

Review Form 3

Journal Name:	Journal of Experimental Agriculture International
Manuscript Number:	Ms_JEAI_125911
Title of the Manuscript:	An Economic Analysis of Changes in Cropping Pattern in Parbhani District of Maharashtra- A Markov Chain Approach
Type of the Article	

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PART 1: Review Comments

Compulsory REVISION comments	Reviewer's comment	Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.	The manuscript titled " <i>An Economic Analysis of Changes in Cropping Pattern in Parbhani District of Maharashtra - A Markov Chain Approach</i> " is significant for the scientific community because it provides valuable insights into the agricultural dynamics of a key region in India. By using the Markov Chain method, the study offers a quantitative approach to understanding how cropping patterns evolve over time, which can inform better agricultural policy-making. It addresses critical issues such as economic sustainability, changing character of crops, reflection on farmers' activities, and the socio-economic impacts of these changes. Personally, I find this manuscript appealing due to its interdisciplinary nature, combining economics, agriculture, and mathematical modeling to tackle real-world challenges.	
Is the title of the article suitable? (If not please suggest an alternative title)	The title of the manuscript " <i>An Economic Analysis of Changes in Cropping Pattern in Parbhani District of Maharashtra - A Markov Chain Approach</i> " is mostly suitable, as it clearly conveys the content and methodology of the study. However, a more concise and refined title might better attract a broad readership. The below may be an alternative: "Evaluating Shifts in Cropping Patterns in Parbhani District, Maharashtra: A Markov Chain Economic Analysis" This revision maintains the focus on the region, methodology, and economic aspect while making it slightly more direct and reader-friendly.	

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<p>Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.</p>	<p>The abstract is fairly inclusive, covering the study's objective, methodology, data source, and key findings. However, some points could be clarified or refined for better readability. Here are my suggestions:</p> <p>Recommended Additions:</p> <ol style="list-style-type: none"> Objective Clarity: Add a brief statement about why understanding cropping pattern changes in Parbhani district is important (e.g., economic, environmental, or policy implications). Conclusion/Implications: Briefly mention the broader implications, such as potential recommendations for agricultural practices or policy insights. <p>Recommended Deletions:</p> <ol style="list-style-type: none"> Technical Details: Remove specific references to crops like "mung and safflower," which may be excessive for the abstract. Instead, a summary of the general trend would be more concise. Repetition: The phrase "This indicated that there was a great shift in cropping pattern in Parbhani district" could be removed since the detailed changes in crop areas already imply this shift. <p>Recommended Revised Abstract:</p> <p>The present investigation examines structural changes in the cropping pattern in Parbhani district of Maharashtra, utilizing secondary time-series data on crop areas from 2013-14 to 2022-23. By applying Markov Chain analysis, the study evaluates crop retention and transition patterns to reveal significant trends. Soybean and jowar retained the largest shares, while sugarcane and soybean emerged as major area gainers, often at the expense of wheat, maize, mung, and safflower. The findings highlight soybean and sugarcane's economic viability and adaptability to local conditions. This analysis underscores the importance of crop selection for economic resilience and sustainable agricultural practices in the region.</p>	
<p>Are subsections and structure of the manuscript appropriate?</p>	<p>The manuscript's structure and subsections appear appropriate and conventional for scientific research. However, a couple of adjustments could enhance clarity and flow:</p> <ol style="list-style-type: none"> Introduction: This section is well-placed as it sets up the context for the study. But the rationale of the study should be explained more clearly. A research question might be added. In addition, brief discussion on remaining literature in the same field should be placed here for contextualizing the study within existing research. Materials and Methods: This section is appropriately named as it describes detail data sources, the period of analysis, and the Markov Chain methodology. Results and Discussion: Combining results and discussion is common, but consider separating them if the discussion of findings is substantial. This would allow for a clearer interpretation of results in the <i>Results</i> section, with a separate, in-depth <i>Discussion</i> of implications. Conclusions: This section is suitable for summarizing the main findings and outlining recommendations, policy implications, or future research directions. 	
<p>Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.</p>	<p>The manuscript demonstrates scientific robustness by employing a well-established quantitative approach, the Markov Chain analysis, which is suitable for modeling transitions in cropping patterns over time. The use of ten years of time-series data provides a substantial dataset, allowing for reliable trend analysis and insights into the stability and shifts in crop areas. By focusing on specific crop transitions, such as the gain or loss of area by sugarcane and soybean, the study effectively highlights economic and environmental dynamics within the Parbhani district. Additionally, the methodology and data sources are clearly articulated, suggesting the study is technically sound and provides a replicable model for similar agricultural analyses.</p>	

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<p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</p>	<p>The references appear mostly sufficient, as they include a variety of studies on cropping pattern dynamics across different regions in India, primarily using the Markov Chain approach. This provides a solid foundation for comparing the Parbhani district study with similar research across various states.</p>	
<p><u>Minor</u> REVISION comments</p> <p>Is the language/English quality of the article suitable for scholarly communications?</p>	<p>The language quality of the manuscript is mostly understandable but could be improved for clarity, conciseness, and scholarly tone. Here are some suggested improvements:</p> <ol style="list-style-type: none"> Grammar and Sentence Structure: Some sentences are lengthy and contain minor grammatical issues, which can affect readability. Breaking down complex sentences and ensuring grammatical accuracy will make the section more reader-friendly. As example the sentence in the 10th line of page 6 (The are projected for wheat increases from 669 ha in 2014 to 803 ha in 2026.) is not clear. Clarity and Conciseness: Repeating information and redundant phrases can be condensed. For example, phrases like "shifts of cropping pattern from 2013 to 2023 reveals significant changes" can be simplified. Technical Language: In academic writing, technical terms like "Transition Probability Matrix" should be properly introduced once with their abbreviations (TPM), and then the abbreviation can be used consistently. Scholarly Tone: Phrasing like "they are highest gainer of area share" could be adjusted to a more formal tone, such as "soybean and jowar demonstrated the highest area retention rates." 	
<p><u>Optional/General</u> comments</p>	<p>General Comments:</p> <ol style="list-style-type: none"> Clarity and Focus: The manuscript provides valuable insights into the structural changes in cropping patterns in the Parbhani district, with a clear focus on shifts influenced by economic viability and environmental factors. Methodology: The use of a Markov Chain model is appropriate and well-suited for analyzing transitions in cropping patterns over time. The inclusion of a Transition Probability Matrix (TPM) adds rigor and strengthens the predictive capacity of the study, making the findings more useful for policy-making and strategic agricultural planning. Data and Period: The ten-year dataset is a solid basis for identifying trends, but including a brief justification for the chosen period (2013-2023) would help contextualize the findings. Additionally, acknowledging any limitations due to data constraints (if any) could enhance the manuscript's transparency. Implications and Policy Relevance: The manuscript does well to highlight the implications of cropping pattern changes for economic and environmental sustainability. However, it could benefit from a dedicated section or paragraph in the <i>Conclusion</i> to outline specific policy recommendations based on the findings, such as incentivizing crop diversity or managing risks related to monoculture. Language and Structure: While generally clear, the manuscript would benefit from language polishing to improve readability, grammar, and conciseness. Shorter, more precise sentences and a reduction in repetitive phrases would enhance clarity. Literature Integration: Although the manuscript references relevant studies, it could further contextualize its findings within recent literature on climate change, economic factors, and crop sustainability in similar regions. This would strengthen its position within current scholarly conversations. Future Research: Mentioning potential areas for future research, such as exploring the impact of climate change on crop choices or conducting similar studies in nearby districts, would add depth to the study's contribution and encourage follow-up research. <p>In summary, the manuscript provides a well-founded analysis with significant practical relevance. Minor improvements in language, structure, and policy recommendations could further enhance its impact and readability.</p>	

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PART 2:

	Reviewer's comment	Author's comment <i>(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

Reviewer Details:

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