INDIAN STREAMS RESEARCH JOURNAL
ISSN NO : 2230-7850
IMPACT FACTOR : 5.1651 (UIF)
VOLUME - 15 | ISSUE - 4 | MAY – 2025

DECISION TREE MODELLING OF ADOLESCENTS' CULTURAL INTELLIGENCE BASED ON THEIR PERCEIVED PARENTING STYLE

P. Sooriya
Post-Doctoral Fellow (ICSSR) ,
Department of Psychology, Periyar University, Salem.

ABSTRACT

Though rapid globalization increases worldwide job opportunities, yet professionally skilled people find it difficult to sustain in culturally diverse settings. Regional variation in cultural practices lead to cultural conflicts that in turn interrupt the sustainability of workers. Therefore, cultural intelligence, an imperative employability skill to function well effectual in a diverse culture is necessitated to develop sustainability. Cognitively, individual's ability to think abstract and judge rationally were actuated during later adolescence. Rapid physical and psychosocial changes during adolescence significantly affect their growth, educational performance, peer influences and closeness to family. However, previous studies demonstrated how culture impinges on the relationship between demographic variables, parenting styles, and behavioural outcomes. This intrigued the researchers to explore the cultural intelligence of adolescents with related variables. Utilizing cluster sampling technique and survey method, the data was collected from 1592 school going adolescents in Tamil Nadu state, India using adolescent cultural intelligence scale and adolescent perceived parenting style scale. Further, the researcher applied factors, cluster, and decision tree analysis in addition to descriptive statistics and developed a predictive tree model depicting adolescents' cultural intelligence level based on their perceived parenting style with respect to socio-demographic variables. Results revealed that adolescents, those who perceived both their father and mother as positive parents, exhibited high cultural intelligence irrespective of demographic variables. Therefore, this tree model could help teachers to plan activities for classroom interaction and in turn help them to suggest the policy makers to modify curriculum to ensure quality education and eliminate disparities at various levels. Proper execution of the above mechanism would ease the individuals' complexity to sustain more in international jobs with minimal cultural misattribution.

KEYWORDS: *Cultural Intelligence, Adolescents, Parenting Style, Perceived Parenting Style, Decision tree model, Cluster Analysis, CHAID.*

INTRODUCTION

In this modern era, rapid globalization leads the world so flat and increased job opportunities worldwide. It encourages people to migrate randomly from one place to another to acquire knowledge and gain experience, that further results in increased intercultural interaction, coincidentally, the probability of cultural misunderstanding and tensions. Misperception about the cultural role in behavior and communication often lead to cultural conflict (Van Dyne et al., 2012). Even professionally skilled people

find it difficult to sustain in culturally diverse settings. This critical scenario urges us to think of a key constraint factor that minimizes misperception and misattribution, necessitates to regulate individuals' social behaviors during inter-cultural encounters. In accordance to satisfy the situational needs, cultural intelligence is positioned as a key delineating factor since it underpins individuals understanding about their self, others and culturally varied situations (Van Dyne & Ang, 2008). Therefore, cultural intelligence is deemed as an inevitable requirement to satisfy their needs and desires to sustain more in society that are quite different from their own culture.

Cultural Intelligence is an individual ability to function well effectual in a diverse cultural environment (Van Dyne et al., 2012). It also deals with the individual's ability to recognize and understand different people's beliefs, values, attitudes, and behaviors to apply knowledge towards achieving specific goals (Livermore, 2013). Earley and Ang (2003) postulated a four- factor model multidimensional cultural intelligence theory. The four factors expound individuals' four different skills namely, (i) CQ Drive deals with the ability to direct attention and sustain energy towards learning new cultural situations; (ii) CQ Knowledge indicates learning oneself to understand similarities and dissimilarities between culture's (iii) CQ Strategy involves capabilities to plan, monitor and revise mental models regarding cultural practices; and (iv) CQ Action deals with the ability to behave culturally sensitive (Livermore, 2013). Therefore, parallel promotion of all four capabilities is essential, because focusing only one would pave way to deeper cultural ignorance instead of CQ enhancement (Kiznyte, Ciutiene & Dechange 2015).

Person having all four CQ capabilities will device plans and support pre- conflict strategies development to prompt awareness and carefulness in multicultural gathering practices (Nemeth, 2010). Equipping Cultural Intelligence is an essential requisite to support effective interaction in multicultural populations (Grubb, 2014). Cultural Intelligence, a noteworthy individual capability, would help to bridge organizational cultural disparities (Arora & Rohmetra, 2010) by distressing work experience in varied levels of cultural encounters. Therefore, theoretically it is evident that Culturally Intelligent people who skillfully work with culturally diverse teams are yearning for the upliftment of society (Yordanova, 2011). Because culturally Intelligent individuals are characterized as well-dressed, well-groomed, compassionate, understanding, sympathetic and sensitive but not domineering. Basically, individual's awareness about their own culture and others, moderate affect-based trust (Zolfaghari, 2013) with people hales from global contexts (Chua, Morris & Mor 2012).

Simultaneously, it steers personal assessment of individual capabilities like adaption in new place (Lawrence, 2011; Gregory et al., 2010), adjustment (Huff, 2013), collaboration (Ahmadia et al., 2013) and trust based relationship (Chen et al., 2017), engagement (Kodwani, 2012), efficiency (Eisa & Rahim, 2015) and effectiveness (Nikpour et al., 2013; Khani et al., 2011; Chen et al., 2011), mindfulness (Kaufman, 2013), decision making style (Drury, 2014; Rahimi et al., 2014), performance (Chen et al., 2011) and leadership (Sozbilir & Yesil 2016; Diemer 2016; Nel et al., 2015), goal orientation, satisfaction (Lu 2012; Nguyen & Dinh., 2010), achievement, multicultural experience (Thomas et al., 2015; Mazzurco. , Jesiek & Ramane, 2012), communication (Lawrence 2011) and negotiation (Groves et al., 2015; Young, 2013), psychological flexibility and wellbeing and social exchange (Javaheri et al., 2013), etc. Hence, it is clearly understood that cultural intelligence is considered as a much better predictor of how to work with people from different cultural backgrounds and it is the undeniable reality for everyone over the next decade

Cultural intelligence: a prerequisite for adolescents

Cultural intelligence is considered as an imperative quality that undoubtedly required for every individual, they may be global students or global leaders (Li et al., 2012). Cultural intelligence is the ultimate requirement for individuals to function effectively and successfully in their survival place. Thus, the significance of cultural intelligence is globally recognized. Cultural intelligence development was strongly influenced by individuals stage of life (Devitt, 2014). Adolescence is a chaotic developmental age in which transmission from childhood to adulthood takes place physically, mentally, emotionally, and socially. At this problematic stage, adolescents started to mingle with society, who probably are disinterested to follow their own customs, traditions and values yet have an urge to find social directions, develop new patterns of behaviour and social responsibility, which lead to the creation of their self-identity. Hence, new insights through multidisciplinary approach linking various disciplines with socioeconomic and cultural diversities are necessitate (Richter 2006). Therefore, it is imperative to impart cultural intelligence among adolescents to channelize their energy in a positive manner and create them as an apt future adult. Cognitively, individual's ability to think abstract and judge rationally were actuated during later adolescence. Rapid physical and psychosocial changes occur during this stage affect their growth, educational performance, peer influences, and closeness to family. Hence, cultural intelligence is a significant prerequisite for proper cognitive development in adolescents.

Perceived parenting style as a predictor of cultural intelligence

While predicting proper cognitive development in adolescents, it is significant to think of their perception regarding their parenting style. Here, parenting style, the explicit attitudes and behaviors shown by parents played an eloquent role in child life (Bibi et al., 2013). Generally, parenting style is a psychological construct representing standard strategies that caregivers use in their child rearing practices. The caregivers might be their own parents, stepparents, grandparents, sibling parents, relatives etc. Generally, child rearing practices of own parents have a high influential role in certain adolescent developments. According to Baumrind (1991), parenting style has been characterized by dimensions of parental responsiveness and demandingness. It is further classified into four styles namely authoritative, authoritarian, permissive and neglectful based on the different combinations of low and high level of parental demandingness and responsiveness. As per Baumrind typology of parenting style, authoritative parenting style is high on demandingness and high on responsiveness; authoritarian parenting style is high on demandingness but low on responsiveness; permissive parenting style is high on responsiveness but low on demandingness; and neglectful parenting style is low on both responsiveness and demandingness (Maccoby & Martin 1983).

Parenting isn't only a clump of skills, rules, and tricks but anyone can know who they are, what their family culture is, and how they transmit the most personal aspects of their values to their children. Parenting style the most imperative source (Pluess & Belsky 2010) influence and shape all sort of child's development. Because majority of people learn parenting practices from their own parents, some may accept, and some may discard. Parents exhibit some unique characteristics like inimitable attitude, action, thoughts, morals, and family background, which varied from one parent to another.

While researching the influence of parenting style on children's development, two important aspects have to be keep in mind. (i) Even though father and mother played an equal role in bringing up their children they also differ in their parenting style. In fact, fathers may follow one style, and mothers may follow the same style or adopt some other different style to raise their children and vice versa. (ii) Even though parents raise their

children in a more positive way, some children may perceive it in a positive manner, some others may perceive it in a different manner and vice versa. Therefore, the perception of adolescents regarding their own parents parenting style must be focused more instead of their parents' view on their parenting style. Hence, it is concluded that the adolescents' perception regarding their parents' parenting style has shown great impact on their cultural intelligence then their parents actual parenting style. Because children raised in dramatically different environments can later grow up to have remarkably similar behavior patterns. Conversely, children of the same parents raised in the same environment can grow up to have astonishingly different patterns of behavior than one another.

Descartes (2012) demonstrated how culture impinges on the relationship between demographic variables, parenting styles, and behavioural outcomes. However, cultural Intelligence is comprehensive, widespread and centred around the impact created by gender (Azizi et al., 2015), religion (Malt 2010) along with the importance of their familial affiliations and financial performance (La Garza et al., 2010); Even language learning had strong association (Devitt 2014; Li et al., 2012), yet considered as a weak predictor of Cultural Intelligence (Ng 2011); Therefore, the significant relationship that exist between cultural intelligence and certain demographic variables are fundamental and undividable (Pour & Zadeh 2013).

Based on the critical retrospection of related literature, it was understood that many international researchers were carried out in Information Technology and management sector but fewer in education. In Indian context even though research in cultural Intelligence has already been carried out, there were dearth of studies dealt with exploring cultural intelligence of adolescents in sub-cultural context (Objective-1). Since, Cultural Intelligence research should not restrict international contexts but also required for domestic context (La Garza, Teresa & Carolyn 2010). However, logically speaking a holistic model showing classification of adolescents' cultural intelligence level based on their perceived parenting style regarding their parents with respect to socio-demographic variables (Objective-2) is an inevitable need of this hour. Because this model could be a very good input for teachers to know the entry level intelligence and behaviour of adolescents as a whole and help teachers to plan activities for classroom interaction and in turn help them to suggest the policy makers to modify curriculum to ensure quality education and eliminate disparities at various levels. Therefore, these two main objectives that address the above-mentioned gaps in cultural intelligence literature upholds a consistent developmental perspective.

Therefore, in this study the researchers considered adolescent sub-cultural intelligence as the ability to plan, be aware of and check their intellectual models as per the knowledge acquired through various experiences and direct their motives intrinsically and extrinsically to adjust and have effective interaction with others by refining their verbal and nonverbal behavioural activities in sub-cultural settings. Whereas perceived parenting style represents the perception of adolescents regarding the cultural and emotional climate in which the caregivers raise them up. Adolescents own mother and father were represented as parents and all others were excluded since the role of their own parents' impact more the adolescents' intelligence than any other caregivers.

METHODOLOGY

The researcher adopted descriptive research methodology as well as quantitative research approach and design for this study.

Research Context

India is a secular country, having states distinct from their own unique customs and tradition, especially Tamil Nadu. It is a well-known state for its old civilization, homes to various religious places, arts, music, literatures, etc. Despite people of Tamil Nadu skilled in various cultural activities, they lacked somewhat in their ability to interact and adapt some other culture in an effective manner due to rapid globalization and modernization. Thus, Tamil Nadu state is considered as the research context.

Population and Sample

Adolescents belong to Tamil Nadu state are considered as population. There were five cultural zones present in Tamil Nadu namely, Coimbatore, Chengalpattu, Thiruvannamalai, Madurai and Tanjavore. In this study, the researcher considered Thiruvannamalai zone because of its translucent culture. Consequently, Thiruvannamalai zone consists of eight districts, among them five districts namely Salem, Villupuram, Dharmapuri, Krishnagiri and Namakkal are randomly selected. Therefore, adolescents belonging to the five districts are considered as target population. Adolescents who studying in ninth standard in Government, Aided, and Private schools in the above said districts are considered as Target sample.

Measurements

(i) Adolescent Cultural Intelligence Scale

The investigator developed a tool to measure the degree of adolescents' cultural intelligence i.e., ability to perform well effectual in a sub cultural environment to fulfil their desires and needs. It is constructed based on Earley and Ang's multidimensional cultural intelligence theory. Adolescent cultural intelligence scale is a self-report measure composed of 50 positively natured items under nine dimensions namely Planning, Awareness, Checking, Culture general knowledge, Context specific knowledge, Interest, Self-efficacy to adjust, Verbal and nonverbal behavior and Speech act. It is a five-point frequency type rating scale (i.e., Never, Seldom, Often, Most Often and Always) with 250 as maximum score and 50 as minimum score. This scale is highly beneficial to demonstrate and has excellent internal consistency across items. Since, it has 0.66 content validity and 0.92 reliability. Utilizing Smart PLS software, confirmatory factor analysis is carried out to obtain a highly validated structural and measurement model. The obtained model satisfies all quality criteria, and all the model fit indices are with in threshold.

(ii) Adolescent Perceived Parenting Style Scale

The investigator developed a tool to measure the degree of adolescents' perception regarding their parents parenting style in a socio-cultural perspective. It is constructed based on Baumrind four typology of parenting styles. It is an observer report composed of 25 items with 13 positive and 12 negative natured items. It is a five-point Agreement type rating scale (i.e., strongly disagree, disagree, undecided, agree and strongly agree) with 125 as maximum score and 25 as minimum score. Four factors namely (i) warmth and nurturance, (ii) authority and control, (iii) encouragement and involvement and finally (iv) attitude and behavior were explored by employing exploratory factor analysis using SPSS. This scale is also highly beneficial to demonstrate since it showed content validity 0.56 (mother) and 0.59 (father). It also exhibited excellent internal consistency with reliability 0.82 (mother) and 0.87 (father). Utilizing Smart PLS software, confirmatory factor analysis is carried out to obtain a highly validated structural and measurement model. The obtained model satisfies all quality criteria, and all the model fit indices are withi n threshold for both father and mother.

Procedure

The researcher planned to collect quantitative primary data for this study. Sample size is calculated by using precision method. Initially the researcher explained the objectives of this study to the headmasters of 25 higher secondary schools in five districts of Tamil Nadu that were selected by cluster sampling technique to get permission. Further the investigator adopted a survey method for collecting data from school going ninth standard adolescents. First, the significance of this research and students' role in it are explained to students and got informed consents from them. Proper instructions were given, and students are allowed to fill in the questionnaires in conducive classroom environments approximately for 40 minutes. The collected data is subjected to data screening and cleaning processes to treat missing data, remove outliers, and check normality distribution.

Variables used in the study

Cultural Intelligence is considered as dependent variable and adolescents perceived parenting style regarding their parents is considered as independent variable. Variables such as religion, language, locality, gender, family type, and monthly income of parents are considered as demographic variables. Cluster sampling technique is employed to select 1592 school going adolescents from 25 schools in Tamil Nadu state, India and survey method utilized to collect data. Among 1592 adolescents, 43.7% (n=696) are boys and remaining 56.3% (n=896) are girls; 30.2% (n=481) adolescents are surviving in urban area and 69.8% (n=1111) are surviving in rural area; Most of the participants (95.9%, n=1526) belong to Hindu religion and others are only 4.1% (n=66); 96% (n=1529) adolescents speak Tamil language as their mother tongue and the left over 4% (n=63) speak other languages as their mother tongue; 25.8% (n=411) are living in joint family and 74.2% (n=1181) are living in nuclear family; 85.1% (n=1354) adolescents' parents are earning monthly income below 30,000 rupees and the left over 14.9% (n=238) are earning above 30,000 rupees. Therefore, the study sample approximately represents the fractions of various demographic variables as such in population.

Statistical Analysis

Descriptive statistics are applied to find cultural intelligence level of adolescents by using SPSS software. Then k-means cluster analysis is employed to categorize the perception of adolescents' regarding their mothers and fathers parenting style separately. Finally, decision tree analysis is adopted to classify different levels of adolescents' cultural intelligence based on their perceived parenting styles regarding their father and mother in presence of certain socio demographic variables.

RESULTS AND DISCUSSION

(i) Adolescents' Cultural Intelligence level

Results revealed that overall adolescents exhibit average cultural intelligence since they secured 63.96% (M=159.91, SD=31.38). Out of 1592 school adolescents, most of them (n=1048, 65.8%) fall under moderate category which was supported by Jaseena & Vijayan (2016). Though the mean scores of adolescents' cultural intelligence is appropriately equivalent to normally distributed ones, a slight positive skewness is observed. Eventually, this happened because of the presence of a greater number of adolescents (n=292, 18.3%) in high category next to moderate and finally low category (n=252, 15.8%). According to Box (2012), cultural intelligence level is befitted as an imperative element for leaders to lead the team successful. Students with lower cultural intelligence show poorer psychological adjustment and lower academic performance (Nguyen & Dinh 2010). In converse to this, individuals with high cultural intelligence might show high level of performance (Moon

2013), collaboration (Zouhbi, 2013), logical thinking, flexibility (Tsai & Lawrence 2011), leading ability and effective management (Keung & Szapkiw, 2013) in different cultural settings .

(i) Clustering Adolescents' Perceived Parenting Style

K means cluster analysis is carried out to identify homogeneous group pf adolescents' perceived parenting style separately for both adolescents' mother and

Table 1
Initial and final clusters of adolescents' perceived parenting style with Anova

Items	Cluster centres of mother perceived parenting style							Cluster centres of father perceived parenting style						
	Initial			Final			F	Initial			Final			F
	1	2	3	1	2	3		1	2	3	1	2	3	
Item 1	1	5	5	3	4	3	78.865***	5	1	1	4	3	3	91.091***
Item 2	5	5	1	3	4	4	285.314***	5	1	1	4	3	3	243.192***
Item 3	5	5	5	3	4	4	385.179***	5	5	1	4	3	3	467.967***
Item 4	1	5	5	3	4	4	270.753***	5	1	5	4	3	3	282.207***
Item 5	1	5	4	3	4	4	292.083***	5	1	1	4	3	3	332.030***
Item 6	1	5	5	3	4	4	119.266***	5	1	5	4	3	3	115.374***
Item 7	5	1	5	4	2	2	460.730***	5	2	5	2	4	4	489.479***
Item 8	1	5	5	3	4	4	340.465***	5	5	1	4	2	3	521.253***
Item 9	1	5	4	2	4	4	643.272***	5	1	2	4	2	3	577.475***
Item 10	5	5	5	3	4	5	494.663***	4	1	5	4	3	3	538.940***
Item 11	1	1	1	4	2	2	761.244***	1	5	5	2	4	3	654.310***
Item 12	1	5	4	3	4	4	383.560***	5	1	4	4	3	3	277.124***
Item 13	3	5	1	3	2	2	228.421***	1	5	5	2	3	3	299.829***
Item 14	1	1	4	3	2	3	98.263***	1	5	5	2	4	3	91.036***
Item 15	5	1	5	3	2	4	174.747***	5	5	1	3	4	3	28.211***
Item 16	3	5	1	2	4	2	254.528***	1	1	5	3	2	3	59.146***
Item 17	5	1	5	3	2	4	339.572***	1	1	5	3	4	3	48.454***
Item 18	1	1	5	3	2	5	499.916***	5	5	5	4	4	3	75.706***
Item 19	1	5	1	3	4	3	96.383***	5	1	5	3	2	3	86.116***
Item 20	1	1	5	3	2	4	205.633***	2	5	5	3	4	3	50.463***

Item 21	5	1	5	3	2	4	174.298***	1	5	1	3	4	3	45.989***
Item 22	1	1	5	3	2	4	253.474***	5	5	1	3	4	3	61.398***
Item 23	1	1	5	3	2	4	334.581***	5	5	1	4	4	2	118.429***
Item 24	1	5	5	3	4	3	68.787***	5	1	5	4	2	3	193.657***
Item 25	2	1	5	3	2	3	66.896***	5	1	1	2	3	2	90.467***

Note. * p < .05. ** p < .01. *** p < .001.

father by fixing 3 as cluster number. Though clusters of adolescents' perceived parenting style of their mother converge at 7^{th} iteration, failed to converge even at 10^{th} iteration in case of father. Adolescents' perception clusters have 0.00 (mother) and 0.07 (father) maximum absolute coordinate change with 14.59 (mother) and 15.07 (father) as its minimum distance between initial centers.From table 1, it is inferred that the calculated 'F' values of all items are greater than that of the critical 'F' value at 0.001 significance level. Hence it is proved to be evident that adolescent's clusters differ significantly from each other in their perceived parenting styles regarding their parents. Each cluster of adolescents' perceived parenting style regarding their mother are named as Optimal mothers (OM), Positive mothers (PM) and Negative mothers (NM) and father are named as Optimal fathers (OF), Positive fathers (PF) and Negative fathers (NF) based on the illustration of characteristics obtained by comparing cluster wise, final cluster center values of each statement. Overall, 41.45% (n=660, mother) and 28.32% (n=451, father) adolescents perceived their parents as optimal parents, 26.38% (n=420, mother) and 46.54% (n=741, father) adolescents perceived their parents as positive parents and 32.16% (n=512, mother) and 25.12% (n=400, father) adolescents perceived their parents as negative parents. Therefore, it is concluded that majority of adolescents perceived their parents as an optimal mother and positive father.

(i) Decision Tree of Adolescents' Cultural Intelligence

Decision tree analysis is utilised to classify adolescents' cultural intelligence level based on their perceived parenting style of their own mother and father with respect to demographic variables such as religion, language, locality, gender, family type, monthly income of parents and proposed a predictive model. Three different levels of cultural Intelligence (CQ) are considered as the dependent variable, clusters of adolescents' perceived parenting style regarding their mother and father are considered as independent variables separately each in addition to the above said categorical variable. In this analysis, Chi-square Automatic Interaction Detection (CHAID), a non- parametric decision tree growing technique is adopted to detect interaction between categorical variables using Pearson chi-square test and the predictive tree model exhibit adjusted significance value based on Bonferroni testing. The 10-fold cross validation test is utilized to standardize the model by comparing category wise, risk indexes of the model. The criteria for tree growth are fixed by putting 3 as maximum growing limit, allowing outcome variables to split and merge into multiple or single nodes at 0.05 significance level by assuming maximum number of cases limited to parent node as 100 and child node as 50. Fig. 1 represents the predictive tree model of adolescents' cultural intelligence based on CHAID, which had 16 Nodes with 9 Terminal Nodes. The predictor variables i.e., clusters of adolescents' perceived parenting style regarding their father and mother, monthly income of parents and locality which are responsible for tree growth is arranged in descending order based on the magnitude of significance value. The remaining categorical variables such as

religion, language (supported by Tajeddin & Momenian, 2012), gender (contradicted by Azizi et al., 2015) and family type are excluded from analysis, since they exhibit non-significant interaction. Among the 9 paths, majority of adolescents in 8 different paths were predicted to have moderate cultural intelligence and in the remaining 1 path have high cultural intelligence.

From the tree model, it is observed that adolescents' cultural intelligence level (parent node) showed significant interaction with different father clusters of adolescents' perceived parenting style and split into three nodes namely positive father (PF, node 1), optimal father (OF, node 2) and negative father (NF, node 3). Here,

Figure 1

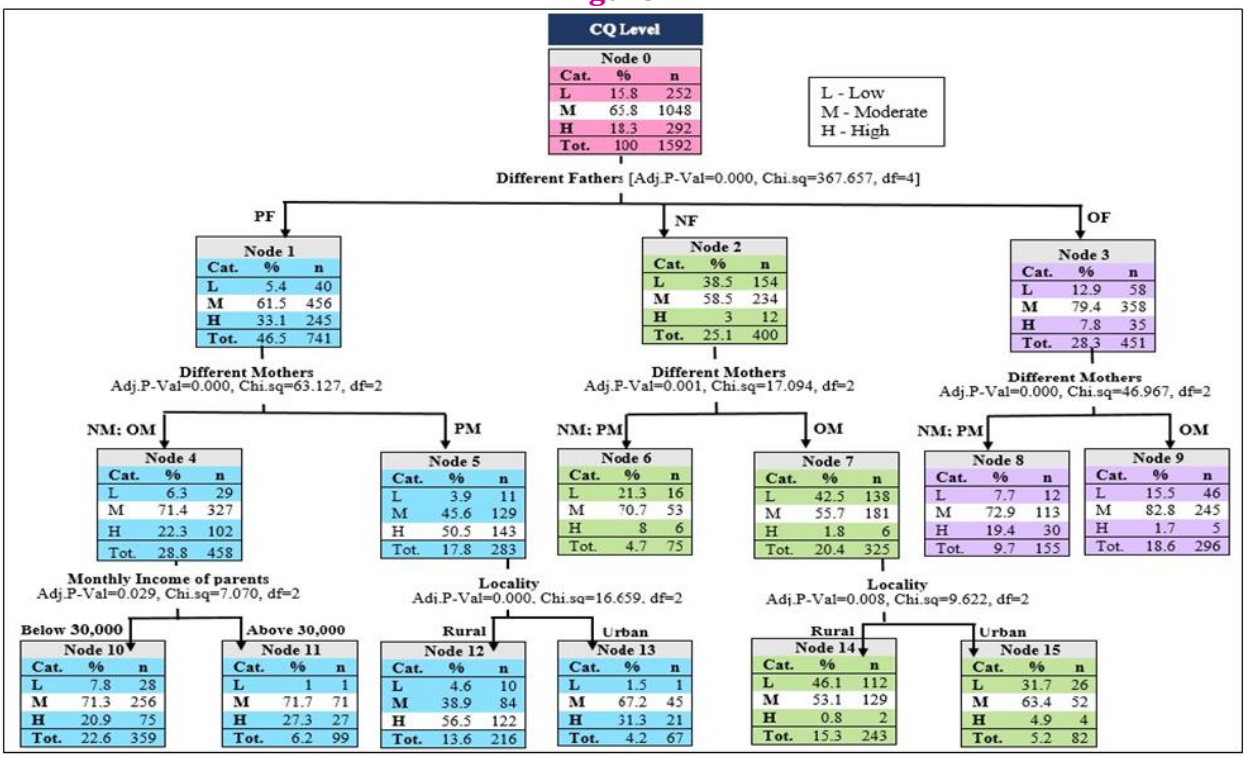

Figure showing Decision tree model of Adolescents' Cultural Intelligence Level based on their Perceived Parenting Style

positive father cluster contributes more for significant interaction than negative and optimal one. Optimal father cluster (intermediate of positive and negative) exhibit least interaction due to its weak polar intensity. Further, all three nodes (1, 2, 3) interact significantly with adolescents' perceived mother clusters and split into two nodes each. Sometimes independent variables that did not show any significant interaction would merge and form a single node. Hence, positively perceived father cluster branches into a merged node of negative and optimally perceived mothers cluster (node 4) and an independent positively perceived mother cluster (node 5). In converse to this, negative and optimally perceived fathers separately split into two nodes (i) a merged node of negative and positively perceived mothers cluster (node 6, 8) and an independent optimally perceived mother cluster (node 7, 9). However, the paths of node 6 (Path 1), node 8 (Path 2) and node 9 (Path 3) terminated from pruning since it had minimum no of cases present in parent node. Further the tree model of cultural intelligence of adolescents interacts significantly with their parents' monthly income undergo pruning. Therefore, adolescents' who perceived their father as positive parent and mother might be either

negative or optimal parent split into two nodes i.e., adolescents whose parents' monthly income below 30,000 rupees (node 10, Path 4) and above 30,000 rupees (node 11, Path 5). All other second ordered nodes showed no significant interaction with the monthly income of parents but interact significantly with locality of the adolescents. These two nodes further split into adolescents surviving in rural places (node 12, 14) and adolescents surviving in urban places (node 13, 15). However, the paths of node 10 (Path 4), node 11 (Path 5) node 12 (Path 6), node 13 (Path 7), node 14 (Path 8) and node 15 (Path 9) are terminated from pruning since the tree model reached its maximum growth limit 3. Therefore, from the tree model it is concluded that majority of adolescents who perceived both their parents adopting positive parenting style and surviving in rural area (path 6) are predicted to have high cultural intelligence when comparatively speaking with others. 10-fold cross validation test results indicate that the overall predictive cultural intelligence level tree model has 68.2% accuracy with 32.3% risk for misclassification rate with standard error 0.012. While considering category wise prediction accuracy, moderate category (92.0%) had high predictive accuracy when compared with high (41.8%) and low category (0%). Hence it is suggested that this predictive tree model better suits and holds good for adolescents having moderate cultural intelligence. Perception regarding their families strongly influenced the future communication. Higher a person's Cultural Intelligence, higher was the self-directed learning and self-management. Though self-control showed no significant impact on students Cultural Intelligence level (Hassani 2015), students with high cultural intelligence show willingness to learn and work in adhocracy (Balogh, Gaal & Szabo 2011). Though individuals lacked little bit knowledge of other cultures and ability to show the appropriate cultural response during cross cultural interactions, exhibit higher level of Cultural Intelligence (Martins et al., 2015). Therefore, it is evident that students with high cultural intelligence can perform well and fulfill their desires more successfully in culturally diverse sections that in turn act as a steppingstone for an enhanced cross-cultural interaction.

Future Direction and Limitation

The findings of this study might help teachers to understand the nature of adolescents and to develop different trainings to inculcate good cultural values to transmit the cultural knowledge from one place to another and one generation to another generation. Interventions to prompt cultural intelligence of lower CQ students and update cultural intelligence of higher CQ students from subcultural environment into cross culture just to maintain a sustainable development. It is essential to provide a required approach which shifts mechanistic to more reflexive and reflective on systems, structures and cultural awareness towards cultural intelligence (Sutherland et al., 2015). To adapt the mechanism fruitfully, teachers should also need to have some unique capabilities (Martins et al., 2010). Global education context should be gotten in practice through infusing culturally Intelligent practices inside and outside of post-secondary classrooms in higher education. (Murphy, 2014). Certain students related cultural aspects should be concentrated by Teachers who gave them a deep insight regarding what is cultural competence and how it is identified and assessed in students (Molina 2013). Job burnout of teachers can be overcome by enhancing Cultural Intelligence (Azizi et al., 2015). Higher education should focus more on developing CQ components among students (Brancu et al., 2016). Parenting style is influenced mostly by the temperaments of both parents and children and this in turn largely depends on the impact exerted by their own parents and culture.

CONCLUSION

Adolescents perceiving their parents as positive parents have high cultural intelligence. Culturally intelligent adolescents are culturally stable and in turn undisturbed or unperturbed by any external factor even at any culturally diverse situation. Culturally Intelligent student may not be found with stress regarding their future. As being skilled and flexible about understanding a culture, learning increasingly more and gradually shaping one's thinking to be more fine-tuned and appropriate when interacting with others from the culture. The duty of the teacher is to improve cultural intelligence by guidance and counselling. Suitable measures need to be taken by the policy makers and other educational administrators to improve the level of Cultural Intelligence of Adolescents.

REFERENCES

1. Ahmadia, S. A. A., Safarzadehb, H., Hozooria, M. J., & Dehnavi, F. (2013). The Role Of Cultural Intelligence Of Managers In Promoting Employees' Collaboration. Management Science Letters, 3,1915–1926.
2. Arora, P., & Rohmetra, N. (2010). Cultural intelligence: Leveraging differences to bridge the gap in the international hospitality industry. International Review of Business Research Papers, 6(5), 216-234.
3. Azizi, Z., Fatemi, A. H, Pishghadam, R., & Ghapanchi, Z. (2015). Investigating The Relationship Between Iranian EFL Learners' Cultural Intelligence And Their Home Cultural Attachment. Mediterranean Journal Of Social Sciences MCSER Publishing, Rome-Italy, 6(3) DOI:10.5901/Mjss.2015.V6n3s1p575.
4. Azizi, Z., Fatemi, A. H, Pishghadam, R., & Ghapanchi, Z. (2015). Investigating The Relationship Between Iranian EFL Learners' Cultural Intelligence And Their Home Cultural Attachment. Mediterranean Journal Of Social Sciences MCSER Publishing, Rome-Italy, 6(3) DOI:10.5901/Mjss.2015.V6n3s1p575.
5. Balogh, A., Gaál, Z., & Szabó, L. (2011). Relationship Between Organizational Culture And Cultural Intelligence. Management & Marketing, 6(1), 95.
6. Bibi, F., Chaudhry, A. G., Awan, E. A., & Tariq, B. (2013). Contribution Of Parenting Style In Life Domain Of Children. IOSR Journal Of Humanities And Social Science,12(2), 91-95. Www.Iosrjournals.Org.
7. Box, J. (2012). The relationship between cultural intelligence and transformational leadership among managers. Available at SSRN 2015049.
8. Brancu, L., Munteanu, V., & Golet, I. (2016). Understanding cultural intelligence factors among business students in Romania. Procedia-Social and Behavioral Sciences, 221, 336-341.
9. Chen, A. S. Y., Lin, Y. C., & Sawangpattanakul, A. (2011). The Relationship Between Cultural Intelligence And Performance With The Mediating Effect Of Culture Shock: A Case From Philippine Laborers In Taiwan. International Journal Of Intercultural Relations, 35(2), 246-258.
10. Chen, A., Zhang, T., Wells, S. L., Schweighardt, R., & Ennis, C. D. (2017). Impact of teacher value orientations on student learning in physical education. Journal of Teaching in Physical Education, 36(2), 152-161.
11. Chua, R. Y., Morris, M. W., & Mor, S. (2012). Collaborating Across Cultures: Cultural Metacognition And Affect-Based Trust In Creative Collaboration. Organizational Behavior Processes, 118(2), 116-131.
12. Descartes, C. (2012). The Social Construction Of Demographic Variables And Parenting Styles In Trinidad. Journal Of The Department Of Behavioural Sciences,1(1), 51- 70.
13. Devitt, P. J. (2014). Cultural Intelligence And The Expatriate Teacher: A Study Of Expatriate Teachers' Constructs Of Themselves As Culturally Intelligent.

14. Diemer, B. J. (2016). The Relationship Between Cultural Intelligence And Work Outcomes Of Expatriates In China.
15. Drury, E. C. (2014). Beyond Socialization, Tolerance, And Cultural Intelligence: Sustainable Cultural Concern Among Evangelical Homeschoolers. Biola University.
16. Eisa, J., & Mohammad Rahim, N., (2015). The Relationship Between Cultural Intelligence, Job Satisfaction And The Employees' Efficiency Of Youth And Sports General Office Of East Azerbaijan Province. Indian Journal Of Fundamental And Applied Life Sciences, 5(2), 1736-1740.
17. Gregory, R., Prifling, M., & Beck, R. (2010). Managing Cross-Cultural Dynamics In IT Offshore Outsourcing Relationships: The Role Of Cultural Intelligence. In Second Information Systems Workshop On Global Sourcing: Services, Knowledge And Innovation.
18. Groves, K. S., Feyerherm, A., & Gu, M. (2015). Examining cultural intelligence and cross-cultural negotiation effectiveness. Journal of Management Education, 39(2), 209-243.
19. Grubb, B. A. (2014). A Study Of Authentic Leadership And Cultural Intelligence In Higher Education Academic Leaders. Indiana Wesleyan University.
20. Hassani, F. (2015) Effect Of Cultural Intelligence On Self-Directed Learning Of Nursing Students. Education Strategies In Medical Sciences, 8(2),115-122.
21. Huff, K.C. (2013). Language, Cultural Intelligence And Expatriate Success, Management Research Review, 36(6), 596 – 612.
22. Jaseena, M. P. M., & Vijayan, K. (2016). Investigation On Emotional Maturity And Cultural Intelligence Among Adolescence Of Kerala. IOSR Journal Of Research & Method In Education, 6(1), 36-41. www.Iosrjournals.Org
23. Javaheri, H., Safarnia, H., & Mollahossein, (2013) A. The Impact Of Cultural Intelligence (CQ) On Leader-Member Exchange, Interdisciplinary Journal Of Contemporary Research In Business. Copyright January, 4(9).
24. Kaufman, S. R. (2013). The Role Of Mindfulness In Cultural Intelligence: Impact On Culturally Congruent Patient Care. Pace University.
25. Keung, E. K., Amanda, J. & Szapkiw, R. (2013). The Relationship Between Transformational Leadership And Cultural Intelligencea Study Of International School Leaders. Journal Of Educational Administration, 51(6), 836-854. DOI 10.1108/JEA-04-2012-0049.
26. Khani, A., Etebarian, A., & Abzari, M. (2011). The Relationship Between Cultural Intelligence And Group Effectiveness In Mobarakeh Steel Company. African Journal Of Business Management. Vol. 5(17), Pp. 7507-7510, 4 September, 2011. 750-751 DOI: 10.5897/AJBM11.428.
27. Kiznyte, J., Ciutiene, R., & Dechange, A. (2015). Applying Cultural Intelligence In International Project Management. Pm World Journal. 5(6). Www.Pmworldjournal.Net.
28. Kodwani, A. D. (2012). Beyond Emotional Intelligence: The Role Of Cultural Intelligence (CQ) On Cross-Border Assignments. World Review Of Business Research, (2)4,86 – 102.
29. La Garza. De., Teresa, M., & Egri, Carolyn P. (2010) Managerial Cultural Intelligence And Small Business In Canada. Management Revue, 21(3): 353 371. DOI 10.1688/1861-9908_Mrev_2010_03_De-La-Garza-Carranza.
30. Lawrence, N. E. (2011). The Effects Of Cultural Intelligence, Self Efficacy And Cross Cultural Communication On Cross Cultural Adaptation Of International Students In Taiwan.
31. Li, Y., Li, H., Mädche, A., & Luen Patrick Rau. P. (2012). Are You A Trustworthy Partner In A Cross-Cultural Virtual Environment?: Behavioral Cultural Intelligence And Receptivity-Based Trust In Virtual Collaboration. Icic '12 Proceedings Of The 4th International Conference On Intercultural Collaboration. Pages 87-96. DOI>10.1145/2160881.2160895.

32. Liu, M. (2016). Verbal communication styles and culture. In Oxford research encyclopedia of communication.
33. Livermore, D. (2013). Expand Your Borders. Discover Ten Cultural Clusters. Published By Cultural Intelligence Center, Llc.
34. Livermore, D. (2016). Driven by difference: How great companies fuel innovation through diversity. Amacom.
35. Lu, S. (2012). The Impact Of Cultural Intelligence In Facilitating Expatriate Performance: The Mediating Role Of Cultural Adjustment And Cultural Effectiveness: (Doctoral Dissertation, Massey University).
36. Malt, S. R. (2010). Cultural Intelligence And The Delivery Of Healthcare In The Gcc Countries. Editorial Report. Avicenna1.
37. Martins, H., Lukic, D., Yarosh, M., & Solari, M. (2015). Cultural Intelligence (CQ) In Erasmus Mundus Students And Alumni: An Exploratory Study On The Levels And Antecedents Of CQ. In EAWOP 2015-17th Congress Of The European Association Of Work And Organizational Psychology.
38. Mazzurco, A., Jesiek, B. K., & Ramane, K. D. (2012). Are Engineering Students Culturally Intelligent?: Preliminary Results From A Multiple Group Study. In American Society For Engineering Education. American Society For Engineering Education.
39. Molina, S. S. (2013). Romanticizing Culture: The Role Of Teachers' Cultural Intelligence In Working With Diversity. The Catesol Journal, 24(1), 220 244.
40. Moon, T. (2013), The Effects Of Cultural Intelligence On Performance In Multicultural Teams. Journal Of Applied Social Psychology, 43, 2414–2425. DOI: 10.1111/Jasp.12189.
41. Murphy, A. S. (2014). Experiences In Postsecondary Education That May Lead To Cultural Intelligence: Exploring And Proposing Practices. International Journal Of Teaching And Learning In Higher Education, 26(2), 287-296. Http://Www.Isetl.Org/Ijtlhe/ ISSN 1812-9129.
42. Nel, N., Nel, J. A., De Beer, L. T., & Adams, B. G. (2015). Assessing cultural intelligence, personality and identity amongst young white Afrikaans-speaking students: A preliminary study. SA Journal of Human Resource Management, 13(1), 1-12.
43. Nemeth, E. (2010). The Art Of Cultural Intelligence: Intelligence For Countering Threats To Cultural Property In Conflict, Forum Archaeologiae 55/Vi/2010 (Http://Farch.Net).
44. Ng, P. S. (2011). Cultural Intelligence And Collective Efficacy In Virtual Team Effectiveness.
45. Nguyen, & Minhtu Dinh. A., (2010). Expatriate Effectiveness And Cultural Intelligence Among Multiculturals And Monoculturals Abroad.
46. Nikoopour, J., & Esfandiari, N. (2017). The relationship between emotional, social, cultural, spiritual intelligence and EFL teachers' teaching effectiveness. Journal of Language Teaching and Research, 8(1), 138.
47. Nikpour, B. Z., Shahrakipour, H., & Karimzadeh, S. (2013). Relationships Between Cultural Intelligence And Academic Members' Effectiveness In Roudehen University. Life Science Journal, 10(1), 1-7.
48. Pluess, M., & Jay Belsky, J. (2010). Children's Differential Susceptibility To Effects Of Parenting. Family Science, 1(1),14–25.
49. Pour, Z. G., & Zadeh, J. E. (2013) Concept And Basis Of Cultural Intelligence According To Nahj And Modern Philosophers. International Journal Of Psychology And Behavioral Research, 2(1), 25-30.
50. Rahimi, M., Barkat, G., & Atari, Y. (2014). A Study Of Relationship Between Cultural Intelligence And Decision Making Styles Of High School Principals In Izeh County. International Journal Of Scientific And Research Publications, Volume 4(6).
51. Richter, L. M. (2006). Studying adolescence. Science, 312(5782), 1902-1905.

52. Sozbilir, F., & Yesil, S. (2016). The Impact Of Cultural Intelligence On Cross Cultural Job Satisfaction And International Related Performance. International Journal Of Human Sciences, 13(1), 2277-2294. DOI: 10.14687/Ijhs.V13i1.3802.
53. Sutherland, A., Edgar, D., & Duncan, P.(2015) International Infusion In Practice - From Cultural Awareness To Cultural Intelligence. Journal Of Perspectives In Applied Academic Practice, 3(3), 32-40.
54. Tajeddin, Z., & Momenian, M. (2012). The Interface Between Cultural Intelligence And Interlanguage Pragmatics. The Case Of Gratitude Speech Act. 2011. Iranian Journal Of Applied Language Studies.4(1),169-192.
55. Thomas, D. C., Liao, Y., Aycan, Z., Cerdin, J. L., Pekerti, A. A., Ravlin, E. C., ... & Van De Vijver, F. (2015). Cultural intelligence: A theory-based, short form measure. Journal of International Business Studies, 46, 1099-1118.
56. Tsai, T., & Lawrence, N. (2011). The Relationship Between Cultural Intelligence And Cross-Cultural Adaptation Of International Students In Taiwan. In International Conference On Management (ICM 2011) Proceeding. Conference Master Resources.
57. Van Dyne, L., Ang, S., Ng, K. Y., Rockstuhl, T., Tan, M. L., & Koh, C. (2012). Subdimensions of the four-factor model of cultural intelligence: Expanding the conceptualization and measurement of cultural intelligence. Social and personality psychology compass, 6(4), 295-313.
58. Yordanova, G. K. (2011). Managing With Cultural Intelligence: The New Secret To Multicultural Team Success. Aarhus University,
59. Http://Pure.Au.Dk/Portal/Files/36186406/Managing_With_Cultural_Intelligence_ Thesis. Pdf.
60. Young, B. (2013). Cultural Intelligence – A Requisite Competency For International Projects. Pm World Journal. 1(2). Www.Pmworldjournal.Net .
61. Zolfaghari, B. (2013). An Examination Of Cross-Cultural Trust Development: Adopting A 'Mosaic Theory'perspective Of Culture (Doctoral Dissertation, Durham University).
62. Zouhbi, O. (2013). Virtual Leadership And Effective Virtual Teams: Cultural Intelligence, Effective Communication, And Successful Projects (Doctoral Dissertation, Indiana Institute Of Technology).