Review Form 3

Journal Name:	**Journal of Scientific Research and Reports**
Manuscript Number:	**Ms_JSRR_130252**
Title of the Manuscript:	**Forecasting the Prices of Poultry Egg and Meat in Major Markets of Karnataka Using ARIMA Models**
Type of the Article	

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This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty'**, provided the manuscript is scientifically robust and technically sound.
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PART 1: Comments

	Reviewer's comment	**Author's Feedback** *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.	This manuscript provides significant insights into the use of ARIMA models for price forecasting in Karnataka's poultry markets, a crucial sector for India's agricultural economy. The study's focus on egg and meat price predictions addresses a critical gap in price stability, which is essential for the livelihoods of millions of poultry farmers and industry stakeholders. By applying advanced forecasting methods like ARIMA, the research highlights the potential for informed decision-making and timely market interventions, contributing to better market stability and policy formulation. Furthermore, the findings underscore the importance of refining forecasting models to account for external factors affecting price variability, ultimately enhancing the sustainability of Karnataka's poultry industry. This research offers a valuable tool for mitigating market volatility and ensuring a more predictable economic environment for the sector.	
Is the title of the article suitable? **(If not please suggest an alternative title)**	Title: Forecasting the Prices of Poultry Egg and Meat in Major Markets of Karnataka Using ARIMA Models; The title is suitable, anyway; there is another title, more concise: "ARIMA-Based Forecasting of Poultry Egg and Meat Prices in Key Markets of Karnataka"	

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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.	The abstract provides a comprehensive overview of the study, clearly outlining the importance of poultry production in India's agricultural sector and the challenges it faces, particularly price volatility. It effectively communicates the research objective, which is to employ the ARIMA model for forecasting egg and meat prices in key markets of Karnataka, and highlights the methodology used (Box-Jenkins) for model identification, estimation, and diagnostic checking. The abstract successfully presents the results, showcasing high forecast accuracy for meat prices in Hubli and Bengaluru, while acknowledging the higher variability in egg prices due to external factors not captured by the model. It also notes the forecast trend of steady price increases, reflecting broader market dynamics. Suggestions: While it mentions the importance of ARIMA models in decision-making and policy development, this point could be expanded to better explain how these models directly contribute to the stability and sustainability of the poultry industry. Additionally, more emphasis could be placed on the practical applications of the study for stakeholders, such as farmers, policymakers, and industry leaders, to make the abstract more impactful. Overall, the abstract effectively shows the study's objectives, methodology, and key findings but could be enhanced by further clarifying the significance of the results and their broader implications.	
Is the manuscript scientifically, correct? Please write here.	1. Scientific Correctness of ARIMA Application: • ARIMA Methodology: The manuscript correctly uses the ARIMA model for time-series forecasting. The explanation of the Box-Jenkins methodology for ARIMA model fitting, including identification, estimation, diagnostic checking, and forecasting, is scientifically accurate. • Model Specifications: The manuscript discusses ARIMA model parameters (p, d, q) for non-seasonal and seasonal components. This is appropriate and aligns with standard time-series modeling techniques. 2. Forecasting and Accuracy: • MAPE (Mean Absolute Percentage Error): The use of MAPE as an evaluation criterion for forecast accuracy is standard practice. The reported values of MAPE (e.g., 3.27% for Hubli meat prices) suggest good forecasting performance for meat prices but highlight challenges with egg price forecasts, indicating variability in prediction accuracy. • Forecasting Challenges: The manuscript rightly identifies that external factor not captured by the basic ARIMA model may influence egg prices, such as seasonal demand fluctuations, climate effects on production, and feed price volatility. This is a valid consideration and scientifically reasonable. 3. Data and Methods: • Data: The use of monthly price data from January 2017 to March 2025 for forecasting is a sound approach, provided the data is of good quality and sufficiently long to detect seasonal and cyclical trends. • Choice of Markets: The study focuses on key markets in Karnataka, which seems appropriate, given the state's significant role in India's poultry production. The selection of Bengaluru, Hubli, and Mysuru allows for a diverse representation of the market dynamics in the state. 4. Conclusion and Implications: • Forecasting for Market Stability: The conclusion underscores the importance of price forecasting for market stability, stakeholder protection, and decision-making, which is scientifically valid. It also suggests practical applications of the forecasting results, such as price stabilization mechanisms and training programs for stakeholders. • Policy Recommendations: The recommendations for policy interventions, such as price stabilization funds and buffer stock mechanisms, align with agricultural economics theory, particularly for markets prone to price volatility. • Potential for Hybrid Models: The manuscript mentions the potential for improving predictive performance by integrating ARIMA with advanced techniques like neural networks or support vector machines. This suggestion is scientifically sound and aligns with contemporary trends in machine learning and time-series forecasting. 5. Areas for Clarification or Improvement: • Model Complexity and External Factors: While the manuscript highlights external factors influencing egg price variability, it could further elaborate on what specific external variables could be included in future models (e.g., feed costs, global market trends, policy changes). • Forecasting Beyond March 2025: The forecasts extend into 2025, but it would be useful to discuss the potential limitations of forecasting that far into the future, as it may increase uncertainty, particularly with poultry prices being sensitive to multiple variables. 6. Scientific Literature Review: • The manuscript appropriately references relevant literature on poultry production, time-series forecasting, and market stability. The inclusion of studies on hybrid models and policy interventions supports the methodology and suggests avenues for improving forecasting accuracy. However, further elaboration on related studies in agricultural forecasting could enhance the manuscript's scientific depth. 7. Clarity and Structure: • The manuscript is generally clear and well-structured. The methodology is logically presented, and the results are	

	accompanied by well-organized tables. The discussion section is thorough and ties the findings to practical implications. • Minor Suggestions: There are some areas where sentence structure could be improved for readability, and some technical terms could benefit from clearer definitions for broader accessibility. **Conclusion**: Overall, the manuscript is scientifically sound in its application of ARIMA models for forecasting poultry prices. The methodology is robust, and the discussion is well-founded in current economic and agricultural theories. The study provides valuable insights into price forecasting, with relevant policy recommendations. However, further refinement of the model to account for external influences on egg prices and a more detailed exploration of hybrid models would strengthen the manuscript. **Suggestions**: the introduction should extend further to 600-800 words.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.	The references provided seem to cover a broad range of topics relevant to poultry farming, time series forecasting, and agriculture in India and beyond. Some of these sources are recent, while others date back several years. Few observations and suggestions regarding the sufficiency and recency of the references: 1. **Diverse coverage**: The references cover a range of topics such as poultry production (Alders, Niranjan et al.), poultry farming management (Naphade & Badhe), economic analysis (Srinivasan & Jha, Singh et al.), and technological interventions (Bulut & Hudaverdi, Júnior et al.). 2. **Geographical relevance**: References from India, such as those from the Government of India and Government of Karnataka, are highly relevant for research focused on Indian poultry farming practices. 3. **Recent publications**: There are recent references from 2023 (Deshmanya & Jainuddin, Lu, Government of India, Raghnandhan & Pallavi), which help provide an up-to-date view of the trends and challenges in the sector. **Areas for Improvement:** 1. **Older references**: Some references are from over a decade ago (e.g., Niranjan et al., Perić et al., Rodić et al., Zhang, 2003), and while these are foundational, more recent studies on poultry management and time series forecasting might offer additional insights, especially with technological advancements. 2. **Lack of newer technological references**: Considering the rapid development of technologies like machine learning and AI in forecasting and agriculture, incorporating recent studies on AI, data analytics, and smart farming could strengthen the references. For example, publications from 2022-2024 on AI in agriculture, machine learning for forecasting, or IoT in poultry farming could add depth. 3. **Specific studies on backyard farming**: The papers focusing on backyard poultry farming, such as Raghnandhan & Pallavi (2023) and Singh et al. (2016), are useful but may benefit from more recent case studies or reports reflecting current practices, challenges, and socio-economic impacts. **Suggestions:** 1. **AI/ML in Agriculture (2022-2024)**: More studies discussing the integration of machine learning, AI, or IoT for better poultry farming management and forecasting could be added. Examples include research on predictive models for poultry disease management, feed optimization, or production forecasting. 2. Overall, from 19 references, 10 are in the years before 2020. We suggest to go to 35-40 references, 80% of them in the years 2020-2024, and 5-6 references should be from the journal itself.	

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Is the language/English quality of the article suitable for scholarly communications?	The language quality of the provided reference list is generally clear and professional, as expected for academic writing. 1. **Consistency**: The references are generally consistent in style, with the correct format for journals, book titles, and publication details. However, it would be helpful to ensure that all references adhere strictly to the chosen citation style (APA, MLA, Chicago, etc.). For instance, some references have slight variations in formatting (e.g., journal volume and issue numbers), which should be unified. 2. **Correctness**: There are no apparent issues with spelling, punctuation, or grammar in the references themselves, which is important for ensuring academic professionalism. 3. **Clarity and Precision**: The references are clear and precise, listing key details such as authors, titles, and publication years. This is essential for academic articles, as readers need to be able to trace the sources easily. **Areas for potential improvement:** 1. **Uniformity in Citation Style**: Some minor inconsistencies might be found in how different sources are listed (e.g., the placement of commas or periods, or the use of "and" vs. "&" between multiple authors). It would be good to standardize the citation style throughout (e.g., APA, MLA, Chicago) to enhance the professional tone and presentation. 2. **Additional Information**: For some references, especially from websites (e.g., the Government of India, Press Information Bureau), more precise details such as retrieval dates or full URLs might be beneficial for a clearer citation. Government of India. (2023). *Basic Animal Husbandry Statistics (BAHS) 2023*. Ministry of Fisheries, **3.** Animal Husbandry & Dairying, Department of Animal Husbandry & Dairying- **missing URL.** 4. Provide Doi where it is possible, **Conclusion:** Overall, the language quality is appropriate for an academic article, especially in the context of a reference list.	
Optional/General comments	The article provides a comprehensive and relevant overview of small-scale poultry farming, with a specific focus on backyard poultry systems in Karnataka, India. The topic is timely and addresses important issues related to poultry farming, including socio-economic impacts, production trends, and the challenges faced by small farmers. 1. **Clarity and Structure**: While the article covers a broad range of topics, there could be a more streamlined structure to ensure a smooth flow of ideas. Some sections might benefit from clearer subheadings and a more logical progression between topics. 2. **Depth of Analysis**: Some sections, particularly those discussing policy and economic factors, could benefit from deeper analysis or more specific examples to provide readers with a clearer understanding of the underlying issues. Additional focus on the challenges of integrating technological advancements into small-scale poultry farming could further enrich the article. 3. **Language and Presentation**: The language is professional, though a few areas could be reworded for better clarity and conciseness. Simplifying some sentences or avoiding redundancy would help maintain reader engagement. 4. **Conclusion and Recommendations**: A stronger conclusion with specific recommendations for policymakers or stakeholders involved in poultry farming would add more practical value to the article. **5.** **In summary,** the article is informative and well-researched, but slight improvements in organization, analysis, and presentation could enhance its impact and readability for a wider audience.	

PART 2:

	Reviewer's comment	**Author's comment** *(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)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	

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