The Diagnostic Test Assumptions Model of Market Orientation on Organizational Performance the Mediating Role of Entrepreneurial Orientation and Market Innovation: A Case of Oromia Regional State MSMEs, Ethiopia

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Abstract – The aim of this study the literature and assumption of diagnostic measure of to be carried out before the linear regression estimation to test Normality assumption, Linearity assumption, Multicollinearity, kurtoses and Skewness Homogeneity of Homoscedasticity assumption and Multicollinearity assumption tests of MO, with MSMEs performance that mediated EO and INNO of scarce, and this assumption that aims to examine the relationship between MO, EO and with Organizational performance, and based on the contingency theory, Market based view theory of a theoretical model that has been drawn, and survey approach with a questionnaire technique has been adapted to achieve the study objectives, and data will be collected from 388 industry sector from primary agricultural Enterprise, from Secondary Industries of Manufacturing and Construction Enterprises and from territory industries data collected from service industry of MSME performance, in Oromia regional state states of Ethiopia. The diagnostic measure assumption of findings that highlight Mo predict Customer, Competitor and IFC, from EO dimension that assess Autonomy Competitiveness Aggressiveness, Pro-active innovativeness and risk-taking and from innovation product, process, Marketing and Organizational innovation have a direct relationship with Organizational performance for the assessments of diagnostic measure of Normality, linearity, Multicollinearity, kurtoses and Skewness, Homogeneity and automatic linear regression modeling of better data fit to be highly recommended and supported for the measurement of MO, EO, ONNO with Firm performance of Business Enterprise of MSMEs Oromia, Ethiopia.

Keywords: Market Orientation, Entrepreneurial Orientation, Market Innovation, Organizational Performance and MSMEs.

1. INTRODUCTION

(Hussain et al., 2021), Market orientation (MO) is the term that has to be extensively, and it investigated in the past, and is known to be very high significant in the modern marketing and related decision-making process in any industry and firm Organization (Aimin, 2015; Blankson et al., 2018; Mahmoud 2019; Powers et al., 2020), and it has been empirically that has to be shown that business marketing practices of customer need to improve an organization of financial result, a firm organization stronger market orientation practices indicate a keen engagement in identifying new prospects and growth opportunities of business strategy (Hussain et al., 2021; Reijonen et al., 2019).

Mahendra Kumar Chelliah (2023), an Entrepreneurial orientation (EO) has over the past decades of firm organizations has to be dramatically changed their decision making and contingency theory strategies and processes of the firm, and the prime to motivate behind of these changes are digitization of marketing decision practices (Fang et al. 2021), and the dynamic and turbulent business environment of the industry firm (Fan et al. 2021), and the constant development of new technologies has to be led to high competition of the business strategies (Ali et al. 2022; Ali and Johl 2022), the current pandemic situation further accelerates the situation around the firm and institution has to be changed (Alsharif et al. 2021).

(Gada Gizachew Wakjira& Scant 2022) Market Innovation is one of the business corporation's has choices when facing market competition and sustainable management of the firm innovation of a company's effort to develop, to produce, and market innovation of new products for the business industry using technology and information of the business, and Market Innovation is not limited scope and objects for manufactured goods, and it also includes life attitudes of the business, behavior of the firm, or movements of organization toward the change process of the business for all forms of community life, (Pervaiz K. Ahmed and Charles D. Shepherd 2020).

(Ebrahim and Andualem 2022), Micro- Small and Medium Enterprises (MSMEs) play an important business role in employment creation, and income generation, (Liguori and Pittz 2020), Micro-Small and Medium Sized Enterprises are more efficient, skilled in the nations of economy, and to create an employment and it can be provide income generation opportunity for low income groups of the business (Tambunan T. 2020), in Micro-Small and Medium sized enterprises to be provide the entrepreneurial culture, and to boast the economy against economic crises, such as low per capita income, poverty and unemployment to the Government of Ethiopia, Oromia (Aradom Gebrekidan Abbay 2022), and the Government has to be recognized the contribution and the efficiency of MSMEs in terms of job creation, idea generation, and income generation for the alleviation of poverty (Albergaria M and Jabbour 2019).

Therefore, most of the previous theoretical empirical, Systematic, methodological and evidential theory of the studies are typically tended to focus on spatial industry distribution, firm opportunity, and the growth of MSME, and to highlighted the global business novelty of the study to seek and to examine the gap in the contribution of industry of MSMEs, based on the above research study gap, and that conducted in this study to assess the effect of Market Orientation with Organizational performance through mediating role of Entrepreneurial Orientation and Market Innovation, and moreover, limited research of the studies to be made to assess the MSMEs for the Contributions towards to sustain in Oromia regional state Micro-Small and Medium Sized Enterprise (MSMEs), Ethiopia.

2. INVESTIGATION PHILOSOPHY AND RESEARCH DESIGN

Quantitative positivism philosophy research approach it requires to search methodological research paradigms, and it concerned widely to use a framework of research design, to add the value in pure social science philosophy, the probabilistic model techniques data to be established in study, to use for another of similar data set, and to describe, it has to be inference, objective research philosophy, and to evaluate the effect and relationship between two or more predict variables, and to confirm the theory testing and building, the findings of data to be extra polite, and to use a similar materials with the same after finished data set of the study, and to test data to be confirm a data and to hypotheses testing, collecting and analyzing Quantitative research data (Deductive Research), Optimism research in nature focusing on cause relationship methods, and to use a statistical data analyses, in order to arrive a generalizable which are often be used with statistical analysis to be analysed (Collis and Hussey, 2019).

(Mesfin Workineh Melese 2016), the quantitative research aspects of the study to be investigated in one shot, and it needed data has to be collected using a questionnaire schedule with working members of the MSMEs in Oromia regional state under study area, the Stratified random techniques, and systematic random techniques of self-administered questionnaires consisting of all relevant variables, (Saunders.et al., 2017), and important to address the objectives of the study can be developed, and data has to be collected from Primary industry of the economic operation of the business under the primary industrial sector activity of the business enterprise of agricultural industries, the Secondary industry of the business uses the raw materials extracted, and using primary sector converted in to finished goods of the business of Manufacturing Industries, and Construction industries, to be selected and the territory industries of the business, it involves and providing service facilitating a smooth flow of goods and services in the market of Service industries of Mining industry, farming industry, Agro industry, Fruit and Vegetables industries, Furniture and home furnishing, Building Materials, Sugar industry, Coffee and oil seed industry, Textile industry, Gasoil station, Electronics, Hospital and health care industry, Food and beverage industry, infrastructure industry, Construction, Cosmetics, Transportation, Hotels and Educational industries of the business Enterprise that can be the study area of MSMEs in Oromia regional state to use a large sampling size of the researcher for 388 business Enterprise of industry the data can be generated, and due to time and financial limitations, the nature of the population, the researcher preferred to use a method developed from 21 zonal area of Oromia regional state, only five selected zonal area of Micro- Small and Medium sized enterprise from Sheger zuria, East Shewa, Arsi Zone, West Guji and East Guji zone of Oromia, Ethiopia.

3. DIAGNOSTIC ASSUMPTION OF MODEL TESTS

The diagnostic tests Modell assumption has to be carried out before the linear regression estimation, and to test Normality assumption, Linearity assumption, Multicollinearity, kurtoses and Skewness Homogeneity of Homoscedasticity assumption and Multicollinearity assumption tests.

3.1. Normality Assumption Test

Table –1: Normality Assumption Model test, (2023)

Tests of the Normality Model Test						
	Kolmogorov-Smirnov [Model]			Shapiro-Wilk Model		
	Stat.	df	Sig.	Stat.	df	Sign.
Customer OR	.147	388	.000	.941	388	.000
Competitor OR	.124	388	.000	.964	388	.000
Interfuncitional	.130	388	.000	.960	388	.000
Supplier OR	.149	388	.000	.947	388	.000

|						
Autonomy EO	.143	388	.000	.963	388	.000
Aggressiveness EO	.160	388	.000	.952	388	.000
Innovativeness EO	.230	388	.000	.915	388	.000
Proactive EO	.162	388	.000	.951	388	.000
Risk-taking EO	.134	388	.000	.961	388	.000
Product INN	.162	388	.000	.941	388	.000
Process INN	.210	388	.000	.916	388	.000
Marketing INN	.199	388	.000	.921	388	.000
Organization INN	.204	388	.000	.923	388	.000
Performance INN	.127	388	.000	.965	388	.000
a. Lillie for Significance for Correction Model						
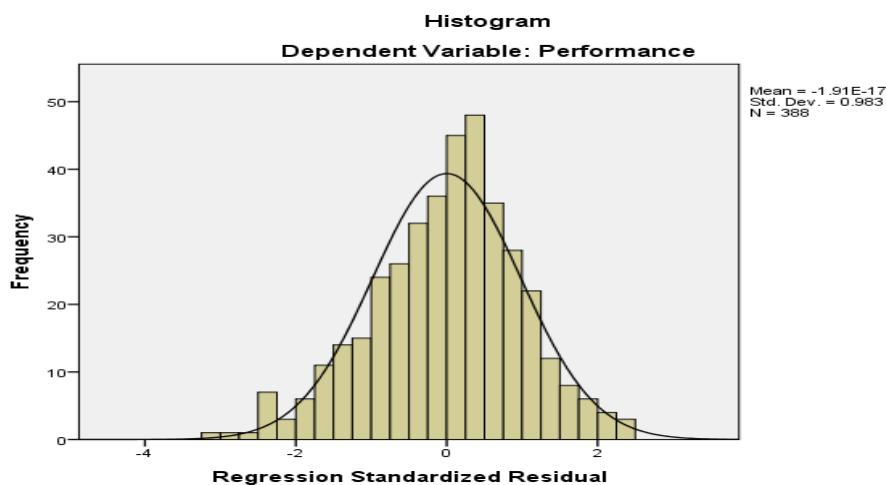
Fig –1: Regressional Standardize Residual Assumption of Histogram, (2023)

For the Normality tests it has to be determine when a data set is well-fitted by a normal distributions of data set of MSMEs, and it has to be computed, and it likely for a random variables of data underlying the data set of the variables has to be normally distributed, and the tests of a form of model selection date has to be highly adjusted , and it can be interpreted in several ways of data distributed methods, has depending on the bell shaped dissemination of data for the interpretations of probability statistics of the assumption can be tested by looking at the histogram model for the data distribution together with above histogram of the standardized Coefficient residuals, of the closer the dots lie to the diagonal line, the closer to normal the residuals are distributed, based on researcher assumption data of MO, EO, INNO and dependent variables of OP data of Histogram has highly Fitted, and Shapiro- walk model of statistics result has highly distributed morethan 0.7, and the significance value result output is accepted.

3.2. Skewness and Kurtosis Assumption of Model Test

Table –2: Skewness and Kurtosis Assumption Model test, (2023)

Descriptive Statistics							
	N	Mean		Std. Deviation	Skewness		Kurtosis	
	Statist.	Statist.	Std. Error	Statist.	Statistic	Std. Error	Statist.	Std. Error
Customer OR	388	3.659	.63168	.59379	–.830	.124	.763	.247
Competitor OR	388	3.770	.34146	.78636	–.355	.124	–.541	.247
Interfunctional OR	388	3.610	.24074	.77225	–.264	.124	–.590	.247
Supplier OR	388	3.414	.84861	.92728	–.760	.124	.524	.247
Autonomy EO	388	3.645	.94664	.88842	–.831	.124	–.616	.247
Aggressiveness EO	388	3.451	.33893	.73652	–.280	.124	–.920	.247
Innovativeness EO	388	3.854	.10037	.97708	–.759	.124	.723	.247
Proactive EO	388	3.590	.10627	.9333	–.736	.124	–.989	.247

Risk-taking EO	388	3.641	.08610	.69602	−.264	.124	−.538	.247
Product INN	388	3.657	.11785	.62135	−.821	.124	.724	.247
Process INN	388	3.412	.09383	.84826	−.007	.124	.696	.247
Marketing INN	388	3.366	.09921	.95428	−.127	.124	.509	.247
Organization INN	388	3.650	.09856	.94149	−.178	.124	.551	.247
OP	388	3.866	.24036	.73456	−.226	.124	−.233	.247
Valid N. (list wise)	388							
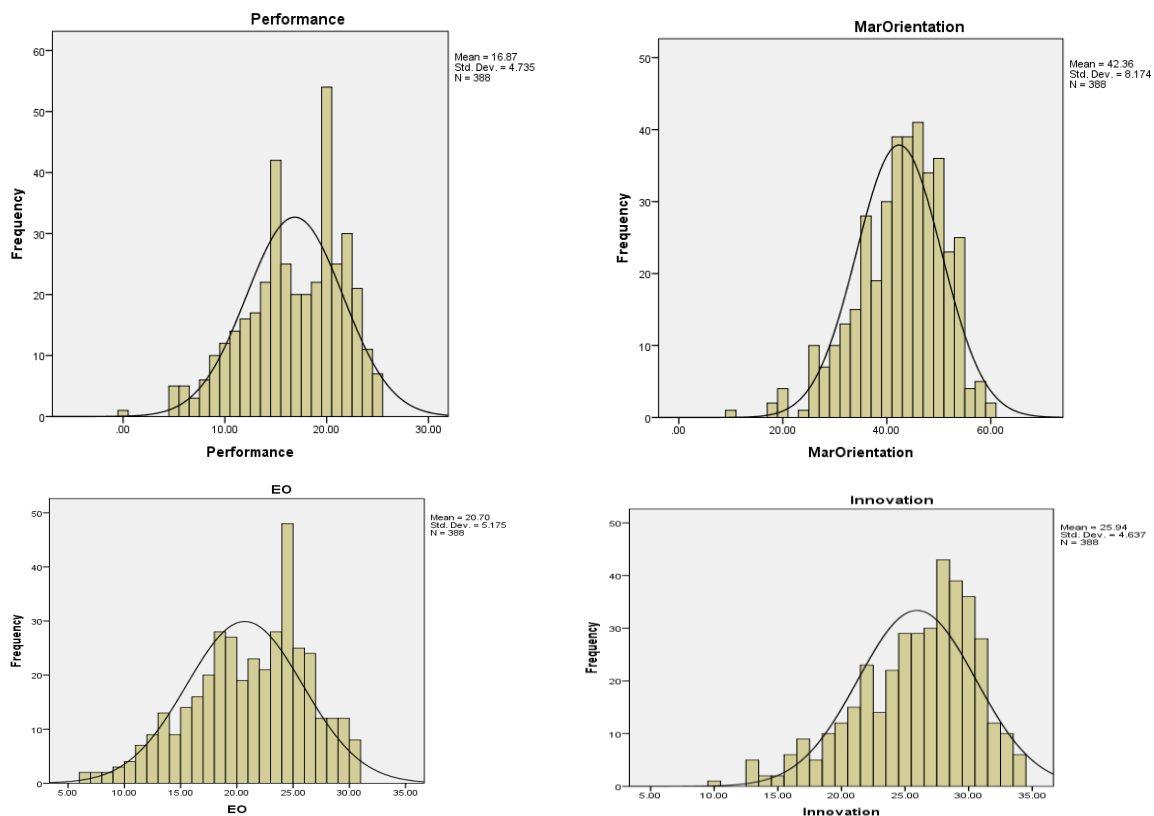
Fig −2:OP, MO, EO and INNO Assumptions

Based on the assumption value within the range of Skewness between +1.96, and −1.96 are the said to be acceptable, Beyond these limits the data can be skewed of data set value, based on the estimation of (Hair,

2010) and Bryne (2010), that argued the data can be considered to be normal if Skewness is between -2 to +2, and Kurtosis is between -5 to +5,cluster of frequency distribution that measure, the rule of the thumb the researchers of the data set is normally the data has distributed and accepted and recommended with in the variables of MO, EO, INNO and OP data of research area has supports based on assumption, and based on the assumption of histogram of skewness value results OP value and MO assumption result that shows zero and mediated skewness, the probability distribution of deviate of normal distribution in data set of EO and Innovation results shows a positive skewed result of bell shaped curve results of MSMEs Oromia, Ethiopia.

3.3. Linearity Assumption Test

Table -3: Linearity Assumption Model test, (2023)

Measures of Associations

	R	R Sq.	Eta	Eta Squared	P. Value
OP * MO	.827	.662	.722	.566	0.000
OP * EO	.842	.678	.759	.575	0.000
OP * INNO	.797	.688	.773	.596	0.000

Data of Linearity Assumption test results that indicate that Market Orientation with OP value of R is (r=0.827, p<0.05), Entrepreneurial Orientation with OP result is focuses of (r =0.842, p<0.05), and Innovation Orientation with Organizational Performance (r =0.797, p< 0.05); the results that implies that there is co-movement of variables of data set value, and in the same direction, and R-sq. value has highly move morethan 0.5, Eta value and Eta- sq. value are also highly distributed with probability value output of >0.05 probability estimation. The reseon why it can be critical to note that correlation does not necessarily mean that there is a causal relationship (Woolridge, 2019), and thus, there is a data need to be conducted a linear regression Coefficient analysis to estimated, and the causal relationship of variables in linear regression is suitable and can be estimated in this study the Linearity Assumption test value of MSMEs of Ethiopia linearity assumption result are supported.

3.4. Homogeneity Assumption of Model Tests

Table -4: Homogeneity Assumption Model test, (2023)

Test of Homogeneity of Model Variance[a,b]					
		Levene Statistic	df1	df2	Sig.
OP	Based on Mean	5.043	12	373	.000
	Based on Median	3.134	12	373	.000

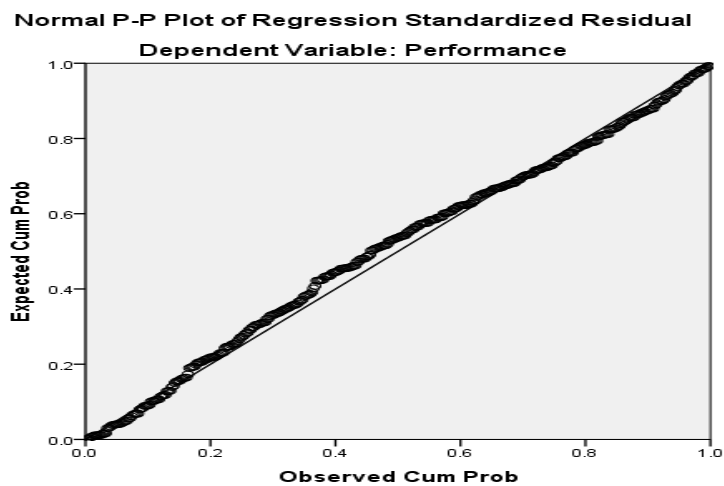|					
	Based on Median and with adjusted df	3.134	12	276.683	.000
	Based on trimmed mean	4.750	12	373	.000
a. OP is constant when MO = 8.13. It has been omitted.					
b. OP is constant when EO = 9.19. It has been omitted.					
c. OP is constant when INN =7.12. It has been omitted.					

Fig –3: Homoscedasticity assumption Model test, (2023)
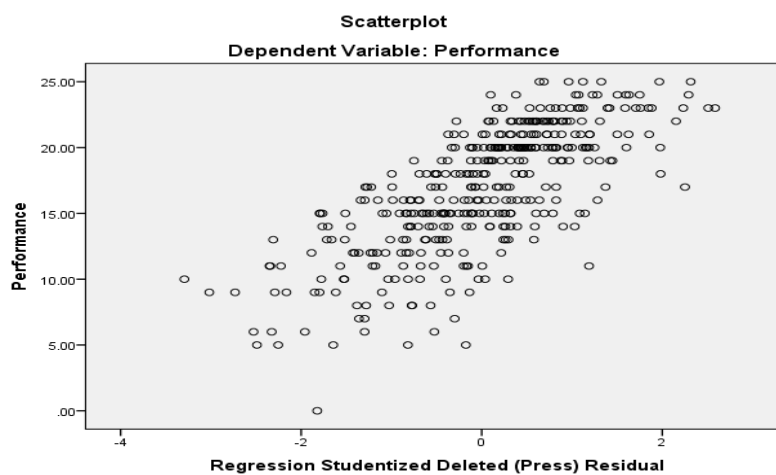

Fig –4: Heteroscedasticity Assumption Model tests, (2023)

The test of Homogeneity tested to be assumed, tested using Levene's tests of dependent variable result exhibits equal variance across the range of predictor variables, and this data set result assumption of the variances in the two groups are different from each other, the variance used to measure the equality of variance of error term for the variables regression of data evaluation of MO, EO, INNO(Gastwirth, Gel & Miao, 2019), the results of mean, media and adjusted df, MO consists OP with result of 8.13, EO with OP 9.19 and INNO consists with OP 7.17 that has to be omitted with the significance level of <0.05 result has to be supported, and the Organizational performance results that requires even distribution of residual and error terms or homogeneity of error terms of MSMEs of Ethiopia throughout the data distribution result output assumption result has to be supported.

The Homoscedasticity result of equal distance of line and the same finite variance of variables of data result can be highly checked by the visual evaluation of a scare plot of the standardized residual error of linear regression standardized predicted value, (Osborn & Waters, 2012), and the error terms are distributed randomly with hasn't certain patterns of data, then the problem is not detrimental for analyses, and the figures and table above results shows that the standardized residuals error in data set are distributed evenly indicating heteroscedasticity are not a serious problem for this data, it has highly distributed and much larger of variations of variables of data set assumption has highly fitted(Gastwirth et al., 2009).
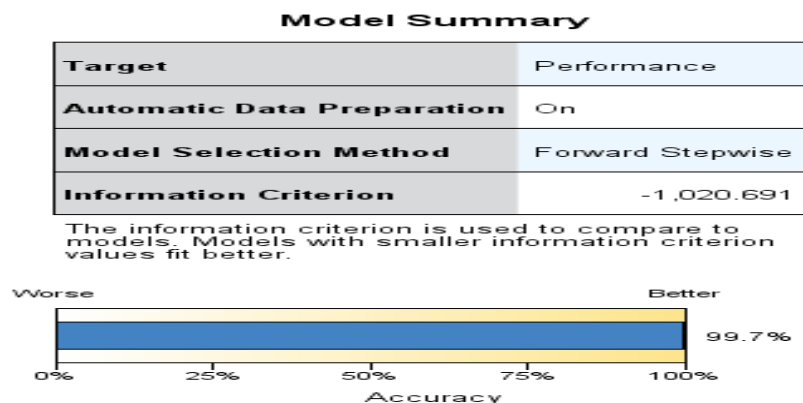
3.5. Multicollinearity Assumption Test
Table -5: Multicollinearity Assumption test, (2023)

Coefficientsᵃ							
Model of the data Estimation	Unstandazed Coeff.		Standzed Coeff.	t	p.v	Collinearity Statistics of Model	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant Value)	6.274	1.305		.210	.000		
Customer Or.	.155	.079	.485	1.959	.051	.761	1.314
Competitor Or.	.074	.083	.302	.050	.000	.600	1.667
Interfunctional Or.	.138	.087	.123	.443	.000	.555	1.803
Supplier Or.	.222	.077	.414	.292	.000	.640	1.562
Autonomy EO	.286	.092	.175	3.099	.002	.751	2.215
Aggressiveness EO	.216	.109	.309	.144	.000	.660	2.779
Innovativeness EO	.131	.141	.255	.928	.000	.516	2.406
Proactive EO	.509	.128	.104	.070	.000	.550	2.221

Risk-taking EO	.198	.139	.571	1.422	.156	.577	1.733
Product INN	.163	.097	.080	1.670	.096	.629	1.590
Process INN	.196	.128	.477	1.535	.000	.576	1.737
Marketing INN	.383	.131	.158	2.925	.004	.592	2.034
Organization INN	.939	.130	.385	7.231	.000	.506	1.977
a. Dependent Variable: OP							

The Variance-inflation factor (VIF) of data set has also been checked, and the values are to be found smaller, which supports that the multicollinearity assumption tests is not a problem, and in this assumption the overall VIF results has less than 1 has to be supported and accepted as per (Hair, 2010), and the tolerance statistics in linear regression analysis of model fit assumption value it helps to detect a co-linearity problem. The Tolerance result that runs from 0 to 1 and result to be closer to 1 it indicates there has no multicollinearity problem, (Keith, 2006), and in this study the overall the tolerances are above 0.5 has to be accepted and, the amount of variation in that construct is not explained by other predictors, and all the two tests of MO, EO, INNO and Organizational Performance of Multiple linear diagnostic results of data set to be run that can indicated there is no multicollinearity problem based on the assumption of MSMEs of Ethiopia.

3.6. Automatic Linear Regression Assumption

Model Summary

Target	Performance
Automatic Data Preparation	On
Model Selection Method	Forward Stepwise
Information Criterion	-1,020.691

The information criterion is used to compare to models. Models with smaller information criterion values fit better.

99.7% Accuracy

Fig –5: Automatic Linear Regression Assumption test,(2023)

The Automatic Linear Regression transform of Assumption data test of MO, EO, INNO and OP variables are automatically transferred to be run, in order to provide an improved data set model transformation techniques of Linear regression of automatically estimated, and the measurement values, outlier trimming, category merging and other purpose of data preparation, Selection methods and Criterion information worse accuracy model data result is better 99.7% to estimate the assumption of MSMEs Ethiopia, Oromia of selected zonal area of the study.

4. CONCLUSION

For the Normality tests it has to be determine when a data set is well-fitted by a normal distributions of data set, and it has to be computed, and it likely for a random variables of data underlying the data set of the variables has to be normally distributed, and the tests of a form of model selection date has to be highly adjusted , and it can be interpreted in several ways of data distributed methods, has depending on the bell shaped dissemination of data for the interpretations of probability statistics of the assumption can be tested by looking at the histogram model for the data distribution together with above histogram of the standardized Coefficient residuals, of the closer the dots lie to the diagonal line, the closer to normal the residuals are distributed, based on researcher assumption data of MO, EO, INNO and dependent variables of OP data of Histogram has highly Fitted, and Shapiro- walk model of statistics result has highly distributed morethan 0.7, and the significance value result output is accepted.

The test of Homogeneity tested to be assumed, tested using Levene's tests of dependent variable result exhibits equal variance across the range of predictor variables, and this data set result assumption of the variances in the two groups are different from each other, the variance used to measure the equality of variance of error term for the variables regression of data evaluation of MO, EO, INNO(Gastwirth, Gel & Miao, 2019), the results of mean, media and adjusted df, MO consists OP with result of 8.13, EO with OP 9.19 and INNO consists with OP 7.17 that has to be omitted with the significance level of <0.05 result has to be supported, and the Organizational performance results that requires even distribution of residual and error terms or homogeneity of error terms of MSMEs of Ethiopia throughout the data distribution result output assumption result has to be supported.

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5. FUTURE RESEARCH DIRECTION

For future research of the study could be supplement the remote the data collection process through self-administrated surveys of data with other methods, to further study to validate the usage of IoT within MSMEs, in future research should adopt and to develop by qualitative and mixed methods approaches to interpreted MO, EO, Innovation and Op of the firm, allowing respondents to record unrestricted responses, and ultimately more significant and negative insights of the firm, and finally, this study used to the subjective measures. However, these measures are standard practices, based on (Gupta et al., 2020; Vij & Bedi, 2016; Wang, 2018; Wiklund & Shepherd, 2020), it may lead to be biased results for the future studies could be consider, and using objective measures for Business performance, Organizational Performance, Marketing Performance and Firm Performance of business Enterprise of Ethiopia.

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