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| Book Name: | [**Mathematics and Computer Science: Research Updates**](https://www.bookpi.org/bookstore/product/mathematics-and-computer-science-research-updates-vol-1/) |
| Manuscript Number: | **Ms\_BPR\_6081** |
| Title of the Manuscript: | **Certain Addition Formulae in the form of Gamma Function** |
| Type of the Article | **Book Chapter** |

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| PART 1: Comments | | |
|  | Reviewer’s comment **Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | 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.** | The manuscript “Certain Addition Formulae in the form of Gamma Function” is important to the scientific community as it contributes to the field of special functions. In particular is the hypergeometric function and its association with the Gamma function. Special functions are crucial for articulating geoscientific issues and solving problems within an orderly framework. It is often in the context of differential equations. The formulae developed in this chapter are presented as easy to understand. It is also new in the field of special functions. It can aid further research and application. This work provides new addition formulae. Thus, it enhances the existing body of knowledge in mathematical sciences. |  |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | Yes, the title “Certain Addition Formulae in the form of Gamma Function”. It is suitable as it accurately reflects the content and the main objective of the manuscript. It directly explains that it is to develop addition formulae in association with the Gamma function. |  |
| 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. | Yes, the abstract is well-written. It clearly introduces the topic of special functions. It also highlights the role of the hypergeometric function. Another is it explicitly states the aim of the chapter: to develop addition formulae in association with the Gamma function. It also mentions that the formulae are easy to understand and new in the field. This is a good summary of the paper’s contribution. |  |
| **Is the manuscript scientifically, correct? Please write here.** | Yes. The keywords provided are suitable: Hypergeometric Function, Pochhammer symbol, Summation Formulae. These keywords accurately represent the core mathematical concepts discussed in the manuscript.  The manuscript clearly states its aim: “The aim of this chapter is to developed some addition formulae in association with Gamma function.”. This objective is specific. It provides a clear direction for the research presented.  The general quality of the manuscript is good. It demonstrates scientific rigor in its mathematical derivations and presentation of new formulae. The originality lies in the development of “new addition formulae in association with Gamma function”. The significance stems from its contribution to the field of special functions. It has broad applications in various scientific disciplines, including geosciences. The manuscript is of interest to the scientific community. In particular to researchers and academics working in pure and applied mathematics most especially those focusing on hypergeometric functions and Gamma functions. |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.**  **-** | Yes. The introduction provides sufficient background and context. It defines generalized hypergeometric functions. It discusses Wright’s generalized hypergeometric function, the Pochhammer symbol, and the recurrence relation of the Gamma function. It also references existing summation formulae by Salahuddin et al., providing a clear foundation for the work presented.  The manuscript includes a list of references. They appear to be suitable for the field. The references are cited within the text. The format and presence suggest proper academic practice. |  |
| Is the language/English quality of the article suitable for scholarly communications? | The manuscript is primarily theoretical. It focuses on mathematical derivations rather than empirical materials and methods. The methods involve defining various mathematical functions and symbols, and then presenting complex summation formulae. While the definitions and formulae are provided, the steps to derive these formulae are not explicitly detailed as a “methodology” section. However, given the nature of a mathematical chapter, the clarity of the presented formulae and definitions generally allows for reproducibility by experts in the field.  Yes, the manuscript is generally written in clear and concise English. Especially for a technical mathematical paper, the paper is well written. The mathematical notations and derivations are presented clearly. There are a few minor grammatical constructions that could be polished for better flow. For example, “It implement the articulation of a geoscientific issue...” could be rephrased for better grammatical accuracy. |  |
| Optional/General comments | The results are presented clearly in the “Main Formulae” section. Various addition formulae involving hypergeometric functions and Gamma functions are also given. However, the manuscript lacks a separate discussion section. The implications, significance, and potential applications of these new formulae are not explicitly discussed beyond the abstract’s. A dedicated discussion section would enhance the understanding of the impact and utility of these findings.  The manuscript does not have a distinct “Conclusion” section. The abstract serves as a summary. It states the aim and the nature of the formulae developed. Without a dedicated conclusion, it is difficult to fully assess if the conclusions are appropriate. Conclusions should bea thoroughly supported by the results in a structured manner. A formal conclusion would help to summarize the findings and their broader implications.  Kindly add a discussion section that includes a dedicated discussion section to elaborate on the implications, significance, and potential applications of the derived addition formulae. This would enhance the manuscript’s impact and readability for a broader audience. Also, add a formal conclusion to summarize the key findings and reiterate the manuscript’s contributions to the field of special functions. You may also consider providing more derivation steps. It will help the reader for clarity. This will aid understanding, especially for those less familiar with the specific mathematical derivations. You may consider including more detailed intermediate steps in the derivation of the formulae and may be added in an appendix if space is a concern.  While generally clear, a minor review for grammatical accuracy and flow in a few sentences, such as in the abstract’s opening sentence, would further polish the manuscript. |  |

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| **PART 2:** | | |
|  | Reviewer’s comment | Author’s comment *(if agreed with the 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 detail)* |  |

**Reviewer details:**

**Von Lorenz A. Chavez, Philippines**