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Comprehensive study on the profile characteristics analysis of farmers in Telangana

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Abstract
The imperative for profile analysis emerges as a guiding compass through the intricate pathways of farmers' lives, transcending statistical realms. Just as wise farmers select seeds for bountiful harvests, understanding farmers' profiles aligns with choosing lenses to perceive their reality. Analyzing personnel, socio-economic, and psychological variables become vital to comprehend agricultural ground reality. A meticulous interview schedule collected primary data from 180 farmers via purposive random sampling across Telangana's distinct Agro-climatic zones. Findings reveal that predominant middle-aged farmers (55.00%), medium family education (38.89%), and concrete house ownership (64.44%). Material passion was mainly medium (62.78%), and farming experience varied. Socio-political participation (45.00%), lower personnel achievements (63.33%), and diverse landholding sizes. Annual income skewed towards low levels (50.56%). Medium levels of innovativeness (43.89%), self-confidence (57.22%), and high levels of economic motivation (42.22%) was observed. The majority held medium risk orientation (57.78%). The results uncover age's diverse impacts on variables, including negative relationships with innovation, self-confidence, and positive ones with farming experience. Innovativeness exhibited positive links with achievement motivation, self-confidence, economic motivation, and risk orientation. Achievement motivation positively related to self-confidence, economic motivation, and risk orientation. Self-confidence had positive relations with economic motivation and risk orientation. Economic motivation positively correlated with risk orientation.

Keywords: Profile analysis, personal variables, socio-economic variables, psychological variables and spearman rank correlation

Introduction
In the intricate tapestry of global societies, farmers stand as the stalwart guardians of sustenance, woven intricately into the very fabric of existence, and forming the resilient backbone of economies worldwide. Their toil, resilience, and unwavering dedication to cultivating the land have not only shaped civilizations throughout history but have also served as the lifeblood that nourishes communities across generations. The symbiotic relationship between humans and the earth, mediated by these agrarian stewards, has been the cornerstone of survival and progress for millennia. However, acknowledging the significance of farmers is merely the surface of a profound narrative. Beneath this overarching identity lies an intricately nuanced reality. The multifaceted world of agriculture is far from monolithic; it is, in fact, an intricate mosaic of diverse individuals, each contributing to the cultivation of the land with their unique attributes, challenges, and aspirations. Farmers are not uniform in their experiences; they hail from various backgrounds, regions, cultures, and socioeconomic circumstances. Their connection to the land is informed by a multitude of factors, shaping their livelihoods, identities, and dreams in distinctive ways. In this rich diversity of agricultural practitioners lies a crucial need to understand the individual threads that compose the greater tapestry. Herein emerges the imperative for profile analysis, a process that transcends the statistical realm to become an insightful compass guiding us through the labyrinthine pathways of farmers' lives. Just as a wise farmer selects the right seeds to sow for a bountiful harvest, understanding the profile composition of farmers is akin to carefully selecting the lenses through which we perceive their reality. In this context, analyzing various aspects of farmers' personnel, socio-economic, and psychological variables is of paramount importance for gaining a comprehensive understanding of the ground reality in agricultural contexts. This holistic approach to analysis allows policymakers, researchers, and agricultural extension services to develop targeted interventions and strategies that can effectively address the challenges faced by farmers and enhance their overall well-being.

Materials and Methods

The current investigation is carried out in Telangana during the march to June months of 2023. Based on thorough review of literature, a total of fourteen variables are selected for the study. The personal characteristic constituents the variable age (X_1), family education status (X_2), type of house (X_3), material possession (X_4) and farming experience (X_5) were selected. Under Social economic variables, the social political participation (X_6), personal achievement (X_7), land holding (X_8), and annual income (X_9) were selected. The psychological variables such as innovativeness (X_{10}), achievement motivation (X_{11}), self-confidence (X_{12}), economic motivation (X_{13}) and risk orientation (X_{14}) were selected for study. A comprehensive interview schedule was meticulously devised, and primary data was gathered directly from farmers. A purposive random sampling method was employed to select 60 farmers from each distinct Agro-climatic zone of state Telangana. This process ensured representation from all three zones. Consequently, the total sample size amounted to 180 farmers. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were employed to categorize respondents into low, medium, and high levels, excluding age, type of house, and landholding as criteria. Spearman's rank correlation was applied to determine significant relationships among personal, socio-economic, situational, communicational, and psychological variables.

Results

From Table 1. It can be observed that the majority of the respondents belonged to middle-aged (55.00 percent), followed by young and old aged. Similar findings were reported by Anushree and Madan (2018) [1] and Sandeep *et al.*, (2020) [10]. Interestingly the family education status of the farmers was found to be medium levels (38.89%), followed by high levels (36.11%) and low levels (25.00%). The majority of the respondents owned concrete type of house (64.44%), followed by Tied and brick wall, Concrete double storied and Mud walled/Metal sheet roof. Medium levels (62.78%) of material passion were observed as the majority, followed by low and high levels.

Table 1: Distribution of respondents according to personal characteristics (n =180)

S. No	Characteristics	Category	Total (n=180)	
			F	%
1.	Age	Young aged (18-35)	58	32.22
		Middle aged (36-50)	99	55.00
		Old aged (> 51)	23	12.78
2.	Family education status (Mean 3.93 and ½ S.D 0.27)	Low < 3.66	45	25.00
		Medium 3.66 – 4.21	70	38.89
		High > 4.21	65	36.11
3.	Type of house	Concrete double storied	28	15.56
		Concrete	116	64.44
		Tied and brick wall	30	16.67
		Mud walled / Metal sheet roof	06	03.33
		Thatched shed	00	00.00
4.	Material possession (Mean 11.12 and ½ SD 1.36)	Low < 9.77	47	26.11
		Medium 9.77 – 12.48	113	62.78
		High > 12.48	20	11.11
5.	Farming experience (Mean 17.71 and ½ SD 3.74)	Low < 13 years	57	31.67
		Medium 13 – 21 years	67	37.22
		High > 21 years	56	31.11

Medium levels (37.22%) of farming experience were observed as high frequency group, and similar portions were observed as low levels of farming experience (31.67%) and high levels (31.11%). The findings are in line with Meera *et al.*, (2018) [3].

Table 2: Distribution of respondents according to socio economic characteristics (n =180)

S. No	Characteristics	Category	Total (n=180)	
			F	%
1.	Socio-political participation (Mean 3.97 and ½ SD 1.76)	Low < 2.21	81	45.00
		Medium 2.21 – 5.73	45	25.00
		High > 5.73	54	30.00
2.	Personal Achievement (Mean 1.89 and ½ SD 0.94)	Low < 0.95	114	63.33
		Medium 0.95-2.83	47	26.11
		High > 2.83	19	10.56
3.	Land holding	Marginal (< 1 ha)	18	10.00
		Small (1 to 2 ha)	85	47.22
		Small-medium (2 to 4 ha)	52	28.89
		Medium (4 to 10 ha)	19	10.56
		Large (>10 ha)	06	3.33
4.	Annual Income (Mean 153566.67 and ½ SD 35619.25)	Low < 117947.42	91	50.56
		Medium 117947.42-189185.91	60	33.33
		High > 189185.91	29	16.11

From Table 2. It can be observed that the low levels (45.00%) of socio-political participation were observed as a high frequency group, followed by high levels and medium levels. Similar findings were reported by Pathade *et al.,* (2017) [8]. It is important to observe that low levels (63.33%) of personnel achievement in terms of awards and recognition were among respondents, followed by medium and high levels. Similar findings are observed by Pandya (2010) [6]. Nearly half of the respondents (47.22%) were holding small size of land holding, followed by small-medium (28.89%), medium, marginal, and large size holding and the results are in line with the findings of Madan (2017) [2]. The low levels of annual income were observed as the high frequency group (50.56%) followed by medium and high levels. The results are supported by Painkra *et al.,* (2014) [5].

From Table 3. Most of the respondents were belongs to medium levels (53.89%), followed by high levels (30.00%) and low levels (26.11%) and the findings are in line with Naik (2018) [4]. More than half of the respondents had medium levels (43.89%) of achievement motivation, followed by high levels (31.11%) and low levels (15.00%). The findings are in line with Swaroop (2016) [11]. More than half of the respondents (57.22%) is observed as medium levels of self-confidence as majority, followed by low (36.11%) and high levels of self-confidence (05.00%). Interestingly, high levels (42.22%) of economic motivations were observed as the major frequency group followed by medium (29.44%) and low levels (28.33%). The findings are supported by Patel (2017) [7]. Medium levels (57.78%) were observed as majority group in risk orientation, followed by high levels (25.56%) and low levels (16.67%). The results are almost similar to findings of Raksha *et al.,* (2017) [9].

Table 3: Distribution of respondents according to psychological characteristics (n =180)

S. No	Characteristics	Category	Total (n=180)	
			f	%
1.	Innovativeness (Mean 19.70 and ½ S.D 1.63)	Low < 18.07	47	26.11
		Medium 18.07-21.33	79	43.89
		High > 21.33	54	30.00
2.	Achievement motivation (Mean 36.01 and ½ S.D 3.36)	Low < 32.66	27	15.00
		Medium 32.66-39.37	97	53.89
		High > 39.37	56	31.11
3.	Self-confidence (Mean 25.84 and ½ S.D 1.55)	Low < 24.29	65	36.11
		Medium 24.29-27.39	103	57.22
		High > 27.39	09	05.00
4.	Economic Motivation (Mean 22.72 and ½ S.D 0.74)	Low < 21.97	51	28.33
		Medium 21.97-23.46	53	29.44
		High > 23.46	76	42.22
5.	Risk orientation (Mean 22.66 and ½ S.D 1.23)	Low > 21.43	30	16.67
		Medium 21.43-23.90	104	57.78
		High > 23.90	46	25.56

From the Table 4 it can be observed that age had negative and significant relationship between type of house, innovativeness, achievement motivation, self-confidence, economic motivation and risk orientation. The variable type of house had a positive and significant relationship with achievement motivation and risk orientation. Farming experience was found to be a negative and significant relationship with innovation, achievement motivation, self-confidence, economic motivation and risk orientation. The variable personal achievement was found positive and significant relationship with innovativeness. Landholding had a positive relationship with annual income.

Innovativeness had as positive and significant relation with achievement motivation, self-confidence, economic motivation, and risk orientation. Achievement motivation had positive and significant relation with self-confidence, economic motivation, and risk orientation. The variable self-confidence had positive and significant relation with economic motivation and risk orientation. The variable economic motivation had positive and significant relation with risk orientation.

Table 4: Correlation analysis between selected independent variables (n = 180)

Spearman rank correlation Coefficient														
ρ value	**X_1**	**X_2**	**X_3**	**X_4**	**X_5**	**X_6**	**X_7**	**X_8**	**X_9**	**X_{10}**	**X_{11}**	**X_{12}**	**X_{13}**	**X_{14}**
X_1	1.00													
X_2	-0.08^{NS}	1.00												
X_3	-.152*	0.01^{NS}	1.00											
X_4	0.00^{NS}	-0.03^{NS}	-0.05^{NS}	1.00										
X_5	.805**	-0.04^{NS}	-0.13^{NS}	0.06^{NS}	1.00									
X_6	0.00^{NS}	-0.11^{NS}	-0.03^{NS}	0.04^{NS}	0.00^{NS}	1.00								
X_7	-0.10^{NS}	0.08^{NS}	0.02^{NS}	0.03^{NS}	-0.06^{NS}	-0.06^{NS}	1.00							
X_8	0.03^{NS}	-0.08^{NS}	-0.05^{NS}	-0.05^{NS}	0.00^{NS}	0.05^{NS}	-0.02^{NS}	1.00						
X_9	0.06^{NS}	-0.12^{NS}	-0.10^{NS}	-0.02^{NS}	0.09^{NS}	0.03^{NS}	-0.02^{NS}	.931**	1.00					
X_{10}	-.786**	0.02^{NS}	0.08^{NS}	-0.06^{NS}	-.659**	0.01^{NS}	.173*	0.06^{NS}	0.04^{NS}	1.00				
X_{11}	-.268**	0.02^{NS}	.223**	0.01^{NS}	-.202**	0.10^{NS}	0.10^{NS}	0.04^{NS}	0.00^{NS}	.230**	1.00			
X_{12}	-.971**	0.08^{NS}	0.14^{NS}	-0.02^{NS}	-.808**	0.01^{NS}	0.09^{NS}	0.01^{NS}	-0.03^{NS}	.786**	.240**	1.00		
X_{13}	-.959**	0.10^{NS}	0.10^{NS}	0.00^{NS}	-.778**	0.00^{NS}	0.14^{NS}	-0.01^{NS}	-0.05^{NS}	.768**	.228**	.950**	1.00	
X_{14}	-.973**	0.05^{NS}	.168*	-0.01^{NS}	-.789**	-0.01^{NS}	0.09^{NS}	-0.02^{NS}	-0.05^{NS}	.773**	.288**	.939**	.915**	1.00
NS- Non significant * significant at 5% level ** significant at 1% level														

Discussion

The results from Table 1 reveal that the majority of respondents in the study belonged to the middle-aged group. Family education status and house type also had significant variations. In terms of material possession and farming experience, medium levels were predominant. To enhance agricultural technology adoption, targeted interventions catering to specific age groups are suggested. Furthermore, initiatives to promote skill development and knowledge sharing can contribute to the growth of the farming community. The insights from Table 2 highlight crucial areas for improvement based on farmers' socio-economic characteristics. To enhance socio-political engagement, awareness campaigns should encourage active participation, empowering farmers to voice their concerns. Recognizing and incentivizing achievements can motivate farmers to attain higher levels of awards and recognition. Strategies to optimize land utilization and promote cooperative farming can uplift small landholders. Initiatives focusing on market access, value addition, and diversified income streams can alleviate income disparities. By tailoring interventions to these socio-economic facets, policymakers can empower farmers, bridge gaps, and foster sustainable growth for rural communities.

Based on results of Table 3 to enhance psychological variables among farmers, a comprehensive approach can be adopted. Firstly, personalized training and workshops should be designed to boost achievement motivation, catering to different levels of motivation and offering actionable steps towards goal attainment. Secondly, interventions to cultivate self-confidence could involve mentorship, skills training, and public speaking opportunities, gradually building their self-assurance. Promoting economic motivations can be achieved through financial literacy programs, demonstrating the benefits of sound financial planning and diversified income streams. Encouraging farmer-to-farmer knowledge exchange can aid in fostering a culture of risk-taking, where success stories and experiences are shared openly. To address psychological well-being, mental health awareness campaigns, stress management workshops, and access to counseling services should be made available. Lastly, fostering a sense of community through cooperative initiatives, peer support groups, and role model showcases can provide emotional reinforcement and motivation. By addressing psychological variables holistically, these strategies can contribute to farmers' improved mindset, empowerment, and resilience, ultimately leading to enhanced agricultural practices, increased productivity, and better overall livelihoods.

From Table 4 it is observed that age had positive and significant relation with farming experience. Encourage cross-generational knowledge exchange to capitalize on the positive relationship between age and farming experience. Foster innovation-oriented workshops, mentorship programs, and confidence-building initiatives to counter the negative correlations. Tailor economic motivation strategies to cater to different age groups, promoting sustained agricultural engagement and growth. To enhance psychological traits of older farmers, implement tailored interventions. Offer continuous learning opportunities to foster innovation and boost motivation. Conduct workshops focusing on self-confidence building and adapting to economic changes. Facilitate peer mentorship to share experiences and encourage risk-taking. To capitalize on the positive link between personal achievement and innovativeness, design mentorship programs that highlight personal success stories to inspire innovative thinking. Create platforms for idea-sharing and collaboration, encouraging individuals to leverage their achievements as a foundation for exploring novel agricultural approaches and technologies. To leverage the positive connection between landholding and annual income, implement land optimization techniques through training, encouraging farmers to maximize productivity from available land. Introduce crop diversification to tap into different market demands, ensuring a consistent income stream. Facilitate access to markets and value chains, enabling farmers to capitalize on their land's potential for improved economic returns. To capitalize on the positive relationships between innovativeness and psychological traits, initiate workshops that blend innovation and goal setting, fostering a dynamic mindset. Establish mentorship programs to enhance self-confidence and economic motivation among individuals who exhibit innovativeness. Create an innovation-friendly environment that encourages calculated risk-taking, aligning with the proactive nature of innovative farmers. To leverage the positive associations between achievement motivation and psychological traits, establish workshops that combine goal setting with confidence-building activities. Create tailored financial literacy programs to reinforce economic motivations, aligning ambition with financial growth. Develop mentorship initiatives that emphasize calculated risk-taking, empowering individuals with achievement motivation to explore new horizons. To harness the positive correlations between self-confidence and psychological traits, initiate workshops that integrate self-assurance with financial literacy, boosting economic motivations. Design mentorship programs to nurture self-confidence and encourage informed risk-taking, aligning with the resilient mindset of confident individuals. Create a supportive ecosystem that fosters self-belief and emboldens farmers to embrace entrepreneurial opportunities. To capitalize on the positive link between economic motivation and risk orientation, implement training programs that emphasize informed risk-taking within the context of economic pursuits. Foster a culture of calculated risk assessment through workshops, encouraging individuals to leverage their economic motivations for innovative ventures. Provide mentorship to navigate potential risks, ensuring alignment with their economic aspirations.

Conclusion

In conclusion, the presented findings shed light on various critical aspects of farmers' characteristics and their implications for agricultural development. The analysis across Tables 1 to 4 provides valuable insights into the dynamic interplay between personnel, socio-economic and psychological. The study highlights the dominance of middle-aged farmers, emphasizing the need for targeted interventions across different age groups. Family education and housing patterns underline the significance of socio-economic factors in shaping farmers' lives. Table 2 underscores the importance of enhancing socio-political participation and promoting awards and recognition to motivate farmers. Landholding's impact on income suggests the potential of land optimization strategies for improved economic outcomes. Incorporating these findings, policymakers can foster holistic growth by implementing initiatives that empower farmers across age groups, enhance socio-political engagement, acknowledge achievements, optimize land use, and promote psychological

well-being. These strategies align with sustainable agricultural development, fostering improved livelihoods, and strengthening rural communities' resilience and progress.

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