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Impact of DAESI programme on skill development of Agri input dealers: A path analysis

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Abstract
In order to make an Agri-input dealer competent enough in terms of knowledge and skill so that they serve the farming community better by acting as para extension professionals, MANAGE had launched a individual financed One-year Diploma in Agricultural Extension Services for Input Dealers (DAESI) Programme during the year 2003 for the input dealers. In Chhattisgarh, under the flagship of Indira Gandhi Krishi Vishwavidhayalaya Raipur, Directorate of Extension Services had initiated a yearly Diploma course which was started in the year 2017-18. The data was collected through a well prepared Questionnaire and need based online data methods such as google forms and ex-post facto research design was used. The present study focused to determine the direct and indirect effects of various independent variables on skill development through DAESI programme. A path analysis was conducted by selecting seven independent variables whose regression Coefficient was significant. The result obtained portrays that the three variables *viz*. Self-confidence, innovativeness and risk bearing ability is considered the most important and determining variables for increase in skill level of Agri-input dealers.

Keywords: DAESI, Skill development, Path analysis, innovativeness, risk bearing ability, self-confidence

1. Introduction
Agri-input dealers are the major source for paradigm shift in Indian Agriculture. These individuals are source for the majority of information which is conveyed to the farmers along with that these individuals also ensures that the farmers should get the supply of agri- inputs and credit whenever they require. They had the potential to act as para-extension professionals and if their technical competency is build up through significant and constant knowledge through various modes or ways of education, then they can maneuver the extension activities in accordance with the prevailing market situation. A one year Diploma course known as DAESI (Diploma in Agricultural Extension Services for input dealers) was launched by "National Institute of Agriculture Extension Management" in order to incorporate the requisite understanding and the location-specific agricultural knowledge for the agri-input dealers so that they can follow the rules and the regulatory norms in their business along with coalescences of their business with extension services. In Chhattisgarh, under the flagship of Indira Gandhi Krishi Vishwavidyalaya Raipur, Directorate of Extension Services had initiated a yearly Diploma course which was started in the year 2017-18. The present study is planned to access the impact of DAESI programme 2019-20 on skill development of agri-input dealers which was organized by different KVK's of Chhattisgarh plains. This study would reveals the determing factor for skill development which could be used by the planners to modify the course curriculum of DAESI programme so that it can

be benefitted to all agri-input dealers.

2. Materials and Methods
The current study was carried out in four purposely selected KVKs of Raipur, Dhamtari, Rajnandgaon and Raigarh districts implementing DAESI Programme in 2019-20. As per the list of participants provided by the respective four KVK, all the 154 trainees/ agri-input dealers trained during 2019-20 were approached and a random sample of 100 participants were selected out of 154 participants. The data was collected through a well prepared Questionnaire and need based online data methods like e-mail, telephone calls, Google forms, etc. and ex-post facto research design was used. Data were analyzed using SPSS and OPSTAT software. Skill development in different components of DAESI programme was measured on a four point continuum ranging from extremely increase in skill level to no change in the skill level through DAESI programme 2019-20.

3. Results and Discussion
The major objective of DAESI programme is to transform practicing agri-input dealers into para-extension professionals thereby strengthening the agricultural extension system so as to enable these agri-input dealers to serve the farmers better at grass root level. Many agri-input dealers attended this diploma course and got benefitted. Skill development is the major factor which is concerned in any diploma course. Skill development in different

components of DAESI programme was measured on a four point continuum ranging from extremely increase in skill level to no change in the skill level through DAESI programme 2019-20. Data pertaining to Table 1 portrays component wise increase in the level of skill which shows that majority of the them had moderately increase in their skill level under leadership quality and managerial skills whereas majority of the them had extremely increase in their skill level under technical skills and self-empowerment heads.

3.1 Multiple regression analysis of all independent variables with increased skill level

Data pertaining to Table 2 reveals regression coefficient (b), standard error and t value which indicates that number of villages covered and risk bearing ability had significant contribution towards the variation in the dependent variable i.e. increase skill level at 5 percent level of significance. Furthermore, gender, management orientation, innovativeness, self-confidence and type of business bore significant contribution towards the variation in the dependent variable i.e. increase skill level at 1 percent level of significance. Coefficient of determination (R^2) shows the combined effect of all independent variables over increased knowledge level. The value of coefficient of determination (R^2) is 0.839 which clearly reveals that 83.90% of the variations on increased skill level are due to the selected variables whereas 16.10% of variation is due to environmental factors or non- selected variables.

Table 1: Component wise increase in the level of skill of agri-input dealers after attending DAESI programme (n=100)

Sl. No.	Components	Percentage of respondents			
		EI	MI	SI	NI
1. Leadership quality					
i)	Convincing ability	35.00	61.00	4.00	0.00
ii)	Motivational ability	37.00	59.00	4.00	0.00
2. Managerial skills					
i)	Accountancy	28.00	64.00	7.00	1.00
ii)	Human resource management	20.00	59.00	19.00	2.00
iii)	Financial management	38.00	54.00	8.00	0.00
3. Technical skills					
i)	Follow up and supervision	58.00	36.00	6.00	0.00
ii)	Technical advice	86.00	12.00	2.00	0.00
4. Self-empowerment					
i)	More confidence in dealing with people	65.00	26.00	9.00	0.00
ii)	Increased public relation and social participation	44.00	38.00	17.00	1.00
iii)	Get recognition in Neighborhood or society	42.00	35.00	20.00	3.00
EI= Extremely increased, MI = Moderately increased. SI = Slightly increased, NI= Not increased/ no changes.					

Table 2: Regression Coefficient of selected independent variables with increase in skill level of agri- input dealers

SI. No.	Independent variables	Regression coefficient(b)	Std. Error	't' value
1.	Age	0.024	0.016	1.507
2.	Gender	-2.225**	0.534	-4.164
3.	Education	0.342	0.181	1.893
4.	Business experience	-0.229	0.130	-1.766
5.	Annual turnover	0.110	0.169	0.649
6.	Annual income	-0.273	0.144	-1.894
7.	Mass media utilization	0.175	0.094	1.869
8.	Location of business (Krishi Kendra)	-0.121	0.267	-0.454
9.	No. of villages covered	0.333*	0.174	1.912
10.	Farmers turnup	0.085	0.081	1.050
11.	Management orientation	0.173**	0.044	3.959
12.	Innovativeness	0.250**	0.072	3.464
13.	Risk bearing ability	0.143*	0.064	2.223
14.	Economic motivation	0.008	0.048	0.159
15.	Self confidence	0.167**	0.044	3.815
16.	Effectiveness of DAESI programme	-0.044	0.037	-1.186
17.	Type of business	1.749	0.576	3.039**

R^2 = 0.839, **Significant at 0.01 probability level, *Significant at 0.05 probability level

3.2 Path analysis

The main objective of path analysis in the present study is to get a clear picture of the direct and indirect effects of the independent variables on dependent variable i.e. increase in skill level. The seven independent variables (out of 18) whose regression values were significant in the final multiple regression analysis was included in the path analysis which is depicted in the Table 3 which shows the matrix of path analysis.

The independent variable i.e. self-confidence (0.270) had highest positive and substantial direct effect on increase in skill level. There were positive and substantial direct effects of innovativeness (0.250), management orientation (0.198), risk bearing ability (0.169), type of business (0.168), and number of villages covered (0.120) on the dependent variable whereas gender (-0.217) had negative and substantial direct effect on the dependent variable.
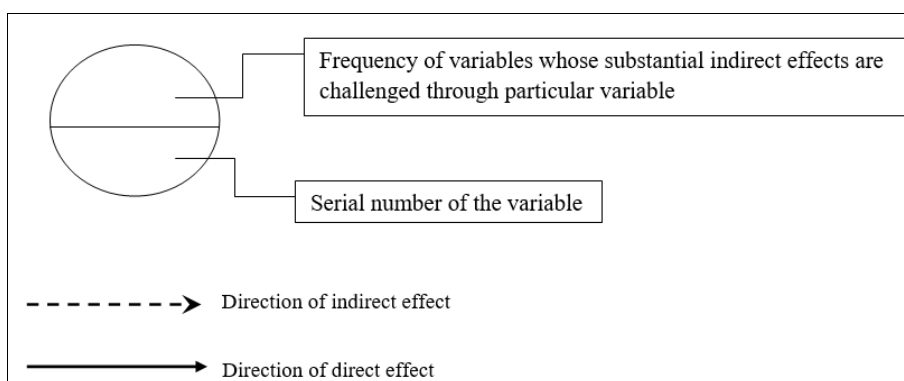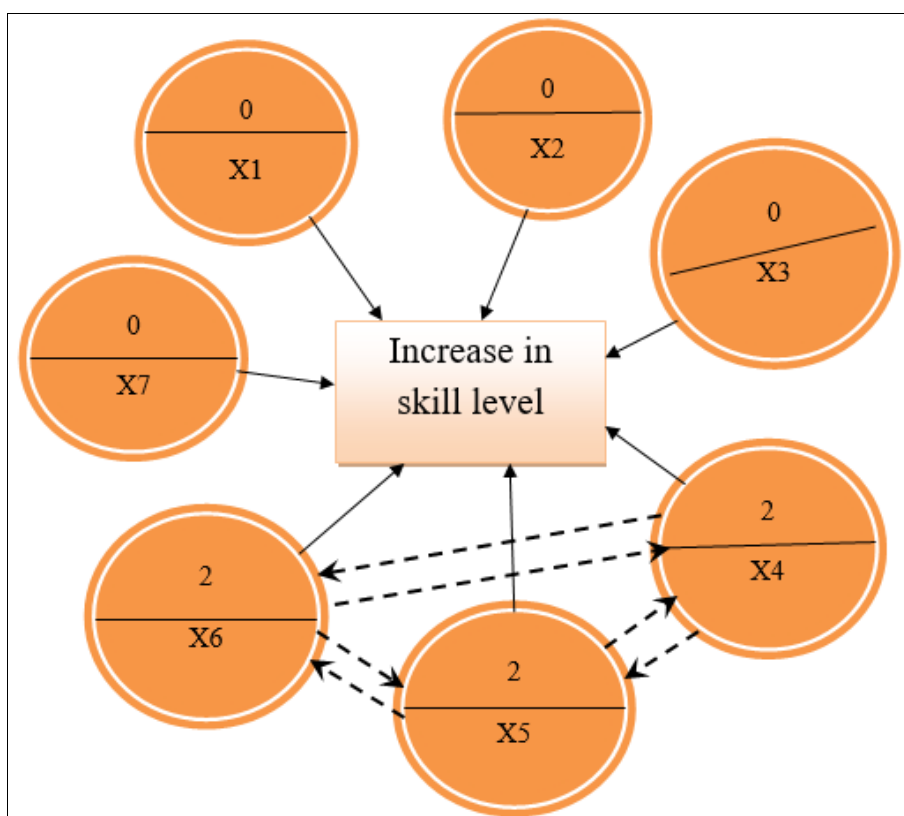
Moreover, table 4 clearly reveals that risk bearing ability had maximum and substantial indirect effect on dependent variable i.e. increased skill level with path coefficient of 0.489 followed by innovativeness (0.412), self-confidence (0.375), management orientation (0.213) and gender (-0.158).

Table 3: Matrix of path analysis

	Gender	No. of villages covered	Management orientation	Innovativeness	Risk bearing ability	Self confidence	Type of business
Gender	-0.21784	0.00137	-0.00956	-0.03951	-0.05052	-0.04686	-0.01318
No. of villages covered	-0.00248	0.12051	-0.00582	-0.00293	-0.00004	0.02211	-0.07597
Management orientation	0.01051	-0.00354	0.19826	0.07813	0.05557	0.08662	-0.0135
Innovativeness	0.03433	-0.00141	0.06178	0.25073	0.11671	0.16764	0.03372
Risk bearing ability	0.06509	-0.00003	0.06516	0.17306	0.16908	0.1621	0.02401
Self confidence	0.03778	0.00986	0.06356	0.15556	0.10144	0.27019	0.00772
Type of business	0.01707	-0.05443	-0.01591	0.05026	0.02414	0.0124	0.16821

Table 4: Path coefficients showing the direct and indirect effects of selected independent variables on increased skill level

Sl. No.	Independent variables	Direct effect	Total Indirect effect
1.	Gender (x_1)	-0.217	-0.158
2.	Number of villages covered (x_2)	0.120	-0.065
3.	Management orientation (x_3)	0.198	0.213
4.	Innovativeness (x_4)	0.250	0.412
5.	Risk bearing ability (x_5)	0.169	0.489
6.	Self-confidence (x_6)	0.270	0.375
7.	Type of business (x_7)	0.168	0.033

Fig 1: Diagrammatic representation of the variables through which substantial direct and indirect effects are challenged

It is evident from Fig 1 that substantial indirect effects of as many as seven variables were challenged through each of the three independent variables i.e. innovativeness (x_4), risk bearing ability (x_5) and self-confidence (x_6). These three variables had more direct substantial effect on the dependent variable. They also formed a complete chain in mutually interacting variables which is evident from the direction of arrows. These three variables, therefore, be considered most important for the increase in skill level of agri-input dealers who had attended DAESI programme 2019-20. The probable reason might be their psychological characterstics which had trailed them to acquire more skills through DAESI programme 2019-20.

4. Conclusion
On the basis of above findings, it can be concluded that majority of the agri-input dealers had moderately increase in their skill level under leadership quality and managerial skills whereas majority of the them had extremely increase in their skill level under technical skills and self-empowerment heads. Moreover, multiple regression analysis reveals that number of villages covered and risk bearing ability had significant contribution towards the variation in the dependent variable i.e. increase skill level at 5 percent level of significance. Furthermore, gender, management orientation, innovativeness, self-confidence and type of business bore significant contribution towards the variation in the dependent variable i.e. increase skill level at 1 percent level of significance. A path analysis was conducted by selecting seven independent variables whose regression coefficient was significant. The result obtained portrays that the three variables *viz*. Self-confidence, innovativeness and risk bearing ability is considered the most important for variables for increase in skill level of agri-input dealers. The decree of the investigation revealed that the majority of participants had medium to high level of increase in skill level after availing DAESI programme So, more emphasis should be taken towards building the capacity of agri-input dealers in terms of skill and knowledge more efficiently to make an agri-input dealer as an effective source of farm information dissemination at the village level (one stop shop) for the farmers. Moreover, planners should focus over building self-confidence, innovativeness and risk bearing ability of agri-input dealers which would ultimately results in skill development.

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