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An Evaluation of the Current Status of Agricultural Implements Manufacturing Industries: Emission of Pollutants Perspective

[1]Joshi Dilipkumar Rameshchandra, Dr. B. R. Pandey[2], and Dr. R. K. Singh[3]

[1]Research Scholar, Glocal School of Allied and Health Sciences, Glocal University, Saharanpur, India
[2]Professor, Glocal School of Allied and Health Sciences, Glocal University, Saharanpur, India
[3]Professor, Glocal School of Allied and Health Sciences, Glocal University, Saharanpur, India

ABSTRACT- Agricultural Implements manufacturing industries use raw material from the Iron and steel industry to produces agricultural machinery products. If we explore the research done in past, a majority of work has been taken on iron and steel industry regarding the environment. These industries are adversely affecting the environment in manufacturing process. This research has tried to add the link that the agricultural manufacturing industry is taking the raw material from iron and steel industry while the iron and steel industry is affecting the environment in the process of production. For this reason research has also analyzed the relevant reference (objective wise) of manufacturing industries industry in paper. On the basis Literature survey identified the research gap and this research paper proposed the current scenario of agricultural implements manufacturing. An evaluation of the current status of Agricultural Implements manufacturing industries w.r.t their emission of pollutants and their level of significance have been analyzed including EMP plan for industries and government.

KEYWORDS- Manufacturing Industries, Environment, Pollution, Emission of Pollutants, Emission and Effusion.

I. INTRODUCTION

Big industries produce Tractors and motors while small and medium produce agricultural implements some of these products are significantly creating emission and effusion which are of concern from pollution point of view[6,7]. A few of these sectors perform CSR activities but majority of them are not performing. With improved cropping strength or the intensity, growers have been accompanied or even mostly changed animate strength with the tractors, power or the energy tillers, electric motors as well as diesel engines [1, 3, 12]. The small and medium sectors need more support from the Government both State and Central. The government should take the regulatory steps to control pollution in this sector. They must know that what is happening in our society is affecting the living standards of the people on the whole, the government will have to be serious Besides Governmental organizations like State Agro Industries Development corporations, major manufacturers of Tractors and other machineries are doing CSR work for farmers [1, 2, 4, 15].These include, enhancing social status, Education, Training and development, knowhow and Agricultural research to help farmers for agricultural outputs [5]. Thus there is a great scope for further mechanized farming in India [8].

II. SAMPLING & RESEARCH METHOD

The industries manufacturing agricultural implements, located in Punjab, Haryana and Delhi NCR is taken into account with sampling method- based on industry manufacturing unit size. Total 3 types of industries taken i. Micro, ii. Small, and iii. Large. Random sampling has been applied [9, 10, 11]. Through 80 no. of units by using organized questionnaire through stratified and comfort inspecting is utilized. Certain identified variable based on those this questionnaire has been prepared. Collected data has been analyzed by SPSS 21 and SPSS AMOS 24 software. In SPSS 21 various test apply based on variable nature [13, 14].

III. OBJECTIVE ANALYSIS AND HYPOTHESIS TESTING

In our previous research paper we already analyzed the objective 1 and objective 2. So in view of above we are going to analyzed remaining objectives one by one.
3rd Objective- To evaluate the impact of Industry emission on natural environment and socio-economic environment
4th Objective- To evaluate the impact of natural environment and socio-economic environment on Economic growth
Technique used- path analysis in SPSS AMOS

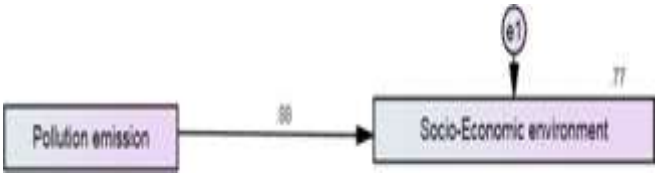

Figure 1: Model of study variable

Table 1: Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Seenv	<---	polemi	1.033	.064	16.152	***	

Table 1 shows that pollution emission is having a significant effect on socio-economic environment as P value is ***, fig no. 1a shows that value of R square is .77, hence pollution emission is impacting 77% of socio-economic environment. In 2nd step we have checked the mediation effect is significant or not for that purpose first condition is satisfied that independent variable (pollution emission) should have significant effect on dependent variable (Socio-economic life), now we need to check the significance of indirect effect, as per table 1 value of indirect effect is .335 and table 2 shows that P value for the indirect effect is .001, hence indirect or mediation effect is significant. Table 3 shows that the direct effect on IDV on DV is significant and indirect effect on DV is also significant hence this type of mediation is called partial mediation. Although earlier IDV have 77% effect of DV but with the introduction of mediation variable total effect become 82%, hence mediation effect has increased the variability explained in the Dependent variable. Maximum Likelihood Estimates

Table 2: Standardized Indirect Effects (Group number 1 - Default model)

	polemi	natenv
natenv	.000	.000
seenv	.335	.000

Table 3: Standardized Indirect Effects - Two Tailed Significance (BC) (Group number 1- Default model)

	polemi	Natenv
natenv	...	...
seenv	.001	...

Table 4: Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P
natenv	<---	polemi	.586	.045	13.091	***
Seenv	<---	polemi	.639	.100	6.358	***
Seenv	<---	natenv	.674	.142	4.751	***

Table 5: Model fit indices

Fit Indices	Obtained Value	Recommended	Results
CMIN/DF	1.839	< 3 is good, >3 <5 Mediocre Fit	Good fit (Hu & Bentler 1999)
GFI	0.989	> .8	Good fit
CFI	0.997	> .9	Good fit
P VALUE	.175	> .05	Good fit
AGFI	0.819	> .8	Good fit
PCLOSE	.217	>.05	Good fit
RMSEA	0.103	< .05 is good, .05 to .1 Mediocre fit	Mediocre fit

CMIN/DF-Degree of Freedom GFI- Goodness of fit index. AGFI-Adjusted Goodness of fit index CFI- Comparative fit index.

Goodness of fit of model-Barbara M. Byrne, Structural equation modeling with Amos Basic concepts, application, and programming, second edition, Pg no 73-80 Model no. 1 Shows that Pollution emission has 68% effect on natural environment and 82% of socio economic environment is effected by pollution emission and natural environment. RMSEA-Root mean square error approximation PCLOSE- P of close fit.

Natural environment poses a mediation effect between pollution emission and socio economic environment. Socio economic and natural environment has combined effect of 63% economic growth.

Table 6: Model Fit Summary

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	9	1.839	1	.175	1.839
Saturated model	10	.000	0		
Independence model	4	306.010	6	.000	51.002

Table 7: Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Natenv	<---	polemi	.586	.045	13.091	***	
Seenv	<---	polemi	.639	.100	6.358	***	
Seenv	<---	natenv	.674	.142	4.751	***	
Ecogro	<---	natenv	.429	.158	2.724	.006	
Ecogro	<---	seenv	.334	.095	3.531	***	

IV. HYPOTHESIS TESTING

Table 8: 3rd and 4th objective hypothesis testing

Sr. no.	Null Hypothesis	Sig. Value	Result
3.1	There is no significant impact of Pollution emission on Natural Environment.	.000***	Alternate accepted
3.2	There is no significant impact of Pollution emission on Socio-economic Environment.	.000***	Alternate accepted
3.3	There is no mediation effect of natural environment on Pollution emission and Socio- Economic Environment.	.000***	Alternate accepted
3.4	There is no significant impact of Natural Environment on Economic growth.	.006***	Alternate accepted
3.5	There is no significant impact of Socio-economic environment on Economic growth.	.000***	Alternate accepted

Objective analysis and hypothesis testing

5th Objective- To evaluate the CSR practices of these industries on the basis of industry profile Technique used- One sample T test to check the level of Fulfillment of CSR activities and their significance.

Table 9: One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Regular health checkup camp for employees	80	3.84	1.130	.126
Regular health checkup camp for society	80	2.56	1.466	.164
Plantation for green environment	80	3.45	1.377	.154
Air/Water quality check in vicinity	80	2.74	1.490	.167

Table 10: One-Sample Test

	Test Value = 3					
	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Regular health checkup camp for employees	6.629	79	.000	.838	.59	1.09
Regular health checkup camp for society	-2.670	79	.009	-.438	-.76	-.11
Plantation for green environment	2.923	79	.005	.450	.14	.76
Air/Water quality check in vicinity	-1.575	79	.019	-.263	-.59	.07

Table 8 of statistics shows that 80 industries has been undertaken for analyzing this objective. Table of test of homogeneity of variance shows that, the variances across all the statements are not equal except health checkup camp for society. Hence Tukey test will be applied on health checkup camp for society as variances are equal and Tamhane method is used for health checkup camp for employees, plantation and for quality of air and water in vicinity where variances are not equal.

Table 12 of ANOVA table shows that all significance value are less than .05 hence all the items of CSR activities are significantly different from each other or at least one is different from others on the basis of industry size.

Table 13 of Tukey test shows that in health checkup camp for society are more arranged by large companies in comparison to small and micro industries. Homogeneous subset table 5.74 of Tukey test also depicts the same comparison.

Table 11: Statistics

	Regular health checkup camp for employees	Regular health checkup camp for society	Plantation for green environment	Air/Water quality check in vicinity
Valid	80	80	80	80
N				
Missing	0	0	0	0

Table 12: Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Regular health checkup camp for employees	3.233	2	77	.045
Regular health checkup camp for society	.750	2	77	.476
Plantation for green environment	8.973	2	77	.000
Air/Water quality check in vicinity	3.706	2	77	.029

Table 13: ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Regular health checkup camp for employees	Between Groups	67.468	2	33.734	79.356	.000
	Within Groups	32.732	77	.425		
	Total	100.200	79			
Regular health checkup camp for society	Between Groups	65.062	2	32.531	23.941	.000
	Within Groups	104.625	77	1.359		
	Total	169.688	79			
Plantation for green environment	Between Groups	55.113	2	27.556	22.409	.000
	Within Groups	94.687	77	1.230		
	Total	149.800	79			
Air/Water quality check in vicinity	Between Groups	76.760	2	38.380	29.934	.000
	Within Groups	98.727	77	1.282		
	Total	175.488	79			

Table 14: Multiple Comparisons Tukey HSD Dependent Variable: Regular health checkup camp for society

(I) Industry size	(J) Industry size	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1 Micro	2 Small	-.782	.467	.221	-1.90	.33
	3 Large	-2.884*	.528	.000	-4.15	-1.62
2 Small	1 Micro	.782	.467	.221	-.33	1.90
	3 Large	-2.102*	.330	.000	-2.89	-1.31
3 Large	1 Micro	2.884*	.528	.000	1.62	4.15
	2 Small	2.102*	.330	.000	1.31	2.89

V. HYPOTHESIS TESTING OF 5TH OBJECTIVE

Table 15: 5th objective hypothesis testing (Industry size wise)

Sr. no.	Null Hypothesis	Sig.Value	Result
5.1	There is no significant impact of Industry size on arranging regular health checkup camp for employees as CSR activity.	.000***	Alternate accepted
5.2	There is no significant impact of Industry size on arranging regular health checkup camp for society as CSR activity.	.000***	Alternate accepted
5.3	There is no significant impact of Industry size on arranging plantation for green environment as CSR activity.	.000***	Alternate accepted
5.4	There is no significant impact of Industry size on arranging air/water quality check in vicinity as CSR activity.	.000***	Alternate accepted

Table 15of test of homogeneity of variance shows that, the variances across all the statements are equal except health checkup camp for employees. Hence Tukey test will be applied on health checkup camp for society, plantation and for air/water quality check in vicinity as variances are equal and Tamhane method is used for health checkup camp for employees where variances are not equal.

Table 16 of ANOVA table shows that all significance value are less than .05 hence all the items of CSR activities are significantly different from each other or at least one is different from others on the basis of product size.

Table 17 of Tukey test shows that in health checkup camp for society and air/water quality check in vicinity are more arranged by large companies in comparison to small and micro industries. In case of plantation micro companies are far behind the small and large industries. Homogeneous subset form table 5.81 to 5.83 of Tukey test also depicts the same comparison.

Table 16: Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Regular health checkup camp for employees	12.816	2	77	.000
Regular health checkup camp for society	2.543	2	77	.085
Plantation for green environment	.097	2	77	.908
Air/Water quality check in vicinity	1.371	2	77	.260

Table 17: ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
	Between Groups	22.005	2	11.003	10.834	.000
Regular health check up camp for employees	Within Groups	78.195	77	1.016		
	Total	100.200	79			
	Between Groups	47.073	2	23.537	14.781	.000
Regular health check up camp for society	Within Groups	122.614	77	1.592		
	Total	169.688	79			
	Between Groups	40.032	2	20.016	14.041	.000
Plantation for green environment	Within Groups	109.768	77	1.426		
	Total	149.800	79			
	Between Groups	58.424	2	29.212	19.214	.000
Air/Water quality check in vicinity	Within Groups	117.064	77	1.520		
	Total	175.488	79			

Table 18: Homogeneous subset Tukey HSD Plantation for green environment

Product Type	N	Subset for alpha = 0.05	
		1	2
1 Micro	11	1.82	
2 Small	53		3.55
3 Large	16		4.25
Sig.		1.000	.198

Means for groups in homogeneous subsets are displayed.

- Uses Harmonic Mean Sample Size = 17.414.
- The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Means for groups in homogeneous subsets are displayed.

- Uses Harmonic Mean Sample Size = 17.414.
- The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Table No. 19: Homogeneous subset Tukey HSD Air/Water quality check in vicinity

Product Type	N	Subset for alpha = 0.05	
		1	2
1 Micro	11	1.73	
2 Small	53	2.45	
3 Large	16		4.38
Sig.		.198	1.000

A. Hypothesis Testing

Table 20: 5th objective hypothesis testing (Product size wise)

Sr. no.	Null Hypothesis	Sig. Value	Result
5.5	There is no significant impact of product size on arranging regular health checkup camp for employees as CSR activity.	.000***	Alternate accepted
5.6	There is no significant impact of product size on arranging regular health checkup camp for society as CSR activity.	.000***	Alternate accepted
5.7	There is no significant impact of product size on arranging plantation for green environment as CSR activity.	.000***	Alternate accepted
5.8	There is no significant impact of product size on arranging air/water quality check in vicinity as CSR activity.	.000***	Alternate accepted

Number of Employee Wise

Table 20 of test of homogeneity of variance shows that, the variances across all the statements are equal. Hence Tukey test will be applied on health checkup camp for society, health checkup camp for employees, plantation and for air/water quality check in vicinity as variances are equal.

Table 21 of ANOVA table shows that except for plantation all other significance value are less than .05 hence all the items of CSR activities are significantly different from each other or at least one is different from others on the basis of product size.

Table 22 of Tukey test shows that there is not much significant difference in health checkup camp for society, health checkup camp for employees and air/water quality check in vicinity by industries on the basis of number of workers, but on the basis of mean values reflected by homogeneous subset it can be concluded that industries with less employees and not that much engaged in CSR activities and industries with more employees are more concerned about CSR activities.

Table 21: Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Regular health checkup camp for employees	1.787	3	76	.157
Regular health checkup camp for society	1.461	3	76	.232
Plantation for green environment	.382	3	76	.766
Air/Water quality check in vicinity	.468	3	76	.705

Table 22: ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Regular health checkup camp for employees	Between Groups	10.252	3	3.417	2.887	.041
	Within Groups	89.948	76	1.184		
	Total	100.200	79			
Regular health checkup	Between Groups	22.901	3	7.634	3.952	.011

camp for society	Within Groups	146.786	76	1.931		
	Total	169.688	79			
Plantation for green environment	Between Groups	6.098	3	2.033	1.075	.365
	Within Groups	143.702	76	1.891		
	Total	149.800	79			
Air/Water quality check in vicinity	Between Groups	26.184	3	8.728	4.443	.006
	Within Groups	149.304	76	1.965		
	Total	175.488	79			

Table 23: Homogeneous subset Tukey HSD Regular health checkup camp for society

No. of workers	N	Subset for alpha = 0.05
		1
1 10-100 nos.	59	2.25
3 1001-5k nos.	3	3.00
4 Above 5K	3	3.00
2 101-1k nos.	15	3.60
Sig.		.395

Means for groups in homogeneous subsets are displayed.

- Uses Harmonic Mean Sample Size = 5.331.
- The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Table 24: Homogeneous subset Tukey HSD Air/Water quality check in vicinity

No. of workers	N	Subset for alpha = 0.05
		1
1 10-100 nos.	59	2.41
4 Above 5K	3	3.00
3 1001-5k nos.	3	3.67
2 101-1k nos.	15	3.80
Sig.		.372

Means for groups in homogeneous subsets are displayed.

- Uses Harmonic Mean Sample Size = 5.331.
- *. The mean difference is significant at the 0.05 level.
- The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

B. Hypothesis Testing

Table 25: 5th objective hypothesis testing (Number of worker wise)

Sr. no.	Null Hypothesis	Sig. Value	Result
5.9	There is no significant impact of number of worker on arranging regular health checkup camp for employees as CSR activity.	.041**	Alternate accepted
5.10	There is no significant impact of number of worker on arranging regular health checkup camp for society as CSR activity.	.011***	Alternate accepted
5.11	There is no significant impact of number of worker on arranging plantation for green environment as CSR activity.	.365***	Alternate accepted
5.12	There is no significant impact of number of worker on arranging air/water quality check in vicinity as CSR activity.	.006***	Alternate accepted

VI. HYPOTHESIS TESTING OF 6TH OBJECTIVE

6th Objective analysis and hypothesis testing to suggest an EMP plan for industries

A. Technique Used

Discriminant function analysis (DFA)
Group statistics shows the mean value of the variables. 5.94. Table 25 of test of equality shows that there is a significant difference in the perception of the respondents about the factors related to the EMP (environment management plan), as all the sig. value are less than .05.

Table 26: Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
Emp input stage	.539	66.590	1	78	.000
Emp process stage	.546	64.877	1	78	.000
Emp output stage	.538	67.112	1	78	.000

Table 26 of eigenvalue shows that model is fit as this value should be approximately equal to1 and the actual value is .996. Canonical correlation is .706, it is good as it should be above 7.

Table 27: Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.996[a]	100.0	100.0	.706

First 1 canonical discriminant functions were used in the analysis.

Table 27 of wilks' Lambda shows value of .501, hence it shows that 49.9 % variability is explained by the independent variables.

Table 28: Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.501	52.883	3	.000

Table 28 of standardized canonical Discriminant function coefficients shows the coefficient value of the factors, which is used to generate regression equation. Table 28 of functions at group centroids is used to measure model values. If the equation value comes around .96 then industry is agreeable with the Environment management plan and if equation value is coming around -1.011 then industry is not agreeable with the environment management plan.

Table 30 of classification results shows that 96.3% of the industries are correctly classified. Table of cross tabulation again shows the setup of the industries that large size companies are totally in sync with the EMP, small companies have a mix response and micro companies are totally not in sync with the Environment management plan.

VII. REGRESSION EQUATION

Pollution emission control (y) = $\alpha + \beta 1\chi 1 + \beta 2\chi 2 + \beta 3\chi 3$

Pollution emission control (y) = α + .410*(Input Stage) + .220*(Processing Stage) .451*(Output Stage)

α is constant

Table 29: Standardized Canonical Discriminant Function Coefficients

	Function
	1
Emp input	.410
Emp process	.220
Emp output	.451

Table 30: Functions at Group Centroids

Do you think pollution can be controlled by the above environment management plan?	Function
	1
1 Yes	.961
2 No	-1.011

Unstandardized canonical discriminant functions evaluated at group means

Table 31: Classification Resultsa

		Do you think pollution can be controlled by the above environment management plan?	Predicted Group Membership		Total
			1 Yes	2 No	
Original	Count	1 Yes	40	1	41
		2 No	13	26	39
	%	1 Yes	97.6	2.4	100.0
		2 No	33.3	66.7	100.0

96.3% of original grouped cases correctly classified.

Table 32: Industry size * Do you think pollution can be controlled by the above environment management plan? Crosstabulation

		Do you think pollution can be controlled by the above environment management plan?		Total
		1 Yes	2 No	
Industry size	1 Micro	1	6	7
	2 Small	24	33	57
	3 Large	16	0	16
Total		41	39	80

A. Hypothesis Testing

Table 33: 6th objective hypothesis testing

Sr.no.	Null Hypothesis	Sig.Value	Result
6.1	There is no significant impact of Input stage procedure on Environment pollution	.000***	Alternate accepted
6.2	There is no significant impact of Processing stage procedure on Environment pollution	.000***	Alternate accepted
6.3	There is no significant impact of Output stage procedure on Environment pollution	.000***	Alternate accepted

VIII. 7TH OBJECTIVE ANALYSIS AND HYPOTHESIS TESTING

A. Objective

To suggest an EMP plan for government

B. Technique Used

Discriminant function analysis (DFA) Table 33 of group statistics shows the mean value of the variables. 5.103 Table of test of equality shows that there is a significant difference in the perception of the respondents about the factors related to the EMP (environment management plan), as all the sig. value are less than .05.

Table 34: Group Statistics

Do you think pollution can be controlled by the above environment management plan?		Mean	Std. Deviation	Valid N (list wise)	
				Unweighted	Weighted
	Govt. implementation	.3171	.61442	41	41.000
1 Yes	Govt. governance	4.2317	.67405	41	41.000
	Govt. implementation	1.9402	.76805	39	39.000
2 No	Govt. governance	1.8910	.71817	39	39.000
	Govt. implementation	3.1583	1.37996	80	80.000
Total	Govt. governance	3.0906	1.36540	80	80.000

Table 35: Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
Govt. implementation	.249	234.778	1	78	.000
Govt. governance	.256	226.128	1	78	.000

Table 5.104 of eigenvalue shows that model is fit as this value should be above 1 and the actual value is 3.577. Canonical correlation is .884, it is good as it should be above .7.

Table 36: Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	3.577[a]	100.0	100.0	.884

First 1 canonical discriminant functions were used in the analysis. Table 36 of wilks' Lambda shows value of .218, hence it shows that 78.2% variability is explained by the independent variables.

Table 37: Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.218	117.117	2	.000

Table 5.106 of standardized canonical Discriminant function coefficients shows the coefficient value of the factors, which is used to generate regression equation. Table 37 of functions at group centroids is used to measure model values. If the equation value comes around 1.821 then industry is agreeable with the Environment management Plan and if equation value is coming around -1.915 then industry is not agreeable with the environment management plan. Table 38 of classification results shows that 96.3% of the government correctly classified.

C. Regression Equation

Pollution emission control (y) = $\alpha + \beta 1\chi 1 + \beta 2\chi 2$
Pollution emission control (y) = α + .574*(Govt. Implementation) + .525*(Governance) α is constant

Table 38: Functions at Group Centroids

Do you think pollution can be controlled by the above environment management plan?	Function
	1
1 Yes	1.821
2 No	-1.915

Unstandardized canonical discriminant functions evaluated at group means

Table 39: Classification Resultsa

		Do you think pollution can be controlled by the above environment management plan?	Predicted Group Membership		Total
			1 Yes	2 No	
Original	Count%	1 Yes	40	1	41
		2 No	2	37	39
		1 Yes	97.6	2.4	100.0
		2 No	5.1	94.9	100.0

IX. CONCLUSION

Big industries produce Tractors and motors while small and medium produce agricultural implements some of these products are significantly creating emission and effusion which are of concern from pollution point of view. A few of these sectors perform CSR activities but majority of them are not performing. With improved cropping strength or the intensity, growers have been accompanied or even mostly changed animate strength with the tractors, power or the energy tillers, electric motors as well as diesel engines. Periodical intervention is the need of the day by the regulatory authorities in terms of maintenance of pollution control by the agricultural implements manufacturers in all the three categories. They should periodically arrange training and development programs for these sectors to control the pollution of industries. There should be punitive actions against those who flout regulatory norms there are lots of manipulation of paper works on the part of manufacturing units all over the country. Hence controlling authorities need to look into it beyond the paper works and report filling the CSR activities of manufacturing units include training and development of farmers towards maintaining and adhering norms to contain environment pollution in their farming activities, Mere a strategic consciousness on the part of the manufacturers will not be enough in containing environmental pollution the villages. Moreover these efforts are not a onetime issue but perennial in nature. All should join hands together, manufacturers, farmers and government.

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