Role of Emotional Intelligence in Explaining Knowledge Sharing

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Abstract

The objective of this paper is to examine the relationship of a firm's environmental performance with its financial performance in a developing economy wherein the traditional command and control mechanism is predominant and the enforcement is weak. The study focuses on the firms in steel, power and cement sectors in India which are not only key contributor to the economic growth but also categorised as highly polluting sectors. The environment performance is represented by an index covering the regulated pollutants and the unregulated resources which proxies the firms environmental performance. We find a nonlinear negative relationship between the firm's market value and its pollution and resource utilization index respectively. The magnitude of market impacts are small as compared to the overall market value of the firms due to the lack of enforcement and low probability of being penalised.

INTRODUCTION

Knowledge sharing has been shown to reduce costs in organizations, promote new product developments, improve group dynamics, and increase organizations' competitive abilities. (Cummings, 2004).

Nevertheless, promoting knowledge sharing in the organization can be a challenging procedure. At the individual level, it may give rise to a feeling of losing a valuable personal asset (Argote et al., 2001). Promoting the creation of new knowledge and its sharing is one of the challenges faced by today's managers (Kogut and Zander, 1992). Various interpersonal factors impair the intention and ability of individuals to share knowledge, resulting in the failure of even the most advanced knowledge administration frameworks adopted by the organizations meant to promote knowledge sharing (Bock et. al. 2005).

Knowledge Sharing can be researched within several contexts including organizational and cultural, interpersonal and group characteristics, or motivational (Wang, S., & Noe, R. A. 2010).

Research on knowledge sharing at individual level have been conducted in information sciences (Wasko & Faraj, 2005), strategic management (Reagans & McEvily, 2003), organizational behavior (Bordia et al. 2006) and psychology (Lin, 2007b, c, d). One of the reasons why the knowledge management systems implemented in the organizations fail is the dearth of concern regarding the interpersonal factors that influence the knowledge sharing in individual or organizational settings (Voelpel, Dous, & Davenport, 2005).

Several factors are known to directly or indirectly influence the psychology of knowledge sharing. These factors may include management characteristics and administrative interventions such as incentives or rewards aimed to

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promote knowledge sharing (Cabrera & Cabrera, 2002); environmental characteristics (Levin and Cross, 2004); and the characteristics of the individuals who are owners of the knowledge such as the strength of association with the organization, interpersonal trust in peers and management, and the sources of motivations, which will ultimately assist them on deciding whether to conceal or share their knowledge (Levin and Cross, 2004).

Various researchers have shown an insight into the psychology of knowledge sharing at individual level. Knowledge sharing has been shown to be influenced by interpersonal factors such as personality, Emotional Intelligence, work engagement, motivational aspects, and interpersonal trust (Obermayer-Kovács et. al. 2015).

Only a few researchers have studied the interactions among different interpersonal factors to explain knowledge sharing (Mooradian et. al. 2006).

Literature Review

1. Knowledge Sharing

Knowledge Sharing has been defined as "the provision or receipt of task information, know-how and feedback regarding a product or procedure" (Cummings, 2004), which is an impression of a socially interactive culture comprising the exchange of knowledge, experiences, skills, abilities and values within or between organizations. Knowledge sharing is a two-way process involving both the demand and supply of the knowledge created (Ardichvill et al. 2003).

Promoting the conception and sharing of new knowledge is vital for the development of any organization (Nonaka & Takeuchi, 1995). Knowledge is a vital resource necessary to attain sustainable competitive advantage in a knowledge based organization through a process in which employees would be stimulated to develop new knowledge and apply it in the most productive manner. (Davenport & Prusak, 1998).

At individual level, knowledge sharing has its roots in the social exchange theory, where the employees, through a series of social interaction, would bring more efficiency in the behaviors crucial for success at job (Lin, 2007). Knowledge sharing, at organizational level, is about the formulation, coordination and organization, capturing, reusing and relocating the experience-based knowledge, which is present within the organization, to the needful centers within or outside the organization, making the knowledge available to others and generating new knowledge based on the existing one.

Knowledge sharing helps an organization retain the intellectual capital, even after the employee has left the organization, thereby increasing the profitability and productivity of the organization, ultimately leading to value addition and sustainability (Lin, 2007).

2. Personality and Knowledge Sharing

Personality refers to the "individual differences in characteristic patterns of thinking, feeling and behaving" (APA). Personality, being a cross-situational and highly stable attribute, has been known to explain the variation in a variety of human actions, behaviors and choices, (Landers & Lounsbury, 2006). There are various dimensions of personality which could be explained through several theories. The Five-Factor Model (FFM) best explains the variability in personality traits, making it the most comprehensive and widely used measure of personality (Zhang & Huang, 2001). Lewis Goldberg proposed the FFM comprising of five dimensions of personality, nicknamed the "Big Five" comprising of openness to experience, extraversion, conscientiousness, agreeableness and Emotional stability (Goldberg, 1990).

Few empirical studies have been conducted on the relation between personality type and knowledge sharing. Agyemang et. al. (2016) found all five traits except conscientiousness to be significantly promoting knowledge sharing among instructors. Chong et. al. (2014) found extraversion and conscientiousness to be the predictors of knowledge sharing behaviors in classrooms. Cabrera et al. (2006) found agreeableness, openness, and conscientiousness to significantly explain the intention to share knowledge. Mooradian & Matzler (2006) found agreeableness to influence knowledge sharing by increasing trust among coworkers.

3. Emotional Intelligence and Knowledge Sharing

Emotional Intelligence is a "multi-dimensional interpersonal factor that links emotion and cognition with the target of refining and improving human interactions" (Mayer & Salovey 1997), and is found to enhance workplace behavior (Aritzeta, et al. 2007) and team performance (Jordan & Troth 2004).

Emotional Intelligence is the intrinsic ability of individuals which helps them to identify their own and other individuals' emotions, helps them to distinguish

and prioritize different emotions and feelings in any given situation, and also helps them to comprehend the Emotional information and use it to guide their behaviors and thoughts (Salovey & Meyer, 1989). Abzari et al. (2014) identified that social and Emotional competences influence employees' knowledge sharing behaviors. From the standpoint of knowledge sharing, Emotional Intelligence, by mediating cognitive and behavioral aspects, permits employees to think and behave in a manner more desired by the management, which will be more conducive to knowledge sharing activities (Obermayer et al. 2017). High Emotional Intelligence brings about a psychological safety among employees that encourages knowledge sharing (Kessel et al., 2012). Emotionally Intelligent employees are known to be more confident, feel more secure and endure lesser fear while indulging in knowledge sharing activities and communication processes (Gupta, 2008).

4. Personality and Emotional Intelligence

Trait Emotional Intelligence integrates the "Emotional" aspects of different personality traits, and is a collection of self-perceptions of emotions located at the fundamental levels of personality traits (Petrides et al. 2007). Matthews et al. (2002) provides evidence relating different dimensions of Emotional Intelligence with Big Five personality factors (Petrides & Furnham, 2001). Trait Emotional Intelligence has been known to have such a high integration with personality traits, that it is often refuted to consider it along with personality traits in an analysis. However, despite showing a strong link with various personality dimensions (Vernon et al.2008), trait Emotional Intelligence has been found to explain additional variances in different situations beyond the personality traits; sometimes even "out-predicting" them (Paunonen & Ashton, 2001). Emotional Intelligence has demonstrated an additional and varied validity in explaining different interpersonal factors and outcomes (e.g.- motivational, engagement, trust and knowledge sharing factors in our research) (Russo et al., 2012), which justifies the need to consider Emotional Intelligence as a significantly different factor from personality (Petrides et al. 2007). Van der et al. (2002) found Emotional Intelligence dimensions to be predicted by Big Five, particularly by extraversion and Emotional stability. Siegling et al. (2014) using a meta-analysis found Emotional stability among Big Five to be prominently correlated with Emotional Intelligence, followed by agreeableness, conscientiousness and openness.

RESEARCH OBJECTIVES:

The objective of this research was to study the role of Emotional Intelligence as a mediator of Big Five Personality traits and Knowledge Sharing.

HYPOTHESIS

Based on the theoretical and empirical evidences and research objective presented above, we propose the following hypothesis:

HO: Emotional Intelligence *does not mediate* the relationship between personality traits and knowledge sharing

HA: Emotional Intelligence *mediates* the relationship between personality traits and knowledge sharing.

RESEARCH METHODOLOGY

1. Sample and Data Collection

As our research intends to analyze the factors responsible for knowledge sharing, it was only logical to gather data from a population where knowledge sharing among employees is a significant factor for the success of the team performance and hence for the overall success of the organization. For this reason companies from information and communication technology (ICT) based industry and financial institutions located in Delhi and Delhi-NCR regions were chosen for data collection, which are often classified as knowledge-based industries. Data was collected using survey method from middle-to-top level employees from these companies who were part of teams working on projects. Our study involves constructs with reflective models only. Out of 600 questionnaires distributed, 450 valid questionnaires were returned. Entire data collection process took around 180 days. The descriptive profile of data collected is given in Table-1.

Demographic Characteristic	No. of responses	Percentage	
Gender	Male	264	58.67
	Female	186	41.33
Age	Upto 30 years	261	58
	30-40 years	140	31.11
	Over 40 years	49	10.89
Experience	0-5 years	170	37.78
	5-10 years	207	46
	Over 10 years	73	16.22
Education	Undergraduate	193	42.89
	Post-graduate	257	57.11
Industry	ICT	181	40.22
	Financial	269	59.78

Table-1 (Demographic profile)

2. Research Instrumentation

In our study, the scales used to measure the variables were adapted from previous studies. Knowledge sharing was measured using 5-point Likert-type scale (ranging from 1 = Never to 5 = Always; and 1 = strongly disagree to 5 = strongly agree respectively). Rest of the constructs were measured using a 7-point Likert-type scale (ranging from 1 = strongly disagree to 7 = strongly agree).

Big-5 traits (explained earlier) were measured using Ten-Item Personality Inventory-(TIPI) constructed by Gosling et al. (2003). Emotional Intelligence, comprising of four sub-dimensions relating to awareness and management of own and others' emotions, was measured using 16-items Workgroup Emotional Intelligence Profile (WEIP-S) developed by Jordan, P. J., & Lawrence, S. A. (2009). Finally, knowledge sharing was measured using 28-item knowledge sharing behavior (KSB) scale developed by Yi (2009). The four dimensions of KSB measure written contributions (5-items), organizational communications (8-items), personal interactions (8-items), and communities of practice (7-items).

3. Psychometric Properties of the Instrument Used in the Study

The relationships between the variables were assessed using structural equation modeling through partial least squares (PLS) approach. All the analyses in our study were conducted using Smart PLS 2.0.M3 (Ringle et al. 2005). According to Hulland (1999), assessment and interpreted of a PLS model is a two-step process. In the first step, reliability and validity analysis is conducted for the measurement model. In the second step, the predictability and significance of the paths between constructs in the structural model is evaluated.

Evaluation of the SEM model requires following steps:

Evaluation of Reflective Measurement model:

- Internal consistency (composite reliability)
- Indicator reliability
- Convergent validity (average variance extracted)
- Discriminant validity

Evaluation of the Structural Model:

- Assessment of structural model for collinearity issues
- Assessment of the significance and relevance of the structural model relationships
- Coefficients of determination (R^2)
- Predictive relevance (Q^2)
- f^2 effect sizes
- q^2 effect sizes
- Importance-Performance Matrix Analysis (IPMA)

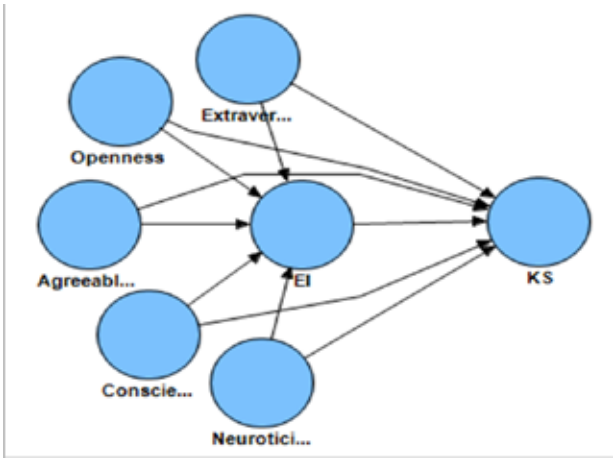

Fig-1 (Display of the relationship between various variables)

Reliability Results:

Following are the results of the Cronbach α calculated for each scale, and sub-scale wherever applicable.

Scale: Extraversion		
Reliability Statistics		
Cronbach's Alpha	0.941	
Item-Total Statistics		
	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
C1	0.956	-
C6	0.956	-
Scale: Openness		
Reliability Statistics		
Cronbach's Alpha	0.785	
Item-Total Statistics		
	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
C5	0.65	-
C10	0.65	-
Scale: Agreeableness		
Reliability Statistics		
Cronbach's Alpha	0.949	
Item-Total Statistics		
	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
C2	0.951	-
C7	0.951	-
Scale: Conscientiousness		
Reliability Statistics		
Cronbach's Alpha	0.96	
Item-Total Statistics		
	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
C3	0.958	-
C8	0.958	-
Scale: Neuroticism		
Reliability Statistics		
Cronbach's Alpha	0.926	
Item-Total Statistics		
	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
C4	0.936	-
C9	0.936	-
Scale: Other Aware		
Reliability Statistics		
Cronbach's Alpha	0.944	
Item-Total Statistics		
	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
E9	0.889	0.923
E10	0.877	0.932
E11	0.84	0.934
E12	0.897	0.918
Scale: Own Aware		
Reliability Statistics		
Cronbach's Alpha	0.839	
Item-Total Statistics		
	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
E1	0.76	0.759
E2	0.773	0.752
E3	0.575	0.837
E4	0.611	0.822
Scale: Other manage		
Reliability Statistics		
Cronbach's Alpha	0.912	
Item-Total Statistics		
	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
E13	0.825	0.88
E14	0.808	0.884
E15	0.799	0.888
E16	0.78	0.894
Scale: Own manage		
Reliability Statistics		
Cronbach's Alpha	0.933	
Item-Total Statistics		
	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
E5	0.826	0.92
E6	0.823	0.919
E7	0.895	0.896
E8	0.843	0.915

Both *Corrected Item-Total Correlation* and *Cronbach's Alpha if Item is Deleted* are a criteria to test indicator reliability.

Table-2

The *Corrected Item-Total Correlation* column shows between-item correlation and the aggregate score from the construct. A reliable scale shows good correlation of all the items with the total score. We need to identify the items which do not significantly correlate with the score of overall scale. Hence, if the correlation value of any such items in less than 0.3, then that item is considered to be problematic and needs to be reassessed. Such problematic items may need to be removed. For all our data, the item specific correlation with overall score is greater than 0.3, hence none of the items are considered to be problematic.

The items in the column labeled *Cronbach's Alpha if Item is Deleted* shows the value of overall Cronbach's Alpha if that particular item is not included in the computation. If an item is found to have Cronbach's Alpha value which is substantially larger than overall Cronbach's Alpha may need to be removed as it may impact the reliability of the overall scale. However, no such need was felt.

Finally, the value of Cronbach's α shows the reliability of the overall scale. According to Kline (1999), value of Cronbach's alpha of 0.8 or greater is considered to be acceptable for psychological tests such as Intelligence tests, however in the tests measuring the abilities, the value of greater than 0.7 is acceptable.

Validity Results

1. Convergent Validity (Average Variance Extracted)

Convergent validity shows the magnitude to which a measure positively correlates with substitute measures of the same construct. In order to determine the convergent validity for a construct, Average variance extracted (AVE) is used.

The results of AVEs for different constructs and sub-constructs used in our model are presented in Table-3.

Variables	AVE
Extraversion	0.9779
Openness	0.8187
Agreeableness	0.9754
Conscientiousness	0.9789
Neuroticism	0.9682
OthersAware	0.8669
OthersMgt	0.7937
OwnAware	0.6778
OwnMgt	0.8342
Written contribution	0.6858
Organizational comm.	0.6075
Personal interaction	0.6231
Communities of practice	0.624

Table-3

As all of our constructs have AVEs > 0.5, we can say that such constructs and hence entire model meets the convergent validity requirement.

2. Discriminant Validity

Discriminant validity is the extent to which a construct is truly distinct from other constructs by empirical standards. Thus, establishing discriminant validity implies that a construct is unique and captures phenomena not represented by other constructs in the model. The Fornell-Larcker criterion (Fornell and Larcker, 1981) is the approach to assessing discriminant validity. It compares the square root of the AVE values with the latent variable correlations. Specifically, the square root of each construct's AVE should be greater than its highest correlation with any other construct. The logic of this method is based on the idea that a construct shares more variance with its associated indicators than with any other construct.

Table-4 shows the application of Fornell-Larcker Criterion on our model.

Fornell-Larcker Criterion	Agree.	Consc	EI	Extrav	KS	Emo-Sta	Openn
Agree.	**0.988**						
Consc.	0.026	**0.989**					
EI	-0.048	0.157	**0.730**				
Extrav.	0.009	0.003	0.373	**0.989**			
KS	0.339	0.541	0.379	0.271	**0.579**		
EmoS-ta.	0.009	0.009	0.376	-0.004	0.289	**0.984**	
Openn.	0.037	-0.037	0.141	0.278	0.107	0.020	**0.905**

Table-4

The square roots of the reflective constructs' AVE are on the diagonal and the correlations between the constructs in the lower left triangle. For example, the reflective construct 'KS.' has a value of 0.579 for the square root of its AVE, which needs to be compared with all correlation values in the row as well as the column of 'KS'

Accordingly, all of our constructs meet Fornell-Larcker criterion requirements and discriminant validity is established.

3. Assessment of Structural Model for Collinearity issues

High correlations are not expected among the constructs in a structural model, which would mean that more than one construct is explaining the same characteristics.

To assess the level of collinearity, researchers should compute the tolerance. The tolerance represents the amount of variance of one construct not explained by another construct in the same block. A related measure of collinearity is the variance inflation factor (VIF), defined as the reciprocal of the tolerance. The term VIF is derived from the square root of the VIF being the degree to which the standard error has been increased due to the presence of collinearity. The tolerance and VIF are both provided in the regression analysis output of IBM SPSS Statistics software package. In the context of PLS-SEM, a tolerance value of 0.20 or lower and a VIF value of 5 and higher respectively indicate a potential collinearity problem (Hair, Ringle, & Sarstedt, 2011). These levels indicate that 80% of an indicator's variance is accounted for by the remaining formative indicators associated with the same construct.

We consider tolerance levels below 0.20 (VIF above 5.00) in the predictor constructs as indicative of collinearity. If collinearity is indicated by the tolerance or VIF guidelines, one should consider eliminating constructs, merging predictors into a single construct, or creating higher-order constructs to treat collinearity problems.

Collinearity Assesment			
First set (to EI)		Second set (to KS)	
Const.	**VIF**	**Const.**	**VIF**
Agree.	1.002	Agree.	1.008
Consc.	1.002	Consc.	1.038
Extrav.	1.084	Extrav.	1.275
Neuro.	1.001	Neuro.	1.204
Openn.	1.087	Openn.	1.09
		EI	1.448

Table-5

In our model, none of the constructs show collinearity problem.

4. Assessment of the Significance and Relevance of the Structural Model Relationships

After running the PLS-SEM algorithm, estimates are obtained for the structural model relationships (i.e., the path coefficients), which represent the hypothesized relationships among the constructs. The path coefficients have standardized values between -1 and +1. Estimated path coefficients close to+1 represent strong positive relationships (and vice versa for negative values) that are almost always statistically significant (i.e., different from zero in the population). The closer the estimated coefficients are to 0, the weaker the relationships. Very low values close to 0 are usually non-significant (i.e., not significantly different from zero). Whether a coefficient is significant ultimately depends on its standard error that is obtained by means of bootstrapping. The bootstrap standard error allows computing the empirical t value. When the empirical t value is larger than the critical value, we say that the coefficient is significant at a certain error probability (i.e., significance level). Commonly used critical values for two tailed tests are 1 .65 (significance level= 10%), 1.96 (significance level = 5%), and 2.57 (significance level = 1 %).

Fig- 2 shows the relevance of the structural model relationships, while Fig-3 shows the relevance of such relationships by displaying the respective t values.

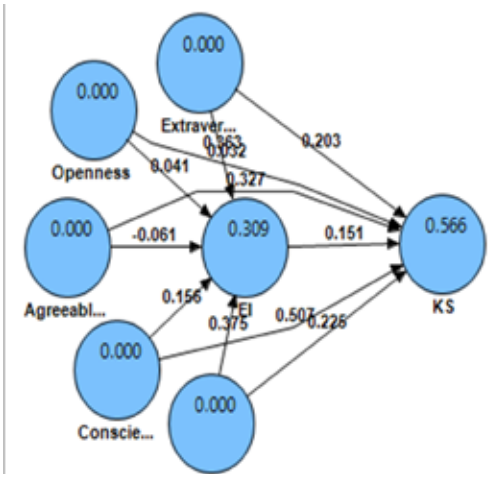

Fig-2

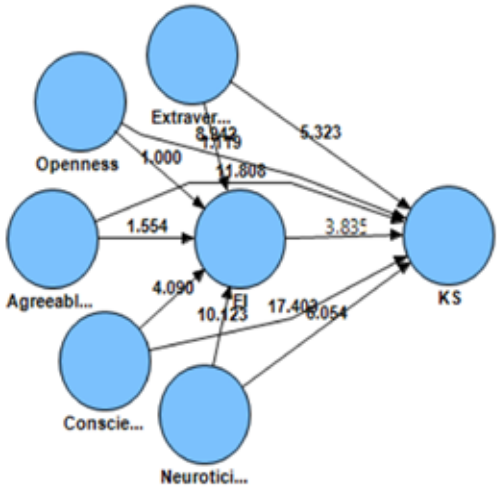

Fig-3

Significance testing results of the structural model path coefficients			
	Path Coefficients	**t values**	**Sig. Levels**
Agreeableness -> EI	-0.061	1.6662	NS
Agreeableness -> KS	**0.3275**	**11.6196**	***
Conscientiousness -> EI	**0.156**	**3.7917**	***
Conscientiousness -> KS	**0.5074**	**18.4203**	***
EI -> KS	**0.1511**	**3.9768**	***
Extraversion -> EI	**0.363**	**8.8705**	***
Extraversion -> KS	**0.2025**	**5.6265**	***
Neuroticism -> EI	**0.375**	**9.5796**	***
Neuroticism -> KS	**0.2247**	**5.6802**	***
Openness -> EI	0.041	0.9921	NS
Openness -> KS	0.032	1.088	NS
Note: NS= not significant **p<0.05, ***p<0.01			

Table-6

After examining the significance of relationships, it is important to assess the relevance of significant relationships. Many studies do not undertake this important step in their analyses but simply focus on the significance of effects. However, the path coefficients in the structural model may be significant, but their size may be so small that they do not warrant managerial attention. An analysis of the relative importance of relationships is crucial for interpreting the results and drawing conclusions.

Path coefficients (relative importance)		
	EI	**KS**
Agreeableness	-0.0605	**0.3275**
Conscientiousness	**0.1559**	**0.5074**
EI		**0.1511**
Extraversion	**0.3629**	**0.2025**
Neuroticism	**0.3752**	**0.2247**
Openness	0.0407	0.032

Table-7

Results displayed in Table-7 shows that Emotional Intelligence is significantly explained by Conscientiousness, Extraversion and Neuroticism, however the weightage of Extraversion and Neuroticism is much higher than Conscientiousness. Knowledge sharing is significantly explained by Emotional Intelligence, and all the Big-5 facets except Openness to experience.

Examining the Total Effects

In a complex structural model like ours, an endogenous construct may be explained by several constructs indirectly. Hence, to get a complete understanding of the structural model, it is important to know the relevance and significance of the relationships between difference exogenous constructs and endogenous constructs, which is explained by the Total Effect of a particular exogenous construct on target endogenous construct. Total Effect is the sum of the direct effect and all indirect effects linking two constructs. PLS uses the bootstrapping methodology (Efron & Tibshirani, 1986) in order to assess the standard errors, which evaluates the significance of the structural coefficients.

Table-8 displays the Total Effects and their significance (at 5% level) for each exogenous construct on each endogenous construct.

Significance testing results of the total effects			
	Path Coefficients	**t values**	**Sig. Levels**
Agreeableness -> EI	-0.0607	1.5315	NS
Agreeableness -> KS	**0.3183**	**11.3977**	***
Conscientiousness -> EI	**0.156**	**4.1397**	***
Conscientiousness -> KS	**0.5309**	**18.3447**	***
EI -> KS	**0.1511**	**4.0419**	***
Extraversion -> EI	**0.3628**	**9.274**	***
Extraversion -> KS	**0.2573**	**7.2284**	***
Neuroticism -> EI	**0.3752**	**9.2973**	***
Neuroticism -> KS	**0.2814**	**7.9673**	***
Openness -> EI	0.0407	0.9301	NS
Openness -> KS	0.0381	1.24	NS
Note: NS= not significant **p<0.05, ***p<0.01			

Table-8

Total effects		
	EI	**KS**
Agreeableness	-0.0605	**0.3183***
Conscientiousness	**0.1559***	**0.5309***
EI		**0.1511***
Extraversion	**0.3629***	**0.2573***
Emotional stability (Neuroticism)	**0.3752***	**0.2814***
Openness	0.0407	0.0381
*p<0.01		

Table-9

From Table-9, we can see that among Big Five; Emotional stability has the strongest significant total effect on

Emotional Intelligence (0.375), followed by extraversion (0.363) and conscientiousness (0.156). All the endogenous constructs, except openness, were found to have a significant total effect on knowledge sharing, with conscientiousness having the highest (0.53) among the Big Five.

Coefficients of determination (R^2) results, representing the exogenous latent variables' combined effects on the endogenous latent variable, are presented in Table-10. R^2 is a measure which suggests the predictability of the constructs involved in a model. It is calculated as the squared correlation between the actual values and the predicted values of a particular endogenous construct.

Constructs	R Square
EI	0.3092
KS	0.1439

Table-10 (*Coefficients of determination: R^2*)

Using the results of R^2 displayed in table-10, we can conclude that R^2 values of 'knowledge sharing' and Emotional Intelligence are weak-to-moderate.

5. Predictive Relevance: Q^2

Stone-Geisser's Q^2 value (Geisser, 1974; Stone, 1974) is an additional tool other than R^2 values, which can be used to measure the predictive accuracy of a construct. In other words, when PLS-SEM displays predictive relevance, it precisely foretells the data points of indicators in "reflective measurement models" of endogenous constructs and endogenous constructs. Q^2 values which are greater than zero in any structural model, for a particular reflective endogenous latent variable specify the path model's predictive relevance for this specific construct. Blindfolding technique is used in order to calculate Q^2 value. Blindfolding technique is a procedure which reuses the sample while eliminating every dth data point in the endogenous construct's indicators and predicts the parameters with the data points which remains (Chin, 1998; Henseler et al., 2009; Tenenhaus et al., 2005). The data points which are omitted in this technique, are considered to be missing and dealt with consequently by the PLS-SEM algorithm (e.g., by means of mean value replacement). Omitted data points are then predicted using the subsequent estimates. Q^2 measure is calculates using the difference between the true (i.e., omitted) data points and the predicted ones. Blindfolding technique runs the process continuously which repeats till omission of each data point is done and re-estimation of model is done. Q^2 values greater than zero suggest that for a certain endogenous construct, the model has predictive relevance In contrast, values of 0 and below indicate a lack of predictive relevance.

Results of Q^2 values	
Endogenous latent variables	**Q^2**
EI	0.2936
KS	0.5467

Table-11

All values in table-8 are considerably above 0, thus providing support for our model's predictive relevance regarding endogenous variables.

6. f^2 effect sizes

In addition to evaluating the R^2 values of all endogenous constructs, the change in the R^2 value when a specified exogenous construct is omitted from the model can be used to evaluate whether the omitted construct has a substantive impact on the endogenous constructs. This measure is referred to as the f^2 effect size. The effect size can be calculated as

$$f^2 = \frac{R^2_{\text{included}} - R^2_{\text{excluded}}}{1 - R^2_{\text{included}}},$$

Where R^2 included and R^2 excluded are the R^2 values of the endogenous latent variable when a selected exogenous latent variable is included in or excluded from the model. The change in the R^2 values is calculated by estimating the PLS path model twice. It is estimated the first time with the exogenous latent variable included (yielding R^2 included) and the second time with the exogenous latent variable excluded (yielding R^2 excluded). Guidelines for assessing f^2 are that values of 0.02, 0.15, and 0.35, respectively, represent small, medium, and large effects (Cohen, 1988) of the exogenous latent variable.

q^2 effect size is a measure used to assess the relative predictive relevance of a predictor construct on an endogenous construct. The computation of the q^2 effect size is an analogous to that of computation of Q^2. While, Q^2 calculates the predictive relevance of the structural model for each of the endogenous latent variables, q^2 effect size calculates the predictive relevance of a particular exogenous construct on an endogenous construct. As a relative measure of predictive relevance (q^2), values of 0.02, 0.15, and 0.35 respectively indicate that an exogenous construct has a small, medium, or large

predictive relevance for a certain endogenous construct.

q^2 effect size is calculated using the following formula.

$$q^2 = \frac{Q^2_{included} - Q^2_{excluded}}{1 - Q^2_{included}}.$$

Summary of results First set (to EI)			
Constructs	**Path coefficients**	**f^2 effect size**	**q^2 effect size**
Agreeableness	NS	0.0046	0.002
Conscientiousness	0.1559***	0.035	0.030
Extraversion	0.3629***	0.175	0.169
Neuroticism	0.3752***	0.203	0.199
Openness	NS	0.002	-0.001
Second set (to KS)			
EI	0.1511***	0.019	0.033
Agreeableness	0.3275***	0.124	0.194
Conscientiousness	0.5074***	0.33	0.503
Extraversion	0.2025***	0.037	0.027
Neuroticism	0.2247***	0.049	0.049
Openness	NS	0.001	-0.037
Note: NS= not significant **p<0.05, ***p<0.01			

Table-12

The effect sizes of constructs 'Extraversion' and 'Neuroticism' on the endogenous latent variable Emotional Intelligence are medium-to-large, while effect size of construct 'Conscientiousness' on the endogenous latent variable Emotional Intelligence is small-to-medium. Effect sizes of Conscientiousness on the endogenous latent variable Knowledge Sharing is large, while that of Agreeableness is medium. Effects of Emotional Intelligence, Extraversion and Neuroticism are small.

The predictive relevance of Extraversion and Neuroticism for the construct Emotional Intelligence is medium, while that of Conscientiousness is small. The predictive relevance of Conscientiousness for the construct Knowledge Sharing is large, while that for Agreeableness is medium, and for EI, Extraversion and Neuroticism is small.

7. Importance-Performance Matrix Analysis

Importance-performance matrix analysis (IPMA) is a tool provided by PLS-SEM, which, using latent variable scores, compares the structural model total effects (importance) with the mean values of the latent variable scores (performance) for any given dependent variable, thus signifying the aspects which warrant managerial attention (Hair et al. 2013). Table-13 and Figure-4 shows the result of IPMA analysis.

Index values and Total Effects for the IPMA of Knowledge Sharing		
	Importance (total effects)	**Performance**
Agreeableness	-0.0231	43.3242
Conscientiousness	**0.0592***	43.5534
EI	**0.3794***	54.5861
Extraversion	**0.1377***	40.446
Emotional stability	**0.1423***	39.3773
Openness	0.0155	16.7301

Table-13 (IPMA analysis)

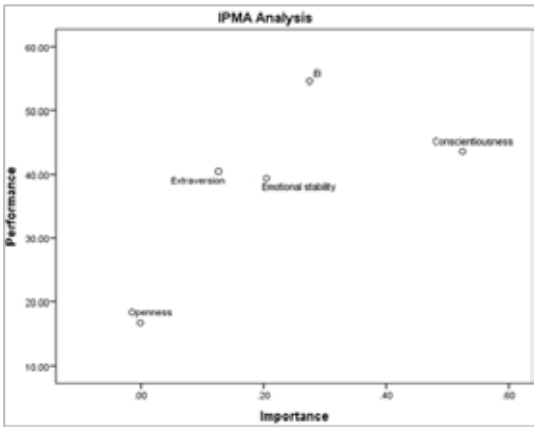

Fig-4 (IPMA analysis)

From the IPMA analysis, it is evident that conscientiousness is the most important construct to facilitate knowledge sharing, while its performance is comparatively lower than EI. Construct Emotional Intelligence performs best.

FINDINGS AND DISCUSSION

Mediation Analysis and Hypotheses Testing

Mediation characterizes a situation where a mediator variable, to a certain extent, absorbs the effect of an exogenous on an endogenous latent variable (Baron & Kenny, 1986). Mediation results are presented in Table-14, for those paths for which the condition of significant direct effect (without mediator) has been met. Such condition was not met for the direct effects of openness on knowledge sharing without EI as the mediator. Hence, these paths were removed from the mediation analysis.

Significance Analysis of Path Coefficients without Mediator

Significance analysis of path coefficients without mediator (EI)			
	Path Coefficient	t value	Sig.
Agreeableness -> KS	0.318	10.7322	***
Conscientiousness -> KS	0.5309	17.883	***
Extraversion -> KS	0.2571	7.121	***
Neuroticism -> KS	0.2816	8.2153	***
Openness -> KS	0.0386	1.2368	NS
*p < .10. **p < .05. ***p<0.01			

Table-14

Relationship between all personality facets except openness to experience have a significant relation with knowledge sharing after removing EI as the mediator, hence for further analysis we do not assume that relationship between openness and knowledge sharing is mediated by EI

Table-15 shows the values and relevance of mediating effect of EI for different Big 5 facets and KS.

Mediator: EI									
Path	**Path coefficient to EI**	**Path coefficient of EI to KS**	**Indirect effect**	**Direct effect**	**Total effect**	**SD**	**t value**	**Sig**	**VAF**
Agreeableness>EI>KS	-0.06	0.15	-0.01	0.33	0.32	0.01	-0.68	NS	-
Conscientiousness>EI>KS	0.16	0.15	0.02	0.51	0.53	0.02	1.14	NS	-
Extraversion>EI>KS	0.36	0.15	0.05	0.20	0.26	0.02	3.55	***	0.21
Neuroticism>EI>KS	0.38	0.15	0.06	0.22	0.28	0.02	3.30	***	0.20
**p < .05. ***p<0.01									

Interpretation of mediation results (at 5% significance level):

Table-15 *(Significance analysis of Mediation)*

Emotional Intelligence was found to have a moderate mediation for extraversion and neuroticism and knowledge sharing, hence only partly supporting HA.

Inspired by the necessity to understand the complex relation between prominent interpersonal psychological factors, and their relation with knowledge sharing behaviors of employees, in this study we incorporated Big Five personality traits and Emotional Intelligence into a structural model, in order to study their direct and indirect effects on knowledge sharing. The results showed the prominence of conscientiousness and Emotional stability among Big Five for explaining knowledge sharing behaviors, in lines with Cabrera et al. (2006). Kim Shin and Swanger (2009) had also found conscientiousness to be one of the most significant personality traits in explaining knowledge sharing. IPMA analysis suggests that even though conscientiousness is the most important factor in explaining knowledge sharing, its performance is much lower than other interpersonal factors like Emotional Intelligence; which has implication for recruitment practices, where the management should attempt to hire more employees rated higher at conscientiousness front, if promotion of knowledge sharing is the aim.

Emotional Intelligence was also one of the top predictors of knowledge sharing, which explained it over and above Emotional stability facet of Big Five, supporting the claims by Paunonen & Ashton, (2001). It was also a significant mediator between extraversion, neuroticism, and knowledge sharing. Emotional stability and extraversion among the Big Five has the highest impact on Emotional Intelligence, while agreeableness and openness has an insignificant effect. This is in lines with Vernon et al., (2008) who suggested that neuroticism embraces most of the Emotional traits, while openness and agreeableness comprises the fewest (Vernon et al., 2008). It is also the highest performer among other factors as per the IPMA analysis. However, given its importance, management should keep on focusing on this aspect in their organization. As it is a highly stable aspect of an individual's psychology, Emotional Intelligence should

be given importance in hiring practices. Also, due to its high correlation with most of the personality traits, an instrument measuring the Emotional Intelligence may substitute a lengthy tool used for personality assessment during recruitment, if time and cost are a major factor, which may give, to a certain extent, insights into the personality traits of the applicant.

Limitations of the Study

In our study, Hierarchical Component Model was used for all constructs except for personality traits. In a Hierarchical Component Model, a construct is explained by two or more underlying dimensions, and as our study comprised a large number of constructs, it made it difficult to see the effect of one sub-dimension of a construct on that of another. Doing so could give a better understanding of the mechanisms through which different factors interact with one another. Future researchers should concentrate on a fewer factors in order to understand such a mechanism. Results regarding the role of personality in explaining knowledge sharing and other interpersonal factors are not perfectly consistent with older studies. However, studies involving personality are known to bring inconsistent results (Zhao & Seibert 2006). In order to keep the questionnaire of a reasonable length, we had adopted a very short scale in order to measure Big Five traits, comprising of only 10-items, as, for even the shortest of other inventories available, number of items exceed over 40 (Facet, B. F. D. Big Five Inventory-BFI). Future researchers may do a more focused study to understand the detailed interactions of personality traits with other interpersonal factors.

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