International Journal of Environment, Agriculture and Biotechnology
Vol-10, Issue-2; Mar-Apr, 2025
Peer-Reviewed International Journal
Journal Home Page Available: https://ijeab.com/
Journal DOI: 10.22161/ijeab

Comparative study of Technological gap among coconut growers of four different taluks

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Received: 28 Mar 2025; Received in revised form: 23 Apr 2025; Accepted: 27 Apr 2025; Available online: 30 Apr 2025
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Abstract— *The research was undertaken in the Tumkur district of Karnataka during 2022–2023 adopting an ex-post-facto research design to compare the technological gap among coconut growers. Tumkur was deliberately chosen for its status as one of the state's leading coconut-producing regions. Based on differences in productivity, four taluks namely Tiptur, Turuvekere, Chikkanayakanahalli and Sira were selected from the district's ten taluks. A total of 120 coconut farmers with 30 respondents randomly chosen from each taluk formed the study sample. The comparison of the technological gap among coconut growers using the Kruskal-Wallis one-way ANOVA showed that there is a significant difference in the technological gap among taluks with H-value of 44.43 significant at one per cent level. Where Tiptur taluk performed better with 32.93 mean rank followed by the Turuvekere taluk with mean rank 47.92 and then followed by the Chikkanayakanahalli taluk with mean rank 74.93 then by the Sira taluk with mean rank 86.22 where it indicates that as the mean rank value is less/decreased the technological gap is also less/decreased and vice versa.*

Keywords— ***Coconut growers, Comparison, Technological gap, Tumkur***

I. INTRODUCTION

In the evolving landscape of agriculture, the adoption of modern technologies plays a pivotal role in enhancing productivity, reducing labor intensity and improving economic outcomes. Among perennial crops, coconut stands out for its commercial and nutritional value, especially in regions like Karnataka. Also known as the 'Kalpatharu' or 'tree of life', coconuts are highly valued in tropical regions of the world for their agronomic, economic and cultural benefits. It is a multipurpose crop that is grown mainly for its many products including copra, coconut oil, coir, tender water and kernel. It is scientifically known as Cocos nucifera (L.). Cocos nucifera (L.) is an important member of the family Arecaceae (palm family) (Lima, E.B., Sousa, C.N., Meneses, L.N. et al., 2015) [1].

For millions of farmers, especially in coastal and semi-coastal regions, coconut is a vital source of income due to its tolerance to a variety of soil and climatic conditions. Beyond its use in commerce, coconut is essential to traditional foods, traditional medicine and rural economy. The crop's importance in sustainable agriculture, food security and revenue generation is becoming more and more apparent as the demand for goods made from coconuts rises worldwide.

However, disparities in the uptake of agricultural technologies among growers have resulted in varying levels of efficiency and output across different regions. The presence of technological gaps, defined as the difference between existing practices and recommended technologies can directly impact productivity, profitability and sustainability. Understanding and comparing these technological gaps is crucial for developing location-

specific strategies that foster inclusive and sustainable growth.

So, it is essential to compare the technological differences among coconut growers in order to overcome regional disparities in agricultural advancement. In addition to highlighting the socioeconomic and infrastructure aspects that contribute to unequal innovation uptake, this type of analysis also identifies latent potential in underperforming locations. Through methodically examining the disparities in the adoption of technology and pinpointing the particular obstacles encountered by farming communities like ignorance, restricted access to extension services or financial concerns, stakeholders may create more specialized and effective solutions. Furthermore, comprehending these differences improves our understanding of how adoption rates are influenced by regional circumstances such as farming practices, market accessibility and climate.

Additionally, conducting a comparison analysis provides important information about how successfully current available resources are assisting coconut growers in various geographical areas. Through a methodical analysis of the distribution and use of technology throughout several taluks, the study can identify both successful regions and areas in need of urgent solutions. It enables a more thorough investigation of the ways in which several personal, socio-economic and psychological factors influence the adoption of novel agricultural practices. The spread of context-specific solutions, tailored training programs and strategic planning, all help to bridge the technology gap. This strategy essentially acts as a workable road map for enhancing agricultural productivity and bolstering the financial stability of coconut farming communities.

Recognizing this, the present study on comparative analysis of technological gaps among coconut growers across four different taluks in Tumakuru district was undertaken. By identifying where the gaps are widest, policymakers and extension workers can channel resources more effectively ensuring that all growers have equitable access to the tools and knowledge essential for modern coconut cultivation.

II. MATERIALS AND METHODS

The research was undertaken in the Tumkur district of Karnataka during 2022–2023 adopting an ex-post-facto research design to compare the technological gap among coconut growers. Tumkur was deliberately chosen for its status as one of the state's leading coconut-producing regions. Based on differences in productivity, four taluks namely Tiptur, Turuvekere, Chikkanayakanahalli and Sira were selected from the district's ten taluks. A total of 120 coconut farmers with 30 respondents randomly chosen from each taluk formed the study sample. For understanding the Technological gap, the procedure followed by Nagaraj (1999) [2] with suitable modifications was used. Technological gap refers to the difference between the recommended technology and the actual technology used by the coconut growers at field level. Kruskal-wallis one-way Anova was used to know the significant difference in the technological gap of coconut growers of selected taluks.

III. RESULTS AND DISCUSSION

Comparison of Technological gap among coconut growers

Table 1 depicts the comparison of the technological gap among coconut growers using the Kruskal-Wallis one-way ANOVA and it showed that there is a significant difference in the technological gap among taluks with H-value of 44.43 significant at one per cent level. Where Tiptur taluk performed better with 32.93 mean rank followed by the Turuvekere taluk with mean rank 47.92 and then followed by the Chikkanayakanahalli taluk with mean rank 74.93 then by the Sira taluk with mean rank 86.22 where it indicates that as the mean rank value is less/decreased the technological gap is also less/decreased and vice versa.

Table 1: Comparison of technological gap among coconut growers with Kruskal-Wallis One-way ANOVA (n=120)

Taluks	Sample size	Mean rank	H-Value
Tiptur	$n_1 = 30$	32.93	44.43**
Turuvekere	$n_2 = 30$	47.92	
Chikkanayakanahalli	$n_3 = 30$	74.93	
Sira	$n_4 = 30$	86.22	

**Significant at one per cent level

IV. CONCLUSION

By comparing technological gaps, we might understand how location-specific factors such as access to resources, exposure to extension services and socio-economic conditions, influence the degree of technological adoption. Overall, comparing technological gaps enables a deeper understanding of where interventions are most needed and lays the groundwork for enhancing productivity and sustainability in coconut farming through region-focused development efforts.

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