Int. Journal for Housing Science, Vol. 41, No. 2 pp. 89-100, 2017
Published in the United States

IMPACT OF SOCIO-ECONOMIC STATUS ON PLACE AND DWELLING ATTACHMENT

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ABSTRACT

This study investigates the variation in attachment to place and dwelling with the variation in caste, educational qualification and income with particular focus on people displaced by development projects. Five constructs have been used as the measure of attachment, on which the variation has been investigated. The findings are based on the responses of families living in 3 villages which were being displaced for a power plant project in the state of Orissa, India. Significant difference was found in the attachment to the natural setting, dwelling, place identity and place dependence between the higher and lower castes, and between respondents of varying educational qualification and incomes. However no statistically significant variation (at $\alpha = 0.05$) was found in the community attachment and cultural identity of respondents of different educational qualification and income. Though variation in attachment has been studied in previous researches, this study focuses on project affected people and is an attempt to understand the variation in losses perceived by people of different social and economic status.

Keywords: Place attachment, Development induced displacement, Place identity, Place dependence, Cultural identity, Project affected people

Introduction

A significantly large body of research has been conducted into understanding man-place relationships. Sense of place is one such highly researched concept in environmental psychology. It is a permanent sense of belonging associated with a

0146-6518/02/89-100, 2017

place [1]. There are several concepts and nomenclatures analogous to Sense of Place. It includes - place attachment [2, 3], place satisfaction [4], community attachment or sense of community [5], neighbourhood attachment [2], place identity etc. Hidalgo and Hernandez associate place attachment to the basic concept of attachment as conceived by Bowlby (1969) and defined it as -"a positive affective bond between an individual and a specific place, the main characteristic of which is the tendency of the individual to maintain closeness to such a place" [6]. Several studies like [6, 7, 8, 9], perceived place attachment to have two distinct components – emotional (Place Identity) and functional (Place Dependence). Payton defined functional attachment as the ability of the resources to meet the needs of the individuals and emotional place attachment as ability of the place to influence people's identity [7]. However, C.M. Raymond et al. argued that these two dimensions fail to consider important connections to the natural and social environment. Therefore, they developed a 4 dimension based model considering – place identity, place dependence, nature bonding and social bonding [10].

Attachment is seen to increase when the place in question is threatened [11]. Proshansky et al. acknowledged that most people give little attention to their place of residence but become more aware of it when the place is threatened [12]. Adger et al. have identified certain cultural risks associated with displacement including - loss of symbolic value, cultural practices, traditional knowledge, social structures and cultural identity [13]. Mishra et al. state that place attachment varies for different subgroups of population. People with lower socio-economic status are reported to have greater place attachment. Genealogy has an impact as well [8]. Hence it is obvious that perceived losses associated with displacement would vary for people of different socio-economic characteristics. According to Hummon (1992), community sentiment embraces three aspects – community satisfaction, community identity and community life. Community satisfaction refers to people's evaluation of the place and Community identity embodies the personal and social meanings that places hold for people [14]. With varying social status and subsequently varying perceived community identity, would vary one's community satisfaction. Therefore, people on different rungs of the social hierarchical ladder would perceive their loss of community ties differently.

Amongst the predictors of place attachment – income and education are important socio-demographic predictors. High income and higher education is often associated with higher place attachment [15]. However, it is sometimes seen to have a negative association with attachment [4, 15]. Amongst Social predictors, social ties, number of friends and relatives in the vicinity [4], involvement in social activities [17], and extent of networking [18] are some positive social predictors of attachment. Evaluating the natural or physical surroundings of the residence is a common environmental predictor of attachment [19]. Variation in such predictors would result in variation in place attachment. This study focuses on the relationship between socio

economic predictors like income, education, caste[1] and the attachment to dwelling and living environment in communities subjected to development induced displacement. As stated earlier, evaluation of attachment is different in case of threatened communities. Though several researches have been conducted into studying predictors of place attachment; the same have not been investigated in the backdrop of project affected people. This study attempts to understand that very situation.

Methodology

For the purpose of this study, the variables or constructs associated with dwelling unit and living environment of project affected people were first chosen from existing body of literature. Then a pilot survey was conducted in the study area in the form of an open ended unstructured survey to evaluate which constructs were relevant to the community. Ultimately, five constructs were chosen, within which underlying 5-point Likert rated items were designed. Given below is a brief description of the constructs,

1. **Place Nature bonding** includes the explicit and implicit connections to non human part of the natural environment [10]. It includes social and spatial hierarchy within communities, locational advantages of house and its proximity to community structures and resources etc. This construct had 6 underlying items.
2. **Place identity** encompasses the symbolic and emotional connection that people experience towards a place. This construct was developed with 4 items.
3. **Place dependence and goodwill** construct has 2 distinct parts. One is Place dependence which refers to the functional connections that people have with a place like livelihood, work relations, colleagues, market linkages, money lending relations, financial support systems, etc. The other is goodwill, which refers to the respect, recognition and established professional practice developed by individuals over time. This construct comprises 6 items.
4. **Cultural identity and community attachment** construct has 6 items within and explores the cultural and traditional ties and societal involvement (religious/non-religious) of the respondents.
5. **Functionality and sentimental attachment to dwelling** construct has 7 items which gauge the attachment to the dwelling in question. It explores the appropriateness of the dwelling for its users and sentimental attachment towards the dwelling it.

These constructs formed the backdrop on which the variation of responses was studied for different sub-groups of the population. The aim of the study was to decipher the variation in level of attachment experienced by respondents belonging to different caste, income groups or having different educational qualifications and to investigate the reasons behind the variation.

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[1] Caste refers to hereditary classes prevalent within Hindu Society and is distinguished by the relative degree of social status, social and religious privileges. It is a form of social distinction used to distinguish people and families having different origins and traditional occupations.

Study Area

For the purpose of this study, 3 villages had been selected that were being displaced to make way for a 4000 megawatt power plant in the state of Orissa, Eastern India. The proposed plant is located at 22^0 02' 30'' N latitude and 84^0 00' 42'' E longitude. The area which is earmarked for acquisition is about 3245 acres and comprises 6 villages in Sundergarh District. Out of these 6 villages, settlement area is being effected in 3 villages – namely, Kopsingha (land acquired = 1067.56 acres), Rupidih (Land Acquired = 628.59 acres) and Lankahuda (land acquired = 754.46 acres). A total of 1937 households were affected by the project. During the time of the survey, the households had already been awarded compensation for the land and dwelling lost and negotiations were being held on the design of the rehabilitation homes to be provided by the development authority.

Procedure

The questionnaire was designed to collect factual data on the respondents and the itemized rating on the 29 five-point Likert rated items within 5 constructs. The factual data included demographic and household characteristics. Systematic sampling was done. Data was collected through scheduling. Multiple interviewers were used to avoid interviewer bias. The list of families being affected by the displacement was available from the power plant authorities which formed the 'frame' for the survey. A sample size of 185 was chosen at 90% confidence level and 10% confidence interval which included 61 from Rupidih village and 62 samples each from Kopsingha and Lankahuda villages. One response was collected from each of the selected households. The respondents varied in age, gender, caste, educational qualification, income and occupation. After data collection, the ratings (1 to 5) for each of the items within a construct were averaged to form an average score for the said construct and were used for further analysis. Hence for each respondent there were a total of 5 average scores for each construct – namely, PNTot (Place nature bonding), PITot (Place identity), PDTot (Place dependence and Goodwill), CTot (Cultural identity and community attachment) and DTot (functionality and sentimental attachment to dwelling). One-way Analysis of Variance (ANOVA) at 95% confidence level was conducted to find the variation in the responses followed by Tukey's post-hoc tests.

Characteristics of the Respondents

The population almost entirely belonged to Hindu religion (98%). The 'transect walk' conducted before survey, revealed that spatially the village was divided into clusters comprising a particular caste. The spatial hierarchy was such that higher castes lived towards the entrance of the village, close to the temple; whereas, the lower castes lived towards the inner circle of the village. The caste categorization used in the study is based on government classification. Scheduled tribes -ST were found to be most prevalent (35%), followed by general castes (29%), schedules caste- SC (24%) and other backward castes- OBC (12%). It must be noted that general caste refers to

higher caste and includes families that traditionally experienced higher social status in Hindu communities. The social status is lower for OBC, SC and lowest for ST. About 76 % of the respondents were male. Thirty percent respondents had attained matriculation, followed by 23% who had passed 12th and 20% with primary education; 14% were graduates, which was the highest level of education attained, while 13% were illiterate. The average monthly income of the respondents was found to be low. Majority (59%) of the respondents had monthly income lower than Rs. 5000 (Fig. 1) mostly comprising labourers. Tribal population was found to have income lower than average, whereas the higher castes who had inherited large agricultural farms from their predecessors were quite affluent.

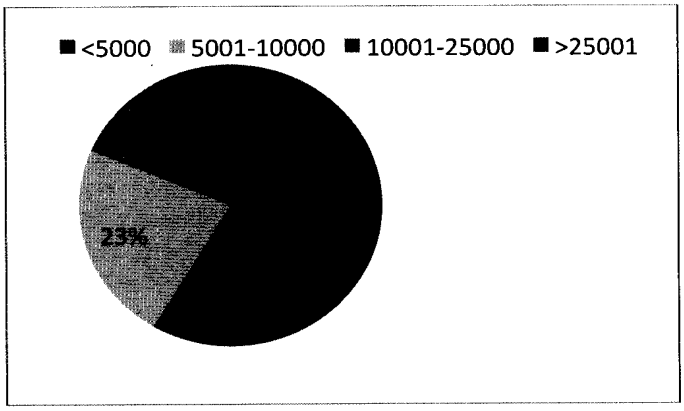

Fig. 1. Average monthly income of the respondents.

Agriculture was found to be the most prevalent occupation (39%) followed by service (27%) and manual labour (20%). Majority (74%) of the dwellings were designed in the traditional style, i.e. single storied, sloped roof (tiled) structures with a central courtyard. Most respondents owned their dwellings as opposed to renting it. Forty eight percent of the dwellings surveyed had 4 or more generations residing. Majority (57%) of the respondents had a separate workspace, cowshed or grain storage space in their dwelling and 65% of the respondents found their dwelling to have adequate habitable space.

Results and Inferences

One way ANOVA was conducted to gauge the variation in the constructs between respondents belonging to different subsections. Table 1 given below highlights which of the tests were statistically significant. As evident from the results, statistically significant difference was found between responses of individuals belonging to different caste with regards to all concerned constructs. However, in case of classification criteria education and income, all constructs except Cultural identity and

community attachment generated statistically significant results at 95% confidence level. Caste was found to have medium to large effect on all the variables. Educational qualification and income was found to have a lesser effect than caste (small/medium effect sizes observed). However, large variation in attachment to dwelling is observed in case of people of different income groups. This is based on the fact that condition of dwelling unit, adequacy of habitable and work space, and personalization varied significantly with income; alongside varied the attachment to the dwelling.

Table 1. Effect size of the classification criteria on variables.

Sr. no.	Test ID	Variable	Classification criteria	Between groups	Total sum of squares	Effect size	Level as per Cohen's guidelines
i	PNTot vs caste*	PNTot	Caste	8.30	111.99	0.074	medium
ii	PITot vs caste*	PITot	Caste	26.61	139.65	0.191	large
iii	PDTot vs caste*	PDTot	Caste	14.32	126.60	0.113	medium
iv	Ctot vs caste*	CTot	Caste	8.22	118.61	0.069	medium
v	Dtot vs caste*	DTot	Caste	36.00	172.45	0.209	large
vi	PNTot vs edu*	PNTot	Education	8.20	111.99	0.073	medium
vii	PITot vs edu*	PITot	Education	10.45	139.65	0.075	medium
viii	PDtot vs edu*	PDTot	Education	7.18	126.59	0.057	small
ix	Ctot vs edu	CTot	Education	1.57	118.61	0.013	small
x	Dtot vs edu*	DTot	Education	14.04	172.45	0.081	medium
xi	PNTot vs income*	PNTot	Income	5.89	111.99	0.053	small
xii	PITot vs income*	PITot	Income	11.85	139.65	0.085	medium
xiii	PDTot vs income*	PDTot	Income	14.59	126.60	0.115	medium
xiv	Ctot vs income	CTot	Income	2.73	118.61	0.023	small
xv	Dtot vs income*	DTot	Income	36.55	172.45	0.212	large

*** Statistically significant at 95% confidence level, results attained using IBM SPSS**

Analysis of Variance on Caste

Significant difference was found for all the variables when tested against the classification criteria - caste. The criteria caste has 4 sub categories based on government classification– general caste (GEN), other backward castes (OBC), scheduled caste (SC) and scheduled tribes (ST).

1. **ANOVA PNtot (caste)** - The one-way ANOVA revealed a reliable effect of caste on PNtot, [$F(3, 180) = 4.80$, $p = 0.003$, MSerror = 0.576, $\alpha = .05$]. The mean place nature bonding of OBC is found to be highest followed by GEN, SC and then ST. This is analogous to the fact that the higher castes occupy better location within the village while the tribal clusters had lower accessibility. Tukey's post hoc test revealed that significant difference existed only between OBC and ST (Sig. 0.003) at $\alpha = .05$. The effect size was found to be medium at 0.074.

2. **ANOVA PItot (caste)** – Caste had reliable effect on PItot, [$F(3, 180) = 14.12$, $p = 0.000$, MSerror = 0.63, $\alpha = .05$]. The effect size was found to be large at 0.191. The mean place identity of GEN is highest followed by OBC, ST and then SC. This is expected as general castes experience the highest social status in the community and are expected to identify with the village to a greater extent. Tukey's test reveals that the difference is greatest between GEN & SC and GEN & ST, which is analogous to the significant difference in societal status experienced by higher castes and lower castes in the villages. Hence hierarchical status in society revealed significant effect on the place identity.

3. **ANOVA PDtot (caste)-** The one-way, ANOVA revealed a reliable effect of caste on PDtot, [$F(3, 180) = 7.65$, $p = 0.000$, MSerror = 0.62, $\alpha = .05$] with effect size medium – 0.113. The mean place dependence and goodwill score is highest for GEN followed by OBC which is expected. Higher castes experience greater recognition in community and have well established professional networks. Such livelihood linkages and networking is weaker for lower castes like SC and ST. Tukey's test reveals that the difference between GEN & SC (Sig. 0.001), and GEN & ST (Sig. 0.001) is statically significant at $\alpha = .05$.

4. **ANOVA Ctot (caste)-** Caste had reliable effect on Ctot, [$F(3, 180) = 4.47$, $p = 0.005$, MSerror = 0.61, $\alpha = .05$, effect size medium - 0.069]. The average cultural attachment is higher for GEN and OBC, followed by SC and ST. This is because; higher castes have greater involvement in community religious and non-religious activities. Even spatially these clusters or 'para' are located closer to the temple and community halls. Lower castes are less involved in community activities and experience lesser support from their neighbors who lack enough financial stability to come to their aid. However, Tukey's test reveals that the difference is only statistically significant between GEN and ST (Sig. 0.01).

5. **ANOVA Dtot (caste)-** The one-way, ANOVA revealed a reliable effect of caste on Dtot, [$F(3, 180) = 15.83$, $p = 0.000$, MSerror = 0.76, $\alpha = .05$]. The mean attachment to the dwelling is highest for GEN, followed by OBC, SC and ST. The higher caste families were found to have larger and better dwellings and have genealogical connections to the house dating back several generations which explains their greater sentimental attachment. Tukey's test reveals that GEN caste has

significantly higher DTot than all other caste categories. Of all the tests conducted, this ANOVA generated the second highest effect size of 0.209. Hence caste had a large effect on attachment to dwelling.

Analysis of Variance on Education

Statistically significant difference was found between responses of individuals with differing educational qualifications for all variables except for cultural identity and community attachment. The classification criteria 'education' had the following sub groups – illiterate, primary education (class 5), secondary (class 10), higher secondary (class 12) and graduation.

6. **ANOVA PNtot (education)-** The one-way, ANOVA revealed a reliable effect of education on PNtot, [$F(4, 179) = 3.54$, $p = 0.008$, MSerror = 0.586, $\alpha = .05$, effect size medium – 0.073]. The average PNTot of graduates is highest followed by respondents with primary, secondary, higher secondary education and is lowest for illiterates. Villagers with higher level of education showed greater attachment to their natural environment which may be due to the fact that most respondents with better educational qualification belonged to higher castes in the village and had houses in better location. Tukey's test reveals that this difference is only significant between, graduates & illiterates (Sig. 0.008) and graduates and higher secondary educated (Sig. 0.045).

7. **ANOVA PItot (education)-** Education had significant effect on PItot, [$F(4, 179) = 3.62$, $p = 0.007$, MSerror = 0.72, $\alpha = .05$, effect size medium – 0.075]. The average place identity was highest for graduates, followed by primary educated and was lowest for illiterates. This is consistent with the findings in [15]. This is because the graduates experience greater recognition and respect in the community as compared to ones with lower levels of education. Tukey's test revealed that the difference was significant only between graduates and illiterates (Sig. 0.004)

8. **ANOVA PDtot (education)-** Education had significant effect on PDtot, [$F(4, 179) = 2.69$, $p = 0.03$, MSerror = 0.67, $\alpha = .05$, effect size small – 0.057]. The average place dependence and goodwill was highest for the secondary level educated group who were found to be most resourceful in arranging livelihood linkages and setting up work networks. The graduates also showed high mean in this construct while illiterates displayed lowest score as they had least access to work. Tukey's test revealed that the difference was significant only between secondary and illiterate group (Sig. 0.018) of the population.

9. **ANOVA Ctot (education)-** The one-way, ANOVA failed to reveal a reliable effect of education on Ctot, [$F(4, 179) = 0.6$, $p = 0.66$, MSerror = 0.65, $\alpha = .05$]. Educational qualification failed to have significant effect on the respondents' perception of their cultural identity, social articulation and community involvement and support. This test generated the lowest effect size of 0.013.

10. **ANOVA Dtot (education)-** Again education had significant effect on Dtot, [$F(4, 179) = 3.97$, $p = 0.004$, MSerror = 0.89, $\alpha = .05$, effect size medium – 0.081]. The graduate group had highest average dwelling attachment and experienced better functionality of dwellings, mostly because they secured better employment. The

illiterate group performed lowest on this construct as they mostly comprised of laborers with sub-standard dwellings.

Analysis of Variance on Income Groups

Significant difference was found for all the constructs except for CTot when tested against the classification 'income group'. Following 4 income brackets were defined for the purpose of this study - < Rs. 5000 per month, Rs. 5001- 10000, Rs. 10001-25000 and > Rs. 25000.

11. **ANOVA PNtot (income group)-** The one-way, ANOVA revealed a reliable effect of income on PNtot, [F(3, 180) = 3.33, p =0.021, MSerror = 0.59, α = .05, effect size small – 0.053]. The average place nature bonding is highest for 0-5000 Rs income group followed by the highest income group. This is because; lower income group is more dependent on natural resources for their domestic activities and hence were highly attached to their natural setting. Alongside, highest income group occupied dwellings with greater accessibility and better setting, which explains their greater attachment. Tukey's test revealed that this difference was statistically significant only between only <Rs. 5000 and Rs. 10001-25000 income groups (Sig. 0.019).

12. **ANOVA PItot (income group)-** Income had significant effect on PItot, [F(3, 180) = 5.56, p =0.001, MSerror = 0.71, α = .05, effect size medium – 0.085]. The average place identity was found to be greatest for the highest and the lowest income groups which is analogous to the findings of [15], [4] and [16]. Tukey's test showed that the highest income group had significant difference from the second (Sig. 0.002) and third income groups (Sig. 0.037).

13. **ANOVA PDtot (income group)-** Income group had significant effect on place dependence (PDTot) [F(3, 180) = 7.82, p =0.000, MSerror = 0.62, α = .05, effect size medium – 0.115]. The highest income showed the highest place dependence and goodwill which is expected as respondents with best access to resources and livelihood networks would secure higher income. The place dependence is high for lowest income group in this case because they are most dependent on the common property resources for their daily activities and have to maintain a close network of colleagues to get access to work.

14. **ANOVA Ctot (income group)-** The one-way, ANOVA failed to reveal a reliable effect of income group on Ctot, [F(3, 180) = 1.41, p =0.24, MSerror = 0.64, α = .05]. That is say that no significant difference was found in the cultural identity and community attachment of respondents belonging to different income groups. This test generated one of the lowest effect sizes of 0.023. Hence income had a very small effect on the cultural identity of the respondents.

15. **ANOVA Dtot (income group)-** The one-way, ANOVA revealed a reliable effect of income group on Dtot, [F(3, 180) = 16.14, p =0.000, MSerror = 0.76, α = .05]. The average attachment to dwelling varies almost according to the income group being highest for the highest income group. This is expected as higher income groups can afford well designed homes with greater functionality leading to higher attachment. Most of the inter income group differences were found to be statistically

significant in Tukey's test. It should be noted here that this ANOVA test between DTot and income showed the largest effect size of 0.212.

Implications

An analysis of the responses shows that there was significant correlation between the variation on the basis of caste, educational qualification and income. This is because, in the surveyed villages, caste defined the social status and opportunities to a much greater extent. Families of higher caste enjoyed better location, greater access to common property resources, greater respect and recognition in community and better livelihood linkages. This resulted in them securing better employment opportunities, higher incomes, better homes and analogously better educational qualifications as well. This correlation explains the similarity between the responses of the higher caste, higher income group and higher educated individuals. Of all the aspects, least variation was observed in the cultural identity and community attachment of the respondents. This depicts that this community had deep seated cultural ties with the place and high level of social articulation, which was hardly affected by the level of income or educational qualification.

Conclusion

The purpose of this study was to understand the impact that social status may have on the attachment to place and dwelling in the case of project affected people in order to gauge the variation in the perceived losses experienced by the displaced households. Place identity, place dependence and attachment to dwelling are expected to be highly severed in case of higher caste individuals. Again, the highly educated individuals were found to be significantly attached to their dwellings, natural setting and experienced higher place identity. The place dependence of individuals with secondary level of education was found to be higher as they had more place specific employment opportunities. The illiterates often involved in jobs as labourer had to travel to the nearest town centre for employment and hence were least threatened by the displacement. The highest income group had invested most in their dwellings and had better homes, because of which, they were highly attached to their dwellings. Hence this income group would be most hesitant to forgo their dwellings. However, the lowest income bracket was highly dependent on the natural resources which explain the higher place nature bonding. Such variation may result in households of different backgrounds to experience different degrees of loss in terms of attachment. It is acknowledged that these results are specific to the study area in question and the responses may vary significantly if the study is conducted in a different state or an urban setting instead of rural. However, the approach may be applicable on similar studies elsewhere. Though variation in place attachment has been observed for various sub groups of the population before, this study tries to understand the impact of such variation in project affected communities. The subsequent implication of this variation may be that, one-size-fits-all approach taken in designing compensation

packages in development induced displacement may not be the best option. Further research can be conducted to understand the implication of such variation in designing compensation packages for project affected people.

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