



## Personality and Life Satisfaction among Parents of Children with Intellectual Disability: The mediating role of Cognitive Flexibility

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### ABSTRACT

The current research aims to measure the personality traits and life satisfaction among parents of children having intellectual disability with the mediating role of cognitive flexibility. The survey method was used to collect data from parents of children having intellectual disability. A sample 150 parents of children with intellectual disability was selected by using purposive sampling from south Punjab in special education centers and schools. HEXACO personality inventory-revised, Satisfaction with life questionnaire and Cognitive flexibility scales were used in collection of data. The data was analyzed through SPSS and AMOS (24.0). The results of bivariate correlation found that honesty-humility, extraversion, agreeableness, conscientiousness, openness and cognitive flexibility have significant positive association with life satisfaction, while emotionality has significant negative association with cognitive agility and life satisfaction. The results of Structural Equation Model found that honesty, and conscientiousness has significant positive impact on cognitive agility, and life satisfaction, whereas emotionality posted negative significant impact on cognitive flexibility and life satisfaction. Cognitive flexibility has noteworthy mediating role in relationship of honesty, emotionality, and conscientiousness with life satisfaction among parents with intellectual disability. In children gender differences through Independent Sample T-test found the honesty-humility, emotionality extraversion, conscientiousness, cognitive flexibility, and life satisfaction are significantly higher among parents of with male children as compared to parents with female children, while parents of female children have higher emotionality level as compared to parents of male children.

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## 1. Introduction

Intellectual disability (ID) is a substantial impairment in adaptive behavior and intellectual functioning that affects a wide range of daily practical and social skills that begins before the age of 18. An IQ score of 70-75 shows a limitation in intellectual functioning, which could include children with Down's syndrome, mental retardation, autism, and so on. The global ID frequency is recorded 1.04 %, and a rise by 15% is expected by 2020 (Organization, 2001; WHO, 2013). In Pakistan, the estimated prevalence of ID is 17%, with mental retardation accounting for 8% of the total (Jawaid, 2007). Severe mental retardation affects 1.9 percent of the population, while mild mental retardation affects 6.5 percent, and is influenced by socioeconomic level and geographical distribution. The birth of a special kid comes as a huge shock to the parents and has a negative impact on their social, family, psychological, emotional, financial, and interpersonal relationships. It influence impact on parental abilities and attitudes, which in turn influences child's psychological, social, emotional, and personality development. Individuals with intellectual disabilities are also a part of our society and play an equal role in our social structure. It is necessary for special needs children's parents to be healthy and happy in order to aid them (Shukla, 2017).

Personality is the sum of the acquired external reactions. The environmental factors of a person cannot be taken for granted. For most, personality is a trait taught. Heredity and life experiences such as nature and nurture are seen as essential personality determinants. Nature and nurture are important to shape an individual's personality (Gardner, Boccaccini, Bitting, & Edens, 2015). Personality may relate to a man's assessment of quality. An individual can have a good personality or an unethical personality as his or her belief; culture and environment reveal. As Robbins (2005) expresses it, a particular thinking of a certain problem depends on its inheritance (e.g., sex and muscle reflections), environment (e.g. culture) and situation. Personality traits are somewhat constant, mostly heritable, and difficult to change using strategies such as behavioral training (Kichuk & Wiesner, 1997). Everitt and Robbins (2005) views personality as an capability to which a person reacts and interrelates with environment. According to him personality is a stable human characteristics or variables. The basic five dimensions are extraversion, agreeableness, perception, emotional stability, and openness to new experiences. The Big Five model is reliable across various cultures in terms of work achievement (Barrick & Mount, 1991), acquisition (Robins et al., 1998), and disorders in the human being (Costa Jr & McCrae, 1992).

Considering specific or changing situations, cognitive agility is defined as the ability to change ideas between two different concepts, to think on more than one concept at a time (Scott, 1962), or to choose between multiple descriptions of an object, multiple strategies, or multiple tasks (Jacques & Zelazo, 2005). Martin and Rubin (1995) defined Cognitive agility as an ability of a person to detect relevant choices, to strive for flexibility while adapting to the environment, and to feel proficient in flexible thinking and conduct. Nimble reasoning and conduct is a mental component that can be applied to various situations that require correspondence or resourcefulness despite issues in daily existence (Martin & Anderson, 1998). According to Cegala (1981), people with higher cognitive agility are more alert, perceptive, and sensitive to social interactions than those with less agility. Satisfaction is immediately influenced by a person's pleasant and painful experiences, whereas satisfaction is a judgment based on a long-term assessment of an individual's life (Keyes et al., 2002). Campbell (1981) identified twelve factors that influence life happiness. Some of these elements include finances, health, family relationships, and friends, work, housing, leisure activities, living, education, religion, transportation, partner and self-esteem. According to the current scenario of Pakistan the increasing number of children with intellectual disabilities, particularly in provinces with higher prevalence rates, is causes challenges for families of children with intellectual disabilities. There are no current statistics in Pakistan on the number of people with intellectual disabilities. The research aims to find out the impact of personality traits on life satisfaction of parents with intellectual disabilities. It also seeks to understand the role of cognitive flexibility as a mediator in this relationship.

### **1.1. Hypotheses of the Study**

1. There would be a significant correlation of personality traits, cognitive flexibility and life satisfaction of parents having children with intellectual disability.
2. There would be an impact of personality traits on life satisfaction among parents of children with intellectual disability through mediating role of cognitive flexibility.
3. There would be significant differences in personality traits, cognitive flexibility and life satisfaction between male and female parents of children with intellectual disability.

## **2. Method**

The cross sectional research was conducted by collecting data through survey research design. A sample of 150 medically and psychologically healthy parents within the age range of 20 to 40 of children with intellectual disability were selected through purposive sampling across south Punjab region (Multan, Bahawalpur and Dera Ghazi Khan). The HEXACO Personality Inventory Revised were carefully picked for each of the six dimensions to highlight the breadth of each dimension (Ashton & Lee, 2009), and participants were also asked to respond each statement using a seven-point Likert scale on SWLS. Cognitive Flexibility Scale was also applied in this study. Descriptive statistics were used to summarize the data by using SPSS (21.0). Descriptive statistics, frequency distribution, reliability analysis and correlation would be suggested for hypotheses testing. While, Process by Hayes were used to test the mediating role of cognitive flexibility. Minimum sample can be 86 with alpha 0.85 and effect size of 0.05 according to an online calculator (Danielsoper). To observe how the variables in the study are correlated, Pearson product moment correlations was used it is denoted by  $r$ .

**Table.1: Correlation among study variables (N=150)**

Variables	1	2	3	4	5	6	7	8
1-Honesty-Humility	-	-.37**	.15	.33**	.53**	.34**	.61**	.56**
2-Emotionality		-	-.35**	-.38**	-.33**	-.43**	-.48**	-.52**
3-Extraversion			-	.31**	.14	.58**	.29**	.23**
4-Agreeableness				-	.32**	.24**	.30**	.34**
5-Conscientiousness					-	.22**	.64**	.62**
6-Openness to Experience						-	.38**	.28**
7-Cognitive Flexibility							-	.64**
8-Life Satisfaction								-

\*\* $p < .01$ ; \* $p < .05$

Results of Table showed that honesty-humility has significantly positive association with agreeableness ( $r = .33$ ,  $p < .01$ ), conscientiousness ( $r = .53$ ,  $p < .01$ ), openness to experience ( $r = .34$ ,  $p < .01$ ), cognitive flexibility ( $r = .61$ ,  $p < .01$ ), and life satisfaction ( $r = .56$ ,  $p < .01$ ). While, honesty-humility has significantly negative association with emotionality ( $r = -.37$ ,  $p < .01$ ). Whereas, emotionality has significantly but negative association with extraversion ( $r = -.35$ ,  $p < .01$ ), agreeableness ( $r = -.38$ ,  $p < .01$ ), conscientiousness ( $r = -.33$ ,  $p < .01$ ), openness to experience ( $r = -.43$ ,  $p < .01$ ), cognitive flexibility ( $r = -.48$ ,  $p < .01$ ), and life satisfaction ( $r = -.52$ ,  $p < .01$ ). Whereas, extraversion has positive as well as significant relation with agreeableness ( $r = .31$ ,  $p < .01$ ), openness to experience ( $r = .58$ ,  $p < .01$ ), cognitive flexibility ( $r = .29$ ,  $p < .01$ ), and life satisfaction ( $r = .23$ ,  $p < .01$ ). Meanwhile, agreeableness has positive as well as significant relation with conscientiousness ( $r = .32$ ,  $p < .01$ ), openness to experience ( $r = .24$ ,  $p < .01$ ), cognitive flexibility ( $r = .30$ ,  $p < .01$ ), and life satisfaction ( $r = .34$ ,  $p < .01$ ). Moreover, conscientiousness has positive and significant relation with openness to experience ( $r = .22$ ,  $p < .01$ ), cognitive flexibility ( $r = .64$ ,  $p < .01$ ), and life satisfaction ( $r = .62$ ,  $p < .01$ ). Furthermore, openness to experience has positive and significant relation with cognitive flexibility ( $r = .38$ ,  $p < .01$ ), and life satisfaction ( $r = .28$ ,  $p < .01$ ). Whereas, cognitive flexibility same as has positive and significant relation with life satisfaction ( $r = .64$ ,  $p < .01$ ). Analysis done with the help of (AMOS)

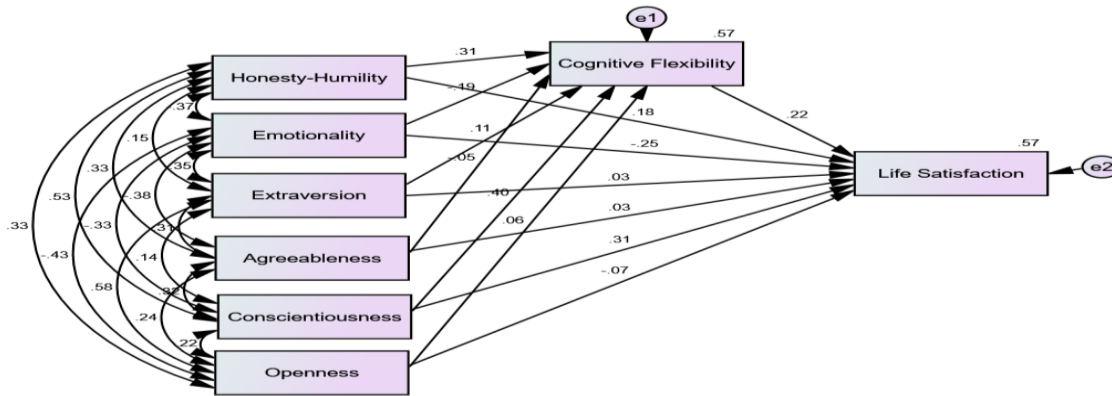
**Table 2: Fit Indices for Personality Traits with mediating Cognitive Flexibility and outcome variables (Life Satisfaction)**

Model	$\chi^2$	P	Df	CFI	NFI	RMSEA (90 % CI)	SRMR
Model Initial	51.59	.00	6	.82	.81	.13	.10
Fit Model	11.37	.02	4	.98	.92	.07	.04

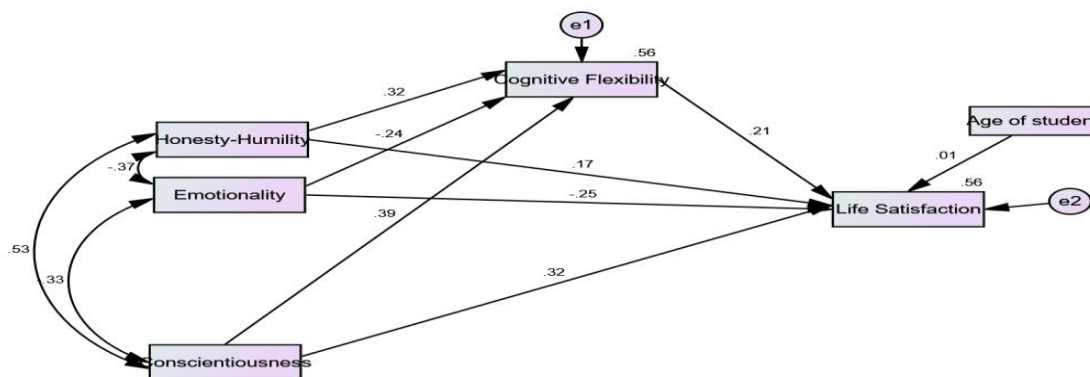
Table showed fit the indices for support to check the predicting role of personality traits with mediating effect of cognitive flexibility on life satisfaction. The model complete or fit model is  $\chi^2 (150) = 11.37$ ,  $p < .02$ . The fit model indices are calculated to run good fit data for the indication of good fit with the model tested. The model fit is analyzed in single key step. The indices of relative and absolute fit (RMSEA, SRMR, CFI, & NFI,) are compared. As test of chi-square of model absolute fit is very sensitive to number of parameters, and sample size, often many analyst used numerous fit descriptive statistics to confirm overall the fit model. The recommendation used by Hu and Bentler (1999) for the  $\chi^2/df$  must be 1 and 5, SRMR and RMSEA scores should be .08 or smaller and CFI, and NFI scores must be .9 or higher indicate as good, but  $.9 \leq .8$  consider as permissible. As in the firs (initial) model the SRMR and RMSEA, .10 and .13, while CFI, and NFI values are .82, and .81 individually, while  $\chi^2/df$  was 8.60. The model initial is not well fit, as per the measure of descriptive of fit. See figure 1

Here need to modification model process start by suggested for the indices modification, indices medication guided in two ways, first way for model fit need to remove insignificant paths between predictors and outcome variables and the second way is to add covariance between the error terms between dependent variables or add covariance from demographic variables to control the effects (Kenny 2011; Tomás & Oliver 1999). So the two covariance such as age and gender are added and insignificant paths of personality traits such as extroversion, agreeableness and openness to experience were deleted form model. After that once again, the absolute and relative indices fit (CFI, NFI, SRMR & RMSEA) are calculated. The SRMR and RMSEA for the model fit after removing insignificant paths are .04 and .07, whereas CFI and NFI are .98 and .92. While the  $\chi^2/df$  was 2.84. These indices are adequate enough to fit model as it seen in the figure 2.

**Figure.1: Results of Empirical Model from a Composite Multivariate Model initial demonstrating Standardized Regression Coefficients**



**Figure 2: Multivariate complex model with 2 variables are endogenous and 6 variables are exogenous. Standardized complete estimates maximum likelihood parameter.**



After confirm model the fit, the estimates with 5000 bootstrapped samples are calculated according the suggestions of Hayes (2013). The results showed that honesty, emotionality and consciousness personality with life satisfaction are mediated by cognitive flexibility.

**Table 2: Direct of the Paths Effects According to SEM (Standardized Regression Estimate of fit Model)**

Variables	Cognitive Flexibility		Life Satisfaction	
	Estimates	SE	Estimates	SE
Honesty	.32**	.20	.17*	.08
Emotionality	-.24**	.17	-.25**	.07
Extraversion	.11	.28	.03	.12
Agreeableness	-.05	.23	.03	.10
Conscientiousness	.39**	.17	.32**	.08
Openness to Experience	.06	.21	-.08	.09
R <sup>2</sup>	.56		.56	

\* $p < .05$ . \*\* $p < .001$ .

The results of SEM for direct effect revealed that honesty, and consciousness have significant positive predictor of cognitive flexibility, and life satisfaction, whereas emotionality posted negative significant predictor of cognitive flexibility, and life satisfaction. Whereas, extraversion is non-significant positive predictor of cognitive flexibility, and life satisfaction. Whereas, openness to experience, agreeableness and extraversion are non-significant interpreter of cognitive flexibility, and life satisfaction. While, agreeableness has non-significant role in cognitive flexibility. Whereas, openness to experience has non-significant prediction of cognitive flexibility and openness to experience has no significance as predictor of life satisfaction. To

investigate the indirect effect of Personality traits on life satisfaction a through cognitive flexibility table has been made. The cognitive flexibility found significantly mediator for honesty, emotionality and consciousness with life satisfaction.

**Table 3: Indirect Effects of the Paths According to SEM for Personality Traits and Life satisfaction with mediating effect of Cognitive flexibility**

Variables	Life Satisfaction	
	Estimates	SE
Honesty	.09**	.09
Emotionality	-.06*	.17
Conscientiousness	.09*	.17

\* $p < .05$ . \*\* $p < .001$ .

The results from the indirect effect found that the mediating role of cognitive flexibility is significant in the relationship between honesty and life satisfaction. While, cognitive flexibility as well is significant mediator between the relationship of emotionality and life satisfaction. Whereas, cognitive flexibility is also significant mediator between consciousness and life satisfaction.

**Table 4: Parents Gender Wise Comparison in Personality Traits, Cognitive Flexibility, and Life Satisfaction (N=150)**

Variable	Male (n = 75)		Female (n = 75)		t(148)	p	95%CI		Cohen's d
	M	SD	M	SD			LL	UL	
Honesty-Humility	30.25	3.82	28.47	4.77	2.53	.01	.39	3.18	.41
Emotionality	23.63	4.92	27.55	4.80	-4.94	.00	-5.49	-2.35	.80
Extraversion	34.61	4.05	31.31	4.90	4.51	.00	1.86	4.76	.72
Agreeableness	33.49	5.19	30.68	4.83	3.44	.00	1.19	4.43	.56
Conscientiousness	34.84	4.22	32.51	5.16	3.03	.00	.81	3.86	.50
Openness	30.08	5.58	26.71	7.06	3.25	.00	1.32	5.43	.53
Cognitive Flexibility	57.09	12.71	42.40	18.60	5.65	.00	9.55	19.83	.86
Life Satisfaction	19.21	7.27	13.87	7.86	4.33	.00	2.90	7.79	.70

The table 4 indicated the result of significant parents' gender difference in the average (mean) score of honesty-humility, emotionality extraversion, agreeableness, conscientiousness, openness to experience, cognitive flexibility and life satisfaction. A significant higher average (mean) score of honesty-humility, conscientiousness, extraversion, openness to experience, cognitive flexibility, and life satisfaction is recorded among male parents in contrast to female parents. While the score (mean) of emotionality in females parents is significantly higher in contrast to male parents.

### 3. Discussion

This research aims to measure the effect of personality traits on the satisfaction levels of parents raising children with intellectual disabilities, along with discovering the mediating role of cognitive flexibility. Results indicated noteworthy relationship of personality traits with cognitive flexibility, personality traits with life satisfaction, also relationship of cognitive flexibility with life satisfaction. Moreover, mediating role of cognitive flexibility was discovered between personality traits and life satisfaction among parents raising children with intellectual disabilities. Additionally, gender differences were observed, with female parents exhibiting higher emotionality and lower life satisfaction compared to male parents. These results enhance our comprehension of the intricate relationship among personality traits, cognitive flexibility and life satisfaction within the realm of parenting children with intellectual disabilities. The results in found that honesty-humility has significantly positive relationship with conscientiousness, agreeableness, openness to experience, and cognitive flexibility. Whereas, emotionality has significantly but negative association with extraversion, agreeableness, conscientiousness, openness to experience, and cognitive flexibility. Whereas, extraversion has positive as well as significant relation with agreeableness, openness to experience, and cognitive flexibility. Meanwhile, agreeableness has positive as well as significant relation with conscientiousness, openness to experience, and cognitive flexibility. Moreover, a significant correlation between openness to experience and cognitive flexibility was also found in results. Furthermore, openness

to experience has positive and significant relation with cognitive flexibility. Past studies investigated that personality is an active structure with the systems of psycho-physical that regulate person's behaviors and thoughts (Allport, 1961). While, Compton (2000) confirmed that the cognitive flexibility has association with personality traits.

The findings of existing study found honesty-humility, agreeableness, extraversion, conscientiousness and openness has significantly positive association with life satisfaction. Whereas, emotionality has significantly but negative association with life satisfaction. Earlier researches have confirmed association between subjective well-being (life satisfying) and personality traits (Diener & Lucas, 1999). Conscientious individual is tending to life standings that are advantageous for well-being (Costa Jr & McCrae, 1992). Hayes and Joseph (2002) reported about agreeableness that ease positive knowledges in social circumstances and continuing and rises the well-being. The results of this research are supported form past researches, so this hypothesis is accepted. The results also found cognitive flexibility has significant positive relation with life satisfaction of parents of children having intellectual disability. The capacities of cognitive flexibility is linked with life satisfaction. It was concluded in a study that cognitive flexibility has positive relation with subjective wellbeing (Dağ & Gülüm, 2013). The results of this research are supported form past researches, so this hypothesis is accepted.

The results of present study showed direct effect of honesty, and consciousness, which have significant positive impact on cognitive flexibility, life satisfaction, whereas emotionality posted negative significant predictor of cognitive flexibility, life satisfaction. Whereas, the indirect effects found that the cognitive flexibility has a mediating role in the relationship between honesty and life satisfaction. While, cognitive flexibility as well is significant mediator between the relationship of emotionality and life satisfaction. Same mediation of cognitive flexibility was found between emotionality and satisfaction. Whereas, cognitive flexibility is substantial mediator between consciousness and life satisfaction. As cognitive flexibility is also important mediator between consciousness and happiness. Past research have been investigated the five factor personality traits as predictor of life satisfaction (Dağ & Gülüm, 2013; Nofle & Shaver, 2006). Cognitive flexibility talents may have an impact on life pleasure. Individuals can practice cognitive flexibility by evaluating and correcting their thinking in the face of challenges. Cognitive process skills effect an individual's ability to solve personal problems and coping with stress (Dağ & Gülüm, 2013; Koesten, Schrod, & Ford, 2009). The findings of existing study found gender difference in the average (mean) score of honesty-humility, emotionality extraversion, agreeableness, conscientiousness, openness to experience, cognitive flexibility and life satisfaction. Honesty-humility, extraversion, conscientiousness, openness, cognitive flexibility, and life satisfaction have higher mean score among parents that are male in contrast to females parents. While higher mean score of emotionality is identified among female parents than male parents. Female parents with children of intellectual disability is reason for increasing the psychological distress that reduce the life satisfaction among female parents and increase the level of emotionality due to intellectual disability of children.

#### **4. Conclusion**

It is concluded that Personality traits such as honesty, conscientiousness, and openness are found to positively correlate with cognitive flexibility and life satisfaction, whereas emotionality exhibits a negative correlation. Additionally, cognitive flexibility has a mediating part in the relationship between specific personality traits, like honesty and conscientiousness, and life satisfaction among parents with children having intellectual disabilities. Furthermore, gender differences among parents indicate that male parents have significantly higher score on traits like honesty, conscientiousness, openness, cognitive flexibility, and life satisfaction as compared to female parents, while female parents show higher scores in emotionality. This research is helpful for psychologist, psychiatrists, special educational teachers, parents with children having intellectual disability and the ministry of education for policy making. Psychologist and educational teachers must conduct seminars among parents of special children to increase the happiness and life satisfaction level.

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