CHAPTER 5: DATA ANALYSIS

5.1 Introduction

This chapter provides a detailed description of the statistical analysis conducted to test the hypotheses related to the conceptual model. We conducted data analysis on a usable sample of 274 respondents collected through our survey. We first discuss the steps we followed to prepare our data followed by the description of preliminary data analysis. In the preliminary data analysis section, a summary account of the descriptive statistics along with the statistical measures to check for and correct for non-normality of the distribution is described comprehensively. In the preliminary data analysis, we have also described correlation analysis carried out between the independent and dependent variables. Next, we provide the details of the Exploratory Factor Analysis employed using SPSS version 23 and Confirmatory Factor Analysis conducted to determine the reliability, validity and overall fit of the model using AMOS 20 statistical package. The proposed structural model (Model I) is tested using structural equation modeling. We further conduct moderation analysis (Model II) to examine the interaction effect of employee creativity and creative personality on employee engagement, where creative personality (characterized by adaptive and innovative cognitive style), as a dichotomous variable, moderated the relationship between employee creativity and employee engagement.

5.2. Preparing the Data

Once data collection for this study was complete, the data was checked for inconsistencies and inaccuracies before considering it for further analysis and interpretation. First, the questionnaires were checked manually for any incomplete responses that were discarded then.

<u>Data Entry & Cleaning</u>

All the data from the questionnaire forms were initially formatted in Microsoft Excel, where rows were filled with variable's scale items and columns with respondents. Before preparing the raw data for analysis, it is important to ensure the quality standard of the data. This is achieved by cleaning the data. Data cleaning includes a number of tasks that include removing all the incomplete and incorrect data from the dataset. This process usually takes a very long time since it requires a thorough manual inspection of the entire data. Once the data cleaning was complete, we checked the data for missing values. Fortunately we only found small information missing from the data and therefore we treated that with multiple imputation in SPSS software. The raw data was standardized before being used for further analysis.

We used a five point Likert scale for all the variables measured in this study for gathering participants' responses. There were negatively worded questions that were reverse coded because the scoring for these questions is different. All the data was then systematically arranged to be used for statistical analysis

5.3. Preliminary Analysis

A total sample of 278 participants were collected, out of which 274 samples were fit to be used for further analysis as the rest were incomplete and inconsistent. Our questionnaire consisted of two parts; first part had questions related to demographics of the participants. These were open-ended questions that included: participant's department, their designation and work experience. Further, there were multiple choice questions pertaining to age, gender and education (based on the SEC grid from MRSI, 2011). The second part of the questionnaire contained questions that measured the constructs used in our study viz. *Task Characteristics, Perceived Organization*

Support, Perceived Supervisor Support, Perceived Value Congruence, Intrinsic Motivation, Creative Self-Efficacy, Employee Engagement, Employee Creativity, Creative Personality.

5.3.1 Sample Characteristics

Most of our sample population comprised of males (79%) and only a fraction comprised of females (21%). The working population in hotel organizations is mostly youth which even reflects in our sample. Here, more than 40% of the employees are aged between 26 to 33 years, nearly 30% lie between the ages of 18 to 25 years, and the rest are above 34 years of age. The average work experience of our participants is around 7 years. A huge chunk (79.9%) of the sample consists of general or professional degree holders and the remaining are diploma holders and high school graduates. The demographic profile of our respondents is presented in Table 5.1.

Table 5.1. Demographic Representation of Survey Participants

Demographic Variables	
Age	18 to 25 years (29.9%)
	26 to 33 years (42.7%)
	34 to 41 years (19.3%)
	42 & above (7.3%)
Gender	21% females
	79% males
Work Experience	Average work experience: 7.34 years
Education	8.8% up to SSC/HSC
	11.3% diploma holders
	79.9% general & professional graduates

5.3.2 Descriptive Statistics

Descriptive statistics is the summary that quantitatively describes the features of a dataset. It helps to examine the trends and patterns of our dataset which in turn gives meaning to the raw data gathered. In our study, we used mean as the measure of central tendency, standard deviation

as the measure of dispersion of data. We also checked the data for normal distribution by considering skewness (measure of symmetry) and kurtosis (pointedness of peak distribution).

Table 5.2. Measures of Central Tendency

Constructs	Mean	Standard Deviation
Task Characteristics	4.15	.564
Perceived Organization Support	3.82	.659
Perceived Supervisor Support	3.52	.549
Intrinsic Motivation	4.38	.489
Creative Self-Efficacy	4.18	.508
Perceived Value Congruence	4.19	.491
Employee Engagement	4.24	.520
Employee Creativity	4.06	.594
Creative Personality	3.99	.407

Mean and Standard Deviation

The mean value for all of the independent and dependent variables is greater than 3.5. The high mean values of 4.24 for employee engagement and 4.06 for employee creativity constructs suggest that the respondents are highly engaged and highly creative individuals. Also, the highest mean value of 4.38 indicates that employees are highly internally motivated (see Table 5.2).

Table 5.3. Measures of Dispersion & Symmetry

Constructs	Skewness	Kurtosis
Task Characteristics	-1.116	3.103
Perceived Organization Support	-.172	-.490
Perceived Supervisor Support	.415	-.745
Intrinsic Motivation	-.393	-.421
Creative Self-Efficacy	-.173	-.352
Perceived Value Congruence	-.537	.718
Employee Engagement	-.541	.464
Employee Creativity	-.444	.306
Creative Personality	.322	-.309

The standard deviation values must be closer to the mean for them to be acceptable in the analysis. Data is required to be normally distributed for analysis and hence large standard deviation becomes unacceptable.

Skewness and Kurtosis

Skewness is the degree of distortion from the symmetrical bell curve used to examine normal distribution. It is a measure of lack of symmetry in data distribution. For a fairly skewed data, the values must range from -1 to 1. We can quantifiably measure the deviation from the horizontal symmetry towards either left or right (Groeneveld & Meeden, 1984). Likewise, kurtosis measures the tails of the distribution and not the flatness or peak of it. It is a measure of outliers present in the distribution of data (Groeneveld & Meeden, 1984). The acceptable range of skewness and kurtosis is +2/-2 for the data to be normally distributed (Field, 2013; George & Mallery, 2010; Trochim & Donnelly, 2006). The skewness and kurtosis in our data are out of the acceptable range (see Table 5.3).

Table 5.4. Test for Normality

Construct Name	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Task Characteristics	.066	278	.006	.935	278	.000
Perceived Organization Support	.094	278	.000	.965	278	.000
Perceived Supervisor Support	.117	278	.000	.951	278	.000
Intrinsic Motivation	.070	278	.003	.971	278	.000
Creative Self-Efficacy	.121	278	.000	.931	278	.000
Perceived Value Congruence	.089	278	.000	.970	278	.000
Employee Engagement	.071	278	.002	.958	278	.000
Employee Creativity	.071	278	.002	.967	278	.000
Creative Personality	.069	278	.003	.984	278	.004

a. Lilliefors Significance Correction

Hence, we now calculate the Shapiro Wilk's (Shapiro & Wilk, 1965) and Kolmogorov- Smirnov test (Lilliefors, 1967; Massey Jr., 1951) to check our data for normality. These techniques are most widely used for testing that the data is normally distributed. All calculations have been conducted using SPSS software.

The results show that the data is not normally distributed (Table 5.4). The significance values of both tests are less than 0.05. We thus, reject the null hypothesis that the data is normally distributed. The data is unfit for further multivariate statistical analysis wherein data distribution is required to be normal. We applied the data transformation technique proposed by Templeton (2011) popularly known as, fractional ranking that qualifies data to be used for conducting parametric tests.

Fractional Ranking for Data Transformation

Using fractional ranking technique, we transformed our data into normal distribution. We followed the two step method as proposed by Templeton (2011).

Table 5.5. Test for Normality after Fractional Ranking

Construct Name	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Task Characteristics	.031	273	.200*	.993	273	.256
Perceived Organization Support	.079	273	.000	.987	273	.016
Perceived Supervisor Support	.077	273	.001	.991	273	.103
Intrinsic Motivation	.029	273	.200*	.992	273	.122
Creative Self-Efficacy	.134	273	.200*	.941	273	.156
Perceived Value Congruence	.077	273	.200*	.980	273	.241
Employee Engagement	.070	273	.200*	.974	273	.000
Employee Creativity	.068	273	.200*	.982	273	.002
Creative Personality	.025	273	.200*	.997	273	.850

*This is a lower bound of the true significance.
a. Lilliefors Significance Correction

First, the data is converted into fractional rank in order to transform the original variable towards uniformity in the distribution probabilities. Next, inverse normal transformation is done on the fraction rank scores to obtain normally distributed z-scores. We performed the data transformation technique using SPSS version 23 software. The test for normality was conducted again on the transformed data (see Table 5.5).

The significance value ($p>0.05$) of Shapiro Wilk and Kolmogorov-Smirnov test qualifies the constructs as normally distributed. Thus, we now accept the null hypothesis that the data lies in normal distribution. We can now perform parametric test on the transformed data (provided in Table 5.6). The descriptive statistics show that the values of skewness and kurtosis now lie between the acceptable range of $+2/-2$ and hence the data is considered as normally distributed.

Table 5.6. Descriptive Statistics after Data Transformation

Constructs	Mean	Standard Deviation	Skewness	Kurtosis
Task Characteristics	.0064	.98568	-.020	-.284
Perceived Organization Support	.0044	.98048	-.020	-.225
Perceived Supervisor Support	.0041	.97470	.035	-.202
Intrinsic Motivation	.0053	.98318	-.039	-.325
Creative Self-Efficacy	-.0154	.92788	-.297	-.597
Perceived Value Congruence	.0009	.96792	-.101	-.436
Employee Engagement	-.0031	.96016	-.152	-.479
Employee Creativity	.0018	.97069	-.089	-.397
Creative Personality	.0096	.99398	.034	-.169

Correlation

In the preliminary analysis, we examine the strength of association between all the independent and dependent variables. Thus, next we calculate the Pearson correlation coefficient (denoted by

r) to measure the relatedness between two variables. This test is used when the variables are numerical and the data is normally distributed (Williams, 1996).

Employee Engagement is positively correlated with Task Characteristics (r=0.535), Perceived Organization Support (r=0.329), Perceived Supervisor Support (r=0.141), Perceived Value Congruence (r=0.550), Intrinsic Motivation (r=0.598) and Creative Self-Efficacy (r=0.552). Even Employee Creativity is positively correlated with Task Characteristics (r=0.538), Perceived Organization Support (r=0.300), Perceived Supervisor Support (r=0.060), Perceived Value Congruence (r=0.537), Intrinsic Motivation (r=0.477) and Creative Self-Efficacy (r=0.677). There also appears to be a strong correlation between EE & EC (r=0.649), EE & CP (r=0.553) and EC & CP (r=0.606). Most of the independent variables also appear to be positively correlated (see Table 5.7). The only negative correlation is between Perceived Supervisor Support and Creative Personality (r= -0.034).

Table 5.7. Correlation Matrix of All Variables

Constructs	1	2	3	4	5	6	7	8	9
TC	1								
POS	.450**	1							
PSS	.137*	.236**	1						
IM	.595**	.330**	.040	1					
CSE	.424**	.289**	.190**	.467**	1				
PVC	.489**	.263**	.101	.566**	.533**	1			
EE	.535**	.329**	.141*	.550**	.598**	.552**	1		
EC	.538**	.300**	.060	.537**	.477**	.677**	.649**	1	
CP	.509**	.212**	-.034	.596**	.433**	.587**	.553**	.606**	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

5.4. Data Analysis I: Canonical Correlation

We found that a majority of the empirical studies conducted with respect to employee engagement and employee creativity have used multiple regression analysis technique for deriving results. Multiple regression is a quantitative technique used to understand the relationships of many independent variables with a single dependent variable and since our study comprises of more than one dependent variable, we conducted the analysis using the canonical correlation technique. A canonical correlation analysis, using SAS university edition (available online), was conducted using the six antecedents as predictor variables of the two work behaviors to evaluate the multivariate shared relationship between the two variable sets (i.e., antecedents and work behavior). The analysis yielded two functions with squared canonical correlations (R_c^2) of .604 and .099 for each successive function. Collectively, the full model across all functions was statistically significant using the Wilks's λ = .357 criterion, F (12, 530.00) = 29.779, p < .0001 (see Table 5.8). Because Wilks's λ represents the variance unexplained by the model, $1-\lambda$ yields the full model effect size in an r^2 metric. Thus, for the set of two canonical functions, the r^2 type effect size was .643, which indicates that the full model explained a substantial portion, about 64%, of the variance shared between the variable sets. Given the R_c^2 effects for each function, only the first function was considered noteworthy in the context of this study (60.4% of the variance). The second function only explained 9.9% of the remaining variance in the variable sets after the extraction of the prior function (see Table 5.9).

Table 5.10 presents the standardized canonical function coefficients and structure coefficients for Functions 1. The squared structure coefficients are also given for the function 1 for each variable. Looking at the Function coefficients, one sees that all criterion variables were relevant except perceived supervisor support and perceived organization support making secondary

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contribution to the synthetic criterion variable. This conclusion was supported by the squared structure coefficients. These antecedents also tended to have the larger canonical function coefficients. Exceptions involved perceived organization support, which had low function coefficient but modest structure coefficient. This result was due to the multicollinearity this variable had with the other criterion variables.

Regarding the predictor variable set viz a viz antecedents in Function 1, creative self-efficacy was the primary contributor to the predictor synthetic variable, with a secondary contribution by task characteristics, perceived value congruence and intrinsic motivation. All of the antecedents were positively related to employee engagement and employee creativity. These results were generally supportive of the theoretically expected relationships

Moving to criterion variables viz a viz employee engagement and employee creativity, the coefficients in Table 5.10 suggest that they both are of nearly same relevance to the antecedent variables. Engagement and creativity were also positively related. The correlation values for each of the antecedents in context to engagement and creativity are nearly same. They are moderately high and positive correlations (Table 5.11). The variance of each of the antecedents affecting the canonical variable of engagement and creativity are similar to one another and vice versa. The interpretation of these findings were inferred with the help of an article published by Sherry & Henson (2005)

Table 5.8. Statistical Significance Test for the Full CCA model

Test Name	Value	F Value	Num. DF	Den DF	Sig. of F
Wilks' Lambda	.35673	29.78	12.00	530.00	<.0001

Table 5.9. Eigenvalues and Canonical Correlation

Root No.	CanCorr.	Adjusted CanCorr.	Approx. Standard Error	Squared CanCorr.	Eigen-value	Diff.	Propor-tion	Cumu-lative
1	0.777	0.772	0.024	0.604	1.5263	1.4167	0.933	0.933
2	0.314	0.295	0.055	0.099	0.1096		0.067	1.000

Table 5.10. Canonical Solution for Antecedents Predicting Work Behavior.

Variable	Function 1		
	Coef.	r_s	r_s^2(%)
Task Characteristics	.272	.756	57.19
Perceived Organization Support	.056	.436	18.98
Perceived Supervisor Support	-.022	.139	1.93
Perceived Value Congruence	.189	.768	59.02
Intrinsic Motivation	.290	.755	56.98
Creative Self-Efficacy	.468	.873	76.25
R_c^2			60.42
Employee Engagement	.518	.897	80.44
Employee Creativity	.583	.920	84.55

Note: Coef= standardized canonical function coefficient, r_s= structure coefficient, r_s^2= squared structure coefficient.

Table 5.11. Correlation between Antecedents, Employee Engagement & Employee Creativity and their Opposite Canonical Variable

Work Behavior Antecedent	Employee Engagement	Employee Creativity	Opposite Canonical Variable
Task Characteristics	.537	.532	.588
Perceived Organization Support	.323	.289	.339
Perceived Supervisor Support	.141	.060	.108
Perceived Value Congruence	.549	.537	.597
Intrinsic Motivation	.597	.476	.587
Creative Self-Efficacy	.553	.674	.679
Opposite Canonical Variable	.697	.715	

5.5. Data Analysis II:

5.5.1. Exploratory Factor Analysis

We conducted exploratory factor analysis to identify and eliminate scale items irrelevant to this study's context and to develop a questionnaire that was valid to our study. KMO and Bartlet's test of sphercity was used to check the appropriateness of data (see Table 5.12). For factor analysis to be statistically significant and suitable, the KMO values should be above 0.50 and Bartlet's test should have $p<0.05$. In our factor analysis. we observed that KMO value for all constructs is above 0.50 and Bartlet's test was $p<0.001$, which suggests the data is fit for conducting factor analysis.

Table 5.12. Barlet's Test & KMO

Model Fit measures	Values
KMO	0.840
Bartlet's test (approx. chi square)	12147.625
DF	2701
Sig.	0.000

We employed the Principal component analysis (PCA) method for extracting factors since it produce components that represent the linear combinations of variables that retain as much information as possible about the original measured variables (Reio & Shuck, 2014). We used varimax rotation to find the minimum number of factors accounting for maximum variance. Nunnally (1978) suggests that a cut-off of 0.50 or 0.60 is sufficient for factor loadings of a scale item to be considered in a particular factor. In our study, we set of a cut-off limit for factor scores

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at 0.50 for a better validation of our scales. The items that loaded at a value of 0.50 or above were retained for further analysis. Any items that loaded below 0.50, were eliminated from the questionnaire. We conducted exploratory factor analysis on 135 scale items of our questionnaire that represent our study's independent and dependent variables. This set of items was reduced to a convenient set of 74 scale items (given in Table 5.13).

Table 5.13. Factor Loadings

Variables	Factor loadings
"Task Characteristics	.794
The job allows me to make my own decisions about how to schedule my work	.742
The job allows me to make a lot of decisions on my own	.690
The job provides me with significant autonomy in making decisions	.662
The job gives me considerable opportunity for independence and freedom in how I do the work	.730
The job involves a great deal of task variety	.783
The job involves doing a number of different things	.733
The job requires the performance of a wide range of tasks.	.716
The job involves performing a variety of tasks.	.670
The results of my work are likely to significantly affect the lives of other people	.641
The job itself is very significant and important in the broader scheme of things	.610
The job has a large impact on people outside the organization.	.672
The work performed on the job has a significant impact on people outside the organization.	.670
The job is arranged so that I can do an entire piece of work from beginning to end.	.729
The job provides me the chance to completely finish the pieces of work I begin	.757
The job allows me to complete work I start	.692
The work activities themselves provide direct and clear information about the effectiveness (e.g., quality and quantity) of my job performance	
Perceived Organization Support	.796
The organization fails to appreciate any extra effort from me	.812
The organization strongly considers my goals and values	.835
The organization would ignore any complaint from me	.847
The organization disregards my best interests when it makes decisions that affect me	.779
Help is available from the organization when I have a problem	
Perceived Supervisor Support	.733
If my supervisor could hire someone to replace me at a lower salary he/she would do so	.757
My supervisor fails to appreciate any extra effort from me	.858
My supervisor strongly considers my goals and values	.798
My supervisor would ignore any complaint from me	.822
Help is available from my supervisor when I have a problem	.802
My supervisor really cares about my well being	.780
My supervisor is willing to extend itself in order to help me perform my job to the best of my ability	.650
If my supervisor found a more efficient way to get my job done they would replace me	.791
My supervisor would forgive an honest mistake on my part	.513
It would take only a small decrease in my performance for my supervisor to want to replace me	
Perceived Value Congruence	.539
Making the world a better place	.606
Being of service to society	.575
Contributing to humanity	.834
Forming relationships with co-workers	.789
Getting to know your fellow workers quite well	.659
Developing close ties with co-workers	.799
Salary level	

Total compensation	.761
The amount of pay	.761
Being certain of keeping my job	.668
Being sure I will always have a job	.807
Being certain my job will last	.607
Definite lines of authority	.684
Doing something different every day	.692
Doing many different things on the job	.786
Doing my work in my own way	.541
Intrinsic Motivation	
Being certain of keeping my job	.769
Being sure I will always have a job	.765
Being certain my job will last	.673
Definite lines of authority	.658
Doing something different every day	.598
Doing many different things on the job	.767
Creative Self Efficacy	
I can always manage to solve difficult problems creatively if I try hard enough	.593
If someone opposes me, I can find the creative means and ways to get what I want.	.658
It is easy for me to stick to my aims and creatively accomplish my goals.	.689
I am confident that I could deal efficiently and creatively with unexpected events.	.696
Thanks to my creative resourcefulness, I know how to handle unforeseen situations.	.517
I can solve most problems creatively if I invest the necessary effort.	.605
I can remain calm when facing difficulties because I can rely on my creative abilities.	.625
Employee Engagement	
At my job, I feel strong and vigorous	.633
I am enthusiastic about my job	.601
My job inspires me	.635
When I get up in the morning, I feel like going to work	.572
I feel happy when I am working intensely	.587
I am proud of the work that I do	.677
I am immersed in my work	.587
Employee Creativity	
Among my colleagues and co-workers, I will be the first or nearly the first to try out a new idea or method	.621
I usually find new uses for existing methods or existing equipment	.617
I develop adequate plans and schedules for the implementation of new ideas	.765
I suggest new and better ways to achieve goal or objectives	.684
I use existing information or materials to develop ideas, methods, or products that are useful to the organization	.737
Quite frequently, the ideas I develop are implemented by the organization	.704
On the whole, the ideas I generate are relevant for organizational success"	.667

Cronbach's alpha was calculated to check the reliability of the reduced scales. Cronbach's alpha is an estimate of the internal consistency associated with scores that can be derived from a scale. The results from our study reported a minimum of 0.788, which is within the acceptable value for reliability (Nunnally, 1978).

5.5.2. Confirmatory Factor Analysis

We conducted Confirmatory Factor Analysis to determine whether the scale indicators represent the constructs used in this study. In the proposed measurement models, CFA was conducted on eight constructs used in the study. A detailed account of the model fit statistics for the measurement model is given below (see Table 5.14). The chi square value over its degree of freedom for most of the constructs is within the acceptable range (except POS: 0.770). The RMSEA values for all the measurement models are also within the acceptable limit. Moreover, the other measures also suggest a good fit to the data in the measurement models.

Table 5.14. Model Fit Indices for Individual Constructs

Variable Names	CMIN/DF	CFI	GFI	AGFI	RMSEA
Task Characteristics	1.651	0.974	0.933	0.905	0.049
Perceived Organization Support	0.770	0.999	0.996	0.989	0.000
Perceived Supervisor Support	1.700	0.995	0.988	0.964	0.051
Perceived Value Congruence	1.502	0.973	0.955	0.929	0.043
Intrinsic Motivation	1.508	0.993	0.988	0.963	0.043
Creative Self Efficacy	1.628	0.985	0.975	0.951	0.048
Employee Engagement	1.633	0.988	0.977	0.951	0.048
Employee Creativity	1.880	0.987	0.975	0.956	0.057

Validity and Reliability

Although, we calculated the Cranbach's alpha for each of the constructs, we also calculated the Composite Reliability scores as it takes into consideration the internal consistency of the scale items with the constructs (Hair, Black, Babin, & Anderson, 2010). All values for composite

reliability scores for each of the constructs is above 0.60 which falls within the acceptable range for further analysis. Average variance extracted (AVE) was calculated to test convergent validity of the constructs. However, it is often suggested that AVE is a more strict way of testing convergent validity when even the composite reliability scores can be used as a measure for convergent validity. The value for AVE for each construct is above 0.50 (except for PVC: 0.480) which is considered suitable (Fornell & Larcker, 1981). The PVC scale consists of items representing different within scale dimensions. These results are provided in Table 5.15.

Table 5.15. Composite Reliability, Convergent & Discriminant Validity

	Composite Reliability	AVE	TC	POS	PSS	PVC	IM	CSE	EE	EC
TC	0.861	0.609	**0.781**							
POS	0.893	0.626	0.187	**0.791**						
PSS	0.887	0.611	-0.142	0.118	**0.782**					
PVC	0.821	0.480	0.016	-0.151	0.037	**0.693**				
IM	0.719	0.563	0.543	0.232	0.027	0.019	**0.750**			
CSE	0.686	0.522	0.513	0.114	0.001	0.011	0.721	**0.723**		
EE	0.769	0.534	0.514	0.238	-0.070	-0.047	0.639	0.489	**0.731**	
EC	0.891	0.538	0.561	0.088	-0.102	-0.048	0.658	0.685	0.657	**0.734**

Common Method Bias

Common method bias is problem that often occurs in social science research when using a common method to measure two or more constructs, in order to examine relationships among them, in the same study. CMB, if not treated or corrected for, could have detrimental effects on the analysis of data. Such as, biased estimates of construct validity or reliability or parameter estimates of the relationship between two constructs (Podsakoff, MacKenzie, & Podsakoff, 2012). We checked for procedural remedies before handing over the questionnaires to the respondents. After doing a complete CFA analysis, we treated our measurement model with the

common method bias test using the common latent factor approach. For the CMB test, we compared the unconstrained common method factor model to the fully constrained zero constrained common method factor model. In the chi square test, the results were statistically significant (p<0.001). Since we had significant shared variance, we retained the common latent factor while testing for the structural model

Measurement Model

The assumption of linearity and multivariate normality were evaluated. Since the data is normally distributed, we chose maximum likelihood method in our study (Kline, 2011). The CMIN/DF (chi square over degrees of freedom) value is 1.522 which is within the acceptable range. The CFI (comparative fit index) is 0.891, GFI (goodness of fit index) is 0.773, AGFI (adjusted goodness of fit index) is 0.751, TLI (Tucker-Lewis index) is 0.885 and RMSEA (root mean square error of approximation) is 0.44. The fit measures indicate that the hypothesized model is a good fit to the data.

5.5.3. Structural Equation Modelling

The relationships proposed in the structural model are based on theories from previous research. In this section we will specify the structural relationships among the antecedents (independent variables) with employee engagement and employee creativity (dependent variables).

We proposed this model to empirically test the relationships of all the work related antecedents and person related antecedents with employee engagement and employee creativity. The conceptual model, represented in figure 5.1, proposes that the hypothesized relationships i.e. H1a, H1b, H2a, H2b, H3a, H3b, H4a, H4b, H5a, H5b, H6a and H6b are statistically significant.
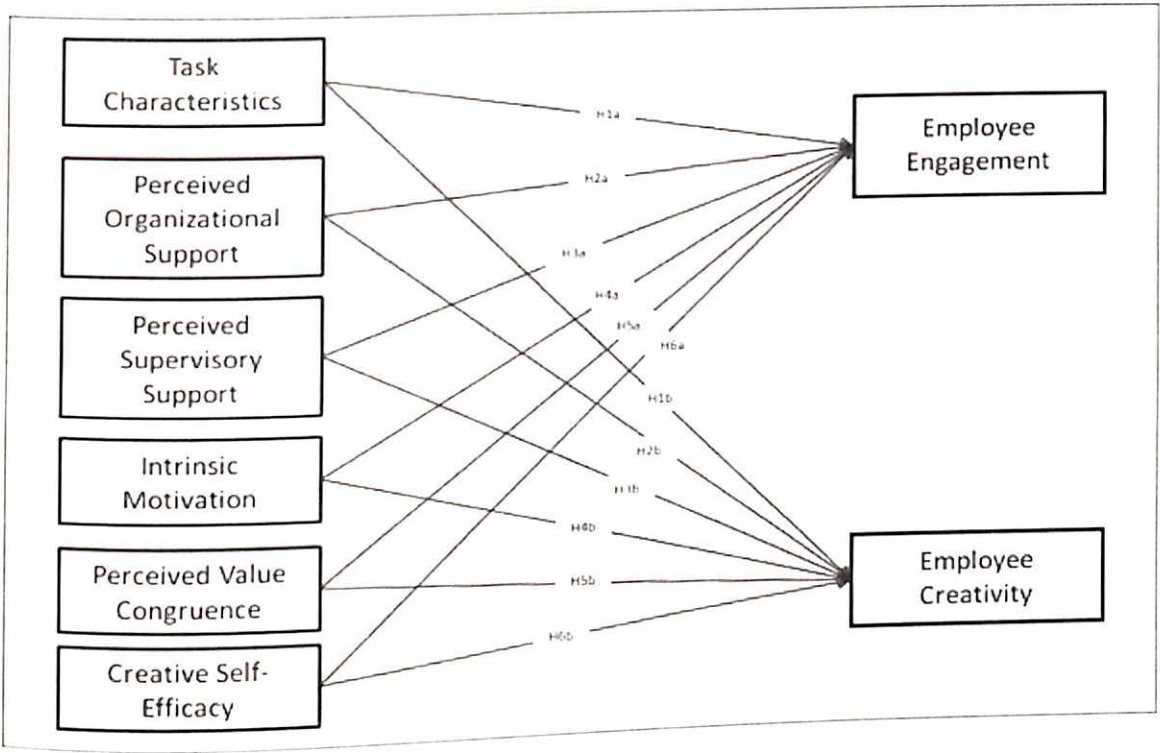
Figure 5.1. Hypothesized Model I

For the purpose of data analysis, the study has used maximum likelihood method. Chi square value for the model was calculated to determine the model fit (Hu & Bentler, 1998). In our study, we have reported the Absolute fir indices, such as chi square test, goodness of fit (GFI), adjusted goodness of fit (AGFI), and root mean square error of approximation (RMSEA). The comparative fit index (CFI) was also calculated for model fit. The incremental fit measures as well as the absolute measures indicate that the hypothesized model is moderately good fit to the data.

Table 5.16. Model Fit Indices for Structural Model

	Model Fit			
CMIN/DF	CFI	GFI	AGFI	RMSEA
1.526	0.891	0.773	0.750	0.044

Table 5.16 show the indices for model fit of the structural model. The CMIN/DF (i.e. chi square value relative to degrees of freedom) is within the acceptable range of less than 3 which is 1.526. The incremental fit measure (CFI= 0.891) and the absolute measures (GFI= 0.773 and AGFI= 0.750) suggest that the hypothesized model is a good fit to the data. Even the RMSEA is within the acceptable limit of less than 0.05, which is 0.044.

Model testing

The conceptual model proposes that TC, POS, PSS, IM, PVC and CSE are positively significant to employee engagement and employee creativity. The model also proposes that employee engagement is positively associated with employee creativity.

The results of the study indicate that only task characteristics, among the work related job factors that included task characteristics, perceived organization support and perceived supervisor support, is positively related to employee engagement ($\beta=0.186$, $p<0.00$) and employee creativity ($\beta=0.268$, $p<0.00$). Therefore, hypotheses H1a and H1b are not rejected. Whereas, the relationship of perceived organization support with employee engagement ($\beta=0.043$, $p=0.382$) and employee creativity ($\beta=0.047$, $p=0.274$) and that of perceived supervisor support with employee engagement ($\beta=0.018$, $p=0.690$) and employee creativity ($\beta=-0.008$, $p=0.863$) are all statistically insignificant. Therefore, hypotheses H2a, H2b, H3a and H3b are all rejected (see Table 5.17).

However, the analysis suggests that all three, work related personal factors have a positive relationship with employee engagement and employee creativity which are statistically significant. From the results, we can say that intrinsic motivation is positively related to

employee engagement (β=0.329, p<0.00) and employee creativity (β=0.164, p<0.00). The relationship between perceived value congruence and employee engagement (β=0.170, p<0.00), and employee creativity (β=0.229, p<0.00) is positive. And, creative self-efficacy is positively linked to employee engagement (β=0.176, p<0.00) and employee creativity (β=0.674, p<0.00). Therefore, hypotheses H4a, H4b, H5a, H5b, H6a and H6b are not rejected.

Table 5.17. Results of Hypotheses Testing from Conceptual Model I

Hypothesized Relationships	Standardized Regression Weights	P value	Remark
H1a: Task characteristics is positively linked to employee engagement	β=0.186	0.002	Not Rejected
H1b: Task characteristics is positively linked to employee creativity	β=0.268	0.000	Not Rejected
H2a: Perceived organization support is significantly related to employee engagement	β=0.043	0.382	Rejected
H2b: Perceived organization support is significantly related to employee creativity	β=0.047	0.274	Rejected
H3a: Perceived supervisor support is significantly related to employee engagement	β=0.018	0.690	Rejected
H3b: Perceived supervisor support is significantly related to employee creativity	β=−0.008	0.863	Rejected
H4a: Intrinsic motivation leads to employee engagement	β=0.329	0.000	Not Rejected
H4b: Intrinsic motivation leads to employee creativity	β=0.164	0.002	Not Rejected
H5a: Perceived value congruence is positively related to employee engagement	β=0.170	0.005	Not Rejected
H5b: Perceived value congruence is positively related to employee creativity	β=0.229	0.000	Not Rejected
H6a: Creative self-efficacy is positively linked to employee engagement	β=0.176	0.002	Not Rejected
H6b: Creative self-efficacy is positively linked to employee creativity	β=0.674	0.000	Not Rejected
H7: Employee engagement is positively linked to employee creativity	β=0.368	0.000	Not Rejected

The above discussed results suggest that task characteristics, intrinsic motivation, perceived value congruence and creative self-efficacy are positively related to employee engagement and

employee creativity in the context of hotel employees and are all statistically significant. These results are represented using the path diagram in figure 5.2.
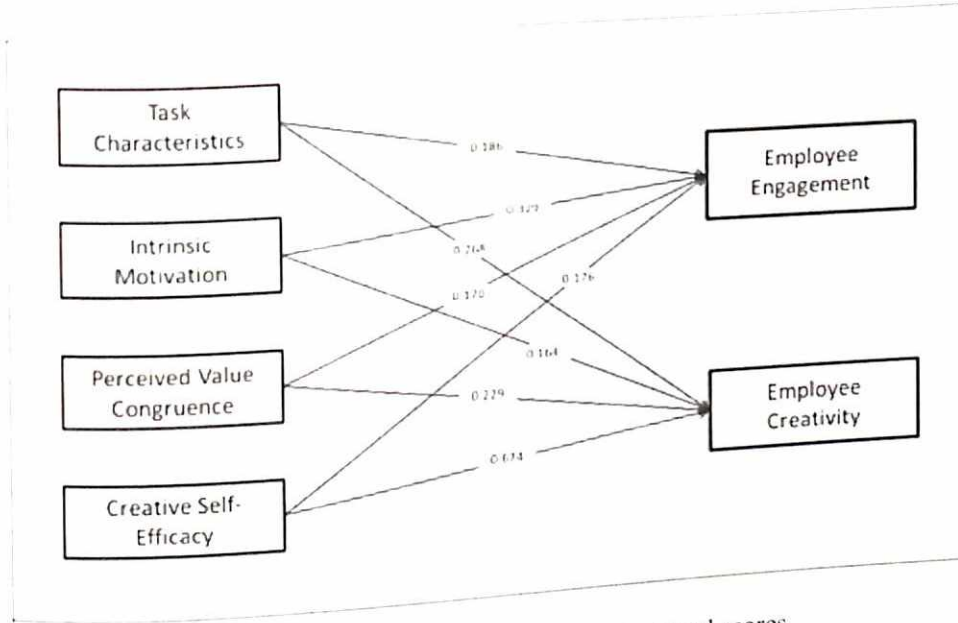

Figure 5.2. Path diagram representing structural scores

5.6. Data Analysis III: Moderation Analysis

Before conducting the moderation analysis, it is important that we check the data for model fit. As we can see from Table 5.18, the interaction between employee creativity and creative personality accounts for significantly more variance than just employee creativity and creative personality by themselves ($\Delta R^2 = 9\%$, p=0.043). This suggests that there is potentially significant moderation of creative personality on the relationship between employee creativity and employee engagement.

We conducted a hierarchical multiple regression analysis using PROCESS in SPSS to test the hypothesized relationship between employee creativity and employee engagement moderated by creative personality. In the first step, we included employee creativity and creative personality in the model 1, where the variables accounted for a significant variance in explaining engaged

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behavior in employees (R^2=0.435, F(2, 271)= 104. 28, p<001). The results are mentioned below in Table 5.18.

In the next step, we introduced the interaction variable between employee creativity and creative personality to the regression model in block 2 which accounted for a significant amount of the variance leading to employee engagement (ΔR^2=0.012, ΔF(1, 270)= 4. 75, p<05). The interaction effect on the relationship is indicated by β=0.253, t (270)=2.18, p<0.05.

Table 5.18. Model Summary: Moderation Analysis

	R^2	Adjusted R^2	ΔR^2	ΔF	p
Model 1	0.435	0.431	0.435	104.28	0.000
Model 2	0.447	0.437	0.012	4.75	0.030

The values derived from the analysis were plotted on a graph to examine the difference in effect on adaptors and innovators. As shown in figure 5.3., the moderating effect is higher for people with innovative cognitive styles as compared to those following adaptive cognitive styles.
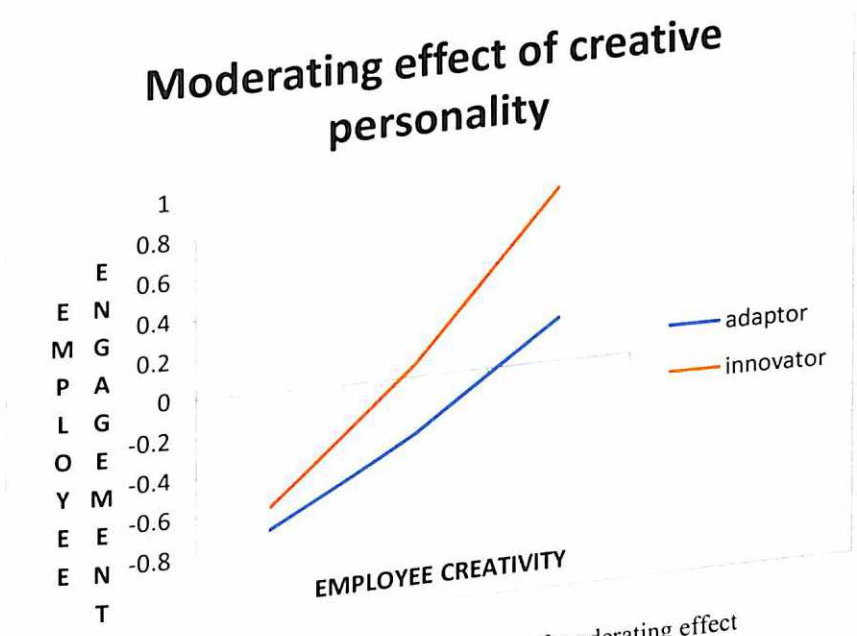

Figure 5.3. Graphical representation of moderating effect