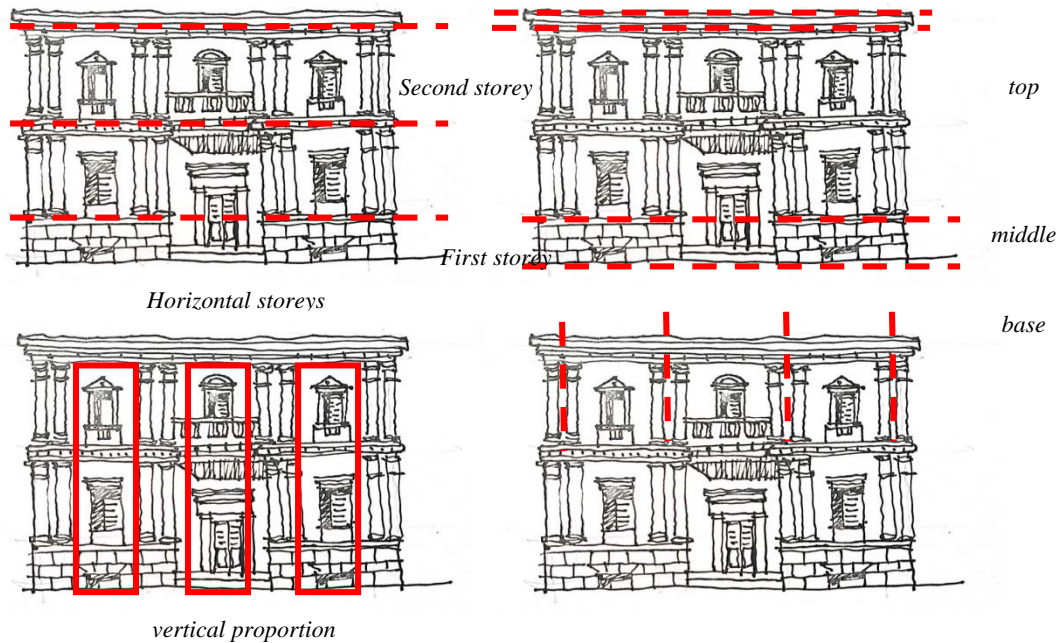


Figure 10. The characteristic of old building façade in Gamal Abdl Nasser (redrawing from M.M. Imam et al., 2016)

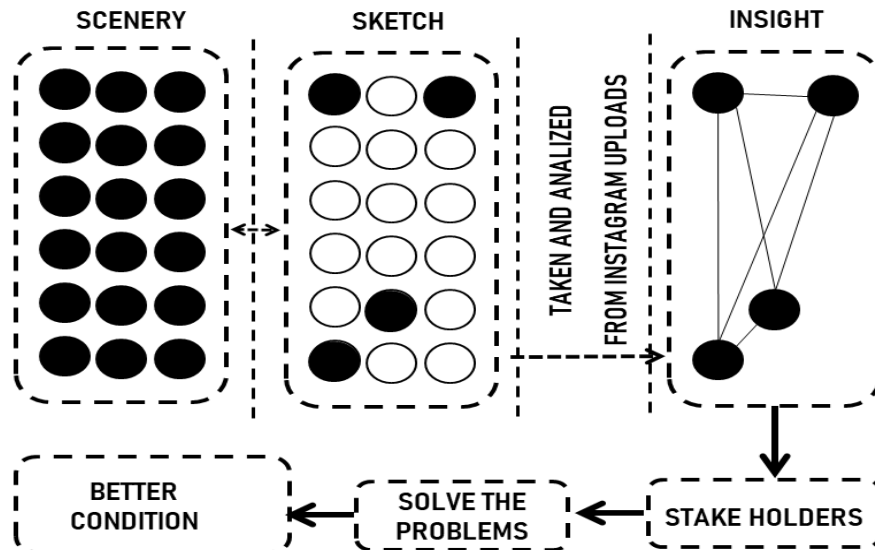


Figure 11. The finding of place identities based on data of manual sketches uploaded on Instagram can be an input for stakeholders as an alternative solution to problems

4.5.3. The Characteristic of Social Life

The social life that exists in society is a highly complex matter. However, several events that are held regularly help explain the characteristic.

The detailed discussion of place identity and sharing through Instagram, which can be continued as input for stakeholders, can be seen in figure 11. It is hoped that stakeholders can adopt several policies to maintain place identities.

So, when sorted into several points, the important things obtained in this discussion are:

- Sketches can give a unique understanding to the sketcher regarding the uniqueness of a place.
- Sketches can help analyze in finding a place identity
- Sketches have communication power to others
- Instagram can communicate someone's ideas and expressions more powerfully
- Information from Instagram can reach several communities of Instagram user and actively invite them to conduct evaluations.
- Sketches uploaded on Instagram can be used as information for stakeholders and the Instagram user community to help each other maintain place identities.

5. CONCLUSION

Sketches have several features, and this activity can enrich people's visual memory, sharpen the thinking process, and ease communication with other parties. The simple drawing is the essence of complex environmental conditions. Also, this simple drawing is one of a collection of identities owned by a place.

The existence of Instagram as a popular SNS allows information to reach a wide range of users. This content will receive feedback as an evaluation. Important points forming the place identity are possible to be obtained and then can be used as input for policymakers in the future.

Further research that can be done is defining in more detail the components that form place identity based on sketches uploaded on Instagram, which can help the government make more concrete decisions.

ACKNOWLEDGMENT

The author is grateful to Department Arsitektur, Fakultas Teknik, Universitas Atma Jaya Yogyakarta, Indonesia for the support and

discussion to realize the ideas contained in this paper.

REFERENCES

- [1] J. Peng, S. Yan, D. Strijker, Q. Wu, W. Chen, and Zhiyuan Ma, "The influence of place identity on perceptions of landscape change: Exploring evidence from rural land consolidation projects in Eastern China," *Land use policy*, vol. 99, p. 104891, 2020.
- [2] M. M. Imam, A. F. Bakr, and Y. M. Anany, "Use of freehand sketching: Documenting heritage buildings, Gamal Abdel Nasser Street (1830–1930), Alexandria, Egypt," *Alexandria Eng. J.*, vol. 55, pp. 2749–2764, 2016.
- [3] H. Budiman, I. Numan, and N. C. Idham, "From Observing to Imagining the Opportunity of Freehand Drawing in Digital Era," vol. 192, no. EduARCHsia 2019, pp. 187–193, 2020.
- [4] E. Kocak, V. A. Nasir, and H. B. Turker, "What drives Instagram usage? User motives and personality traits," *Line Inf. Rev.*, vol. 44, no. 3, pp. 625–643, 2020.
- [5] Y. H. Kim and J. H. Kim, "Using computer vision techniques on Instagram to link users' personalities and genders to the features of their photos: An exploratory study," *Inf. Process. Manag.*, vol. 54, no. 6, pp. 1101–1114, 2018.
- [6] S. N. Chen and D. B. Luh, "A social network supported CAI model for tacit knowledge acquisition," *Int J Technol Des Educ*, vol. 28, pp. 613–630, 2018.
- [7] F. Perdreau and P. Cavanagh, "Drawing experts have better visual memory while drawing," *J. Vis.*, vol. 15, no. 5, pp. 1–10, 2015.
- [8] W. Sei and -Wo Tseng, "Can visual ambiguity facilitate design ideation?," *Int J Technol Des Educ*, vol. 28, pp. 523–551, 2018.
- [9] E. N. E. A. Mohamed, "The Impact of Digital Architecture on Freehand Sketches through Design Process," *Emirates J. Eng. Res.*, vol. 19, no. 1, pp. 49–60, 2014.
- [10] M. Schütze, P. Sachse, and A. Römer, "Support value of sketching in the design process," *Res. Eng. Des.*, vol. 14, pp. 89–97, 2003.
- [11] H. Lee, "From Sketch to Screen, from Scratch to Competence," *Int. J. Art Educ.*, vol. 36, no. 3, pp. 303–314, 2017.
- [12] M. C. Chipofya, C. Schultz, and A.

- Schwering, "A metaheuristic approach for efficient and effective sketch-to-metric map alignment," *Int. J. Geogr. Inf. Sci.*, vol. 30, no. 2, pp. 405–425, 2016.
- [13] S. Ekwaro-Osire, R. Cruz-Lozano, H. B. Endeshaw, and J. P. Dias, "Uncertainty in Communication with a Sketch," *J. Integr. Des. Process Sci.*, vol. 20, no. 4, pp. 43–60, 2016.
- [14] G. Goldschmidt, "Manual Sketching: Why Is It Still Relevant?," *Act. Image*, vol. 28, pp. 77–97, 2017.
- [15] K. Nieścioruk, "The Use of Mental and Sketch Maps as a Tool to Evaluate Cartography Teaching Effectiveness," *Cartogr. J.*, vol. 53, no. 2, pp. 186–196, 2016.
- [16] M. Mengoni, M. Germani, and F. Mandorli, "Reverse engineering of aesthetic products: use of hand-made sketches for the design intent formalization," *J. Eng. Des.*, vol. 18, no. 5, pp. 413–435, 2017.
- [17] B. Garnier, M. Chang, C. Ormand, B. Matlen, B. Tikoff, and T. Shipley, "Promoting Sketching in Introductory Geoscience Courses: CogSketch Geoscience Worksheets," *Top. Cogn. Sci.*, vol. 9, no. 4, pp. 943–969, 2017.
- [18] B. Ferwerda and M. Tkalcic, "Predicting Users' Personality from Instagram Pictures: Using Visual and/or Content Features?," in *UMAP '18: Proceedings of the 26th Conference on User Modeling, Adaptation and Personalization*, 2018, pp. 157–161.
- [19] K. Budge, "Visually Imagining Place: Museum Visitors, Instagram, and the City," *J. Urban Technol.*, vol. 27, no. 2, pp. 61–79, 2020.
- [20] M. MahdiForoudi, J. M.T.Balmer, W. Chen, P. Foroudi, and P. Patsala, "Explicating place identity attitudes, place architecture attitudes, and identification triad theory," *J. Bus. Res.*, vol. 109, pp. 321–336, 2020.