Four Functions of Ujung Berung Square Based on Visitor Activity, Duration, and Motivation

Amanda Rahmalia Syafitri[1,*], Yemima Sahmura Vividia[1], Hanson E Kusuma[1]

[1] *School of Architecture, Planning and Policy Development, Institut Teknologi Bandung, Indonesia*
[*]*Corresponding author. Email:* amandarahmalias@gmail.com

ABSTRACT

Town squares or alun-alun, as an open space of a city in Indonesia, accommodates a recreational area for residents. Simultaneously, many town squares are developed and managed to meet the needs of a rapidly growing urban population. Ujung Berung square, which was revitalized in 2014, is interesting because it has been used as a place for residents' interaction activity. The digital era development that can change a person's behavior in interacting does not make Ujung Berung square empty of visitors, so this town square's function needs to be revealed. This qualitative study used grounded theory to discuss the background of a phenomenon through respondent data. The data were collected by distributing online questionnaires. The correspondence between visitor activities with motivation and time duration indicates the four functions of Ujung Berung square, namely the recreational, community, explorative, and athletic. Recreational function accommodates recreational activities with a duration of less than one hour. Explorative function accommodates culinary activities with a duration of one to two hours. Athletic function accommodates sports activities with a duration of two to three hours. The association function accommodates social interaction activities with a duration of more than three hours. The hypothesis findings form the basis of designing Ujung Berung square that can be optimized in its activities and fulfill people's needs.

Keywords: Town Square, Ujung Berung, Activity, Motivation, Duration.

1. INTRODUCTION

Information and Communication Technologies (ICTs) have spread and been applied in everyday life unprecedentedly. Social media and digital technology accompany urban city dwellers. The profound innovation of the internet, smartphone applications, and digital social networks encourage people to be more socially connected through virtual spaces rather than physical public spaces.

The development continues to develop rapidly in technology, applications, and services used in everyday life. Contacting friends, organizing banquets, buying goods, and many daily activities are now done online. The younger generation tends to be less involved with parks or public open spaces than the previous generation [1]. An article published in National Geographic in October 2016 entitled "The Power of Parks: Unplugging The Selfie Generation" discusses concerns about how the technology inherent in the younger generation has implications for developing a generation less connected to parks and public areas [2].

Bandung History Expert, Haryoto Kunto, in Wajah Bandoeng Tempo Doeloe, stated that Bandung was once known as the village of Bandoeng or West Oedjoengbroeng, so that it could be interpreted that Bandung was part of the Ujung Berung area, not vice versa [3]. The rapid expansion of the village of Bandung to dominate the territory of Oedjoengbroeng, shifting the name of the Oedjoengbroeng area to Bandung. In 2014, Ujung Berung square was revitalized by the regional government, and the public once again visited the city's open space. The digital era's development that changes a person's behavior in interacting does not make the Ujung Berung square empty of visitors. Thus, the function contained in the meaning of this square needs to be revealed.

Creativity is an essential skill in the 21st century [4], so that city designers, government, and society need to solve problems in restoring the function of open space for the community. This study identifies Ujung Berung square's role after revitalizing the public space design based on user activities, duration of activities, and reasons for visiting. This grouping then becomes a

reference for open space designers to accommodate visitors' needs and activities in the digital era.

Ujung Berung square is interesting to be investigated because residents use it as a place for interaction. This study identifies the extent to which the internet's role affects Ujung Berung square after the revitalization based on user activity, duration of activities, and the reason for the visit. This grouping then becomes the reference for the designer of the square's open space to accommodate visitors' needs and activities in the digital age.

2. LITERATURE REVIEW

2.1 Alun-alun is a city public space in the digital era

The square or *alun-alun* as a form of public space in Java is a legacy of the former Majapahit Empire. The concept of a traditional plaza with a Hindu style has been maintained, even to the Demak and Mataram Kingdoms (aged 13-16), which adhere to Islamic values [5]. The city center was marked by the presence of *alun-alun* (square), *pendopo* (center of government), *pasar* (market), a place of education (school), and a place of worship (mosque). During the Dutch colonial period, the local authorities made the city center concept be applied to the development of districts around cities in Java (16th century). In this digital era, the square strives to be maintained as a public space and a city identity [6].

Research findings related to features, meetings, and interactions in public spaces show society's value and social benefits, both individually and collectively (in communities) [7]. Roads, squares, plazas, markets, parks, green spaces, green lanes, community gardens, and playgrounds have important roles in maintaining environmental quality, protecting nature, and public health [8]. However, to achieve these benefits, people need an accessible, safe, easily accessible environment by walking, cycling, relaxing, or participating in recreational activities. These are what make people more open to interacting with neighbors and communities [9].

2.2 Meditated public space: A need for encouragement for the digital age

The rapid development of digital and mobile technologies (global internet access, smart devices, embedded computing, and wearable sensors) is continuously being enhanced and changing how people communicate, socialize, work, and learn. This phenomenon creates an interconnected world and removes the boundaries of socio-political taboos. On the other hand, ICT opens up new public spaces opportunities to meditate as assets in city settings [10].

The challenge is to utilize digital technology in creating an environment that is sensitive to the need to bring people closer to the environment and lead an active lifestyle [9].

This multi-connectivity variable of the meditating public space redefines the stakeholders associated with the individual and his environment, between citizens and the government, challenging social scientists, urban designers, and ICT developers to contribute. The urge to cultivate the multidisciplinary team needed to solve physical inactivity, social isolation, threats to individual rights and privacy, cybercrime, and personal data flow is present as adverse effects of technological developments in the digital era. Not surprisingly, one of the components that make up cities is data [11]. Unfortunately, many policymakers often refer to the role of technology and information as separate things in designing public spaces [12].

The real involvement of local communities is significant in changing the urban environment [13-14]. A smart city is a city concept that departs from conscious public awareness to build awareness as an individual and a community. This concept is not implemented well because its policies do not empower citizens as active players in their city. Smart city policies that are carried out with the digital era approach are obsessed with high-tech solutions, assuming that technological improvements will automatically solve complex city problems. The diverse character of society with the development of technical sophistication is accessed by these people demands to know the needs of users of public space so that a significant increase in the quality of life can be obtained.

3. METHODOLOGY

This study used a qualitative method with a grounded theory approach to reveal the interrelationships between phenomena. This approach has several analysis stages, namely open coding, axial coding, and selective coding [15], in which this study used to translate respondents' open-ended answers. The respondents are Ujung Berung square visitors. The open coding stages collect all the keywords (meaning segments) from the respondent's open answers and group them into several groups (code words, category, and main category), which results in an analysis of the frequency distribution to interpret the phenomenon (Table 1). Furthermore, to hold axial coding, a search for relationships between groups is carried out through correspondence analysis. A cluster dendrogram would illustrate the results of this analysis for the relationship between categories. Finally, the selective coding stage results would formulate a hypothesis that provides complete knowledge of the open space phenomenon that is being expressed. The data collected were analyzed using conventional content analysis. This study used

experimental techniques by collecting all data without adequate knowledge before [16]. The researcher did not use pre-conception or hypothesis at the beginning of the study. The researcher tries to explore the factors underlying the phenomenon through respondent data.

This study's data collection method was carried out by distributing online questionnaires. Non-random sampling used the snowball technique by sending questionnaires from one person to another group [16]. The distribution of questionnaires was not limited to population age groups or groups in certain areas. The questionnaire contained respondents' demographic questions and some questions about Ujung Berung square regarding whether or not they have ever visited, the motivation of visits, duration of visits, number of visits, and suggestions for developing the square. The respondents who had never visited Ujung Berung square were asked related to the type of questions about other squares that have been visited. Questions were submitted to respondents who were constrained in their visits, both those who have visited and those who have never visited for Ujung Berung Square's development. The data collection took place for one week in September 2019. The data collected and processed were 203 respondents, and 109 of them have visited Ujung Berung Square, and 94 respondents have never visited Ujung Berung Square.

The respondents came from various cities/districts and provinces and were not limited by certain research conditions. The majority of respondents were from Bandung. Other respondents came from Sumedang, Jakarta, Denpasar, Serang, Cimahi, Garut, Cibubur, Tangerang, Karawang, Pekanbaru, Majalengka, Purwakarta, Cibiru, Sukabumi, Depok, and Yogyakarta. The ratio of male and female respondents was balanced by 53 female respondents and 56 male respondents. Respondents were born ranged from 1965 to 1997. The largest number of respondents of the same age was 72 respondents born in 1996. In general, respondents were 84 workers, while the rest were students (19 people) or not working (6 people). Most of the respondents have an

undergraduate education (78% or 85 people), then followed by respondents with high school education (16% or 16 people), S2 (5% or 5 people), and junior high school (2% or 3 people). The collected data were then analyzed using qualitative data, namely open coding, axial coding, and selective coding.

4. RESULT AND DISCUSSION

The open coding analysis results were grouped based on code words from the meaning segments captured and interpreted by researchers from open-ended answers to visiting motivation. Furthermore, the categories formed were regrouped into more superficial category groups. One respondent's answer may contain one or more meaning segments, which become different code words and categories. As for the variety of segments that can be formed, one codeword or the same category is possible. The following is an example of the Open Coding process for respondent number 33 when asked about his motivation to visit Ujung Berung Square (Table 1).

4.1 Motivation for Ujung Berung Square Visit

Based on the given meaning segments, there are twenty-three categories of motivation for visits to Ujung Berung square. The various categories formed were regrouped into ten main categories, namely curiosity (n = 35), just happened to be passing (n = 32), recreational activities (n = 23), accessibility (n = 21), commercial activities (n = 13), social interaction (n = 11), college assignments (n = 7), healthy activities (n = 6), culinary activities (n = 5), and adequate facilities (n = 1). Based on frequency distribution, most visitors went to Ujung Berung square because of curiosity (n = 35) and just happened to be passing (n = 32). Reasons for rare visits were culinary activities (n = 5) and adequate facilities (n = 1).

The main motivation category of curiosity (n = 35) collects the category of curiosity (n = 35). The main motivation category of just happened to be passing (n =

Table 1 Open Coding Process on Respondent's Data in Ujung Berung Square

No	Respondents' Answer	Meaning Segments	Code Word	Category	Main Category
33	*Saat libur*[1,2]*, kerap kali teman saya mengajak untuk olahraga*[2] *di alun-alun Ujung Berung karena rumahnya*[3] *masih dalam satu kawasan berdekatan dengan alun-alun Ujung Berung.*[3]	*Saat libur, ...*	*Libur* (Holiday)	*Hiburan* (Entertainment)	Recreational activities
		Saat libur....Olahraga	*Olahraga* (Sport)	*Olahraga* (Sport)	Healthy activities
		...rumah... dalam kawasan deket alun-alun Ujung Berung	*Dekat Rumah* (Near home)	*Strategies* (Strategic)	Accessibility

32) comprises the categories of only passing (n = 28), transit (n = 4), and circulation (n = 1). The main motivation category of recreational activities (n = 23) comprises the categories of entertainment (n = 13), recreation (n = 6), rest (n = 2), stay still (n = 1) and sitting (n = 1). The main motivation category of accessibility (n = 21) comprises the categories of strategic (n = 19), accessibility (n = 1) and regional icons (n = 1). The main motivation category of commercial activities (n = 13) comprises the categories of selling (n = 7) and business meeting (n = 6) categories. The main motivation category of social interaction (n = 11) comprises the categories of waiting for people (n = 5), gathering (n = 4), interacting (n = 1) and doing activities around (n = 1). The main category of motivation for coursework (n = 7) brings together the categories of scientific research (n = 6) and coursework (n = 1). The main motivation category of healthy activity (n = 6) compiles the category of sports (n = 6). The main category of motivation for culinary activities (n = 5) compiles the category of snacks (n = 5). The main category of motivation for adequate facilities (n = 1) compiles the category of area (n = 1).

The sense of curiosity (n = 35) is the main reason people visit Ujung Berung square. The ease of obtaining information and the latest news with communication technology and digital media related to the newly revised square attracted residents' attention to visit. The Indonesian consumptive character is also reflected in public space visits as one of the tourist attractions. Two combined motivations for accessibility (n = 21) and reasons for just happened to be passed (n = 32) were the strongest factors for both visitors to go to the square. The ease of accessibility factor due to the closeness of settlements to the square was a factor in the public's higher reason to be visited [17]. The motivation to visit a park or public area is usually due to the park's attributes, namely features (facilities), conditions, accessibility, aesthetics, and safety aspects [18]. The analysis of motivation to visit the Ujung Berung square compared to the motivation to visit the park shows that several variables were contradictory or mutually reinforcing. The reason for visiting Ujung Berung square was quite large because this accessibility increased the security of access to encourage greater use of open space [19].

The reason for visiting to do recreational activities (n = 23) is included in one of the strong reasons. Looking for entertainment and recreation activities is carried out as a form of rest from the daily routine. Others express their silence and sit quietly for a moment leaving their daily routine. Open space design with green areas can reduce user stress. Facilities (n = 1), one part of the open space design, is one reason for the surrounding community to visit. Although the set of activities underlying this recreational activity varies, the reasons for the strategic location in the accessibility

category do not correlate and affect the increase in green urban space activities [20].

The motivations of commercial activities (n = 13), coursework (n = 7), healthy activity (n = 6) and culinary activities (n = 5) occupied the last place visitor motivation groups. Commercial activities (n = 13) encouraged square users to do marketing through social media or digital advertising. The rise of a home-based business with limited distribution devices made businesspeople run Cash on Delivery (CoD) or business meetings to deliver sales products to prospective customers. The square became a strategic CoD meeting location. Not only shipping goods, but the form of culinary business run by users is also carried out in Ujung Berung square. The motivation of culinary activities (n = 5), which was the reason for culinary sellers' presence, was because consumers tried to find food and beverage nearby. Reviewing online sales of food sold has increasingly influenced business activities. Good responses and even satisfaction with the culinary being sold brings a sense of security to buy and encourage the surrounding community to buy, and vice versa. Many businesspeople optimize the acquisition of good reviews from customers as one of the marketing efforts.

The motivation to attend to the square for coursework (n = 7) was a reason for the derivation of curiosity, a researcher's strong characteristic. Good research is born from the researcher's questions that have not been revealed in published research reports. Access to journals on the internet is increasingly encouraging learners to enrich their knowledge further. The presence of healthy activity (n = 6) to visitors to the square can be due to acceptance of the importance of healthy living, one of which is from the internet.

4.2 Visitor Activities at Ujung Berung Square

An open coding analysis was also carried out on answers to open-ended activities carried out by respondents in Ujung Berung square. The 25 types of respondent's activities were grouped into four main activities, namely recreation (n = 88), interacting (n = 67), culinary (n = 42) and sports (n = 6). Most visitors went to Ujung Berung square for recreation rather than exercise based on the frequency distribution.

The main activities in the category of recreation (n = 88) collect categories of pay attention (n = 23), sitting (n = 19), photograph (n = 12), walking (n = 12), refreshing (n = 7), playing (n = 5), rest (n = 3), recreation (n = 3), worship (n = 1) and read (n = 1). The main activities in the category of interacting (n = 67) collect the categories of selling (n = 12), taking pictures (n = 12), hanging out (n = 9), talking (n = 8), waiting (n = 7), gathering (n = 6), meeting (n = 5), shopping (n = 4), discussing (n = 2), dating (n = 1) and accompanying (n = 1). The main

activities in the category of culinary (n = 42) collect the categories of snacks (n = 28), eating (n = 7) and drinking (n = 7). The main sports category (n = 6) compiles the exercise category (n = 6).

Two main activities that are the most diverse of the four activity groups were recreation and interacting. The square is a place for recreation (n = 88), where activities include sitting, resting, taking photos, watching, refreshing, walking, recreation, worshiping, playing, reading, and taking notes. Recreation activities become fatigue relief activities from daily routine and can be done independently. These activity groups only benefit themselves and become an internalization plan as a form of individual evaluation of the activities and decisions making. The city's public open space filled with green areas is suitable for accompanying visitors resting, relaxedly sitting, and reading a book. The momentum of a visit to this square can be immortalized in photos and uploaded to photo sharing services. Not infrequently, observations were accompanied by documentation of this visit written on a personal website. These activities produce large amounts of digital data (Big Data) to study community behavior patterns [21-23].

Interacting (n = 67) is the main category of the whole activities: discussion, talking, meeting, gathering, selling, hanging out, taking pictures, dating, shopping, waiting, and accompanying. Photographed activities are associated with groups of recreation and interaction activities. The majority of activities are carried out face-to-face or without communication technology intermediaries. Virtual communication connected to the internet occurs before a visit to make an appointment or ask about the person's position.

The other activities carried out by visitors in the square were culinary (n = 42) and sports (n = 6). Culinary attract visitors with the ease of information related to food, drink, or snacks accompanied by buyer reviews. Internet supports the rise of home-based business [24]. The presence of visitors who took the time to attend and use the square's facilities to exercise indicates that city residents understand health's urgency. At least, the respondents who engaged in sports activities encouraged to continue to promote the importance of exercising to maintain physical fitness with the development of information technology.

4.3 Relationship between Visit Motivation and Visitor Activity

Correspondence analysis was carried out to see the relationship between visit motivation and visitor activity. The motivation to visit Ujung Berung square is divided into ten types, namely accessibility, adequate facilities, social interaction, happened to be passing, commercial activities, culinary activities, recreational activities, healthy activities, curious, and coursework.

Based on the visitors' activities of the square, there are four types of activities: interacting, culinary, sports, and recreation. Based on the analysis, both have a significant relationship with P-Value 0.0001 and Likelihood Ratio 0.0001. Groups with activities to interact tend to have a motivation to visit to interact socially due to adequate facilities and commercial activities. The groups whose activities for culinary tend to be motivated because of the accessibility and accidental passing by. Unlike the case with groups that do sports activities, this group has a strong tendency because it is motivated to do healthy activities. As for groups with recreational activities, there is a tendency to be motivated to attend the visit because of curiosity, coursework, and recreational activities (Figure 1).
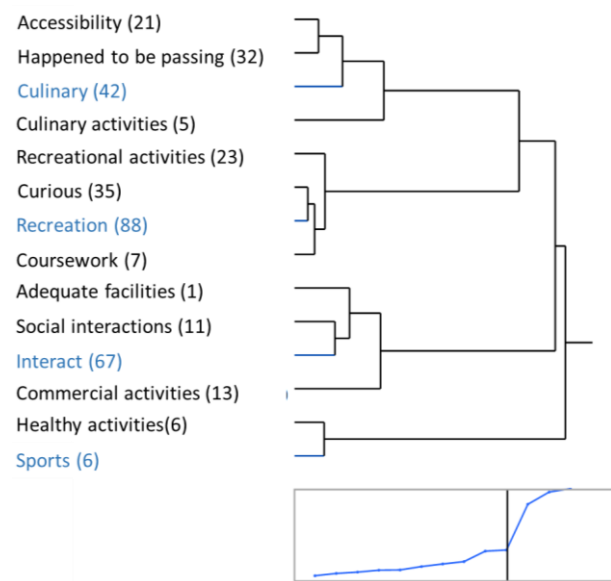

Figure 1 Dendrogram of Relationship Motivation Visit and Visitor Activity (P-Value 0,0001 and Likelihood Ratio 0,0001).

The motivation to visit can encourage visitors to do activities in Ujung Berung square. Specific motivation will direct visitors to do specific activities, such as people who are motivated to come to do healthy activities must have sports activities. Many visitors to Ujung Berung square started visiting with no definite reasons or because of curiosity. A curiosity of visitors drove them to do recreational activities, culinary, then to interact. The closeness of the dendrogram picture's tendencies (Figure 1) shows that four groups visit Ujung Berung Square, namely the explorative group, the recreational group, and the community and the athletic group.

Attachment of visitors to the open space can increase park visits by increasing motivation, activities, intentions of support for environmental care, building volunteerism and community involvement, adequate management support, compliance with rules, and visitor

satisfaction [25]. In this case, Ujung Berung Square needs to get visitor satisfaction by accommodating visitors' motivation to increase attachment to the place.

4.4 Relationship between Visitor Activity and Visit Duration

Correspondence analysis was also carried out to see the relationship between visitor activity and visit duration resulting in a significant relationship with a P-Value of 0.09 and a Likelihood Ratio of 0.15. Based on the results of the analysis, there are four groups: groups that have recreational activities that tend to have activities less than 1 hour; groups have activities that tend to interact for 3 hours, groups that have culinary activities tend to have 1-2 hours and sports activities group tend to have activities of 2-3 hours (Figure 2).
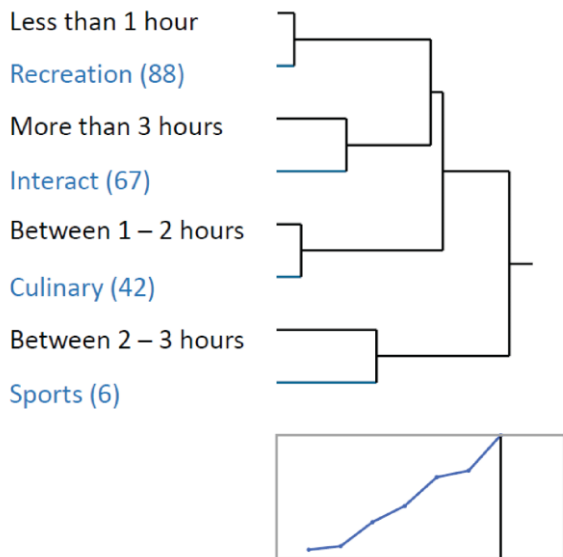

Figure 2 Dendrogram of Relationship between Visitor Activity and Visit Duration (P-Value of 0.09; Likelihood Ratio of 0.15).

The duration of the visit shows how much the motivation of visitors to linger in Ujung Berung square. The longer the visit's duration, the greater the visitors' involvement to move around in the park. According to the correspondence relationship results between visit motivation and visit activities, specific motivation for healthy activities with sports activities was carried out in the longest duration of 2-3 hours. Recreational activities were carried out in less than one hour. The longest duration occurred in interacting activities showed the character of visitors who like to socialize.

These four main activities serve as references for the town square planner to be accommodated in their design. The long duration activities need to get more attention to be carried out comfortably. The characteristics of users who are active in this open space

provide information on other special needs based on gender. Women who are active for a shorter duration than men [26] will affect the need for public open space. Enhancing public open space features as needed will increase visitor usage and activity [27].

4.5 The Hypothesis of the Four Functions of Ujung Berung Square

The relationship between the visit's motivation, visitor activities, and visit duration to the Ujung Berung square produces hypothesized findings of the four functions of the Ujung Berung square based on the four activity groups (Figure 3). First, the explorative function accommodates culinary activities for accessibility visits, incidentally through culinary activities. Second, the recreational function accommodates recreational activities for curious visits, college assignments, and recreational activities. Third, the community or association's function accommodates interaction activities for social interaction, adequate facilities, and commercial activities. Fourth, athletic function accommodates sporting activities for reasons of visiting healthy activities.
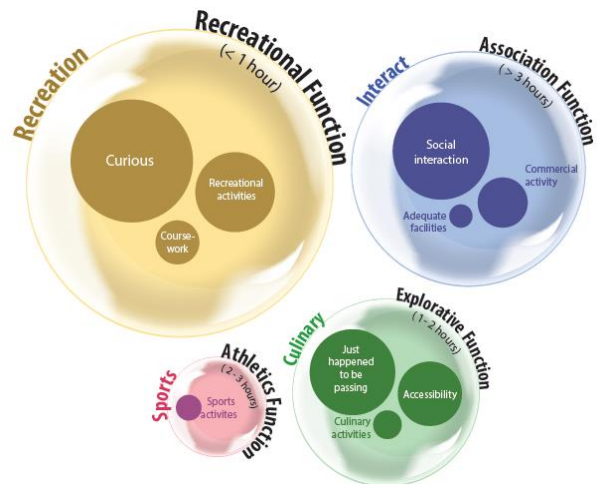

Figure 3 Visual Hypothesis Model of the Functions of Ujung Berung Square.

5. CONCLUSION

This study explains the correspondence analysis results of the relationship between visit motivation, visit duration, and user activities in the form of four Ujung Berung square functions, namely exploratory functions, recreational functions, association (community) functions, and athletic functions. This finding is expected to be the basis for designing other town squares in the digital era.

The research has some weaknesses in terms of discussion and data collection. This research has not yet shown that gender, income, and education level correspond to the activities. Furthermore, the collection

of research data by direct distribution is possible to provide different results so that this research does not yet have a high level of reliability. Further research needs to be conducted because the data collection in this one was only conducted once.

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