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# An Assessment of Intergenerational Relationship between Youth and Parental Generation

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**Abstract:** "Intergenerational relationships are sometimes treated as a barometer of social change. Events that seem to express the willingness of adults to bring up and cherish a new generation or to care for their elders are seized on as an indicator of societal well being" (Jamieson, 2006). In this paper primary data have been analyzed using discriminant analysis to evaluate the health of the relationship between youth and parental generation among the students. We find that compared with male students, female students have better relationships with their parents. Students, living with their parents, have a better intergenerational relationship (IR) than those not living with their parents. Students who are associated with a joint family have a superior IR, compared with students associated with a nuclear family. Furthermore, households with the presence of grandparents show better IR than households not having grandparents. We also find that parents with higher education possess a better relationship with their children than parents who are illiterate or less educated.

**Keywords:** Intergenerational Relationship (IR), Rough Set Theory (RST), Fuzzy Rough set theory (FRST), Fair Intergenerational Relationship (FIR), Discriminant Analysis (DA).

## **1** Introduction

It is a well known fact that human is a social creature and completes his life living in a society. During his life cycle, human create important bonds and have meaningful experiences with individuals, especially with the family members. As time advances, human encounters with different experiences that make him more mature and sensible. Different norms, beliefs, and values develop as time progresses from one generation to another and every generation has something precious to transfer others. Thus, intergenerational relationships become indispensable parts of social life.

"However, a number of challenges to the functioning of intergenerational relations at the community and societal levels can be identified. Positive contact, interaction and communication between different generations may be affected by differences in physical and cognitive functioning among different age-groups, which leads to the occupation of separate physical spaces and engagement in different activities. In addition, psychological changes that occur throughout the life course may create differences in the behaviour of younger and older cohorts and affect how each views the world, their role and interaction with others." [8]. As [14] asserts, "strong relationships between youth and elders serve protective and developmental functions. They can prevent youth from engaging in problem behaviors, while concurrently, they can help promote knowledge, competency, and initiative among youth. The values and beliefs passed on from one generation to another shape what the world will look like in the future. Belief systems are based on what individuals were taught in the past."

Indian culture is plentiful and altered. Parents make children appreciate the values of tradition and provide a platform for moral and spiritual values. Some of the Indian customs may seem dispensable today, but there are just about matters that have everlasting value. The individual gets blessings from his elders by touching their feet. Offering help to the older person is another salient feature in the Indian culture. Ceremonial rites and festive occasions are never concluded without the blessings from grandparents, whose direction is required at every stride.

The family has been the centre of Indian living since ancient times. Families in India are connected up with unseen bond, cooperation, harmony and mutuality. Togetherness is always encouraged by elders in India, thus living in extended

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family has been the culture in the Indian culture. The joint family has always been the preferred family type, and most Indians at some point in their lives have lived in a joint family [10]. It is not uncommon to find joint living of three or four generations under a common roof and cooking food in a common hearth [4].

First of all, being with grandparents gives the younger generation time and chance to respect the elders and their experience. It helps them see their impressions, sentiments and concern for the elderberry bushes. The wisdom and experience of the elders are invaluable in working out their own troubles. Domestic problems are being discussed with the elders. Devoting time to them makes them feel desired and valued. The joint-family system has many advantages such as the experience of the elders, their time and effort in taking care of the children or looking after the household and their advice when the youngsters are at fault. The elders themselves are also benefited as they are not left alone. This contributes to their mental and physical well-being. Besides, in times of sickness and need, the younger generation will be there to care for them. Grandparents and grandchildren have a special bonding that enriches the lives of each other.

In a joint family a child learns and is reared by a number of people, thus dividing work, saving time and creating a spectrum of exposure and awareness. The funeral rites and the worshiping of ancestors are still a part of the function of a joint family. This reinforces in the minds of the younger generation the respect and love the elders are entitled to get within the larger structure. The living arrangements for the elderly are often considered as the basic indicator of the care and support provided by the family [9]. However, it must be noted that this practice is more culturally based rather than development dependent. According to WHO surveys, 72% of the elderly in Malaysia and 79% in the Philippines live with their children [9]. Presently in Indian villages, 80% of the elderly live with their children [3]. In the United States, this proportion is much lower, at 15% [2] and [9].

"These observations point to the strengths of cultural traditions over other factors in providing care and support that family provides to their elderly. Indian culture puts pressure on the children, especially the male children to take care of the aged parents, apart from the legal requirements. The cultural practices also assign certain duties for the aged in the household chores. Taking care of the young children, looking after the societal responsibilities, settling interpersonal or inter-household or even inter-group conflicts, helping in the matrimonial matchmaking, are among the duties that the society expects the aged persons to take interest in and attend to. Thus, the aged members play useful roles in the household as well as in the society." [3]. In India, intergenerational relationships have their huge importance due to the preference of joint family. In the current scenario, our society is confronting the conflict and ambivalence, since the culture and values have been sharing with a huge amount of adjustments and alterations. This layout leads to the psychological as well as the social imbalance. Therefore, this field delivers a great relevance in order to provide the current status of the intergenerational relationship to the social scientists and policy makers.

## 2 Data and Methodology

Data for this study were collected by interviewing the students of the Banaras Hindu University, Varanasi, India. A sample of 500 was selected from the target population consisting of about 30000 students, with a non-response of 8.6% While selecting the sample size, 95% confidence level and margin of error of 2.62 were taken into the consideration. Also, a pilot survey was conducted to assess the variability within the population for determining the sample size. It was observed that the value of  $\sigma$  is 30.196 for the parameter which we want to estimate that is the index of intergenerational relationship. The Data include students belonging to the states like Uttar Pradesh, Uttarakhand, Bihar, Jharkhand, West Bengal, Haryana, Madhya Pradesh, Rajasthan and Delhi.

## 2.1 Validity and Reliability of the survey schedule

A pilot survey based on 50 students was conducted to assess the validity and reliability of the instrument. Experts' suggestions were taken to validate the instrument. Item analysis was carried out to check the internal consistency of the items, as a measure of reliability of the instrument. As a result of item analysis, we dropped a few items which reduced the value of reliability coefficient. The Cronbach's Alpha was as 0.77 and Cronbach's Alpha based on standardized items was 0.80. Standardized items refer to the items having the same variances. The value of Cronbach's Alpha as 0.77 indicates that 77% of variability in a composite score, by combining 20 items, would be considered as internally consistent or reliable variance. We have used 13 items to construct an index of the intergenerational relationship. As per the importance of the variable with respect to the level of intergenerational relationship (IR), we have given suitable weights for the respective variable and found the weighted sum of the variable scores. Thus, we calculated the scores for all respondents. We classified the respondents into various groups based on the IR Index for further analysis. Rough set theory was used for data classification as follows:

## 2.2 Rough Set Approach for Data Classification

In 1982, Pawlak introduced Rough set theory (RST) a methodology for data analysis based on the approximation of concepts in information systems. Rough sets deal with vagueness and uncertainty using a different mathematical approach. Rough set approach includes the mechanism of the ability to distinguish between objects based on their attribute values, this mechanism is called discernibility. "Given an indiscernibility relation, lower and upper approximations of concepts can be constructed. The objects included in the lower approximation can be classified with certainty as members of the concept. In contrast, the upper approximation contains objects, possibly not belonging to the concept. An important advantage of RST is that it does not require additional parameters to analyze the data." [13].

RST has been generalized in many ways to tackle various problems. In particular, [7] combined concepts of vagueness expressed by membership degrees in fuzzy sets and indiscernibility in RST to obtain a fuzzy rough set theory (FRST). FRST allows partial membership of an object to the lower and upper approximations, and moreover, approximate equality between objects can be modeled by means of fuzzy indiscernibility relations. An advantage of this is that we do not need to perform discretization if our data contain real-valued attributes. FRST has been used, e.g., for feature selection, instance selection, classification, and regression. There are many application areas that have been addressed by FRST. We first introduce some notations. A dataset is represented in terms of an information system S = (U,A); where U is a finite, non-empty set of objects called the universe of discourse and A is a finite, non-empty set of attributes, such that  $a: U \rightarrow Va$  for every  $a \in A$ , where Va is the set of values that the attribute a may take. A decision system is a special kind of information system, used in the context of classification and prediction, in which d is a designated attribute called the decision attribute, and the attributes in A are called conditional attributes. More formally, it is a pair  $S = (U,A \cup d)$ , where  $d \notin A$  is the decision attribute. In our problem the conditional attribute is age of respondent and the decision attribute is the IR index of respondent. IR Index is the weighted sum of the scores of 13 items which represent the level of intergenerational relationship.

#### 2.3 Set Approximations

Suppose an information system S = (U,A),  $X \subseteq U$  and  $B \subseteq A$  is given. Here X is the set (class) of respondents who lie in the group in which a fair intergenerational relationship is present. Let us define two operations, assigning to every  $X \subseteq U$  two sets  $\underline{B}X$  and  $\overline{B}X$ , called the B-lower and the B-upper approximation of X, respectively and defined as follows:

$$\underline{\mathbf{B}}X = \bigcup_{x \in U} \left\{ B(x) : B(x) \subseteq X \right\}$$
(1)

$$\bar{B}X = \bigcup_{x \in U} \{B(x) : B(x) \cap X \neq \phi\}$$
(2)

Hence, the B-lower approximation of a set is the union of all B-granules that are included in the set, whereas, the B-upper approximation of a set is the union of all B-granules that have a nonempty intersection with the set. The set

$$BN_B(X) = \bar{B}X - \underline{B}X \tag{3}$$

will be referred to as the B-boundary region of X. If the boundary region of X is the empty set, i.e.  $BN_B(X) = \phi$  then X is crisp (exact)with respect to B, in the opposite case, i.e. if  $BN_B(X) \neq \phi$ ; X is referred to as rough (inexact)with respect to B. Thus, the set of elements is rough (inexact) if it cannot be defined in terms of the data, i.e. it has some elements that can be classified neither as a member of the site nor its complement in view of the data. With the help of a rough set approach the data are classified into two groups, one is the class in which a fair intergenerational relationship (FIR) is present and the other class in which the FIR is not present.

#### 2.4 Discriminant Analysis

"Discriminant analysis is a statistical technique which allows us to study the differences between two or more groups of objects with respect to several variables simultaneously." (Sage book by Klecka, 1980). Discriminant Analysis (DA) performs the same analysis as multiple linear regressions by predicting an outcome. However, multiple linear regression is limited to cases where the dependent variable on the Y axis is an interval variable so that the combination of predictors will, through the regression equation, produce estimated mean population numerical Y values for given values of weighted combinations of X values.

DA is used when the dependent is categorized with the predictor of interval level, such as age, income, attitudes,

perceptions, and years of education, although dummy variables can be used as predictors as in multiple regression. There could be more than two dependent variable categories, unlike logistic regression, which is limited to a dichotomous dependent variable. In this problem we have used DA in place of logistic regression since DA provides the information about the accuracy of the data classification too along with other analysis which logistic regression does.

## 2.5 Discriminant Function

$$D = V_1 X_1 + V_2 X_2 + V_3 X_3 + \dots + V_i X_i + a$$
(4)

Where;

D = Discriminant function or discriminant score

V = The discriminant function coefficient or weight for that variable

X = Respondent's score for the particular predictor variable

a = A constant

i = The number of predictor variables

This function is similar to a regression equation or function. The v's are unstandardized discriminant coefficients analogous to the b's in the regression equation. These v's maximize the distance between the means of the criterion (dependent) variable. Good predictors contain larger weights in discriminant function. The discriminant function is supposed to maximize the distance between the categories, thus the equation should contain strong discriminatory power between groups. The DA also investigates differences between groups on the basis of the attributes of the cases, indicating which attributes contribute most to group separation.

The number of discriminant functions is one less the number of groups. There is only one function for the discriminant analysis of this problem, since our dependent variable has only two categories. In our problem the dependent variable FIR has two categories, one has the FIR present and the other one has the FIR absent. Since the



Fig. 1: Normality check for the Data

predictors, involved in our D.A, are not at interval level, we have created dummy variables for each category of predictor

variables. In order to avoid the problem of multicollinearity, we have dropped the variables age of student and family size from discriminant analysis.

The paramount assumptions required to be tested to check the compatibility of data with distriminant analysis, are homoscedasticity and normality. Levene's test of equality of error variances has been used to test the homogeneity of variance (homoscedasticity). As a result of the Levene's test, the null hypothesis that the error variance of the dependent variable is equal across groups has been accepted (p<.05). Therefore, it can be concluded that the data hold the homoscedasticity assumption. Further, the normal Q-Q curve for the standardized residuals has been plotted to check for normality assumption. After having a glance at figure 1 it is observed that the residuals are normal in nature. Since the data fulfill the assumptions of homoscedasticity and normality, the discriminant analysis has been applied for analysis.

# **3 Results and Findings**

Variables	Number of Cases	Percentage Distribution	Variables	Number of Cases	Percentage Distribution	
Sex of Students			Current Residence			
Male Student	268	58.60%	Staying with Parents	199	43.50%	
Female Student	189	41.40%	Not Staying with Parents	258	56.50%	
Native Residence			Type of Family			
Rural	213	46.60%	Nuclear Family 241		52.70%	
Urban	244	53.40%	Joint Family	216	47.30%	
Sex of the Head			Marital Status of Head			
Male Head of the Family	408	89.30%	Married Head	276	60.40%	
Female Head of the Family	49	10.70%	Widowed/Widower/Divorced Head	181	39.60%	
<b>Residence Status of Head</b>			Presence of Grandparents			
Head Residence In	292	63.90%	Household with Grandparents	180	39.40%	
Head Residence Out	165	36.10%	Household without Grandparents	277	60.60%	
Faculty			Education Head of the Family			
Science	139	30.40%	Head Education Illiterate	65	14.20%	
Arts	126	27.60%	% Head Education Primary 65		14.20%	
Social Sciences	60	13.10%	Head Education Secondary 25		05.50%	
Others	132	28.90%	Head Education Higher	302	66.10%	
Class of Students			Religion			
U.G Students	232	50.80%	Hindu	405	88.60%	
P.G Students	144	31.50%	Muslim	42	09.20%	
Ph.D Students	81	17.70%	Other Religion	10	02.20%	
Family Income Per Month						
Low Income	95	20.80%				
Moderate Income	266	58.20%				
High Income	96	21.00%				

#### Table 1: Distribution of the variables

Table 1 provides the percentage distribution of the variables considered in the desired analysis. The primary data include about 30% of students from the faculty of science, about 28% of students from Arts faculty, 13% from the faculty of social sciences and about 29% of students from other faculties of the university. More than half of the students are from undergraduate programme, a little less than one-third are in postgraduate programme and the rest are registered in research programme. The data consist of 59% male students and 41% female students. This table clearly shows that most of the students (89%) belong to Hindu religion, while the remaining 9% belong to Muslim religion and 2% belong to other religion. We further find that about 43% of students live with their parents, while about 57% students do not stay with their parents, which means that they live in the university hostel or in nearby lodges. About 21% students belong to low income families, 58% students belong to families with moderate income and 21% students belong to the families which fall in high income group. We also find that more than half (53%) of the students belong to families with a place



of residence in urban areas, whereas about 47% belong to the family with rural base. As expected, the majority (89%) of the household is headed by males, while just 11% are headed by females. About 60% heads are currently married, while 40% are widowed/widower or divorced. About 14% family heads are illiterate and the same proportion of heads is primarily educated, about 6% heads are secondary educated, while 66% have completed higher education. It is observed that about 64% of the family heads live with the family while about 36% are away because of their jobs and other reasons. It is important to note that that about 40% students have grandparents at their households, while 60% students do not have grandparents in their households.

Table 2: Rough Set Classification					
Number of objects	Lower Approximation	Upper Approximation	Quality of Approximation	Accuracy	Decision Groups
457	151	152	0.7574	0.7173	2

Table 2 gives the rough set classification of the objects involved in the study. The lower approximation for I.R index is 151 and the upper approximation is 152. Here, the X is said to be a rough set. Since we have the discrete scores for the I.R index, we don't need to perform the discretization for the data. The rough set analysis divides the data into two groups. Since the lower approximation value is 151, we accumulate all respondents having scores lower than 151 into group1, in which a fair intergenerational relationship (FIR) is absent and rest respondent into group2, in which FIR is present. The quality of the approximation is 0.7574 that indicates the high quality of our classification. Similarly the accuracy has been found as 0.7173 which indicates the high accuracy of the data classification.

Table 3: Distribution of objects					
Groups	Number of Objects	Percent objects			
FIR Absent (1)	276	60.40%			
FIR Present (2)	181	39.60%			

Table 3 shows that three-fifth students lie in the group1, which means that they do not have a fair intergenerational relationship and the rest two-fifth students lie in the group2, suggesting that two-fifth of the students have a sound relationship with their parents.

Table 4 presents the test of equality of group means for the different variables taken into consideration. We find that the proportion of undergraduate students is higher in the group2 (57%) with respect to group1 (46%) and the proportion of research student is higher in group1 (22%) with respect to group2 (11%). Considering that these differences are significant, it may be concluded that compared with research students, undergraduate students have better relationships with their parents, development of older students' own aspirations is a possible explanation for such an observation. Also, since research scholars are financially independent and do not have financial requirements from their parents, their relationship with their parents is likely to be weaker. On the other hand, younger students are more likely than older students to stay with their parents since they are heavily dependent on their parents for economic and social support. We also find that the difference in post-graduation students between the two groups is not significant; there are almost equal proportions of post-graduation students between group1 (32%) and group2 (33%).

It is worthwhile to mention that the proportion of female students is higher in the group2 (57%) than in group1 (31%) and the proportion of male students is higher in group1 (69%) than in group2 (43%). It appears that female students have better (stronger) relationships with their parents than their male counterparts. Females not only tend to have unique attributes such as love, affection and care to nourish the intergenerational relationship, but also they are more likely than male students to stay with their parents for economic and social reasons. There is no significant difference between the two groups with respect to religion since each religion has its own cultural traits.

The proportion of students staying with their parents is higher in the group2 (54%) than in group1 (37%) and the not staying with their parents is higher in group1 (63%) than in group2 (46%). This means that students living with their parents, have a better (stronger) intergenerational relationship than those not living with their parents. This is to be expected, since the students living with their parents have greater communication and sharing than those not living with their parents.

We also find that the proportion of students with urban background, is higher in group2 (67%) than that in group1 (45%) and the proportion of students with a rural background, is higher in group1 (55%) than that in group2 (33%). This finding suggests that students with urban background have better relationships with their parents than students with rural background. This observation is probably due to the fact that students from Urban background tend to live with their

parents and grandparents (table is not shown). While students from urban areas are more likely to live their parents and grandparents because they can commute to the university from their parental home, while this is not necessarily true for students from rural areas, whose parents live too far from the university. We also find that the difference between two groups with respect to family income is not significant, suggesting that family income is not an important determinant of intergenerational relationship between youth and parental generation. This finding runs counter the popular opinion that families the bonding between elders and children is stronger for economically well-to-do families.

Table 4 exhibits that the proportion of students living in joint families, is higher in the group2 (54%) compared with than in group1 (43%) and proportion of students living in nuclear families, is higher in group1 (57%) compared with that in group2 (46%). It appears that students living in joint families have a higher IR compared with those living in nuclear families. In India most people prefer a joint family. Joint family is the platform for children to learn about sharing and caring for the other members of the family, especially the elders.

The Table 4 also reveals that there is no significant mean difference between two the groups regarding the sex of the head of the family. We find that the proportion of students from the household with currently married head, is higher in the group2 (84%) compared with that in group1 (45%) and the proportion of students from the household with widowed/widower/divorced head, is higher in group1 (55%) compared with that in group2 (16%). This observation suggests that the students, belonging to the household with currently married head have a better relationship with their parents than the students who belong to the household with widowed/widower/divorced head. The rationale behind this result could be the mental and social imbalance of the heads those are widowed/widower or divorced, since there are many factors, related to the marital status, affect the mental and social status of an individual. Head of the family with good mental and social status could be having a good relationship with his/her offspring.

Education of the family members is another important attribute for the establishment of intergenerational relationships. The Table 4 shows that the proportion of students whose family head is illiterate or has a primary education is higher in group1 (20%) than in group2 (6%) and the proportion of students whose family head is better educated is higher in group2 (85%) than in group1 (54%). We do not regard the secondary education of head significant as a causal factor of group separation, since there is a little change in the proportions of students between group1 (7%) and group2 (3%) for the given variable; also, these proportions are really smaller with regard to other categories for the variable. Thus we may conclude that the parents with higher education possess a better relationship with their children than the parents who are illiterate or less educated. Education enables the parents to understand the thoughts of the new generation and to have harmony with the younger generations. It is not surprising,, therefore, that the level of IR increases with the education of elder generation. Since a higher proportion of students with parents or they will be in constant touch with their parents.

It is observed from table 4 that the residential status of family head makes a significant difference between two groups. The table exhibits that the proportion of students, whose head of the family is living inside the household, is higher in the group2 (88%) with respect to group1 (48%) and proportion of students, whose head of the family is working outside the station, is higher in group1 (52%) with respect to group2 (12%). Thus, it can be concluded that the head of the family, dwelling inside the household, keeps better relationship with the younger generation than the head of the family, dwelling outside the station because of his/her employment. Parents, who stay at home, have more time to interact with their children and they can take care of their children properly too, if parents are not around, the younger generation does not bear a firm support to share their personal affairs and problems. The table also exhibits that the proportion of students, belonging to the household having grandparents, is higher in group1 (71%) with respect to group2 (45%). This indicates that the presence of grandparents affects the relationship between students and their parents. As an outcome of this study, it is found that household with the presence of grandparents, shows better IR than the household not having grandparents.

In Table 4, the smaller the wilks' lambda, the more important the independent variable to the discriminant function. From the result, it is clear that sex of the student, type of the family, marital status of the head of the household, higher educated head of family, residential status of head and presence of grandparents in the household are more significant for the group separation.

Table 5 provides information on each of the discriminant functions (equations) produced. The maximum number of discriminant functions produced is the number of groups minus 1. We are only using two groups here, namely 'FIR absent' and 'FIR present', so only one function is displayed. An eigenvalue indicates the proportion of variance explained (between-groups sums of squares divided by within-groups sums of squares). The larger the eigenvalue, the more of the variance in the dependent variable is explained by that function. The canonical correlation is the multiple correlation between the predictors and the discriminant function. With only one function, it provides an index of overall model fit which is interpreted as being the proportion of variance explained (R2). In our problem a canonical correlation of 0.801 suggests the model explains 64.16% of the variation in the grouping variable, i.e. whether a respondent has a FIR with his/her parents or not. Wilks' Lambda is the ratio of within-groups sums of squares to the total sums of squares. This



Mean/Group1 (FIR Absent)         S.D/Group 1 (FIR Absent)         Mean/Group 2 (FIR Present)         S.D/Group 2 (FIR Present)         Wilks' Lambda         Sig.           U.G Students         0.46         0.500         0.57         0.496         0.888         0.02           P.G Students         0.32         0.465         0.31         0.466         1         0.10           Ph.D Students         0.22         0.416         0.11         0.314         0.880         0.00           Male Student         0.69         0.324         0.43         0.446         0.730         0.00           Female Student         0.31         0.462         0.57         0.496         0.730         0.00           Hindu         0.91         0.293         0.866         0.352         0.994         0.10
U.G Students0.460.5000.570.4960.8880.02P.G Students0.320.4650.310.46610.10Ph.D Students0.220.4160.110.3140.8800.00Male Student0.690.3240.430.4460.7300.00Female Student0.310.4620.570.4960.7300.00Hindu0.910.2930.860.3520.9940.10
P.G Students         0.32         0.465         0.31         0.466         1         0.10           Ph.D Students         0.22         0.416         0.11         0.314         0.880         0.00           Male Student         0.69         0.324         0.43         0.446 <b>0.730</b> 0.00           Female Student         0.31         0.462         0.57         0.496 <b>0.730</b> 0.00           Hindu         0.91         0.293         0.86         0.352         0.994         0.10
Ph.D Students         0.22         0.416         0.11         0.314         0.880         0.00           Male Student         0.69         0.324         0.43         0.446 <b>0.730</b> 0.00           Female Student         0.31         0.462         0.57         0.496 <b>0.730</b> 0.00           Hindu         0.91         0.293         0.86         0.352         0.994         0.10
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Female Student         0.31         0.462         0.57         0.496         0.730         0.00           Hindu         0.91         0.293         0.86         0.352         0.994         0.10
Hindu         0.91         0.293         0.86         0.352         0.994         0.10
Muslim 0.09 0.282 0.10 0.300 1 0.65
Other Religion         0.01         0.085         0.04         0.206         0.985         0.06
Staying with Parents 0.37 0.462 0.54 0.410 0.870 0.00
Not Staying with Parents         0.63         0.483         0.46         0.500         0.870         0.00
Rural 0.55 0.451 0.33 0.472 0.852 0.00
Urban 0.45 0.498 0.67 0.322 0.852 0.00
Low Income 0.20 0.400 0.22 0.416 0.999 0.58
Moderate Income         0.59         0.493         0.57         0.496         1         0.80
High Income         0.21         0.411         0.20         0.404         1         0.81
Nuclear Family         0.57         0.496         0.46         0.436         0.789         0.03
Joint Family 0.43 0.441 0.54 0.500 <b>0.789</b> 0.03
Male Head of the Family         0.90         0.302         0.88         0.221         0.999         0.62
Female Head of the Family         0.10         0.332         0.12         0.321         0.999         0.62
Married Head 0.45 0.498 0.84 0.308 <b>0.748</b> 0.00
Widowed/Widower/Divorced Head         0.55         0.388         0.16         0.368         0.748         0.00
Head Education Illiterate         0.20         0.397         0.06         0.320         0.864         0.00
Head Education Primary         0.20         0.297         0.06         0.240         0.864         0.00
Head Education Secondary         0.07         0.254         0.03         0.180         0.994         0.10
Head Education Higher         0.54         0.499         0.85         0.363         0.800         0.00
Head Residence In         0.48         0.531         0.88         0.317         0.737         0.00
Head Residence Out         0.52         0.501         0.12         0.328         0.737         0.00
Household with Grandparents         0.29         0.435         0.55         0.389         0.831         0.00
Household without Grandparents         0.71         0.455         0.45         0.499         0.831         0.00

Table 5: Eigenvalue and Wilks' Lambda

	0					
Test of Function(s)	<b>Canonical Correlation</b>	Eigenvalue	Wilks' Lambda	Chi-square	df	Sig.
1	0.801	0.806	0.316	229.48	17	.00

is the proportion of the total variance in the discriminant scores not explained by differences among groups. This is a measure of how well each function separates cases into groups. Smaller values of Wilks' lambda indicate the greater discriminatory ability of the function. The table indicates a highly significant function (p < .01). Thus, our discriminant function is statistically significant for group separation.

Table 6 exhibits that on an average, we have got that 77.9% of original grouped cases are correctly classified and 75.3% of cross-validated grouped cases are correctly classified, the cross-validated result is more reliable. Thus we can say that the classification of the students between two groups is pretty good.

# 4 Discussion & Conclusion

This study is designed to discover the potential of the intergenerational relationship between youth and their parental generations. Since only 39% of students own a fair intergenerational relationship with their parents, society should look into the factors behind such imbalance within the family. As the age increases, people are assumed to become wiser, and therefore, they take decisions related to their lives on their own, which results in a conflict between two generations. Thus, folks from both generations should try to make the harmony in the relation with each other by respecting the thoughts and lifestyle of other generation. Although the son preference is still high in the Indian society, thus far no one can rebuff the love, care and devotion of female child towards her elder generations, they also seek more attention and social security than male students. This is the rationale why the study shows that female students have better relationships with their parental generation. Like other relationships, distance matters in intergenerational

Table 6: Classification results from Discriminant Analysis						
	Predicted Group Membership					
		Groups	1(FIR Absent)	2 (FIR Present)	Total	
Original	Count	1 (FIR Absent)	223	53	276	
		2 (FIR Present)	48	133	181	
	%	1 (FIR Absent)	80.8	19.2	100	
		2 (FIR Present)	26.5	73.5	100	
Cross validated	Count	1 (FIR Absent)	213	63	276	
		2 (FIR Present)	50	131	181	
	%	1 (FIR Absent)	77.2	22.8	100	
		2 (FIR Present)	27.6	72.4	100	

a. Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all cases other than that case. b. 77.9% of original grouped cases correctly classified.

c. 75.3% of cross-validated grouped cases correctly classified.

relationship too. We find that the students living with parents have better relationships with their parents since they get more chances to interact and share things with them. Most of the students from rural setup stay far from their households since they do not receive a good education facility at their native place of abode. The study suggests stabilizing better, higher educational institutions in rural places of the country, so that students can complete their education dwelling in their households. As a result of this study, we don't find family income as an important factor in building a good relationship between the two generations under study.

The most beautiful feature of the Indian culture is the tradition of the joint family system. An important element that holds all members integrated in love and peace in a joint family system in India is the importance tied to the customs. This characteristic is really peculiar to Indian folks. Manners like respecting elders, bearing upon their feet as a mark of respect, addressing in a dignified way, taking elders' advice prior taking important decisions and so forth is something that Indian parents take care to instill in their children from the very outset. In the joint family system all members of the family endeavor to solve their problems adhesively, this is what keeps one tension-free, jovial and contended even in today's highly competitive environment.

Education of parents is also another unavoidable factor for the strength of the intergenerational relationship, since educated parents can understand the values and thoughts of the younger generation. Parents who dwell outside the household due to their jobs have less interaction and communication with their children; it results to a weak relationship between the children and parents. In the current scenario, both the parents are working due to the fast pace of life and modernization. The existence of grandparents in the family is essntial to look after the young children; the grandparents render them emotional security and practically assist them to concentrate on their career and achievement needs. Since the presence of grandparents makes the relationship between offspring generations stronger, it is suggested to make grandparents a part of the family.

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#### References

- [1] An ILC Global Alliance Report March (2012). "Global Perspectives on Multigenerational Households and Intergenerational Relations".
- [2] Bose, A. (1982). "Aspects of Aging in India", Social action, 32(1), 1-19.
- [3] Rikhye, K. and Chadha, N.K. (1998) "Intergenerational Gap and its consequences in Old Age. Aging and Society": The Indian Journal of Gerontology, 8, 57-70.
- [4] Chowdhry, D. P. (1992). "Aging and the Aged": A source book. South Asia Books.
- [5] De-Souza, A. and Fernandes, W. (1982). "Aging in South Asia: Theoretical Issues and Policy Implications" (Vol. 6). Indian Social Institute.
- [6] Divjak, B. and Oreški, D. (2009). "Prediction of academic performance using discriminant analysis in Information Technology Interfaces", 2009. ITI'09. Proceedings of the ITI 2009 31st International Conference on (pp. 225-230). IEEE.
- [7] Dubois, D. and Prade, H. (1990). "Rough fuzzy sets and fuzzy rough sets". International Journal of General System, 17(2-3), 191-209.



- [8] Jamieson, L. (2006): "Intergenerational Relationships: Theory and Method". A talk given by Lynn Jamieson, Centre for Research on Families and Relationships and Sociology, University of Edinburgh.
- [9] Martin, L. (1988). "The Aging of Asia", Journal of Gerentology: Social Sciences, 43(4): S 99.
- [10] Nandan, Y. and Eames, E. (1980). "Typology and analysis of the Asian Indian family". The New Ethnics: Asian Indians in the United States, 199-215.
- [11] Pawlak, Z., Grzymala-Busse, J., Slowinski, R. and Ziarko, W. (1995). "Rough sets". Communications of the ACM, 38(11), 88-95.
- [12] Pawlak, Z. (1998). "Rough Set Theory and its Applications to Data Analysis, Cybernetics and Systems". An International Journal, 29:7, 661-688.
- [13] Riza, L.S., Janusz, A., Bergmeir, C., Cornelis, C., Herrera, F., Slezak, D. and Bentez, J.M. (2014): "Implementing algorithms of rough set theory and fuzzy rough set theory in the R package" "RoughSets". Information Sciences : 287 (2014) 68-89.
- [14] Zeldin, S Larson, R, Camino, L, O'Connor, C 2005, "Intergenerational Relationships and Partnerships in Community Programs: Purpose, Practice, And Directions For Research". Journal Of Community Psychology, 33(1): 1-10.



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