

Chapter VI

*Impact of Motivational, Business
Environmental (Internal and External)
Factors on Firms' Performance and their
Relationship Inter Se using Structural
Equation Model and the Major
Problems Faced by Rural MSMEs*

CHAPTER VI

IMPACT OF MOTIVATIONAL, INTERNAL AND EXTERNAL ENVIRONMENTAL FACTORS ON FIRMS' PERFORMANCE AND THEIR RELATIONSHIP *INTER SE* USING STRUCTURAL EQUATION MODEL AND THE MAJOR PROBLEMS FACED BY RURAL MSMEs

6.1 INTRODUCTION

According to Jauch & Glueck (1998) and Indris & Promina (2015), Performance is the level of achievement of a business firm in a certain period. The performance and growth of the rural Micro, Small and Medium enterprises (MSMEs) is the major indices for the rapid industrialization in rural areas, increases investment opportunities, enhances income distribution and strengthens the rural entrepreneurship (Kotey and Meredith, 1997).

A business firm is influenced by the environment in which it operates and the success of any firm is dependent on its ability to adapt to the changing environment. Therefore, the business environment plays an imperative role in the growth of rural Micro, Small and Medium manufacturing enterprises (Delmar and Wiklund, 2008). The Psychological motivation factors have received a significant influence on business start-ups. Accordingly, entrepreneurs start their own business units due to several reasons namely, passion for entrepreneurship, to create employment opportunity, to be recognized in the society and to improve their standard of living. Hence, the study has considered that, the performance of an enterprise has been influenced by Motivational factors (Shane et al., 2000), Internal and External Environmental factors (Rogoff et al., 2004; Beck and Demirguc-Kurt, 2006). The internal environmental factors are largely controllable by the business units (Fatoki & Garwe, 2010; Kolstad & Wiig, 2015) and the external environmental factors are beyond the control of the business units (Fatoki & Garwe, 2010). Therefore, the motivational factors, Internal and External environmental factors can have either positive or negative influence on the performance of the business units (World Bank, 2006; Zhang, van Doorn & Leeflang, 2014). In spite of the rural Micro, Small and Medium manufacturing enterprises' contribution to the rural economic growth

and development, these enterprises could not progress satisfactorily due to various functional problems that they are confronted with while running their business units.

This chapter deals with the objective of examining the extent of influence of Motivational, Internal and External Environmental factors on the performance of Rural Micro, Small and Medium manufacturing enterprises, constructing a Structural Equation Model to analyze their relationship *inter se* and assessing the major functional problems faced by Rural Micro, Small and Medium Manufacturing Enterprises.

6.2 RELATIONSHIP BETWEEN MOTIVATIONAL FACTORS, INTERNAL ENVIRONMENTAL FACTORS, EXTERNAL ENVIRONMENTAL FACTORS AND BUSINESS PERFORMANCE

To examine the level of influence of Motivational, Internal and External environmental factors on the performance of rural Micro, Small and Medium manufacturing enterprises, Correlation analysis has been performed initially to find the relationship between the factors measuring the firms' performance. Further, regression analysis has been applied to estimate the co-efficient of the dependent variable from several independent variables. This section of analysis aims at testing the following hypothesis:

H₀₁: “Motivational factors, Internal and External Environmental factors do not have a significant influence on Firms' Performance”

The following table 6.1 presents the result of Correlation analysis between Motivational factors, Internal environmental factors, External Environmental Factors and Firms' Performance

Table 6.1: Correlation Matrix- Motivational Factors, Internal environmental Factors, External environmental Factors and Firms' Performance

Factors	Y	X1		X3	X4	X5	X6	X7	X8	X9	X10
Y	1.000	.086	.252**	.160*	.148*	-.322**	.256**	.079	.254**	.556**	-.406**
X1		1.000	.225	.369	.272	-.019	.108	.032	.086	-.171	-.111
			1.000	.491	.364	.098	.151	.070	.067	.132	.110
X3				1.000	.461	.104	.179	.169	.158	.045	.162
X4					1.000	-.046	.011	.035	.047	.014	-.106
X5						1.000	.370	.350	.217	.088	-.093
X6							1.000	.329	.159	.082	-.207
X7								1.000	.401	.131	-.118
X8									1.000	.057	-.111
X9										1.000	-.108
X10											1.000

(Source: computed) (* - significant at 1per cent level, ** - significant at 5 per cent level, Ns- not significant)

Y= Business performance

X1= Need for independence

X2= Need for achievement

X3= Social recognition

X4= Financial rewards

X5= Production

X6= Finance

X7= Marketing

X8= Human resource

X9= Micro environment

X10= Macro environment

It is revealed from the table 6.1 that, most of the variables have a relationship with other variables. Among the four factors of Motivation, need for achievement ($r=0.252$), Social recognition($r=0.160$) and Financial rewards ($r=0.148$) have a significant positive relationship with firms performance at 1 per cent and 5 per cent level. Similarly, Need for Independence ($r=0.086$) also has a positive relationship, but the relationship has not been

significant at 1 per cent and 5 percent level. The highest correlation exists between need for achievement and firms' performance. It implies that the rural entrepreneurs have been motivated to achieve in their respective business through the knowledge and experience gained from business operations.

Among the four Internal factors considered, Finance ($r= 0.256$) and Human resource ($r=0.254$) have been positively correlated with the performance and significant at 1 per cent level. Production ($r=-0.322$) has been negatively correlated with the performance which implies, if production increases by 1, firms performance decreases by -0.322 . Similarly, marketing ($r=0.079$) has been positively correlated with the performance but the relationship has not been significant at 1 per cent and 5 per cent level. Hence, the highest positive correlation exists between finance and the performance which implies that the rural entrepreneurs receive a strong financial support from their families in the form of equity. Among the External Environmental factors, Micro environmental factor ($r=0.556$) has a positive relationship with firms performance and Macro environmental factor ($r=-0.406$) has a negative relationship with firms performance and the relationships are found to be significant.

Hence, it is inferred from the above correlation matrix table 6.1 that, among the independent variables, the highest positive relationship exists between micro environmental factor and firms' performance. It implies that the opportunities that rural Micro, Small and Medium manufacturing enterprises seize from a close environment include factors namely, 'customers' and 'suppliers'. Hence, the Micro Environmental factors play an imperative role in exploring the performance of rural Micro, Small and Medium manufacturing enterprises. The result is in line with (Romero et. al, 2012).

Further regression analysis has been performed for the independent variables namely, Need for Independence, Need for Achievement, Social Recognition, Financial Rewards, Production, Finance, Marketing, Human Resource, Micro Environment and Macro Environmental factors and for the dependent variable (Business performance).

6.3 REGRESSION ANALYSIS FOR BUSINESS PERFORMANCE

The regression analysis has been applied to study the nature of relationship between two variables. It provides estimates of values of the dependent variable from

values of the independent variables with the regression equation. The following ten independent variables namely, 'Need for Independence', 'Need for Achievement', 'Social Recognition', 'Financial Rewards', 'Production', 'Finance', 'Marketing', 'Human Resource', 'Micro Environment' and 'Macro Environment' have been included in the model as pointers to predict the level of influence on Firms' Performance.

Multiple Regression analysis which is a logical extension of regression analysis includes two or more independent variables in the regression equation. Multiple regression analysis derives an equation which provides values of the dependent variable from values of the several independent variables. Out of the different methods of Multiple Regression analysis, stepwise regression method has been used. The general Multiple Regression equation is of the form,

$$Y = a_0 + a_1X_1 + a_2 + \dots + a_nX_n$$

where Y, the dependent variable

a_0 , constant

a_1, a_2, \dots, a_n - regression coefficients of dependent variable

X_1, \dots, X_n - regression coefficients of independent variables.

The regression analysis estimates the regression co-efficient and the constant. Initially, the equation starts with no predictor (independent) variables, then at the first step the variable having maximum correlation with the dependent variable is selected first and included in the regression model. The variable once included in the equation is again considered for removal to avoid multi-collinearity (correlation between independent variables) problems.

Once the variable has entered and remains in the equation, the next variable with the highest positive or negative partial correlation has been selected and considered for entry and if satisfies, the variable is added to the equation. This process of entry and removal is continued until all the variables satisfy the entry and removal criteria. Finally, the variables selected based on the selection criteria have alone been included in the model.

The regression result of the independent variables (factors) against the dependent variable (business performance) has shown in the following table 6.2

Table 6.2: Stepwise regression analysis for Business Performance

Model	Regression Coefficients (B)	Std. Error	Beta	t- value	Sig.
(Constant)	5.278	.271			
Micro environment	.372	.036	.384	9.425	**
Need for achievement	-.214	.034	-.394	-7.313	**
Macro environment	-.329	.064	-.369	-6.735	**
Production	-.383	.141	-.352	-5.410	**
Finance	.465	.062	.274	6.647	**
Human resource	.482	.159	.127	5.378	*
Financial rewards	.520	.133	.095	3.011	*
R= 0.655, R² = 0.489, Adj. R²= 0.420, F= 46.049, Sig = **					

*(Source: Computed *-significant at 5per cent level, **- significant at 1 per cent level)*

Dependent variable: Business performance

The table 6.2 depicts the result of stepwise regression analysis and contains the details of Multiple R, R², Adjusted R² and stepwise inclusion of variables in the regression equation. However, all the factors identified for the analysis have not been included in the equation. Out of 10 predictors, 7 predictors have been included in the equation. The factors which have not met the selection criteria (the variable whose F-value is 3.84 and the associated probability for F-test is less than or equal to 0.05 is considered for inclusion in the equation. Similarly, once the variable entered, removal criterion is F-value less than 2.71 associated with a probability of 0.10 or more) have been kept out of the equation.

Multiple R given in the above table 6.2 explains the multiple correlation coefficient of dependent variable with the set of independent variables which have included in the regression equation. The R value (0.655) has indicated that, there has been a good level of correlation between the dependent variable (Business performance)

and the set of independent variables. However, the F-value ($F=46.049$) shows that, the model has been statistically significant. The adjusted R^2 value (0.420) obtained when multiplied by 100 gives the percentage of variation in the dependent variable explained by the group of independent variables in the regression equation. Hence, 42.0 per cent variability in the performance of rural Micro, Small and Medium manufacturing enterprises has predicted by the independent variables such as 'Micro Environmental factor', 'Macro Environmental factor', 'Need for Achievement', 'Production', 'Finance', 'Human Resource' and 'Financial Rewards'.

From the regression table 6.2 it is found that, all the 7 predictor variables have a significant impact on firms' performance either at 5 per cent or 1 per cent level. Individually, 'Micro environmental factor', 'Finance', 'Human resource' and 'Financial rewards' have a positive influence on the 'Firms Performance'. The higher values on these set of variables have also scored higher on firms' performance. The other 3 predictor variables included in the equation namely, 'Production', 'Macro environmental factor' and 'Need for achievement' have a negative effect on Firms' Performance.

The t-test statistics calculated for the regression co-efficient have shown that, all the variables which have finally included in the model have significantly influenced the performance of rural Micro, Small and Medium manufacturing enterprises either at 5 per cent or 1 per cent level.

Standardized regression coefficients (Beta) have been calculated to find the relative contribution of each variable to the dependent variable. Since, the variables included in the model have different units of measurements, their respective regression coefficients cannot be compared directly. These variables have converted in to standardized values which are free from units of measurements and hence, the corresponding regression coefficients (Beta) have taken for comparable. It is noted from the table 6.2 that, in absolute terms, the contribution of the factor 'Micro environment' is high when compared to other variables with a highest beta value of 0.384 followed by 'Finance' with a beta value of 0.274, 'Human resource' with a beta value of 0.127 and 'Financial rewards' with a beta value of 0.095. It is, because of the adequate availability of raw materials on time, customers' purchasing power, strong financial support from

family members and cordial relationship maintained with their employees has increased the performance and has improved the rural entrepreneurs' standard of living.

The other variables such as 'Production', 'Macro environmental factor' and 'Need for achievement' have contributed less to the performance of rural Micro, Small and Medium Manufacturing Enterprises. It implies that, manufacturing is one of the thrust areas for rapid technology up-gradations that increase productivity in a highly competitive business environment. The relative prevalence of low level of technology and high material cost has increased the cost of production with poor productivity rates. Progressive State and Central Government schemes and subsidies have not been accessed by the respondents because of lengthy procedures to access the benefits, stringent rules and regulations etc.,. Moreover, the entrepreneurs fail to maximize the profitability and scale of operations due to the scarcity of resources. Hence, the problem of accessibility has impeded to prove in their business performance. Thus, the result of regression equation is depicted in the following:

$$\text{Business Performance} = 5.278 + .384 (\text{Micro environment}) - .394 (\text{Need for Achievement}) - .369 (\text{Macro Environment}) - .352 (\text{Production}) + .274 (\text{Finance}) + .127 (\text{Human Resource}) + .095 (\text{Financial Rewards}).$$

Structural Equation Model

Structural Equation Modeling (SEM) has been applied to know the relationship of Motivational, Internal environmental factors, External environmental factors and the Performance of rural Micro, Small and Medium manufacturing enterprises. A research model has been developed based on the items included in the questionnaire which theoretically explains the relationship of Motivational factors, Internal environmental factors (controllable) and External environmental factors (uncontrollable) and the Firms Performance. The rural Micro, Small and Medium manufacturing Enterprises have been studied by its Micro and Macro Environmental factors which have likely to influence the Internal environmental factors, Motivational factors and Business Performance. Further, the dimensions of motivational factors and internal environmental factors are as follows:

I. Motivational factors

1. Need for Independence
2. Need for Achievement
3. Social Recognition
4. Financial Rewards

II. Internal factors

1. Production
2. Finance
3. Marketing
4. Human resource

The following is the Single factor dimension identified for SEM

- Micro Environmental factor
- Macro Environmental factor and
- Business Performance

The micro and macro environmental factors have been assumed to affect the internal environmental factors, motivational factors and business performance. Hence, internal environmental factors and motivational factors mediate the effect of micro and macro environmental factors on Business performance.

Research Model

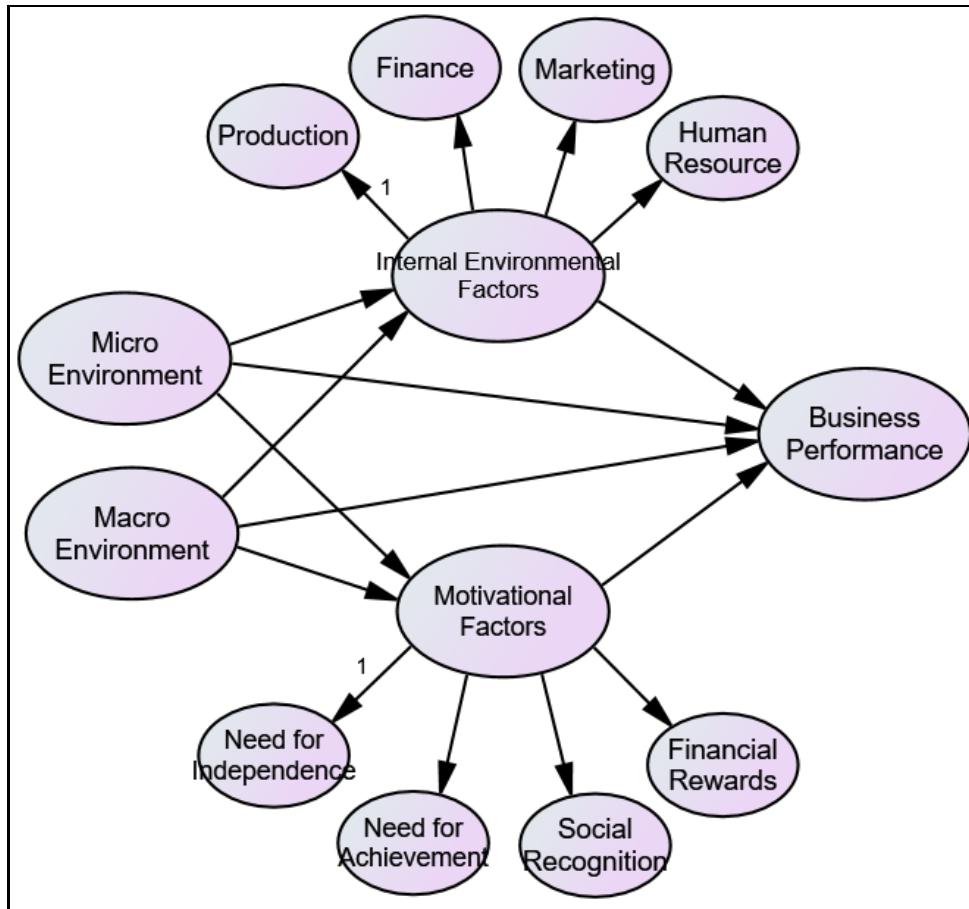
The initial proposed research model is shown in the figure 6.3.1. The latent factors for each dimension namely, Motivational and Internal environmental factors have been measured by the respective leading arrows drawn from these dimensions. ‘Need for Independence’, ‘Need for Achievement’, ‘Social Recognition’ and ‘Financial Rewards’ have been measuring the ‘Motivational factors’ with the leading arrows drawn from it. Similarly, ‘Production’, ‘Finance’, ‘Marketing’ and ‘Human resource’ have been measuring the ‘Internal environmental factors’ with the leading arrows drawn from it.

- The arrow leading from Micro and Macro environmental factors to Internal environmental factors measures the direct effect of Micro and Macro environmental factors on Internal environmental factors.
- The arrow leading from Micro and Macro environmental factors to Motivational factors measures the direct effect of Micro and Macro environmental factor on Motivational factors.
- The arrow leading from Micro and Macro environmental factors to Business Performance measures the direct effect of Micro and Macro environmental factors on Business Performance.
- The arrow leading from Internal environmental factors and Motivational factors to Business Performance measures the direct effect of Internal environmental factors and Motivational factors on Business Performance.
- Besides, the Internal environmental factors and Motivational factors act as a mediating variable to measure the indirect effect of Micro and Macro environmental factors on Business Performance.

The initial proposed model has been developed to achieve the following objectives:

1. To examine how the Motivational dimension has been explained by the four latent factors namely, 'Need for Independence', 'Need for Achievement', 'Social Recognition' and 'Financial Rewards'. It is to assess whether the model consisting of these four factors load on Motivational factors.
2. To examine how the Internal dimension has been explained by the four latent factors namely, 'Production', 'Finance', 'Marketing' and 'Human Resource'. It is to assess whether the model consisting of these four factors load on Internal environmental factors.
3. To establish a relationship of Motivational factors, Internal environmental factors, Micro and Macro Environmental factors and Business Performance and also, the effect of the Micro and Macro Environmental factors on business performance when mediated by the Internal environmental factors and Motivational factors.

Figure 6.1 Structural Equation Model explaining the relationship of Motivational, Internal environmental factors, Micro and Macro Environmental factors on the Performance of Rural Micro, Small and Medium manufacturing enterprises.



Motivational factor consisted of 21 items which has been explained with the constructs namely, ‘Need for Independence’ (5 items), ‘Need for Achievement’ (6 items), ‘Social Recognition’ (6 items), and ‘Financial Rewards’ (4 items).

Internal environmental factors consisted of 26 items which has been explained with the constructs namely, ‘Production’ (6 items), ‘Finance’ (9 items), ‘Marketing’ (5 items), and ‘Human Resource’ (6 items).

‘Micro Environmental factor’ and ‘Macro Environmental factor’ is a single factor dimension consisted of 12 items each which have explained the factor. Business Performance is also a single factor dimension consisted of 10 items which has explained the factor.

Reliability of Constructs

Initially, the reliability coefficients for all the latent constructs involved in this study have been found out to assess whether the items are consistent with the factors they measure. Cronbach's Alpha has been found out for each construct. The results are given in the following table 6.3

Table 6.3: Reliability Coefficients for constructs

S.No.	Constructs	Number of items	Cronbach's Alpha	Variable Names Given
Motivational Factors				
1	Need for Independence	5	0.744	NOI1 to NOI5
2	Need for Achievement	6	0.768	NOA1 to NOA6
3	Social Recognition	6	0.732	SR1 to SR6
4	Financial Rewards	4	0.706	FR1 to FR4
Internal Environmental Factors				
1	Production	6	0.765	PR1 to PR6
2	Finance	9	0.842	FIN1 to FIN9
3	Marketing	5	0.760	MAR1 to MAR5
4	Human Resource	6	0.753	HR1 to HR6
External Environmental Factors				
1	Micro Environment	12	0.886	MIC1 to MIC12
2	Macro Environment	12	0.849	MAC1 to MAC12
Business Performance				
1	Business Performance	10	0.839	BP1 to BP10

(Source: Computed)

It is seen from the table 6.3 that, the reliability coefficient, Cronbach's Alpha has been well above 0.70 for all the constructs which is considered as fairly reliable.

Confirmatory Factor Analysis of factors used in the model

The research model now consisted of five dimensions. It proposes to explain the Micro environment and Macro environment as independent variables and explain the relationship with endogenous (dependent) factors, 'Internal environmental factors', 'Motivational factors' and 'Business Performance'. Internal environmental factors and Motivational factors explain the relationship with Business Performance as independent variable and also as a mediating variable. Overall, the research model has been proposed with four latent independent constructs having direct and indirect effects on Business Performance.

Next, Confirmatory Factor Analysis (CFA) has been adopted to validate the constructed scales developed for 'Motivational factors' with four latent constructs, 'Internal environmental factors' with four latent constructs, 'Micro Environmental factor', 'Macro Environmental factor' and 'Business Performance'. The first step has been considered the fitting of the measurement model for each of the latent factor of two individual dimensions proposed in the model.

If the measurement models have been good representation of the respective domains individually, the next step has to develop a second-order factor model to test whether the hypothesized higher order factor has accounted for the relationship among the lower order factors. It results in simplified interpretations of complex structures of the first-order model. The final step is to test for the fitness of the second order factor model and to assess whether each of the two dimensions have been well captured and represented by their respective underlying factors. The data has been analysed by using AMOS version 22.0 where the parameters of the model have estimated by maximum likelihood method.

Measures of Model Fit

The adequacy of the model fit has been identified on the basis of the chi-square test statistics (given as CMIN in AMOS), that tests whether the population covariance matrix is equal to the model-implied covariance matrix. A significant result indicates, a poor fit ($P < 0.05$) whereas a non-significant test result indicates that, model fit is good showing that, the model has been appropriate for the data. However, the chi-square test

statistic has been sensitive to the sample size that it tends to give highly significant results in the cases with moderate to large sample size. Hence, apart from chi square test, other goodness-of-fit statistics viz., the ratio of the chi-square value to its associated degrees of freedom (CMIN/df), Root Mean Square Error of Approximation (RMSEA), Goodness-of-Fit Index (GFI), Comparative Fit Index (CFI), and Normed Fit Index (NFI) have been used. For a good model fit, the ratio CMIN/df should be less than 3, RMSEA should have a value 0.05 or below and the GFI, CFI and NFI should have values above 0.95. However, the CMIN/df with a value between 3-5, RMSEA between 0.05-0.08 and GFI, CFI and NFI between 0.90-0.95 has been considered to accept the model.

Modification Indices (MI) given by AMOS is to improve the model fit by allowing correlations between error terms and interdependence of the scales used in the analysis. The model fit improves after modification, and hence this has been performed minimally to have a better fit of the model.

Confirmatory Factor Analysis has been applied to each of the factors of five dimensions (Micro environment, Macro environment, Motivational factors, Internal environmental factors and Business Performance) to measure whether the items listed under each construct have in turn intended to measure what it has to measure. The items of each construct loads well on their respective constructs. The list of the respective item variables have been given.

6.4 CONFIRMATORY FACTOR ANALYSIS FOR MOTIVATIONAL FACTORS

I. First Order Confirmatory Factor Analysis (CFA) for Motivation dimension.

The factors of 'Motivation' towards Business performance has consisted of four dimension taken from 'Four force of Entrepreneurial motivation model (Christoph Ernst Wilken Kisker, 2016) have been measured on a five point Likert scale as Highly motivated, Motivated, Moderately motivated, Demotivated and Highly demotivated. The items related with each construct have loaded high on their respective factors. The first order confirmatory factor analysis has been done to test whether the variables represent their respective factors.

The First Order CFA Model proposed for 'Need for independence', 'Need for achievement', 'Social recognition' and 'Financial rewards' consists of the following items.

Need for Independence (NI)

NOI1: To be my own boss

NOI2: To have flexibility in time

NOI3: To implement my own ideas

NOI4: To create job instead to seek

NOI5: To adopt freedom work approach

Need for Achievement (NA)

NOA1: To prove I can do it

NOA2: To use my knowledge and experience

NOA3: To challenge myself

NOA4: To realize my dream

NOA5: To be innovative in the forefront of new technology

NOA6: To generate ideas and keep learning to develop a new product

Social Recognition (S)

SR1: To continue the family business tradition

SR2: To gain respect from family and friends

SR3: To follow an example of a successful entrepreneur

SR4: To gain social prestige

SR5: To have higher position in the society

SR6: To gain well reputation

Financial Rewards (F)

FR1: To self earn

FR2: To increase my family income

FR3: To improve my financial security

FR4: To improve my standard of living

The factors have been tested with the following hypothesis:

H₀₁: “The observed variables NOI1, NOI2, NOI3, NOI4 and NOI5 load on the factor named as Need for Independence”.

H₀₂: “The observed variables NOA1, NOA2, NOA3, NOA4, NOA5 and NOA6 load on the factor named as Need for Achievement”.

H₀₃: “The observed variables SR1, SR2, SR3, SR4, SR5 and SR6 load on the factor named as Social Recognition”.

H₀₄: “The observed variables FR1, FR2, FR3 and FR4 load on the factor named as Financial Rewards”.

The confirmatory factor models have been tested for the goodness of fit and the results are exhibited in the following table 6.4

Table 6.4: First Order Confirmatory Factor Analysis (CFA) for Motivational Factors

Factor	Hypothesis	Indicator variables	Chi-Square	P value	CMIN/df	GFI	NFI	CFI	RMSEA
Need for Independence	H ₀₁	NOI1 to NOI5	12.970	P<0.05	2.594	0.986	0.983	0.989	0.065
Need for Achievement	H ₀₂	NOA1 to NOA6	19.043	P<0.01	3.174	0.984	0.985	0.990	0.072
Social Recognition	H ₀₃	SR1 to SR6	21.802	P<0.05	2.725	0.981	0.970	0.981	0.068
Financial Reward	H ₀₄	FR1 to FR4	3.206	P>.05	1.603	0.996	0.995	0.998	0.040

(Source: Computed)

The model test results in the table 6.4 have shown that, the chi-square value has been significant for the factors ‘Need for Independence’, ‘Need for Achievement’ and

‘Social Recognition’ and insignificant for the factor ‘Financial Reward’. However, the Chi square values have been greatly influenced by the sample size and hence, the CMIN/df has taken as a measure of fit. It shows that, for these three significant factors, the CMIN/df values have been below 5. The goodness of fit statistics GFI, NFI and CFI has been above 0.95 for all the factors. The RMSEA values have been below 0.08 for all the factors. The model fit statistics have shown that, all the measures of fit are within acceptable limits and it can be inferred that, the variables load on their respective factors. Hence, the hypotheses H₀₁ to H₀₄ have been accepted.

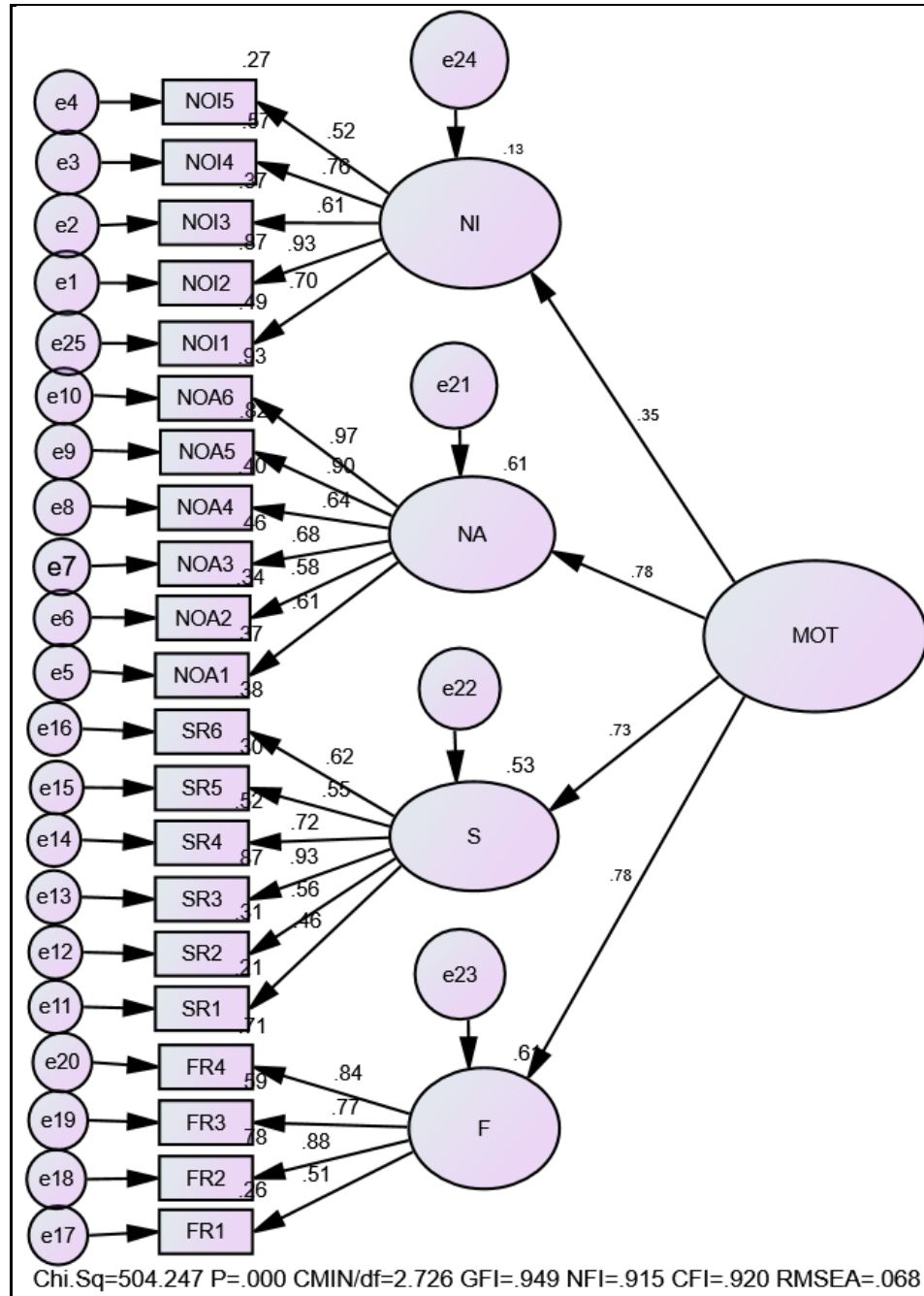
Second Order Factor Model for Motivational factors

The factor models have been measurement models explaining the relationship between the four latent constructs namely, ‘Need for Independence’, ‘Need for Achievement’, ‘Social Recognition’ and ‘Financial Reward’ and their respective indicator variables have been considered appropriate with their hypotheses accepted. The goodness of fit indices for these measurement models has been adequate. To fit a second order factor model, the latent factors obtained in the first order CFA models, have to represent the respective dimension individually. To test for the fit of the second-order factor model considering the four hypothesized factors together where only if these constructs (latent factors) have been highly correlated in the first-order factor model, a second-order factor model which is more parsimonious and interpretable could be obtained. The second order factor model with the four factors of Motivation with their respective indicator variables has proposed initially in figure 6.3.2a and has tested with the following null hypothesis:

H₀: “The Motivational factors have been adequately explained by the four factors namely, Need for Independence, Need for Achievement, Social Recognition and Financial Reward”

The following figure 6.2 shows the initially obtained second order factor model for Motivational factor.

Figure 6.2: Second Order CFA Model for Motivational factors



The figure 6.2 shows the initially obtained second order factor model for ‘Motivational factors’ which consists of measurement models obtained in the first order factor model. The second order factor model shown in the figure 6.2 has suggested that, the model has been satisfactory since, all the fit statistics have been below the admissible limits.

The CMIN/df value has been found below the admissible level of 5, the other measures namely, the GFI, NFI and CFI values have been above 0.90 and the RMSEA value has been 0.06, which makes the model satisfactorily acceptable as the value is below 0.08. Since the model has been acceptable no further improvements in the model has been necessary and thereby the hypothesis has been accepted wherein the four latent factors namely, Need for Independence, Need for Achievement, Social Recognition and Financial Reward explains the higher order factor namely, Motivation.

Factor loadings

The figure 6.2 shows the standardized estimates for the observed factors as well as indicator variables. These weights are independent of the units with which the variables have been measured and compared. The standardized regression weights for observed variables of each factor and the respective factors have given with the leading arrows, higher the loading, better the variable explain about the factor. The path shows that, the variable NOI2 loads higher on ‘Need for Independence’ with 0.93 loading factor compared to other variables. Similarly, the variable NOA6 loads higher on ‘Need for Achievement’ with factor loading of 0.97 compared to other variables, the variable SR3 with a value of 0.93 loads higher on the factor ‘Social Recognition’ and the variable FR2 with a value of 0.88 loads higher on the factor ‘Financial Reward’.

Factor wise for the dimension Motivation, the path for Need for achievement and Financial Rewards loads higher (0.78) on Motivational dimension compared to other factors. The factor Need for Independence has lesser loading (0.35) compared to other factors.

The following table 6.4 (a) shows the un-standardised regression coefficients of the paths developed for the model.

Table 6.4 (a): Regression Weights for Motivational factors

Variable To	Path	Variable from	Estimate	S.E.	C.R.	P
Need for Independence	<---	Motivational factor	0.600	0.123	4.870	**
Need for Achievement	<---	Motivational factor	1.246	0.182	6.850	**
Social Recognition	<---	Motivational factor	0.848	0.142	5.960	**
Financial Rewards	<---	Motivational factor	1.000			

(** - Significant at 1% level)

It is observed from the table 6.4 (a) that, the above estimates have been un-standardised regression estimates of the corresponding independent variables. For example, 0.600 under the column estimate denote that as the value of Motivation goes up by 1, the value of Need for Independence increases by 0.600. The values given above have been the regression estimates of the corresponding independent variables. S.Es has been the Standard Errors of respective regression coefficients. C.R (Critical ratio) has been the ratio of regression estimate values to S.E. Probability (P) shows that the regression coefficients have been significantly contributing to the dependent variable.

It is found from the figure 6.4 (a) that, with four latent factors, it can generate a model of respectable fit. The model shows that, the CMIN/df value being 2.726 and RMSEA value being 0.068 which have been at the acceptable level. The GFI, NFI and CFI have been above 0.90 and the hypothesis has been accepted with the four latent constructs namely, 'Need for Independence', 'Need for Achievement', 'Social Recognition' and 'Financial Reward' shows a significant representation of Motivational factor.

6.5 CONFIRMATORY FACTOR ANALYSIS FOR INTERNAL ENVIRONMENTAL FACTORS

II. First Order Confirmatory Factor Analysis (CFA) for Internal environmental factors

The proposed model of Internal environmental factors have been analysed to determine if the items measure the factors that they have intended to measure it. It is expected that, the items related with each factor have loaded high on their respective factors and has assumed that these items would not cross loaded on other factors. The First Order Factor Model has consisted of several indicator variables which explain the latent constructs that represent the following items:

Production (PR)

1. PR1: Raw material can be accessed at reasonable rate.
2. PR2: Cost of the land is less in rural areas
3. PR3: Labours are available at cheaper cost
4. PR4: Location of the unit helps to enjoy tax concession from the Government

5. PR5: Low cost machinery is used for production
6. PR6: Low cost of basic infrastructure facilities like electricity, water etc

Finance (FIN)

1. FIN1: The firm employs the best financial mix and proper financial planning
2. FIN2: Procurement of funds from different sources are at less cost
3. FIN3: Loan amount is sanctioned on time
4. FIN4: Rate of interest on business loan is moderate
5. FIN5: Firm gets good banking services
6. FIN6: Margin money loan from DIC is sufficient
7. FIN7: Interest on Margin money loan is fair
8. FIN8: Financial support from family, friends and relatives
9. FIN9: Financial assistance from moneylenders are at moderate rate

Marketing (MAR)

1. MAR1: Customers feedback are taken into account to improve the quality of production
2. MAR2: Middlemen service charge is relatively low
3. MAR3: Business links are supportive in marketing the products
4. MAR4: Credit sales is encouraged
5. MAR5: Products are displayed in trade fairs

Human Resource (HR)

1. HR1: Firms adhere to the labour laws which are suitable to the enterprise
2. HR2: Stress free environment is provided to labourers
3. HR3: Cordial relationship is maintained with the labourers
4. HR4: Job security is provided to workers

5. HR5: Labourers are regular in their work
6. HR6: Employees are praised and acknowledged for their work

The factors models have been tested with the following hypothesis:

H₀₁: “The observed variables PR1, PR2, PR3, PR4, PR5 and PR6 load on the factor named as Production”

H₀₂: “The observed variables FIN1, FIN2, FIN3, FIN4, FIN5, FIN6, FIN7, FIN8 and FIN9 load on the factor named as Finance”

H₀₃: “The observed variables MAR1, MAR2, MAR3, MAR4 and MAR5 load on the factor named as Marketing”

H₀₄: “The observed variables HR1, HR2, HR3, HR4, HR5 and HR6 load on the factor named as Human Resource”

The confirmatory factor models have been tested for the goodness of fit and the results are depicted in the following table 6.5

Table 6.5: First Order Confirmatory Factor Analysis (CFA) for Internal Environmental Factors

Factor	Hypothesis	Indicator variable	Chi-Square	P value	CMIN/df	GFI	NFI	CFI	RMSEA
Production	H ₀₁	PR1 to PR6	24.838	P<.01	4.468	0.979	0.975	0.980	0.074
Finance	H ₀₂	FIN1 to FIN9	73.654	P<.01	2.833	0.958	0.960	0.973	0.070
Marketing	H ₀₃	MAR1 to MAR5	147.129	P<.01	4.348	0.972	0.965	0.993	0.023
Human Resource	H ₀₄	HR1 to HR6	33.842	p>.05	0.368	0.976	0.981	0.996	0.014

(Source: Computed)

The model test results in the table 6.5 have shown that, the chi-square value has been significant for the factors ‘Production’, ‘Finance’, ‘Marketing’ and insignificant for the factor ‘Human Resource’. However, the Chi square values have greatly influenced by

the sample size and hence, the CMIN/df has been taken as a measure of fit. It shows that, for the three factors the CMIN/df values have been below 5. The goodness of fit statistics GFI, NFI and CFI has been above 0.95 for all the factors. The RMSEA values have been below 0.08 for all the factors. The model fit statistics shows that, all the measures of fit are within acceptable limits and it can be inferred that, the variables load on their respective factors. Hence, the hypotheses H₀₁ to H₀₄ have been accepted.

Second Order Factor Model for Internal environmental factors

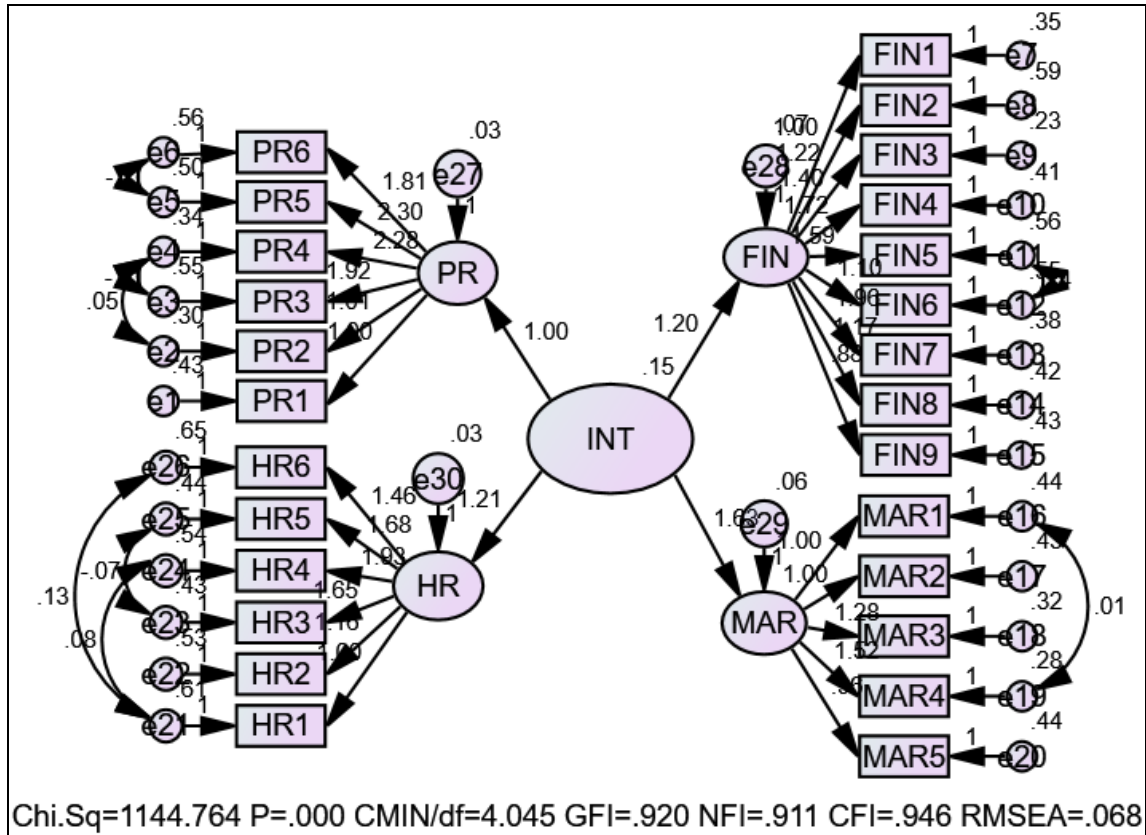
The factor models are measurement models which explains the relationship between the four latent constructs namely 'Production', 'Finance', 'Marketing' and 'Human Resource' and their respective indicator variables which have been considered as appropriate with the hypotheses accepted in the first order model.

The goodness of fit indices for these measurement models are adequate. To fit a second order factor model, the latent factors obtained in the first order CFA models have to represent the respective dimensions individually. To test for the fit of the second-order factor model, the four hypothesized factors have to be considered together, where only if these constructs (latent factors) are highly correlated in the first-order factor model, a second-order factor model which is more parsimonious and interpretable model could be obtained. The second order factor model with the four latent constructs of Internal environmental Factors with their respective indicator variables has been proposed initially in figure 6.3 and has tested with the following hypothesis:

H₀: "The indicators of Internal environmental factor have been adequately explained by the four factors namely, Production, Finance, Marketing and Human Resource"

The following figure 6.3 shows the initially obtained second order factor model for Internal environmental factors

Figure 6.3: Second Order CFA Model for Internal environmental factors



Modification Indices for Co-variances

The modification indices computed for the measurement models has suggested that, there has been scope for improvement in the model fit. The Modification Indices will show how much the chi square value would reduce, if the error terms are allowed to correlate. The M.I has suggested that, allowing the error terms e2-e4, e3-e4, e5-e6, e11-12, e16-e19, e21-e24, e21-e26, e23-e25 to correlate would greatly decrease the CMIN value of the respective factor model. The M.Is used initially in the measurement model helps to improve the model fit.

The CMIN/df value has been found to be below the admissible level of 5, the other measures namely the GFI, NFI and CFI values have been above 0.90 and the RMSEA value has been 0.068, which makes the model satisfactorily acceptable as the value is below 0.08. Since, the model has been acceptable and no further improvements

in the model is necessary and thereby, the hypothesis has been accepted wherein the four latent factors viz., Production, Finance, Marketing and Human Resource explains the higher order factor namely, Internal Factor.

Factor loadings

The figure 6.3 shows the standardized estimates for the observed factors as well as indicator variables. These weights are independent of the units with which the variables have been measured and compared. The standardized regression weights for the observed variables of each factor and the respective factors have been given with the leading arrows, higher the loading, better the variable explain about the factor. The path shows that the variable PR4 loads higher on Production with 0.85 loading factor compared to other variables. Similarly, the variable FIN7 loads higher on Finance with factor loading of 0.86 compared to other variables, the variable MAR4 with a value of 0.88 loads higher on the factor Marketing and the variable HR4 with a value of 0.79 loads higher on the factor Human Resource.

Factor wise for the Internal environmental dimension, the path for marketing shows higher loading (0.94) on internal factor compared to other dimensions. The factor Finance has lesser loading (0.88) compared to other factors.

The following table 6.5 (a) shows the un-standardised regression coefficients of the paths developed for the model.

Table 6.5 (a): Regression Weights for Internal Environmental Factors

Variable To	Path	Variable from	Estimate	S.E.	C.R.	P
Production	<---	Internal Environmental factor	.831	0.092	9.055	**
Finance	<---	Internal Environmental factor	1.000			
Marketing	<---	Internal Environmental factor	1.307	0.119	10.976	**
Human Resource	<---	Internal Environmental factor	.978	0.111	8.836	**

(** - Significant at 1 per cent level)

It is found from the table 6.5 (a) that, the estimates are un-standardised regression estimates of the corresponding independent variables. For example, 0.831 under the column estimate denotes that as the value of Internal environmental factor increases by 1, the value of Production increases by 0.831. S.Es has been the Standard Errors of respective regression coefficients. C.R (Critical ratio) has been the ratio of regression estimate values to S.E. Probability (P) shows, which regression coefficients have been significantly contributing to the dependent variables.

It is observed from the figure 6.3 that, with four latent factors a model can generated with the respectable fit. The model shows that, the CMIN value being 4.045 and RMSEA value being 0.068 both have been at the acceptable level. The GFI, NFI and CFI values have been above 0.90 and the hypothesis has been accepted with the four latent constructs namely, Production, Finance, Marketing and Human Resource have shown a significant representation of internal environmental factors.

6.6 FIRST ORDER CONFIRMATORY FACTOR ANALYSIS (CFA) FOR MICRO ENVIRONMENT, MACRO ENVIRONMENT AND BUSINESS PERFORMANCE

First order confirmatory analysis has been done for single factor dimensions namely, ‘Micro Environment’, ‘Macro Environment’ and ‘Business performance’. These dimensions have only single factor to represent their respective dimensions. The items of these factor dimensions have been measured on a five point rating scale. It has been expected that, the items related with each factor would load high on their respective factors. It has also been assumed that, these items would not cross load on other factors. The first order confirmatory factor analysis has been done to test whether the variables represent their respective factors.

The first order CFA model proposed for ‘Micro Environment’, ‘Macro Environment’ and ‘Business Performance’ consists of the following items:

Micro Environment (MIC)

1. MIC1: Different suppliers are available to procure raw materials
2. MIC2: There is sufficient and timely availability of raw materials
3. MIC3: Raw materials are supplied on credit basis, if necessary

4. MIC4: Customers have sufficient purchasing power which leads to increase in demand
5. MIC5: Attitude and desire of customers are supportive to the business
6. MIC6: Products are sold to different group of customers
7. MIC7: Market potential is identified from the competitors
8. MIC8: Competitor's dynamic move alert us
9. MIC9: Appropriate Market intermediaries are involved in distributing the products
10. MIC10: Regulatory agencies (DIC, Ministries, NSIC etc) are helpful in promoting the business
11. MIC11: Non-Government Organization (NGO) is helpful
12. MIC12: Local public are co-operative.

Macro Environment (MAC)

1. MAC1: Government regulations and procedures are simple
2. MAC2: Industrial policy changes are liberalised
3. MAC3: Government schemes and subsidy are accessible
4. MAC4: Ministries enhance assistance on the functional areas of business
5. MAC5: Labour laws are simple and streamlined
6. MAC6: Business registration is easy
7. MAC7: Line departments are prompt in issuing certificates
8. MAC8: Monetary and Fiscal incentives are supportive
9. MAC9: Proper utilization of capacity during price inflation
10. MAC10: Technological changes make production faster
11. MAC11: Family support is essential to start the business
12. MAC12: Materials used for the production are recyclable.

Business Performance (BP)

1. BP1: Reduction in the Cost of production
2. BP2: Increase in Sales volume
3. BP3: Increase in Profit
4. BP4: Increase in number of employees
5. BP5: Return on investment
6. BP6: Customer satisfaction
7. BP7: Customer retention
8. BP8: Business image
9. BP9: Market share
10. BP10: Expansion and diversification

The factor models have been tested with the following hypotheses:

H₀₁: “The observed variables MIC1, MIC2, MIC3, MIC4, MIC5, MIC6, MIC7, MIC8, MIC9, MIC10, MIC11 and MIC12 load on the factor named as Micro Environment”

H₀₂: “The observed variables MAC1, MAC2, MAC3, MAC4, MAC5, MAC6, MAC7, MAC8, MAC9, MAC10, MAC11 and MAC12 load on the factor named as Macro Environment”

H₀₃: “The observed variables Bp1, Bp2, Bp3, Bp4, Bp5, Bp6, Bp7, Bp8, Bp9 and Bp10 load on the factor named as Business Performance”

The confirmatory factor models have been tested for the goodness of fit and the results are given in the following table 6.4

Table 6.6: First Order CFA for Micro Environment, Macro Environment and Business Performance

Factor	Hypothesis	Indicator variables	Chi-Square	P value	CMIN/df	GFI	NFI	CFI	RMSEA
Micro Environment	H ₀₁	Mic1 to Mic12	232.638	P<.01	4.308	0.913	0.939	0.952	0.071
Macro Environment	H ₀₂	Mac1 to Mac12	216.466	P<.01	4.009	0.915	0.911	0.931	0.057
Business Performance	H ₀₃	Bp1 to Bp10	136.386	P<0.01	3.897	0.930	0.928	0.945	0.075

(Source: Computed)

From the above table 6.6, the model test results have shown that, the chi-square value has been significant for all the factors. However, the Chi square values have been greatly influenced by the sample size and hence, the CMIN/df has taken as a measure of fit which shows that, the value has been below 5. The goodness of fit statistics GFI, NFI and CFI have been above 0.90 for the factors and the RMSEA values have been within the admissible limits of 0.05-0.08. Hence, considering the results of all the goodness of fit measures except chi-square, the model has been appropriate and hypotheses have been accepted.

The model fit statistics show that, all the measures of fit have been within the acceptable limits and it can be inferred that the variables load on their respective factors. Hence, the hypotheses H₀₁ to H₀₄ have been accepted.

6.7 STRUCTURAL EQUATION MODEL OF MICRO ENVIRONMENT, MACRO ENVIRONMENT, MOTIVATIONAL FACTORS, INTERNAL ENVIRONMENTAL FACTORS AND BUSINESS PERFORMANCE OF RURAL MICRO, SMALL AND MEDIUM MANUFACTURING ENTERPRISES

The objective of the study is to understand the relationship among Motivational factors, Internal environmental factors, Micro Environment, Macro Environment and Business Performance *inter se*. Among these factors, the micro and macro environmental factors have been assumed as independent variables, Internal and Motivational factors have been assumed to mediate the effect on business performance. The following

hypotheses have been framed based on the conceptual research model and the objectives given at the beginning of SEM discussion.

H₀₁: “Micro and Macro Environmental factors have a direct positive effect on Internal environmental and Motivational factors”

H₀₂: “Internal environmental and Motivational factors have a direct positive effect on Business Performance”

H₀₃: “Micro and Macro Environmental factors have a direct positive effect on Business Performance”

H₀₄: “There has been a mediation effect played by Internal environmental and Motivational factors between Micro environment, Macro environment and business performance”

After attaining an acceptable level of fit with the measurement models for Micro Environment, Macro Environment, Motivational factors, Internal environmental factors and Business Performance, the data has been used for construction of full scale Structural Equation Model based on the hypotheses from H₀₁ to H₀₄.

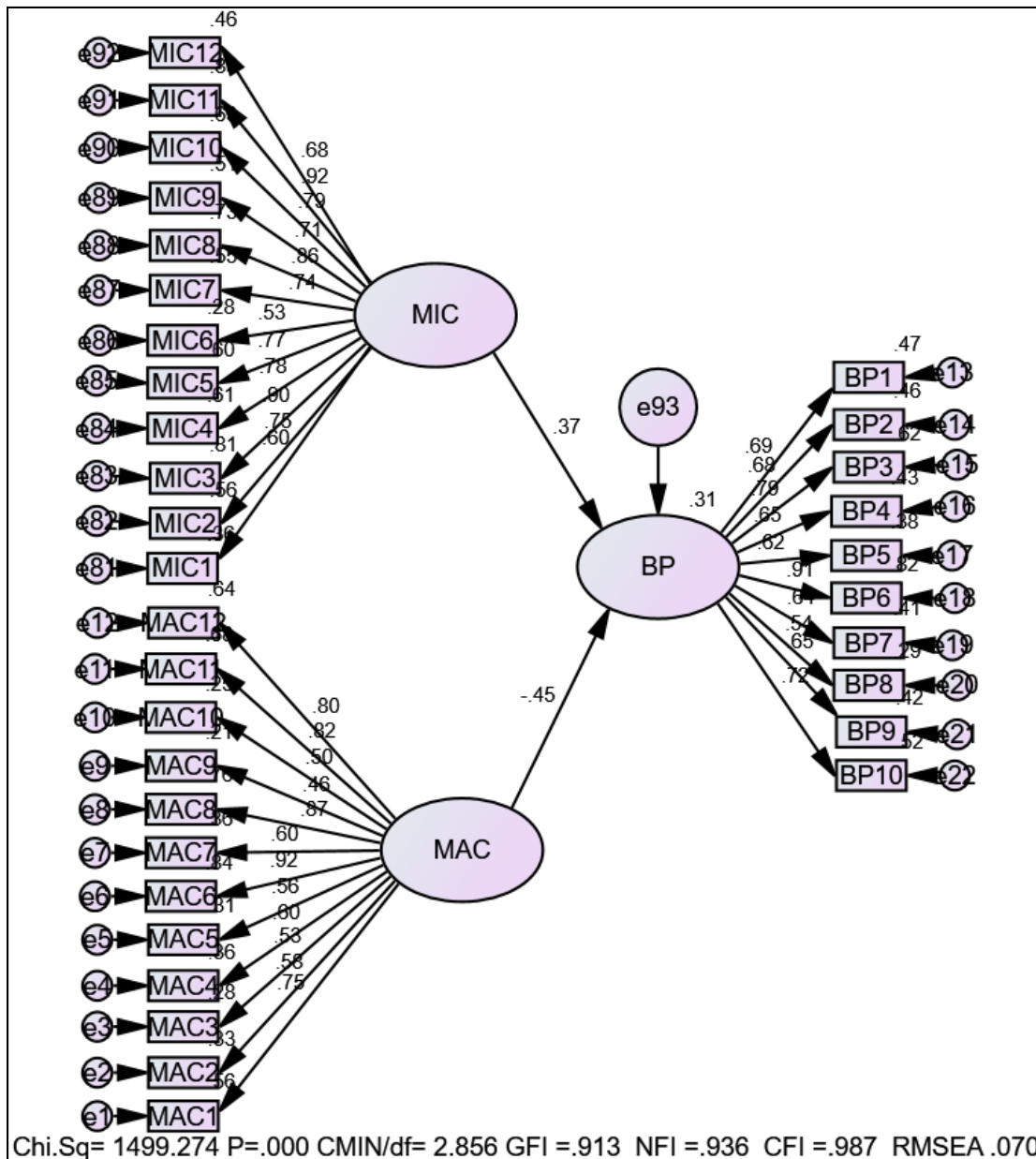
Structural Equation Model of Micro Environmental factor, Macro Environmental factor and Business Performance

It has been assumed that, the Environmental factors have an impact on Business Performance of rural Micro, Small and Medium manufacturing enterprises. The figure no 6.4 depicts the direct relationship of Micro Environmental factors, Macro Environmental factor and business performance. The path coefficients have been standardised regression weights.

The model fit statistics shows that, the CMIN/df value being 2.856 which has been less than the admissible limit of 5. The RMSEA value (0.070) has also been found to be less than the maximum admissible value of 0.08. The goodness of fit indices namely, GFI, NFI and CFI have been above 0.90, which indicates that the model has been acceptable. The standardised regression weight shows that, there has been a direct positive relationship between Micro environmental factor and Business performance and a direct inverse relationship between Macro environmental factor and Business performance. Hence, the hypothesis H₀₃ has been rejected.

It is inferred from the figure 6.4 that, the direct effect of Micro environmental factor on Business Performance is higher with a regression weight of 0.37 when compared to Macro environmental factor.

Figure 6.4: Structure Equation Model of Micro and Macro Environmental factors on Business Performance



Model Estimation

Table 6.6 (a): Regression Weights for Micro Environment, Macro Environment and Business Performance

Variable To	Path	Variable from	Estimate	S.E.	C.R.	P
Business Performance	<---	Micro Environment	.345	.050	6.862	**
Business Performance	<---	Macro Environment	-.388	.052	-7.483	**

(** - Significant at 1 per cent level)

Estimates of Regression Weights

The un-standardised regression estimates of the corresponding independent variable have been given in the above table 6.6 (a) S.Es has been the Standard Errors of respective regression coefficients. C.R (Critical ratio) has been the ratio of regression estimate values to S.E. Probability (P) shows which regression coefficients have been significantly contributing to the dependent variables (** indicates the respective regression weights are significant at less than 1 per cent respectively).

The table 6.6 (a) shows, that the Micro and Macro environmental factors affect the Firms Performance both positively and negatively. The regression weight for Micro environmental factor (0.345) and Macro environmental factor (-0.388) have been found to be significant at 1 per cent level. It indicates that, there exists a direct positive relationship between Micro environmental factor and Business Performance, a direct negative relationship between Macro environmental factor and Business Performance. Hence, the hypotheses, H_{03} (“There has been a direct positive significant relationship between Micro and Macro environmental factors and Business Performance”) have been rejected.

Structure Equation Model of Micro Environmental factor, Macro Environmental factor, Internal environmental factors, Motivational factors and Business Performance

The structural Equation Model given in the above figure 6.4 depicts the direct relationship between Micro and Macro environmental factors and Business Performance individually establishing that, Micro and Macro environmental factor has a significant

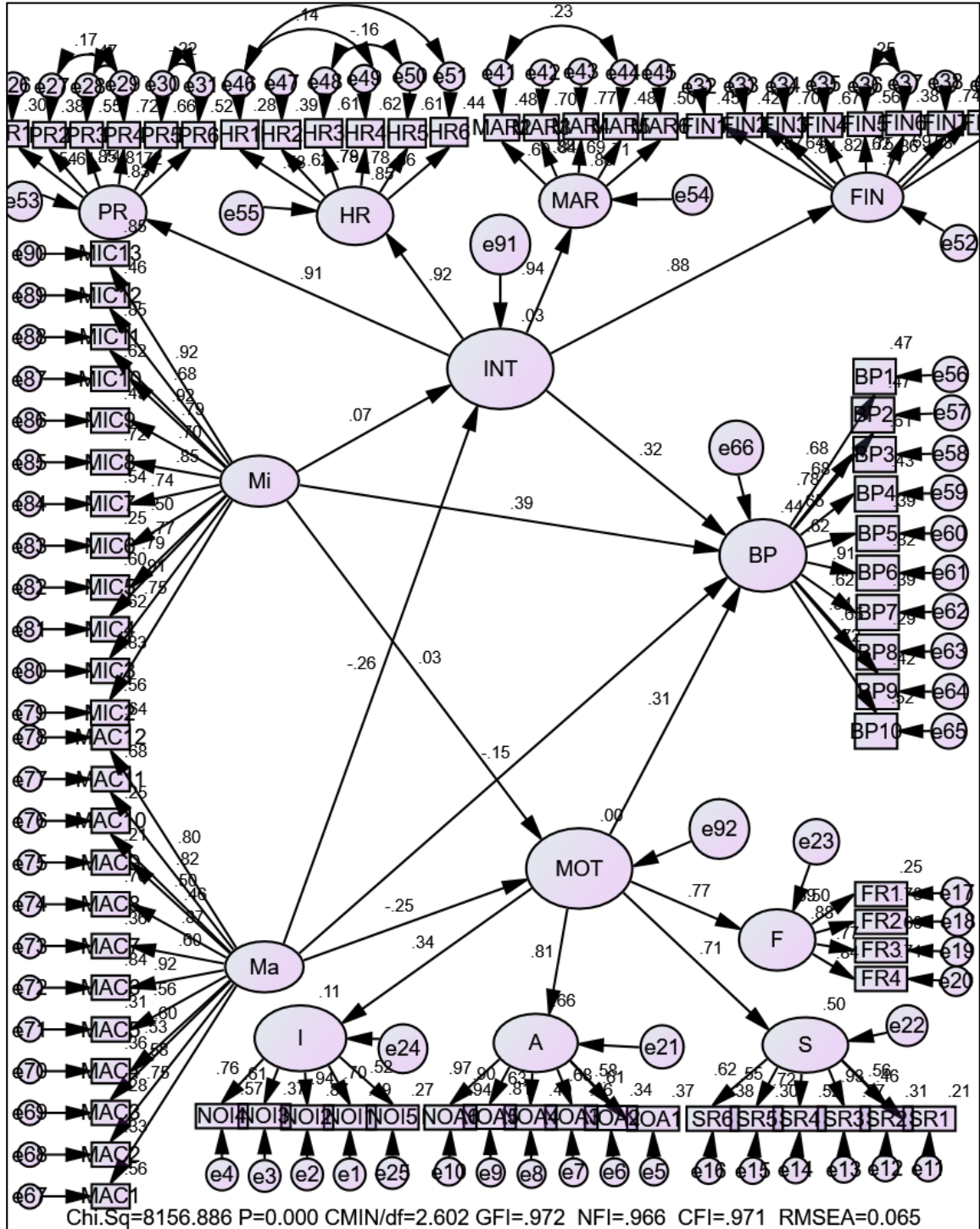
direct relationship with Business performance when there has been no mediating variable. However, it has been assumed that, the Micro and Macro environmental factor also have an indirect effect on Business Performance viz., the study attempts to find out whether Internal environmental and Motivational factors have a significant mediation effect between Micro and Macro environmental factors and Business Performance.

The following figure 6.5 shows that, the direct relationship of Micro and Macro environmental factors with Internal environmental and Motivational factors and Business Performance. The path coefficients have been standardised regression coefficients. The regression estimates produced by AMOS for un-standardised regression have been given below. The model fit statistics shows that, all the goodness of fit indices namely, GFI, NFI and CFI have satisfied the criterion value of being above 0.95, the CMIN value has been within the admissible limit of 5 and the RMSEA value falls between 0.05 and 0.08.

The model shown in the following figure no 6.5 gives the standardized regression weights of the corresponding variables and also squared multiple correlations. The regression coefficient shows that, these coefficients have been comparable as they are the independent of units of measurement.

Among the variables, Micro Environment has a direct positive relationship with Internal environmental factors, Motivational factors as well as Business Performance. The direct effect of Micro Environment on Business Performance explains more with a regression weight of 0.39 when compared to the direct effects of Micro Environment on Internal environmental (0.07) and Motivational factors (0.03). The direct effects of Macro Environment on Internal environmental factors, Motivational factors and Business Performance have an inverse relationship. The regression coefficient shows that, the direct effect of Macro Environment on Internal environmental factors with a regression weight of -0.26 and Motivational factors with a regression weight of -0.25 explains more compared to the direct effect of Macro Environment on Business Performance (-0.15).

Figure 6.5: Structure Equation Model of Micro Environmental factor, Macro Environmental factor, Internal environmental factors, Motivational factors and Business Performance



The magnitude and direction of relationship between all the dimensions have been studied in detail with the un-standardised regression weights. The results produced by AMOS have been given in the following table 6.7

Model Estimation

Table 6.7: Regression Weights for Micro Environment, Macro Environment, Internal environmental factors, Motivational factors and Business Performance

Variable To	Path	Variable from	Estimate	S.E.	C.R.	P
Business Performance	<---	Micro Environment	0.363	0.059	7.458	**
Internal environmental factors	<---	Micro Environment	0.037	0.030	1.244	Ns
Motivational factors	<----	Micro Environment	0.009	0.020	0.439	Ns
Business Performance	<---	Macro Environment	-0.186	0.021	0.468	Ns
Internal environmental factors	<---	Macro Environment	-0.391	0.151	-8.171	**
Motivational factors	<----	Macro Environment	-0.374	0.125	-6.780	**
Business Performance	<---	Internal environmental factors	0.282	0.083	3.421	**
Business Performance	<----	Motivational factors	0.269	0.072	3.112	**

(** - Significant at 1per cent level, Ns- Not Significant)

Estimate of Regression Weights

The estimates given in the table 6.7 have been the un-standardised regression estimates of the corresponding independent variables. S.Es has been the Standard Errors of respective regression coefficients. C.R (Critical ratio) has been the ratio of regression estimate values to S.E. Probability (P) shows which regression coefficients have been significantly contributing to the dependent variables (** indicates the respective regression weights are significant at less than 1 per cent respectively).

The table 6.7 further shows that, the regression weight of Micro Environmental factor on Business Performance is 0.363 which has found to be significant at 1per cent level. The regression weight of Macro Environmental factor on Business Performance is -0.186 which has found to be not significant at 1per cent level or 5 per cent level. Hence, the hypothesis **H₀₃** (“Micro and Macro Environmental factors have a direct positive effect on Business Performance”) has been rejected.

Micro environmental factor has a higher direct effect on Business performance (0.363) compared to the direct effect it has on Internal environmental (0.037) and Motivational factors (0.009). Macro environmental factor has a higher direct effect on Internal environmental (-0.391) and Motivation factor (-0.374) compared to the direct effect it has on Business performance (-0.186) which reveals that there exists a mediation effects between macro environmental factor and Business performance. Hence, the hypothesis **H₀₄** (“There has been a mediation effect played by Internal environmental and Motivational factors between Micro environmental factor, Macro environmental factor and business performance”) has been rejected.

Micro environmental factor has a direct positive effect on Internal environmental and Motivation factors but the relationship has not been significant at 1 per cent and 5 per cent level. Macro environmental factor has a direct negative effect on Internal environmental and Motivation factors at 1 per cent level of significance. Hence, the hypothesis **H₀₁** (“Micro and Macro Environmental factors have a direct positive effect on Internal environmental and Motivational factors”) has been rejected.

Internal environmental and Motivational factors have a direct positive effect on Business Performance at 1 per cent level of significance. Hence, the hypothesis **H₀₂** (“Internal environmental and Motivational factors have a direct positive effect on Business Performance”) has been accepted.

Table 6.8: Direct, Indirect and Total Effects – Un-standardised

Direct Effects					
	Micro Environment	Macro Environment	Motivational factors	Internal Environmental factors	Business Performance
Motivational factors	.009	-.374	---	---	---
Internal Environmental factors	.037	-.391	---	---	---
Business Performance	.363	-.186	.269	.282	---
Indirect Effects					
	Micro Environment	Macro Environment	Motivational factors	Internal Environmental factors	Business Performance
Motivational factors	---	---	---	---	---
Motivational factors	---	---	---	---	---
Business Performance	0.014	-0.210	---	---	---
Total Effects					
	Micro Environment	Macro Environment	Motivational factors	Internal Environmental factors	Business Performance
Motivational factors	.009	-.374	---	---	---
Motivational factors	.037	-.391	---	---	---
Business Performance	.377	-.396	.269	.282	---

(Source: computed)

Direct Effects – Estimates

The coefficients associated with the single-headed arrows in a path diagram are called as direct effects. In un-standardised model, for instance, Micro environmental factor has a direct positive effect on Internal environmental (0.037) and Motivational factors (0.009). It indicates that, the Micro environmental factor increases by 1, the Internal environmental and Motivational factors also increases by 0.037 (Internal environmental factor) and 0.009 (Motivational factor). The direct effect of Micro environmental factor on Business Performance has been 0.363 which infers that, the Micro environmental factor increases by 1, the Business performance also increases by 0.363. Similarly, Macro environmental factor has a direct negative effect on Internal environmental (-0.391) and Motivational factors (-0.374) of which indicates that, Macro environmental factor increases by 1, the Internal environmental and Motivational factors decreases by -0.391 (Internal environmental factor) and -0.374 (Motivational factor). The direct effect of Macro environmental factor on Business Performance has been -0.186 which infers that, Macro environmental factor increases by 1, the Business performance decreases by -0.186. It is found that, the direct effect of motivational factors on business performance (0.269) and internal environmental factors on business performance (0.282) are found to be positive. It has also been found that, the existence of indirect (mediated) effect of Micro and Macro environmental factors on business performance.

Indirect Effects – Estimates

The table 6.8 also describes the indirect effect of each of the column variable on each row variable. The table 6.5.2b shows that, Micro environmental factor has no indirect effect on Business Performance. It is found that, Micro environmental factor has a positive direct effect on Business Performance (0.363) which is higher than the indirect effect it has on Internal environmental and Motivational factors (0.014). Similarly, Macro environmental factor has an indirect effect on Business Performance. It is also been found that, the Macro environmental factor has a direct negative effect on Internal environmental and Motivational factors (-0.210) which is somewhat higher than the direct effect it has on Business Performance (-0.186).

In the previous model (Table 6.6 a), where the mediation effect of Internal environmental and Motivation factors have not been introduced and only the direct relationship between Micro and Macro environmental factors and Business performance have been studied. The result has shown that, the Micro environmental factor has a significant positive and direct effect (0.345) on Business Performance, but the Macro environmental factor has a significant negative and direct effect (-0.388) on Business Performance. However, in the latter model when the mediation of Internal environmental and Motivational factors have been introduced between Micro and Macro Environmental factors and Business Performance (Table 6.5.2a), the direct effect of Micro Environmental factor on Business Performance has increased to (0.363) and found to be significant. Similarly, the direct effect of Macro Environmental factor on Business Performance has reduced to (-0.186) and found to be not significant.

Thus, the indirect effect of Macro environmental factor on Business Performance has shown a negative effect in the relationship when mediated by internal environmental and Motivational factors. The result has suggested that, there has been a significant mediation effect of Internal environmental and Motivational factors between Macro environment and Business Performance. Hence, the hypothesis **H₀₄** (“There has been a mediation effect played by Internal environmental and Motivational factors between Micro environmental factor, Macro environmental factor and business performance”) has been rejected.

Total Effects – Estimates

The total effect has been the combined direct and indirect effect of each column variable on each row variable. The total effect of Micro environmental factor on Business Performance has been 0.377, which has been the sum of the direct and indirect effect it has on Business Performance. It is due to both direct (unmediated) and indirect (mediated) effects of Micro environmental factor on Business Performance. It reveals that, if Micro environmental factor increases by 1, the business performance also increases by 0.377. Similarly, the total effect of Macro environmental factor on Business Performance has been -0.396, which has been the sum of the direct and indirect effect

that it has on Business Performance. It is due to both direct (unmediated) and indirect (mediated) effects of Macro environmental factor on Business Performance and reveals, that if Macro environmental factor increases by 1, the business performance decreases by -0.396.

The model has also observed that the direct relationship between Micro and Macro environmental factors and Business Performance. The total effect indicates that, all the independent variables viz., Micro and Macro environmental factors, Internal environmental and Motivational factors have a both positive and negative effect on Business Performance and implies that, Micro environmental factors facilitate the Business Performance where the Macro environmental factors impede the Business Performance.

Table 6.9: Direct, Indirect and Total Effects – Standardised

Direct Effects					
	Micro Environment	Macro Environment	Motivational factors	Internal Environmental factors	Business Performance
Motivational factors	0.03	-0.25	---	---	---
Motivational factors	0.07	-0.26	---	---	---
Business Performance	0.39	-0.15	0.31	0.32	---
Indirect Effects					
	Micro Environment	Macro Environment	Motivational factors	Internal Environmental factors	Business Performance
Motivational factors	---	---	---	---	---
Motivational factors	---	---	---	---	---
Business Performance	.032	-.17	---	---	---

Total Effects					
	Micro Environment	Macro Environment	Motivational factors	Internal Environmental factors	Business Performance
Motivational factors	---	---	---	---	---
Motivational factors	---	---	---	---	---
Business Performance	.422	-.311	---	---	---

(Source: Computed)

Similar to un-standardised regression weights, relative contribution of the standardised direct, indirect and total effects of each column variable on each row variable have been given in the table 6.9. The direct effect of Micro Environmental factors on Business Performance has been 0.39 which is comparatively higher than the respective indirect effect. Similarly, the direct effect of Macro Environmental factors on Internal environmental factors (-0.26) and Motivational factors (-0.25) have been comparatively higher than the direct effect of Macro Environmental factors on Business Performance. The indirect effect of Macro Environmental factors on Business Performance has been -0.17 which is somewhat higher than the respective direct effect.

Finally, the study has revealed that the availability of adequate raw materials on time, abundant of suppliers, customers' purchasing power, customers attitude, NGO's support etc have helped the rural entrepreneurs to satisfy their customers and has facilitated the Business Performance. On the other side, Government stringent regulations, complicated laws, price inflation, prevalence of low level of technology, informal payments to public servants etc has affected the Internal environmental and Motivational factors of rural entrepreneurs and has resulted in impediment of the Business Performance of the rural Micro, Small and Medium Manufacturing Enterprises.

6.8 PROBLEMS FACED BY THE RURAL ENTREPRENEURS

The role of Micro, Small and Medium manufacturing enterprises in the development of the rural areas is significant (Bayati and Taghavi, 2007). In the light of their significance in growth and development, these enterprises still faces numerous challenges associated with their growth. The key variables affecting the rural Micro, Small and Medium manufacturing enterprises are finance, production, marketing, and human resource. This has been enlightened in the following:

Financial Problems

Respondents have asked to rank the financial problems that affect their growth and development. The most important problem has given as rank 1 and the least financial problem has given as rank 8. Mean ranks have been found out for the entire variables and are exhibited in the table 6.10

Table 6.10: Mean ranks – Financial problems

Financial problems	Mean rank	Actual rank
More legal formalities and cumbersome procedures to obtain loan from banks and financial institutions	2.05	1
Delay in sanctioning the loan amount	3.23	3
Insistence on collateral and margin money requirement	2.10	2
High interest rate	5.03	5
High transaction cost	5.72	6
Tight repayment schedule	6.47	7
Insisting compulsory deposit	6.90	8
Difficulty in collecting dues from the customers	4.49	4

(Source: Computed)

It is seen from the table 6.10 that, ‘stringent legal formalities and cumbersome procedures to obtain loan from banks and financial institutions’ has been highly ranked by the respondents as the most financial problem which affects their growth and development with a mean rank of 2.05 followed by ‘insistence on collateral and margin money requirement’ (mean 2.10), ‘delay in sanctioning the loan amount’ (3.23), ‘difficulty in collecting dues from the customers’ (mean 4.49), ‘high interest rate’ (5.03), ‘high transaction cost’ (5.72), tight repayment schedule’ (6.47) and ‘insisting compulsory deposit’ (6.90). It implies that, the policies and requirements discourage the respondents to obtain loans from banks and financial institutions. It is similar to the findings of (Venkateswarlu & Ravindra, 2014; Nishanth and Zakkariya, 2014; Shiralashetti, 2012; Joel Jebadurai, 2013; Krasniqi, 2007)

Friedman rank test has been applied to find out the significant variation in mean ranks for the financial problems.

H₀: “The mean ranks for the financial problem does not differ significantly among the respondents”

Table 6.10 (a): Friedman rank test- Financial problems

N	Chi-Square	Df	Sig.
375	1.599E3	7	**

(** - significant at 1 per cent level)

The ranking as per the above table 6.10 (a) is valid as the chi square value ($\chi^2 = 1.599E3$, $p < 0.000$) is statistically significant. Hence, the null hypothesis has been rejected at 1 per cent level of significance and has revealed that, the respondents have varied in ranking the financial problems.

Human Resource Problems

The following table 6.11 depicts the human resource problems faced by the respondents. The respondents have given rank 1 for the highest problem and 5 for the least problem and the result are presented in the table 6.11.

Table 6.11: Mean ranks – Human Resource problems

Human Resource Problems	Mean rank	Actual rank
Difficulty in identify the source	4.36	5
Lack of skilled labours	1.53	1
Inadequate motivation from employees	4.22	4
Labour absenteeism	3.33	3
Labour turnover	2.93	2
Demanding high monetary and non-monetary	4.63	6

(Source: Computed)

The table 6.11 shows that, ‘lack of skilled labours’ is the major problem faced by the respondents (1.53) followed by ‘labour turnover’ (2.93), ‘labour absenteeism’ (3.33), ‘inadequate motivation’ (4.22), ‘difficulty in identify the source’ (4.36) and ‘demanding monetary and non-monetary benefits’ (4.63). It implies that, majority of the respondents run their business units with unskilled labours and provides them training through on the job. Moreover, labours who are highly skilled prefer to work in urban areas due to high salary and other incentives than in rural areas. Hence, the non-availability of skilled labours in rural MSMEs has resulted in lower productivity, absence of quality, increase in wastages and raise in other overhead costs. The similar result is reported in the study by Venkateswarlu & Ravindra (2014); Mateen Ahmed Siddiqui (2015); Joel Jebadurai (2013) and Krishnendu Malakar (2017)

Friedman rank test has been applied to find the significant variation in mean ranks with regard to Human Resource problems.

H₀: “The mean ranks for the human resource problem does not differ significantly among the respondents”

Table 6.11 (a): Friedman rank test- Human Resource problems

N	Chi-Square	Df	Sig.
375	771.648	5	**

(** - significant at 1 per cent level)

The ranking as per the above table 6.11 (a) is valid as the chi square value ($\chi^2 = 771.648$, $p < 0.000$) is statistically significant. Hence, the null hypothesis has been rejected at 1 per cent level of significance and has inferred that, the respondents have varied in ranking the human resource problems.

Production problems

The respondents have asked to rank the following production problem that affects their business operation. The respondents have given rank 1 for the highest production problem and 5 for the least production problem and are exhibited in the following table: 6.12.

Table 6.12: Mean ranks– Production problems

Production problems	Mean rank	Actual rank
Lack of modern technology	1.67	1
High material cost	2.19	2
Irregular power supply	3.64	4
Shortage of water facilities	3.14	3
Lack of transportation and communication	4.36	5

(Source: Computed)

It is observed from the table 6.12 that, ‘lack of modern technology’ has been the major production problem faced by the respondents with a mean value of 1.67 followed by ‘high material cost’ (2.19), ‘shortage of water facilities’ (3.14), ‘irregular power supply’ (3.64) and ‘Lack of transportation and communication’(4.36). It implies that the prevalence of poor technology impedes their production efficiency. The similar finding is reported in the study by (Mateen Ahmed Siddiqui, 2015; Krishnendu Malakar, 2017).

Friedman rank test has been applied to find the significant variation in mean ranks with regard to production problems faced by the respondents.

H₀: “The mean ranks for the production problem does not differ significantly among the respondents”

Table 6.12 (a): Friedman rank test- Production problems

N	Chi-Square	Df	Sig.
375	762.189	4	**

(** - significant at 1 per cent level)

The ranking as per the above table 6.12 (a) is valid as the chi square value ($\chi^2 = 762.189, p < 0.000$) is statistically significant. Hence, the null hypothesis has been rejected at 1 per cent level of significance and has revealed that, the respondents have varied in mean ranks with respect to production problems.

Marketing Problems

The respondents have asked to rank the Marketing problems that affect their performance. The most important problem has given as rank 1 and the least problem has given as rank 8. Mean ranks have been found out for the entire variables and the results are depicted in the following table 6.13

Table 6.13: Mean Rank –Marketing Problems

Marketing Problems	Mean rank	Actual rank
Lack of information on changing market condition	6.07	6
Cut throat competition from large scale and urban enterprises	1.84	1
Inadequate market research	7.62	8
Lack of organised market channels	6.69	7
Unfamiliarity with export procedures	4.42	5
Cumbersome export formalities	4.20	4
Inadequate marketing support from Government agencies	2.82	3
Customers request extension of time for payment	2.35	2

(Source: Computed)

It is observed from the table 6.13 that, ‘cut throat competition from large scale and urban enterprises’ has been the major marketing problem faced by the respondents with a mean value of 1.84 followed by ‘customers request extension of time for payment’ (mean 2.35), ‘inadequate marketing support from Government agencies’ (mean 2.82), ‘cumbersome export formalities’ (mean 4.20), ‘unfamiliarity with export procedures’ (mean 4.42), ‘lack of information on changing market condition’ (mean 6.07), ‘lack of organized market channels’ (mean 6.69) and ‘inadequate market research’ (mean 7.62). It indicates, that most of the respondents are facing tough competition from large scale organizations and urban entrepreneurs due to lack of modern technology. The similar finding is reported in the study by (Joel Jebadurai, 2013); (Mateen Ahmed Siddiqui, 2015); (Krishnendu Malakar, 2017) and (Kushalakshi and Raghurama, 2014).

Friedman rank test has been applied to find the significant variation in mean ranks with regard to marketing problems.

H₀: “The mean ranks for the marketing problem does not differ significantly among the respondents”

Table 6.13 (a): Friedman rank test- Marketing problems

N	Chi-Square	df	Sig.
375	2.043E3	7	**

(** - significant at 1 per cent level)

The ranking as per the table 6.13 (a) is valid as the chi square value ($\chi^2 = 2.043E3$, $p < 0.000$) is statistically significant. Hence, the null hypothesis has been rejected at 1 per cent level of significance and has inferred that, the respondents have varied in mean ranks with respect to the marketing problems.

6.9 Conclusion

In this chapter, correlation analysis, multiple regression analysis and Friedman Rank Test have been used to analyse the extent of influence of the Motivational, Internal environmental and External Environmental (micro and macro environment) factors on business performance. The result of the correlation matrix table has implied that, the

Micro environmental factor has a strong positive correlation with Business Performance. The Regression result has indicated that, Micro environmental factor, Finance, Human resource and Financial rewards have a greater contribution to the Performance of rural Micro, Small and Medium manufacturing enterprises.

To analyse the relationship *inter se* among the factors, a Structural Equation Model has been constructed to find the direct and indirect effects of Micro, Macro Environmental factors on Business Performance when mediated by Internal environmental and Motivational factors. In the process, the effects of Micro, Macro Environmental factors on Internal environmental and Motivational factors and Internal environmental and Motivational factors on Business Performance have also been studied. Initially, Confirmatory Factor Analysis (CFA) has been applied to validate the items and latent factors involved in each factor and each dimension representing Internal environmental factors, Motivational factors, Micro environmental factor, Macro environmental factor and Business Performance. The items which have been originally considered as contributing towards their respective factors have been validated by Confirmatory Factor Analysis. During the process of CFA for different factors of Internal environmental, Motivational, Micro environment, Macro environment and Business Performance, the measurement models have been found to explain adequately by their respective indicator variables. Those factors which have not been adequately explained by their respective indicator variables have been examined for possible improvement in the model fit by Modification Indices which have been used to identify the error terms correlation and improve the model fit. The hypotheses stating that, the factors explaining the latent constructs which consist of the factors, namely, Internal environmental, Motivational, Micro environment, Macro environment and Business Performance have been accepted. The Second order CFA has explained the relationship between first order latent constructs and the higher order factor. The respective hypotheses framed have also been accepted. All the model fit statistics used for goodness of fit of the model have been within the admissible levels.

Before assessing the mediating effect of the Internal environmental and Motivational dimensions, the direct effect of Micro, Macro environmental factors with Business Performance have been assessed. Several hypotheses have been framed and

tested to assess the relationships. The hypothesis states that, there is a direct positive relationship between Micro, Macro environmental factors and Business Performance. The model developed has exhibited the relationship between the afore said dimensions and has confirmed the relationship with model fit statistics on the admissible limits. The regression weights explain the relationship between Micro, Macro environmental factors and Business Performance. The micro environmental factors have shown a significant positive influence on business performance of rural MSMEs. The macro environmental factors have revealed a significant negative impact on the business performance of rural MSMEs. Hence, the hypothesis has been rejected.

Finally, a full structural equation model has been developed, to examine the effect of Micro, Macro environmental factors as independent variables and Internal environmental and Motivational factors as mediating variable on Business Performance. It is found that, there has been a mediating effect of Internal environmental and Motivational factors between Macro environmental factors and Business Performance. The result of the study has further shown that, there is an indirect effect on Business Performance by Macro environmental factor. The indirect effect of Macro environmental factor on Internal environmental and Motivational factors is severe when compared to the direct effect of Macro environmental factor on Business Performance. The total effects of macro environmental factor and mediating variables have shown a negative effect on Business Performance.

In a nutshell, the structural equation model results reveal that the business performance of rural MSMEs depend on both micro and macro environmental factors. The direct positive effect of micro environmental factor on business performance is more in comparison to its indirect effect, which shows that the micro environmental factors, namely, customers, suppliers, intermediaries, competitors etc., play a vital role in the performance of business in rural areas and in turn their success. The macro environmental factors, namely, political, legal, economical, socio-cultural, technological environments etc., as uncontrollable factors, discern a negative influence on the performance of rural entrepreneurs. The intensity of indirect negative impact of macro environmental factors on business performance of rural MSMEs has been less when mediates through internal environmental and motivational factors suggesting that, the rural MSMEs need to adapt

the environmental changes and up-gradation for their survival and successful business performance, and also their sustainability in the business world.

With respect to the functional problems faced by rural manufacturing enterprises, the financial problem namely, 'more legal formalities and cumbersome procedures to obtain loan from banks and financial institutions', human resource problem namely, 'lack of skilled labourers', production problem namely, 'lack of modern technology' and the marketing problem namely 'cut throat competition from large scale and urban entrepreneurs' have been the major problems faced by the respondents in their functional areas of business operations which impede the growth and development of the rural manufacturing enterprises.