RESEARCH ARTICLE





Harnessing rural households' intentions to adopt ethnobotanical knowledge

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Abstract

Ethnobotanical practices, rooted in indigenous knowledge, offer sustainable solutions for health, nutrition and agriculture, yet their adoption remains understudied, due to socio-economic or institutional constraints. This research examines factors influencing farmers' intention to adopt ethnobotanical practices in Coimbatore district, Tamil Nadu. It aims to identify the key drivers and barriers. Using a quantitative method, data were collected through interviews with 540 respondents across 12 blocks and analyzed using Structural Equation Modeling (SEM). Results indicate that Perceived Benefits (PB), Perceived Ease of Use (PEOU), Social Influence (SI) and Access to Resources (AR) positively influence adoption, while Institutional Support (IS) showed a weak negative correlation, suggesting inadequate alignment with local needs. The study highlights the potential of Farmer Producer Organizations (FPOs) as catalysts for integrating traditional knowledge with modern agricultural systems through improved resource access and collective marketing. Key findings underscore the importance of community-centric approaches in promoting ethnobotanical practices, emphasizing the need for policy reforms to enhance institutional responsiveness. The study concludes that empowering FPOs to bridge indigenous and scientific knowledge systems can significantly improve rural livelihoods, health resilience and agricultural sustainability. Recommendations include strengthening local capacity-building initiatives, refining extension services to better incorporate traditional wisdom and fostering participatory models of knowledge exchange. These insights provide actionable pathways for policymakers and development practitioners to leverage ethnobotanical knowledge for sustainable rural transformation.

Keywords: adoption; ethnobotany; Farmer Producer Organization; PLS-SEM; sustainability

Introduction

Ethnobotanical knowledge is the study of how people in different cultures use plants for their well-being-has played a crucial role in shaping the lives and livelihoods of rural households for centuries (1, 2). Rooted in indigenous wisdom passed down through generations, this knowledge encompasses a broad range of applications, including medicine, food, agriculture and rituals (3). In rural communities, where access to modern healthcare, commercial goods and agricultural inputs can be limited, ethnobotanical practices continue to provide sustainable solutions to daily challenges (4).

Ethnobotanical agricultural practices not only enhance biodiversity but also support overall ecosystem health. Traditional herbal medicines offer alternatives to expensive pharmaceutical treatments (5) and ethnobotanical agricultural practices support biodiversity and ecosystem health (6). Moreover, these practices often align with the principles of sustainable development, making them vital to modern discussions about ecological conservation and community development.

There is a wealth of literature on ethnobotany, reflecting its importance and diverse applications in rural development and

sustainability The keywords, shown in the word cloud illustrate the thematic breadth and research relevance of ethnobotany (Fig. 1). These keywords are illustrated in a word cloud to emphasize the thematic breadth and relevance of ethnobotany in research and practice.

In recent years, the growing interest in ethnobotany has sparked efforts to document and promote this knowledge, not only to safeguard it from the threat of extinction but also to explore its potential in addressing global challenges like food security, climate change and healthcare access. Farmer Producer Organizations (FPOs) also help farmers leverage their ethnobotanical knowledge to improve agricultural practices, health management and overall livelihoods. With a promising venture for business, FPOs facilitate collective marketing, access to resources and knowledge sharing. FPOs also help the farmers to leverage their ethnobotanical knowledge to enhance agricultural practices, health management and improve livelihoods. They serve as a bridge between traditional wisdom and modern agricultural strategies, fostering resilience in rural households.

MONIKA ET AL 2

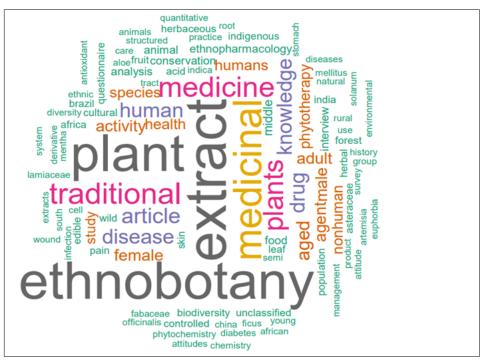


Fig. 1. Frequently used keywords in ethnobotanical studies by researchers.

This study examines the factors influencing rural households' adoption of ethnobotanical practices in Tamil Nadu's Coimbatore district, addressing critical gaps in current understanding of traditional knowledge systems. Despite extensive documentation of ethnobotany's applications in health, agriculture and cultural heritage-and its relevance to sustainable development-few studies have examined the psychosocial drivers of its adoption using theoretical models (7-12). Recent work highlighted ethnobotany's continued relevance in rural livelihoods, yet adoption mechanisms remain understudied (12).

The adoption intention of ethnobotanical practices in rural households can be explained through the integration of several behavioural, technological and innovation diffusion theories. These theories collectively highlight the various constructs like perceived benefits, knowledge and awareness, access to resources, institutional support, attitude, social influence and perceived ease of use. This study employs an integrated framework combining the Theory of Planned Behaviour (TPB) and the Technology Acceptance Model (TAM) to analyze constructs influencing adoption intention.

Theoretical frameworks for studying adoption intention among rural households

Theory of Planned Behaviour (TPB)

Theory of Planned Behaviour posits that an individual's behaviour is determined by three key factors: attitudes, subjective norms and perceived behavioural control (13). Attitude Towards Ethnobotany (ATE) refers to the individual's positive or negative evaluation of ethnobotanical practices. A favourable attitude towards ethnobotany is expected to enhance the likelihood of its adoption intention. In the context of this model, the attitude towards ethnobotany encompasses the belief that these practices are beneficial for health, sustainability and economic savings. Social Influence (SI) represents the subjective norms in TPB, reflecting how the family, community and media influence the individual's intention to adopt ethnobotanical practices (14). In rural areas, community norms and the influence of local leaders can be crucial in shaping the behaviour. Perceived

Behavioural Control (PBC) is represented in this model by the construct Perceived Ease of Use (PEOU). Access to Resources (AR) and PEOU, reflect the individual's belief in their ability to adopt and practice ethnobotany. Easy access to resources and information increases the likelihood of adoption intention, while difficulties in accessing materials may impede it.

Technology Acceptance Model (TAM)

The Technology Acceptance Model is one of the most widely used models in understanding technology adoption intention (15). It identifies two main factors that influence the intention to adopt a new technology or practice: Perceived Usefulness and Perceived Ease of Use. Perceived Benefits (PB) is analogous to Perceived Usefulness in TAM, where ethnobotanical practices are believed to enhance household well-being by improving health, reducing costs and contributing to sustainability (16). The greater the perceived benefits, the stronger the intention to adopt (17). While PEOU in TPB relates to control over behaviour, in TAM it emphasizes how easily a practice can be adopted into one's routine. If individuals perceive ethnobotany as easy to learn and integrate into their lives, they are more likely to adopt it. It also encompasses access to ethnobotanical knowledge and materials, which is particularly important in resource-limited rural settings. Building on TPB, the Technology Acceptance Model (TAM) provides another lens to understand adoption intention, particularly in relation to technology or new practices.

Literature and Visual Network Analysis

A review of the literature on adoption intention theories reveals extensive research collaborations among scholars using TPB and TAM frameworks. As shown in Fig. 2, network visualization highlights the collaboration among researchers using the TAM (Technology Acceptance Model) and TPB (Theory of Planned Behaviour) frameworks. Prominent authors, such as Young, Michael Nay, Persada, Satria FA and Prasetyo, Yogi Tri, serve as central nodes within their respective clusters, signifying their substantial contributions to this area of research. From Fig. 3 it is observed that the theoretical frameworks are most notable in countries like China and the USA, reflecting their strong focus on technology adoption

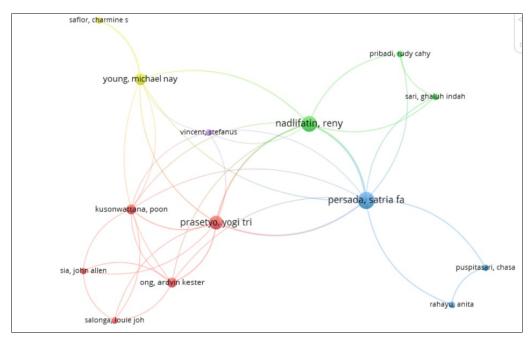


Fig. 2. Global research collaboration network on TAM and TPB frameworks in technology adoption.

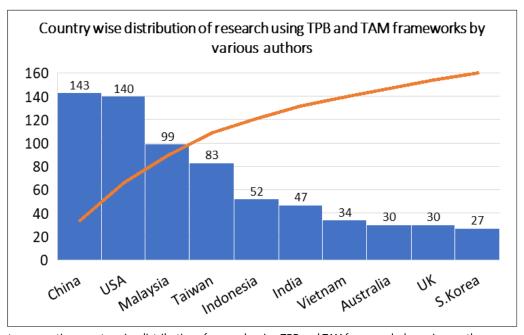


Fig. 3. Paleo chart representing country wise distribution of research using TPB and TAM frameworks by various authors. intention and behaviour modeling. Additionally, emerging economies such as Malaysia, Taiwan and India demonstrate significant research output, underscoring the frameworks' adaptability to diverse cultural and technological contexts. These trends highlight the global relevance and utility of TAM and TPB in understanding and modeling the technology adoption intention across varying environments.

Hypotheses based on the theoretical frameworks

- 1. Perceived Benefits (PB) will have a positive impact on Adoption Intention (AI). The more beneficial a household perceives ethnobotanical practices to be, the higher the likelihood of adoption intention.
- 2. Perceived Ease of Use (PEOU) will positively influence both Adoption Intention (AI) and Attitude Towards Ethnobotany (ATE). Easier-to-use practices foster more positive attitudes and a higher probability of adoption intention.
- 3. Social Influence (SI) will positively impact Adoption Intention (AI). Support from family, community and influencers enhances the intention to adopt ethnobotany.

- 4. Attitude Towards Ethnobotany (ATE) will have a positive impact on Adoption Intention (AI). Favourable attitudes drive higher adoption intention.
- 5. Knowledge and Awareness (KA) will positively influence Attitude Towards Ethnobotany (ATE). Households with more knowledge on ethnobotany tend to have more positive attitudes toward it.
- 6. Access to Resources (AR) will positively impact Perceived Ease of Use (PEOU) and Adoption Intention (AI). The easier it is to access ethnobotany resources, the higher the likelihood of adoption intention.
- 7. Institutional Support (IS) will positively influence Adoption Intention (AI). Institutional initiatives and support programs will increase the likelihood of households adopting ethnobotany practices.

MONIKA ET AL

Materials and Methods

Study area

This study was conducted in the Coimbatore district of Tamil Nadu, India, an area for its rich agricultural heritage and dependence on traditional knowledge for health, nutrition and livelihoods. Data were collected from all 12 blocks to ensure comprehensive representation of agricultural practices and cultural beliefs related to ethnobotany. The blocks included: Annur, Sulur, Kinathukadavu, Pollachi North, Pollachi South, Sultanpet, Perur, Madukkarai, Sarcarsamakulam, Thondamuthur, Karamadai and Coimbatore North. A quantitative research design was employed to explore the factors influencing the adoption intention of ethnobotany practices among rural households. A semi structured interview schedule was employed for collection of data providing a snapshot of current practices, perceptions and adoption behaviours across the selected blocks.

Sampling procedure

The study targeted a total sample size of 540 respondents across 12 blocks, to ensure relevance and capture diverse engagement levels with ethnobotanical practices. Within each block, villages were selected based on their known associations with ethnobotanical practices, such as the use of herbal remedies and traditional knowledge. This approach ensured the inclusion of households that were likely to be aware of and engaged with ethnobotanical knowledge.

Data collection instruments

A structured questionnaire served as the primary data collection instrument, designed to capture relevant data across several constructs influencing ethnobotanical adoption intention among rural households. Perceived Benefits (PB), Perceived Ease of Use (PEOU), Social Influence (SI), Attitude Towards Ethnobotany (ATE), Knowledge and Awareness (KA), Access to Resources (AR), Institutional Support (IS), Adoption Intention (AI) are the constructs included in the study. These constructs are depicted in Fig. 4. Each construct was assessed using Likert scale ranging from "Strongly Agree" to "Strongly Disagree", allowing for nuanced insights into respondents' perceptions and behaviours regarding ethnobotany. Data were collected through direct interviews, enabling researchers to engage directly with the respondents, ensuring clarity and accuracy of responses. The data collection was done for household usage of ethnobotanical resources for health, nutrition and agriculture. Data were also collected on perceived benefits,

ease of use and social influences such as those from family, community and local leaders that shape adoption intention. Further data on access to resources required for ethnobotanical practices, institutional support for promoting ethnobotany, future intentions to continue using ethnobotany were also collected.

Partial Least Squares Structural Equation Modeling (PLS-SEM)

Structural Equation Modeling (SEM) is a widely used method in Social and Behavioural Sciences (18) that combines observational and experimental data, whether primary or secondary, to evaluate proposed models (19) for driving policy changes. SEM captures both external and internal factors that influence model development, connecting latent variables through factorized statements (20). In this research, five main constructs were identified: general challenges, local strategy, expert strategy, marketing strategy and commercialization scope (Table 1). The Constructs such as Perceived Benefits (PB), Perceived Ease of Use (PEOU), Social Influence (SI) and Attitude Towards Ethnobotany (ATE) are latent variables included in the SEM measurement model to quantitatively examine adoption intention. In contrast, constructs like challenges, local strategy, expert strategy, marketing strategy and commercialization scope represent broader thematic categories derived from qualitative coding and descriptive analysis. These categories are not part of the SEM latent variable set but were used to contextualize and interpret the quantitative findings by grouping related field-level issues.

SEM includes two components: the structural model and the measurement model. The structural model, represented by path coefficients, tests the validity of the conceptual framework (Fig. 4), with a path value exceeding 0.70 indicating that the model is acceptable. The measurement model examines the relationships between independent variables (statements) and latent variables, illustrating how these variables collectively contribute to forming a theory (21). PLS-SEM enhances this analytical process by offering a robust approach for complex models, especially in scenarios with smaller sample sizes or non-normal data, making it a highly adaptable tool for advancing research in social and behavioural sciences. In this study, PLS-SEM was preferred over covariancebased SEM (CB-SEM) because the research involved a relatively small sample size, non-normal data distribution and an exploratory focus on prediction rather than strict model confirmation, conditions under which PLS-SEM provides more reliable and meaningful results.

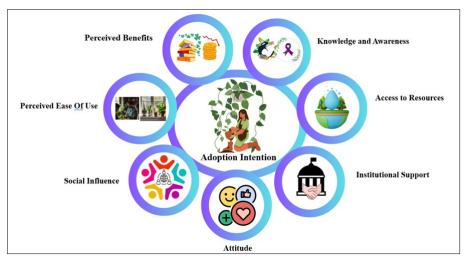


Fig. 4. Conceptual framework of PLS-SEM model depicts the adoption intention of ethnobotany among households.

Table 1. Reliability and validity assessment of the constructs

Construct	Cronbach's Alpha	Composite Reliability ((rho_a)	Composite Reliability (rho_c)	AVE	Interpretation
Access to Resource (AR)	0.801	0.828	0.865	0.619	Good reliability & validity
Adoption Intention (AI)	0.636	0.857	0.788	0.564	Moderate reliability
Attitude Towards Ethnobotany (ATE)	0.721	0.881	0.821	0.605	Reliable, moderate validity
Institutional Support (IS)	0.866	0.883	0.918	0.790	Strong reliability & validity
Knowledge and Awareness (KA)	0.285	0.636	0.424	0.374	Weak reliability & validity
Perceived Benefits (PB)	0.920	0.926	0.944	0.808	Very strong reliability & validity
Perceived Ease of Use (PEOU)	0.671	0.814	0.748	0.465	Moderate reliability
Social Influence (SI)	0.775	0.905	0.863	0.637	Good reliability & validity

Data analysis

Upon completion of data collection, responses were entered into a database for quantitative analysis. Statistical techniques, including descriptive statistics and Structural Equation Modeling (SEM) via SMART PLS, were used to explore the relationship between constructs. The analysis aimed at clouting the key factors of ethnobotanical adoption intention, measuring the strength of relationships between constructs and validating the theoretical model derived from the data. Further, "R" and "RStudio" software were used to extract keywords and to derive a Paleo chart, which in this context refers to a temporal trend illustrating how various authors across the nation have employed different theoretical frameworks related to adoption intention over time.

Results and Discussion

The factors clouting the adoption intention of ethnobotany among rural households is depicted in Fig. 5.

Perceived Benefits (PB) and Adoption Intention (AI)

The data indicated that perceived benefits positively affected the Adoption Intention, with a path coefficient of β = 0.65 and at a significance level of p < 0.01. This aligned with the hypothesis that households are more inclined to adopt ethnobotanical practices when they perceive health, economic and sustainability advantages,

highlighting the practical utility of ethnobotany in rural contexts where cost-effectiveness and sustainability are primary concern. The strong Cronbach's Alpha (0.920) and Composite Reliability (0.944) for this construct confirm its robustness, indicating that the measurement of perceived benefits is reliable and valid.

Perceived Ease of Use (PEOU) and Adoption Intension

Perceived Ease of Use (PEOU; Cronbach's Alpha = 0.671, Composite Reliability = 0.748) had a strong impact on Adoption Intention, with a path coefficient of β = 0.45 at a significance level of p < 0.05, suggesting that rural households are more likely to adopt ethnobotanical practices as they perceive these practices as simple and accessible. This finding supports the idea that ease of implementation and accessibility to ethnobotanical knowledge are crucial for adoption intention, particularly in areas where formal education or technical assistance are limited.

Social Influence (SI) and Adoption Intention (AI)

Social influence positively impacted Adoption Intention, with a path coefficient of β = 0.37 and a significance level of p < 0.05. This indicated that community dynamics play a significant role in the decision to adopt ethnobotanical practices. It supports the idea that in rural households, social networks, community leaders and cultural norms significantly impact behaviour, underscoring the importance of a supportive community environment in promoting ethnobotany.

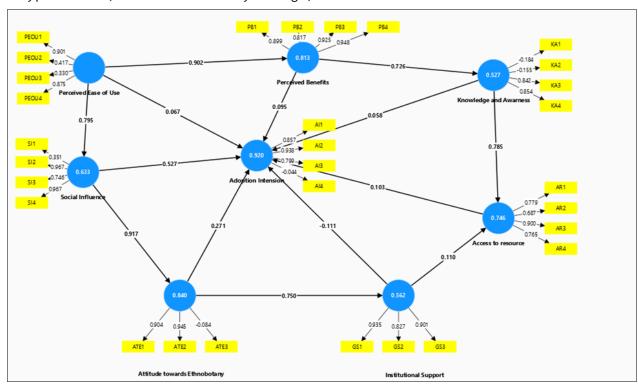


Fig. 5. PLS-SEM model indicating factors clouting the adoption intention of ethnobotany among rural households.

MONIKA ET AL 6

Attitude Towards Ethnobotany (ATE) and Adoption Intention (AI)

Attitude towards ethnobotany had a positive effect on Adoption Intention, with a path coefficient of β = 0.58 and a significance level of p < 0.01. This confirmed that favourable attitudes encourage households to integrate ethnobotanical practices, implying that fostering a positive outlook towards these traditional practices, possibly through awareness programs, through targeted community awareness and school-based educational programs.

Access to Resources (AR) and Adoption Intention (AI)

Access to resources positively influenced the adoption intention with path coefficients of β = 0.41 (p < 0.01). This underscores that access to materials, knowledge and training can drive adoption intention. The findings suggested that the provision of resources, either through community initiatives or institutional support, is essential to facilitate the adoption intention of ethnobotanical practices among rural households.

Institutional Support (IS) and Adoption Intention (AI)

Interestingly, Institutional Support (IS) was found to have a slight negative impact on Adoption Intention, with a path coefficient of β = -0.12 and a significance level of p = 0.08 (not statistically significant at the 0.05 level). This indicated that existing institutional initiatives may not be fully aligned with household needs or expectations, or that bureaucratic hurdles discourage adoption. Although institutional support can be beneficial, this finding suggested that institutional support through FPOs might need to be tailored more closely to the local context and made more accessible as the FPOs are self-help initiatives.

Knowledge and Awareness (KA) and Attitude Towards Ethnobotany (ATE)

Knowledge and awareness significantly enhanced the attitude towards ethnobotany, with a path coefficient of β = 0.49 and a significance level of p < 0.01, highlighting the need for education and outreach initiatives. Households that understand the benefits and applications of ethnobotany are more likely to view it favourably, highlighting the value of knowledge-sharing initiatives, such as community training or folk knowledge documentation, in preserving and promoting ethnobotanical practices.

Overall, the model explained 68 % of the variance in Adoption Intention (R^2 = 0.68) and 57 % in Attitude Towards Ethnobotany (R^2 = 0.57), indicating strong explanatory power. These findings illustrated how a combination of individual perceptions, community influences and resource availability shapes the adoption intention of ethnobotanical practices among rural households. This highlights the multi-dimensional nature of adoption, where interventions must address awareness, attitude and systemic support.

To ensure the robustness of the measurement model, Cronbach's Alpha, Composite Reliability (rho_c) and Average Variance Extracted (AVE) were assessed for each construct. Cronbach's Alpha values values ≥ 0.7 indicate acceptable internal consistency, while values below this may warrant further refinement of the construct. Composite Reliability (rho_c) values above 0.7 further confirm internal consistency and AVE values above 0.5 indicate adequate convergent validity.

From Table 1, the results showed that Perceived Benefits (PB), Institutional Support (IS), Social Influence (SI) and Access to Resources (AR) exhibited strong reliability and validity, with Cronbach's Alpha and Composite Reliability values exceeding 0.8 and AVE values above 0.6. Attitude Towards Ethnobotany (ATE) was found to be reliable, though it demonstrated moderate internal consistency. Adoption Intention (AI) and Perceived Ease of Use (PEOU) had moderate reliability, with Cronbach's Alpha values of 0.636 and 0.671 respectively, both slightly below the 0.7 threshold, suggesting acceptable but improvable consistency.

Conversely, Knowledge and Awareness (KA) exhibited weak reliability and validity, with low Cronbach's Alpha (0.285) and AVE (0.374), indicating the need for refinement in its measurement. This suggests a need to revise the measurement items or incorporate more context-specific indicators to strengthen the reliability and validity of the KA construct.

Conclusion

The overall study summarizes that the ethnobotanical knowledge enhances rural livelihoods, with Adoption Intention shaped by Perceived Benefits (PB), Perceived Ease of Use (PEOU), Social Influence (SI) and Access to Resources (AR). Positive correlation between Perceived Benefits (PB) and Adoption Intention (AI) underscores ethnobotanical practices as a sustainable response to health, economic and environmental challenges. Reliability and validity assessment supports the robustness of the findings, with most constructs exhibiting Cronbach's alpha values >0.80 and composite reliability scores >0.85, except for Knowledge and Awareness, which requires further refinement. However, the negative correlation between institutional support and adoption intention reveals a disconnect between formal interventions and community expectations, highlighting the need for more contextsensitive programming. In this context, FPOs can bridge gaps by promoting knowledge sharing, collective action, resource access and market opportunities and promote ethnobotanical practices. Future research and policy efforts should aim to strengthen the synergy between traditional knowledge systems and institutional support, ensuring the validated, sustainable integration of ethnobotanical practices to enhance household health and economic resilience.

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Authors' contributions

MA conducted the survey, recorded observations and analysed the data. MND contributed to developing the research ideas and reviewed the manuscript. CK guided the research by formulating the research concept. RP assisted in editing and summarizing the manuscript. SS contributed to summarizing and revising the manuscript and RGS assisted in revising the manuscript. All authors read and approved the final manuscript.

Compliance with ethical standards

Conflict of interest: Authors do not have any conflict of interests to declare.

Ethical issues: None

References

- 1. Monika A, Dhivya C. Ethnobotany and agriculture: a timeless relationship for sustainable farming. Greenaria. 2024;2:197-8.
- 2. Pandey AK, Tripathi Y. Ethnobotany and its relevance in contemporary research. J Med Plants Stud. 2017;5(3):123-9.
- Philip KS. Indigenous knowledge: science and technology studies.
 In: Wright JD, editor. In: International Encyclopedia of the Social & Behavioral Sciences. 2nd ed. Oxford: Elsevier; 2015. p. 113-4.
- Shisanya CA. Role of traditional ethnobotanical knowledge and indigenous institutions in sustainable land management in western Highlands of Kenya. In: Indigenous people and sustainable development. IntechOpen; 2017. p. 159. https:// doi.org/10.5772/intechopen.69890
- Sam S. Importance and effectiveness of herbal medicines. J Pharmacogn Phytochem. 2019;8(2):354-7.
- Kumar A, Kumar S, Komal RN, Singh P. Role of traditional ethnobotanical knowledge and indigenous communities in achieving sustainable development goals. Sustainability. 2021;13 (6):3062-5. https://doi.org/10.3390/su13063062
- Cotton CM. Ethnobotany: principles and applications. New York: John Wiley & Sons; 1996.
- Martin GJ. Ethnobotany: a methods manual. London: Chapman & Hall; 1995. https://doi.org/10.1007/978-1-4615-2496-0
- Balick MJ, Cox PA. Plants, people and culture: the science of ethnobotany. New York: Scientific American Library; 1996.
- Berkes F, Colding J, Folke C. Rediscovery of traditional ecological knowledge as adaptive management. *Ecol Appl.* 2000;10(5):1251-62. https://doi.org/10.1890/1051-0761(2000)010[1251:ROTEKA]2.0.CO;2
- Srithi K, Balslev H, Wangpakapattanawong P, Srisanga P, Trisonthi C. Medicinal plant knowledge and its erosion among the Mien (Yao) in northern Thailand. *J Ethnobiol Ethnomed*. 2009;5 (1):1-14. https://doi.org/10.1016/j.jep.2009.02.035
- Ladio AH, Lozada M. Patterns of use and knowledge of wild edible plants in distinct ecological environments: a case study of a Mapuche community from northwestern Patagonia. *Biodivers Conserv.* 2004;13 (6):1153-73. https://doi.org/10.1023/B:BIOC.0000018150.79156.50

- 13. Ajzen I. The theory of planned behavior. Organ Behav Hum Decis Process. 1991;50(2):179-211.
- Femi O, Ruiz P, Martinez MP, Perez IR. Food values and purchase decisions in emerging markets: empirical evidence from Kenya.
 Cogent Bus Manag. 2023;10(3):2287771. https://doi.org/10.1080/23311975.2023.2287771
- Davis FD. Perceived usefulness, perceived ease of use and user acceptance of information technology. MIS Q. 1989;13(3):319-40.
- Turner NJ, Cuerrier A, Joseph L. Well grounded: indigenous Peoples' knowledge, ethnobiology and sustainability. People Nat. 2022;4(3):627-51. https://doi.org/10.1002/pan3.10321
- Lee MC. Factors influencing the adoption of internet banking: an integration of TAM and TPB with perceived risk and perceived benefit. Electron Commer Res Appl. 2009;8(3):130-41. https:// doi.org/10.1016/j.elerap.2008.11.006
- Boslaugh S, editor. Encyclopedia of epidemiology. Thousand Oaks (CA): Sage Publications; 2007.
- Pearl J. Causality. Cambridge (UK): Cambridge University Press; 2009.
- 20. Kline RB. Principles and practice of structural equation modelling. 4th ed. New York (NY): Guilford Press; 2016.
- 21. Vinzi VE, Chin WW, Henseler J, Wang H, editors. Handbook of partial least squares. Berlin: Springer; 2010.

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