CHAPTER 4

DATA ANALYSES

4.1 Introduction

This study aims to investigate the effect of leader-member exchange and organization learning Culture on Human Resource Management and employees' job satisfaction among public sector employees in the Sultanate of Oman. More specifically, the study attempted to investigate the effect of an organizational learning culture (OLC) and leader-member exchange relationship (LMX) on human resources management (HRM), which consist of compensation, reward and training, Work-life balance, career development and job satisfaction. This chapter presented a detailed description of the method used to analyse the results of the tables, procedures and statistical results. It also presented the analysis results of the respondents' demographic data collected.

The researcher performed several statistical analyses on the collected data to answer the research questions. First, The researcher used descriptive analysis of the study samples as a first step to discovering the missing data, extreme and outlier data using SPSS statistical program. Moreover, The researcher verified the normal distribution of the data. In the second step, The researcher conducted confirmatory factor analysis (CFA) of the first and second order using AOMS statistical program. According to Gopal (2017), Confirmatory factor analysis (CFA) measures whether a set of constructs are influencing responses predictably. For heterogeneous construct, (multiple factors), "hidden" factors can be determined and split into four factors using

Factor Analysis. The concept of reliability assumes unidimensionality, thus, allowing us to undertake further tests through the use of dimensionality. Unidimensionality (homogeneity) implies items measure a single latent trait or construct. If this assumption is violated, it does cause a significant underestimate allowing us to undertake further reliability tests. Factor analysis is a commonly used tool to extract a smaller set of underlying factors that summarizes the essential information of a large number of variables.

In the third step, the researcher used Structural Equation Modeling (SEM) to test the complicated statistical relations between the study variables by describing and analyzing all variables (independent, mediator, and dependent variables). SEM enables the researchers to simultaneously analyse complex pathways with multiple dependent variables and links directly with indicators (both reflective and formative). SEM is often the term advanced version of general linear modelling procedure. It combines factor analysis with linear regression modelling to allow statistical examination of theory-based-latent variables by measuring directly observable indicator variables. Also, SEM evaluates the fit of the overall measurement model as well as the strength and significance of the relationship (paths) between exogenous/endogenous variables. Moreover, SEM sheds light on the theoretical causality of relationships between latent and observed variables and helps the researchers decide whether to accept or reject hypothesized relationships (Gopal,2017).

4.2 Demographic Background of Respondents

Table (4.1) shows that most respondents participated in this study. Males were (71.2%, n = 405), while females were (28.8%, n = 164). Table (4.1) details showed that males outnumbered their female counterparts. This gender imbalance in the sample

reflected the real situation of the public sector employees in the Sultanate of Oman in the different Ministries.

Table (4.1) illustrates the information about respondent's academic qualifications, table (4.1) shows the majority of respondents have a bachelor order (42.5%, n = 242), while 29.3 % (n = 167) have a master order and 13.2% (n=75) have their diploma. Furthermore, 7.9% (n = 45) have a high secondary, while 7% (n =40) completed their PhD.

Table (4.1) shows the participants' experience level; it was revealed that most (29%, n = 165) have work experience of more than 20 years. Followed by 24.1% (n =137) who have an experience between 11 to 15 years. Moreover, the analysis also explains that 22% of the participants (n = 125) have experienced between 16 to 20 years while 21.6% (n = 123) have experienced between 6 to 10 years, and 3.3% (n = 19) have experience from 1 to 5 years.

Table 4. 1: Demographic variable

Variables		N	Percentage
Gender			
	Male	496	73.4
	Female	180	26.6
Experience			
	1-5	20	3.0
	6-10	147	21.7
	11-15	166	24.6
	16-20	148	21.9
	21 and above	195	28.8
Qualification			
	High School	62	9.2
	Diploma	88	13.0
	Bachelor	288	42.6
	Master	191	28.3
	PhD	47	7.0

4.3 Initial Assumptions for Using Structural Equations Model (SEM)

Before starting the main analysis, the process using structural equation models, The researcher should provide an in-depth explanation of the data that The researcher has collected from the study population. This step is crucial because it describes the data and its suitability for analysis, the diversity of the program used and the type of statistical tests used to analyse the data description and answer research questions.

The data for this research use statistical software known as SPSS. SPSS program is a software product used for statistical analysis. According to Ibrahim (2018), SPSS can handle large amounts of data and perform all the analyses covered in the text. The program, called Statistical Package for the Social Sciences, was released in 1968 and quickly became one of the most widely used statistics programs in the social sciences, including in healthcare, government, market research and surveying. SPSS was chosen because of its compatibility with most other software packages and user-friendliness used for data analysis.

In this chapter, the researcher analyzed the data and made sure that the data followed a normal distribution (Normality test) and that the data was without missing values and outliers. He also ensured no Multicollinearity and that the data were characterized by Homoscedasticity & Linearity. Below are the steps used in this study to analyse the data.

4.3.1 Data Screen

Data screening is mandatory to avoid encountering problems at a later stage of analysis and to improve the model result (Gallagher *et al.*, 2008). Particularly in this stage, it is purposely to ensure that the data had been transcribed efficiently by looking at the inconsistent responses by checking the missing and outliers data to confirm the data had normal distribution (Pallant, 2011). Additionally, it is considered a critical first

step when dealing with multivariate statistical techniques to certify that the data entered are error-free (Hair *et al.*, 2010). Data screening was utilized by detecting any 'out of range values' using the 'descriptive' and frequencies commands through Statistical Package for Social Sciences (SPSS) version 22.0.

As previously explained in Chapter Three, due to the circumstances accompanying the coronavirus pandemic, the questionnaire was delivered electronically and randomly; 593 respondents were obtained from the research society. The final sample size (569) exceeds the minimum sample size required to analyse the research framework. Since the original dataset contained the data type string depicting the responses captured based on a Likert scale that ranged from strongly disagree to strongly agree. It is needed to be converted to a digital data type ranging from 1 for strongly disagree to 5 for strongly agree to facilitate the SEM using AMOS package. The researcher used five Likert scales to give respondents varied choices from different alternatives, consequently increasing the scale's reliability. According to Gopal, 2017, Diversity in response is vital in reliability analysis. When there are many options for respondents, and they answered variably, that would increase the reliability value. Therefore, the researcher employed this scale (1-5) to give respondents various options and to obtain high-reliability scores. The respondents' demographic profile is explained in detail in the following section.

4.3.2 Normality Test

Normality, the fundamental assumption in data analysis, refers to the shape of the data distribution for an individual metric variable and its correspondence to the normal distribution. Hair, Black, Babin, and Andrson (2010) term it the benchmark for statistical methods. The variation from the normal distribution needs to be small. These tests resulting from the analysis are invalid for significant deviations. For large

variations, There are several ways to describe the distribution if it differs from the normal distribution.

In other words, normality for each variable may be checked in several ways, such as using a histogram with a normality plot and the Kolmogorov–Smirnov, skewness and kurtosis value. As Kolmogorov–Smirnov normality test is susceptible, standard skewness and kurtosis are adapted in this study since skewness and kurtosis are among the most popular approaches in describing the shapes or distribution of a data set.

Skewness looks at the distribution balance, whether it is centred (symmetric) or it shifted to the left or right. It measures the symmetry of distribution, and skewness values falling outside the range of -2 to +2 indicate a substantially skewed distribution (Hair et al., 2010). Kurtosis, a measure of pawedness or flatness of a distribution compared to the normal distribution, has a recommended range from -7.0 to +7.0, as per the recommendation of Coakes and Steed (2007).

4.3.3 Normality Test for (OLC & LMX)

Table (4.2) shows that all the results of skewness and kurtosis tests of the mediator variable are normal in the distribution because all values are between (-2, +2). The skewness value for Leader-member exchange (LMX) is (-0.266), and the kurtosis value is (-0.794), while the standard deviation did not exceed plus or minus 7. Also, the skewness results are all positive, which means that the skewness coefficient indicated that the data are curved to the left. These results prove that the data of the independent variable are of high quality and valid for the statistical analyses.

On the other hand, the skewness value for Organizational Learning Culture (OLC) is (0.165), and the kurtosis value is (-0.887), while the standard deviation did not exceed plus or minus 7. Also, the skewness results are all positive, which means

that the skewness coefficient indicated that the data are curved to the left. These results prove that the data of the independent variable are of high quality and valid for statistical analyses.

Table 4. 2: Normality test of Skewness and Kurtosis for independent variables

Variables		Mean	Std. Deviation	Skewness	Std. DeviationError	Kurtosis	Std. DeviationError
Independent variables	Leader-member exchange (LMX)	3.614	.728	-.266	.097	-.794	.195
	organizational learning culture (OLC)	2.995	.958	.165	.097	-.887	.195

The histogram (4.1) for the independent variables showed no large deviation in the data. Most scores fall within the normality threshold, meaning the data were normally distributed and can be convincingly used statistically for scientific research.

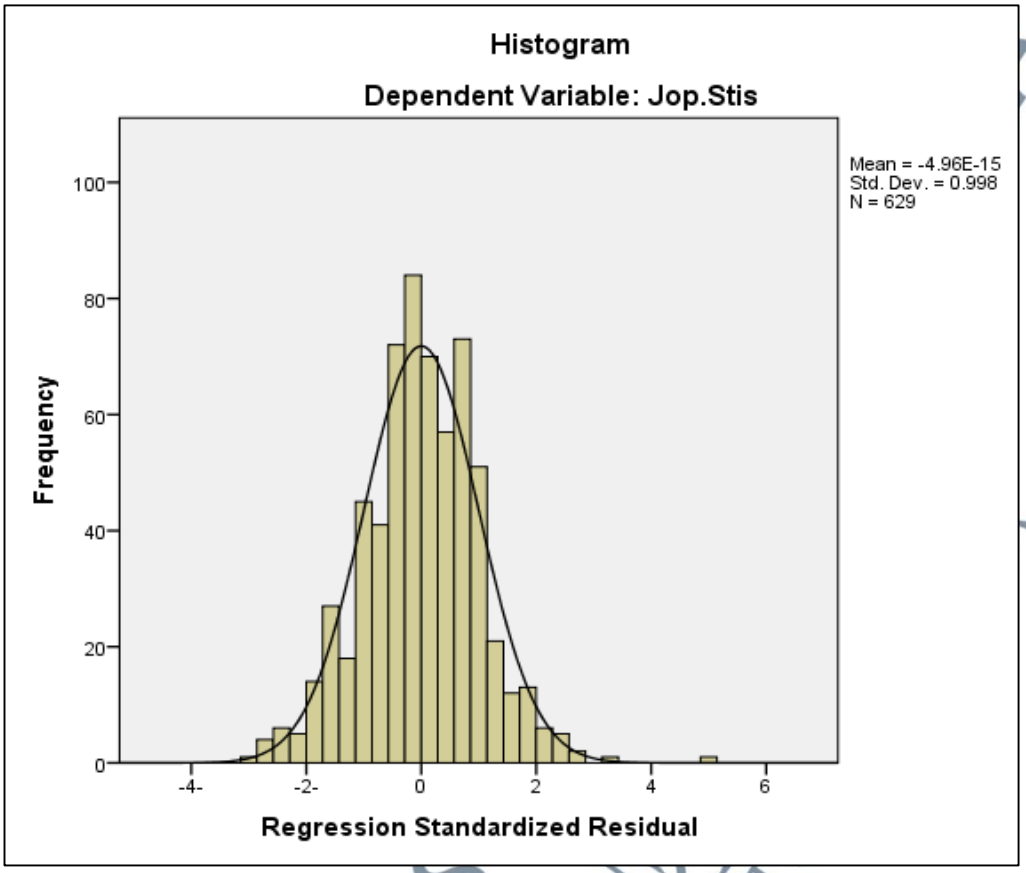

Figure 4. 1: Normal Distribution (OLC & LMX)

4.3.4 Normality Test for (HRM) and (Jop Satisfaction)

Table (4.3) shows that all the results of skewness and kurtosis tests of the mediator variable are normal in the distribution because all values are between (-2, +2). The skewness value for the mediator dimension of compensation, Rewards and training is (0.193). The kurtosis value is (-0.980), while the skewness value for the dimension of career development is (-0.345) and the kurtosis value is (-0.310), and the skewness value for the dimension of work-life balance is (-0.246), and the kurtosis value is (-0.687). Additionally, the standard deviations for all dimensions are not (+7) or (– 7). Also, The skewness value for the dependent variable (Job satisfaction) is (-0.293), the kurtosis value is (-0.901), and the standard deviations for the independent variable are

not (+7) or (– 7). This implied that the data were normally distributed and no severe violation of skewness and kurtosis was observed. Therefore, the data meet the requirement of further statistical analyses.

Table 4. 3: Normality test of Skewness and Kurtosis for mediator variable (HRM) and Job Satisfaction (J Sati)

Variables		**Mean**	**Std. D**	**Skewness**	**Std. Deviation Error**	**Kurtosis**	**Std. Deviation Error**
Mediator Variable*	(Cop, R & T)	2.814	1.125	.193	.097	-.980	.195
	(HRM-CD)	3.276	.906	-.345	.097	-.310	.195
	(HRM-WLB)	3.930	.665	-.246	.097	-.687	.195
	Job Satisfaction (Jop satisfaction)	3.607	.859	-.293	.097	-.901	.195

*Human Resources Management (HRM) and Job Satisfaction

As discussed previously, this study attempted to investigate the effect of leader member-exchange relationship (LMX) and the organizational learning culture (OLC) on human resources management (HRM), which consists of compensation, reward and training, work-life balance, career development and job satisfaction.

A histogram test was used to check the data normality assumption of the regression model. It showed the normality of data distribution. Figure (4.2) indicates that there is no significant deviation in the data, and the majority of the scores fall within the normality threshold, which means the data were normally distributed and can be convincingly used statistically for scientific research.

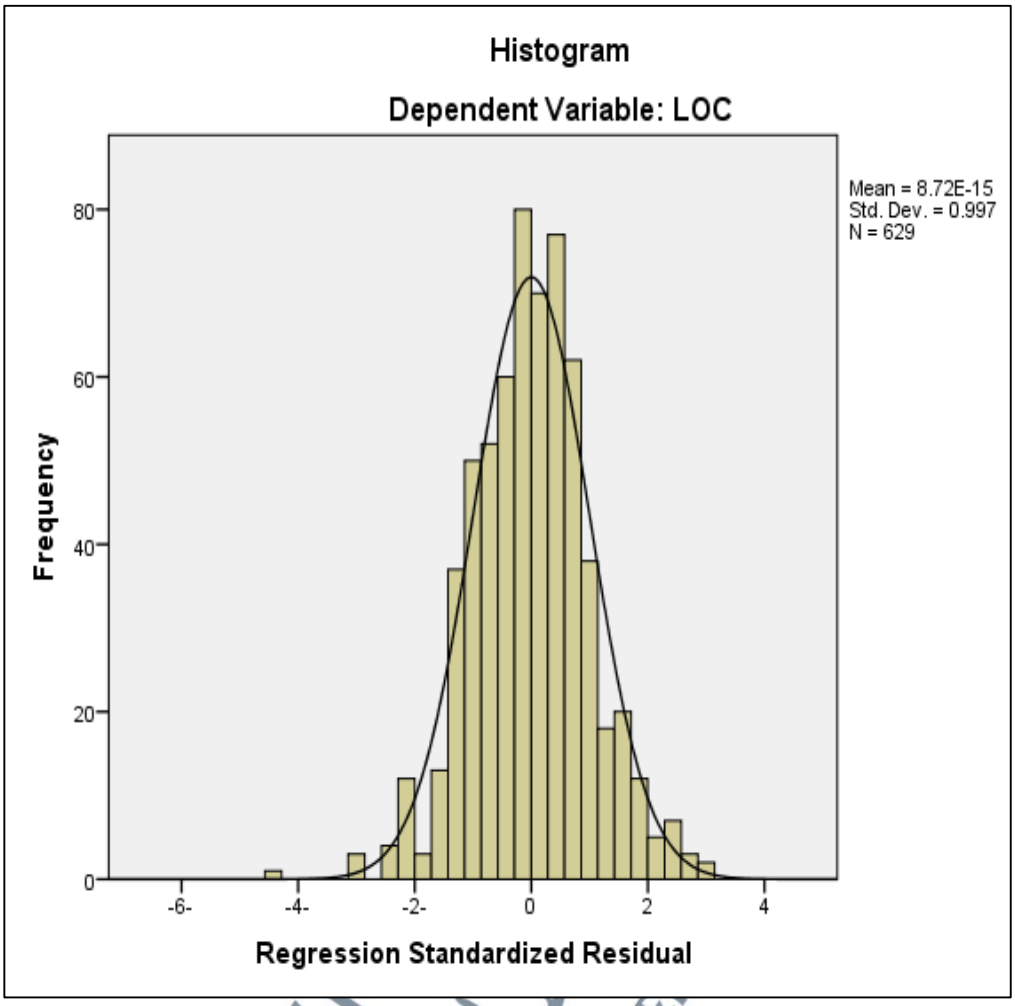

Figure 4. 2: Normal Distribution (HRM) and job satisfaction 4.3.6 Missing Data

Missing data issues are a rule rather than an exception in quantitative research. Missing values exist when data consist of various codes to show a lack of response, resulting in partial information loss (Schafer and Graham, 2002). Dong and Peng (2013) indicated that a missing rate of 15% to 20% was communal in psychological and educational research.

In this study, the researcher distributed the questionnaire electronically to the research society due to the circumstances accompanying the Covid-19 pandemic. The absence of missing data characterizes the electronic questionnaire, and that is because

the respondent cannot send his response in the event of missing data. Therefore, there are no missing values in the current data at all.

4.3.7 Outliers

Outliers affect the statistical research treatments, and if the researcher does not treat the outliers or delete them will obtain inaccurate results. According to Abdul Salam, 2006 reducing or permanently eliminating outliers has a positive effect on getting logical results that contribute to achieving the study objectives. Outliers are "cases in which the values are much greater or less than the rest of the cases in the data." (Ibrahim, 2018. p. 182).

Some statisticians attribute the reasons for the existence of outliers in the data to a set of reasons, including the errors that occur when entering data by the researcher and the responses provided by the respondents while answering. Statisticians have listed some ways to deal with outliers, depending on the variable's value in the study. If the variable is not essential or not what is intended for the study, then the outliers should be deleted, but they can be preserved if the outliers are part of the intended study sample and have an effect on the sample size and statistical treatments (Gopal, 2015).

Outliers are important to give the accurate meaning of the research data. Treating the issue of outliers is very significant in hierarchical regression because outliers represent cases whose scores are substantially different from all the others in a particular data set (Byrne, 2010). This assumption is essential to assess because it can influence the parameter estimates (Tabachnick and Fidell, 2007). Its asses the assumption based on the assessment of multivariate outliers. Univariate outliers within continuous variables are cases with z scores above 3.29 (Tabachnick & Fidell, 2007). Because the data were already converted to z scores, numbers above 3.29 were easily detected simply by looking at the range of the data. Removal of the univariate outliers

did not significantly improve skewness and kurtosis values, so they were left in the dataset.

Pallant (2013) suggests further investigating the Cook ‘s Distance value of the identified cases before taking any action. Cook ‘s Distance value provides diagnostics around whether those cases have any undue influence on the results.

The cases with Cook ‘s Distance values larger than 1 constitute a potential problem (Tabachnick and Fidell, 2007). An inspection of the value of Cook ‘s Distance showed its maximum value is 0.3, which is less than 1, suggesting there are no major problems and, therefore, the ten cases were retained (Pallant, 2013).

After analyzing the data, the results showed that the total number of respondents who responded to the questionnaire electronically was 593 employees (males and females) in the public sector in the Sultanate of Oman. After the data analysis to confirm the outliers, the number of respondents whose answers did not meet the required quality was 24 respondents, and they were deleted, so the total number of valid data for canalization was 569. The details of this were clarified in the descriptive analysis of the demographic variables.

4.3.8 Linearity

Linearity is one of the critical steps used for analysing—linearity assumption using to identify nonlinearity in the data, which could result in underestimating the strength of relationships. Ibrahim (2018) illustrates that the extent to which each or both variables deviate from the assumption of a linear relationship affects the size of the correlation coefficient. According to Ibrahim (2018), the extent to which one or both variables deviate from the assumption of a linear relationship affects the size of the correlation coefficient. Gopal (2017) argued that scatterplot diagrams examine the relationships between variables and detect any nonlinearity that could affect the

correlation. The researcher conducted a series of multiple regressions using a studentized (SRED) residual pilot against each of the predicted dependent variables to examine the linearity. Visual inspection of the residual plots showed that the scores were scattered randomly with no distinct pattern, thus, suggesting that this assumption was reasonably met. Finally, the lack of evidence of severe violations of the assumptions justified for the researcher to continue with his analysis and then answer the research questions as mentioned in Chapter One.

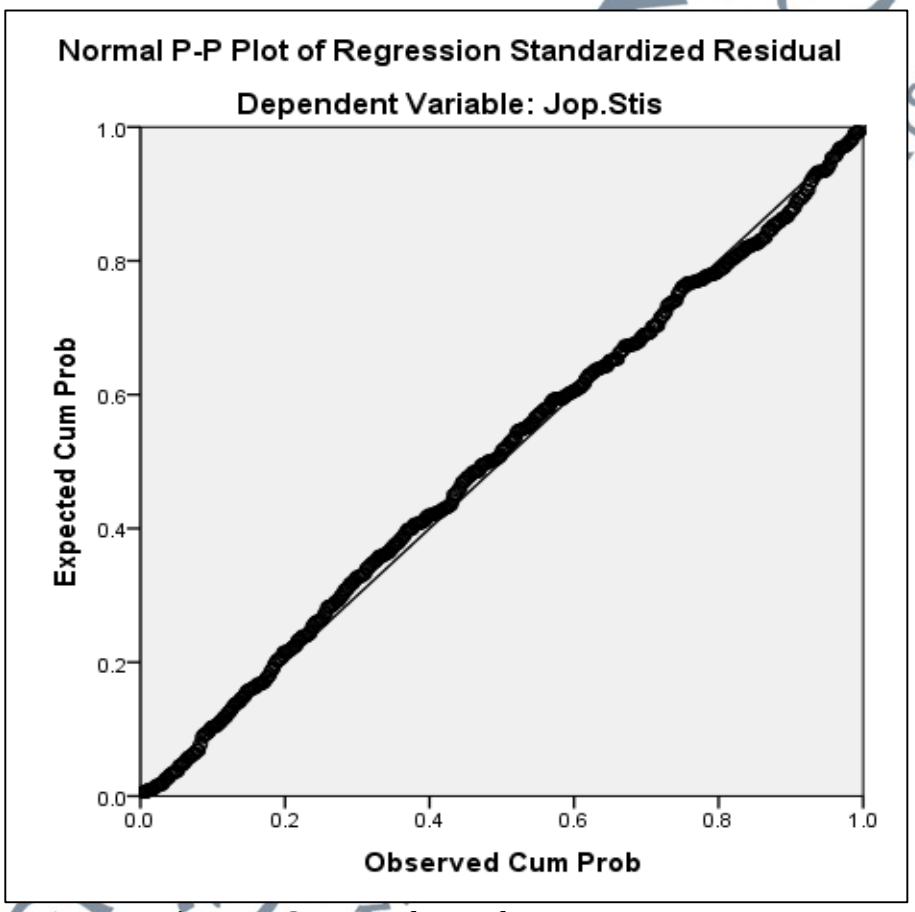

Figure 4. 3: Normal P-P Plot To Linearity Test

Linearity assumption assumes a straight-line association between the predictor and criterion variables, and homoscedasticity assumes that the scores are relatively equally distributed about the regression line. Homoscedasticity assumption and other regression assumptions, such as linearity, were thoroughly assessed through the

examination of scatterplots. It was interpreted through the standardized prediction versus standardized residual regression scatterplot. The presence of a rectangular distribution, one with no recognizable pattern, indicated no homoscedasticity problem in the data. This result suggested that the assumption of homoscedasticity holds for the data used for academic research.

4.3.9 Homoscedasticity

Another significant assumption of multivariate is Homoscedasticity. According to Pallant (2011), Homoscedasticity refers to dependence relationships among variables. The dependent variable's variance level and the predictor variables' range should be the same. This test ensures that the relationships between dependent variables (DV) and independent variable (IV) are fully captured by using an equal variance value at each predictor variable value.

Homoscedasticity assumptions met; the points plot will appear as a rectangular band in a scatterplot. The band will be narrow if the variables have a strong relationship. Pallant (2011) argued that the band becomes broader if the relationship is weaker. Also, if the pattern of points is curved instead of rectangular, the assumption of linearity is violated. Moreover, if the band of points is narrow at one end than at the other, there is a violation of the assumption of homogeneity of variance. Hair et al. (2010) explained that the violations of the assumptions of linearity and homoscedasticity might be correctable through the transformation of one or both variables, similar to the transformations employed for violations of the normality assumption. Figure (4.5) indicates that there is no violation of the assumption of homoscedasticity.

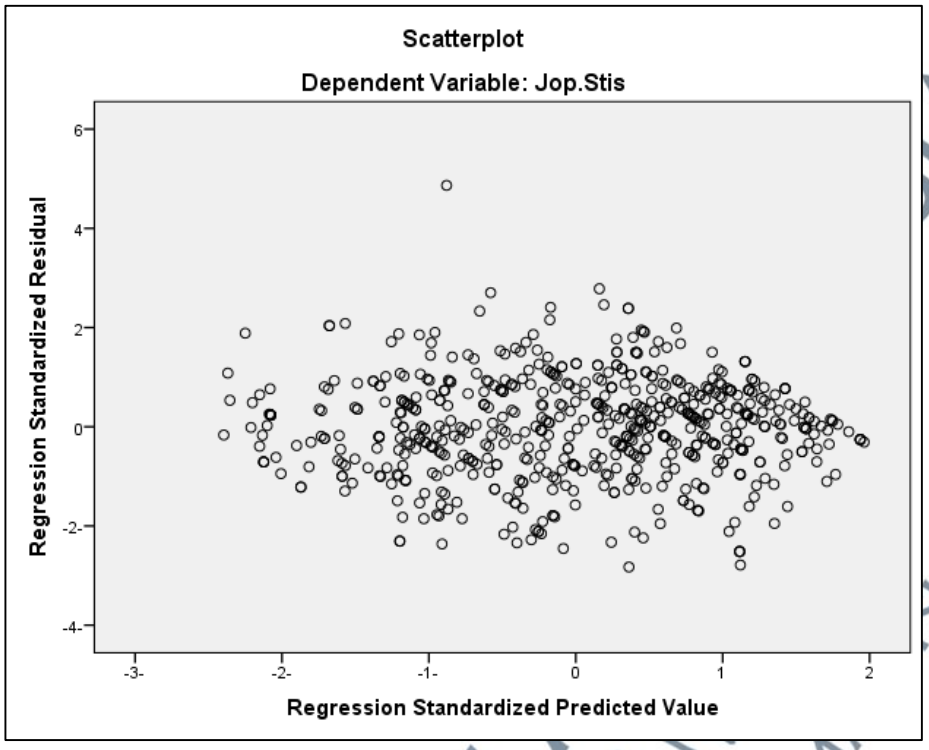

Figure 4. 4: Normal P-P Plot To Homoscedasticity Test

4.3.10 Conclusion

Through the preliminary analyses, the researcher summarized a set of conclusions about the data, such as the missing values and the outliers that would positively affect the accuracy of the data and were treated scientifically and statistically. Descriptive details were given about the current study sample, and the normal distribution of the data that indicated its normality was confirmed through the two measures of skewness and kurtosis. It was valid for advanced statistical analyses by statistical programs. Also, for the linearity of the data, the graphs indicated the linearity and symmetry of the data. For the research variable stability, the result of the internal consistency according to the Cronbach Alpha test summarized an excellent result. Therefore, the researcher can start practical analyses to answer the study questions.

4.4 Confirmatory Factor Analysis (CFA)

confirmatory factor analysis is one of the analyses used to verify the construct validity of various measures built-in light of scientific theories based on previous studies. Therefore, these analyses are based on agreed indicators and standards for explaining and extracting results, judging them and evaluating their quality (Gopal, 2017). There are two types of confirmatory factor analysis. The first type is the first order of the confirmatory factor analysis, also called non-hierarchical or normal confirmatory factor analysis. It assumes one, two, or several eigenvalues and relates with its own measured indicators. The second type is the second order of the confirmatory factor analysis, called hierarchical. In this study, The researcher did not limit to the first order of the confirmatory factor analysis only. He introduced the second-order confirmatory factor analysis (or the hierarchal confirmatory factor analysis) to compare it with the explanatory model the researcher is studying. The hierarchical confirmatory factor analysis distinguishes the variables items into hierarchical ranks and levels, adding coherence between the concept's disparate components (Gopal,2017). Moreover, the researcher relied on many indicators to prove the quality of the proposed model. Accordingly, the researcher must explain in detail the indicator's quality and standards and the evidence of the construct validity, which are considered vital to interpreting the results and the researcher's outputs in this type of analysis.

4.7.1 The Quality Indicators in confirmatory factor analysis

As explained previously, the confirmatory factor analysis is one of the analyses used to verify the construct validity of various measures built-in light of scientific theories Figured based on previous studies. Therefore, these analyses are based on agreed indicators and standards for explaining and extracting results, judging them and evaluating their quality (Gopal, 2017).

Two conformity quality indicators are considered the most widespread rankings. First: Indicators of absolute conformity fit the model on a general level to proposed model. Second, the Comparative fit indicators estimate the proportional improvement in the assumed model proposed by the researcher (Ibrahim, 2018).

The analyses of this study relied on these standards and indicators that the researcher will extract from the AMOS statistical program to judge the quality of the confirmatory factor analysis and other structural analyses. It is important to accurately clarify these indicators and standards to be a reference for the researcher in judging the quality of the models, structural equations and statistical analyses. Table 4.16 shows the most important quality indicators, which depended on the confirmatory factor analysis and the structural modelling.

Chi-square (CMIN) is one of the most important indicators of good fit. It is used to evaluate the hypothetical, theoretical model, and due to the sensitivity of this indicator to the sample size, it is suitable for small samples. This indicator will be rejected in the cases of large samples (Gopal, 2017). The high value of the Chi indicator indicated that the internal matrix included in the analysis resulting from the sample is different from the matrix obtained from the analysis. And when there is a statistically significant critical value (P), this indicates a misfit of the specified model with the sample data. While the low value of chi-square, accompanied by the absence of statistical significance, indicated that there are no fundamental differences between the two matrices. This leads to a judgment that the model matches the specific data and their fit, and the value of zero indicates an exact fit of the model (Hassan & Abdel Fattah, 2013).

To accept the actual model of the estimated model for the data under test, the result of the Chi-square must be between zero and five, in which zero indicates a perfect

fit, and when the result is close to five, it indicates a weak fit. Also, when the result of the Chi-square is less than two, the quality of the chi-square is high (Ramadas & Satish, 2018). However, in the case of large samples, the chi-square can be used through the Orders of Freedom (DF) by extracting the CMIN / DF square by dividing the Chi-square on the orders of freedom.

The Root Mean Square Error of Approximation (RMSEA) is one of the most critical indicators in this type of analysis. It measures the model's fit for the research community and indicates the extent of the theoretical model quality (Gopal, 2017). The value of the Root Mean Square Error of Approximation (RMSEA) index ranges between zero and 0.1. If the higher result of this indicator is close to zero, it indicates a good fit. In contrast, if the (RMSEA) index value exceeds (0.1), it shows errors in approaching the sample population (Ramadas & Satish, 2018).

According to Gopal (2017), the Goodness of Fit Index (GFI) is an alternative to Chi-square. The value of a Good Fit Index (GFI) is between zero and one; whenever the value of the Good Fit Index (GFI) is equal to one, this indicates an exact fit. The GFI index is used to elaborate the percentage of variance and covariance for the model assumed by the researcher. In other words, to what extent can the hypothetical model provide us with information about the relations or assume or put the analogous model in the research society?

When calculating the Goodness of Fit Index (GFI) and focusing on the number of free parameters in the model, it results in a new indicator called the Adjusted Goodness of Fit Index (AGFI). Adjusted Goodness of Fit Index (AGFI) corrects the value of GFI by decreasing it when the complexity of the model increases.

There are four types of quality indicators for confirmatory factor analysis. First is the normed fit index (NFI). This indicator is used to compare the value of the Chi-

square of the model with the value of the Chi-square for the null model. The NFI value ranges between zero and one. According to Ibrahim (2018), the value of the NFI greater than 0.90 indicates the quality of the model, but some statisticians accept the value greater or equal to (0.95).

Tucker-Lewis Index (TLI) is the second quality indicator for confirmatory factor analysis. Also, it is known as the Non-Normed Fit Index (NNFI). It is used to solve the problems caused by the Normed Fit Index (NFI) because of its sensitivity to the sample size. This indicator considers the orders of freedom and applies them to the hypothetical and the null models. The sample size, less than 500 respondents, weakens the normed fit Index (NFI) result. Statisticians recommend that the value of the non-normed fit index ranges between (0 - 1), and the quality of the index indicates conformity when it exceeds (0.95).

Third: The Incremental Fit Index (IFI) is one of the indicators invented by "Pullen" in 1989. It estimates the proportional improvement in the fitting implemented by the assumed model by the researcher compared with the basic model. The value of the incremental fit index (IFI) is between (0 - 1). When the quality of the index exceeds 0.90, it indicates the fit.

Finally, The Comparative Fit Index (CFI) is a modified form of the Normed Fit Index (NFI). It is considered one of the best indicators based on the comparison. It is based on comparing the Chi-square of the research model to the value of the Chi-square of the independent model. The CFI value ranges from zero (which means no fit) to one (which means there is a perfect fit). When the value of this indicator is more remarkable than (0.90), it confirms the acceptance of the theoretical model.

Table 4. 4: The quality indicators of conformity models

Indicator name	The indicator code	The indicator quality
Chi-Square	CMIN	CMIN**2 >**
Order Of Freedom	DF	
Chi-Square Standard	CMIN/DF	CMIN/DF**5 >**
Root Mean Square Error of Approximation	RMSEA	RMSEA**0.07 >**
Goodness Of Fit Index	GFI	GFI < **0.90**
Adjusted Goodness of Fit Index	AGFI	< AGFI**0.90**
Normed fit index	NFI	NFI**0.95 <**
Tucker –Lewis Index	TLI	TLI**0.95 <**
Incremental Fit Index	IFI	IFI**0.90 <**
Comparative Fit Index	CFI	CF1**0.90 <**

Radwan, (2018)

4.7.2 Validity

Validity is of great importance in scientific studies and research. There are various types of validity, but construct validity is the most crucial for the researcher using the confirmatory factor analysis. Through construct validity, the researcher can assess the extent that the theoretical model accurately fits the actual data of the phenomenon studied. Construct validity has been divided into Concurrent Validity and Discriminant Validity (Al-Barek et al., 2013).

The Concurrent validity elaborated on the extent of participation and closeness of the studied variable items with each other in the same variable. The highest loading values of the indicators that measure the item are evidence for Concurrent validity (Gopal, 2017). While the discriminant validity is to differentiate each variable from the other variable, and they are not related to each other, each variable achieves and measures only the goal for which it was set and does not relate to other variables. Accordingly, achieving discriminant validity is through the absence of

multicollinearity, which indicates that the variables are not similar and each variable represents itself (Al-Barek et al., 2013).

For the researcher to accurately complete the confirmatory factor analysis (first and second order), extracting the validity results and highlighting the validity models removed from the confirmatory factors analysis is important.

4.8 Confirmatory Factor Analysis of (LMX) and (OLC)

The researcher entered the collected data into the AMOS program following the scientific steps in the analysis to obtain the confirmatory factor analysis of Leader-member exchange and organisational learning culture. He started with the first-order analysis and then the second-order analysis. After that, the researcher judged the model quality and ensured the construct validity represented Concurrent and discriminant validity. Finally, the researcher compared the two models to decide the best model.

4.8.1 First-Order Confirmatory factor analysis

The researcher entered the data in the AMOS program to obtain the confirmatory factor analysis model first order. The confirmatory factor analysis first order goes through a structured set of steps to extract the results. This type of analysis is considered a cumulative structural analysis, depending on the results extracted from the exploratory factor analysis of leader-member exchange and organization learning culture and the loadings of their eigenvalues according to explained previous results.

The researcher uses the maximum probability method in the confirmatory factor analysis to achieve the maximum possible convergence between the variance and covariance of the model matrix and between the variance and covariance matrix of the measured indicators. Also, this method provides the researcher with accurate estimates of the model parameters when the normal distribution of the data is available.

Additionally, it keeps its outputs' accuracy in case the data deviates from the normal distribution. Also, it provides excellent statistical and conformity indicators to the analysis process not offered by other methods (Gopal, 2017).

The researcher examined the quality indicators starting from the Chi-square value of 575.36 (Acceptable quality). The chi-square value indicated a significant relationship in the proposed model and did not fit the data as required, which is considered a positive result of the model. Research previously suggested that the value of the Chi-square is very sensitive for large samples. The order of freedom value was 175 (Excellent quality), and the statistical significance value (P value) was 0.001, making the researcher decide there was no quality for the proposed model of the first order. As previously mentioned, Chi-square is not considered in the case of large samples as it is in the current study; however, it is possible to benefit from the Chi-square and orders of freedom to extract the standard Chi-square by dividing the Chi-square on the degree of freedom. The result of the standard Chi-square was 3.288 (Excellent quality), and since the result did not exceed five, the result confirms the acceptance of the actual model for the estimated model.

It is also worth noting that the Root Mean Square Error of Approximation (RMSEA) result was 0.058 (Excellent quality). This result indicated a fit and quality of the estimated construct model for the research sample data. All the indicators showed excellent qualities except the CMIN, which showed acceptable quality. The Adjusted Goodness of Fit Index (AGFI) value is 0.9 (Excellent quality); the Normed fit index (NFI) is 0.958 (Excellent quality), and the Comparative Fit Index (CFI) is 0.97 (Excellent quality). The Goodness of Fit Index (GFI) value is 0.924 (Excellent quality). The Tucker-Lewis Index (TLI) is 0.964 (Excellent quality). Finally, the Incremental Fit Index (IFI) value is 0.97 (Excellent quality). Through the previous indicators, the

researcher can judge that the proposed first-order model is of high quality, as recommended by the statistical experts.

Table 4. 5: First Order loading indicators of the Leader-member exchange and organizational learning culture (Independent variables)

Indicator code	Quality indicator	The result	The quality
CMIN	CMIN < 2	575.36	Acceptable
DF	-	175	Excellent
CMIN/DF	CMIN/DF < 5	3.288	Excellent
GFI	GFI < 0.90	0.924	Excellent
AGFI	< AGFI0.90	0.9	Excellent
NFI	NFI > 0.95	0.958	Excellent
TLI	TLI> 0.95	0.964	Excellent
IFI	IFI > 0.90	0.97	Excellent
CFI	CFI > 0.90	0.97	Excellent
RMSEA	RMSEA < 0.07	0.058	Excellent

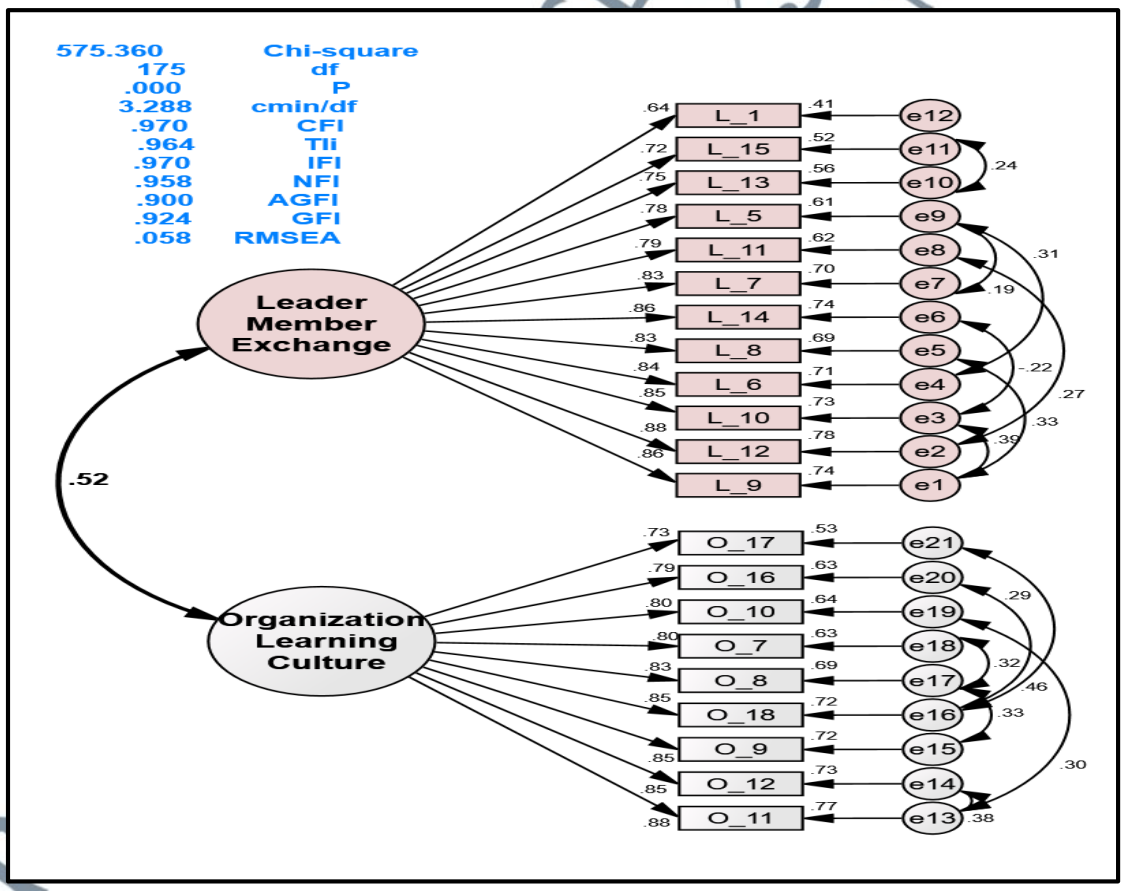

Figure 4. 5: First Order of the Leader-member exchange and organizational learning culture (Independent variables)

After being satisfied with the model based on goodness of fit indices, the researcher moved to analysis of the standardized values, the standard error, the significance, the T-ratio or the critical value (Critical Ratio), and the Squared Multiple Correlations (SML). Table 4.6 shows the total number of the independent variables items was 21 items included in the analysis. Also, the standardized value between the variables and their items exceeded 0.5, which means that the variable was related to its items well. The standardized value ranged between 0.642 -0.882, while the value of the standard error was limited between 0.026 - 0.036. This result indicated that the standard error is not small or close to zero, so it is not significant; moreover, it is not comparable to one, which suggests it is inaccurate.

The results shown in Table 4.6 indicated that the T-ratio, or what is known as the critical value, was greater than 1.964 at a level of significance ($\alpha = 0.05$). Also, table 4.6 shows the entire standard is statistically significant, which indicates the existence of correlational relationships between the items, and they measure only one item. Also, multiple correlation coefficients can be used to indicate the percentage of the variance in the index, which explains to which measured index the item belongs. The multiple correlations factor value ranges from zero to one, and when it is close to one, it is more reliable and has high quality and accuracy. Table 4.6 shows that the correlation coefficients ranged between 18.958 - 38.351, indicating the measured indicators' stability.

Figure 4.5 and Table 4.6 are extracted for the independent variables' first-order confirmatory factor analysis model (leader-member exchange and organizational learning culture). We note that some of the independent variable items entered from the exploratory factor analysis have been deleted from the final first-order confirmatory factor analysis model because the correlation and loadings of these items with the other

items didn't reach 0.5. However, to improve the model, the researcher used the modification indices and linked the standard errors of the items that belong to the same item in the variable. Nineteen items from the independent variables were deleted; 8 items of (LMX) are (2, 3, 4,16,17,18,19,20). Additionally, 11 items of (OLC) were deleted, which are (1,2,3,4,5,6,13,14,15,19,20).

Table 4. 6: First Order Loading indicators of the confirmatory factor analyses of the independent variables

Path analysis			Standardized Regression	Estimate	S.E.	C.R.*	SMC
L M X	→	L_6	0.845	0.975	0.033	29.263	0.714
L M X	→	L_8	0.829	0.985	0.029	34.453	0.688
L M X	→	L_14	0.862	0.975	0.032	30.052	0.744
L M X	→	L_7	0.835	0.987	0.035	28.449	0.697
L M X	→	L_11	0.788	0.874	0.034	25.757	0.621
L M X	→	L_5	0.779	0.879	0.035	25.216	0.607
O L C	→	O_12	0.852	1	0.026	38.351	0.727
O L C	→	O_9	0.848	0.97	0.033	29.362	0.719
O L C	→	O_18	0.847	0.91	0.031	29.19	0.717
O L C	→	O_8	0.832	0.96	0.034	28.025	0.692
O L C	→	O_7	0.796	0.873	0.034	25.951	0.634
O L C	→	O_10	0.797	0.864	0.027	31.44	0.636
O L C	→	O_16	0.794	0.844	0.032	26.115	0.631
L M X	→	L_1	0.642	0.765	0.04	18.958	0.413
L M X	→	L_15	0.719	0.803	0.036	22.207	0.517
L M X	→	L_13	0.749	0.862	0.036	23.668	0.561
L M X	→	L_9	0.862	1			0.743
L M X	→	L_12	0.882	0.995	0.032	31.505	0.778
L M X	→	L_10	0.854	1.015	0.027	37.99	0.73
O L C	→	O_11	0.88	1			0.774
O L C	→	O_17	0.726	0.712	0.032	22.514	0.527

* $\alpha < 0.05$

4.8.2 Second-Order confirmatory factor analysis for the Independent Variables

After the satisfactory result of the first-order measurement model, the researcher examines the second-order to ensure which model best fits the data, as shown in Figure 4.6. Referring to the Model Fit outputs and Figure 4.6, a set of analyses can be

summarized to ensure the quality of the second-order model. The results showed that the Chi-square values 575.36 indicate acceptable quality for the proposed model of the second order because it is susceptible to large samples. Also, the model's degree of freedom (DF) is 175, which is considered excellent. Moreover, the value of the statistical significance of the (P) ratio was 0.001. The Chi-square standard (CMIN/DF) result indicated that its value was 3.288, which is an excellent result as it was less than 5, and accordingly, we judge the acceptance of the second-order model.

In addition, the results of the quality indicators analysis showed the value root mean square error of Approximation (RMSEA) is 0.058; it is high quality and indicates the model quality. The Comparative Fit Index (CFI) is 0.970, and the Adjusted Goodness of Fit Index (AGFI) is 0.90. The Normed Fit Index (NFI) is 0.958, and the Goodness of Fit Index (GFI) is 0.924. The Tucker-Lewis Index (TLI) is 0.964. The incremental fit index (IFI) is 0.970, which fulfils all the quality requirements and indicates the excellent quality of the proposed model.

Table 4. 7: Second Order loading indicators of independent variables

Indicator code	Quality indicator	The result	The quality
CMIN	CMIN < 2	575.36	Acceptable
DF	–	175	Excellent
CMIN/DF	CMIN/DF < 5	3.288	Excellent
GFI	GFI < 0.90	0.924	Excellent
AGFI	< AGFI0.90	0.9	Excellent
NFI	NFI > 0.95	0.958	Excellent
TLI	TLI> 0.95	0.964	Excellent
IFI	IFI > 0.90	0.97	Excellent
CFI	CFI > 0.90	0.97	Excellent
RMSEA	RMSEA < 0.07	0.058	Excellent

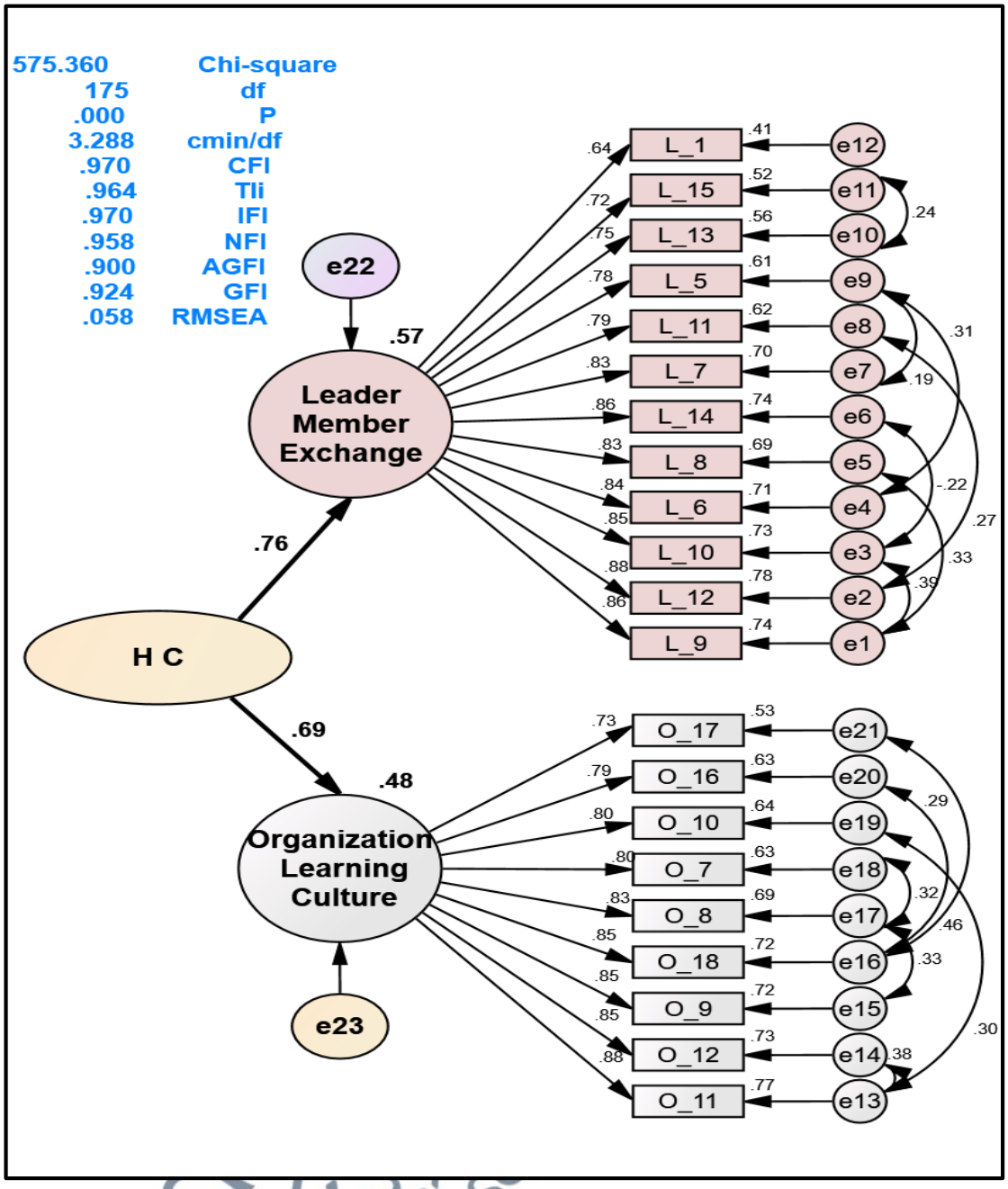

Figure 4. 6: Second Order of the Leader-member exchange and organizational learning culture (Independent variables)

The results presented in Table 4.8 show that the standardized estimates between the items and its variable ranged between 0.642 - 0.882, which means that the item correlated with its factor very well.

The results showed that the standard error value ranged between 0.04 - 0.036, and the critical value exceeded its average of 1.964 at the significance level ($\alpha = 0.05$). According to the results, the researcher concluded that the model is accurate in giving results related to statistical significance. Moreover, all the standardized estimates are statistically significant, indicating a relationship between the item and its variable. The multiple correlation coefficient values ranged between 0.413 - 0.778, leading to the judgment that the second-order model has good stability.

Table 4. 8: First Order Loading Indicators for independent variables

Path analysis			Standardized Regression	Estimate	S.E.	C.R.*	SMC
H C	→	O L_C	0.691	1			0.478
H C	→	L M X	0.756	1			0.571
L M X	→	L_6	0.845	0.975	0.033	29.263	0.714
L M X	→	L_8	0.829	0.985	0.029	34.453	0.688
L M X	→	L_14	0.862	0.975	0.032	30.052	0.744
L M X	→	L_7	0.835	0.987	0.035	28.449	0.697
L M X	→	L_11	0.788	0.874	0.034	25.757	0.621
L M X	→	L_5	0.779	0.879	0.035	25.216	0.607
O L C	→	O_12	0.852	1	0.026	38.351	0.727
O L C	→	O_9	0.848	0.97	0.033	29.362	0.719
O L C	→	O_18	0.847	0.91	0.031	29.19	0.717
O L C	→	O_8	0.832	0.96	0.034	28.025	0.692
O L C	→	O_7	0.796	0.873	0.034	25.951	0.634
O L C	→	O_10	0.797	0.864	0.027	31.44	0.636
O L C	→	O_16	0.794	0.844	0.032	26.115	0.631
L M X	→	L_1	0.642	0.765	0.04	18.958	0.413
L M X	→	L_15	0.719	0.803	0.036	22.207	0.517
L M X	→	L_13	0.749	0.862	0.036	23.668	0.561
L M X	→	L_9	0.862	1			0.743
L M X	→	L_12	0.882	0.995	0.032	31.505	0.778
L M X	→	L_10	0.854	1.015	0.027	37.99	0.73
O L C	→	O_11	0.88	1			0.774
O L C	→	O_17		0.712	0.032	22.514	0.527

* $\alpha < 0.05$

4.8.3 Concurrent Validity

The researcher verified the Concurrent validity, as a step of the confirmatory factor analysis steps, through the loading ratio and the extracted contrast. Through the factors loading ratio of the independent variables with its items (see previous Figures (4.6)), it was found that the loading value ranged between 0.642 - 0.882, and this is evidence that the estimates were excellent and did not reach the fusion level or separation from each other.

Moreover, the results of the extracted variance indicating the mean of the square correlation for each item (AVE) exceeded 0.50; the extracted variance ratio for the LMX variable showed 0.651. On the other hand, the extracted variance ratio for the OLC variables is 0.673. According to current results, the researcher judges the strength of the extracted variance for the variables to an excellent order. From the previous results, the researcher concludes that the Concurrent validity indicated the extent of the items' convergence to their variables and that all the items of each independent variable could represent their variable in the best representation.

4.8.4 Discriminant validity

The researcher also examined the discriminant validity of the tested model. Considering Figure (4.6), which showed a correlation matrix between the items with each other, it is observed that all the items were highly correlated with their respective factors. It was found that the correlation between LMX and OLC was 0.522. On the other hand, the lowest correlation was between LMX and OLC. Thus, all the standardized regression was between 0.642 - 0.882, indicating the discriminant validity assumption was met. Also, each of the independent variable’s items correlated with itself at a higher rate than with other items, which is another evidence that the researcher concluded from the discriminant validity.

It was also observed that all the independent variable items belong to the same item, which means they are related to its item only in a greater order than other items. This indicated the absence of duplication and mixing for loading between the items and other items.

It is possible to get a benefit from the extracted variance and the covariance to judge the criterion, which must be the value of the extracted variance greater than the covariance value. The extracted variance (AVE) has been defined as the sum average of the subdivision values of the items with their factor. In contrast, the covariance is defined as the result of the factor's correlation by himself or others multiplied by its value (Hair et al., 2010).

4.8.5 Comparison between the first-order model and the second-order model of LMX and OLC (Independent variables)

The researcher collected the quality and conformity indicators of the two models in Table 4.21 to facilitate the comparison process. After the satisfactory results of the first and second-order measurement models, the researcher compared them to determine which of the both appropriately fit the data. It was found that both the first and second-order models equally fit the data based on the values of Chi-square, (GFI) index, (AGFI) index, NFI Index, (CFI) Index, (TLI) Index, (GFI) Index, (IFI) index and (RMSEA) index. Thus, it can be concluded that none of the models is better than the order according to the goodness of fit indices.

Table 4. 9: A comparison between the first-order model and the second-order model of independent variables

Indicator code	Quality indicator	First order model	Second order mode
CMIN	CMIN < 2	575.36	575.36
DF	-	175	175
CMIN/DF	CMIN/DF < 5	3.288	3.288
GFI	GFI < 0.90	0.924	0.924
AGFI	< AGFI0.90	0.9	0.9
NFI	NFI > 0.95	0.958	0.958
TLI	TLI> 0.95	0.964	0.964
IFI	IFI > 0.90	0.97	0.97
CFI	CFI > 0.90	0.97	0.97
RMSEA	RMSEA < 0.07	0.058	0.058

4.9 Confirmatory factor analysis for (HRM) and (Job Satisfaction)

The researcher dealt with the confirmatory factor analysis of the mediator variable, following the same previous steps in the analysis (first-order analysis and second-order analysis). After that, the researcher ensured the model fit and the constructive validity represented by the Concurrent and discriminant validity. Finally, the researcher compared the two extracted models (first-order and second-order analyses) to decide which was better.

4.9.1 First-Order Confirmatory factor analysis

The researcher analysed the independent variables and included the mediator (HRM) in the confirmatory factor analysis. The researcher is starting this analysis to emphasise what the researcher resulted from the results of the exploratory factor analysis and following the scientific method in the analysis using the statistical analysis program (AMOS).

The researcher examined the quality indicators starting from the Chi-square value of 747.336. The chi-square value indicated a significant relationship in the proposed model; it did not match the data as required, which is considered a positive

result of the model. The researcher previously indicated that the value of the Chi-square is very sensitive for large samples. The degree of freedom value was 193, and the statistical significance value (P value) was 0.001, making the researcher decide there is no quality for the first-order proposed model. As early mentioned, the Chi-square is not considered in the case of large samples as it is in the current field study; however, it is possible to benefit from the Chi-square and orders of freedom to extract the standard Chi-square by dividing the Chi-square on the degree of freedom. The result of the standard Chi-square was 3.872, and since the result did not exceed five, the result confirms the acceptance of the actual model for the estimated model.

It is also worth noting that the RMSEA result was 0.065. This result indicated a match and quality of the fit of the estimated constructive model for the research sample data. The Adjusted Goodness of Fit Index (AGFI) value is 0.878. The Normed fit index (NFI) is 0.915, and the Comparative Fit Index (CFI) is 0.935. The Goodness of Fit Index (GFI) value is 0.907. The Tucker-Lewis Index (TLI) is 0.922. Finally, the Incremental Fit Index (IFI) value is 0.906. Through the previous indicators, the researcher can judge that the proposed first-order model is high quality, as recommended by the statistical experts.

Table 4. 10: First Order loading indicators of (HRM)

Indicator code	Quality indicator	The result	The quality
CMIN	CMIN < 2	747.336	Acceptable
DF	–	193	
CMIN/DF	CMIN/DF < 5	3.872	Excellent
GFI	GFI < 0.90	0.907	Excellent
AGFI	< AGFI0.90	0.878	Acceptable
NFI	NFI > 0.95	0.915	Acceptable
TLI	TLI> 0.95	0.922	Acceptable
IFI	IFI > 0.90	0.906	Excellent
CFI	CFI > 0.90	0.935	Excellent
RMSEA	RMSEA < 0.07	0.065	Excellent

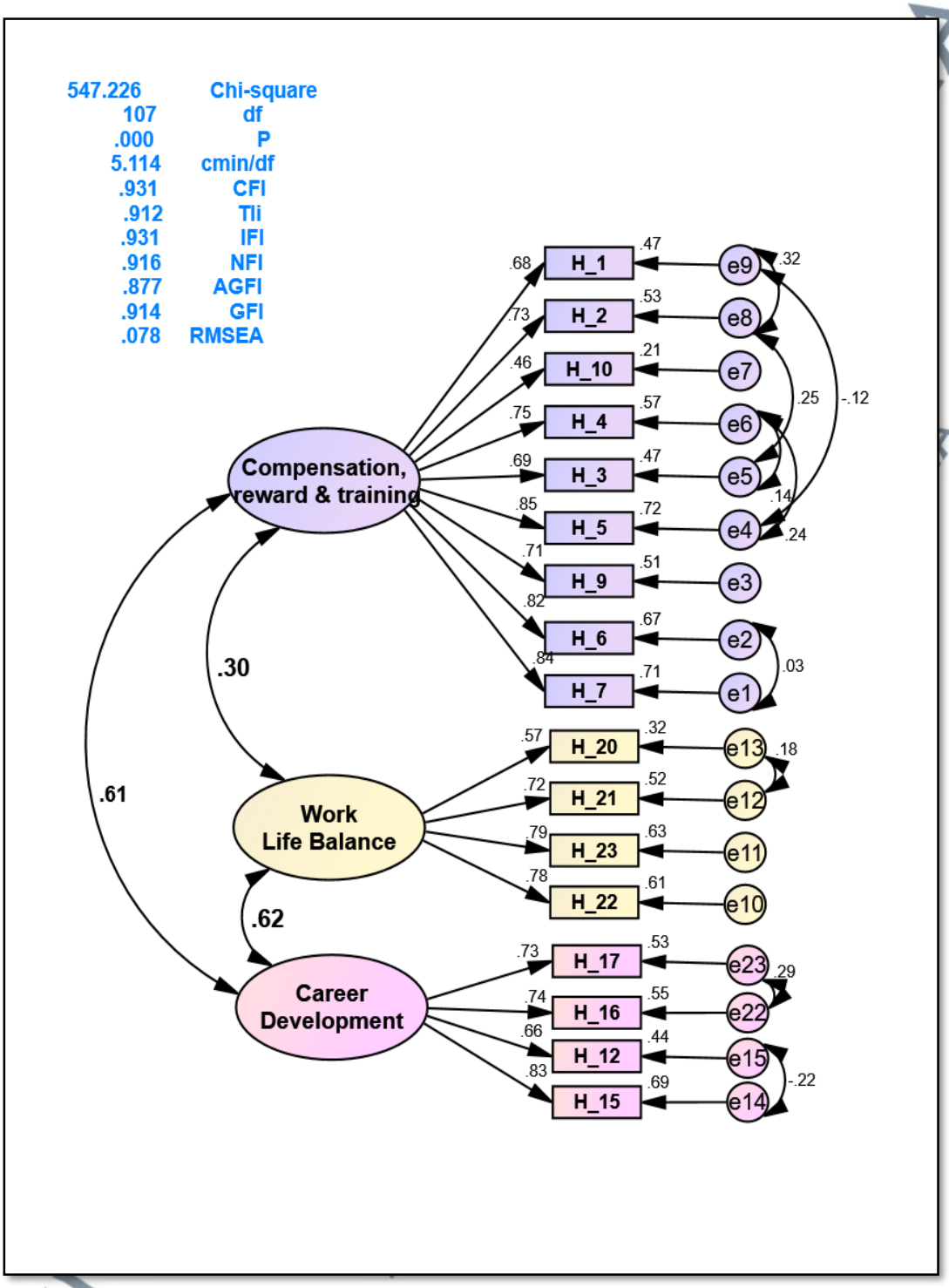

Figure 4. 7: First-order Measurement model of Human Resources Management

After the satisfactory result of the model, as was ensured by the goodness of fit indices, the researcher examined the standardized values, the standard error, the significant level, the t-ratio or the critical value (Critical Ratio), and the Squared Multiple Correlations. Table 4.11 shows the total number of the mediator variables items (which contain three dimensions) and 22 items for three dimensions included in the analysis. Also, the standardized value between the variables and their items exceeded 0.5, which means that the variable was related to its item well. The standardized value ranged between 0.461 -0.849, while the value of the standard error was limited to between 0.034 - 0.096. This result indicated that the standard error is not small but close to zero, so the calculation of the statistical function ends with it. Also, not close to one; this indicates its inaccuracy.

The results shown in Table 4.11 indicated that the T-ratio, or what is known as the critical value, was greater than 1.964 at a level of significance ($\alpha = 0.05$). Also, table 4.11 shows that the entire standardized is statistically significant, indicating the existence of correlational relationships between the items and measuring only one element. Multiple correlation coefficients can also indicate the percentage of variance in the index, which explains to which measured index the item belongs. The multiple correlations factor value ranges between zero to one, and when it is close to one, it is more reliable, quality and accurate. Table 4.11 shows that the correlation coefficients ranged between 0.213 - 0.721, indicating the measured indicators' stability.

Figure 4.7 and Table 4.11 showed the first-order confirmatory factor analysis model for the mediator variable (Human Resource Management); which had three dimensions; compensation, Rewards and Training dimension, Career development dimension and Work-Life Balance. However, to enhance the quality of the model, the

researcher examines the modification index, and some of the errors allow to be correlated based on the suggestion of the modification index.

Table 4. 11: first-order loading indicators for (HRM) and job satisfaction

PATH ANALYSIS			Standardized regression	Estimate	S.E.	C.R.*	SMC
Cop, R & T	→	H_7	0.846	1			0.716
Cop, R & T	→	H_6	0.807	0.88	0.034	25.745	0.651
Cop, R & T	→	H_9	0.718	0.775	0.036	21.286	0.515
Cop, R & T	→	H_5	0.844	0.95	0.036	26.165	0.712
Cop, R & T	→	H_3	0.689	0.738	0.037	19.863	0.475
Cop, R & T	→	H_4	0.745	0.863	0.039	21.844	0.556
Cop, R & T	→	H_10	0.461	0.477	0.039	12.174	0.213
Cop, R & T	→	H_2	0.733	0.798	0.037	21.733	0.538
Cop, R & T	→	H_1	0.697	0.865	0.043	20.042	0.485
HRM WLB	→	H_22	0.779	1			0.607
HRM WLB	→	H_23	0.795	1.238	0.064	19.347	0.631
HRM WLB	→	H_21	0.722	1.136	0.066	17.096	0.522
HRM WLB	→	H_20	0.565	1.038	0.081	12.767	0.32
HRM (CD)	→	H_15	0.843	1			0.711
HRM (CD)	→	H_12	0.667	0.833	0.053	15.796	0.445
HRM (CD)	→	H_17	0.717	0.749	0.044	17.111	0.515
HRM (CD)	→	H_16	0.734	0.844	0.047	18.028	0.538

$\alpha < 0.05$

4.9.2 Second-Order confirmatory factor analysis for (HRM)

As was done in the first-order measurement model, the researcher examines the second-order for comparison using the AMOS program, as shown in Figure 4.8. Referring to the Model Fit outputs and Figure 4.8, a set of analyses can be summarized to ensure the quality of the second-order model. The results showed that the Chi-square value is 750.154, which indicates the lack of quality for the second-order proposed model because it is very sensitive to large samples. Also, the degree of freedom of the model reached 195. Moreover, the value of the statistical significance of the (P) ratio was 0.001. The result of the Chi-square standard indicated that its value was 3.847,

which is an excellent result as it was less than 5, and accordingly, we judge the acceptance of the second-order model.

In addition, the results of the quality indicators analysis showed the value root mean square error of Approximation (RMSEA) is 0.065; it is high quality and indicates to the model quality. The Comparative Fit Index (CFI) is 0.935, and the Adjusted Goodness of Fit Index (AGFI) is 0.871. The Normed Fit Index (NFI) is 0.914, and the Goodness of Fit Index (GFI) is 0.900. The Tucker-Lewis Index (TLI) is at 0.923. The incremental fit index (IFI) is 0.935, which fulfils all the quality requirements and indicates the quality of the proposed model. Some items have been linked together depending on the program recommendations. All the indicators showed excellent qualities except the CMIN, which showed acceptable quality.

Table 4. 12: Second order loading indicators of (HRM) and job satisfaction

Indicator code	Quality indicator	The result	The quality
CMIN	CMIN < 2	750.154	Acceptable
DF	-	195	
CMIN/DF	CMIN/DF < 5	3.847	Excellent
GFI	GFI < 0.90	0.9	Excellent
AGFI	< AGFI0.90	0.871	Acceptable
NFI	NFI > 0.95	0.914	Acceptable
TLI	TLI> 0.95	0.923	Acceptable
IFI	IFI > 0.90	0.935	Excellent
CFI	CFI > 0.90	0.935	Excellent
RMSEA	RMSEA < 0.07	0.065	Excellent

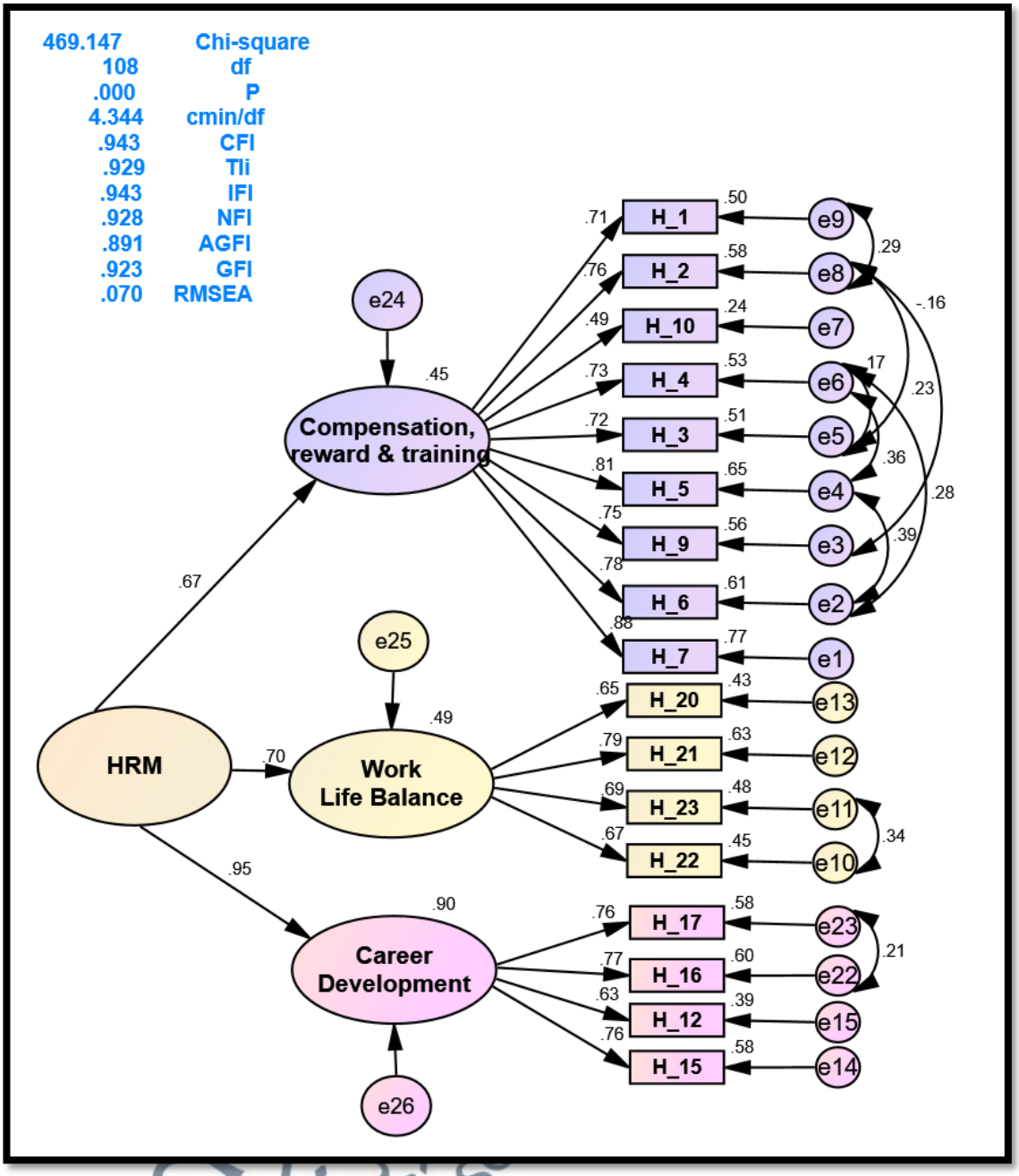

Figure 4. 8: Second-order Measurement Model of Human Resources Management

According to the results it showed, The researcher concluded that the model is accurate in giving results related to statistical significance. The results presented in Table 4.13 showed that the rated estimates between the item and its factor ranged between 0.475 - 0.856, which means that the item correlated with its factor very well. Also, the results showed that the standard error (SE) value is confined to between 0.035

- 0.107, and the critical value exceeds its average of 1.964 at the significance level (α = 0.05). Moreover, all rated estimates are statistically significant, indicating the relationship between the item and its variable. The multiple correlation coefficient values ranged from 0.225 to 0.733. This result leads to the judgment that the second-order model has good stability.

Table 4. 13: Second Order Loading Indicators for (HRM) and job satisfaction

PATH ANALYSIS			Standardized regression	Estimate	S.E.	C.R.*	SMC
H C	→	Cop, R & T	0.805	1			0.692
H C	→	HRM_WLB	0.553	0.313	0.035	8.87	0.306
H C	→	HRM (C D	0.832	0.893	0.068	13.119	0.648
H C	→	JOP	0.808	0.613	0.047	13.135	0.652
Cop, R & T	→	H_7	0.856	1			0.733
Cop, R & T	→	H_6	0.764	0.823	0.035	23.476	0.584
Cop, R & T	→	H_9	0.737	0.786	0.036	21.957	0.543
Cop, R & T	→	H_5	0.796	0.887	0.036	24.675	0.633
Cop, R & T	→	H_3	0.701	0.742	0.037	20.287	0.492
Cop, R & T	→	H_4	0.712	0.815	0.039	20.833	0.507
Cop, R & T	→	H_10	0.475	0.485	0.039	12.523	0.225
Cop, R & T	→	H_2	0.754	0.811	0.036	22.239	0.568
Cop, R & T	→	H_1	0.701	0.86	0.042	20.489	0.491
WLB	→	H_22	0.668	1			0.447
WLB	→	H_23	0.692	1.258	0.071	17.766	0.48
WLB	→	H_21	0.8	1.467	0.096	15.334	0.639
WLB	→	H_20	0.65	1.391	0.107	12.963	0.422
HRM (C D)	→	H_15	0.83	1			0.689
HRM (C D)	→	H_12	0.619	0.786	0.052	14.967	0.383

* $\alpha < 0.05$

4.9.3 Concurrent validity

The researcher verified the Concurrent validity and clearly explained it; as a step of the confirmatory factor analysis steps; through the loading ratio and the contrast extracted. The factor loading ratio of the mediator variable dimensions (between 0.475

- 0.856) is evidence that the estimates were outstanding and did not reach the level of fusion or separation from each other.

The results of the extracted variance indicate the mean of the square correlation for each factor (AVE). The results showed values of 0.520, 0.552 and 0.52 for compensation, rewards and training, career development and work-life balance, respectively. Hence, based on the result, it can be concluded that the assumption of concurrent validity is met. Also, all the items of each dimension of the mediator variable could represent their factor in the best representation. Finally, the high stability value of the mediator variable dimensions is evidence of Concurrent validity.

One of the essential results to indicate the concurrent validity is the extracted variance index (AVE), which shows the extent of the convergence is met with a value higher than 0.5. The results of the confirmatory analysis showed that all indicators of the extracted variance exceeded (0.5).

4.9.4 Discriminant validity:

The researcher also tested the discriminant validity of the model and found it to be met. According to the researcher and statistical practitioner, discriminant validity could be examined via model-extracted standards and evidence of the goodness of fit indices. Table 4.13 presented correlation values of the model's dimensions, and the results showed a high correlation among the factors. However, the value of the correction did not reach the level of multicollinearity, which indicates that each factor maintained its identity. The results showed a correlation between compensation, rewards and training (r = 0.522). Thus, all the variations ranged between 0.461 - 0.849, which suggests that discriminant validity was achieved between the dimensions. Also, the three dimensions of the mediator variable were significantly correlated, which is

another evidence of the discriminant validity. According to AMOS program results, we notice that all the dimension items belong to the same dimension, which is they are correlated to their dimensions only in a greater order than other items. This indicated the absence of duplication and mixing of loading between each dimension's items and the different dimension's items.

The extracted variance (AVE) has been defined as the sum average of the subdivision values of the items with their factor. In contrast, covariance is defined as the result of the factor's correlation by himself or others multiplied by its value. According to Hair et al. (2010), it is possible to get a benefit from the extracted variance and the covariance to judge the criterion, which must be the value of the extracted variance greater than the value of the covariance.

Table 4.13 explained the correlation matrix between the extracted variance and the covariance of the model, and it was found that the extracted variance values were greater than the covariance values.

Referring to the Model Fit outputs and Figure 4.8, a set of analyses can be summarized to ensure the quality of the second-order model. The results showed that the Chi-square value is 750.154, which indicates the lack of quality for the second-order proposed model because it is very sensitive to large samples. Also, the orders of freedom of the model reached 195. Moreover, the value of the statistical significance of the (P) ratio was 0.001. The result of the Chi-square standard indicated that its value was 3.847, which is an excellent result as it was less than 5, and accordingly, the acceptance of the second-order model.

In addition, the results of the quality indicators analysis showed the value root mean square error of Approximation (RMSEA) is 0.065; it is high quality and indicates the model quality. The Comparative Fit Index (CFI) is 0.935, and the Adjusted

Goodness of Fit Index (AGFI) is 0.871. The Normed Fit Index (NFI) is 0.914, and the Goodness of Fit Index (GFI) is 0.900. The Tucker-Lewis Index (TLI) is at 0.923. The incremental fit index (IFI) is 0.935, which fulfils all the quality requirements and indicates the proposed model's quality. Some items have been covariance depending on the program recommendations for this. All the indicators showed excellent rates except the CMIN, which showed acceptable quality.

Table 4. 14: Second order loading indicators of (HRM) and job satisfaction

Indicator code	Quality indicator	The result	The quality
CMIN	CMIN < 2	750.154	Acceptable
DF	-	195	
CMIN/DF	CMIN/DF < 5	3.847	Excellent
GFI	GFI < 0.90	0.9	Excellent
AGFI	< AGFI0.90	0.871	Acceptable
NFI	NFI > 0.95	0.914	Acceptable
TLI	TLI> 0.95	0.923	Acceptable
IFI	IFI > 0.90	0.935	Excellent
CFI	CFI > 0.90	0.935	Excellent
RMSEA	RMSEA < 0.07	0.065	Excellent

4.9.5 Comparison between the first-order model and the second-order model of HR dimensions

The researcher also tested the second-order measurement model after obtaining the satisfactory first-order. The second order aimed to compare first and second-order models based on the goodness of model fit to determine the best model.

According to Table 4.15, the researcher elaborated on the quality of the model and explained the goodness of the fit indices for both models for the aiming of comparison. The results of the comparison showed that the second-order model is better than the first-order model in all indicators such as the Chi-square, (GFI), (AGFI), NFI, (CFI), (TLI), (IFI) and (RMSEA) index. Thus, it is concluded that the second-order analysis for the mediator variable fits the data better than the first-order analysis.

Table 4. 15: A comparison between the first-order model and the second-order model of mediator variables (HRM)

Indicator code	Quality indicator	First order model	Second order mode
CMIN	CMIN < 2	806.586	799.799
DF	-	213	215
CMIN/DF	CMIN/DF < 5	3.787	3.72
GFI	GFI < 0.90	0.903	0.899
AGFI	< AGFI0.90	0.874	0.87
NFI	NFI > 0.95	0.916	0.917
TLI	TLI> 0.95	0.925	0.927
IFI	IFI > 0.90	0.937	0.938
CFI	CFI > 0.90	0.937	0.938
RMSEA	RMSEA < 0.07	0.064	0.063

Job Satisfaction Measurement Model

Because the job satisfaction variable (endogenous variable in this study) is not a factor in human resources management but rather an independent entity, the researcher conducted a separate measurement model for its items. Ten items were initially involved, but eventually, five fulfilled the measurement model's requirements.

As with previous analyses, Maximum Likelihood via AMOS was used to estimate the model and examine the uniqueness of each item and overall model fit. According to the analysis, the chi-square, with its degree of freedom and respectful p-value, showed the value of .671 to .901, respectively. Figure 4.9 suggests that the model adequately fits the data.

As was previously highlighted, the Maximum Likelihood estimation was used to estimate parameters in the measurement model. Several indices were evaluated to assess the overall model fit. The Chi-Square was 44.40, *df 5*, p=.001. Since it was asserted that Chi-square is sensitive to sample size, the researcher assessed other indices. Some of the results generated fit indices that exceeded the recommended critical value of .90. The result showed the GFI (.971), IFI (.976), TLI (.952), CFI

(.976) and RMSEA (.073). The value of CMIN/DF was also 3.90, indicating that the model was reasonably fit since the number fell well below the maximum recommended value of 5. Thus, considering the number of indices that reached the recommended value, it can be unequivocally claimed that the model reasonably fits the data.

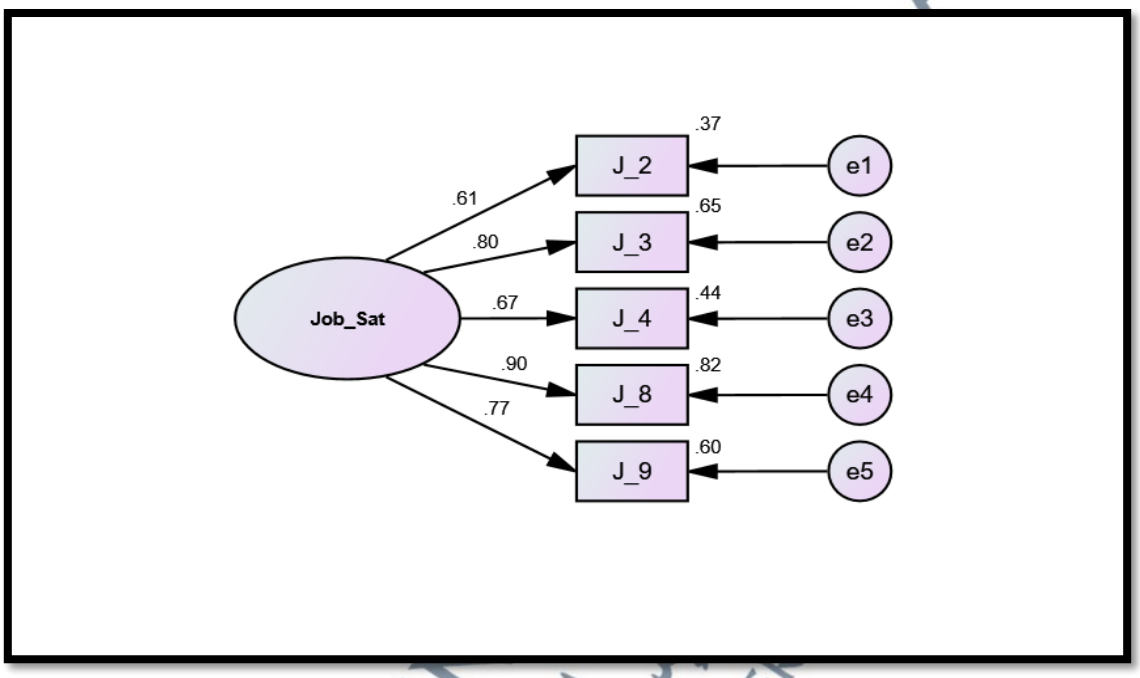

Figure 4. 9: First-order Measurement model of Job Satisfaction

Interestingly, the convergent validity was evaluated through the item loading. According to the analysis, all involved items met the requirement of convergent validity because the factor loading values were greater than the cut-off of $\geq$.50.

Table 4. 16: job satisfaction Goodness of Fit Indecies

Indicator code	Quality indicator	outcome	The quality
CMIN	CMIN < 2	44.40	Acceptable
DF	-	5	
CMIN/DF	CMIN/DF < 5	3.90	Excellent
GFI	GFI < 0.90	0.971	Excellent
AGFI	< AGFI 0.90	0.919	Excellent
NFI	NFI > 0.95	0.973	Excellent
TLI	TLI> 0.95	0.952	Excellent
IFI	IFI > 0.90	0.976	Excellent
CFI	CFI > 0.90	0.976	Excellent
RMSEA	RMSEA < 0.07	0.073	Excellent

Moreover, the unstandardized and standardized regression weight, standard error, critical ratio and squared multiple correlations for the job satisfaction variable were also investigated and presented in Table 4.17. The analysis suggested that all squared multiple correlations were higher than the acceptable level of .50. This indicated that the latent factors in this analysis accounted for more than half of the explained variance in each indicator. Other estimates, such as factor loading, variance extracted, and composite reliability, have also remained satisfactory. Regarding factor loading, the results for this analysis found relatively higher indicator loading for the job satisfaction variable and then used it for complete structural equation modelling.

Table 4. 17: Standardized and unstandardized regression weight

PATH ANALYSIS			Standardized regression	Estimate	S.E.	C.R.*	SMC
J_2	→	Job_Sat	0.805	1.00			0.556
J_3	→	Job_Sat	0.553	1.64	.100	16.301	0.737
J_4	→	Job_Sat	0.832	1.40	.098	14.279	0.691
J_8	→	Job_Sat	0.808	1.79	.103	17.323	0.703
J_9	→	Job_Sat	0.856	1.47	.092	15.853	0.771

4.10 Results of the First Question

The question states: **Does Organizational Learning Culture impact Human Resource Management among the public sector employees in Sultanate Oman?**

The first question in the current study is about the impact of Organizational Learning Culture on Human Resource Management among the public sector employees in Sultanate Oman; The researcher follows the previous practical steps to analyse and extract the results.

The researcher indicated that it is impossible to depend entirely on the chi-square result because of its sensitivity to the sample size. The extracted results from structural modelling, as it showed in Figure 4.9, showed; the value of chi-square is 1164.378, which is acceptable quality, and the order of freedom (DF) is 283. Also, the value of CMIN / DF was 4.114, which is excellent quality; these results fulfilled the statistical experts' requirement. Interestingly, the (P) ratio (the critical value) is statistically significant, another evidence of model fit. It could be concluded that the organizational learning culture positively affects types of human resource management practices.

RMSEA, as the leading goodness of fit index in structural equation modelling, was excellent. RMSEA value, as shown in Table 4.18, is 0.068, indicating the superior quality of the estimated model of the research sample data. The Goodness of fit index (GFI) value is 0.878, while the adjusted Goodness of fit index (AGFI) value is 0.849. GFI and AGFI were slightly below the recommended value of .90 but still considered acceptable. Fortunately, the Normed Fit Index (NFI) value is .911. Tucker-lewis Index (TLI) value is 0.921, above the threshold of .90. Moreover, the Comparative Fit Index (CFI) value is 0.931. The Incremental Fit Index (IFI) is 0.931were considered excellent goodness of fit indices. These findings suggested that the model is acceptable since the

values of the goodness of fit indices were all approached or above the recommended value of .90. With these results, it is proved beyond reasonable doubt that the model is acceptable. Moreover, Modification Indices, which aim to improve the model quality, illustrate the possibility of covariance between some measurement errors of the items, as shown in Figure 4.9

Table 4. 18: loading indicators of OLC and HRM

Indicator code	Quality indicator	The result	The quality
CMIN	CMIN < 2	1164.378	Acceptable
DF	-	283	
CMIN/DF	CMIN/DF < 5	3.72	Excellent
GFI	GFI < 0.90	0.878	Acceptable
AGFI	< AGFI0.90	0.849	Acceptable
NFI	NFI > 0.95	0.911	Acceptable
TLI	TLI> 0.95	0.921	Acceptable
IFI	IFI > 0.90	0.931	Excellent
CFI	CFI > 0.90	0.931	Excellent
RMSEA	RMSEA < 0.07	0.068	Excellent

Furthermore, the results presented in Table 4.18 showed that the factor loading values ranged between 0.576-0.898, and the standard error values ranged between 0.045 - 0.095. The table results elaborate that the factor loading value between the organization learning culture and HRM is 0.701, and the standard error value between them is 0.045, while the result of the critical value (Critical Ratio or P value) is 10.571, which is greater than 1.964 at the level of significance ($\alpha = 0.05$). This result showed a significant direct relationship between organization learning culture and HRM among the government sector employees in the Sultanate of Oman.

Moreover, table 4.18 suggested a positive and significant relationship between organisational learning culture and human resources management ($r = .70$, $p = .001$) among the government sector employees in the Sultanate of Oman. This result indicated

that when an organisation has a culture of learning and exploration, the level of human resources management is increased. The analysis also showed that compensation, reward and training, work-life balance and career development were authentic factors of human resources management. Moreover, the analysis also discovered that career development is the most representative of the human resources management construct (r = .90), followed by compensation, rewards and training (r = .73) and then work-life balance (r = .53). The results of the table 4.15 showed the loading value between HRM and its Dimension Work-Life Balance which is 0.576 and the standard error value between them is 0.048. In contrast, the result of the critical value between HRM and its Work-Life Balance reached 9.06, greater than 1.964 at the level of significance (α = 0.05).

On the other hand, the results indicated that the loading value between HRM and its Dimension Career Development is 0.898. The standard error value between them is 0.095. In contrast, the result of the critical value (Critical Ratio) between HRM and its Career Development reached 11.329, greater than 1.964 at the significance level (α = 0.05).

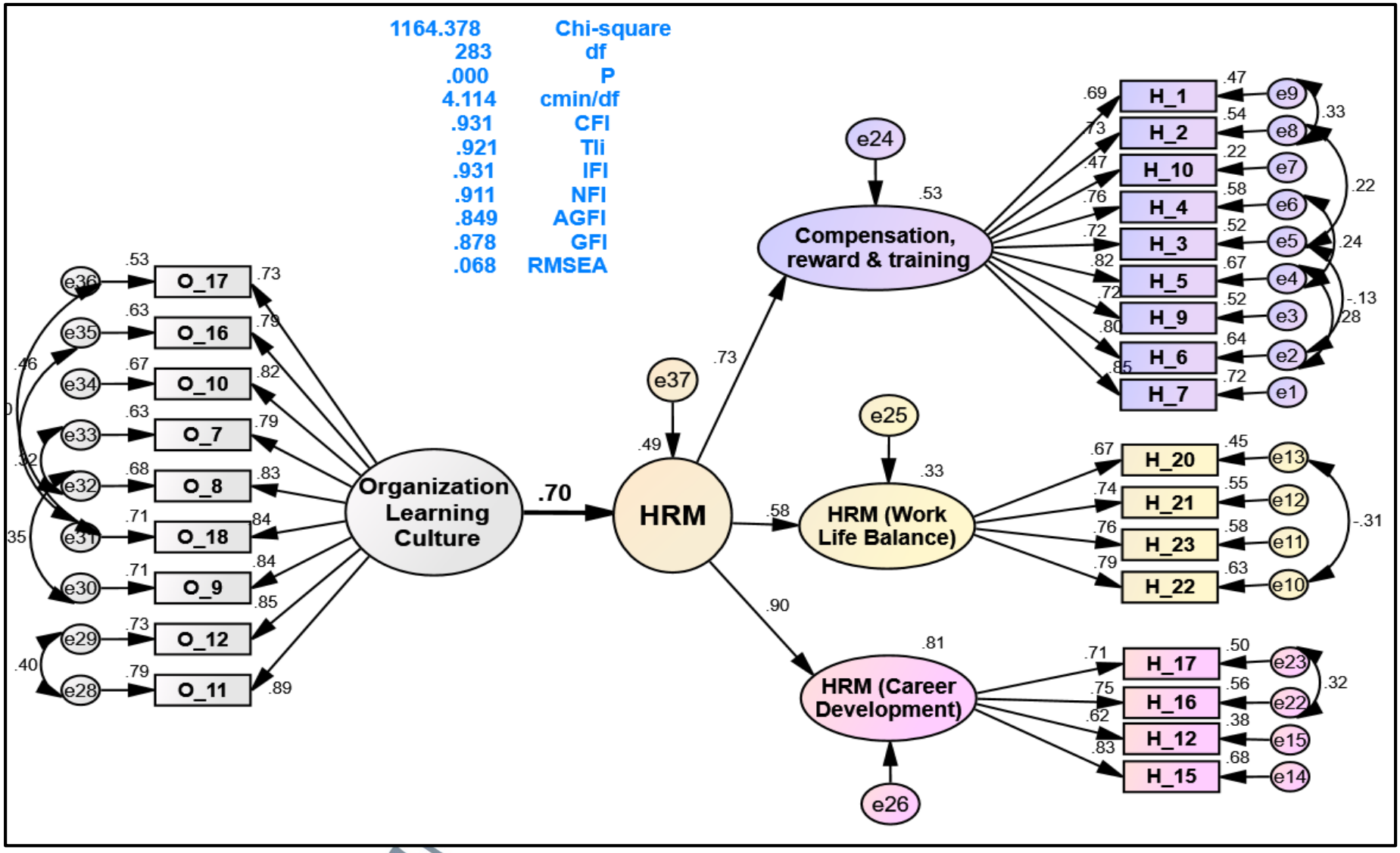

Figure 4. 10: The structural model between (OLC) and (HRM) dimensions

Finally, the evidence for the construct validity showed the results of the standard loading without sign of multicolleanirity (> .90) among the items, while on the other hand, the values of factor loading are not below .50. This indicated that both convergent and discriminant validity met and the finding of this analysis could be unequivocally accepted.

Table 4. 19: Loading indicators for the structural equation between (OLC on HRM)

Path analysis			Standardized regression	Estimate	S.E.	C.R.*	P
O L C	→	HRM	0.701	0.476	0.045	10.571	0.001
HRM	→	HRM Cop, R & T	0.727	1			0.001
HRM	→	HRM WLB	0.576	0.431	0.048	9.062	0.001
HRM	→	HRM (C D)	0.898	1.071	0.095	11.329	0.001

* $\alpha < 0.05$

Hypothesis 1: There is a positive relationship between organization learning culture (OLC) and Human Resource Management (HRM).

The results showed that there was a statistically significant relationship at the significance level $\alpha < 0.05$ between the variable (OLC) on the variable (HRM) among the research sample members.

4.11 Results of the Second question

Does Leader-Member Exchange impact Human Resource Management among the public sector employees in Sultanate Oman?

Structural equation modelling was also employed to answer the second research question regarding the impact of leader-member exchange on human resources management among Omani's public sector employees. It is worth mentioning that the previous practical steps to analyse and extract the results were strictly followed. The

extracted results from structural modelling, as shown in Figure 4.10, suggested the chi-square value is 1659.071, and the degree of freedom (DF) is 363 with a p-value of .001. This result rhetorically indicated that the model was not fit. However, as was previously mentioned, the chi-square with its respective p-value was very sensitive to the large sample size; the researcher used other indices to prove the appropriateness of the model. Among the employed indices is CMIN / DF, which yields a value of 4.57 and indicates that the model adequately fits the data since the value is slightly below the five suggested by practitioners and statistics experts. Interestingly, the (P) ratio (the critical value) is also statistically significant, meaning there is a substantial relationship between leader-member exchange and human resources management among Omani public employees.

The Root Mean Square Error of Approximation, popularly known as RMSEA, was also satisfactory. RMSEA is considered one of the most influential goodness of fit indices and examines the discrepancy of the model. Its value ranged between .00 to .08 to suggest the model's suitability and that the collected data is not significantly different from the model. According to the analysis, the value of RMSEA is 0.073, below the recommended value of .08. This value indicates that the model is adequately fit and that the collected appropriately fits the proposed model. Furthermore, the value of the Tucker-Lewis Index (TLI) value is 0.902, Comparative Fit Index (CFI) is 0.913, and the Incremental Fit Index (IFI) is 0.913, which also suggests that the model is an appropriate fit. The Goodness of Fit Index (GFI) value of 0.850 and Adjusted Goodness of Fit Index (AGFI) of 0.820 were slightly below the threshold of 0.90. However, the values are still acceptable as good enough to prove the appropriateness of structural equation modelling. Moreover, Modification Indices, which aim to improve the model

quality, illustrate the possibility of linking some standard errors of the items, as shown in Figure 4.10.

Table 4. 20: loading indicators of LMX and (HRM) dimensions

Indicator code	Quality indicator	The result	The quality
CMIN	CMIN < 2	1659.071	Acceptable
DF	-	363	
CMIN/DF	CMIN/DF < 5	4.750	Excellent
GFI	GFI < 0.90	0.850	Acceptable
AGFI	< AGFI0.90	0.820	Acceptable
NFI	NFI > 0.95	0.891	Acceptable
TLI	TLI> 0.95	0.902	Acceptable
IFI	IFI > 0.90	0.913	Excellent
CFI	CFI > 0.90	0.913	Excellent
RMSEA	RMSEA < 0.07	0.073	Excellent

The results presented in Table 4.17 showed that the factor loading values ranged between 0.416-0.902, and the standard error values ranged between 0.040 - 0. 045. Results explained that there is a significant direct relationship between leader-member exchange among government sector employees in the Sultanate of Oman. After proving the appropriateness of the model fit, it was found that leader-member exchange significantly and positively affects human resources management. According to the analysis, a significant and positive relationship exists between leader-member exchange and human resources management ($r = .89$, $p = .001$). This result indicated that when there is leader-member exchange behaviour in the organization, it would positively and significantly affect the human resources management principle that the organization follow. Also, the result of the critical value (Critical Ratio or P value) is 21.44, greater than 1.964 at the significance level ($\alpha = 0.05$).

Moreover, table 4.20 depicts the result of the factor loadings of underlying dimensions of human resources management, such as compensation, rewards and

training, work-life balance and career development, substantially reflecting human resources management. According to the analysis, compensation, rewards, and training is the most significant underlying dimension of human resources management with a factor loading of .90, followed by career development at .68 and then work-life balance with a factor loading of .42, all at p. value of .001. The structural equation analysis showed a direct statistically significant relationship between HRM and its dimension of career development among the government sector employees in the Sultanate of Oman (P ratio: 0.001).

Table 4. 21: Loading indicators for the structural equation between LMX and HRM

Path analysis			Standardized regression	Estimate	S.E.	C.R.*	P
L M X	→	HRM	0.893	0.849	0.04	21.44	0.001
HRM	→	HRM Cop, R & T	0.902	1			0.001
HRM	→	HRM WLB	0.416	0.238	0.027	8.847	0.001
HRM	→	HRM (C D)	0.675	0.607	0.045	13.407	0.001

* $\alpha < 0.05$

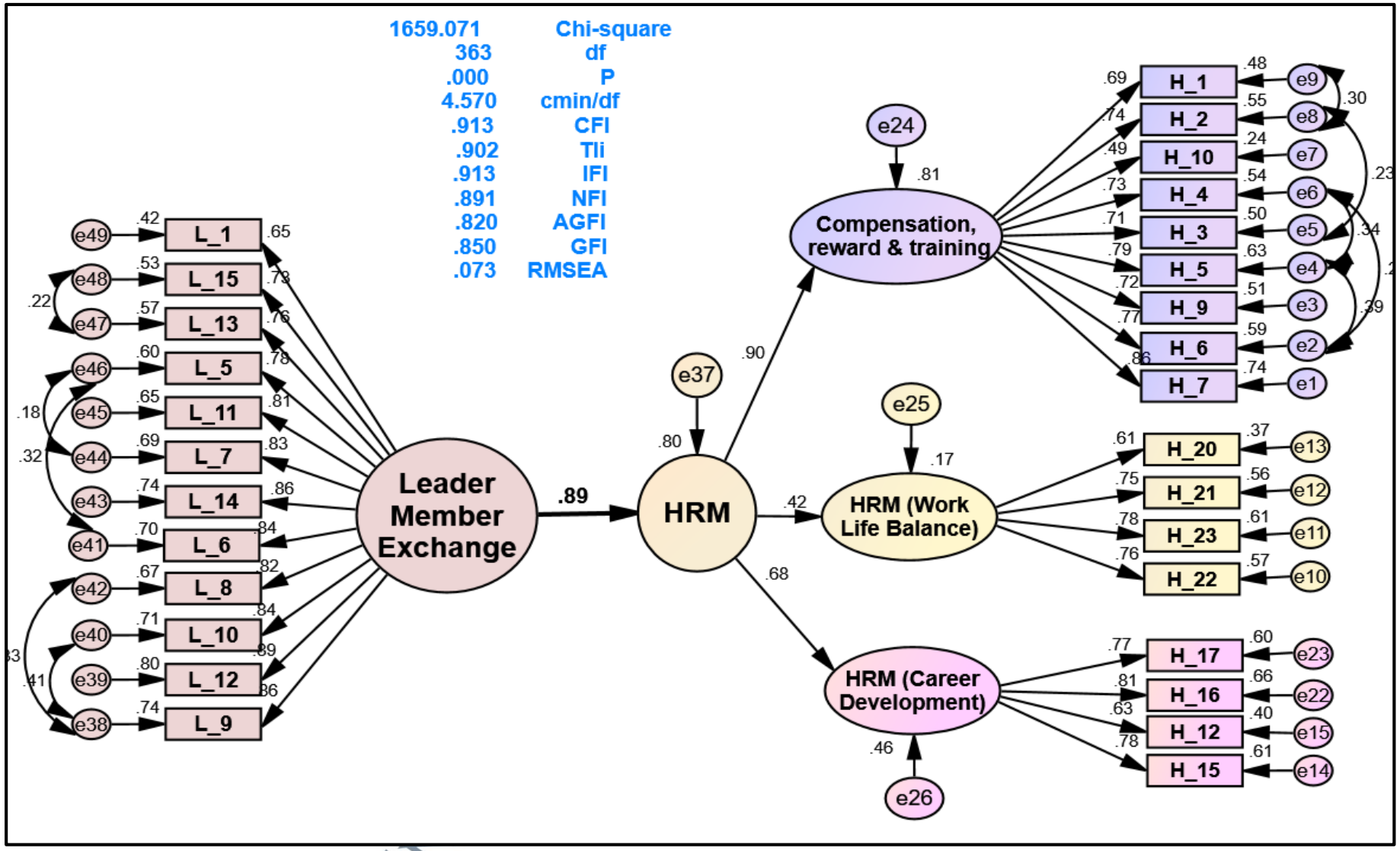

Figure 4. 11: The structural model between (LMX) and (HRM) dimensions

Additionally, to support the goodness of fit indices, the researcher evaluated and presented the unstandardized and standardized regression weights, standard errors, critical ratios, and squared multiple correlations for the leader-member exchange and human resources management. Standardized associations indicated that a unit increase in the standard deviation of an independent variable (predictor) would lead to an improvement or decline by some corresponding amount (a unit of standard deviation). Nevertheless, raw data or raw units articulate the unstandardized regression weight. Therefore, unstandardized regression weight means that a one-raw-unit increase in the independent variable would either enhance the dependent variable or decrease it by a number of its raw units equivalent to the correlation coefficient.

Furthermore, except for minor cases, the study found that the values of multiple square correlations were greater than the recommended value of .50. The finding implied that almost two-thirds of the variances were explained by the items accounted for by the construct. However, despite the two items failing to achieve a recommended value of .50, they were still preserved because the items significantly contribute to the factors in terms of content and construct validities. These items were also retained because estimating other fitness components, such as construct reliability, variance extracted, and factor loading, remained largely adequate and appropriate. Additionally, the factor loading values were relatively higher for indicators of the partial structural model components. The analysis indicated that leader-member exchange statistically predicted human resources management principles adopted from an organization ($\beta = .89, .001$). This can be interpreted that when organizations adapt to leader-member exchange, they will be oriented towards positive and friendly human resources management.

Finally, the evidence for the constructive validity showed that the factor loading results did not reach 1 to prove discriminant validity and were also high than .50 to suggest achieving convergent validity.

Hypothesis 2: There is a positive relationship between leadership member exchange (LMX) and (HRM)

The results showed that there was a statistically significant relationship at the significance level $\alpha < 0.05$ between the variable (LMX) on the variable (HRM) among the research sample members.

4.12 Results of the Third Question

Does Human Resource Management impact job satisfaction among public sector employees in the Sultanate of Oman?

The third structural model was conducted to investigate the relationship between human resources management and employee job satisfaction in the public sector in Sultanate Oman. As the measurement model analysis indicates, human resource management comprises three factors: compensation, rewards and training. Nine items were used to measure compensation, rewards and training, and four items each for work-life balance and career development, respectively. On the other hand, six items were used to examine the endogenous variable: employee job satisfaction. The result of this study produced ($\chi^2 = 891.998$, df = 218, p-value =.001, $\chi^2/df = 4.09$, GFI = 0.890, CFI = 0.928, TLI = 0.916, IFI = 0.928, RMSEA = 0.068). Based on the chi-square with its respected p-value, it can be concluded that the data poorly fit the model because the p-value is less than alpha ($p < .05$). Nevertheless, because SEM chi-square with its corresponding p-value is sensitive to the sample size, especially when the sample size is larger than 200, other supplement goodness of fit indices were used to determine the suitability of the model.

In brief, the different indicators of overall goodness-of-fit for the model suggested good fit (see Figure 4.11). Interestingly, the values of GFI, AGFI, CFI, TLI, NFI and RMSEA indicated that the proposed model adequately fits the model, implying that the obtained covariance matrix is consistent with the estimated covariance matrix in the empirical data (Hair et al., 1998). Furthermore, the normed chi-square (χ^2/df) was consistent with the supplement indices values. The value of the normed chi-square (χ^2/df) is 4.09, which felt below the maximum ratio of 5.0, indicating that the model is adequately fit.

It is interesting that the (P) ratio (the critical value) is statistically significant, which means that the structural modelling model is between leader-member exchange and organization learning culture on employee job satisfaction among the Omani public employees to have acceptable quality, and this prompts The researcher to continue examining the results of other indicators to complete the evaluation of the model quality.

Table 4. 22: loading indicators of Human Resource Management and job satisfaction

Indicator code	Quality indicator	The result	The quality
CMIN	CMIN < 2	891.998	Acceptable
DF	-	218	
CMIN/DF	CMIN/DF < 5	4.092	Excellent
GFI	GFI < 0.90	0.89	Acceptable
AGFI	< AGFI0.90	0.861	Acceptable
NFI	NFI > 0.95	0.907	Acceptable
TLI	TLI> 0.95	0.916	Acceptable
IFI	IFI > 0.90	0.928	Excellent
CFI	CFI > 0.90	0.928	Excellent
RMSEA	RMSEA < 0.07	0.068	Excellent

Results explained that there is a significant direct relationship between Human Resource Management and job satisfaction among the government sector employees in

the Sultanate of Oman. Furthermore, the results presented in Table 4.20 showed that the factor loading values ranged between 0.531-0.853, and the standard error values ranged between 0.041 - 0.077. The table results elaborate that the factor loading value of job satisfaction is 0.772 and the standard error value is 0.068, while the result of the critical value (Critical Ratio or P value) is 14.987 which is more significant than 1.964 at the level of significance ($\alpha = 0.05$).

Also, the structural equation analysis showed a direct statistically significant relationship between HRM and its Dimension of Work-Life Balance among the government sector employees in the Sultanate of Oman (P ratio:0.001). The results of Table 4.20 showed the loading value between HRM and its Dimension Work-Life Balance, which is 0.853, and the standard error value between them is 0.041. In contrast, the result of the critical value (Critical Ratio) between HRM and its Work-Life Balance reached 8.832, which is greater than 1.964 at the level of significance ($\alpha = 0.05$). On the other hand, the results of Table 4.20 indicated that the loading value between HRM and its Dimension Career Development is 0.778. The standard error value between them is 0.077.

The structural equation analysis showed a direct statistically significant relationship between HRM and its dimension of career development among the government sector employees in the Sultanate of Oman (P ratio: 0.001). In contrast, the result of the critical value (Critical Ratio) between HRM and its Career Development reached 12.489, which is greater than 1.964 at the level of significance ($\alpha = 0.05$). With all the previous results, it becomes clear to the researcher to decide that there is a direct statistically significant relationship between HRM dimensions and job satisfaction (p) = 0.001) among government sector employees in the Sultanate of Oman.

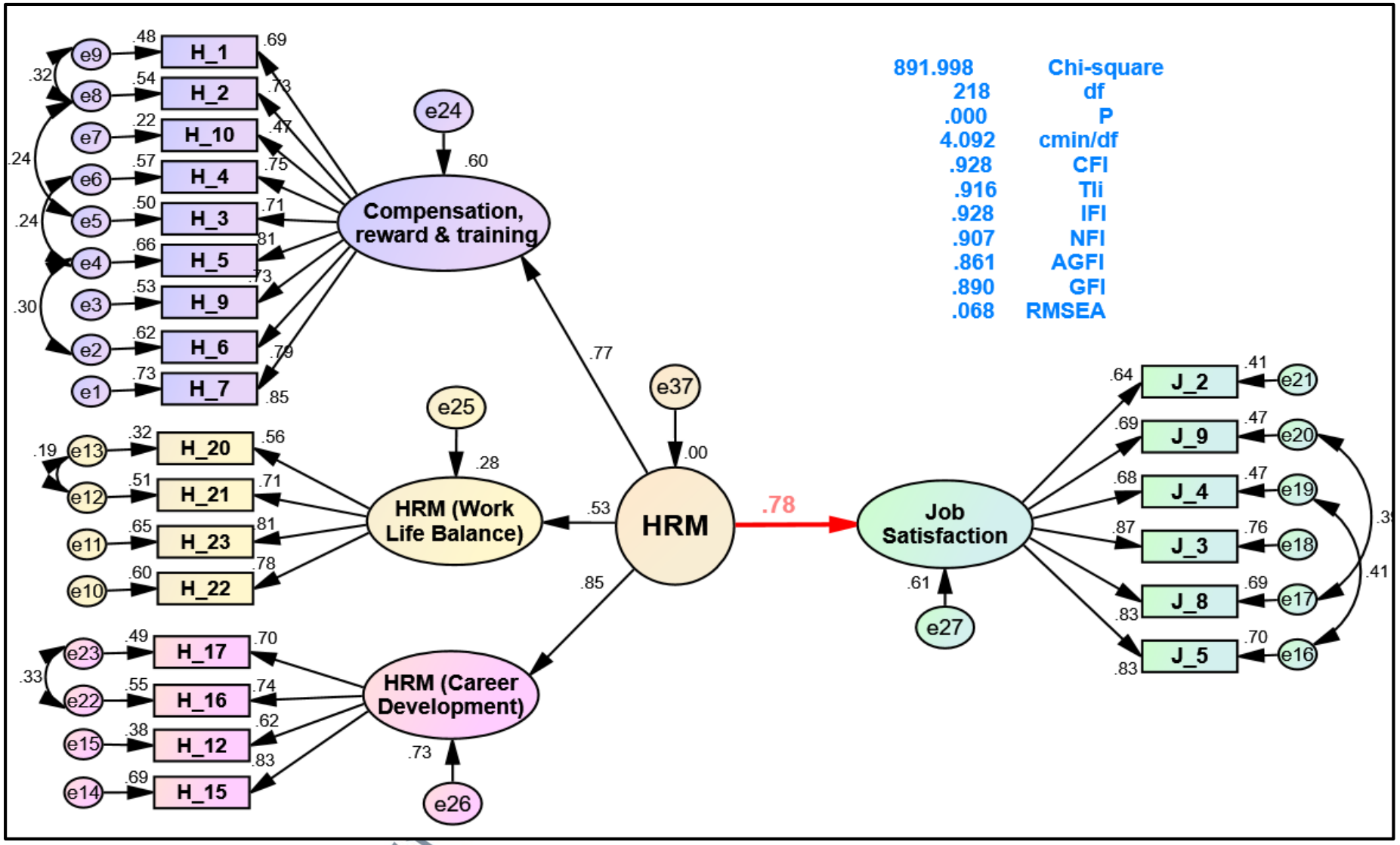

Figure 4. 12: The structural model between HRM and job satisfaction

Finally, the evidence for the construct validity of the constructive equation showed the results of the normal loading that ranged between 0.531 - 0.853, so the loadings did not reach 1 to judge that it reached the merging point. Also, loadings did not be less than 0.20 to judge that they separate from each other, which approves the Concurrent validity between the mediator variable (HRM) and dependent variables (job satisfaction items).

Table 4. 23: Loading indicators for the structural equation between (HRM) and employees' job satisfaction)

Path analysis			Standardized regression	Estimate	S.E.	C.R.	P
HRM	→	Job satisfaction	0.772	1.024	0.068	14.987	0.001
HRM	→	HRM Cop, R & T	0.531	1			0.001
HRM	→	HRM WLB	0.853	0.365	0.041	8.832	0.001
HRM	→	HRM (C D)	0.778	0.96	0.077	12.489	0.001

* Standardized Regression Weights ** $\alpha < 0.05$

Hypothesis 3: There is a positive relationship between (HRM) and job satisfaction

In summary, the analysis showed that there was a statistically significant relationship at the significance level $\alpha < 0.05$ between the exogenous variable (HRM) and endogenous variable (Job Satisfaction) among the research participants.

4.13 Results of the Fourth Research Question

Does Human Resource Management play a significant role in mediating between Organizational Learning Culture (OLC) and Leader-Member Exchange (LMX) on Job Satisfaction among Omani public sector employees, on the other hand?

Having been satisfied with the casual structural relationship between the independent (exogenous) and dependent (endogenous) variables, the researcher tested the whole model with the mediator variable (Human Resources Management). This hypothesised structural model enables the researcher to holistically examine the role of leader-member exchange, organization learning culture, and job satisfaction among Omani public sector employees, considering human resources management as a mediator variable. This mediated model was recommended by Baron and Kenny (1986) in an influential article. They propositioned three distinctive conditions for mediation effects: these conditions are;

1. The exogenous variables need to be statistically and directly influenced the mediating variable. For example, leader-member exchange and organization learning culture must affect human resources management.
2. The exogenous variable must statistically and directly influence the dependent variable. In this model, leader-member exchange and organization learning culture must influence the product variable (employees' job satisfaction).
3. The mediator variable must statistically and directly impact the dependent variable. In this case, human resources management must affect employees' job satisfaction.

Hence, the researcher assessed these conditions recommended by Baron and Kenny (1986) and found that they were met. Thus, examining the mediation effect of

human resources management using SEM is justifiable. In addition to that, substantial relationships among the exogenous, endogenous, and mediation variables are warranted for a meaningful mediation model could be used (Hair et al. 1998). Moreover, Baron and Kenny (1986) also proclaimed that three equations are required to test the relationship of the mediation model. A meditational model is a causal model whereby it is theorized that A "causes" B and that B then "causes" C. Nevertheless, Holmbeck (1997) and MacKinnon, et al., 2002) introduced four conditions for using mediated variables in the model.

The four conditions proposed by Holmbeck (1997) and MacKinnon et al. (2002) for B to be a mediator are:

1) A (independent variable or predictor) is substantially connected with C
2) A (independent variable or predictor) is considerably connected with B
3) B is statistically and considerably linked with C (once A has been controlled).
4) The effect of A on C is substantially decreased after B has been controlled.

(A= leader-member exchange, organization learning culture, B= human resources management and C= employees' job satisfaction). It is worth mentioning that Structural equation modelling would be more suitable and appropriate to use when multiple indicators are used to measure the construct.

Therefore, the bivariate Correlation was examined to assess the association among the exogenous, mediator, and endogenous variables. The result of the Pearson Correlation analysis suggested significant correlations among the concerned variables (table 4. 24). Despite the fact that the weights and directions of associations among the dimensions affected were different, the results of the analysis, as demonstrated in the table indicated that structural equation modelling could be hypothetically, statistically,

and profoundly used due to the initial magnitudes of the connections among the variables. It was revealed that leader-member exchange and organization culture significantly correlated with human resource management (mediator variable), and consequently mediator variable was statistically correlated with employees' job satisfaction. Hence, it can be concluded at this point that human resources management is playing a significant role in mediating between leader-member exchange and organization learning culture on one hand and employees' job satisfaction.

Table 4. 24: Correlation Coefficient, Means and Standard Deviations of the summated variables in the study

	OLC	LMX	HRM CRT	HRM CD	HRM WLB	J_Sat
OLC						
LMX	.689**					
HRM CRT	.660**	.771**				
HRM CD	.623**	.698**	.726**			
HRM WLB	.535**	.580**	.607**	.723**		
J_Sat	.898**	.585**	.579**	.586**	.497**	
Mean	3.56	2.92	3.20	3.58	3.82	3.51
SD	.77	.99	.95	.90	.81	.94

Sample Size = 569, ** at .01: Note: OLC = Organization Learning Culture, LMX = Leader-Member Exchange, HRM CRT = Human Resource Management Compensation Reward and Training, HRM CD = Human Resource Management Career Development, HRM WLB = Human Resource Management Work Life Balance and J_Sat = Job Satisfaction

Following this correlation analysis, the researcher followed previous procedures in dealing with semi-structural equation modelling. Absolute goodness of fit indices such as χ^2 with their degree of freedom and p-value were examined. As previously highlighted, the χ^2 test is very sensitive to sample size and normally tends to be significant even for slight deviation. Thus, other absolute fit indices such as RMSEA and incremental fit indices such as CFI, NFI, and GFI were used to determine the

goodness of the model under investigation. Interestingly, for a full structural model with a mediator variable, Chi-square revealed the value of $\chi^2 = 3158.905$, df = 838, p = .001, while the normed chi-square (χ^2/df) showed a value of 3.77. This value falls within the acceptable ratio of less than 5.0 for the χ^2/df value (Hair et al. 1998). The TLI was 0.899, while the CFI was 0.906. The TLI and CFI are incremental fit indices, and these values have exceeded the recommended level of 0.90. For the badness-of-fit index, the Root Mean Square Error of Approximation (RMSEA), the value of 0.064, was well below 0.07. However, the goodness-of-fit index (GFI) was 0.813, and the adjusted goodness-of-fit index (AGF) was .788, indicating a poor fit of the model to the data. Notwithstanding, since the various indices of overall goodness-of-fit for the model indicated a good fit except for GFI and AGFI indices, the researcher accepted the model as a fit model and continued to test the full hypothesized model. It is worth mentioning that the chi-square value was expected to be significant due to the large sample size.

Table 4. 25: indicators of conformity Quality to the structural equation model

Indicator code	Quality indicator	The result	The quality
CMIN	CMIN < 2	3158.905	Acceptable
DF	-	838	
CMIN/DF	CMIN/DF < 5	3.77	Excellent
GFI	GFI < 0.90	0.813	Acceptable
AGFI	< AGFI0.90	0.788	Acceptable
NFI	NFI > 0.95	0.877	Acceptable
TLI	TLI> 0.95	0.899	Acceptable
IFI	IFI > 0.90	0.906	Excellent
CFI	CFI > 0.90	0.906	Excellent
RMSEA	RMSEA < 0.07	0.064	Excellent

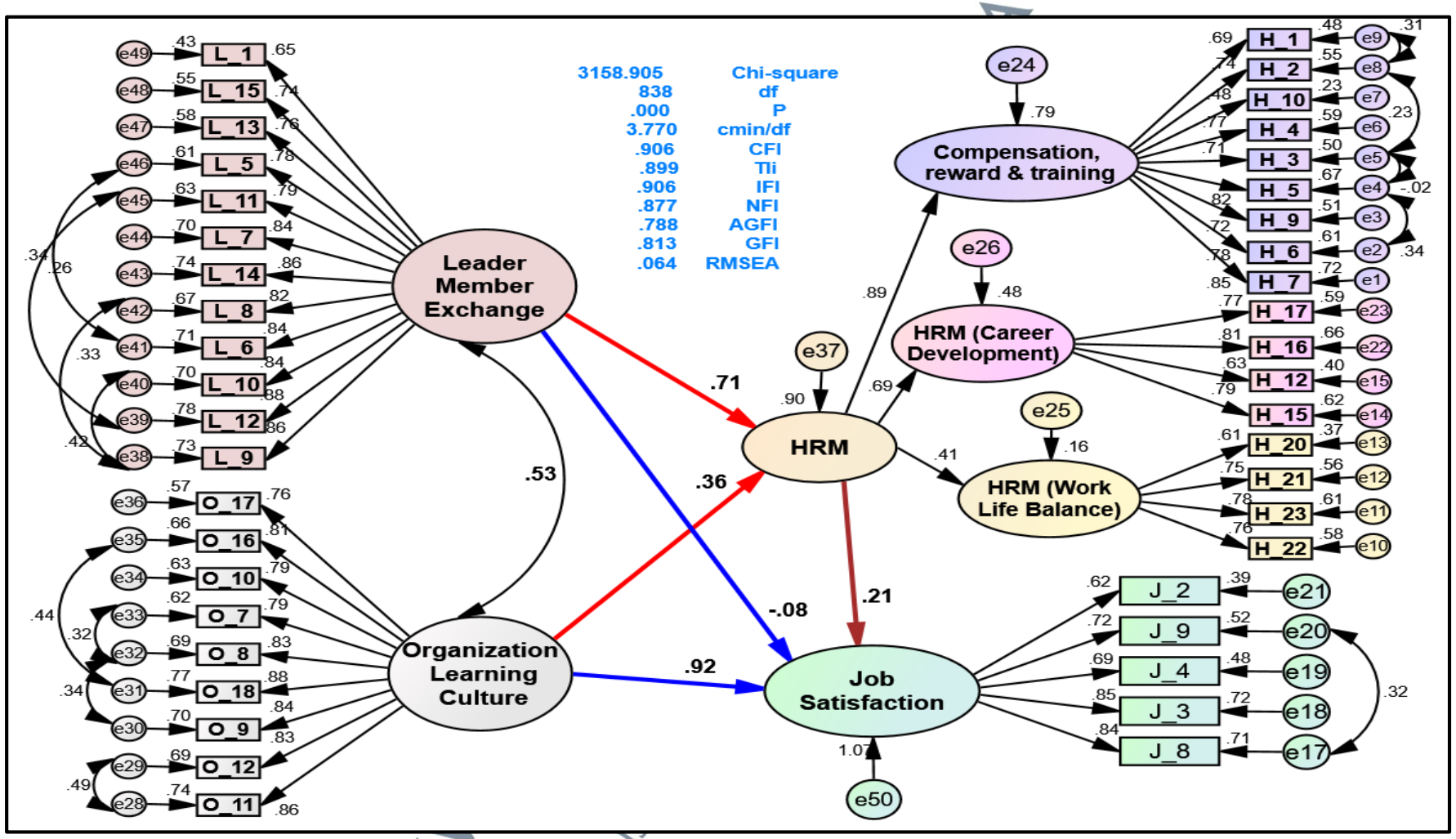

Figure 4. 13: Structural modelling between the mediating variable and the independent variables

The result of the analysis indicated substantial direct and indirect relationships among the components of this study. More precisely, it was found that organization learning culture directly predicts Omani public sector employees' job satisfaction (β =.92, p = .001) and indirectly via human resources management (HRM) (β =.35, p = .001). The analysis also suggested that leader-member exchange was positively and indirectly correlated with employees' job satisfaction via human resource management (β =.21, p = .001). However, the impact of leader-member exchange was negatively and directly correlated with employees' job satisfaction. Moreover, the result of the analysis also suggested positive relationships between leader-member exchange (β =-.71, p. = .001), organization learning culture (β =-.36, p. = .001) and human resources management (HRM) respectively, among Omani public sector employees.

Moreover, the sub-dimensions factor loading values of the HRM construct ranged between .41 to .89. According to the analysis, the factor loading for compensation, rewards and training is 0.886, the factor loading for career development is .68, and the factor loading for work-life balance is .41 with p-value of .001 respectively. These values suggested that human resources management is empirically and meaningfully categorized into these sub-dimensions. On the other hand, the results also indicated that the loading value between HRM and its dimension of career development is 0.693. The standard error value between them is 0.046. In contrast, the result of the critical value (Critical Ratio) between HRM and its Career Development reached 14.166, which is greater than 1.964 at the level of significance (α = 0.05). The structural equation analysis showed a direct statistically significant relationship between HRM and its Dimension of Career Development among the government sector employees in the Sultanate of Oman (P ratio: 0.001).

The standard error results ranged between 0.027-0.071, and the multiple correlation square coefficients ranged between 0.13-0.63. Furthermore, the standard loading value ranged between -0.84 - 0.886. Also, from Table 4.23 below, the researcher noticed that the critical value ranged between -1.087 -17.404. Some critical values were also below 1.964 at the significance level ($\alpha = 0.05$). However, most variables showed the critical value exceeded 1.964 at the significance level ($\alpha = 0.05$), indicating a substantial correlation among them.

It was also found that the result of the loading value between LMX and HRM is 0.708, and the standard error value between them is 0.038, while the result of the critical value (Critical Ratio) between LMX and HRM reached 17.404; therefore, it is greater than 1.964 at the level of significance ($\alpha = 0.05$). Moreover, the structural equation analysis showed an indirect statistically significant relationship between LMX and HRM (P ratio: 0.001) among the government sector employees in the Sultanate of Oman.

Interestingly, the analysis also indicated that the result of the loading value between OLC and HRM is 0.359 and the standard error value between them is 0.029, while the result of the critical value (Critical Ratio) between OLC and HRM reached 10.637; therefore, it is greater than 1.964 at the level of significance ($\alpha = 0.05$). Additionally, the structural equation analysis showed an indirect statistically significant relationship between OLC and HRM (P ratio: 0.001) among the government sector employees in the Sultanate of Oman.

Additionally, the loading value between HRM and job satisfaction is 0.209, and the standard error value between them is 0.071, while the result of the critical value (Critical Ratio) between HRM and job satisfaction reached 2.003; therefore, it is greater than 1.964 at the level of significance ($\alpha = 0.05$). Additionally, the structural equation

analysis showed an indirect statistically significant relationship between HRM and job satisfaction (P ratio: 0.045) among the government sector employees in the Sultanate of Oman.

Moreover, Table 4.22 indicates the result of the loading value between LMX and job satisfaction which is -0.084, and the standard error value between them is 0.048, while the result of the critical value (Critical Ratio) between LMX and job satisfaction is -1.087; therefore, it is less than 1.964 at the level of significance ($\alpha = 0.05$) which mean there is no direct relationship between LMX and job satisfaction. Additionally, the structural equation analysis showed a direct statistically significant relationship between OLC and HRM (P ratio: 0.277) among the government sector employees in the Sultanate of Oman.

Table 4. 26: continued: The Loading indicators of the structural equation model

Tayp of path	**Path analysis**			**Standardized regression**	**Estimate**	**S.E.**	**C.R.***	**P**
Indirect	L M X	→	HRM	0.708	0.657	0.038	17.404	0.001
Indirect	O L C	→	HRM	0.359	0.307	0.029	10.637	0.001
Indirect	HR M	→	Job satisfaction	0.209	0.142	0.071	2.003	0.045
Direct	L M X	→	Job satisfaction	-0.084	-0.053	0.048	-1.087	0.277
Direct	O L C	→	Job satisfaction	0.92	0.536	0.037	14.622	0.001
	HR M	→	HRM Cop, R & T	0.886	1			0.001
	HR M	→	HRM WLB	0.406	0.239	0.027	8.938	0.001
	HR M	→	HRM (CD)	0.693	0.647	0.046	14.166	0.001

* $\alpha < 0.05$

Hypotheses 4: Human Resource Management is a mediator between leader-member exchange (LMX), organization learning culture (OLC) and Job Satisfaction (JS)

The study hypothesis results showed a moderate relationship between each of the variables (OLC) and job satisfaction in the presence of human resource management. As previously mentioned, direct and indirect relationships were statistically significant at (0.05). At the same time, the analysis results indicated only an indirect moderate relationship between leader-member and job satisfaction with human resource management, where all the indirect relationships were statistically significant except for the direct relationship between (LMX) and job satisfaction. However, the direct relationship between leader-member exchange and job satisfaction was statistically significant without the variable (HRM), as explained previously in the second question.

4.14 Results of the Fifth Research Question

Is there any significant effect of Organizational Learning Culture (OLC) and Leader-Member Exchange (LMX) on Job Satisfaction among Omani public employees when HRM entered the equation as a mediator?

The fifth research question of this current study examined the relationships between leader-member exchange and organization learning culture on the one hand and employees' job satisfaction on the other hand. The relationship between leader-member exchange and organization learning culture was also thoroughly evaluated. As with previous research questions, structural equation modelling was also used to examine these complex relationships. The researcher follows the previous practical steps to analyse and extract the results.

The extracted results from structural modelling, as it showed in Figure 4.13, showed; the value of chi-square is 1124.274 (acceptable quality), the degree of freedom (DF) is 284, and the p-value =.001. The p-value indicated a discrepancy between the variance-covariance matrix of the proposed model and the matrix extracted from the data. However, since the sample size is greater than 200 participants, it was believed that the p-value would be extremely sensitive. Thus, the researcher used other indices as complementary to the chi-square and its respective p-value. As a result, the value of CMIN / DF was 3.959; these results fulfilled the requirement that the statistical experts set. Interestingly, the (p) ratio (the critical value) is statistically significant, which means that the structural modelling model is between leader-member exchange and organization learning culture on employee job satisfaction among the Omani public employees to have acceptable quality, and this prompts the researcher to continue examining the results of other indicators to complete the evaluation of the model quality.

Additionally, other indices, such as Root Mean Square Error of Approximation known as RMSEA, NFI, TLI, CFI, and IFI were within the stipulated value. According to the analysis, the value of RMSEA = .066, NFI = .935, TLI = .943, CFI = .950 and IFI = .950, suggesting that the model adequately fits the data and, consequently, the interpretation of the results is legitimate. However, the value of GFI = .877 and AGFI = .848 were slightly lower than .90, as statisticians and research practitioners recommended. The previous results of the indicators elaborate on the model's high quality. As was previously indicated and based on these findings, the model adequately fits the data, and the results are meaningful. Moreover, modification indices, which aim to improve the model quality, illustrate the possibility of linking some standard errors of the items, as shown in Figure 4.13.

Table 4. 27: indicators of the Leader-member exchange, organizational learning culture (Independent variables) and job satisfaction

Indicator code	Quality indicator	The result	The quality
CMIN	CMIN < 2	1124.274	Acceptable
DF	-	284	
CMIN/DF	CMIN/DF < 5	3.959	Excellent
GFI	GFI < 0.90	0.877	Acceptable
AGFI	< AGFI0.90	0.848	Acceptable
NFI	NFI > 0.95	0.935	Acceptable
TLI	TLI> 0.95	0.943	Acceptable
IFI	IFI > 0.90	0.95	Excellent
CFI	CFI > 0.90	0.95	Excellent
RMSEA	RMSEA < 0.07	0.066	Excellent

As a continuation of the analysis process, the results presented in Table 4.26 showed that the factor loading values ranged between 0.067-0.986, and the standard error values ranged between 0.016 - 0.035. Based on the findings, the analysis found a reciprocal and significant relationship between leader-member exchange and organization learning culture (r = .50, p = .001). This finding indicated that both variables affect each other. In other words, when the leader-member exchange is available in an organization, the learning culture is positively affected. Moreover, the analysis also found that leader-member exchange (r = .46, p = .001) and organization learning culture (r = .63, p = .001) positively and significantly predicted the job satisfaction of Omani employees. This finding indicated that when the element of leader-member exchange and learning culture are available in an organization, the employees' job satisfaction level would dramatically enhance and improve.

The table results also show the value of the variables (exogenous and endogenous variables) factor loadings. According to the analysis, the values of factor

loading for leader-member exchange, organization learning culture and employees' job satisfaction ranged between .62 and .89, with a standard error of .016 and critical ratio equal to 3.546 greater than 1.964 at 0.05. This result suggested that the individual items of each variable were meaningfully targeted to their respective factors.

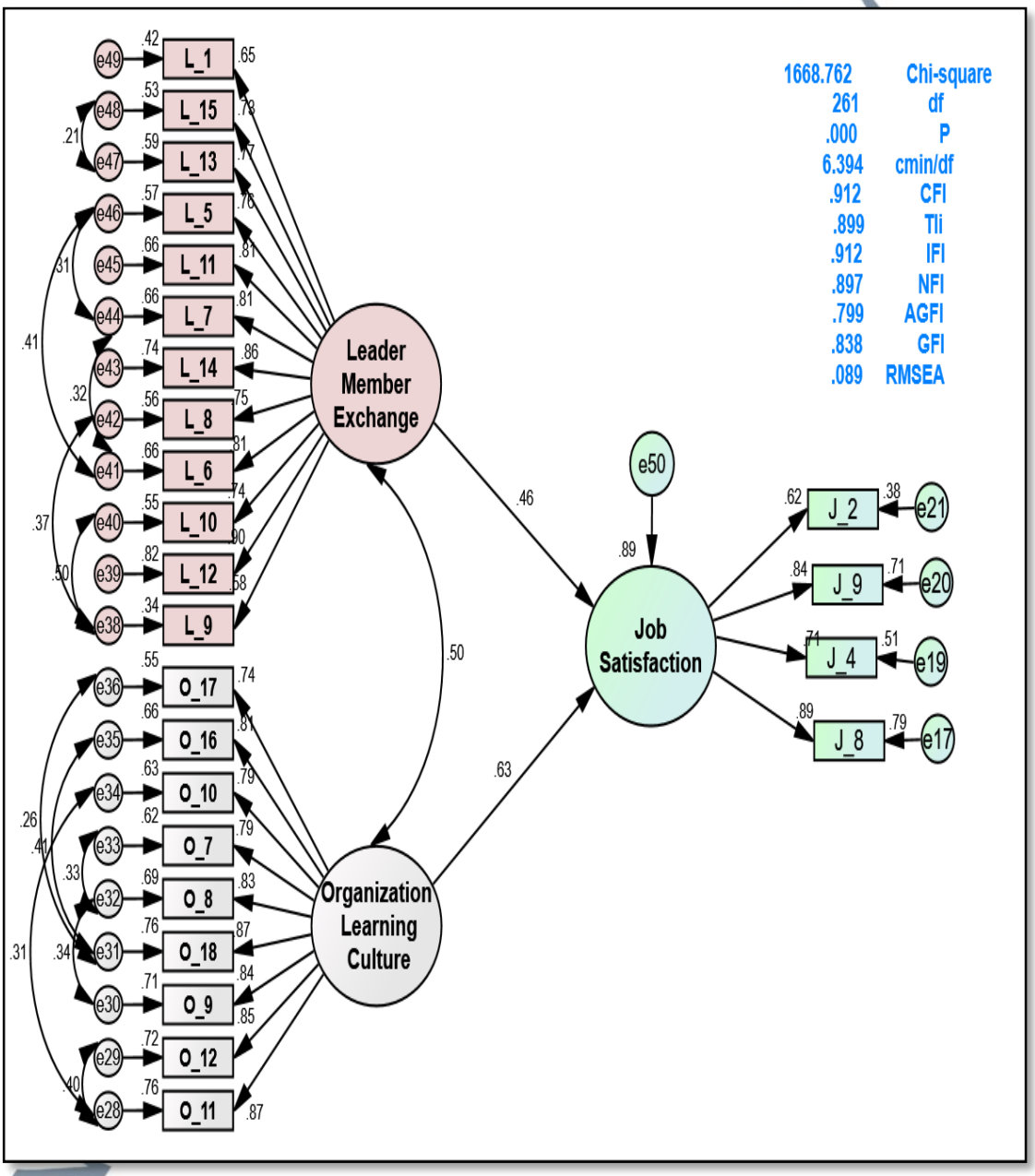

Figure 4. 14: The structural model between both the independent variables and the dependent variables

Finally, the evidence for the constructive equation's constructive validity showed the normal loading results that ranged between 0.067 - 0.986, so the loadings did not reach 1 to judge that it reached the merging point. Also, loadings were not less than 0.20 to suggest the Concurrent validity between the independent variables (leader-member exchange and organization learning culture) and dependent variables (job satisfaction items).

Table 4. 28: Loading indicators for the structural equation between (LMX and OLC on employees' job satisfaction)

Path analysis			**Standardized regression**	**Estimate**	**S.E.**	**C.R.***	**P**
O L C	→	Job satisfaction	0.986	0.791	0.035	22.436	0.001
L M X	→	Job satisfaction	0.067	0.057	0.016	3.546	0.001

* $\alpha < 0.05$

Hypothesis 5: There is a direct relationship between organization learning culture (OLC) and leader-member exchange (LMX) (independent variable), and Job Satisfaction (dependent variable).

The results showed a statistically significant relationship at the significance level $\alpha < 0.05$ between the variable (OLC) on Job Satisfaction among the research sample members. Also, the results showed a statistically significant relationship at the significance level $\alpha < 0.05$ between the variable (LMX) on Job Satisfaction among the research sample members.

4.15 Summary

The following Table 4.29 summarises the research hypotheses indicated in the literature review and the framework according to the relationship between the research variables shown in Figure 4.13.

Table 4. 29: Summary of the findings

No	Findings	Analysis results
1	There is a positive and significant relationship between the Organization learning culture and Human Resource Management.	Supported Positive and significant
2	There is a positive and significant relationship between the Leader-Member exchange and Human Resource Management.	Supported Positive and significant
3	There is a positive relationship between Human Resource Management and job satisfaction.	Supported Positive and significant
4	There is a positive and significant relationship between leader-member exchange and job satisfaction.	Positive and significant
5	There is a positive and significant relationship between the Organization's learning culture and job satisfaction.	Supported Positive and significant
6	Human Resource Management is a mediator between LMX and Job satisfaction.	Supported Positive and significant
7	Human Resource Management is a mediator between OLC and Job satisfaction.	Supported Positive and significant
8	There is no significant indirect relationship between the Organization learning culture and job satisfaction when Human Resource Management after a mediator enters the equation.	Supported Positive and significant
9	There is no significant indirect relationship between the leader-member exchange and job satisfaction when Human Resource Management implemented as a mediator	Supported Positive and significant