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### Correlational analysis of profile of beneficiary farmers and impact of Jalyukt Shivar campaign

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#### Abstract

Jalyukt Shivar Campaign was launched in Maharashtra in December, 2014 to make Maharashtra a drought free state. The main objectives of the programme were harvesting maximum rainwater in the surroundings of villages, increasing level of groundwater, increasing area under irrigation, creating decentralized water bodies. The present study was conducted to measure strength of the association between the profile of beneficiary farmers and impact of Jalyukt Shivar Campaign. An Ex-post-facto research design was used for the investigation. A sample of 320 beneficiary farmers was selected by covering 40 villages of two districts namely; Nagpur and Yavatmal from Nagpur and Amravati division of Maharashtra state, respectively. The results of correlation revealed that, the characteristics of the respondents namely education, annual income, land holding, source of irrigation, type of soil, extension participation, source of information, innovativeness, cosmopolitaness, risk preference, economic motivation and attitude of the respondents had positive and significant relationship with impact of Jalyukt Shivar Campaign at 0.01 level of probability. Whereas, family size, occupation, farming experience and social participation were found positively and significantly related with impact of Jalyukt Shivar Campaign at 0.05 level of probability. The age of the respondents had non-significant relationship with impact of Jalyukt Shivar Campaign. The study focused the existing relationship between the profile of beneficiary farmers and impact of Jalyukt Shivar Campaign.

**Keywords:** Correlational analysis, Jalyukt Shivar campaign, profile of beneficiary farmers, source of irrigation

#### 1. Introduction

In Maharashtra state drought is the major challenge. Inconsistency of rains in the very times of crop growth, discontinuity of rains and over exploitation of groundwater create drought like situation. Nearly 82 percent area of the state falls in rainfed sector and 52 percent is drought prone. Heavy ups and downs have been observed in the production of crops on dryland. Less availability of water is a major factor responsible for varying yields. As per the Government Resolution (GR), dated 25 November, 2014, government of Maharashtra has declared drought like situation in 19059 villages of 22 districts (GoM, 2014) <sup>[1]</sup>. It is observed that after every 2 years drought situation is created. Availability of water is the major challenge. There is need to recharge ground water and create decentralized water bodies to overcome the water scarcity problem in rainfed area of the state. Keeping in mind the various negative effects of lack of water availability, Maharashtra government had launched Jalyukt Shivar Campaign (JSC) in December, 2014 to permanently overcome internal drought situation in the state. This programme focused on restoration, repair, rejuvenation and construction of local water bodies. There were number of works taken up under 13 major activities of Jalyukt Shivar Campaign all over the state as well as in study area to improve the availability of water. The personal, socio-economic, situational,

communicational and psychological characteristics of beneficiaries play major role in deriving benefits from Jalyukt Shivar Campaign activities hence attempt was made to find out association between profile of beneficiary farmers and impact of Jalyukt Shivar Campaign.

#### 2. Materials and Methods

The study was carried out in Vidarbha region of Maharashtra state. Nagpur district was selected from Nagpur division and Yavatmal district was selected from Amravati division having maximum villages under Jalyukt Shivar Campaign. For the evaluation an ex-post-facto research design of social research was used. Total 320 beneficiary farmers were selected purposively from 40 villages of four talukas namely; Katol, Narkhed from Nagpur district and Darwha, Digras from Yavatmal district. The purposively selected beneficiary farmers were personally interviewed with help of structured interview schedule. The interview schedule was developed in English language and then translated in Marathi. The schedule was pre-tested by interviewing the 32 beneficiaries in a non-sampled area against ambiguity and redundancy, in the light of the pretested experience, the interview schedule was modified. In the present study, age, education, family size, occupation, annual income, land holding, farming experience, social participation, source of irrigation, type of

soil, extension participation, source of information, innovativeness, cosmopolitaness, risk preference and economic motivation were studied as independent variables, attitude towards Jalyukt Shivar Campaign as intervening variable and impact of Jalyukt Shivar Campaign as dependent variable. The data collected was qualitative, it was converted into quantitative form by scoring them in MS Excel and later the data was analysed by using SPSS software.

### 3. Results and Discussion

Relationship between selected personal, socio- economic, situational, communicational and psychological characteristics of the beneficiary farmers with impact of Jalyukt Shivar Campaign has been worked out and presented in Table 1.

#### 3.1 Age with impact of JSC

The data presented in Table 1 has been clearly indicated that, age was non significantly related with impact of JSC. The probable reason might be that, water for irrigation is the need of every individual doing farming. Beneficiary farmers from any specific age group don't influence impact. Similar finding has been reported by Chavai *et al.* (2015) <sup>[2]</sup>, Deshmukh (2016) <sup>[3]</sup> and Ninama *et al.* (2016) <sup>[4]</sup>.

#### 3.2 Education with impact of JSC

It has been apparent from the data presented in Table 1 that, education had positive and significant relationship with impact of JSC at 0.01 level of probability. As education of the beneficiary farmers increased there was positive increase in impact of JSC. Beneficiaries with good educational background had knowledge of activities of JSC, their benefits, soil and water conservation techniques/practices at farm, improved crop production technologies therefore, they might have reaped more benefits from JSC. The finding is in conformity with the findings of Deshmukh (2016) <sup>[3]</sup>, Ninama *et al.* (2016) <sup>[4]</sup>, Supe *et al.* (2017) <sup>[5]</sup> and Tekale *et al.* (2017) <sup>[6]</sup>.

#### 3.3 Family size with impact of JSC

It has been seen from Table 1 that, family size had positive and significant relationship with impact of JSC at 0.05 level of probability. Higher proportions of the respondents from study area had medium family size i.e. 5 to 6 members in family. More the family members then less are the labour cost because of their involvement in farming as well as in other income generation activities like subsidiary occupations. Therefore, it has been concluded that, more the family members more the impact of JSC. Similar finding has been reported by Deshmukh (2016) <sup>[3]</sup> and Supe *et al.* (2017) <sup>[5]</sup>.

#### 3.4 Occupation with impact of JSC

The data presented in Table 1 has been clearly indicated that, occupation had positive and significant relationship

with impact of JSC at 0.05 level of probability. Majority of the beneficiary farmers from study area were engaged in agriculture as main occupation. Other farmers were engaged in agriculture plus subsidiary occupations. All the respondents were engaged in farming. They have taken benefits from JSC activities on their farm in the form of irrigation water and increased crop production, productivity, annual income etc. Therefore, it has been concluded that, change in impact of JSC was respective of occupation of the beneficiaries. Similar finding has been reported by Deokate (2018) <sup>[7]</sup>.

#### 3.5 Annual income with impact of JSC

It has been seen from Table 1 that, annual income had positive and highly significant relationship with impact of JSC at 0.01 level of probability. It has been concluded that, as annual income of the beneficiary farmers increased change in impact of JSC also increases. Farmers with good financial background have taken more benefits from available water for irrigation. The finding is in close conformity with the findings of Deshmukh (2016) <sup>[3]</sup>, Ninama *et al.* (2016) <sup>[4]</sup> and Tekale *et al.* (2017) <sup>[6]</sup>.

#### 3.6 Land holding with impact of JSC

The data presented in Table 1 has been revealed that, land holding had positive and highly significant relationship with impact of JSC at 0.01 level of probability. The probable reason might be that, farmers with large land holdings were always ready to reaped benefits from new technologies, programmes. Because of their better financial condition, risk taking ability. Similar finding has been reported by Deshmukh (2016) <sup>[3]</sup>, Ninama *et al.* (2016) <sup>[4]</sup>, Chavai and Shinde (2017) <sup>[8]</sup> and Supe *et al.* (2017) <sup>[5]</sup>.

#### 3.7 Farming experience with impact of JSC

It has been seen from Table 1 that, farming experience had positive and significant relationship with impact of JSC at 0.05 level of probability. The respondents with higher farming experience had more risk bearing ability. They know farming practices to improve yields, productivity and income. The majority of the beneficiary farmers from study area had higher farming experience. Therefore, with increase in farming experience impact was also increased. Similar finding has been reported by Supe *et al.* (2017) <sup>[5]</sup>.

#### 3.8 Social participation with impact of JSC

It has been seen from the data presented in Table 1 that, there was positive and significant relationship between social participation and impact of JSC at 0.05 level of probability. The beneficiary farmers with more social participation have more exposure to different sources of information during their interaction, which helped them to gain more information. The finding is supported by findings of Chavai *et al.* (2015) <sup>[2]</sup>, Deshmukh (2016) <sup>[3]</sup>, Ninama *et al.* (2016) <sup>[4]</sup>, Supe *et al.* (2017) <sup>[5]</sup> and Tekale *et al.* (2017) <sup>[6]</sup>.

**Table 1:** Correlation coefficients of characteristics of the respondents with impact of Jalyukt Shivar Campaign

Sr. No.	Variable	'r' values
<b>A) Independent variable</b>		
1	Age <sup>▪</sup>	0.069 <sup>NS</sup>
2	Education <sup>▪</sup>	0.258 <sup>**</sup>
3	Family size <sup>▪</sup>	0.118 <sup>*</sup>
4	Occupation <sup>◦</sup>	0.132 <sup>*</sup>
5	Annual income <sup>▪</sup>	0.485 <sup>**</sup>
6	Land holding <sup>▪</sup>	0.409 <sup>**</sup>
7	Farming experience <sup>▪</sup>	0.125 <sup>*</sup>
8	Social participation <sup>◦</sup>	0.134 <sup>*</sup>
9	Source of irrigation <sup>◦</sup>	0.375 <sup>**</sup>
10	Type of soil <sup>◦</sup>	0.280 <sup>**</sup>
11	Extension participation <sup>◦</sup>	0.185 <sup>**</sup>
12	Source of information <sup>◦</sup>	0.212 <sup>**</sup>
13	Innovativeness <sup>◦</sup>	0.226 <sup>**</sup>
14	Cosmopolitaness <sup>◦</sup>	0.239 <sup>**</sup>
15	Risk preference <sup>◦</sup>	0.292 <sup>**</sup>
16	Economic motivation <sup>◦</sup>	0.318 <sup>**</sup>
<b>B) Intervening variable</b>		
17	Attitude towards Jalyukt Shivar Campaign <sup>◦</sup>	0.314 <sup>**</sup>

NS- Non Significant, \*\*Significant at 0.01 level of probability

\*Significant at 0.05 level of probability

▪ Karl Pearson's correlation ◦ Spearman's Rank correlation

### 3.9 Source of irrigation with impact of JSC

The data presented in Table 1 has been revealed that, source of irrigation had positive and highly significant relationship with impact of JSC at 0.01 level of probability. Farmers with more than one source of irrigation brought more area under irrigation and reaped more benefit than farmers with one source of irrigation might be the probable reason behind this kind of result. The finding is in line with the finding of Deokate (2018) [7].

### 3.10 Type of soil with impact of JSC

It has been cleared from Table 1 that, type of soil had positive and significant relationship with impact of JSC at 0.01 level of probability. Deeper soils generally can provide more water and nutrients to plants than shallow soils might be the probable reason. Hence this trend was noticed. Similar finding has been reported by Deokate (2018) [7].

### 3.11 Extension participation with impact of JSC

It has been seen from Table 1 that, extension participation had positive and significant relationship with impact of JSC at 0.01 level of probability. Participation in extension activities gives beneficiary farmers reliable information. The beneficiary farmers who have participated in more extension activities have more knowledge about JSC activities and innovative crop production technologies and took benefit from it.

### 3.12 Source of information with impact of JSC

It has been revealed from Table 1 that, there was positive and significant relationship between source of information and impact of JSC at 0.01 level of probability. The beneficiary farmers who had more contact with personal, cosmopolite and mass media sources for information found to be benefited more than other beneficiaries with less contact. The finding is supported by the finding of Deokate (2018) [7].

### 3.13 Innovativeness with impact of JSC

The data presented in Table 1 has been revealed that, innovativeness had positive and significant relationship with impact of JSC at 0.01 level of probability. Innovative farmer is early in use of new practices. Therefore, the beneficiary farmers with high innovativeness adopted activity of JSC earlier than other farmers and benefited from JSC activities. The finding is supported by the findings of Tekale *et al.* (2017) [6].

### 3.14 Cosmopolitaness with impact of JSC

It has been seen from Table 1 that, cosmopolitaness had positive and significant relationship with impact of JSC at 0.01 level of probability. The beneficiary farmers having contacts outside their social system come across different sources of information, meet people with different attitude, values and beliefs. It brings change in beneficiary's knowledge, attitude and skill. This might be the probable reason behind this result. Similar finding has been reported by Kumar *et al.* (2013) [9].

### 3.15 Risk preference with impact of JSC

It has been cleared from the Table 1 that, there is positive and significant relationship between risk preference and impact of JSC at 0.01 level of probability. The probable reason might be that, the beneficiaries with high-risk preference adopted JSC activities near their farm and would give better farm returns. The finding is supported by findings of Kumar *et al.* (2013) [9], Ninama *et al.* (2016) [4], Chavai and Shinde (2017) [8] and Supe *et al.* (2017) [5].

### 3.16 Economic motivation with impact of JSC

The data presented in Table 1 has been reported that, economic motivation had positive and significant relationship with impact of JSC at 0.01 level of probability. Every farmer wants to maximize his profit by adopting different technologies. Under JSC there is increase in the availability of water for irrigation. Therefore, farmers with high economic motivation took advantage of it for better economic returns through increased production and quality of produce. The finding is in line with findings of Kumar *et al.* (2013) [9], Deshmukh (2016) [3] and Supe *et al.* (2017) [5].

### 3.17 Attitude towards JSC with impact of JSC

It has been seen from the data presented in Table 1 that, attitude had positive and significant relationship with impact of JSC at 0.01 level of probability. The beneficiary farmers with favourable attitude towards JSC had taken benefit from JSC activities. Therefore, attitude had significant relationship. Similar finding has been reported by Sonam Agrawal (2015) [10].

It was revealed from above results that, education, annual income, land holding, source of irrigation, type of soil, extension participation, source of information, innovativeness, cosmopolitaness, risk preference, economic motivation and attitude of the respondents had positive and significant relationship with impact of Jalyukt Shivar Campaign at 0.01 level of probability. Whereas, family size, occupation, farming experience and social participation were found positively and significantly related with impact of Jalyukt Shivar Campaign at 0.05 level of probability. Therefore, the null hypothesis ( $H_0$ ) framed for these

variables were rejected and alternative hypothesis ( $H_1$ ) were accepted. The age of the respondents had non-significant relationship with impact of Jalyukt Shivar Campaign. Therefore, in this case null hypothesis ( $H_0$ ) framed for this variable was accepted.

#### 4. Conclusion

The present investigation showcases the relationship between personal, socio-economic, situational, communicational and psychological characteristics of beneficiaries with impact of Jalyukt Shivar Campaign. It has been concluded that, increase in education, annual income, land holding, source of irrigation, type of soil, extension participation, source of information, innovativeness, cosmopolitaness, risk preference, economic motivation, attitude, family size, occupation, farming experience and social participation increases impact of Jalyukt Shivar Campaign on beneficiary farmers. The findings of the correlational analysis revealed that, education, family size, occupation, annual income, land holding, farming experience, social participation, source of irrigation, type of soil, extension participation, source of information, innovativeness, cosmopolitaness, risk preference, economic motivation and attitude had found significant contribution in influencing impact of Jalyukt Shivar Campaign. Therefore, it is suggested that, policy makers should focus on these parameters while planning and formulating future water conservation programmes.

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