



ISSN NO. 2320-5407

Journal homepage: <http://www.journalijar.com>

INTERNATIONAL JOURNAL
OF ADVANCED RESEARCH

RESEARCH ARTICLE

Estimation of Conflict to measure Social Entropy in the realm of Technology Socialization in a Farm Ecology

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Manuscript Info

Manuscript History:

Received: 12 April 2013
Final Accepted: 10 May 2013
Published Online: May 2013

Key words:

Conflict Diffusion,
Farm modernization,
Social entropy,
Technology socialization,
Social ecology.

Abstract

Conflict is increasing in the farming society in India and even not, it is an integral part of the social-ecology. Conflict generates due to non-compliance between prescribed knowledge and pristine knowledge, gradual disillusionment over the economic efficacy of agricultural technologies and non-supportive institutional functioning. Conflict, on the other way, generates a desire for solving a problem or creating alternatives. The present study envisages the conflict and measures it to estimate social entropy in farm ecology. The following variables have to exert dominant influences to generate conflict are Education (x2), Family education status (x3), Educational aspiration (x4), Family size (x5), Farm size (x10), Adoption leadership (x17), Market orientation (x26) and Utilization of Cosmopolite source of information (x29), Information seeking behaviour and Distance matrix (x31). Farm size (x10) has exerted the highest direct effect, whereas Educational aspiration has exerted the highest indirect effect on Conflict. The study presents huge scope for managing organization in a proper perspective, resolving conflict to pace up the modernization process in real sense and accomplishment.

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Introduction

The process of farm modernization generates consolation and conflicts, compliance and coercion, rites and resolution. The basic root of conflicts are the chasms between output promised and output realized, changes envisages and changes generated. Conflicts are fuelling are social entropy in farm ecology in India. Conflict s are simmering due to up scaling hegemony of exotic knowledge over the indigenous knowledge and declining return from farm economy per capita and per unit time. The present paper has taken up these critical and crucial issues of farm modernization in India and estimated the scale and magnitude of farm entropy through a score of agro-economic and socio-personal variables.

Reviews

Nneoyi, I-O *et. al.* Cursuo, (2012) determined the impact of conflicts on agricultural production in the Niger Delta of Nigeria with specific evidence from Cross River State. The state was purposively selected

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because of its high rate of communal conflict. A multi-staged sampling procedure was employed and respondents were randomly sampled from two different communities where conflicts have occurred over time. A total of 60 respondents were used for the study. Data were collected from respondents using personal interviews, with the aid of structured questionnaire. Descriptive statistics as well as inferential statistics (ordered probity regression) were used to analyze data. Results from the descriptive analysis revealed that a greater percentage of the respondents (63.33%) were farmers, 41.67% were youths between the ages of 21 and 40 years, majority (56.67%) had low educational attainments and there was a high level of unemployment (90%) in the area, while 25 percent of the respondents earned as low as N=30,000 or less per-annum. The results of the hypotheses tested revealed that there is a significant relationship between conflicts and respondents' socio-economic characteristics such as age, occupation, marital status, family size, education and employment status while gender, income and

infrastructure were not significant. The result also showed a significant but negative relationship between agricultural GDP and conflict. Therefore, the study noted that strategies and programmes aimed at addressing the socio-economic needs of the people and investments in agriculture were required to stem the spate of conflicts in the Niger-Delta region of Nigeria. Caruso, R. (2006), in a model of conflict where two asymmetric, rational and risk-neutral opponents clash in order to redistribute a divisible prize in their favour, had presented a Potential Settlement Region (PSR) as the set of all possible settlement points. The agent with the lower evaluation will expend efforts in conflict management only when the asymmetry is extremely large. When agents are asymmetrical both in evaluation of the state and fighting abilities, there is also a smaller PSR. Finally, the concept of entropy has been applied as a tool for the measurement and evaluation of conflict and conflict management. Herrera, A. (2010) considered Andalusian agreement as an autotransformation capacity of social conflict for nature is the first expression of the Spanish green movement. This green movement, claimed for a new sustainable use of forests arose from the confluence of several environmental organization and the traditional peasant union. The struggles achieved a new forest policy adopted by the regional government introducing new ecological values in the population beyond the traditional conservationist conception of environmentalism. Jehn K.K. et al. (1999) in a multimethod of field study of 92 groups explored the influence of three types of workgroup diversity (Social category diversity) and two moderators (task interdependence) on work group outcomes. While groups have become central to organization they present their own intrinsic problem of coordination, motivation and conflict management.

Objectives

1. To identify some socio-economic, socio-psychological and agro-economic factors responsible for conflict regarding prescribed technology;
2. To establish intra and inter relationship among the identified socio-economic, socio-psychological and agro-economic variables influencing conflict among the respondent;
3. To isolate some factors contributing to conflict among the respondents;
4. To estimate conflict among the respondents for prescribed technology hindering the smooth process of Technology socialization.

Methodology

Ex post facto method of Research design was adopted to conduct face to face interview with the respondents of village Chiroura in the state, Bihar and the respondents of village Ghoragachha of West Bengal. Data collected, tabulated and analyzed with following statistical tools viz. Correlation coefficient, Stepwise regression, Path analysis.

The independent variables

Age (x1), Education (x2), Family Education Status (x3), Educational Aspiration (x4), Family Size (x5), Male: Female Ratio (x6), Urbanization Index (x7), Occupation (x8), Cropping Intensity (x9), Farm Size (x10), Expenditure Allotments (x11), Credit Load (x12), Annual Income (x13), Electricity Consumption (x14), Fuel Consumption (x15), Irrigation index (x16), Adoption leadership (x17), Scientific orientation (x18), Independency (x19), Innovation proneness (x20), Risk orientation (x21), Economic motivation (x22), Orientation towards competition (x23), Management orientation (x24), Production orientation (x25), Market orientation (x26), Social participation (x27), Utilization of cosmopolite source of information (x28), Information seeking behavior (x29), Training received (x30), Distance matrix (x31), Drudgeries (x32).

The dependent variables:

Perception on discontinuance (y1), Perception on rejection (y2), Disagreement (y3), Conflict (y4), Reasons for dissonance (y5), Reasons for reinvention (y6), Confusion index (y7).

Results and discussion

Analysis Table 1 presents Correlation coefficient of dependent variable, **Conflict (y4)** with 32 independent variables of pooled village. The table reveals that the following variables viz. **Adoption leadership (x17)**, **Market orientation (x26)**, **Utilization of cosmopolite source of information (x28)**, and **Information seeking behavior (x29)**, have significantly and positively correlated with the dependent variable **Conflict (y4)**. It has been found that the variable **Distance matrix (x31)** is significantly and positively correlated with the dependent variable, **Conflict (y4)**.

The table also reveals that the following variables viz. **Education (x2)**, **Family Education status (x3)** and **Educational aspiration (x4)**, and **Farm size (x10)** have been significantly but negatively correlated with the dependent variable, **Conflict (y4)**.

Table 1: Correlation coefficient of dependent variable Conflict (y4) with 32 independent variables of pooled village, (Ghoragachha and Chiroura).

N = 150	
Variables	Coefficient of Correlation (r)
Age (x1)	-0.145
Education (x2)	-0.261**
Family education Status (x3)	-0.255**
Educational aspiration (x4)	-0.231**
Family size (x5)	-0.200*
Gender (x6)	-0.028
Urbanization index (x7)	-0.103
Occupation (x8)	-0.019
Cropping intensity (x9)	0.105
Farm size (x10)	-0.458**
Expenditure allotment (x11)	0.149
Credit load (x12)	-0.065
Annual income (x13)	-0.032
Electricity Consumption (x14)	0.107
Fuel consumption (x15)	-0.068
Irrigation index (x16)	0.009
Adoption leadership (x17)	0.212**
Scientific orientation (x18)	0.159
Independency (x19)	0.078
Innovation proneness (x20)	0.121
Risk orientation (x21)	0.156
Economic motivation (x22)	0.095
Orientation towards competition (x23)	0.104
Management orientation (x24)	0.103
Production orientation (x25)	0.002
Market orientation (x26)	0.354**
Social participation (x27)	-0.080
Utilization of cosmopolite source of information (x28)	0.248**
Information seeking behavior (x29)	0.381**
Training received (x30)	-0.058
Distance matrix (x31)	0.175*
Drudgeries (x32)	-0.053
*Significant at 0.05%	
**Significant at 0.01%	

The independent variable **Family size (x5)** has also recorded significantly but negatively correlated with the dependent variable, **Conflict (y4)**.

The result indicates the respondent of lower Education, lower family education status, lower Educational aspiration are vulnerable to ignite conflict. Conflict are also found prominent when Farm size is smaller, Conflict are also found dominant when adoption leadership is attempted and exercised upon in mobilizing respondents towards adopting new prescriptive practices.

Again the three close-by variables viz. **Market orientation (x26)**, **Utilization of cosmopolite source of information (x28)** and **Information seeking behavior (x29)** due to this properties of seeking information inventorying information and analyzing information, can invite a degree of informational dissonance *vis a vis* Social entropy. Distance matrix has inducted with high distance from the strategic location of different utility center have added more Social entropy with increase of distances.

Table 2: Stepwise regression Conflict (y4) versus 32 independent variables of pooled village (Ghoragachha and Chiroura): Predominating variables retained at the last step.

N = 150								
Predictors	B	S.E	Beta	t	R	R ²	R square Adjusted	SE Estim at ed
Farm size (x10)	-0.133	0.020	-0.453	-6.781**	0.606	0.368	0.350	0.853
Information seeking behavior (x29)	0.259	0.071	0.287	3.628**				
Training received (x30)	0.000	0.000	-0.164	-2.387*				
Utilization of cosmopolite source of information (x28)	0.664	0.326	0.165	2.038*				

Table 3: Path analysis of dependent variable Conflict (y4) versus 32 exogenous variables of pooled village (Ghoragachha and Chiroura).

N = 150						
Variables	TE	TDE	TIE	Substantial Indirect Effect		
				I	II	III
Age (x1)	-0.145	0.066	-0.211	-0.161(x10)	-0.100(x3)	0.056(x4)
Education (x2)	-0.261**	0.029	-0.290	-0.202(x10)	-0.153(x3)	0.094(x4)
Family education Status (x3)	-0.255**	-0.288	0.033	-0.180(x10)	0.146(x4)	0.023(x1)
Educational aspiration (x4)	-0.231**	0.171	-0.402	-0.245(x3)	-0.188(x10)	0.021(x1)
Family size (x5)	-0.200*	-0.016	-0.184	-0.181(x10)	-0.070(x3)	0.049(x4)
Gender (x6)	-0.028	0.010	-0.038	-0.033(x10)	-0.014(x6)	0.008(x13) -0.008(x30)
Urbanization index (x7)	-0.103	0.036	-0.139	-0.072(x10)	0.026(x4)	-0.024(x11)
Occupation (x8)	-0.019	0.065	-0.084	-0.077(x29)	-0.015(x28) (x11) 0.015(x30)	0.009(x1) -0.009(x24)
Cropping intensity (x9)	0.105	0.014	0.091	0.122(x10)	0.057(x3)	-0.042(x4)
Farm size (x10)	-0.458**	-0.424	-0.034	-0.122(x3)	0.076(x4)	-0.029(x26)
Expenditure allotment (x11)	0.149	0.153	-0.004	-0.067(x13)	0.065(x29)	0.016(x10)
Credit load (x12)	-0.065	0.020	-0.085	-0.067(x10)	-0.050(x13)	-0.014(x3)
Annual income (x13)	-0.032	-0.136	0.104	-0.077(x10)	0.075(x11)	0.066(x29)
Electricity Consumption (x14)	0.107	0.012	0.095	0.072(x10)	0.028(x11)	0.027(x29)
Fuel consumption	-0.068	0.034	-0.102	-0.102(x10)	0.059(x11)	-0.050(x13)

(x15)						
Irrigation index (x16)	0.009	-0.121	0.130	0.086(x10)	0.039(x29)	0.030(x3)
Adoption leadership (x17)	0.212**	-0.022	0.234	0.142(x29)	0.055(x10)	0.048(x28)
Scientific orientation (x18)	0.159	0.046	0.113	0.132(x29)	-0.042(x3)	0.034(x28)
Independency (x19)	0.078	0.018	0.060	0.031(x10)	-0.018(x16)	0.014(x24)
Innovation proneness (x20)	0.121	0.005	0.116	0.043(x29)	0.031(x28)	0.025(x26)
Risk orientation (x21)	0.156	-0.040	0.196	0.069(x29)	0.021(x26)	0.053(x10)
Economic motivation (x22)	0.095	0.035	0.060	0.052(x29)	-0.021(x10)	-0.020(x13)
Orientation towards competition (x23)	0.104	0.020	0.084	0.063(x29)	-0.026(x3)	0.025(x24)
Management orientation (x24)	0.103	0.066	0.037	0.038(x29)	-0.024(x3)	0.021(x28)
Production orientation (x25)	0.002	-0.062	0.064	0.060(x10)	-0.035(x3)	0.025(x29)
Market orientation (x26)	0.354**	0.071	0.283	0.177(x10)	0.091(x29)	0.042(x3)
Social participation (x27)	-0.080	-0.043	-0.037	-0.123(x10)	-0.082(x3)	0.066(x29)
Utilization of cosmopolite source of information (x28)	0.248**	0.124	0.124	0.179(x29)	-0.052(x3)	0.044(x11)
Information seeking behavior (x29)	0.381**	0.332	0.049	0.067(x28)	0.031(x10)	0.030(x11)
Training received (x30)	-0.058	-0.131	0.073	0.056(x29)	-0.039(x3)	0.033(x28)
Distance matrix (x31)	0.175*	-0.021	0.196	0.134(x10)	0.068(x3)	-0.037(x4) 0.037(x11)
Drudgeries (x32)	-0.053	-0.049	-0.004	-0.053(x10)	0.035(x29)	-0.009(x8)
Residual Effect	0.750					
Highest count	Farm size (x10):24					

Table 3 present the path analysis of the consequent variable, **conflict (y4)** versus 32 exogenous variables by decomposing the total effect 'r' into direct effect, indirect effect and residual effect of pooled village. It

has been found that the exogenous variable, **Farm size (x10)** has exerted highest total direct effect whereas the other exogenous variable, **Educational**

aspiration (x4) has exerted highest total indirect effect on the consequent variables, **conflict (y4)**.

It has also been found that the exogenous variable, **Farm size (x10)** has routed the highest individual dominating effect as many as 24 times to define the tremendous impact on other exogenous variables to ultimately characterize the performance of consequent variable, **Conflict (y4)**.

The residual effect being 0.750, it is to infer that even with the combination of 32 exogenous variables, 25 per cent of variance embedded in the consequent variable, **Conflict (y4)** has been explained so far.

Conflict or cooperation, friendship or enmity, serenity or disorder, all are found in this case a subject of resource support to the farmers. Farm size here, has characterize the nature of conflict as a whole, encompassing farmers of West Bengal and Bihar simply because land is still the single largest and swashbuckling factor to catalyze the social chemistry of cultural dissonance vis a vis informational entropy. The question of adoptability to technology or repulsion to technology can ultimately be answered through a farm size category, small, marginal or big.

Educational aspiration (x4) as already been discussed can go a long way in characterizing the performance of other variables due to its intrinsic association ship with other variables. Educational aspiration can generate space and scope, Elasticity and resilience in perceiving any technology from its totality and help faster socialization across a social space.

Conclusions

Higher farm size ignites both investment and entrepreneurship because farmers are able to provide more land in generating their income but he has failed to accomplish the return necessary for their livelihood and gradually tilting toward off farm economy. More over higher the educational aspirations motivate the farmer to send their children school and colleges for higher education at the cost of farm occupation. Information seeking behaviour also igniting conflict because he gets more and more new information that are not compatible to their livelihood situations. In addition, the poor entrepreneurial efficiency of most of the Indian farmer have led them to a confront them a conflicting situation between higher investment versus low return and poor efficiency versus sub optimal character of return. The study has led to a policy implication wherein both

strategic and operational intervention are required for Indian farmers based on their farm category, enterprise category, risk category and knowledge category.

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