

# Personality Aging Pattern (PAP): An Empirical Study on Personality Traits in Relation with Work Force Age Bands

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**D.Deepa**

*Assistant Professor, Department of Management Studies  
Madurai Kamaraj University, Madurai, Tamil Nadu, India*

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## Abstract

*As human resource interventions are more of subjective nature, Human Resource Analytics gives a metric system and a rational dimension. The author heads to establish a pattern for Personality change among work force as against Aging under three workforce age bands using Big five Personality Inventory. The finding shows that all the five factors of personality take different patterns along the life span. Human Resource interventions may be designed and executed for the functions viz., hiring, appraisal, development and retention of workforce in any type of organization in the sublime of Personality Aging Pattern (PAP).*

**Keywords:** Big-five Personality trait Inventory, Personality Aging Pattern (PAP), Human Resource Analytics.

## Introduction

The famous psychologist William James noted that character (personality) was "set like plaster" for most people by age 30. Where as, some psychologists have denied the perspective that there was any stability to personality at all. Current research aims to capture the pattern of personality change along life span of employees with a purpose to supplement HR analytics in organizations. Big Five Inventory consists of a range of more specific traits derived from statistical analysis. The Big Five factors are an empirically based phenomenon, not a theory of personality: Openness to experience, Extroversion, Neuroticism, Agreeableness and Conscientiousness. There exist many studies related to Personality and Age. Inspiration of this study was sourced from the article published in NOBA project online article, 'Personality stability and Change' authored by Brent Donnellan, Michigan State University. The research purpose of this study was to trace if any Pattern exists with Personality and Age. Thus the Objective of the study was to examine the relationship between the Five Factor Model of Personality and Age, especially along three work force Age bands 20+ years, 30+ years, 40+ years of age group and to arrive on a pattern if any.

## Review of Literature

In general, average levels of extraversion (especially the attributes linked to self-confidence and independence), agreeableness, and conscientiousness appear to increase with age whereas neuroticism appears to decrease with age (Roberts et al., 2006). Openness also declines with age, especially after mid-life (Roberts et al., 2006). A number of large-scale, cross-sectional studies have evaluated age differences in personality (Anusic, Lucas, & Donnellan, 2012; Lucas & Donnellan, 2009; McCrae & Costa, 2003; Soto, John, Gosling, & Potter, 2011; Srivastava, John, Gosling, & Potter, 2003).

A number of large-scale, cross-sectional studies have evaluated age differences in personality (Anusic, Lucas, & Donnellan, 2012; Lucas & Donnellan, 2009; McCrae & Costa, 2003; Soto, John, Gosling, & Potter, 2011; Srivastava, John, Gosling, & Potter, 2003). The pattern of positive average changes in personality attributes is known as the maturity principle of adult personality development (Caspi, Roberts, & Shiner, 2005). This pattern of increasing stability with age is called the cumulative continuity principle of personality development (Caspi et al., 2005). Patterns of mean-level change in personality traits across the life course: a meta-analysis of longitudinal studies. : Longitudinal studies, mostly of Western cultures, have found strikingly similar results. Changes in mean levels of personality traits were recently examined in a meta-analysis of 92 longitudinal studies covering the life course from age 10 to 101 (Roberts, Walton, & Viechtbauer, 2006). As in the cross-sectional studies, significant mean-level change in all trait domains was found at some point in the life course, and statistically significant change was found in 75% of personality traits in middle age (40–60) and old age (60+). Clearly, personality traits continue to develop in adulthood. the direction of change is clearly in the positive direction. With age,

people become more confident, warm, responsible, and calm—or what some have described as socially mature (Roberts & Wood, 2006). People who conduct problematic, counterproductive activities at work, such as theft, aggression, and malingering, are prone to decrease on measures of conscientiousness and emotional stability (Roberts, Walton, Bogg, & Caspi, 2006). Social maturity is equated with the capacity to become a productive and involved contributor to society. Moreover, those who develop the cardinal traits of psychological maturity earliest are more effective in their relationships and work and lead healthier and longer lives (Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007). Journal of Research in Personality Volume 79, (April 2019), Pages 67-78 To fear or fly to the unknown: Tolerance for ambiguity and Big Five personality traits Author Hayley K.JachLuke D.Smillie

**Methodology**

Online Test of Big five inventory questionnaire were circulated to various organizations through the HR Managers. Out of 2231 collected Data sheets, only 450 sheets were complete and valid. The valid data sheets were considered for the study purpose.

The constructs measured in Likert scale in five points for the five traits and the constructs were as follows.

<b>extraversion</b>	<b>Openness</b>	<b>conscientiousness</b>	<b>Agreeableness</b>	<b>Neurosis</b>
Talkative Reserved Helpful & unselfish Tends to be quiet Values aesthetics Inhibited Outgoing & Sociable Politically liberal	New ideas Curious about different things Deep thinker Active imagination Inventive Work routine Play with ideas Artistic interests Sophisticated	Thorough job knowledge Somewhat careless Handless Stress & Relaxed Reliable worker task finished on time efficiency	Find faults Quarrels others forgiving nature generally trusting assertive personality considerate everyone cooperate with others	Full Energy Lot of enthusiasm Tends to be disorganized worries a lot tends to be lazy Not easily upset cold and aloof can be moody tense situations rude to others nervous easily easily distracted

task is finished	things efficiently	follows through with them	find faults	Quarrels others	forgiving nature	generally trusting	assertive personality	considerate everyone	cooperate with others	high self-esteem	depressed	Full Energy	Can be tense	Lot of enthusiasm	Tends to disorganized	worries a lot	tends to be lazy	Not easily upset	cold and aloof	can be moody	tense situations	rude to others	nervous easily	easily distracted
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BIG FIVE Inventory was selected to test Personality Dimension. Hypothesis testing was done statistically using ANOVA tool to study the relationship between the Five Factor Model of Personality and Age under three work force age bands of 20+ years, 30+ years and 40+ years of age. Data were plotted on Bar charts to visualize the relative difference at a glance. Scatter plot was done to fetch Personality Aging Pattern graphs for all the five factors of personality.

### Analysis

Null hypothesis H0:  $\mu_1 = \mu_2 = \mu_3$  - The mean personality trait is statistically equal across the three age bands.

Thus, the alternative hypothesis is: Ha: At least one mean pressure is not statistically equal.

Using the data in ANOVA Table.1 we may find the grand mean:

$$\bar{X} = \frac{\sum_{ij} X_{ij}}{N}$$

$$SST = 96,383.75$$

which is 'Between' Sum of Squares (or Treatment Sum of Squares) – variation in the data between the different samples (or treatments).

$$SSTR = 85,049.75$$

which is 'Within' variation (or Error Sum of Squares) – variation in the data from each individual treatment.

$$\text{Error Sum of Squares (SSE)} = \sum \sum (X_{ij} - \bar{X}_j)^2$$

$$E = 11,334.$$

Note that  $SST = SSTR + SSE$

$$(96,383.75 = 85,049.75 + 11,334).$$

Total Mean Squares (MST) =  $\frac{SST}{N-1}$  number of

$$\text{observations) } MST = \frac{96,383.75}{(450-1)} = 214.66$$

Mean Square Treatment (MSTR) =  $\frac{SSTR}{c-1}$  "average

between variation" (c is the number of columns in the data table)

$$MSTR = \frac{85,049.75}{(3-1)} = 42524.875$$

Mean Square Error:

$$MSE = 11,334 / (450-3) = 25.355$$

Note:  $MST \neq MSTR + MSE$

If the average 'between' variation rises relative to the average 'within' variation, the F statistic will rise and thereby our chance of rejecting the null hypothesis will rise. As the F, observed value is greater than critical value, we reject the null hypothesis.

### Interpretation and Findings

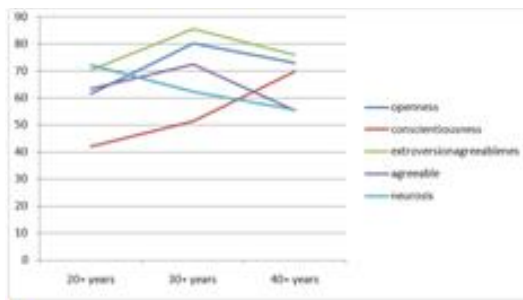
Since we rejected the null hypothesis, we are 95% confident that the mean trait is not statistically equal for the workforce age bands 20+, 30+ and 40+ years.

Further Scatter chart was plotted with the data sheet and a Personality Aging pattern results were fetched in a graph form. A positive relation exists between Age and the three traits, extroversion, Agreeableness and Openness whereas the association between Conscientiousness and Neuroticism becomes weaker with age. Among the workforce Age groups, age band of 30+ years showed the most desired Personality Traits for work place. The researcher found that Conscientiousness (organized, disciplined, and meticulous work style) increased with age. Increased most gradually in the 20s and increased steeply in the 30s and further in the 40s similarly. 2. Agreeableness (warm, generous, and helpful) increased most in the 20s and 30s and sloped down gradually in the 40s. 3. Neurosis (impulsive, anxious) declined to decrease with the age. . Openness (inventive/curious) scored very high in 20+ years and increased sharply in the 30s thereafter reduces gradually in 40+ years. Extroversion factor (outgoing/energetic) scored high in the 30s and reduced in the 40s.

It had been observed that the three traits, Openness, Agreeableness and Extroversion have the same pattern of personality change along the life span.

## Output

### Personality Aging Pattern (Pap) Chart



## Conclusion

With reference to Florida Tech online, According to a paper published in Science Direct, 2016, “leaders who have an understanding of how individuals’ personalities differ can use this understanding to improve their leadership effectiveness and lead to improve employees’ job performance. All the HR functions may be designed and executed with the Personality Aging Pattern in the core. Personality though a qualitative aspect, PAP gives a customized rational intervention which increases the validity of hiring, training and other HR interventions.

## Author Details

**Dr.D.Deepa**, Assistant Professor, Department of Management Studies, Madurai Kamaraj University, Madurai, Tamil Nadu, India. **Email ID:** ddeepamurali1@gmail.com

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