P-ISSN: 2618-0723
E-ISSN: 2618-0731

NAAS Rating: 5.04
www.extensionjournal.com

International Journal of Agriculture Extension and Social Development

Volume 8; Issue 1; January 2025; Page No. 549-552

Received: 23-11-2024
Accepted: 29-12-2024

Indexed Journal
Peer Reviewed Journal

Assessing the relationship of profile characteristics of the tribal farmers with overall perceived effectiveness of Ethno medical practices in Idukki district of Kerala

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DOI: https://www.doi.org/10.33545/26180723.2025.v8.i1h.1985

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Abstract

The study assesses the relationship between the profile characteristics of tribal farmers and their perceived effectiveness of Ethno-Medical Practices (EMPs) in addressing health-related ailments in the Idukki district of Kerala. Perceived effectiveness was operationalized as the degree of positive outcomes obtained through EMPs, as rated by tribal farmers. A Perceived Effectiveness Index (PEI) was developed to measure the effectiveness of EMPs based on 17 traits evaluated on a three-point continuum (agree, undecided, disagree). The overall perceived effectiveness index (OPEI) was calculated for individual respondents. Data collected from 452 respondents revealed a mean OPEI of 2.39, with 74.34% of farmers falling into medium to high OPEI categories, indicating that EMPs are generally perceived as effective. Correlation analysis identified that significant positive relationships existed between OPEI and the variables such as age, farm size, years of experience. Self-reliance, conservatism-liberalism, fatalism-scientism, religious belief, intra tribal communication, environmental orientation, belief in EMP and attitude towards EMP, while educational status, occupational status, family status, material status, livestock possession, farm power status, social participation, mass media participation, extension agency contact, innovativeness, economic motivation, progressivism-traditionalism and rational orientation showed significant negative relationships. Non-significant associations were found for scientific orientation and value orientations. The findings underscore the cultural relevance and practical value of EMPs, highlighting their low cost, eco-friendliness, and alignment with socio-cultural values. The study recommends focused efforts to promote EMPs through policy initiatives and community-based interventions to enhance their adoption and sustainability.

Keywords: Ethno medical practices, perceived effectiveness, relationship

1. Introduction

Ethno-medical practices (EMPs) have been integral to the healthcare systems of indigenous communities for centuries, particularly in rural and tribal regions. These practices, deeply rooted in cultural traditions, rely on natural resources, local knowledge, and community-specific methodologies to address a range of health-related ailments (Bisht S & Negi D 2021) [1]. For tribal farmers, who often have limited access to modern healthcare facilities, EMPs serve as a primary or complementary healthcare solution, offering benefits such as cost-effectiveness, eco-friendliness, and cultural compatibility (Rani R & Singh R 2020) [2].

In the Idukki district of Kerala, a region characterized by its rich biodiversity and indigenous populations, EMPs continue to play a vital role in maintaining the health and well-being of tribal communities. However, the perceived effectiveness of these practices varies among farmers, influenced by factors such as personal experiences, socio-economic conditions, and cultural orientations (Singh A & Singh P K 2022) [3]. Understanding these perceptions is crucial for preserving and promoting EMPs as viable alternatives or supplements to conventional medicine (Thomas J & Varghese S 2023) [4].

This study focuses on assessing the perceived effectiveness of EMPs among tribal farmers in Idukki and examining the relationship between their profile characteristics and their perceived effectiveness index. By developing a Perceived Effectiveness Index (PEI), this research aims to identify the most effective EMPs and provide evidence-based insights to enhance their adoption and sustainability. The findings of this study have significant implications for agricultural extension, healthcare integration, and the preservation of traditional knowledge systems. By highlighting the factors that influence the acceptance and effectiveness of EMPs, the research seeks to contribute to the development of targeted strategies for promoting these practices, ensuring their relevance and value in contemporary healthcare contexts.

2. Objectives of the study

1. To assess the effectiveness of ethno-medical practices as perceived by the tribal farmers.

2. To examine the relationship between tribal farmers' profile characteristics and their overall perceived effectiveness of ethno-medical practices.

3. Methodology

The study in Kerala's Idukki district explored the relationship between tribal farmers' profile characteristics and their perceived effectiveness of ethno medical practices. Nine prominent tribal groups Mala Arayan, Muthuvan, Mannan, Urali, Ulladan, Paliyan, Mala Pulayan, Malavedan, and Mala Pandaram were selected based on their population and ethno medical traditions. A total of 40 villages, chosen from eight blocks with the highest concentration of tribal farmers, were included.

In this study perceived effectiveness of ethno-medical practice was operationalized as the degree of positive outcome obtainable, as perceived by the tribal farmers, by applying the practice, in solving their problems faced in health related issues/ailments by use of ethno-medical practices. Development of a methodology for measuring the perceived effectiveness of ethno-medical practices and identification of effective ethno-medical practices in selected ailments were the main objectives of this research. Hence, it was proposed to construct a Perceived Effectiveness Index to identify the effective Ethno-Medical Practices (EMPs). The finally selected list of 17 traits was administered individually to each of the respondents and they were asked to rate the effectiveness of each of the EMPS, adopted by them in selected ailments, against each of the traits on a three point continuum, the points being agree, undecided and disagree with scores 3,2, and 1 respectively.

If R_1, R_2, R_3…… R_{17} were to be the relevancy weights of the seventeen traits, then the Perceived Effectiveness Index (PEI) was defined as follows:

$$PEI = \frac{W_1R_1+W_2R_2+W_3R_3 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots+W_{17}R_{17}}{R_1+R_2+R_3 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots+R_{17}}$$

Where, W_1, W_2, W_3.....W_{17} were the scores obtained for the traits for an EMP from a respondent.

In simple terms: PEI = $\frac{\sum W_i R_i}{\sum R_i}$

The maximum of each Wi would be 3 and the minimum of each Wi would be 1. Since, when Wi-3 for all I,

$$PEI = \frac{3\sum R_i}{R_i} = 3$$

The PEI computed as above was actually the PEI for a particular EMP as expressed by an individual respondent. Hence, to obtain the Overall Perceive Effectiveness Index (OPEI) for a particular respondent, the PEIS obtained for all the EMPS adopted by him were summed up and the mean was worked out. The mean PEI was taken as the OPEI for the respondent.

4. Results and Discussion

4.1 Overall perceived effectiveness

Table 1: The score range, mean, standard deviation and coefficient of variation of overall perceived effectiveness index of the tribal farmers (n=452)

Mean Score	SD	CV (%)	Obtained score range	Possible score range
2.39	0.234	9.8%	1.67-2.87	1-3

Ethno-medical practices perceived as effective by the tribal farmers would continue to be adopted by them and transferred to others through interpersonal communication. Before adoption, famers would evaluate ethno medical practices based on several criteria such as low-cost, eco-friendly, the combination of prevention, health care, treatment and recovery, less toxic and free from side effect, alternative and safe effect, cheap and readily available, natural and comparable. Adhering well with socio-cultural values; simplicity and sustainability of the practices are also equally important. Hence, the perceived effectiveness of the selected EMPs was measured using a standard tool, as mentioned in the methodology chapter. Here the Overall Perceived Effectiveness Indices (OPEI) concerning tribal farmers have been worked out as outlined in the methodology chapter, and the same is summarized in Table 2.

Table 2: Distribution of farmers based in their overall perceived effectiveness index (OPEI) of EMPs (n=452)

Sl. No	Categories of OPEI	Number	Percentage
1	Low	116	25.66
2	Medium	212	46.91
3	High	124	27.43
Total		452	100.00

A glance into Table 1 shows that the mean OPEI was 2.39, revealing that the EMPs were more inclined towards the effective side. At this juncture, it should be noted that the coefficient of variation is comparatively less, pointing that there was less variation among the tribal farmers in judging the effectiveness of practices, which further confirms the worth of EMPs. Categorization of respondents based on their overall perceived effectiveness indices was analyzed the same and is offered in Table 2.

A quick view of the Table 2 reveals that a majority of the tribal farmers belong to the medium to high categories (74.34%) concerning their perceived effectiveness scores. This finding, coupled with the mean value of 2.39, reveals that the tribal farmers perceived the EMPS effective in general. The EMPs are highly worth it, mainly when it is found to be effective by the real patrons (tribal farmers). So deliberate attempts should be made from all corners to promote EMPs.

4.2. Relationship of profile characteristics of the tribal farmers with perceived effectiveness of Ethno medical practices

To study the relationship between the profile characteristics and perceived effectiveness of EMPs, correlation analysis was carried out. The results of this research are presented in Table 3.

From Table 3, it is evident that out of the twenty-six variables, twelve variables had a positive and significant relationship with perceived effectiveness: Age, Farm size, Years of experience, Self-reliance, Conservatism-Liberalism, Fatalism-Scientism, Religious belief, Intra tribal communication, Environmental orientation, Belief in EMP and Attitude towards EMP were found to have a positive and significant relationship with the perceived effectiveness index of the respondents at 1% level of probability. This finding derives indirect support from the findings of Venkatesan (2012) [5].

The remaining twelve variables *viz*., educational status, occupational status, family status, Livestock possession, material status, farm power status, social participation, mass media participation, extension agency contact, innovativeness, economic motivation, progressivism-traditionalism and rational orientation exhibited a significant negative association at one percent level of significance. The remaining two variables *viz*., value orientation and scientific orientation expressed a non-significant association with OPEI.

Table 3: Correlates of profile characteristics with perceived effectiveness on Ethno medical practices

Sl. No	Profile Characteristics	Correlation 'r" Value
1	Age	0.254**
2	Educational status	-0.130**
3	Occupational Status	-0.142**
4	Family status	-0.295**
5	Farm size	0.129**
6	Livestock possession	-0.162*
7	Material status	-0.276**
8	Farm power status	-0.155**
9	Year of experience	0.373**
10	Social participation	-0.129*
11	Mass media participation	-0.288**
12	Extension agency contact	-0.131**
13	Value orientation	0.059^{NS}
14	Scientific orientation	0.085^{NS}
15	Innovativeness	-0.439**
16	Economic motivation	-0.295**
17	Self-reliance	0.453**
18	Conservatism- liberalism	0.665**
19	Fatalism – Scientism	0.715**
20	Progressivism- Traditionalism	-0.395**
21	Religious belief	0.384**
22	Intratribal communication	0.690**
23	Rational orientation	-0.134**
24	Environmental orientation	0.735**
25	Belief in ethno-medical practices	0.374**
26	Attitude towards EMPs	0.596**

** - Significant at 1 per cent level, * - Significant at 5 per cent level, NS - Non- Significant

Age positively influences the perceived effectiveness of EMPs. Older farmers are more likely to adhere to traditional practices due to their deep-rooted cultural ties, accumulated experience, and familiarity with EMPs. Over the years, they may have witnessed the benefits of these practices in treating ailments effectively, thus reinforcing their belief. Younger generations, exposed to modern healthcare systems, might exhibit a lower inclination toward EMPs. This generational divide suggests the need for documenting and preserving indigenous knowledge for future generations.

Education negatively correlates with the perception of EMP effectiveness. Educated farmers often have greater exposure to scientific methods and modern healthcare systems, which might undermine their trust in traditional EMPs. This highlights a potential conflict between indigenous knowledge and modern education systems. Bridging this gap through education modules that include indigenous medical practices could help in preserving their relevance while fostering scientific integration.

Occupational diversification away from farming negatively impacts the perceived effectiveness of EMPs. Farmers engaged in non-agricultural activities might prioritize modern healthcare options due to urban influence and reduced dependency on traditional agricultural or forest resources. This underscores the role of occupation in shaping healthcare choices and the need to focus on retaining EMP relevance among diverse occupational groups.

Farmers with higher family status, often linked to better income and resources, are less inclined to view EMPs as effective. They might afford modern healthcare systems and perceive them as more efficient. On the contrary, low-status families rely on EMPs due to their cost-effectiveness and accessibility. Addressing this disparity requires targeted interventions to highlight the scientific and cost-effective benefits of EMPs to affluent families.

Farmers with larger farm sizes perceive EMPs as more effective. This may be due to their reliance on forest resources for inputs like herbs and medicinal plants used in EMPs. Larger farms could also indicate greater autonomy in experimenting with traditional practices, reinforcing their perceived effectiveness. Promoting the cultivation of medicinal plants on such farms could strengthen the sustainable use of EMPs.

The negative correlation with livestock possession suggests that EMPs do not directly relates to the needs of livestock healthcare. Farmers with more livestock may rely on modern veterinary services, reducing the perceived effectiveness of EMPs. Integrating livestock-relevant remedies into EMPs could increase their acceptance among livestock-owning farmers.

Materially affluent farmers perceive EMPs as less effective. This could be due to their ability to access and afford modern healthcare, reducing their reliance on traditional systems. Enhancing the economic viability of EMPs, such as through commercialization or value addition, might encourage their adoption among this group.

Farmers with high farm power (machinery and resources) tend to prefer modern healthcare due to its alignment with progressive farming approaches. This suggests a disconnect between traditional knowledge systems and mechanized farming communities, calling for integration of EMPs into modern farming narratives.

Experienced farmers are staunch advocates of EMPs, given their long-term observation of their efficacy. This highlights the need to document and validate these experiences to create a repository of evidence-based traditional practices for younger generations.

Farmers with high social participation may interact with modern systems and adopt progressive views, leading to scepticism about EMPs. However, leveraging these social networks to promote EMP awareness and validate their effectiveness could help increase acceptance.

Media often promotes modern medical advancements, overshadowing traditional systems. Tailored media campaigns highlighting EMP benefits could counteract this trend and improve perceptions among media-exposed farmers.

Extension agencies generally focus on modern agricultural and healthcare technologies, which could explain the negative correlation. Incorporating EMP-related modules in extension programs could improve the outreach and perception of these practices.

Although non-significant, the slight positive correlation suggests that farmers with traditional values may slightly favour EMPs. Programs emphasizing cultural heritage could further strengthen this association.

Innovative farmers are less likely to perceive EMPs as effective, likely due to their preference for novel and advanced solutions. Demonstrating the adaptability of EMPs to innovative contexts (e.g., integrating with modern healthcare systems) could shift this perception.

Economically driven farmers may undervalue EMPs due to their non-commercial nature. Creating economic incentives, such as marketable EMP-based products, could boost their perceived effectiveness.

Self-reliant farmers perceive EMPs as highly effective due to their independence from external healthcare systems. This highlights the importance of promoting EMPs as self-sufficient solutions in remote and resource-constrained areas. Conservative farmers deeply value EMPs as integral to their cultural and social identity. This indicates the need to preserve these practices as part of tribal heritage while sensitively introducing modernization.

Farmers with fatalistic beliefs are strong proponents of EMPs, trusting their time-tested reliability. Encouraging this group through documentation and promotion of their practices can help retain their cultural value. Progressive farmers are less inclined toward EMPs, favoring modern alternatives. Developing hybrid models combining EMPs with modern systems could attract this group. Religious farmers strongly associate EMPs with spiritual and ritualistic values, reinforcing their perceived effectiveness. Highlighting the sacred aspects of EMPs could further engage this group.

Effective communication within tribal communities fosters a collective trust in EMPs. Strengthening these networks through participatory learning initiatives could further promote EMPs. Rational farmers critically analyze EMPs and may find them less effective without scientific evidence. Validating EMPs through research could address their concerns. Farmers with strong environmental values perceive EMPs as effective due to their alignment with ecological sustainability. Promoting EMPs as eco-friendly solutions can enhance their acceptance. Strong belief in EMPs directly enhances their perceived effectiveness. This demonstrates the psychological and cultural roots of EMP acceptance. A positive attitude significantly correlates with perceived effectiveness. Creating awareness programs to cultivate positive attitudes could increase EMP adoption.

5. Conclusion

Ethno-medical practices (EMPs) remain as an essential component of healthcare for tribal farmers in the Idukki district of Kerala, offering accessible and culturally relevant solutions to various health challenges. This study revealed that the majority of tribal farmers perceived EMPs as effective, with 74.34% categorized in the medium to high perceived effectiveness index (OPEI). Factors such as aage, farm size, years of experience. Self-reliance, conservatism-liberalism, fatalism-scientism, religious belief, intra tribal communication, environmental orientation, belief in EMP and attitude towards EMP positively influenced this perception, underscoring the importance of personal and contextual factors in shaping attitudes toward traditional practices.

At the same time, the study identified challenges, including negative correlations with educational and economic factors, indicating potential barriers to EMP adoption in the context of higher exposure to alternative modern healthcare systems. The variation in perceived effectiveness across different EMPs highlights the need for a critical evaluation of specific practices to identify and promote those that are most beneficial. The findings emphasize the significance of preserving and promoting EMPs as low-cost, eco-friendly, and culturally aligned healthcare options. Policymakers, extension agents, and community leaders should focus on integrating EMPs with modern healthcare frameworks, providing education on their safe and effective use, and encouraging their adoption through participatory and culturally sensitive approaches.

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