Personality Traits and Performance: A Perception Study In Respect of Faculty in Academic Disciplines

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ABSTRACT

The present study investigates the impact of personality in terms of Big Five traits on faculty job performance in the areas of academics. An empirical research has been conducted with the help of personal interviews and close ended questionnaire (for members of faculty) on the basis of 5 components of personality traits and their impact on job performance. After collecting data from 178 faculty members working in a number of educational institutes throughout eastern India through questionnaire survey, Factor analysis has been used to analyze the data with the help of SPSS software and to identify the most significant factors most influencing traits with respect to their performance. For this purpose a principal component analysis with Varimax rotation was conducted on 5 items. A Reliability analysis also has been used with the help of Cronbach's alpha to check the Reliability of the test. Multiple Regression Analysis has been used to identify influence level of those personality traits on performance. In a concluding initiative, a strategic framework has been designed with the help of Bayesian Probabilistic Network. This study is significant as it helps in policy implementation in terms of academic performance.

Keywords: Personality, Traits, Performance, Perception, Faculty, Academic Disciplines

Most of the available research has discerned Personality to be a leading factor in understanding why people behave the way they do. Personality is a state of psychological features related to a broad range of behaviors and attitudes. In the past two decades, the discipline of psychology has developed a framework called the Big Five-Factor Model (Goldberg, 1990; John & Srivastava, 1999), which defines most of the current studies of personality. This broad approach asserts that personality traits can be categorized and reliably measured in five domains: extraversion, emotional stability (also called neuroticism, its reverse), and openness to new experiences, agreeableness, and conscientious-ness; it is to be noted that each factor is bipolar (e.g., emotional stability vs. neuroticism, extraversion vs. introversion).

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The literature also suggests that these five traits are rooted in genetics. This implies that personality affects other variables rather than get influenced by social contexts.

For years, psychologists turned to cognitive ability or brainpower, as a predictor of job performance. Smarter people were considered more likely to succeed on the job. But intelligence is only part of the story. Other important factors in job performance - creativity, leadership, integrity, and cooperation — are related to personality, not intelligence.

When psychologists are trying to determine what kind of personality someone has, they look at the "Big Five": whether someone is an extravert; whether they are agreeable; whether they are conscientious; whether they're emotionally stable; and whether they're open to experience.

Beyond that, though, psychologists disagree. The relationship between personality and job performance has been a frequently studied topic in industrial psychology; evidence has suggested that personality measures are valid predictors of diverse job-related criteria (Goldberg, 1993)

RESEARCH METHODOLOGY

The present study investigates the impact of personality in terms of Big Five traits on job performance in the areas of academics. An empirical research has been conducted with the help of personal interviews and close ended questionnaire (for members of faculty) on the basis of 5 components of personality traits and their impact on job performance. After collecting data from **178** faculty members working in a number of educational institutes throughout eastern India through questionnaire survey, Factor analysis has been used to analyze the data with the help of SPSS software and to identify the most significant factors most influencing traits with respect to their performance. For this purpose a principal component analysis with Varimax rotation was conducted on 5 items. A Reliability analysis also has been used with the help of Cronbach's alpha to check the Reliability of the test. Multiple Regression Analysis has been used to identify influence level of those personality traits on performance. In a concluding initiative, a strategic framework has been designed with the help of Bayesian Probabilistic Network.

ANALYSIS AND DISCUSSION

Interpretation of Factor Analysis

Table-1: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.836
Bartlett's Test of Sphericity	Approx. Chi-Square	7429.524
	df	91
	Sig.	.000

Here, Barlett's test of spericity is significant, as p value is .000 which is less than .05. Thus from the perspective of Bartlett's test, factor analysis is feasible. As Bartlett's test is significant, a more discriminating index of factor analyzability is the KMO. High values (between 0.5 and 1.0) indicate factor analysis is appropriate. Values below 0.5 imply that factor analysis may not

be appropriate. For this data set, it is .836 (very close to 1.0), which is very large, so the KMO also supports factor analysis.
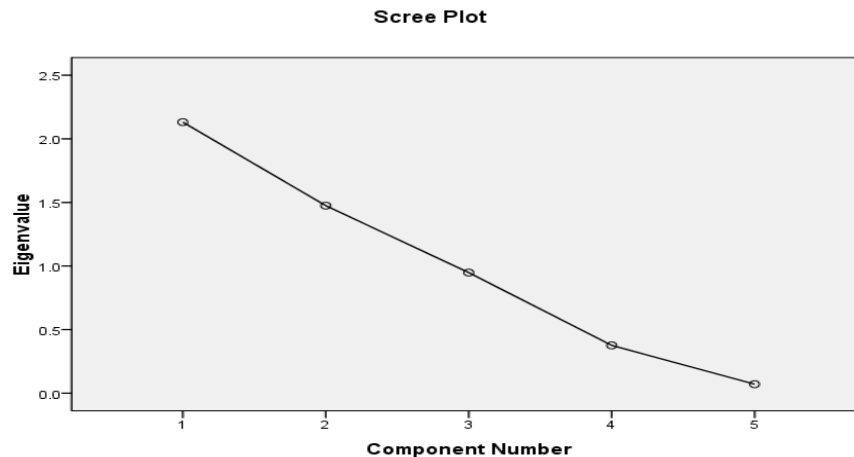
Table-2: Scree Plot

Table-3: Factor Analysis Output in a Summarized Form

Item Labels	Factor Loading	Variance Explained	Cronbach Alfa	No. of Items
Factor 1: Candidness		49.342	.8964	2
Openness	.962			
Agreeableness	.910			
Factor 2: Calmness	.841			
Emotional Stability		38.217	.8238	1

Total variance explained 88.559%

Factor analysis was carried on all the statements found in the questionnaire in order to test the dimensionality of the survey instrument. A principal component analysis with Varimax rotation was conducted on 5 items. The Kaiser-Meyer-Olkin(KMO) measure of sampling adequacy is 0.836 and it can be thus deduced that the sample is adequate.

Scree Plot showed that there are only 2 factors with eigen values more than 1, were considered significant and chosen for interpretation. From the Varimax rotated matrix, 2 factors representing 88.559% of the explained variance were extracted from the 5 components as shown in the above Table.

Reliability Coefficients: N of Cases =178.0 N of Items = 5 Alpha = .8601

In this *Reliability* analysis, 178 cases were used in the calculation of Cronbach's alpha. The obtained alpha score is 0.8601, which indicates that the scale has high internal consistency (*Reliability*).

INTERPRETATION OF MULTIPLE REGRESSION ANALYSIS

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.813[a]	.661	.667	.67392	.137	20.142	2	176	.000

a. Predictors: (Constant), Emotional Stability, Openness, Agreeableness

The above table represents the value of R, the multiple correlation coefficients. Here the value of "R" .856 indicates a high level of prediction. From the R square value of 0.661 it can be depicted that our independent variables explain 66.1% of the variability of our dependent variable. Here are dependent variable is Performance and the 3 independent variables are categorized under 3 parameters, namely – Emotional Stability, Openness and Agreeableness

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.198	.167		7.163	.000
	Emotional Stability	.426	.051	.415	4.433	.000
	Openness	.346	.057	.335	2.580	.010
	Agreeableness	.203	.059	.180	2.259	.024
	Extraversion	.072	.066	.075	1.547	.123
	Conscientiousness	.041	.077	.035	1.082	.280

Unstandardized coefficients indicate how much the dependent variable varies with an independent variable when all other independent variables are held constant. Consider the effect of Emotional Stability on Performance, the unstandardized coefficient, B1, for Emotional Stability score is equal to 0.426. This means that for each one scale increase in the Average value of Emotional Stability, there is an increase in Performance of 0.426. Similarly, for each one scale increase in the score of Openness, there is an increase in Performance of 0.346, for each one scale increase in the score of Agreeableness, there is an increase in Performance of 0.203 and for each one scale increase in the Average value of Extraversion, there is an increase in Performance of 0.072 whereas for each one scale increase in the Average value of *Conscientiousness*, there is an increase in Performance of 0.041.

From the "t" value and the "Sig." value we tests whether the coefficients are statistically significantly different to 0 (zero). Here for 3 independent variables $p < .05$, so this explained that those coefficients are statistically significantly different to 0 (zero).

So, for Performance**,** the equation from the regression output is
PERFORMANCE= 1.198 + (.426 ×EMOTIONAL STABILITY) +
(.346 ×OPENNESS)+ (.203 ×AGREEABLENESS)

*Fig 1: Personality Traits Influencing Performance*
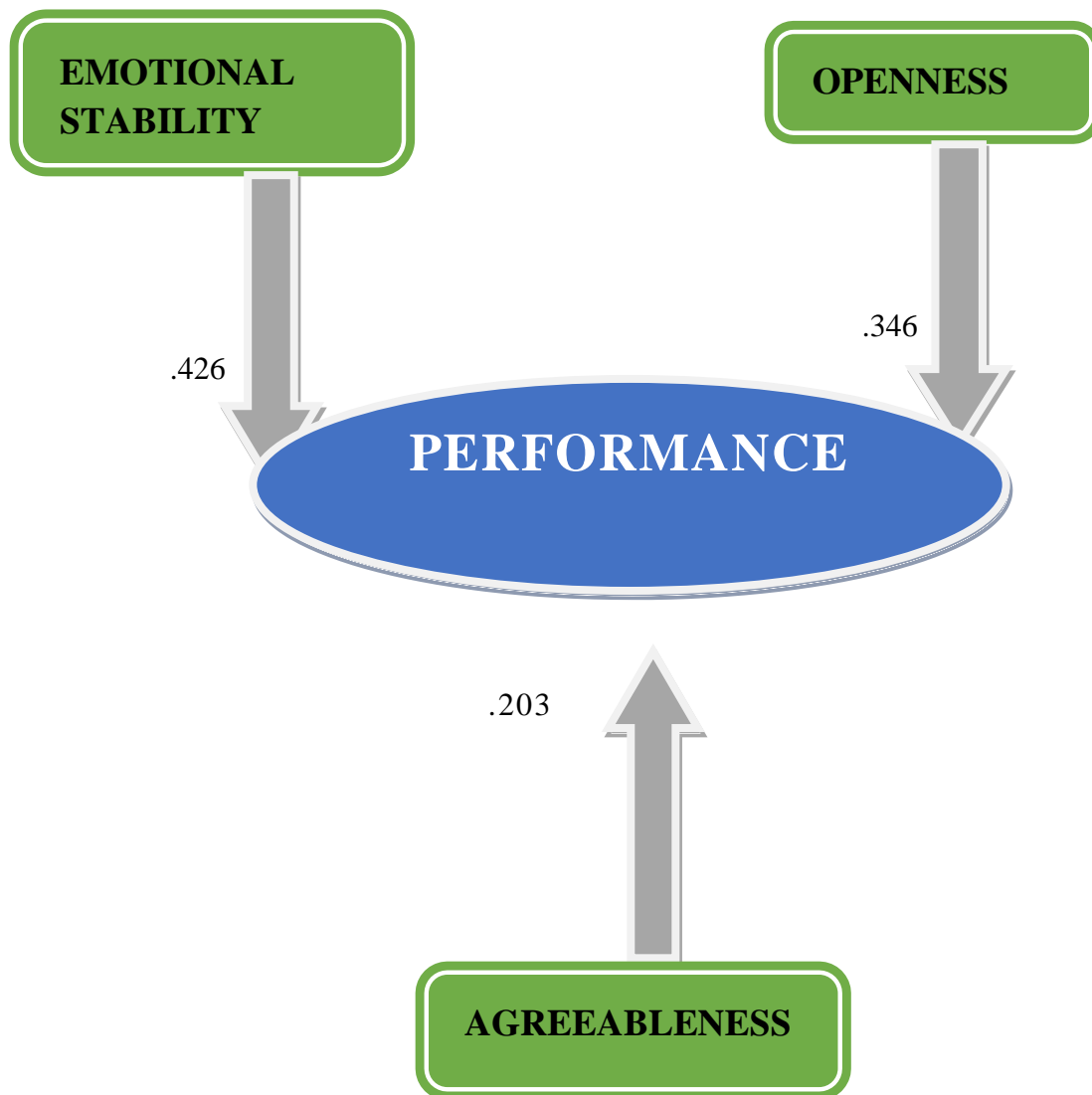
After crunching the numbers, for the specific fields of academics – teaching and research, the present findings robust evidence that attributes related to emotional stability, openness and agreeableness, and in that order, have the most impact on performance. It must be noted however that specific occupations may have different rankings for personality traits; nevertheless knowing which traits are highly valued could be helpful information for students and seekers of knowledge as well as providers of educational services.

As part of initiative for further research, the empirical analysis has been recast in terms of Bayesian Probabilistic Framework. The independent factors – emotional stability, openness and agreeableness – have binary measures from the available evidence and a probability distribution of the dependent variable- performance – occupies and completes the Bayesian framework. As it s well known, Bayesian Probabilistic frameworks provide an elegant solution, particularly in

cases of limited data and when qualitative and/or a mix of qualitative and quantitative data need to be used. This is precisely the case in the current investigation. The basic framework is given in following diagram. A spectrum of scenario and causal analyses follows.

Fig 2: Bayesian Probabilistic Frameworks
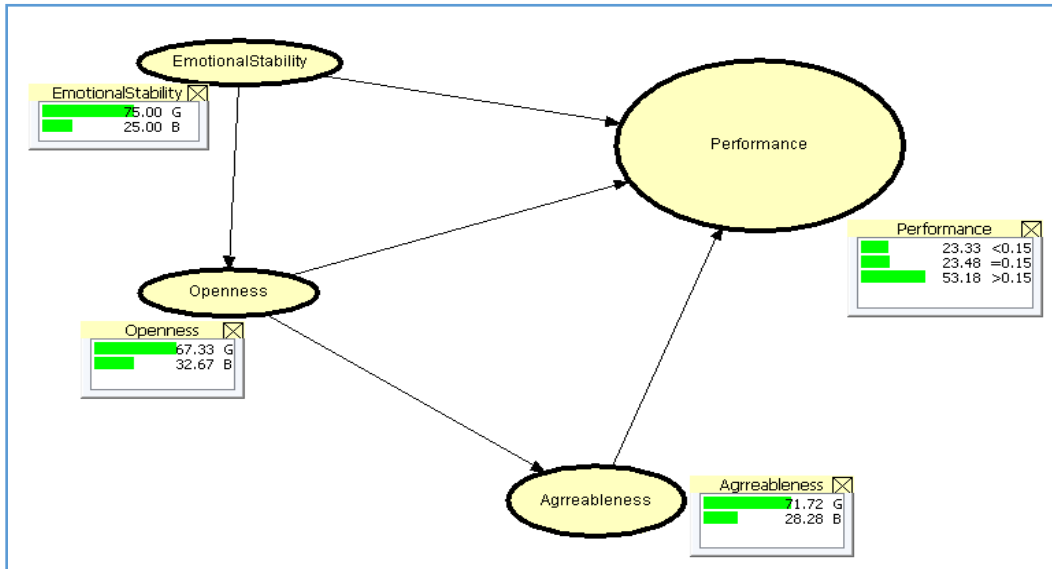
Scenario and Causal Analysis

Keeping the significant factors of employee performance in mind, further research may be undertaken to develop a measure that works using Bayesian Probability Network as follows:

Fig 3: Scenario Analysis 1
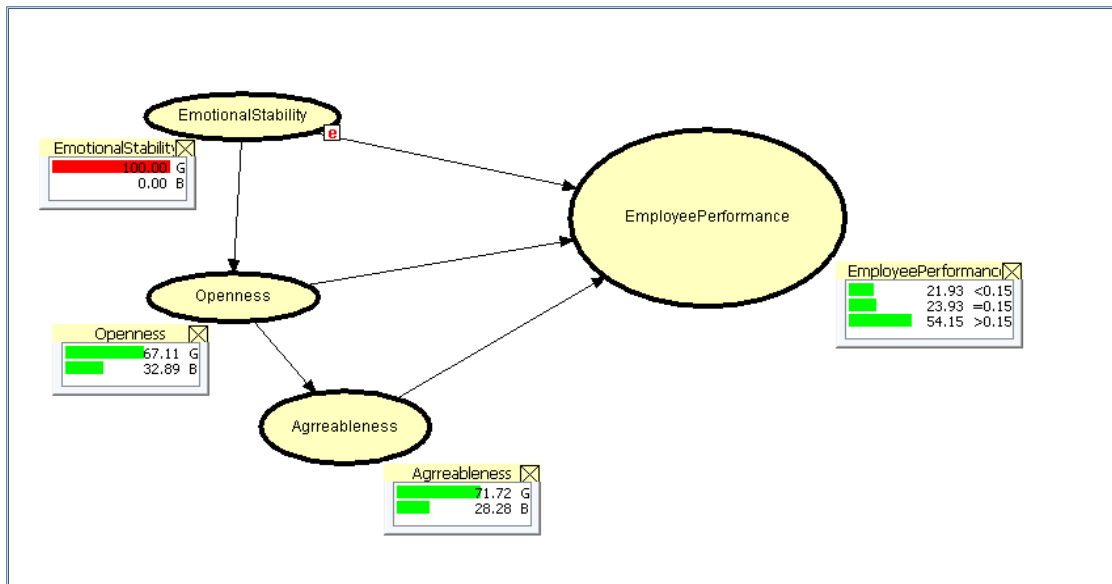
Fig 4: Scenario Analysis 2
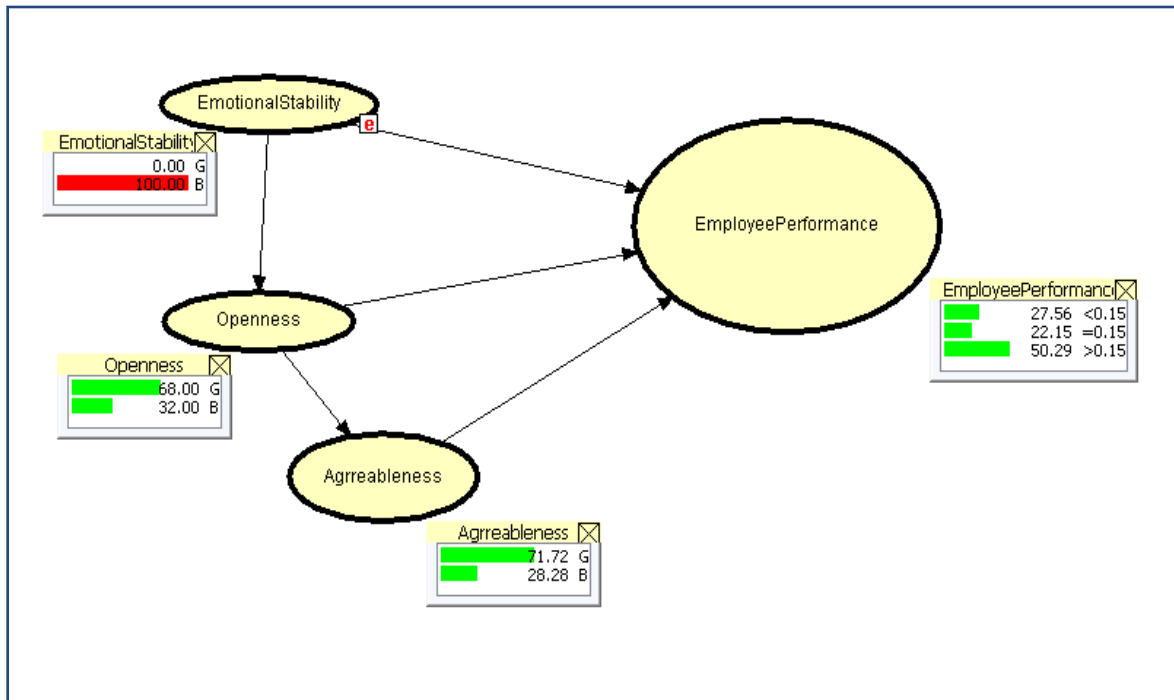
Fig 5: Scenario Analysis 3
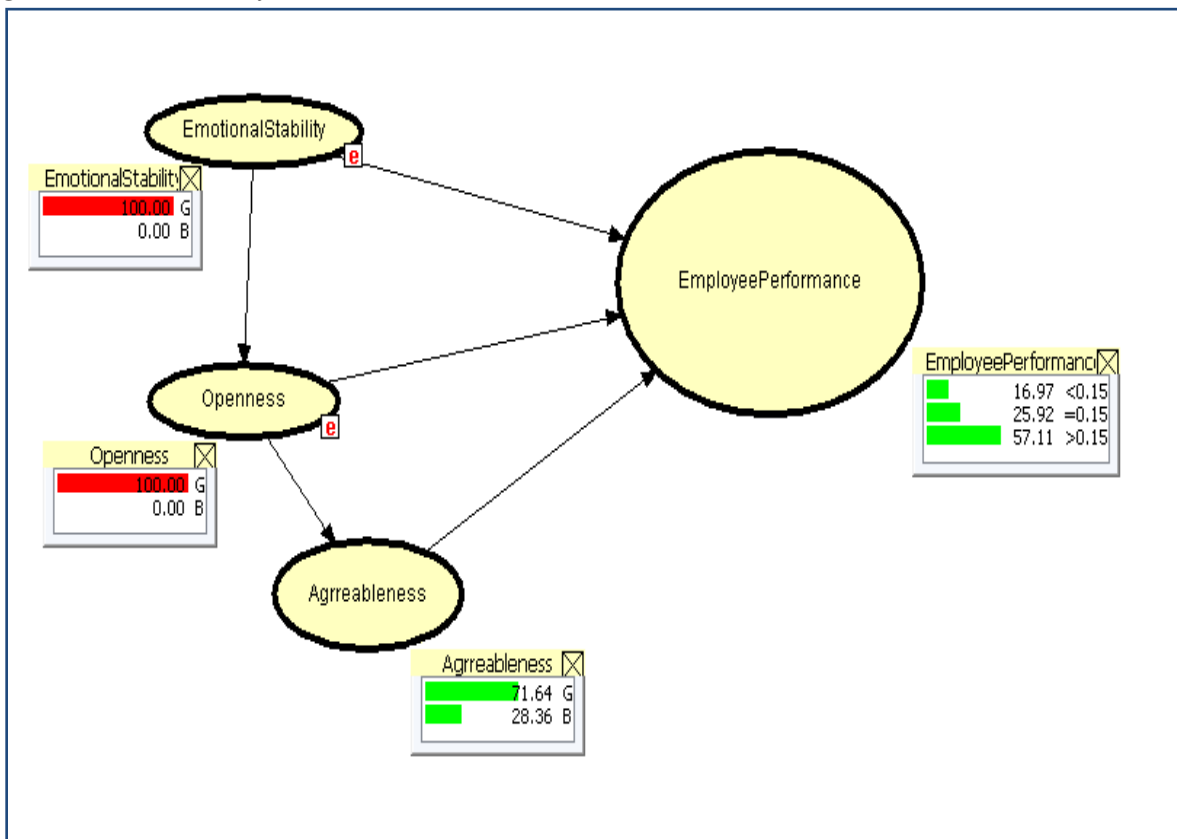
Fig 6: Scenario Analysis 4
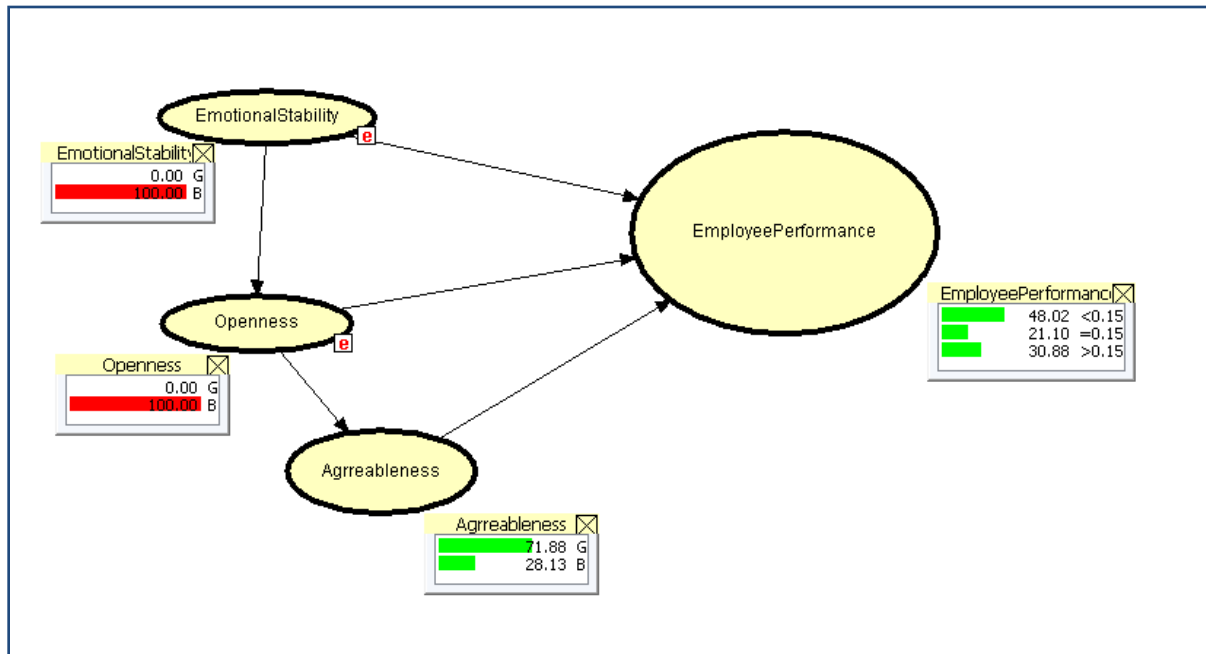
Fig 7: Scenario Analysis 5
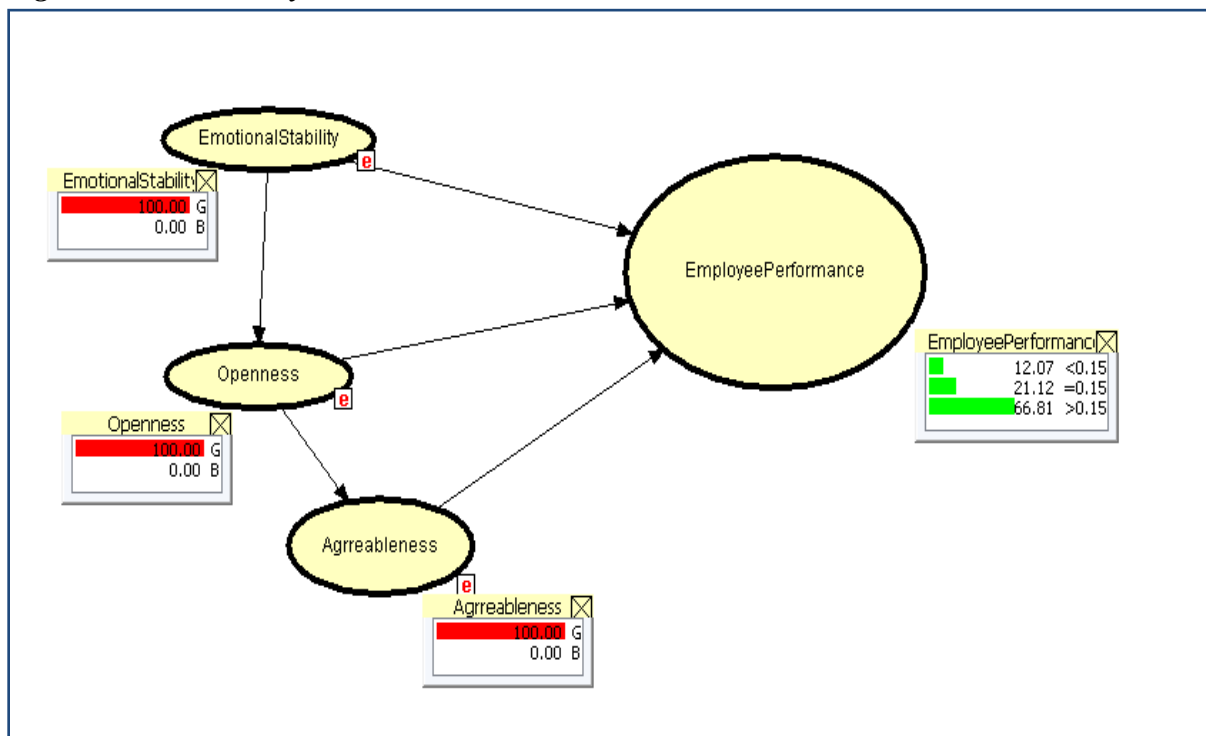
Fig 8: Scenario Analysis 6
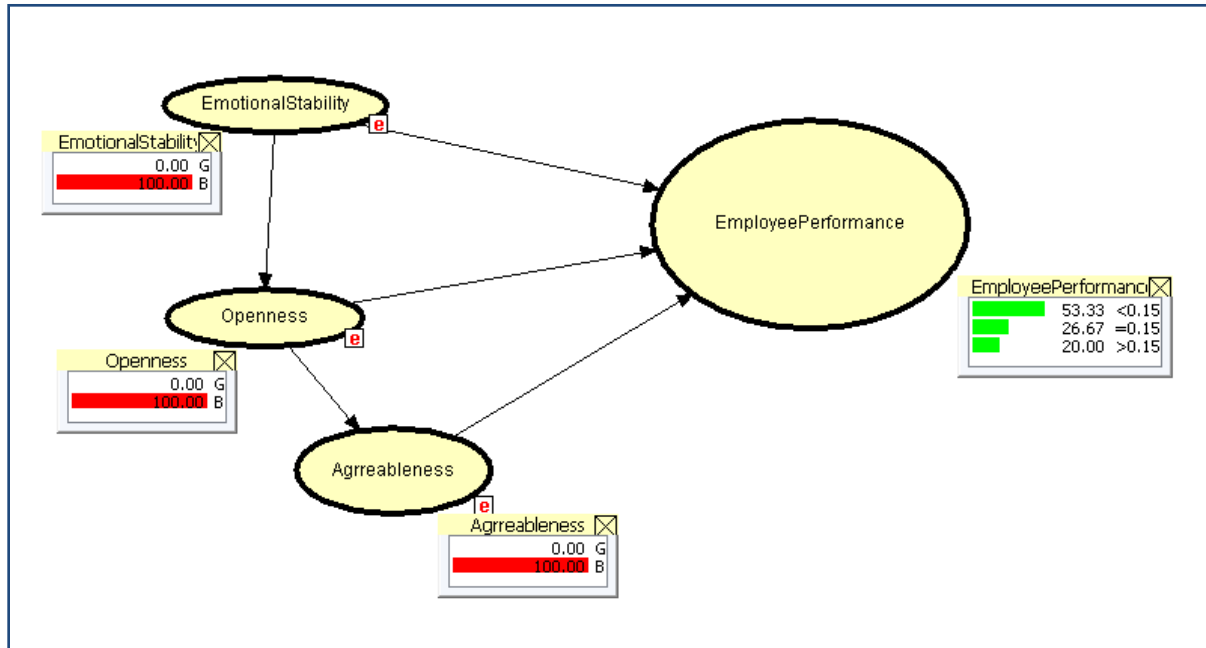
Fig 9: Causal Analysis 1
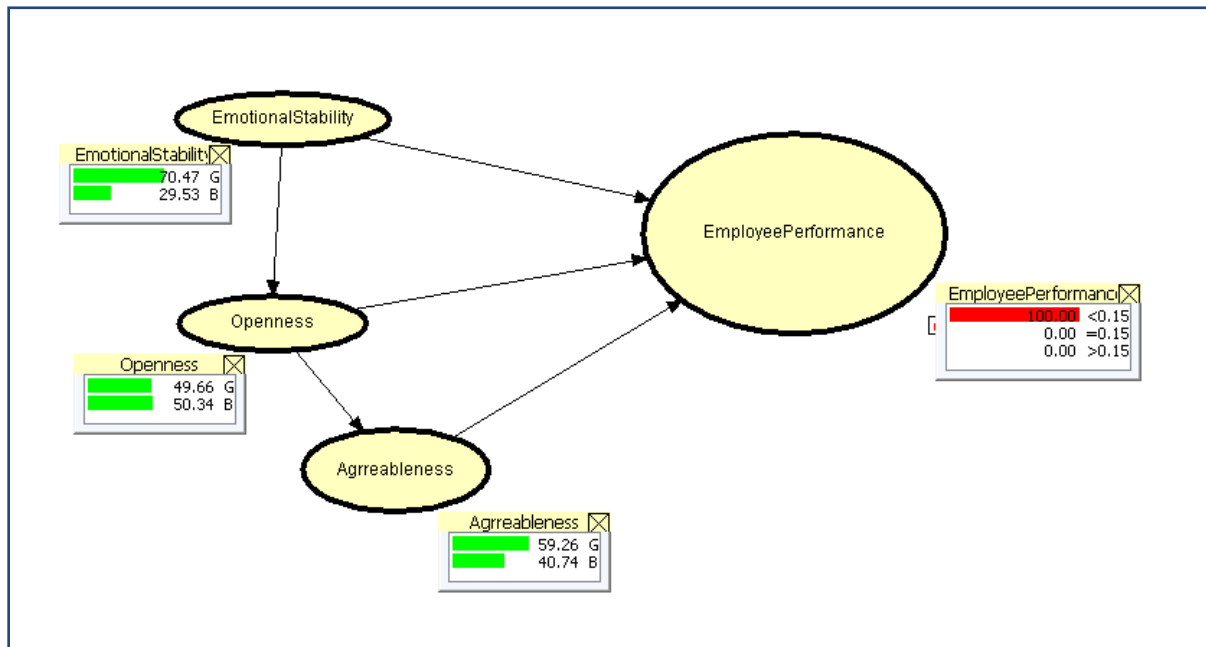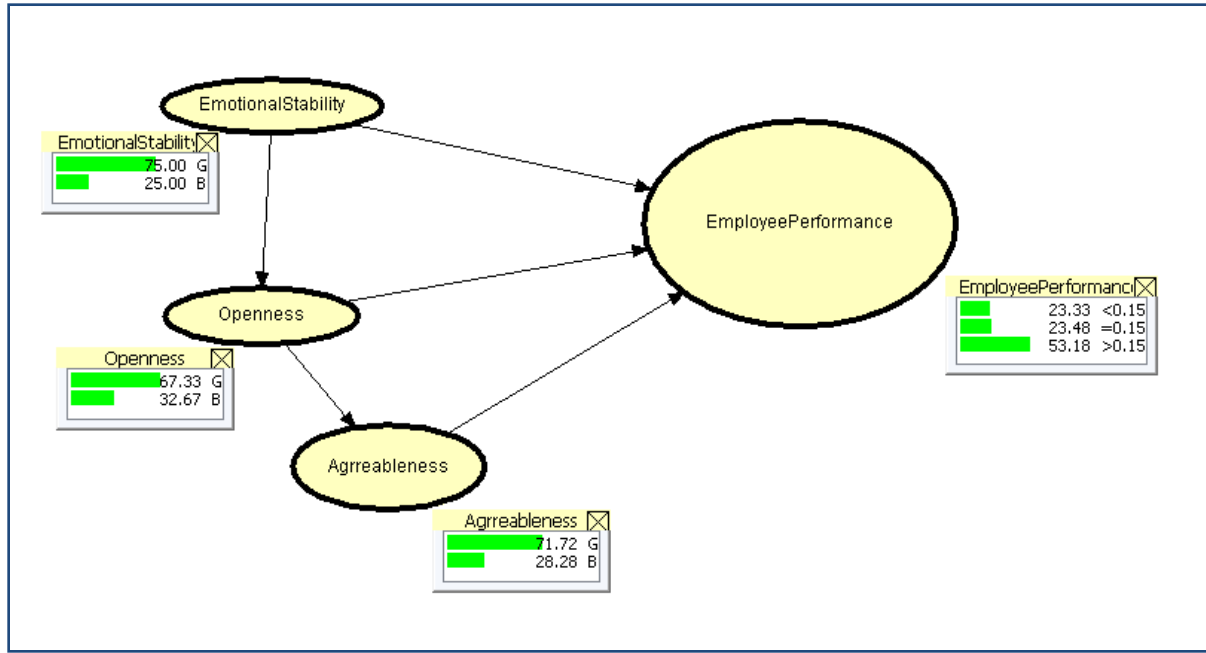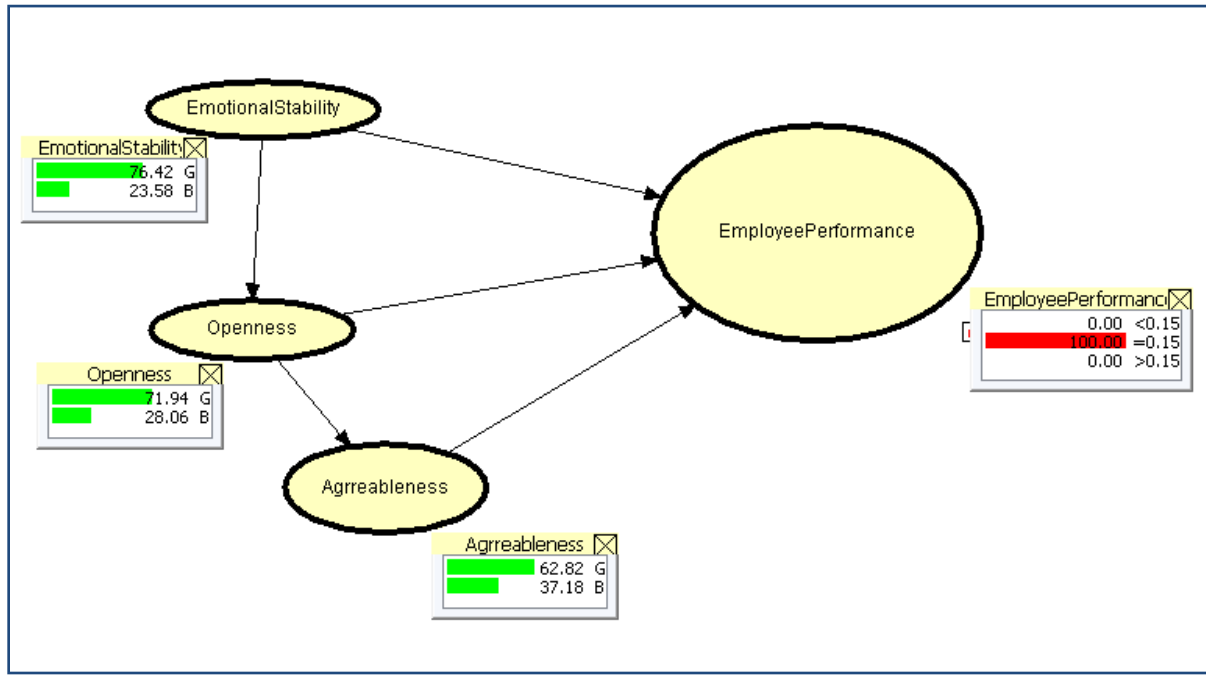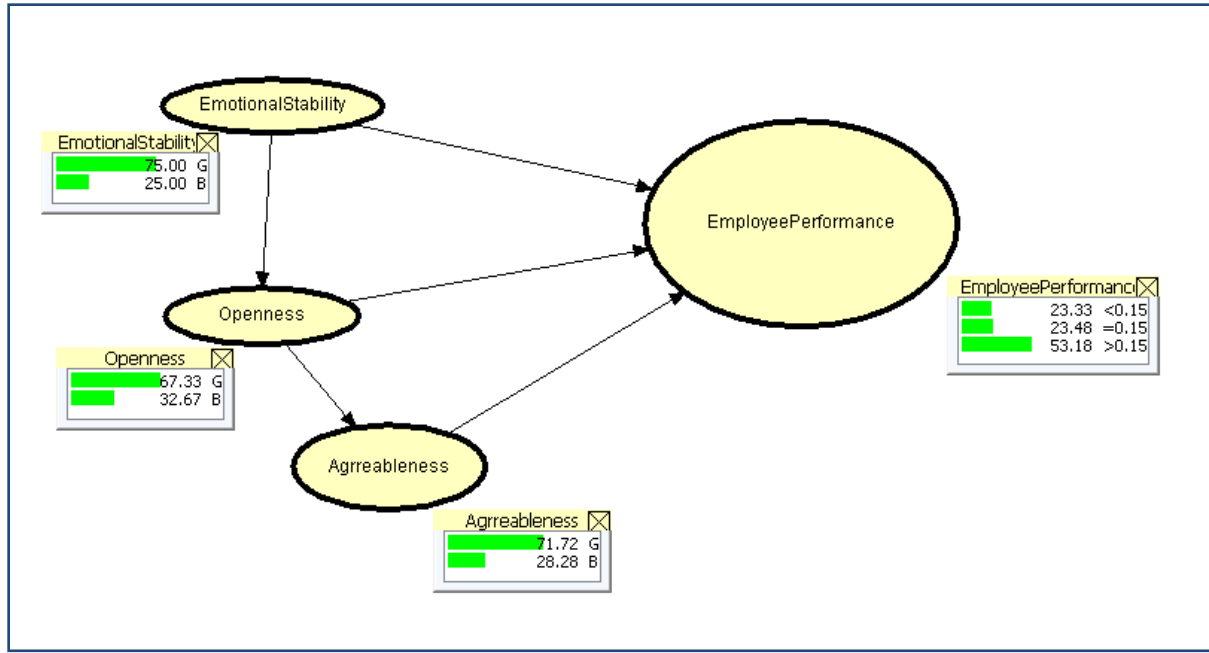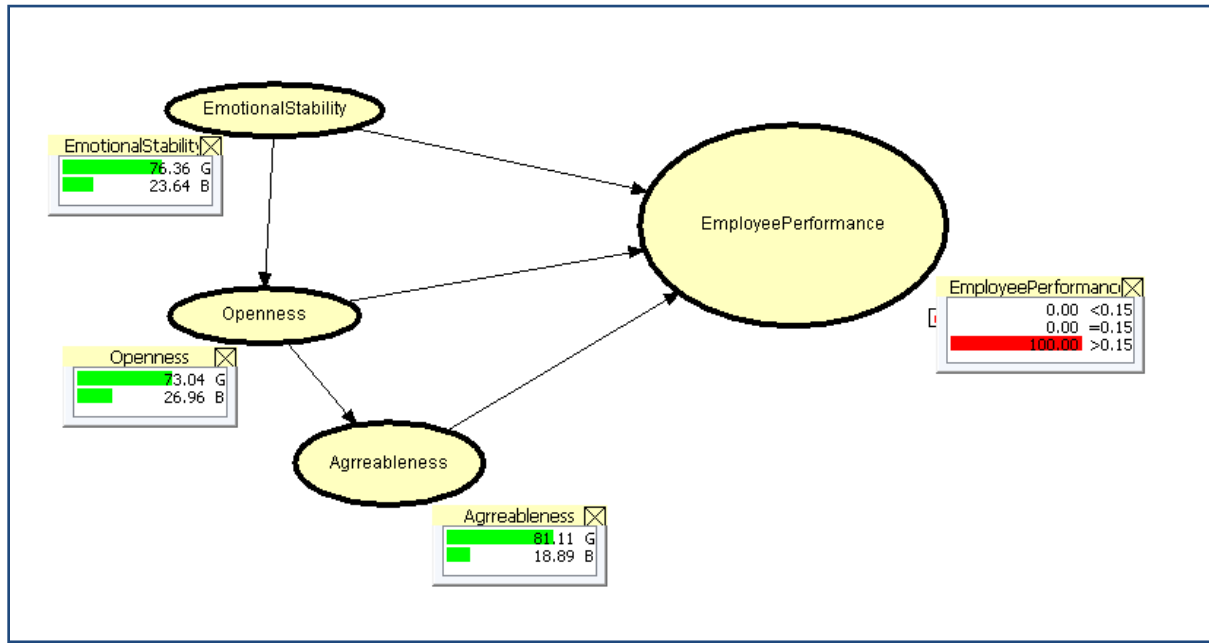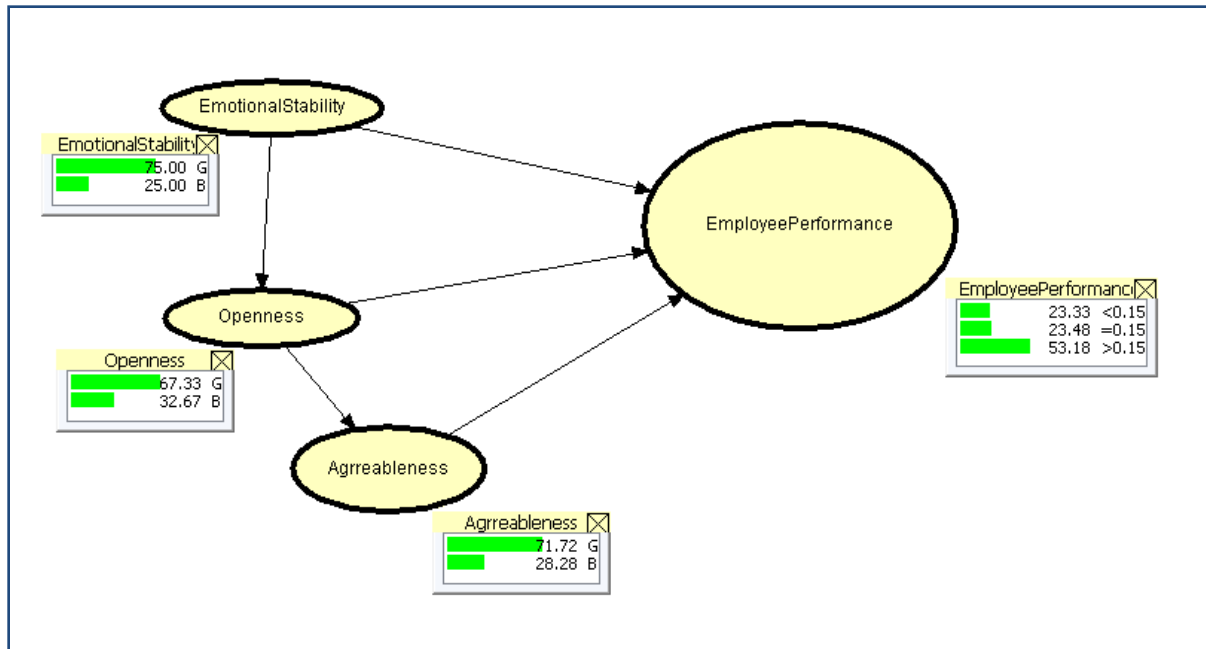
Fig 10: Causal Analysis 2:

Fig 11: Causal Analysis 3:

SCENARIO AND CAUSAL ANALYSIS

With **Scenario Analysis**, one can calibrate one or more causal or independent factors in the network and analyze its impact on the likely performance estimate. For example, one might be interested in estimating faculty job performance under different sets of emotionally stable faculty being recruited, (other conditions remaining unchanged).

Under **Causal Analysis,** new evidence of faculty job performance is used to calculate updated probabilities (also referred to as posterior probabilities) of all the causal/ independent factors. In other words, additional performance information is propagated to all the nodes in the network. This technique of evidence (new performance data) propagation is extremely useful for analyzing the causes that impact faculty performance.

The Bayesian process of statistical estimation is one of continuously revising and refining the probable influences of the independent personality traits about the state of the outcomes regarding job performance as more data become available.

Conflict of Interests: The author declared no conflict of interests.

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