

# **FACTOR ANALYSIS FROM SEMANTIC DIFFERENTIAL ON THE PUBLIC PERCEPTION OF PUBLIC ART: CASE STUDY OF MALAYSIA NATIONAL MONUMENT**

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## **ABSTRACT**

This study aims to address the factors that outline public art factors assessment, memorial monument specifically. Memorial monuments hold significant and rich message, the intention of the monuments is to mark and commemorate important event or to inform younger generation about the past. Public monument is built for public and it aims to raise awareness about the significant issue. Therefore, by investigating the impact of the existing public memorial art, hopefully the findings will shed some lights to the upcoming public art projects' stakeholders in assuring the memorial message is delivered to the public directly and transparently. Public is the main actor as public is the fundamental purpose that the art was created. Perception is framed as one of the reliable evaluation variables to assess the public art impact factors. The Malaysia National Monument is selected to be the case study for the investigation. The public's perceptions were gathered using a questionnaire that involved (n-115) participants to attain keywords, and next Semantical Differential Methodology (SDM) was adopted to evaluate the perceptions about the memorial monument. These perceptions were then measured with Reliability Factor and then were factorised using Factor Analysis of Principal Component Analysis (PCA) method to acquire concise factors for the monument assessment. The result revealed that there are four factors that influence public's perception on the monument which are: aesthetic, audience, topology, and public reception. The study concludes by proposing the factors for public memorial art assessment for the next future public memorial projects especially in Malaysia.

**Keywords:** Factor analysis; Public art; Public perception; Semantical Differential Methodology.

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*Received: 5 April 2018*

*Accepted: 19 May 2019*

## **1. INTRODUCTION**

Since ancient times, public art assembles an important and integral aspect of numerous civilizations. It enhances the perceptions of viewers, increases their ability to be reflective and expresses their aesthetic perceptions (Sussman, 2013; Meusburger, Heffernan and Wunder, 2011). According to Sussman (2013), public art must be large, and the most effective public art is monument or sculpture. Its inherent and tangible components effectuate sculptors to mediate messages that can be shared and felt by the publics. The study aims to evaluate the public perception of National Monument, which will benefit many future stakeholders and artists in planning future public memorial monument, specifically. National Monument is selected to be the case study for the

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research investigation as it is one of the prominent historical monuments in Malaysia. As the monument was built in 1960's, it is important to re-evaluate the efficacy, importance and reliability of the monument in resurrecting memorial message to the public. This study addresses the factors of what do public think of the monument and provides variables for the stakeholders to consider when commencing future memorial monument projects. Ibrahim and Yoon (2014) stated that there are many monuments that were erected in order to reinforce the memory of some very important events in history connected with the places where these monuments are built. Memorial monuments can be used to tell a story, to mark a time or event in history (Connerton, 1989; Carr, Francis, Rivlin and Stone, 1992). Shifting the paradigm of the artist-centric work profile, public art that focuses on memorial monument aims to create awareness and acts as a symbol of certain events of a society. This shift gives monument a social function and has moved from large-scale, site-specific art into work with social content (Umbanhowar, 2005). Monument exists out of artists' integral role in civic planning, participating with elected authority to create works that illuminate our culture (Strong-Cuvas cited by Sussman, 2013). Besides the artists and authority collaboration, it is important to include the "public" as it is called public art after all. Public is an elementary audience and having a direct contact with things and making reflections around the experience and theory of place are important as the work of public art is being placed at its habitat permanently. Therefore, public perception is described as one of the key components to consider in realization of any public projects (Zebracki, 2011). In this paper, we are exactly interested in the perceptions of these 'publics' in regard to the memorial monument.

## **2. LITERATURE REVIEW**

### **2.1. *Public Memorial Monumen***

Public memorial is one of the public art projects that commonly be discussed due to its complex standpoint invites discursive analysis from the multi-perspectives of the related stakeholders (Cho, 2012; Sussman, 2013; Ibrahim and Yoon, 2014; Dwyer and Alderman, 2008). Memorial monuments are like reminders of cherished sanctioned memories that are exhibited in public space (Shanken, 2002). Memorial monuments are erected based on the commemorative events that take place around the remembrance of war. In recent years, works have been done on memory and race, as scholars from numerous angles have shown how the commemoration of wars helped to shape new relations within society. Memorial monuments are commonly commissioned by the legal authority to private sculptors and meant for public. Therefore, public monuments comprise a vast and multidimensional urban typology, which ranges from objects placed in a site to site-based works, to more transient and realistic works that explore dynamic processes, artistic and biological (Savage, 2007).

### **2.2. *Definition of Public Perception***

According to Dowler, Green, Bauer and Gasperoni (2006), public perception comprises information obtained from a public opinion survey. Public opinion is a collective view of a group of people who are asked directly what they think about particular issues. The perceptions accessed at one point in time from one individual are not necessarily representative of their views at other times, or in other contexts. Perception involves understanding and discernment and includes an element of decision and action as people choose to see things in certain ways, and the social and cultural determinants of those choices differ with time and place.

The process of perception has become a subject of interest for many researchers in a variety of fields: psychology (Gibson, 1950; Tomaszewski, 2004), especially behavioural and environmental psychology represented by (Proshansky, O'Hanlon, Ittelson, and Rivlin, 1977) and others, who analysed the use of behavioural maps; anthropology and sociology (Hall, 1966; Sommer, 1967; Lawson, 2001) as well as geography (Wood, 1992), urban environment research and town planning, developed by Lynch (1960) and Tuan (1977). Some of the fields of research interest are also the visual perception of art (Arnheim, 1954) and media in urban space (McCullough, 2004).

### **2.3. *Malaysia National Monument***

National Monument was erected in honour of the fallen heroes of the World Wars I and II, as well as the Malayan Emergency from the years 1948 to 1960. The idea of erecting the bronze monument came to the late Tunku Abdul Rahman Putra Al Haj, Malaysia's first prime minister, in 1960 when he visited the United States Memorial Centre war memorial in Arlington. The monument is one of the integral National Monument square components. It is located next to the Malaysian Parliament House. The square consists of a pavilion, fountain, garden, cenotaph and the monument. The current National Monument, is a composition of seven tall and bronze soldiers supporting their fallen comrades. The seven statues represent leadership, unity, vigilance, strength, courage, sacrifice and suffering. In front of this bronze monument lies a water fountain, which enhances the experience of visitor whilst adoring the monument. National Monument has suffered its own difficulties, undergoing extensive damage after an explosion was detonated by a communist rebel in 1975. The communists blamed the explosion on the Malaysian government, claiming that they needed a reason to rebuild the faces of the statues, which were perceived to have Caucasian features. The restoration took two years and now there is a fence set up between dusk and dawn to protect the area from any further attempts at destruction.

### **2.4. *Theoretical Position on Public Perception***

Art is rather symbolic than subjective, to evaluate the impact that it has on the audience, we need to recapitulate recent literature on similar assessment of impact as publics' perceptions were expressed in platitudes. This study adopted the public perception theoretical framework developed by Zebracki (2011). In his theorisation of public perception on public art, Zebracki has identified five important attributes of public perception of public art. The first two attributes relate to the publics, which are, the educational background of the publics and their familiarity with the public art. The other three attributes refer to their perceptions of the public art in term of the appropriateness, sociableness and meaningfulness.

#### **A. Educational background of the publics**

Perception is measured dependently on the subject (public) in this study, and therefore it is relevant to include the educational background of the publics as one of the attributes to measure public art. Education plays major role in filtering the publics' perception as it indicates the exposure and the thinking that the publics have been exposed to.

#### B. Familiarity with the public art

Familiarity in this context refers to the publics' familiarity with the public art, and their interest in art and their concern in art. It is important to acknowledge the locality of publics as this will ensure the findings are more coherent and reliable.

#### C. Appropriateness

Appropriateness refers to the relevancy of the perceived public art and the given space. The theory 'sense of place' and place making theory are related to this attribute. The study will look into the spatial elements of the space, the aesthetics of the public art and the relationship between the art and its context.

#### D. Sociableness

Sociableness in this study refers to the social aspect of the public art. The intrinsic value of any public art is its social relation to the perceivers. It also serves as meeting point and venue for people to appreciate or criticise the art.

#### E. Meaningfulness

Memorial monument should arouse memories of the event to the publics, as it should be able to transmit and mediate the meaning to the perceivers. Meaningfulness is another attribute of public perception of public art. Meaning is conveyed through its attractiveness, the narrative of the monument and the commemorative nuance that the monument possesses for the perceiver.

### **3. METHODOLOGY**

A mini pilot survey on public perception of National Monument was conducted at one of the local universities, Universiti Teknologi Mara (UiTM) Perak, Malaysia and 20 respondents have participated in the survey. All selected respondents must have had at least one visit to National Monument. The respondents were asked to give opinion about National Monument. A photo was shown to assist the respondents to reminisce their own experience at National Monument. A total of 65 keywords are collected and 19 keywords are found to be reliable and contextually relevant to public art in general. They act as outline for the actual survey. Based on the pilot study's findings, we constructed an actual survey that stresses the depth of adjectives that consubstantiates with the public perception framework.

#### **3.1. Participant**

Data on the public perception was obtained from the visitors of National Monument. Non-participatory audience (visitors) is selected to be the respondent for the study. The total of 115 questionnaires were distributed and 100% of the visitors were from the region of Asia Pacific (Japan, South Korea, China, Australia, Malaysia and Singapore). Respondents ( $n=115$ ) were ranged from various work background but majority were university and college students (97.4%). Respondents were categorised as those who were guided to the place as part of the planned travel

agency's itinerary(guided tourist), those who passed it sporadically or on daily basis (passer-by) and those who read about it or see it on television (art enthusiast).

**Table 1:** Demographic Profile of Respondent

<b>Demographic Profile of Respondent (N=115)</b>		
<b>Characteristic</b>	<b>Frequency</b>	<b>%</b>
<b>Gender</b>		
Male	46	40.0
Female	69	60.0
<b>Education Level</b>		
University/College	112	97.4
Secondary School	3	2.6

### 3.2. *Study Setting*

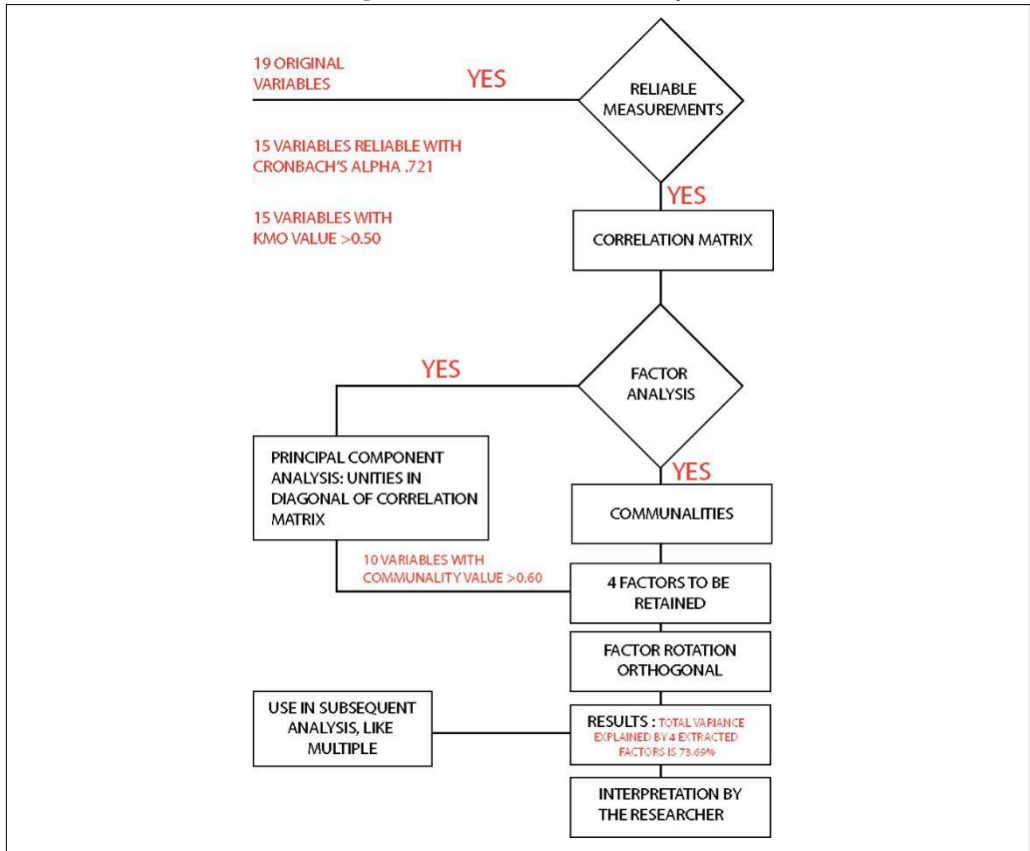
The study was taken place at National Monument (Tugu Negara) and we took five days to observe and conduct our questionnaire survey. For public art as art to work it must be visible, thus it must be perceived by its immediate audience. Immediate audience or publics that happened to be on the site were the participants of the study. Obtaining participants was problematic, as they were tourist, they had limited time to be spent around the square, thus some were unwilling to participate in the survey. Overall, for the duration of five days, we managed to collect 115 responses.

### 3.3. *Semantical Differential Methodology (SDM)*

The semantic differential methodology (SDM) fits the technique for scaling people on their responses to pairs of bipolar adjectives in relation to concepts (Gable & Wolf, 1993). In theory, each bipolar pair can be represented by a straight-line (semantic space) and several such pairs or scales form a multidimensional geometric space (See Figure 1). Thus, when participants respond to a set of pairs or scales as they rate a concept, those participants are differentiating the meaning of that concept in intensity (degree from the origin along each semantic space) and direction (positive or negative along each semantic space). Data from semantic differentials are then analysed using Reliability Factor Measurement, factor analysis and hierarchical cluster.

The dataset consists of 115 individual responses to 19 bipolar adjective pairs on a semantic differential about public perception of National Monument. Each pair was one mark along a 7-step, Likert-type scale for each bipolar pair. A Reliability Measurement and then correlation matrix of 19 pairs was run using SPSS in order to determine which pairs were most highly correlated and appeared to be most significant as generalized indices of perception towards the memorial monument. Respondents rated each pair by placing a mark (X) in boxes along the two bounded ends for each pair from 1 to 7. Principal Components Analysis was run on the semantic differential in order to investigate correlations among subsets of responses to bipolar pairs. This analysis reduced the semantic differential to a smaller number of components representing subsets of bipolar pairs that measure the similar aspects of the memorial monument. Principal Components.

**Figure 1: Flowchart of The Study**



**4. RESULTS AND DISCUSSION**

**4.1. Results**

Correlations among all original 19 bipolar pairs were highlighted according to strength, and the resulting patterns of correlations afforded good initial insight into comparative response patterns and relationships among the variables (pairs). Figure 2 (below) is the original variables of the 19 bipolar pairs in the final dataset.

**Figure 2: 19 Bipolar Pairs(variables)**

Keywords (Adjectives)	Name
Historical/Fictional	<b>HIS</b>
Informative/Useless	<b>INF</b>
Agreeable/ Controversial	<b>AGR</b>
Open/Sacred	<b>OPN</b>

<b>Keywords (Adjectives)</b>	<b>Name</b>
Authentic/Fake	<b>AUT</b>
Patriotic/Thoughtless	<b>PAT</b>
Memorable/Commonplace	<b>MEM</b>
Monumental/Insignificant	<b>MON</b>
Spacious/Condensed	<b>SPA</b>
Supple/Rigid	<b>SUP</b>
Literal/Indirect	<b>LIT</b>
Attractive/Hideous	<b>ATT</b>
Original/Banal	<b>ORI</b>
Modest/Kitsch	<b>MOD</b>
Vibrant/Gloomy	<b>VIB</b>
Heroic/Discourage	<b>HER</b>
Strategic/Isolated	<b>STR</b>
Famous/Unknown	<b>FAM</b>
Accessible/Restricted	<b>ACC</b>

#### A. Reliability Factor Measurement

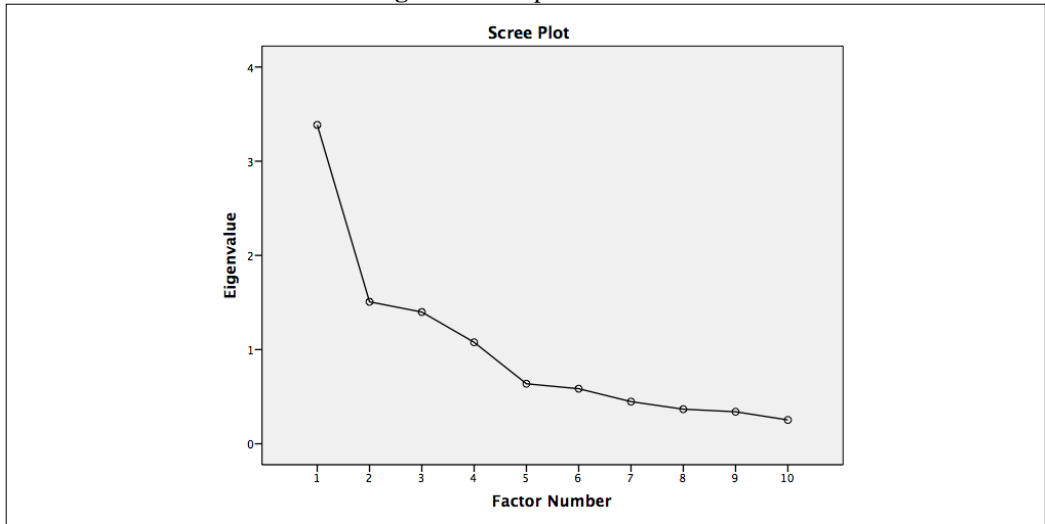
Since factor analysis comes from a correlation matrix, the used variables should first of all be measured at an interval level. Secondly, the variables should be normally distributed thus makes it possible to generalize the results of the analysis beyond the sample collected. Four variables are removed from the original variables in order to reach the acceptable reliability measure with Cronbach alpha  $< 0.70$ . Then, the total of 15 variables are now reliable to be analyzed with Factor Analysis

#### B. Correlation Matrix: The Kaiser-Meyer-Olkin Measure of Sampling Adequacy

This is an index for comparing the magnitude of the observed correlation coefficients to magnitude of the partial correlation coefficients. The closer the KMO measure to 1 indicates the sizeable sampling adequacy. The Kaiser-Meyer-Olkin Measure of Sampling adequacy (**KMO= .741**) is more than the suggested .6 value, indicating that the correlation matrix may be reliable to factor.

#### C. Factor Analysis: Principal Component Analysis

The total variance explained by four extracted factors is 73.693%, which can be considered acceptable by reducing 10 variables to four composite factors. The component matrix shows the loading on each of the four factors for ten variables. The factor loadings (greater than 0.5) are highlighted in orange in the Figure 3. Factor rotation of principal factors extraction with Varimax rotation was performed on 10 bipolar adjective pairs from the semantic differential on the keyword "memorial." It is to extract the number of factors and the factorability of the correlation matrices, providing initial insight into how the participants' ratings may be contributing to generalized indices of perception towards memorial (Gable & Wolf, 1993).

**Figure 3: Component Matrix**

#### 4.2. Discussion

As a result, from the principal component analysis (PCA), four composite factors are identified which are Meaningfulness, Sociableness, Familiarity and Appropriateness. The factors are related to the ways of people perceive perception, whilst reflect their perceptions towards the National Monument. According to Hair et al. (2010), factor loading estimates should be higher than 0.5, and ideally, 0.7 or higher.

Meaningfulness factor loadings (greater than 0.5) is shown in the Table 2. Items loading high on one factor and loading low on another factor can be uniquely assigned to each factor. From the Table III the keywords PAT, MEM, HIS, and MON are loading high on this factor. These four keywords represent the participant's perception on the monument with the amount of 30.051% (on Rotation SSL) of the total shared variance. Therefore, the four pairs of the adjectives: Patriotic (PAT), Memorable (MEM), Historical (HIS), and Monumental (MON) are relevant to be used to construct the perception framework of memorial monument. Sociableness has two keywords, which are Open/Sacred (OPN), and Agreeable/ Controversial (AGR) and they are all on loading high on factor 2. These keywords indicate the social aspects of the respondent's perception on National Monument, which is 15.684% of the total shared variance. Familiarity covers the 15.342% of the total shared variance. It consists of two pairs of adjectives; Famous/ Unknown (FAM) and Accessible/ Restricted (ACC). Appropriateness, which consists of Modest/ Kitsch (MOD) and Heroic/ Discourage (HER) are loading high on factor 4, demonstrates 12.617% of the total shared variance.



**Table 2:** Factor Loadings

Factors	Rotated Factor Loadings	% Variance Explained		Eigenvalues After Rotation
		Before Rotation	After Rotation	
1 <i>Meaningfulness</i>		33.854	30.051	3.005
<b>PAT</b>	<b>.875</b>			
<b>MEM</b>	<b>.871</b>			
<b>HIS</b>	<b>.811</b>			
<b>MON</b>	<b>.685</b>			
2 <i>Sociableness</i>		15.074	15.684	1.568
<b>OPN</b>	<b>.829</b>			
<b>AGR</b>	<b>.771</b>			
3 <i>Familiarity</i>		13.988	15.342	1.534
<b>FAM</b>	<b>.871</b>			
<b>ACC</b>	<b>.861</b>			
4 <i>Appropriateness</i>		10.778	12.617	1.262
<b>MOD</b>	<b>.879</b>			
<b>HER</b>	<b>.654</b>			
<b>Total</b>		<b>73.693%</b>	<b>73.693%</b>	

#### A. Problems and Limitations

The limitation of this study is the four factors solution with 10 variables creates a situation in which each factor is best characterized by high loadings from only 2 or 3 variables. Ideally, the number of variables loading highly on one factor should be higher, perhaps 4 - 6. Presumably a better factor structure would result with the latter situation. A minimum of 3 variables per factor is critical. This result confirms the theoretical findings of Anderson and Rubin (cited by Velicer & Fava, 1998; 243). At least four measured variables for each common factor and perhaps as many as six (Prinzie, et.al., 2007; 282).

Zebracki (2011) establishes five attributes of public perception in regard to public art.

##### 1) Education background

Demographic, which concerns the education background of the participant plays important role in shaping a coherent and reliable perception of the perceivers. Respondents or perceivers need to be competent and possess general knowledge about National Monument. Overall, 97.4% of the respondents are from college graduates and their perceptions are relevant to be measured and included in the findings.

##### 2) Meaningfulness

Patriotic (PAT), Memorable (MEM), Historical (HIS), and Monumental (MON) are relevant keywords collected from the survey. As regards the monument itself we found that respondents felt a nuance of patriotism while embracing the monument. Memorable is associated with historical meaning of the monument site as according to the respondents, the figurative monument invokes

the memories of the events lucidly. Monumental refers to the memorial monument, which is the massive size of the bronze figure echoes the message of patriotism, that reverberates the public engagement with the monument.

### 3) Sociableness

Open (OPN), and Agreeable (AGR) are two adjectives that contribute to the sociableness attribute. The respondents agreed that the monument is a gathering place and venue for meeting. The monument is perceived as an open space site-specific sculpture that invites public discursive debate on its controversial forms.

### 4) Familiarity

Famous (FAM) and Accessible (ACC) are the two adjectives that represent the public perception of the public monument. Famous is measured base on their familiarity on the monument. Respondent's perceived the monument as well-known tourist spot as it is accessible for everyone.

### 5) Appropriateness

Modest (MOD) and Heroic (HER) are two adjectives refer to the perceive match between the monument and place is relevant. The modest design of the monument fit perfectly at the National Square. Besides, the sense of place matches with the heroic message portrayed by the monument.

## B. Implication of Study

Surveys of public perception often utilise the standard quantitative survey method to gather objective answers to straightforward questionnaires. Questions are designed so that answers are easily categorized and quantified (May, 2001). Further research on public perception of public art, memorial monument specifically should consider the four factors that have been discussed in this section. These factors are shown to be reliable among other variables to assess the public perception of public memorial monuments as they are constructed based on Zebracki's public perception theoretical framework.

However, as the survey was conducted for a specific length of time, the respondents participated in the survey were small in numbers. Future researchers should spend longer time to collect more numbers of participants and construct watertight framework based on the current literatures as perceptions are dynamic and often change from time to time. In conclusion, these factors and adjectives are helpful to shape concise survey questionnaires that will aid future researcher to assess the memorial monuments from the public perspective.

## 5. CONCLUSION

This research aims to study the public perception of National Monument and identify the implication of National Monument had on visitors. Zebracki (2011) outlines five important attributes to be considered in assessing public art impact. Using SDM, the questionnaires findings have revealed that there were 19 keywords (bipolar pairs) of perception that relevant to the research.

As a result, from the principal component analysis (PCA), four composite factors are identified which are related to the ways of people perceive perception whilst experiencing National Monument. Meaningfulness, Sociableness, Familiarity and Appropriateness factors keywords are extracted using PCA as they are loading high (greater than 0.5). These four components play paramount role in shaping stakeholder's understanding about the purpose of public monument projects. There are too many memorial monuments that are collecting dust, as proven by the number of participants that participated in the study. Content and approaches of commencing public art project should evolve with time, thus by studying the impact of previous project, it should further artists' and authority's understanding about memorial monument. In conclusion, based on our findings, memorial monument should represent our devotion to the country (PAT), it should be placed at open space for its accessibility (OPN), the symbol (subject of the monument) must be something familiar to the local (FAM) and it should immerse in heroic message (HER).

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