# Impact of Demographic Factors on the Distress among Small Farmers: A Case Study of Punjab

PARDAMAN KAUR* AND JASKARAN SINGH DHILLON
*Faculty of Commerce and Management, Sri Guru Granth Sahib University, Fatehgarh Sahib, Punjab, India*
*Corresponding author's email:pardaman14@gmail.com

## Abstract

*The study investigated the impact of demographic factors on distress among small farmers of Punjab. The study examined the influence of age, qualification, marital status, farming experience and annual income on distress among farmers. The study sampled 385 small farmers. Data was collected using schedule. Data was analyzed by PSAW Statistics 18 (SPSS). Mean ANOVA were used to answer research question. Results showed that age, qualification, marital status and annual income have certain impact on the distress among small farmers but farming experience does not have the impact on distress among small farmers.*

## Introduction

Distress, an essential part of the human existence, is said to have a massive influence over the lives of individuals and the organizations. In the present period, the nature and strength of distress is so violent that the present age has been named as 'Age of Anxiety, Distress and Depression' (Horwitz, 2010).

Distress is a situation in which person is not able to utterly become accustomed to stressors and their resulting stress and shows maladaptive behaviors e.g. aggression, passivity or withdrawal etc. People do find ways to compact with distress, in both negative and positive ways. Positive ways may include are listening to music, coloring, sports etc. Negative ways can include many but are not restricted to use of drugs including alcohol, and face of anger. These may likely to show the way to complex social interactions, thus causing increased distress.

Distress Symptoms- Distress can have an effect on the different aspects of the life. It includes emotions, thinking ability, behaviors, and physical health. No part of the body is invulnerable from the distress. But as people handle distress in altered ways, symptoms of distress can also diverge person to person. Signs of distress can be cognitive, emotional, physical, or behavioral as indicated in the Table 1.

The most general terminology about stress compasses a range of both positive and negative effects. Therefore, it ranges from low-level dissatisfaction to acute mental illness. Various disciplines as medical sciences, geography, and sociology have researched about stress, but there are different findings strained from these studies. When stress is formed by unwanted outcomes it becomes distress. Distress is a form of stress which requires examination and steps to deal with it because distress is usually allied with heart disease, alcoholism, drug abuse, marital problem, absenteeism etc.

Distress in agriculture sector has become a fastidious challenge for the researchers. There are number of factors that the literature has well-known over and over again. Various causes include: financial problems, the political climate, disease and acute crises, bad weather conditions, machinery failures, family problems, health problems, insecurity, loneliness and negative media coverage. The agrarian economy of Punjab has been under distress since 1980s.

Agriculture in Punjab had a great growth up to early 1990's, but after that it slowed down due to a range of reasons. The available resources and technology was getting exploited which results in increasing costs, decreasing productivity, profitability and income level as well. (Kalkat et al.. 2006 and Singh, 2009). Small/marginal farmers had slight alternative, they had to go for capital-intensive

Table 1: Distress symptoms

| Cognitive symptoms | Physical symptoms | Behavioural symptoms | Emotional symptoms |
|---|---|---|---|
| Memory problems | Tension, headaches | Sleep problems | Moodiness |
| Inability to concentrate | Neck aches, Back pain | Nervous habits | Depression |
| Poor judgment | Stammering | Increased frustration and irritability | Sense of loneliness |
| Pessimistic approach | Trembling of lips or hands | Increased alcohol use | Feeling overwhelmed |
| Nightmares | Gritting or grinding of teeth, Jaw pain | Weight gain or loss without diet | Anxiety, worry, nervousness |
| Trouble learning new information | Muscle tenseness, bracing, and aches | Overreaction to small things | Increased anger and frustration |

Source: Nathan Ronald. G., Rosch Paul J. "The Doctor's Guide to Instant Stress Relief: A Psychological and Medical System"(2007) http://www.healthylife.com/online/stress/StateOfMichigan/symptoms-of-distress.html retrieved on 2 December,2015

farming. Natural resources were exploited especially ground water. The income of farmers was used more on digging deeper to install submersible pumps (Singh, 2008). With the passage of time, farmers have adopted the high living standards due to the era of high growth, which makes their social and cultural obligations more expansive. The indebtedness of the small/marginal farmers, whose economic base is poor, increased very fast which was beyond their repaying capacity. So, their distress continued as a result.

A study by Punjab State Farmers Commission and Punjab Agricultural University reported that farmers, on average, indebted up to 64 per cent of his annual income. The farmers who are having up to 4 hectare were indebted up to 90 per cent of their annual income. About 19 per cent of the marginal and small farmers were under acute burden of indebtedness (Singh et al, 2007).

Punjab is a 'little big state' of India, little because the state occupies only 1.5 per cent of the geographical area of the country and big because around two-third of the food grains procured annually in the country come from this state. Further over 95 per cent of the food grains that are moved interstate to feed deficit areas through the public distribution system are the stocks procured from this state. The historical region of Punjab is considered to be one of the most fertile regions on Earth. Both east and west Punjab produce a relatively high proportion of India and Pakistan's food output respectively. The region has been used for extensive wheat farming in addition rice, cotton, sugarcane, fruit and vegetables are also grown (Government of Punjab, 2015)

Hypothesis building

H1. There is significant difference among distress of small farmers based on different age groups.
H2: There is significant difference among distress of small farmers based on different education groups.
H3: There is significant difference among distress of small farmers based on different marital groups.
H4: There is significant difference among distress of small farmers based on different farming experience groups.
H5: There is significant difference among distress of small farmers based on different annual income groups.

## Materials and methods

The present study was conducted for the period of 2016-2017 and primary data has been used for analysis. Further, the cluster convenient sampling technique was followed to select the respondents. The study was conducted on the small scale farmers* of Ludhiana district. The scope of the study is limited to Ludhiana district only. The study has covered district Ludhiana which is an industrial town. It has the biggest grain market of Asia which is in Khanna.

*Small-holder farmers - defined as those marginal and sub-marginal farm households that own or/and cultivate less than 2.0 hectare of land (Government of Punjab, 2015). One hectare is equal to 2.471 acres of land. (Metric-converstions, 2015)

It is being assumed that there is large population and the variability in the population is not known. Therefore it is being assumed that the variability, p=0.5(maximum variability). At 95% of confidence level and ±5 % precision. So the resulting sample is

$$n_0 = \frac{Z^2pq}{e^2} = \frac{(1.96)^2(.5)(.5)}{(.05)^2} = 385 \text{ farmers}$$

(Determining Sample Size, Glenn D. Israel)

## Results and Discussion

The one-way analysis of variance (ANOVA) is used to resolve whether there are any statistically significant differences between the means of two or more independent (distinct) groups. To examine whether there exists any dissimilarity among different groups of small farmers categorized by age, education, marital status, income, total work experience with reference to their distress under study, one way ANOVA was conducted for the selected demographic factors.

Before ANOVA, the two assumptions of the concern were normality and the homogeneity of variance was met.

*Age*

The independent between-groups ANOVA yielded a statistically significant effect, F (3,381)=12.04, p=0.000, n2=0.137. The table 2 shows the output of the ANOVA analysis and whether there is a statistically significant difference between the different age groups. The significance value is 0.000 which is below than 0.05 and therefore, there is statistically significant difference in distress among different age groups. It shows that the distress among small farmers varies as per their age.

*Qualification*

The independent between-groups ANOVA yielded a statistically significant effect, F (3,381)=4.65,

p=0.003, n²=0.157. The table 2 shows the output of the ANOVA analysis and whether there is a statistically significant difference between the different educational qualification groups. The significance value is 0.006 which is below than 0.05 and therefore, there is statistically significant difference in distress among different educational qualification groups of the small farmers. It shows that the distress among small farmers also varies as per their educational qualifications.

*Marital status*

The independent between-groups ANOVA yielded a statistically significant effect, F (3,381)=3.09, p=0.0393, n2=0.124. The table 2 shows the output of the ANOVA analysis and whether there is a statistically significant difference between the different educational qualification groups. The significance value is .039 which is below than 0.05 and therefore, there is statistically significant difference in distress among marital status of the small farmers. It shows that the distress among small farmers also varies as per their marital status.

*Farming experience*

The independent between-groups ANOVA yielded a statistically significant effect, F (3,381)=0.840, p=0.472, n2=0.124.The table 2 shows the output of the ANOVA analysis and whether there is a statistically significant difference between the different farming

Table 2: Demographic profile-wise Results of One-Way Analysis of Variance for Small Farmers

|  |  | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| **Age** |  |  |  |  |  |  |
|  | Between Groups | 984.039 | 4 | 246.010 | 12.045 | 0.000 |
|  | Within Groups | 7761.405 | 380 | 20.425 |  |  |
|  | Total | 8745.444 | 384 |  |  |  |
| **Marital Status** |  |  |  |  |  |  |
|  | Between Groups | 308.892 | 3 | 102.964 | 4.650 | 0.003 |
|  | Within Groups | 8436.552 | 381 | 22.143 |  |  |
|  | Total | 8745.444 | 384 |  |  |  |
| **Qualification** |  |  |  |  |  |  |
|  | Between Groups | 88.213 | 1 | 88.213 | 3.903 | 0.039 |
|  | Within Groups | 8657.231 | 383 | 22.604 |  |  |
|  | Total | 8745.444 | 384 |  |  |  |
| **Farming Experience** |  |  |  |  |  |  |
|  | Between Groups | 57.496 | 3 | 19.165 | 0.840 | 0.472 |
|  | Within Groups | 8687.948 | 381 | 22.803 |  |  |
|  | Total | 8745.444 | 384 |  |  |  |
| **Annual Income** |  |  |  |  |  |  |
|  | Between Groups | 457.988 | 3 | 119.329 | 4.460 | 0.004 |
|  | Within Groups | 8687.456 | 381 | 22.802 |  |  |
|  | Total | 8745.444 | 384 |  |  |  |

experience groups of the small farmers. The significance value is 0.472 which is more than 0.05 and therefore, there is no statistically significant difference in distress among different farming experience groups of the small farmers. It shows that the distress among small farmers does not change with their experience of farming.

*Annual Income*

The independent between-groups ANOVA yielded a statistically significant effect, $F(3,381)=4.460$, $p=.004$, $n2=.124$. The table 2 shows the output of the ANOVA analysis and whether there is a statistically significant difference between the different farming experience groups of the small farmers. The significance value is 0.004 which is less than 0.05 and therefore, there is statistically significant difference in distress among different income groups of the small farmers. It shows that the distress among small farmers does not change with their annual income.

So, the study found that there is a certain impact of the demographic factors on the distress among small farmers. Results showed that age, qualification, marital status and annual income have certain impact on the distress among small farmers. These demographic factors have firm impact on the distress among the farmers along with other factors. Although the results also showed that farming experience does not have any impact on distress among small farmers. Distress among small farmers does not change with the less or more experience of the farmers, rather there are other factors which create distress among small farmers.

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