

## CHAPTER 4

### DATA ANALYSIS RESULTS

#### 4.1 Introduction

This chapter explains the results from data analysis. The chapter begins with explanation of response rate and the respondent's demography and profile. Following this, the chapter describes the analysis results of statistical assumptions, exploratory factor analysis, confirmatory factor analysis and the structural model. Finally, the chapter explains the final structural model for this study and the summary of hypotheses testing.

#### 4.2 Response Rate

As mentioned in Chapter 3, two sets of questionnaires were distributed in this study. The first questionnaire was distributed to the academic staff at Aden University. The questionnaire contained questions about HRM practices, organizational commitment, job satisfaction, and job involvement. The second questionnaire was distributed to selected customers of the academic staff, namely, their students. The questionnaire contained questions related to service quality.

The first set of questionnaires (academic staff questionnaire) was distributed to 400 academic staff at Aden University, of which 257 surveys were returned, with a

response rate of 64.25%, which was deemed to be satisfactory for the current study as it exceeded the average response rate of 52.7% for management and behavioral science studies (Baruch, & Holtom, 2009; Mostafa, 2013). Meanwhile, for the second set of questionnaires, 2000 surveys were distributed to customers of the academic staff (their students), of which 1285 surveys were returned, with a response rate of 64.25%.

However, 10 surveys from the academic staff and 50 from the students were deleted due to incomplete responses or missing data. Deleting incomplete questionnaires or cases with missing data is the most common, safest and easiest method for handling missing data, and can be used with any statistical method because it will not result in any biased estimates (Allison, 2003, 2010; Sahibzada et al., 2019). Therefore, 247 academic staff questionnaires and 1235 student questionnaires were able to be used for the analysis. Although the academic staff sample was smaller than the required sample size, the sample (247 useable questionnaire) was considered to be a good and representative sample under a sampling error level of  $\pm 6\%$  and confidence interval of 95%. The minimum sample size under a sampling error level of  $\pm 6\%$  and a confidence interval of 95% was 239 (Sekaran & Bougie, 2016). In addition, the sample size (247) was suitable for employing structural equation modelling (Kline, 2011, 2016).

#### **4.3 Demographic and Profile of the Respondents**

The respondents of this study are the academic staff at Aden University and their students (regarded as the customer for the academic staff). Below are the details of the respondents.

#### 4.3.1 Demographic and Profile Details of Academic Staff

Demographic and profile details of academic staff as shown in Table 4.1, the total sample of the academic staff as sample of this study are 247 staff. 72.5 per cent (N=179) of them are male, while the remaining 27.5 per cent (N= 68) are female. In terms of age, 11.3 per cent (N= 28) were between 20-29 years old, 35.6 per cent (N=88) were between 30-39 years old, 33.6 per cent (N= 83) were between 40-49 years old, and 19.4 per cent (N=48) were above 50 years old. Regarding the education qualification, 38.9 per cent (N= 96) of them hold a bachelor's degree, 18.2 per cent (N=45) of them hold a master degree, and 42.9 per cent (N=106) of them are PhD holder. In term of working experience, 24.3 per cent (N= 60) of them have been in the university from 1-5 years, 25.9 per cent (N= 64) of them have been in the university from 6-10 years, 16.2 per cent (N= 40) of them have been in the university from 11-15 Years, 16.6 per cent (N= 41) of them have been in the university from 16-20 Years, and 17 per cent (N= 42) of them have been in the university for more than 21 years. In term of the salary of the respondents, 2 per cent (N= 5) of them earn salary below than 40,000 YR, these respondents are the new teaching assistants who hold a bachelor's degree, 13.4 per cent (N= 33) of them earn salary between 40,001-60,000 YR, 29.6 per cent (N= 73) of them earn salary between 60,001-80,000 YR, 13.4 per cent (N= 33) of them earn salary between 80,001-100,000 YR, and 41.7 per cent (N= 103) of them earn salary more than 100,000 YR. According to Central Bank of Yemen (2018), 500 YR is equal to 1 US Dollar.

Table 4.1: Demographic and Profile Details of Academic Staff

Characteristics	Category	Frequency	Percent
Gender	Male	179	72.5
	Female	68	27.5
Age	20-29 Years old	28	11.3
	30-39 Years old	88	35.6
	40-49 Years old	83	33.6
	≥ 50 Years old	48	19.4
Qualification	Bachelor's Degree	96	38.9
	Master's Degree	45	18.2
	PhD or Equivalent	106	42.9
Experience	1-5 Years	60	24.3
	6-10 Years	64	25.9
	11-15 Years	40	16.2
	16-20 Years	41	16.6
	≥ 21 Years	42	17.0
Faculty	Literature	22	8.9
	Education	75	30.4
	Medicine	25	10.1
	Engineering	37	15.0
	Commerce, science management & economic	54	21.9
	Oil and Minerals	11	4.5
	Sharie'a & Law	18	7.3
	Continuous education & Computer & Languages Centers	5	2.0
Salary	≥ 40,000 YR	5	2.0
	40,001-60,000YR	33	13.4
	60,001-80,000YR	73	29.6
	80,001-100,000YR	33	13.4
	>100,001YR	103	41.7

#### 4.3.2 Demographic and Profile Details of Students (Customer)

As shown in Table 4.2, the total sample of students (customers) are 1235 students. 67 percent (N=827) of them were male, and 33 percent (N=408) of them were female. 38.2 percent (N=472) of the student study in level one, 25 percent (N=309) study in level two, 21.5 percent (N=265) study in level three, 14.5 percent (N=179) study in level four, and 0.8 percent (N=10) study in level five. Regarding to the faculty, 8.5 percent (N=105) study in the Faculty of Literature, 21.1 percent (N=260) study in the Faculty of Commerce, Science Management and Economic, 10.1 percent (N=125) study in the Faculty of Medicine and Health Sciences, 15 percent (N=185) study in the Faculty of Engineering, 31.6 percent (N=390) of the students study in the Faculty of Education, 7.3 percent (N=90) study in the Faculty of Shariaa and Law, 4.5 percent (N=55) study in the Faculty of Oil and Minerals, and 2 percent (N=25) of them study in the Center of Continuous Education, Computer and Languages.

Table 4.2: Demographic and Profile of the Students (Customers)

Characteristics	Category	Frequency	Percent
Gender	Male	827	67
	Female	408	33
Level of study	Level 1	472	38.2
	Level 2	309	25
	Level 3	265	21.5
	Level 4	179	14.5
	Level 5	10	0.8
Faculty	Faculty of Literature	105	8.5
	Commerce, Science Management, & Economic	260	21.1
	Medicine & Healthy sciences	125	10.1
	Engineering	185	15.0

	Education	390	31.6
	Shariea'a & Law	90	7.3
	Faculty of Oil and Minerals	55	4.5
	Continuous Education & Computer & Languages Centers	25	2.0
Total		1235	100%

#### 4.4 Analysis of the Statistical Assumptions

##### 4.4.1 Outliers

The data were assessed to determine if there were univariate and multivariate outliers (Hair et al., 2010; Hair, Hult, Ringle & Sarstedt, 2016) as these outliers can change the data distribution completely, and may influence the results substantially (Sarstedt & Mooi, 2019). Each individual variable was screened for univariate outliers. The outliers for each variable were assessed by examining its z-score (Field, 2013). The z-score is positive if the actual score is above the mean, and negative if the actual score is below the mean (Aron, Coups & Aron, 2013). Outliers are significant if the standardized z-score value exceeds  $\pm 3.29$  (Tabachnik & Fidell, 2012; Fidell & Tabachnik, 2014) or is more than 4 (Hair et al., 2014; Pituch & Stevens, 2016). In the context of the data for this study, all the z-scores were between  $\pm 3.29$ , which means that there were no outliers in this set of data (Kline, 2016). The descriptive statistics with the standardized z-score of each variable are presented in Appendix L.

The multivariate outliers were assessed through the Mahalanobis D2 measure, which contains statistical properties that allow for significance testing for cases that have excessive values for two variables or more (Kline, 2005; Hair, Black, Babin & Anderson, 2014; Tabachnick & Fidell, 2014; Kline, 2016). The cases that had squared

Mahalanobis distance values that exceeded the critical chi-square value were considered as outliers. The critical chi-square value in this case was 112.317, based on a p-value of .001, as recommended by Tabachnick and Fidell (2007; 2014). The analysis showed that there were no cases where the D2 value exceeded the critical chi-square value, as shown in Appendix M. This observation did not appear in the previous analyses and in the multivariate test. This result revealed that there were no unique outliers in any individual variable, and there did not appear to be any unique outliers in the combination of variables (Hair et al., 2014). Furthermore, Hair and colleagues (2014) believed that outliers should be retained, unless they affect the results. Therefore, researchers can conduct further analyses with and without the outliers to determine their effect on the results, so the outliers that affect the results can be deleted (Hair et al., 2014). In addition, the results that were obtained from the Mahalanobis D2 analysis were verified by means of the Cook's distance (Cook, 1977). A Cook's distance of more than +1 may be an indication of a potential problem (Cook, 1977; Tabachnick & Fidell, 2014). However, in this set of data, the highest Cook's distance was 0.088 (see Appendix O), which reaffirmed that there was no major problem with outliers.

#### **.4.4.2 Normality**

Normality is determined by the skewness and kurtosis (Hair, Hult, Ringle & Sarstedt, 2016). Skewness is an assessment of the extent to which the distribution of a variable is symmetrical (Sarstedt & Mooi, 2019). If the distribution of the responses to the variable stretches towards the left tail (negative) or right tail (positive), the data distribution is characterized as being skewed (Sarstedt & Mooi, 2019). Kurtosis is an assessment of whether the distribution of the data is too peaked (very narrow, with most

of the responses being distributed at the centre) (Hair et al., 2016). Skewness tends to impact tests of means, while kurtosis severely impacts tests of variance and covariance (Byrne, 2016).

An analysis of the observed variate (see Appendix P) revealed that there were no issues in relation to normality because the skewness (minimum – 0.533, maximum 0.425) and the univariate kurtosis (minimum -1.20, maximum 1.51) were within their respective ranges of normality (nearest to zero) (Tabachnick & Fidell, 2007, Hair et al., 2016; Denis, 2019), and did not exceed -2;2 or -7;7, respectively (Kline, 2011; Muthen & Kaplan, 1985; Curran, West & Finch, 1996; Chou & Bentler, 1995; Mostafa, 2013; Peredaryenko, 2016).

#### **4.5 Exploratory Factor Analysis**

A principal component analysis (PCA) was performed during the exploratory factor analysis on the items for the constructs of HRM practices, service quality, organizational commitment, job satisfaction, and job involvement. According to Pallent (2016), there is not much difference between a PCA and an exploratory factor analysis because both approaches often produce similar results. Therefore, a PCA is considered as an appropriate approach for exploring the mutual relationships among a set of items (Sarstedt & Mooi, 2019).

In this study, an exploratory factor analysis was performed based on the steps suggested by Sarstedt and Mooi (2019). The first step was to check the suitability of the data for the PCA by measuring the Kaiser-Meyer-Olkin (KMO) criterion and the value of the Bartlett's test of sphericity. The second step was to extract the factors in order to

reproduce a data structure with only a few factors using the Kaiser criterion. The factors to be extracted were those with an eigenvalue of more than 1. Moreover, this study used a parallel analysis, as suggested by Ledesma and Valero-Mora (2007) and Sarstedt and Mooi (2019), to ensure that the factors obtained from the Kaiser criterion were non-trivial factors that had been applied by previous studies (e.g., Zumrah, 2012; Paczkowski, 2017). The factors were considered as significant if their associated eigenvalue was bigger than the criterion value obtained from the parallel analysis (Ledesma & Valero-Mora, 2007, Pallant, 2016). The third step was to rotate the factors by means of a varimax rotation. A varimax rotation was selected for this study because it maintains orthogonality in the components (Karamacoska, Barry & Steiner, 2019), and can facilitate the interpretation of the factors (Sarstedt & Mooi, 2019). A varimax rotation was applied previously in organizational studies (e.g., Zumrah, 2012; Paczkowski, 2017).

#### **4.5.1 Human Resource Management Practices**

Table 4.3 shows the result of Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett Test of Sphericity for variable HRM Practices. Based on the results, the value of the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was 0.856. This value exceeding the value 0.50 as suggested by Sarstedt and Mooi (2019). The Bartlett Test of Sphericity was statistically significance ( $\chi^2 = 40.66.080$ ,  $df = 276$ ,  $p < 0.000$ ). The results of KMO and the Bartlett Test of Sphericity indicate that this set of data was adequate to conduct factor analysis.

Table 4.3: The KMO and Bartlett Test for HRM Practices

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.855
Bartlett's Test of Sphericity	Approx. Chi-Square	3066.585
	df	276
	Sig.	.000

The results of principal component analysis (PCA) revealed presence of five factors with an eigenvalue exceeding 1, explaining 29.0715%, 13.413%, 9.456%, 7.382%, and 6.987% of the variance respectively (see Table 4.4).

Table 4.4: Total Variance Explained for HRM Practices

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.977	29.071	29.071	6.977	29.071	29.071
2	3.219	13.413	42.483	3.219	13.413	42.483
3	2.270	9.456	51.940	2.270	9.456	51.940
4	1.772	7.382	59.322	1.772	7.382	59.322
5	1.677	6.987	66.310	1.677	6.987	66.310
6	.781	3.255	69.565			
7	.692	2.882	72.447			
8	.674	2.807	75.254			
9	.608	2.533	77.786			
10	.598	2.492	80.279			

To ensure that the five factors are non-trivial factors, the factors have been compared with the parallel analysis. The parallel analysis is considered as the best available alternative for solving any problems in the number of factors to retain from PCA, (Ledesma & Valero-Mora, 2007). This study retains the factors that has

eigenvalue bigger than the criterion value obtained from Parallel Analysis (Pallant, 2016). Table 4.5 shows that the five factors have eigenvalues larger than the criterion value from parallel analysis.

Table 4.5: Comparison of Eigenvalues that Obtained from Principal Component Analysis and Criterion Values that Obtained from Parallel Analysis for HRM Practices

Component	Eigenvalues from Principal Component Analysis	Criterion Values that obtained from Parallel Analysis	Decision
1	6.977	1.688	Accept
2	3.219	1.567	Accept
3	2.270	1.498	Accept
4	1.772	1.426	Accept
5	1.677	1.362	Accept
6	.781	1.317	Reject
7	.692	1.263	Reject
8	.674	1.210	Reject

The factor loading for all items of HRM practices is shown in Table 4.6. The loadings for all items of HRM practices were above the minimum significant loading (0.40), which ranged from 0.66 to 0.85. None of the items has issue of cross-loading. In addition, the communality value for each item exceeds the cut-off point 0.30 (Pallant, 2011; 2016). Furthermore, the internal consistency for all items of HRM practice is high (the Cronbach Alpha value 0.89), which exceed the recommended level of 0.70. Therefore, all items of HRM practices are retained for confirmatory factor analysis.

Table 4.6: Factor Loading, Communalities and Cronbach Alpha for HRM Practices

Items	Loading	Communalities	Items	Loading	Communalities	Cronbach Alpha  0.89
R1	.660	.548	P3	.793	.724	
R2	.714	.565	P4	.787	.664	
R3	.838	.788	P5	.762	.659	
R4	.754	.612	A1	.773	.634	
R5	.745	.652	A2	.749	.697	
T1	.722	.564	A3	.845	.798	
T2	.744	.626	A4	.707	.605	
T3	.785	.685	A5	.623	.572	
T4	.781	.653	Cp1	.830	.746	
T5	.726	.587	Cp2	.853	.773	
P1	.771	.639	Cp3	.843	.750	
P2	.798	.665	Cp4	.819	.707	

To support in the interpretation of these five components, the varimax rotation was performed. The rotated solution revealed that there are five items (R1, R2, R3, R4, R5) labeled in factor1 in this study named (recruitment and selection), five items (T1, T2, T3, T4, T5) labeled in factor 2 (training and development), five items (P1, P2, P3, P4, P5) labeled in factor 3 (participation), Five items (A1, A2, A3, A4, A5) labeled in factor 4 (performance appraisal), and four items (Cp1, Cp2, Cp3, Cp4) labeled in factor 5 (compensation), as shown in Table 4.7.

Table 4.7: Factors and Item's Loading

R1	.660		
R2	.714		
R3	.838		
R4	.754		
R5	.745		
T1		.722	
T2		.744	
T3		.785	
T4		.781	
T5		.726	
P1			.771
P2			.798
P3			.793
P4			.787
P5			.762
A1			.773
A2			.749
A3			.845
A4			.707
A5			.623
Cp1			.830
Cp2			.853
Cp3			.843
Cp4			.819

#### 4.5.2 Organizational Commitment

Table 4.8 shows the result of Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett Test of Sphericity for variable organizational commitment. Based on the results, the value of the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was 0.844. This value exceeding the value 0.50 as suggested by Sarstedt and Mooi (2019). The Bartlett Test of Sphericity was statistically significance ( $\chi^2 = 1027.034$ ,  $df = 28$ ,  $p < 0.000$ ). The results of KMO and

The Bartlett Test of Sphericity indicate that this set of data was adequate to conduct factor analysis.

Table 4.8: The KMO and Bartlett Test for Organizational Commitment

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.844
Bartlett's Test of Sphericity	Approx. Chi-Square	1027.034
	df	28
	Sig.	.000

The results of principal component analysis (PCA) revealed the presence of two factors with an eigenvalue exceeding 1, explaining 53.181% and 18.453 % of the variance respectively (see Table 4.9).

Table 4.9: Total Variance Explained for Organizational Commitment

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.254	53.181	53.181	4.254	53.181	53.181
2	1.476	18.453	71.634	1.476	18.453	71.634
3	.548	6.849	78.484			
4	.453	5.667	84.151			
5	.372	4.648	88.799			
6	.349	4.359	93.157			
7	.332	4.145	97.303			
8	.216	2.697	100.000			

To ensure that the two factors are non-trivial factors, the factors have been compared with the parallel analysis. The parallel analysis is considered as the best

available alternative for solving any problems in the number of factors to retain from PCA, (Ledesma & Valero-Mora, 2007). This study retains the factors that has eigenvalue bigger than the criterion value obtained from Parallel Analysis (Pallant, 2016). Table 4.10 shows that the two factors have eigenvalues larger than the criterion value from parallel analysis.

Table 4.10: Comparison of Eigenvalues that Obtained from PCA and Criterion Values that Obtained from Parallel Analysis for Organizational Commitment

Component	Eigenvalues from Principal Component Analysis	Criterion Values that obtained from Parallel Analysis	Decision
1	4.254	1.352	Accept
2	1.476	1.232	Accept
3	.548	1.132	Reject
4	.453	1.072	Reject
5	.372	1.008	Reject
6	.349	.933	Reject
7	.332	.878	Reject
8	.216	.818	Reject

Factor loading of Organizational Commitment which contain eight items shown in Table 4.11. The factor loadings for all items were above the minimum significant loading (0.40), which ranged from 0.790 to 0.86. None of the items has the issue of cross-loading. In addition, the communality value for each item exceeds the cut-off point 0.30 (Pallant, 2011; 2016). Furthermore, the internal consistency for all items of organizational commitment is high (the Cronbach Alpha value is 0.874), which is much more the recommended level (0.70). Therefore, all items of organizational commitment are retained for confirmatory factor analysis.

Table 4.11: Factor Loading, Communalities and Cronbach Alpha for Commitment

Items	Loading	Communalities	Cronbach Alpha
C1	.810	.712	0.874
C2	.806	.752	
C3	.824	.723	
C4	.861	.755	
C5	.795	.675	
C6	.826	.717	
C7	.816	.703	
C8	.797	.694	

Furthermore, to support in the interpretation of the two components, the varimax rotation was performed. The rotated solution revealed that four items (C1, C2, C3, C4) labelled in factor 1 (in this study refer to affective organizational commitment), and remaining items (C5, C6, C7, C8) are labelled in factor 2 (continuance organizational commitment (see Table 4.12)).

Table 4.12: Varimax Rotation for Organizational Commitment

Items	Component 1	Component 2
C1	.810	
C2	.806	
C3	.824	
C4	.861	
C5		.795
C6		.826
C7		.816
C8		.797

### 4.5.3 Job Satisfaction

Table 4.13 shows the result of Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett Test of Sphericity for variable job satisfaction. Based on the results, the value of the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was 0.845. This value exceeding the value 0.50 as suggested by Sarstedt and Mooi (2019). The Bartlett Test of Sphericity was statistically significant ( $\chi^2 = 1425.139$ ,  $df = 55$ ,  $p < 0.000$ ). The results of KMO and The Bartlett Test of Sphericity indicate that this set of data was adequate to conduct factor analysis.

Table 4.13: The KMO and Bartlett Test for Job satisfaction

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.845
Bartlett's Test of Sphericity	Approx. Chi-Square	1425.139
	df	55
	Sig.	.000

The results of principal component analysis (PCA) revealed the presence of three factors with an eigenvalue exceeding 1, explaining 44.477 %, 13.895 %, and 12.130 % of the variance respectively (see Table 4.14).

Table 4.14: Total Variance Explained for Job satisfaction

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.892	44.477	44.477	4.892	44.477	44.477
2	1.528	13.895	58.372	1.528	13.895	58.372
3	1.334	12.130	70.502	1.334	12.130	70.502
4	.867	7.879	78.381			
5	.575	5.224	83.605			

To ensure that the three factors are non-trivial factors, the factors have been compared with the parallel analysis. The parallel analysis is considered as the best available alternative for solving any problems in the number of factors to retain from PCA, (Ledesma & Valero-Mora, 2007). This study retains the factors that has eigenvalue bigger than the criterion value obtained from Parallel Analysis (Pallant, 2016). Table 4.15 shows that the three factors have eigenvalues larger than the criterion value from parallel analysis.

Table 4.15: Comparison of Eigenvalues that obtained from PCA and Parallel Analysis for Job satisfaction

Component	Eigenvalues from Principal Component Analysis	Criterion Values obtained from Parallel Analysis	Decision
1	4.892	1.454	Accept
2	1.528	1.332	Accept
3	1.334	1.226	Accept
4	.867	1.1670	Reject
5	.575	1.095	Reject

Table 4.16 shows the factor loading for job satisfaction which contain eleven items. The loadings for all items of job satisfaction were above the minimum significant loading (0.50), which ranged from 0.617 to 0.86. None of the items has issue related to cross-loading. In addition, the communality value for each item exceeds the cut-off point 0.30 (Pallant, 2011; 2016).

Furthermore, Table 4.16 shows the internal consistency for all items of job satisfaction is high (the Cronbach Alpha value is 0.87), which exceed the recommended level of 0.70. This demonstrates that the three factors which contain eleven items measure the same underlying construct.

Table 4.16: Factor Loading, Communalities and Cronbach Alpha for Job satisfaction

Items	Loading	Communalities	Cronbach Alpha
J1	.690	.564	0.87
J2	.831	.703	
J3	.823	.738	
J4	.617	.408	
J5	.735	.716	
J6	.837	.816	
J7	.860	.790	
J8	.794	.718	
J9	.850	.814	
J10	.837	.784	
J11	.802	.703	

Moreover, the varimax rotation solution revealed that three items (J1, J2, J3,) labeled in factor 1, four items (J4, J5, J6, J7) labeled in factor 2, and the remaining items (J8, J9, J10, J11) are labelled in factor 3 (see Table 4.17).

Table 4.17: The Result of Varimax Rotation for Job satisfaction

Items	Component1	Component2	Component3
J1	.690		
J2	.831		
J3	.823		
J4		.617	
J5		.735	
J6		.837	
J7		.860	
J8			.794
J9			.850
J10			.837
J11			.802

#### 4.5.4 Job involvement

Table 4.18 shows the result of Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett Test of Sphericity for variable job involvement. Based on the results, the value of the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was 0.904. This value exceeding the value 0.50 as suggested by Sarstedt and Mooi (2019). The Bartlett Test of Sphericity was statistically significance ( $\chi^2 = 1214.084$ ,  $df = 36$ ,  $p < 0.000$ ). The results of KMO and Bartlett Test of Sphericity indicate that this set of data was adequate to conduct factor analysis.

Table 4.18: The KMO and Bartlett Test for Job Involvement

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.904
Bartlett's Test of Sphericity	Approx. Chi-Square	1214.084
	df	36
	Sig.	.000

Communalities table gives information about how much of the variance in each item is explained, Low values (e.g., less than 0.3) could indicate that the item does not fit well with the other items in its component (Pallent, 2011: 198, 2016). therefore, items (Jn2, Jn6) shown low value (.27 & .28). in this case according to Pallent (2011, 2016) the solution is remove items from the scale. Removing items with low communality values tends to increase the total variance explained (Pallent, 2011: 198, 2016).

The results of principal component analysis (PCA) revealed the presence of only one factor with an eigenvalue exceeding 1, explaining 65.263 % of the variance (see Table 4.19).

Table 4.19: Total Variance Explained for Job Involvement

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.568	65.263	65.263	4.568	65.263	65.263
2	.655	9.357	74.620			
3	.476	6.797	81.417			
4	.437	6.237	87.654			
5	.371	5.305	92.959			

To ensure that the factor are non-trivial factors, the factor have been compared with the parallel analysis. The parallel analysis is considered as the best available alternative for solving any problems in the number of factors to retain from PCA, (Ledesma & Valero-Mora, 2007). This study retains the factor that has eigenvalue bigger than the criterion value obtained from Parallel Analysis (Pallant, 2016). Table 4.20 shows that only one factor has eigenvalues larger than the criterion value from parallel analysis.

Table 4.20: Comparison of Eigenvalues that obtained from PCA and Parallel Analysis for Job Involvement

Component	Eigenvalues from Principal Component Analysis	Criterion Values that obtained from Parallel Analysis	Decision
1	4.568	1.384	Accept
2	.655	1.243	Reject
3	.476	1.174	Reject
4	.437	1.110	Reject
5	.371	1.030	Reject

Table 4.21 shows the factor loading of job involvement which contain nine items. The loadings for all items of job involvement were above the minimum significant loading (0.40), which ranged from 0.54 to 0.91. None of the items has issue related to cross-loading. In addition, the communality value for each item exceeds the cut-off point 0.30 (Pallant, 2011; 2016). Furthermore, the internal consistency for all items of job involvement is high (the Cronbach Alpha value is 0.885), which is exceed the recommended level of 0.70. This demonstrates that the nine items measure the same underlying construct. Subsequently, these nine items were used in confirmatory factor analysis.

Table 4.21: Factor Loading, Communalities and Cronbach Alpha for Job Involvement

Items	Loading	Communalities	Cronbach Alpha
In1	.808	.653	0.908
In3	.823	.677	
In4	.660	.436	
In5	.912	.832	
In7	.818	.669	
In8	.837	.701	
In9	.775	.600	

#### 4.5.5 Service Quality

Table 4.22 shows the result of Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett Test of Sphericity for variable job involvement. Based on the results, the value of the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was 0.879. This value exceeding the value 0.50 as suggested by Sarstedt and Mooi (2019). The Bartlett Test of Sphericity was statistically significance ( $\chi^2$

=6593.943, df= 153, = p< 0.000). The results of KMO and Bartlett Test of Sphericity indicate that this set of data was adequate to conduct factor analysis.

Table 4.22: The KMO and Bartlett Test for Service Quality

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.879
Bartlett's Test of Sphericity	Approx. Chi-Square	6593.943
	df	153
	Sig.	.000

The results of principal component analysis (PCA) revealed the presence of four factors with an eigenvalue exceeding 1, explaining 46.248 %, 22.665 %, 13.320 %, and 8.965 % of the variance respectively (see Table 4.23).

Table 4.23: Total Variance Explained for Service Quality

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.325	46.248	46.248	8.325	46.248	46.248
2	4.080	22.665	68.913	4.080	22.665	68.913
3	2.398	13.320	82.233	2.398	13.320	82.233
4	1.614	8.965	91.198	1.614	8.965	91.198
5	.234	1.299	92.497			
6	.192	1.068	93.566			
7	.165	.915	94.481			
8	.158	.876	95.356			
9	.137	.764	96.120			
10	.126	.702	96.823			

To ensure that the four factors are non-trivial factors, the factors have been compared with the parallel analysis. The parallel analysis is considered as the best available alternative for solving any problems in the number of factors to retain from PCA, (Ledesma & Valero-Mora, 2007). This study retains the factors that has eigenvalue bigger than the criterion value obtained from Parallel Analysis (Pallant, 2016). Table 4.24 shows that the four factors have eigenvalues larger than the criterion value from parallel analysis.

Table 4.24: Comparison of Eigenvalues that obtained from PCA and Parallel Analysis for Service Quality

Component	Eigenvalues from Principal Component Analysis	Criterion Values that obtained from Parallel Analysis	Decision
1	8.325	1.591	Accept
2	4.080	1.459	Accept
3	2.398	1.388	Accept
4	1.614	1.305	Accept
5	.234	1.252	Reject
6	.192	1.188	Reject
7	.165	1.134	Reject

Table 4.25 shows the factor loading for variable service quality which contain 18 items. The loadings for all items of service quality were above the minimum significant loading (0.40), which ranged from 0.852 to 0.902. None of the items has issue related to cross-loading. In addition, the communality value for each item exceeds the cut-off point 0.30 (Pallant, 2011; 2016). Furthermore, the internal consistency for all items of service quality is high (the Cronbach Alpha value is 0.93), which is exceed the

recommended level of 0.70. Therefore, all items of service quality are retained for confirmatory factor analysis.

Table 4.25: Factor Loading, Communalities and Cronbach Alpha for Service Quality

Items	Loading	Communalities	Items	Loading	Communalities	Cronbach Alpha
S1	.928	.911	S10	.933	.910	0.93
S2	.916	.899	S11	.931	.911	
S3	.922	.911	S12	.937	.913	
S4	.909	.893	S13	.913	.896	
S5	.890	.863	S14	.901	.926	
S6	.891	.908	S15	.919	.945	
S7	.918	.950	S16	.895	.927	
S8	.902	.941	S17	.918	.927	
S9	.893	.917	S18	.872	.865	

Furthermore, to support the interpretation of these four components, the varimax rotation was performed. The rotated solution revealed that five items (S1, S2, S3, S4, S5) labelled in factor 1, four items (S6, S7, S8, S9) labelled in factor 2, four items (S10, S11, S12, S14) labelled in factor 3, Five items (S15, S16, S17, S18) labeled in factor 4 (see Table 4.26).

Table 4.26: Factors and Item's Loading

	Factor1	Factor2	Factor3	Factor4
S1	.928			
S2	.916			
S3	.922			
S4	.909			
S5	.890			
S6		.891		
S7		.918		
S8		.902		
S9		.893		
S10			.933	
S11			.931	
S12			.937	
S13			.913	
S14				.901
S15				.919
S16				.895
S17				.918
S18				.872

#### 4.5.6 Conclusion of Exploratory factor analysis (EFA)

Exploratory factor analysis (EFA) has been utilized to verify the dimensional structure of the scales for all variables (Latif, 2018; Sahibzada, et al. 2019). A total of 70 items were subjected to EFA. The factor loadings obtained from the EFA were meet the minimum factor loading criteria, all items succeed for load onto their respective dimension, only two items of job involvement obtained low values of communalities (less than 0.3) which indicate that the item does not fit well with the other items in its component (Pallent, 2011: 198, 2016). therefore, items (Jn2, Jn6) shown low value (.27 & .28). the solution was to remove items from the scale (Pallent, 2011, 2016). Removing items with low communality values tends to increase the total variance

explained (Pallent, 2011: 198, 2016). therefore, the 7 items remained form the scale of job involvement.

#### **4.6 Confirmatory Factor Analysis**

A confirmatory factors analysis (CFA) was conducted to assess the measurement model in terms of its goodness-of-fit, reliability and construct validity (convergent and discriminant validity). The goodness-of-fit of the measurement model was assessed through the normed  $\chi^2$  chi-square value divided by the degrees of freedom  $\chi^2 (\chi^2/df) \leq 5.0$  (Kline, 2011), based on a comparative fit index (CFI) of  $\geq 0.90$  (Hair et al., 2010; Kline, 2011), Tucker–Lewis index (TLI) of  $\geq 0.90$  (Tucker & Lewis, 1973), root mean square error of approximation (RMSEA) of  $\leq 0.08$  (Kline, 2011), and the standardized root mean square residual (SRMR) (Kline, 2011; 2015; Schumacker & Lomax, 2012; Hair et al., 2013; Keith, 2014; Byrne, 2016).

The reliability of each construct in the measurement model was measured by the composite reliability (CR), which should be higher than 0.7 (Fornell & Larcker, 1981; Hair et al., 2013). The convergent validity was measured through the average variance extracted (AVE), which should be more than 0.5 (Fornell & Larcker, 1981; Hair et al., 2013), while the discriminant validity was measured by comparing the square root of the AVE with the relationship between the variables. The relationship between the variables should be less than the square root of the AVE (Hair, Black, Babin & Anderson, 2010; Malhotra & Dash, 2015).

The results of the confirmatory factor analysis (CFA) for each variable (Human Resource Management Practices, Organizational Commitment, Job Satisfaction, Job

Involvement, Service Quality), and the overall outcome (including all the variables in this study) are discussed in detail in the following sections.

#### 4.6.1 CFA Results for HRM Practices

Figure 4.1 is a measurement model for construct HRM practices that consist of five dimensions known as recruitment and selection (Rec), training and development (Train), participation (Parti), performance appraisal (App), and compensation (Cop).

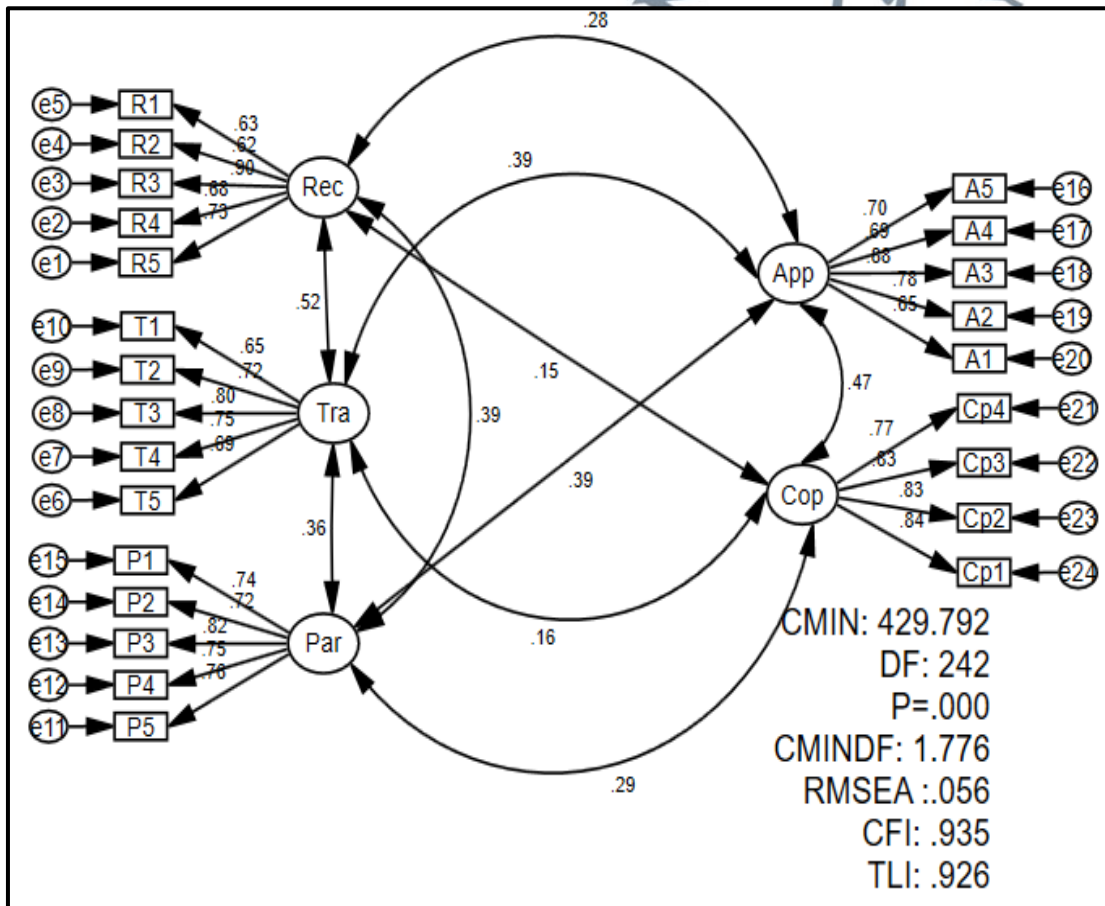


Figure 4.1: The Measurement Model for HRM Practices

Table 4.27 shows the results of Goodness of Fit of measurement model for construct HRM practices. The results indicate that, the  $\chi^2 = 429.792$ ,  $df = 242$ , the  $\chi^2/df$  ( $429.792/242$ ) = 1.776, the p-value associated with this result is significant ( $p < 0.000$ ), CFI = 0.935, TLI = 0.926, SRMR = 0.056, and RMSEA = 0.056. These results showed a good model fit (Gaskin & Lim, 2016).

Table 4.27: Result of Goodness of fit of Measurement Model for HRM Practices

Measure	Estimate
CMIN	429.792
DF	242
CMIN/DF	1.776
CFI	0.935
TLI	0.926
SRMR	0.056
RMSEA	0.056

Table 4.28 shows that the composite reliability (CR) meets the acceptable value ( $> 0.70$ ), which range from 0.841 to 0.891 (Fornell & Larcker, 1981; Hair et al., 2013). The Average variance extracted (AVE) also was above 0.50 (Fornell & Larcker, 1981; Hair et al., 2013), which confirmed the convergent validity. In addition, the square root AVE (figure with bold) was bigger than the correlation between variables (Hair, Black, Babin & Anderson, 2010; Malhotra & Dash, 2015), which confirmed the discriminant validity.

Table 4.28: Composite Reliability, Average Variance Extracted, Square Root of Average Variance Extracted and Correlation for HRM Practices

	CR	AVE	Rec	Tra	Par	App	Cop
Rec	0.841	0.519	<b>.721</b>				
Tra	0.844	0.522	.519***	<b>.722</b>			
Par	0.871	0.576	.392***	.360***	<b>.759</b>		
App	0.860	0.554	.282***	.390***	.387***	<b>.744</b>	
Cop	0.891	0.672	.149*	.164*	.289***	.474***	<b>.820</b>

\* Noted: Rec = recruitment and selection; Tra = Training and development; Par = Participation; App = Performance Appraisal; Cop = compensation; CR = Composite Reliability; AVE = Average Variance Extracted; Figure with Bold = Square Root of Average Variance Extracted

#### 4.6.2 CFA Results for Organizational Commitment

Figure 4.2 is a measurement model for construct organizational commitment that consist of two dimensions known as affective commitment and continuous commitment.

The results show (see Table 4.29) an acceptable fit. In specific, the  $\chi^2 = 36.091$ ,  $df = 18$ , the  $\chi^2/df (36.091/18) = 2.00$ , the p-value associated with this result is significant ( $p < 0.000$ ), CFI = 0.982, TLI = 0.972, the value for the root means square error of approximation (RMSEA) = 0.064, and the standardized root mean square residual (SRMR) = 0.036.

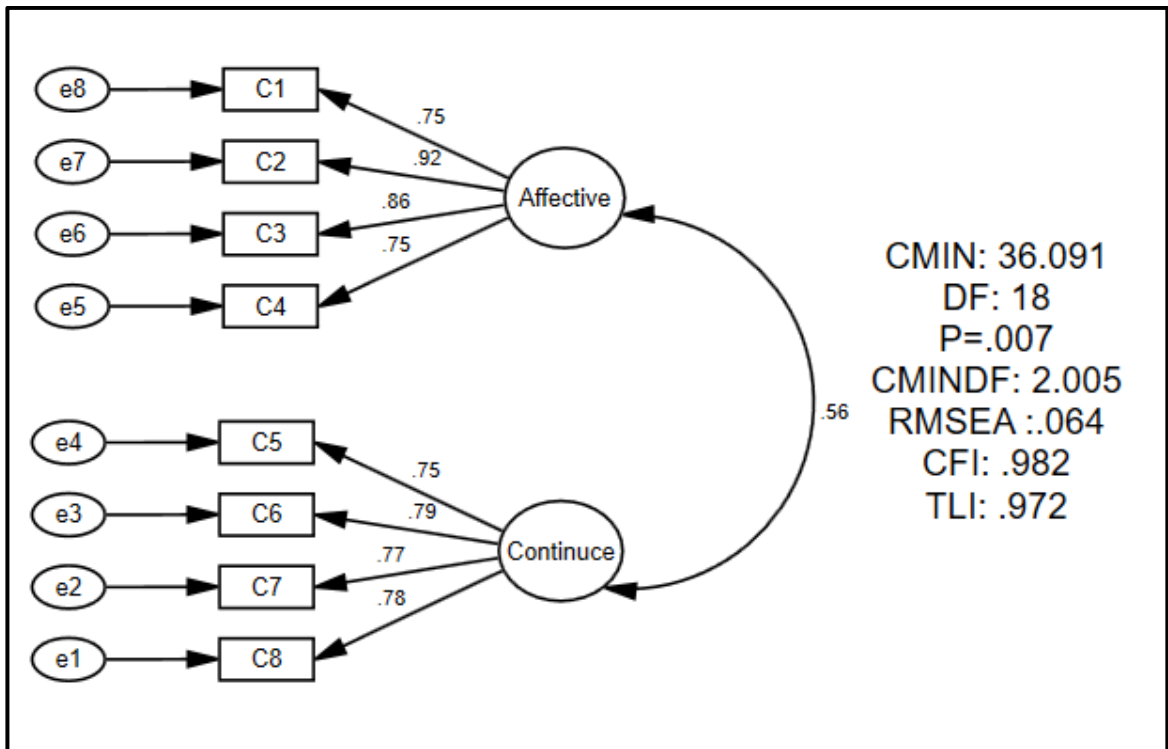


Figure 4.2: The Measurement Model for Organizational Commitment

Table 4.29: Result of Goodness of fit of Measurement Model for Organizational Commitment

Measure	Estimate
CMIN	36.091
DF	18.000
CMIN/DF	2.005
CFI	0.982
TLI	0.972
SRMR	0.036
RMSEA	0.064

Table 4.30 shows the composite reliability (CR) for continuous commitment is 0.855, while affective commitment is 0.893, which is higher than 0.70 as recommended by Fornell and Larcker (1981) and Hair and colleagues (2013). The Average variance extracted (AVE) were 0.597 for continuous commitment and 0.677 for affective

commitment, which provide a confirmation for convergent validity (Fornell & Larcker, 1981; Hair et al., 2013). In addition, the Average variance extracted (AVE) was bigger than the relationship between variables, which provide a confirmation for discriminant validity (Hair, Black, Babin & Anderson, 2010; Malhotra & Dash, 2015).

Table 4.30: Composite Reliability, Average Variance Extracted, Square Root of Average Variance Extracted and Correlation for Organizational Commitment

	CR	AVE	Affective	Continuous
Continuous	0.855	0.597	<b>0.773</b>	
Affective	0.893	0.677	0.557***	<b>0.823</b>

Noted: CR = Composite Reliability; AVE = Average Variance Extracted; Figure with Bold = Square Root of Average Variance Extracted

#### 4.6.3 CFA Results for Job Satisfaction

Figure 4.3 is a measurement model for construct job satisfaction that consist of three dimensions known as social (Socia) 3 items, intrinsic (Enter) 4 items, and extrinsic (Exter) 4 items. However, one item under dimension intrinsic (item number J4) has been deleted due to low loading (0.30) value (Chin, 1998; Hair et al., 2013).

The result Goodness of fit (see Table 4.31) show an acceptable fit. In specific, the  $\chi^2/df$  (63.069/32) = 1.971, the p-value associated with this result is significant (p < 0.000), CFI = 0.977, TLI = 0.967, the value for RMSEA = 0.063, and the standardized root mean square residual (SRMR) = 0.050.

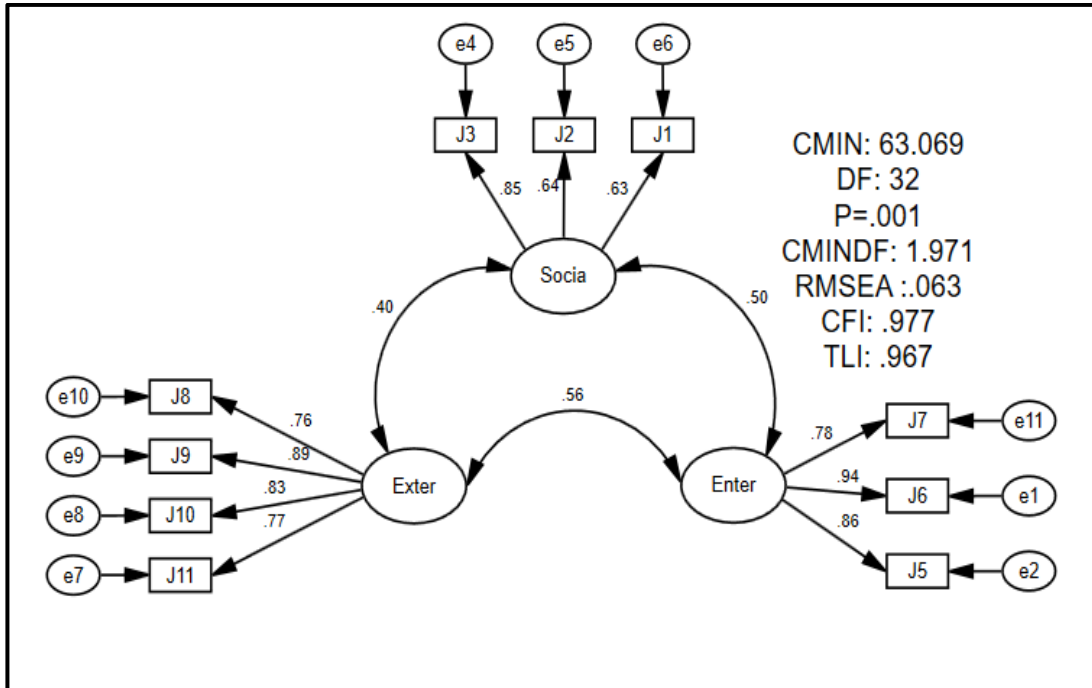


Figure 4.3: Measurement Model for Job Satisfaction

Table 4.31: Goodness of Fit of Measurement Model for Job Satisfaction

Measure	Estimate
CMIN	63.069
DF	32.000
CMIN/DF	1.971
CFI	0.977
TLI	0.967
SRMR	0.050
RMSEA	0.063

Table 4.32 shows the composite reliability (CR) for dimension social (0.753), intrinsic (0.897) and extrinsic (0.885) were much higher than 0.70 (Fornell & Larcker, 1981; Hair et al., 2013). The Average variance extracted (AVE) for all dimensions also

was above 0.50 (Fornell & Larcker, 1981; Hair et al., 2013), which provide a confirmation of convergent validity. In addition, the relationship between dimensions was below than the square root of AVE (figure with bold), which provide a confirmation of discriminant validity (Hair, Black, Babin & Anderson, 2010; Malhotra & Dash, 2015).

Table 4.32: Composite Reliability, Average Variance Extracted, Square Root of Average Variance Extracted and Correlation for Job Satisfaction

	CR	AVE	Intrinsic	Social	Extrinsic
Intrinsic	0.897	0.745	<b>0.863</b>		
Social	0.753	0.509	0.500***	<b>0.714</b>	
Extrinsic	0.885	0.660	0.561***	0.404***	<b>0.812</b>

Noted: CR = Composite Reliability; AVE = Average Variance Extracted; Figure with Bold = Square Root of Average Variance Extracted

#### 4.6.4 CFA Results for Job Involvement

Figure 4.4 is a measurement model for construct job involvement that consist 9 items. However, two items (In2, and In6) have been deleted due in the previous step (EFA) to the Communalities value are below 0.3 (Pallant, 2011, 2016). therefore, a measurement model for construct job involvement that consist of 7 items.

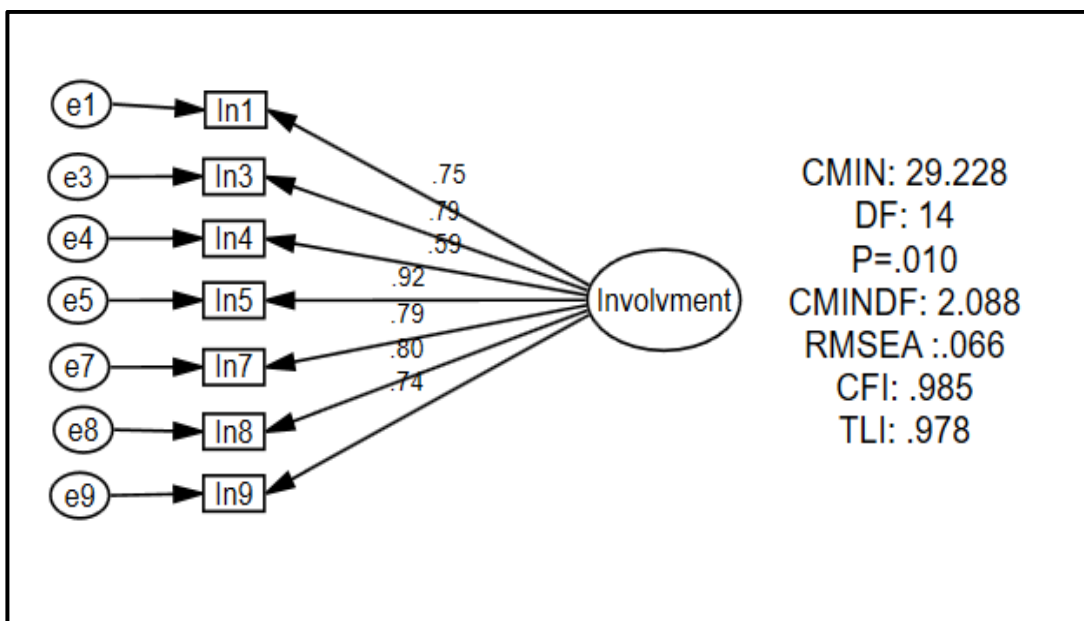


Figure 4.4: The Measurement Model for Job Involvement

The analysis result (see Table 4.33) shows that the goodness of fit of the measurement model is good. In specific, the  $\chi^2/df$  ( $29.228/14$ ) = 2.08, the p-value associated with this result is significant ( $p < 0.000$ ), CFI = 0.985, TLI = 0.978, RMSEA = 0.066, and SRMR = 0.029.

Table 4.33: The Goodness of Fit of Measurement Model for Job Involvement

Measure	Estimate
CMIN	29.228
DF	14.000
CMIN/DF	2.088
CFI	0.985
TLI	0.978
SRMR	0.029
RMSEA	0.066

Table 4.34 shows that the composite reliability (CR) was 0.912, which were much higher than 0.70 (Fornell & Larcker, 1981; Hair et al., 2013). The Average variance extracted (AVE) was .599, which was above 0.50 (Fornell & Larcker, 1981; Hair et al., 2013). The result provides confirmation of convergent validity.

Table 4.34: Composite Reliability, Average Variance Extracted for Job Involvement

	CR	AVE
Job Involvement	0.912	0.599

Noted: CR = Composite Reliability; AVE = Average Variance Extracted

#### 4.6.5 CFA Results for Service Quality

Figure 4.5 is a measurement model for construct service quality that consist of four dimensions known as reliability (Rel) 5 items, responsiveness (Res) 4 items, assurance (Ass) 4 items and empathy (Empt) 5 items.

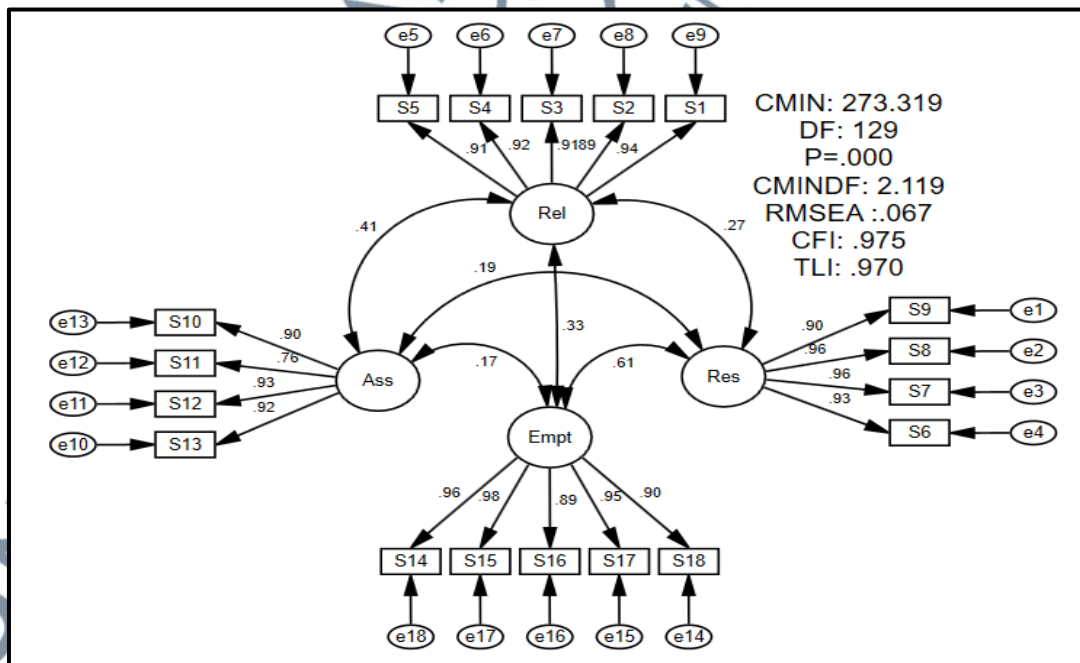


Figure 4.5: The Measurement Model for Service Quality

Table 4.35 shows the result of goodness of fit of measurement model for service quality. The results show acceptable fit. In specific, the  $\chi^2/df$  (273.319/129) = 2.119, the p-value associated with this result is significant ( $p < 0.000$ ), CFI = 0.975, TLI = 0.970, the value for RMSEA = 0.067, and SRMR = 0.034.

Table 4.35: The Goodness of Fit of Measurement Model for Service Quality

Measure	Estimate
CMIN	273.319
DF	129.000
CMIN/DF	2.119
CFI	0.975
TLI	0.970
SRMR	0.034
RMSEA	0.067

Table 4.36 shows that the composite reliability (CR) for dimensions of service quality is above 0.70 (Fornell & Larcker, 1981; Hair et al., 2013). In specific, the CR for responsiveness is 0.969, CR for reliability is 0.962, CR for assurance is 0.932 and CR for empathy is 0.972. the Average variance extracted (AVE) for each dimension also was above 0.50 (between .775 to 0.885), which provide a confirmation for convergent validity (Fornell & Larcker, 1981; Hair et al., 2013). In addition, the square root of AVE (figure with bold) is higher than the correlation between dimensions, which provide a confirmation for discriminant (Hair, Black, Babin & Anderson, 2010; Malhotra & Dash, 2015).

Table 4.36: Composite Reliability, Average Variance Extracted, Square Root of Average Variance Extracted and Correlation for service quality

	CR	AVE	Res	Rel	Ass	Empt
Res	0.969	0.885	<b>0.941</b>			
Rel	0.962	0.836	0.266***	<b>0.915</b>		
Ass	0.932	0.775	0.193**	0.414***	<b>0.880</b>	
Empt	0.972	0.875	0.613***	0.331***	0.175**	<b>0.935</b>

Noted: Res = Responsiveness; Rel = Reliability; Ass = Assurance; Empt = Empathy; CR = Composite Reliability; AVE = Average Variance Extracted; Figure with Bold = Square Root of Average Variance Extracted

#### 4.6.6 CFA Results for Overall (HRM Practices, Organizational Commitment, Job Satisfaction, Job Involvement, Service Quality)

Figure 4.6 is a measurement model that consist of dimensions of HRM practices (recruitment and selection, training and development, participation, performance appraisal, and compensation), dimensions of organizational commitment (affective and continue), dimensions of job satisfaction (social, intrinsic, extrinsic), job involvement and dimensions of service quality (reliability, responsiveness, assurance, and empathy).

Figure 4.6: The Overall Measurement Model.

Table 4.37 shows the result of goodness of fit for the overall measurement model that reveal an acceptable fit. In specific, the  $\chi^2/df$  (2692.795/1974) = 1.364, the p-value associated with this result is significant (p < 0.000), CFI = 0.942, TLI = 0.937, SRMR = 0.047, and RMSEA = 0.038.

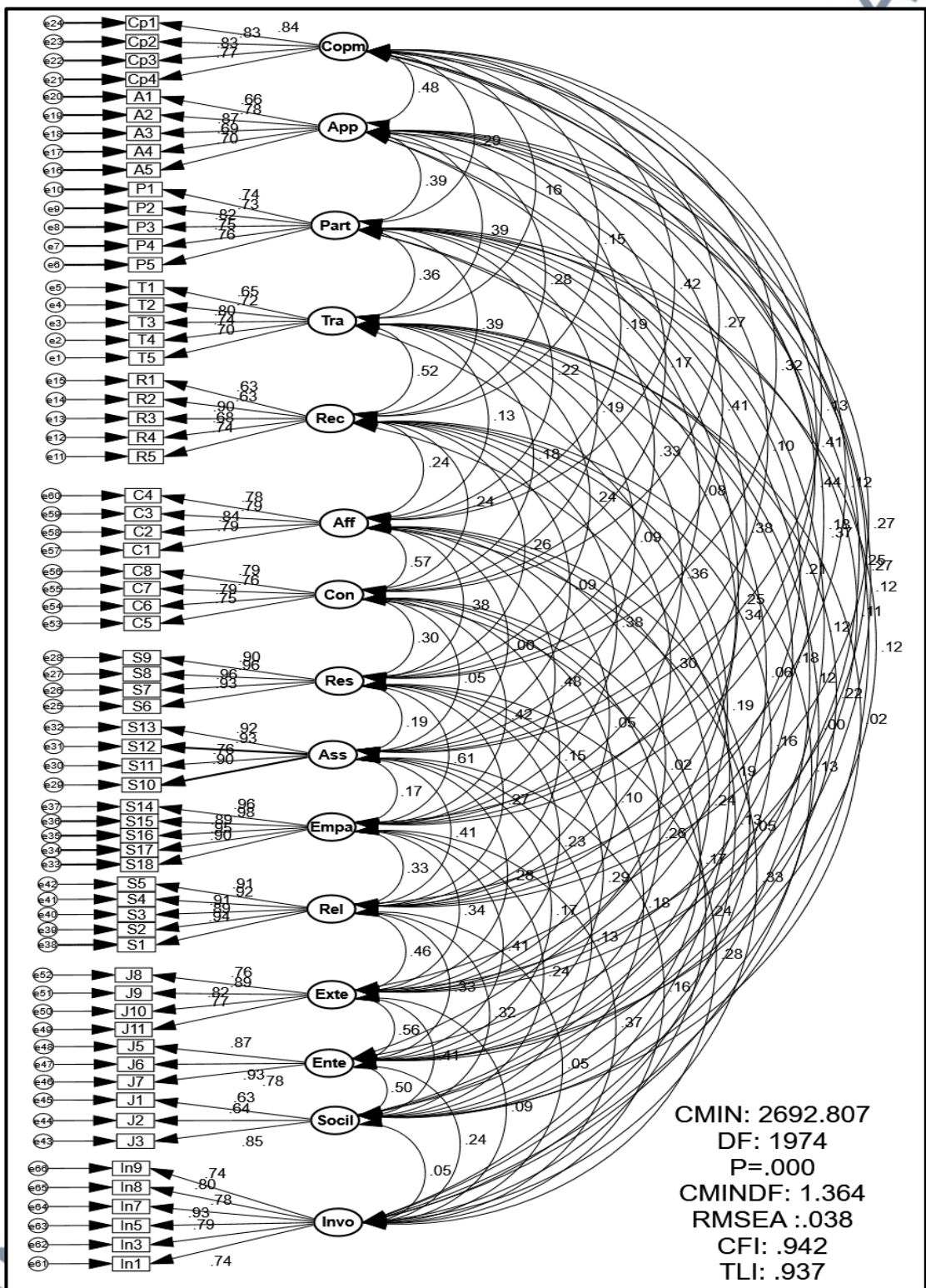


Figure 4.6: The Overall Measurement Model

Table 4.37 shows the result of goodness of fit for the overall measurement model that reveal an acceptable fit. In specific, the  $\chi^2/df$  (2692.795/1974) = 1.364, the p-value associated with this result is significant ( $p < 0.000$ ), CFI = 0.942, TLI = 0.937, SRMR = 0.047, and RMSEA = 0.038.

Table 4.37: Goodness of Fit for the Overall Measurement Model

Measure	Estimate
CMIN	2692.795
DF	1974
CMIN/DF	1.364
CFI	0.942
TLI	0.937
SRMR	0.047
RMSEA	0.038

Table 4.38 shows that the Composite Reliability for all constructs were between 0.832 to 0.969, which is much higher than 0.70 (Fornell & Larcker, 1981; Hair et al., 2013). The Average Variance Extracted (AVE) for all construct also was above 0.50 was (between 0.573 to 0.873) (Fornell & Larcker, 1981; Hair et al., 2013), which provide a confirmation for convergent validity. In addition, the square root of AVE (figure with bold) was greater than the relationship between the constructs, which provide a confirmation about the discriminant validity (Fornell & Larcker, 1981; Hair et al., 2013; Malhotra & Dash, 2015).

Table 4.38: Composite Reliability, Average Variance Extracted, Square Root of Average Variance Extracted and Correlation for All Construct

	CR	AVE	Trai	Part	Rec	App	Cop	Res	Ass	Emp	Rel	Soc	Intr	Extr	Con	Aff	Invo
<b>Trai</b>	.845	.522	<b>.722</b>														
<b>Part</b>	.871	.576	.360***	<b>.759</b>													
<b>Rec</b>	.841	.520	.520***	.393***	<b>.721</b>												
<b>App</b>	.860	.554	.392***	.388***	.285***	<b>.744</b>											
<b>Cop</b>	.891	.673	.164*	.289***	.149*	.476***	<b>.820</b>										
<b>Res</b>	.969	.885	.241**	.327***	.255***	.408***	.324***	<b>.941</b>									
<b>Assu</b>	.932	.775	.088	.082	.089	.104	.134†	.193**	<b>.880</b>								
<b>Emp</b>	.972	.875	.359***	.376***	.376***	.439***	.405***	.613***	.175**	<b>.935</b>							
<b>Rel</b>	.962	.837	.343***	.214**	.302***	.267***	.122†	.266***	.414***	.332***	<b>.915</b>						
<b>Soc</b>	.753	.508	.015	.062	.134†	.123	.123	.177*	.133†	.237**	.322***	<b>.713</b>					
<b>Int</b>	.897	.745	.223**	.124†	.162*	.253***	.254***	.289***	.169*	.413***	.331***	.504***	<b>.863</b>				
<b>Ext</b>	.886	.660	.182*	.113	.192**	.265***	.175*	.234***	.276***	.339***	.460***	.408***	.562***	<b>.813</b>			
<b>Cont</b>	.855	.597	.180*	.189*	.242**	.169*	.271***	.297***	.053	.420***	.148*	.171*	.261***	.096	<b>.773</b>		
<b>Affe</b>	.876	.640	.136†	.218**	.243**	.187*	.416***	.377***	.000	.483***	.051	.049	.236**	.018	.571***	<b>.800</b>	
<b>Invo</b>	.914	.639	.192*	.000	.128†	.115	.368***	.284***	.156*	.374***	.053	.047	.236**	.088	.237**	.325***	<b>.799</b>

Noted: Trai = Training and Development; Part = Participation; Rec = Recruitment and Selection; App = Performance Appraisal; Cop = Compensation; Invo = Job Involvement; Affe = Affective Commitment; Cont = Continuous Commitment; Soc = Social; Intr = Intrinsic; Extr = Extrinsic; Res = Responsiveness; Rel = Reliability; Ass = Assurance; Empt = Empathy; CR = Composite Reliability; AVE = Average Variance Extracted; Figure with Bold = Square Root of Average Variance Extracted

#### 4.7 Structure Equation Modeling (SEM)

Figure 4.7 is a structural model that include dimensions of HRM practices (recruitment and selection, training and development, participation, performance appraisal, and compensation), dimensions of organizational commitment (affective and continue), dimensions of job satisfaction (social, intrinsic, extrinsic), job involvement, dimensions of service quality (reliability, responsiveness, assurance, and empathy), and the direction of relationship between the variables (HRM practices, organizational commitment, job satisfaction, job involvement and service quality).

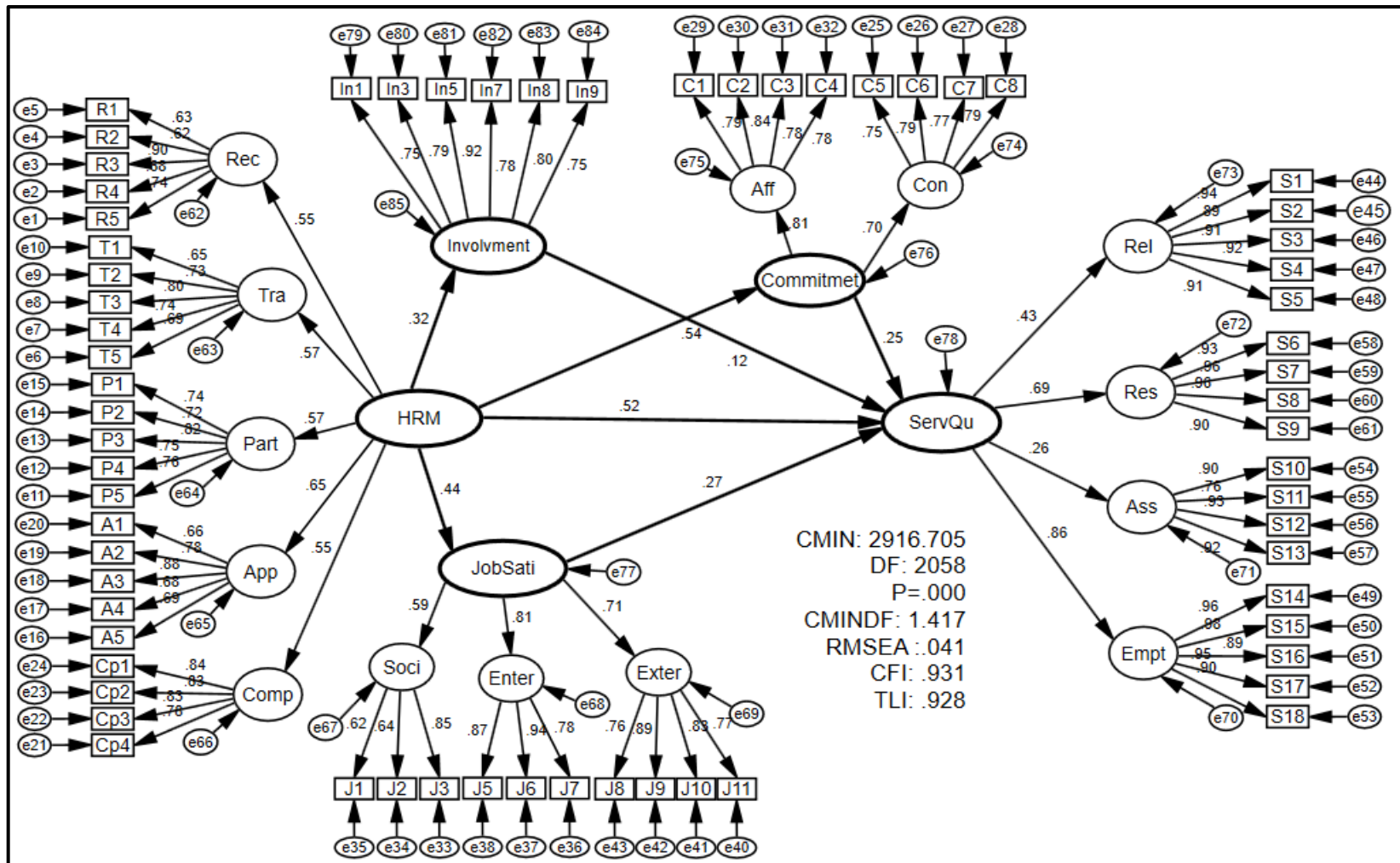


Figure 4.7: Structural Model

Table 4.39 shows the result of goodness of fit for the structural model that reveal an acceptable fit. In specific, the  $\chi^2/df$  (2916.705/2058) = 1.417, the p-value associated with this result is significant ( $p < 0.000$ ), CFI = 0.931, TLI = 0.928, SRMR = 0.075, and RMSEA = 0.041.

Table 4.39: The Goodness of Fit for Structural Model

Measure	Estimate
CMIN	2916.705
DF	2058
CMIN/DF	1.417
CFI	0.931
TLI	0.928
SRMR	0.075
RMSEA	0.041

#### 4.7.1 Hypothesis Testing and Results (Direct Relationships)

Table 4.40 shows the result of direct relationship between HRM practices, service quality, organizational commitment, job satisfaction, and job involvement.

In specific, the analysis result shows that there is a positive and significant relationship between HRM practices and service quality ( $\beta = 0.52$ ,  $p < 0.001$  (Critical Ratio = 4.186), which providing support for hypothesis 1.

The analysis result also shows that there is a positive and significant relationship between HRM practices and organizational commitment ( $\beta = 0.54$ ,  $p < 0.000$  (Critical Ratio = 4.17), which providing support for hypothesis 2.

In addition, the analysis result shows that there is a positive and significant relationship between HRM practices and job satisfaction ( $\beta = 0.44$ ,  $p < 0.000$  (Critical Ratio = 3.77), which providing support for hypothesis 3.

Furthermore, the analysis result shows that there is a positive and significant relationship between HRM practices and job involvement ( $\beta = 0.32$ ,  $p < 0.000$  (Critical Ratio = 3.64), which providing support for hypothesis 4.

Moreover, the analysis result shows that there is a positive and significant relationship between organizational commitment and service quality ( $\beta = 0.25$ ,  $p < 0.05$  (Critical Ratio = 2.84), which providing support for hypothesis 5.

The analysis result also shows that there is a positive and significant relationship between job satisfaction and service quality ( $\beta = 0.27$ ,  $p < 0.000$  (Critical Ratio = 3.42), which providing support for hypothesis 6.

Finally, the analysis result shows that there is a positive and significant relationship between job involvement and service quality ( $\beta = 0.12$ ,  $p < 0.05$  (Critical Ratio = 2.13), which providing support for hypothesis 7.

Table 4.40: The Results of Hypotheses Testing

	Estimate		t-value (CR)	P Value	Decision
	USD	SD			
HRMp → ServQul	0.84	0.52	4.186	***	Supported
HRMp → Commitment	0.55	0.54	4.169	***	Supported
HRMp → Satisfaction	0.36	0.44	3.77	***	Supported
HRMp → Involvement	0.59	0.32	3.64	***	Supported
Commitment → ServQul	0.40	0.25	2.84	.004	Supported
Satisfaction → ServQul	0.55	0.27	3.42	.000	Supported
Involvement → ServQul	0.11	0.12	2.13	.033	Supported

Note: USD = Unstandardized; SD = Standardized; CR = Critical Ratio; HRMp = Human Resource Management Practices; ServQul = Service Quality; \*\*\* $p < 0.000$

#### 4.7.2 Bootstrapping method (Indirect Effect)

The mediating effect of organizational commitment, job satisfaction, and job involvement in the relationship between HRM practices and service quality were tested using a bootstrapping method. Specifically, bias-corrected bootstrap method was applied using 2,000 bootstrap samples and 95% confidence intervals.

According to the results of bootstrapping procedure, the effect of organizational commitment, job satisfaction, and job involvement as mediation on the relationships between HRM practices and service quality was supported with  $p \text{ value} = p < 0.000$  for all mediation relationship, which providing support to Hypothesis 8, hypothesis 9 and hypothesis 10. The result of bootstrapping shown in Table 4.41.

Table 4.41: Bootstrap Results: Standardized Indirect Effect

Structural Path	Estimate		SE	95% Confidence interval		P.Value	Decision based on test significance
	USD	SD		Lower	Upper		
HRM→OC→SQ	.38	.25	.085	.051	.251	.020	supported
HRM→JS→SQ	.18	.14	.057	.057	.211	.012	supported
HRM→JI→SQ	.084	.060	.026	.018	.103	.020	supported

Note: HRMp = HRM practices; OC = Organizational Commitment; SQ = Service Quality; JS = job Satisfaction; JI = Job Involvement; USD = Unstandardized; SD = Standardized.

#### 4.7.2.1 Proportion of Mediation

The mediations' proportion such as the relative the indirect size compared to the direct pathways could be figured out by comparing the importance of the indirect to total (direct plus indirect) path coefficients (Iacobucci, Saldanha & Deng, 2007), This could be accomplished by utilizing the following equation. This formula was used in previous studies by Mostafa (2013).

$$\text{Proportion of Mediation} = \frac{a \times b}{(a \times b) + c}$$

##### 4.7.2.1.1 Proportion of Mediation of Organizational Commitment on the Relationship between HRM Practices and Service Quality

Table 4.42 shows the coefficient of the indirect path of HRM practice to service quality via organizational commitment that equaled to 0.135 (0.54× 0.25), and significant due to p-value was 0.002 (see Table 4.41). The ratio of indirect effect to total effect was 0.20 as shown in Table 4.42. This indicates that 20 percent of the variance of service quality explained by both HRM practices and the mediation path of

organizational commitment. Therefore, there was a partial mediation of organizational commitment between HRM practices and service quality, which providing support to hypothesis 8.

#### **4.7.2.1.2 Proportion of Mediation of Job Satisfaction on the Relationship between HRM Practices and Service Quality**

Table 4.40 shows the standardized path coefficients from HRM practices to job satisfaction, and from job satisfaction to service quality are significant. As shown in Table 4.42, the coefficient of the mediation path of job satisfaction between HRM practice and service quality is 0.119 ( $.44 \times 0.27$ ) and was significant due to p-value was 0.012 (see Table 4.41). The ratio of indirect effect to total effect was 18.6 as shown in Table 4.42. This indicates that 16.6 percent of the variance of service quality explained by both HRM practices and the mediation path of job satisfaction. Therefore, there was partial mediation of job satisfaction between HRM practices and service quality, which providing support to hypothesis 9.

#### **4.7.2.1.3 Proportion of Mediation of Job Involvement on the Relationship between HRM Practices and Service Quality**

Table 4.40 shows the standardized path coefficients from HRM practices to job involvement, and from job involvement to service quality are significant. As shown in Table 4.42, the coefficient of the mediation path of job involvement between HRM practice and service quality is 0.045 ( $0.32 \times 0.12$ ) and was significant due to the p-value was 0.020 (see Table 4.41). The ratio of indirect effect to total effect was .083 as shown in Table 4.42. This indicates that 8.3 percent of the variance of service quality explained by both HRM practices and the mediation path of job involvement. Thus, there was

partial mediation of job involvement between HRM practices and service quality, which providing support to hypothesis 10.

Table 4.42: Proportion of Mediation Effect of Organizational Commitment, Job Satisfaction and Job Involvement Between HRM Practices and Service Quality

1 Indirect Effect	2 HRM→SQ	3 HRM→ Attitudes (a)	4 Attitudes→ SQ (b)	a*b	a*b+c	Ratio of Indirect- to Total Effects
HRM→ OC → SQ	.52	.54	.25	0.135	0.655	0.20
HRM→JS→ SQ	.52	.44	.27	0.119	0.639	0.186
HRM→ JI → SQ	.52	.32	.12	0.0384	0.558	0.083

Note: HRM = Human Resource Management Practices; OC = Organizational Commitment; JS = Job Satisfaction; JI = Job Involvement; SQ = Service Quality.

#### 4.8 Final Structural Model

Figure 4.8 below is the final structural model for this study. It is based on the analysis results that have been discussed in previous section 4.7. The analysis result shows that there is a positive and significant relationship between HRM practices and service quality (hypothesis 1). The analysis result also shows that there is a positive and significant relationship between HRM practices and organizational commitment (hypothesis 2). In addition, the analysis result shows that there is a positive and significant relationship between HRM practices and job satisfaction (hypothesis 3). Furthermore, the analysis result shows that there is a positive and significant relationship between HRM practices and job involvement (hypothesis 4). Moreover, the analysis result shows that there is a positive and significant relationship between organizational commitment and service quality (hypothesis 5). The analysis result also shows that there is a positive and significant relationship between job satisfaction and

service quality (hypothesis 6). Finally, the analysis result shows that there is a positive and significant relationship between job involvement and service quality (hypothesis 7). In addition to direct relationship, the analysis results also show that the relationship between HRM practices and service quality were partially mediated by organizational commitment (hypothesis 8), job satisfaction (hypothesis 9) and job involvement (hypothesis 10). Table 4.43 provides a summary of the hypotheses testing.

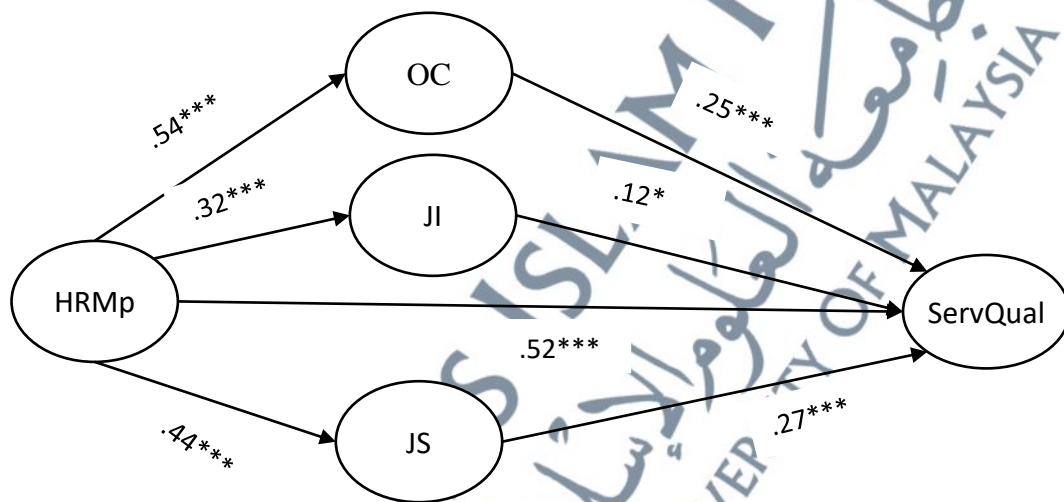


Figure 4.8: The Final Structural Model with Standardized Paths Estimates

Note: Model Goodness of Fit: ( $\chi^2 = 2.834$ ,  $DF=2,000$ ,  $\chi^2/df = 2.834/2,000 = 1.42$ ,  $p < 0.000$ ),  $CFI=0.94$ ,  $SRMR = 0.030$ ,  $RMSEA = 0.042$ )

Table 4.43: The Results of Hypotheses Testing

No.	Hypothesis	Result
1	HRM practices is positively related to service quality	Supported
2	HRM practices is positively related to organizational commitment	Supported
3	HRM practices is positively related to job satisfaction	Supported
4	HRM practices is positively related to job involvement	Supported
5	Organizational commitment is positively related service quality	Supported
6	Job satisfaction is positively related to service quality	Supported
7	Job involvement is positively related to service quality	Supported
8	Organizational commitment mediates the relationship between HRM practices and service quality	Supported (Partial Mediation)
9	Job satisfaction mediates the relationship between HRM practices and service quality	Supported (Partial Mediation)
10	Job involvement mediates the relationship between HRM practices and service quality	Supported (Partial Mediation)

#### 4.9 Chapter Summary

This chapter has explained the results from data analysis including the response rate, the respondent's demography and profile, the statistical assumptions, exploratory factor analysis, confirmatory factor analysis and the structural model. The next Chapter Five will provide a discussion about findings of this study.