



PLACE ATTACHMENT AND EMOTIONS DEVELOPED THROUGH HERITAGE, GREEN SITES, ROYAL ARCHITECTURE OF BURDWAN RAJ DYNASTY

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Abstract:

Geography is usually defined by space and place, especially in the social and behavioural sciences. Place attachment, as such, forms an integral part of social research when it comes to defining individual psychology, emotions, and behavioural aspects. This paper tries to analyse the emotional bond between people and places that forms the major backdrop of environmental psychology, which is highly correlated with individual behaviour and personal experiences. Here, the royal sites of Burdwan Raj have a huge impact on the minds of urbanites that involves physical, social, ecological as well as emotional strings. This attachment is related to the identity as well as the dependence of the place. Therefore, this paper tries to find the reason for such attachment and bonding towards the place and portrays the hidden relations between them. A 22-item place attachment scale has been used here among a random sample of 322 respondents of various age groups, from 18 to above 90 years, representing the views of young, middle-aged and elderly generations. The dimensions used here to measure place attachment include place identity, place dependence, social bond, family bond, friendship bond, and natural bond through Exploratory Factor Analysis (EFA).

Keywords: Physical, Social, Ecological, Emotional, Environmental

I. Introduction to Emotional Geography

Geography is usually defined by space and place, especially in the social and behavioural sciences. Place attachment, as such, forms an integral part of social research when it comes to defining individual psychology, emotions, and behavioural aspects (Selten, 2011; Tuan, 1939; Wakuru, 2013). This paper tries to analyse the emotional bond between people and places that forms the major backdrop of environmental psychology, which is highly correlated with individual behaviour and personal experiences. Here, the royal

sites of Burdwan Raj have a huge impact on the minds of urbanites that involves physical, social, ecological as well as emotional strings.

Place attachment is defined as one's emotional or affective ties to a place that is considered to be the result of a long-term connection (Low & Altman, 1992; Walton, 2010; Williams and Roggenbuck, 1989), as such emotions form an integral part of social science research (Teasdale, 1997; Y. F. Tuan, 1991; Ujang & Zakariya, 2015). Emotions are a state of mental reaction that involves a feeling or consciousness towards a specific object, space, place, environment, mood, or relationship with others. It occurs around a specific place within and around the closest of spatial scales. It has even fabricated itself with personal geographies, experiences, and stories emphasizing the significance of emotional geography over the spatial scale. American Psychological Association (APA), defines 'Emotion' as "a complex reaction pattern, involving experiential, behavioural and physiological elements." Geography over the recent scenario has considered emotions as an important aspect of Human study (Nayak, 2011; Smith, Bondi, Smith, & Davidson, 2009; Williams et al, 1992). It deals with the relationship between emotions, places, and their contextual environments, particularly focusing on human emotions relating to or affecting the surrounding environment.

II. Concept of Place Attachment

Human-place interaction is generally characterized by three dimensions: Cognitive, behavioural, and emotional (Nishiyama, 2016; Ratcliffe, 2002). People know the environmental elements and use them to navigate their way using the cognitive aspects of interaction. The behavioural aspects of interaction are discussed in relation to activities and the functional relationship between people and the environment. In addition, emotional attachment to place is correlated with satisfaction (Altman and Low, 1992; Vaske & Kobrin, 2001; Williams and Roggenbuck, 1989). There can be a strong relationship between the individual and the components of place. As a result, people's experiences play a major role in their perception and interaction of cognition, with place that has been illustrated in table. The perception of the functional aspects as well as the types of activities on the environment are considered in behavioural interaction (Nishiyama, 2016). Finally, emotional interaction in relation to places is considered (Canter, 1977; Jorgensen and Stedman, 2001; Stedman, 2003) (Table 1).

	Type of Relationship	Details of Relationship	Place components
Interaction between human and places	Cognitive	General perception in order to understand the geometry of space and orientation	Form
	Behavioural	Perception of space capabilities to obviate the needs	Function
	Emotional	Perception of satisfaction and attachment to place	Meaning

Table 1. Human interaction with the environment and different components of place

Place is also a reality to be clarified and understood from the perspectives of the people who have given it meaning (Proshansky, Fabian, & Kaminoff, 2014; Sime, 1986; Tuan, 1939, 1977). Therefore, any

particular space covered with meanings and values is known as place. The emotions and feelings (Averill et al., 2001; Bliss, 2011; Bondi, 2005; Nayak, 2011; Whittlesea & Williams, 2001) that people have for a place describes its place attachment (Davidson & Milligan, 2004; Sarkar & Guchhait, 2023). As such, places not only help in maintaining individual as well as group identity, but also plays a significant role in developing human behaviour and their mental health. Low & Altman (1992) viewed place attachment as an emotional connection between people and their surroundings and further comprises of interactions between knowledge and beliefs, affect and emotions, and behaviours and actions regarding a place. Hummon (1992) asserted that place is associated with environmental setting while attachment mainly focuses on its affect.

III. Study Area

The footprints of Burdwan Raj family could be seen in many places in West Bengal. The administrative regime of Burdwan Raj included eight judicial or revenue *daftars within* his capital, revenue collecting *kacharies* in each Parganas and eight forts to staff (McLane, 1993). However, Burdwan Raj Places existed in Kalna, Burdwan, Darjeeling, and Kolkata where they often resided. In Dainhat also a Barodwari palace was developed that was abandoned by the Raj family due to attack of the bargees (Chakraborty et al., 2011; Sarkar.N., 2014). The built-up nature in the forms of gardens and tanks, the architectural beauty of the monuments and palaces in the form of built-up architecture with varieties of architectural style and the socio-cultural marks such as the religious places and festivals celebrated by them, bears the glimpses of their existence and power even today. Apart from building and repairing a large number of temples the Burdwan Raj also endowed many temples especially in places such as Kalna and Burdwan.

So, the study area includes a five-kilometre buffer from Burdwan Rajbari (Raj Palace) as it falls in the most influential zone. As according to distance decay theory in geography, the effect of distance falls on the on cultural or spatial interactions. Therefore, the distance decay effect asserts that as the distance between two locations grows, the interaction between them decreases. Thus, when the distance between the two locations exceeds the activity space of the two locations, their interactions begin to decline (Rengert, Piquero, & Jones, 1999).

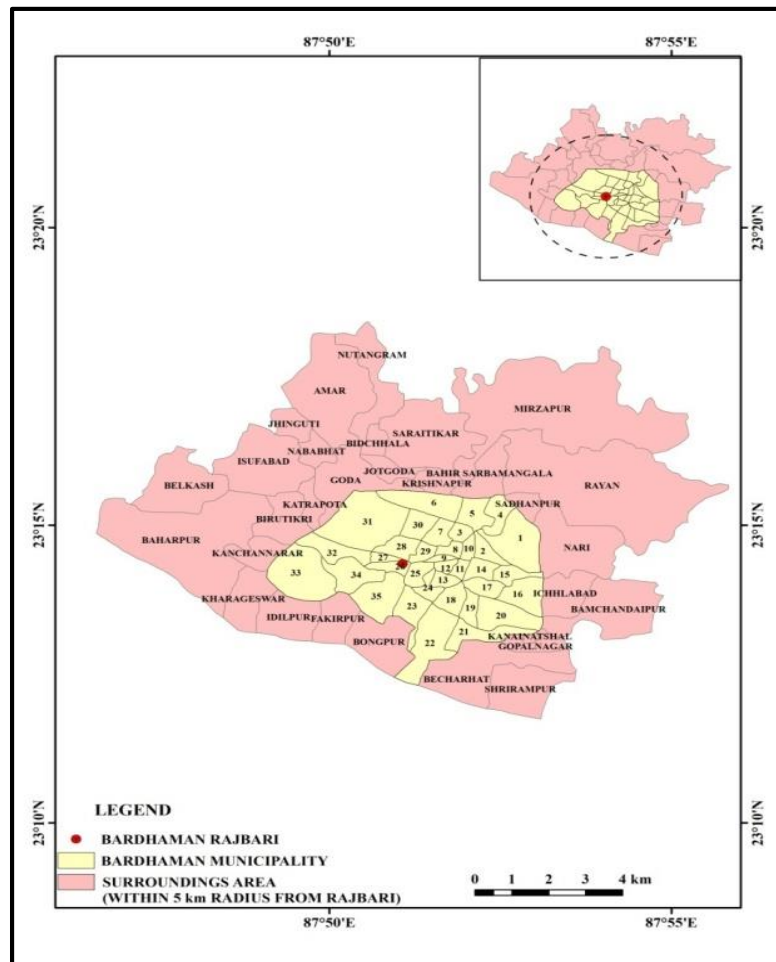


Figure 1. Location of the Study Area

In the present context of discussion, the study area therefore includes predominantly the area around the royal site of Burdwan town including both urban and peri-urban parts. Therefore, with marked importance in terms of historicity, administration, establishments as well as to give the research study a geographical outlook in describing spatial patterns, processes and images of specific cultural heritage sites, the core and peripheral parts of Bardhaman town are considered for close scrutiny. The area within the town has been considered as the core boundary and the surrounding area as peripheral parts (Figure 1).

IV. Methods and Techniques

In exploring the varying dimensions of place attachment among the urbanites in Burdwan town and its outskirts, place identity, place dependence, social bond, family bond, friendship bond, nature bonding, as well as psychological bonding specifically the sense of place is identified along with emotional attachment are considered. Mixed method has been applied. In the initial phase the description of preliminary statistics is done and the major attributes with high factor loading are taken into consideration for exploratory factor analysis and confirming its validity as well as sample adequacy. The selected dimensions of place attachment have been considered in this study to extract the human-place relation within an urban set-up (Figure 2).

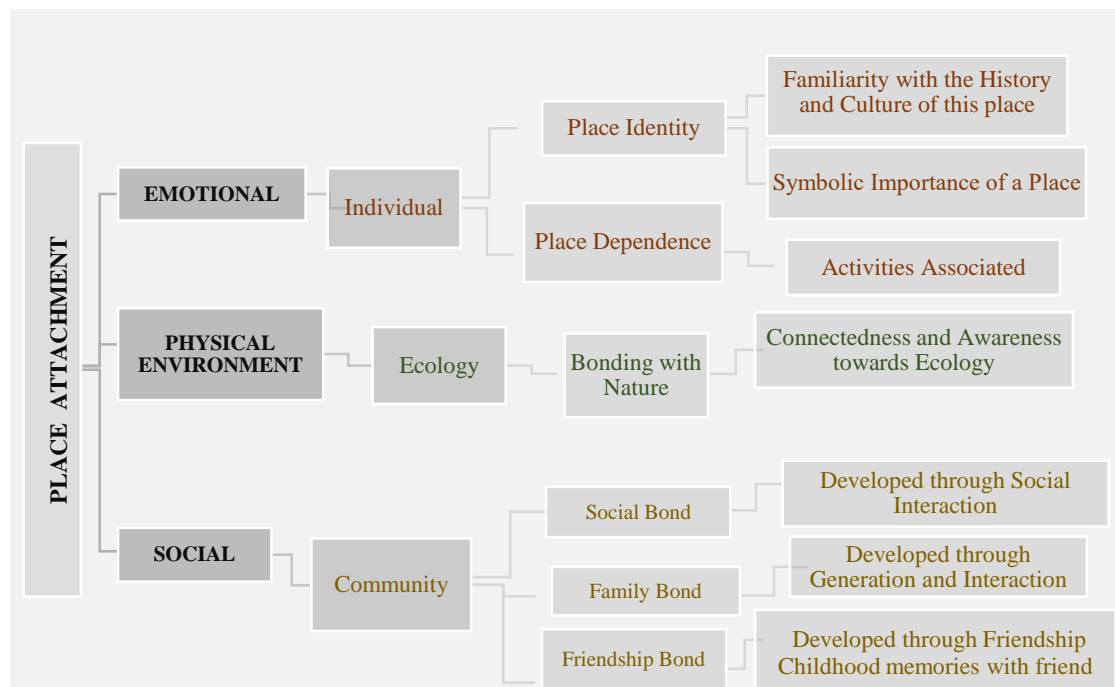


Figure 2. Dimensions of Place Attachment

This study is completely based on purposive sampling where the participants included were the urbanites living in Burdwan town and those living at the outskirts of the town. The sample size is 322, and it includes age groups from 18 years to above 90 years from various backgrounds. The sole purpose of the study is to curve out the complex of ecological image and cultural heritage in shaping and re-shaping the psychological domain of individuals at the core and periphery of the urban areas. As a matter of fact, emotions attached with this place is an integral part of the study to establish the connection between place and people. The data is collected through in-depth interviews, focus group discussion, questionnaire survey on a 5-point Likert scale (Brehm, Eisenhauer, & Stedman, 2013; Vaske & Kobrin, 2001; Wong & Lai, 2015). Audios, images and videos were collected and their expressions were also noted down to capture their emotions as well as way of interaction. Thus, phasing of the series of facts captured place attachment through a simultaneous style, which was then blended to create a single image.

In this study the sense of place towards a place has formed through psychological bond with no sense of place at all. Place attachment has formed through cognitive-emotional attachment and human emotions has been highlighted. Generation wise attachment or attachment developed through staying or attachment towards royal family led to development of place attachment with no sense of place. Further, the relationship between an individual and their environment in terms of mental, emotional, and cognitive health can be portrayed through their connection with historicity and beauty of the place as well as nature's noise and silent beauty of the site.

V. Results and Discussion

• Descriptive Statistics

Descriptive statistics, in brief, assist, explain and comprehend the properties of a given data set by offering concise summaries about the sample and measurements of the data. Entering all the numbers in the data set and then dividing by the number of sub-items in the set, the mean (average) of a data set is obtained. The Grand mean is the average of the average of sub-items.

The descriptive statistics table (Table 2) shows the mean value of individual items based on selected dimension along with their grand mean and standard deviation. Here in this table the major dimensions considered along with their sub-items and codes assigned are stated. The mean of each individual criteria is given. Where most of the mean values are above the average of Likert scale point average which is 3 in case of 5-point Likert scale indicating that the score of response for that particular question is above the mid-point which is a good indication. However, in particular cases the average value of a sub-item is below average but the overall grand mean for each dimension is again higher than the mid value. The variation or dispersion from the individual mean values are shown through standard deviation that states the deviation from the mean. Each of the dimensions indicates a high mean value with high average \bar{x} SD. The grand mean value of place identity is 3.537 and Mean SD is \bar{x} 0.828047, place dependence is 3.833 and Mean SD is \bar{x} 0.728148, bonding with nature is 3.917 and Mean SD is \bar{x} 0.840564, family bond is 3.494 and Mean SD is \bar{x} 1.027734, friendship bond is 3.752 and Mean SD is \bar{x} 0.837972, and social bond is 4.035 and Mean SD is \bar{x} 0.860499 showing high level of place attachment and positive response. Simultaneously, both the Cronbach alpha values as well as KMO test values that signifies reliability and sampling adequacy are good enough for running EFA (Exploratory Factor Analysis).

Table 2. Descriptive Statistics of Individual Items

	Code	Item	Mean	Grand Mean	STD Error	STD	Mean STD	Skewness	Mini	Max		
Emotional Attachment	Place Identity											
	placeid1	I know the historical background of Burdwan	3.164596	3.537	0.060175	1.079801		0.086523	1	5		
	placeid2	Burdwan is very special to me	4.245342		0.034861	0.625566		-1.76982	1	5		
	placeid3	I feel commitment towards the protection of Royal architecture	3.350932		0.045644	0.819058	0.828047	-0.42006	1	5		
	placeid4	Living here in Burdwan, the memories attached with these sites says a lot	3.068323		0.052279	0.938111		0.296142	1	5		
	placeid5	I feel very proud living in Burdwan	3.857143		0.037767	0.677701		-1.02604	1	5		
	Place Dependence											
	placedep1	I enjoy recreating in these royal historical sites more than any other sites	4.018634	3.833	0.045702	0.820091		-0.71652	1	5		
	placedep2	The ecology along with historicity is the best part of this place in Burdwan compared to other sites in Burdwan	3.701863		0.04235	0.759937		-0.29759	1	5		
	placedep3	I feel more satisfied while visiting royal sites rather than any other place in Burdwan	3.586957		0.039352	0.706148	0.728148	-0.28459	1	5		
	placedep4	No other place can be compared with the uniqueness of the royal sites in Burdwan	4.31677		0.040038	0.718447		-1.56967	1	5		
	placedep5	I will not substitute any other place in Burdwan or elsewhere for the activities I do here	3.543478		0.035449	0.636118		-0.71205	1	5		
	ENV	Bonding with Nature										

naturebo1	I have a deep feeling and connectedness with the natural environment (Green Space) present in Burdwan	3.754658	3.917	0.049535	0.888869	-0.03381	1	5	
naturebo2	I like to spend time in nature's noise and scenic beauty	3.860248		0.047449	0.851444	0.840564	-0.338	1	5
naturebo3	I am very much aware for the protection of nature	4.136646		0.043545	0.781379		-1.03269	1	5
Family Bonding									
familybo1	As my family is living here from generation, I have seen certain events that are memorable	3.003106	3.494	0.055204	0.990605		-0.21907	1	5
familybo2	Attachment by hearing stories about this place from my family	3.313665		0.066371	1.190984	1.027734	0.008554	1	5
familybo3	Attachment came through staying	4.167702		0.050245	0.901615		-1.36351	1	5
Friendship Bonding									
friendshipbo1	I spent my childhood here and my childhood friends are here	3.568323		0.044098	0.791302		-0.28344	1	5
friendshipbo2	The friendship developed here while doing certain activities (morning and evening walk, meditation, exercise, visiting, get together, academics etc.) and memories of it strongly connects me over here	4.068323	3.752	0.047834	0.858342	0.837972		1	5
friendshipbo3	I have heard stories about this place from my friends and spent time with them in this place as such the memories about them connects me	3.621118		0.048164	0.864273		-0.26194	1	5
Social Bonding									
socialbo1	I feel very safe and secure in this place	3.838509		0.049533	0.888841		-0.69541	1	5
socialbo2	Attachment due to education and development	4.142857	4.035	0.045441	0.815406	0.860499		1	5
socialbo3	The culture and festivals associated with this place connects me	4.124224		0.048887	0.87725		-0.80181	1	5
Kaiser-Meyer-Olkin Measure of Sampling Adequacy									0.913
Cronbach's Alpha									0.853

• Exploratory Factor Analysis

Factor analysis is a data reduction technique that are accomplished by looking for unobservable (latent) factors that are reflected in the observed variables (manifest variables). A factor analysis can be carried out using a variety of techniques (such as principal axis factor, maximum likelihood, generalised least squares, unweighted least squares) etc. After the initial extraction of factors, there are many other kinds of rotations that may be performed such as orthogonal rotations like varimax and equimax, which prevent the factors from being linked, and oblique rotations like pro-max, which enable the factors to be correlated. The initial extraction values also signify high factor loading of the variables before rotation and even the lowest one is above 0.4 loading that is good for interpretation. Exploratory factor analysis (EFA) is a statistical approach used in multivariate statistics to identify the underlying structure of a reasonably large set of variables to determine the underlying connections amongst measured variables.

The variance explained by the initial solution, extracted components, and rotated components is shown in total variance explained table. The Initial Eigenvalues are shown in the first portion of the table. The eigenvalue, or amount of variation in the original variables accounted for by each component, is given in the total column. The percent of Variation column shows the ratio of the variance accounted for by each component to the overall variance in all variables, given as a percentage. The Cumulative percent column

shows how much of the variation is explained by the first n components. The total of the percentages of variation for the first and second components, for example, is the cumulative percentage for the second component. Eigenvalue ≥ 1 is important and here 3 components together explained nearly 62.97% of the total variance explained with eigen values greater than 6.

The second section of the table shows the extracted components. They explain nearly 62.970 % of the variability in the original twenty-two variables, however the complexity of the data set can be considerably reduced by using these components, with only a 37.03 % loss of information. The rotation keeps the cumulative proportion of variance explained by the extracted components, but it now spreads the variation more equally among the components. Thus, due to substantial differences in individual totals, the rotated component matrix is simpler to comprehend than the unrotated matrix.

The rotated component matrix, often known as the loadings, is the most important result of principal component analysis. In addition to correlation estimates, component estimates are included. Table 8 shows the exploratory factor analysis for all the Place Attachment variables considered to be functioning in this area. The variables are sorted down into three components using PCA. The cumulative percentage of variance explains 28.89%, 47.84% and 62.97% respectively (Table 3).

Table 3. Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.323	33.287	33.287	7.323	33.287	33.287	6.357	28.897	28.897
2	4.370	19.865	53.152	4.370	19.865	53.152	4.169	18.949	47.846
3	2.160	9.818	62.970	2.160	9.818	62.970	3.327	15.124	62.970

The very first component includes “*Attachment to place and nature*” that explains 28.897 % of cumulative variance shows highlights the development of place identity in the royal sites of Burdwan Raj. The memories, ideas, feelings in relation to the complexity of physical settings being both historical, ecological as well as educational give meanings, and conceptions to behaviour and experience. They are more or less aware of the historical background of these sites and are attached to it both physically and emotionally.

They feel committed towards the protection of these royal sites as their duty towards their city as it feeds them psychologically, socially and culturally. Irrespective of gender, age, occupation the urbanities have a deep love for the royal sites still preserved to some extent within the city and representing the rich history and culture with it. The memories attached to the sites makes them feel nostalgic. Thus, living here in Burdwan, the memories attached with these sites says a lot of their own identity with the place. They could

identify their own self with these memories and experiences they have gone through and could deeply feel the royal sites of Burdwan Raj is a part of them. In their views they feel happy seeing the royal sites whenever they see they are protected or renovated and at the same time they feel the same pain when it is being not taken care of. This clearly depicts the emotional touch they have in their daily lives with the royal sites of Burdwan Raj.

The second component elucidates *“Social connectedness”* with the variance of 18.955 % (Cumulative variance 47.846 %) explaining the psychological bonding towards a place. In this case we find respondents give priority to the Royal sites of Burdwan Raj solely because the develop place attachment to their homes. Few of them even agreed to the fact that they would have shift to some other place if their family was not living here. Thus, the memories attached to their family and home environment within this place has made the royal sites more special to them to the ones living within the core areas of the city. They are proud of the fact that their home is near to these places and they have immense memories attached to this place with their families.

Table4. Rotated Component Matrix^a

	Component		
	1	2	3
placeid5	.830	-.060	.148
placeid2	.792	.133	.263
naturebo1	.753	-.359	.478
placedep2	.739	-.017	-.163
naturebo2	.727	-.254	.108
placeid1	.697	-.388	.109
placedep3	.677	.032	-.016
placedep5	.664	.218	-.111
placeid4	.663	-.142	.028
placedep1	.604	-.019	.570
familybo1	.577	-.285	.436
placeid3	.576	-.074	.259
naturebo3	.012	.815	-.014
friendshipbo2	-.151	.813	.191
socialbo2	-.082	.809	.138
socialbo1	-.034	.734	-.351
familybo3	-.173	.720	.292
placedep4	.454	.456	.118
familybo2	.078	.039	.896
friendshipbo3	-.023	.356	.683
socialbo3	.519	.010	.673
friendshipbo1	-.029	.523	.601

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization. a. Rotation converged in 6 iterations.

The third component describes 15.13% of explained variance (Cumulative variance of 62.97%) depicting "**Cultural Integration and Bonding**". People recalled how they enjoy the kite festival (introduced by Burdwan Raj family in Burdwan, being celebrated on the day of Makar Sankranti), the Holi festival (festival of colours, celebrated in Burdwan on the next day of original Holi as per the customs maintained by Burdwan Raj Dynasty, followed till today) with their family friends and relatives. As such a person's sense of place can improve the quality of life, physical and psychological health, social connections, family relations, cultural norms and satisfaction with their physical environment shown in the matrix table (Table 4).

Another benefit of developing a place attachment to their home and surroundings is to feel a sense of belonging and emotions to their surrounding place. People with higher place attachments report greater social involvement in their communities, and communities with highly attached members are more likely to work together to achieve a desired outcome, such as protecting the environment and maintaining the distinctive characteristics of the neighbourhood. Thus, bonding with family has also increased place attachment and involvement with these royal sites increasing more love and commitment towards it.

VI. Conclusion

In this study it is clear that the urbanites find these Royal sites as a recreational space in the midst of this city life. No other sites in Burdwan have so much greenery and peaceful atmosphere within the city except in Golapbag which was once the recreational zoo of the Maharajas now converted into an educational hub. These Royal sites such as the palace of the Maharaja, the recreational garden or garden of roses of the Maharaja - Golapbag, the Ramna Bagan Forest and Bijay Bahar now converted into zoological park has been the centres of attraction for the residents of Burdwan apart from the temples made by Burdwan Raj in the core and peripheral parts of the city. They are also a place of freshness for the green lovers.

These places are at the centre of attraction for all generations. For the elderly people, these places are the places of nostalgia and also act as places for leisure, gossip and relaxation during the evening hours apart from being the place for walks and exercises at morning. The green space along with the historicity provides a soothing atmosphere that actually renders happiness as well as positive emotions within the minds of them. For the middle age groups these places acts as place for mental relaxation far from their household disturbances. Many of them have agreed to the fact particularly the housewives that these places make them happy as they could easily forget the pain, the tensions of their daily lives while in front of pristine nature. The young generation has said that though there are other places of modern means of recreation within the city such as the modern restaurants as well as the Big Bajar or multiplex but the royal sites have their own flavour in it that cannot be replaced through these temporary means of recreational space. The historical importance, the silent beauty of the place, the noise of nature, the vivid archaeology all makes the young generation feel immense proudness from inside whenever they visit them as they could witness the historical of this place. This is a place for attraction, attachment, emotion and nostalgia to the urbanites of different age and gender.

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