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BPI Review Form 070520

Book Name:	**Research Updates in Mathematics and Computer Science**
Manuscript Number:	**Ms_BP_3688G**
Title of the Manuscript:	**Probability Laws Derived from the Gamma Function**
Type of the Article	**Book chapter**

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PART 1: Review Comments

	Reviewer's comment	**Author's comment***(If agreed with the reviewer, correct the manuscript and highlight that part in the manuscript. Authors must write his/her feedback here)*
Is the manuscript important for the scientific community? Please write a few sentences explaining your answer	The gamma function is fundamentally important so in that sense laws derived from this function are important. If the sections are written and motivated better with more details as in terms of derivations and/or references, it will be a good book chapter. Also, the case studies need more motivation.	
Is the title of the article suitable? Do you have any alternative Title in your mind?	It seems suitable, though something could be added about "sampling" or "estimation". Perhaps "…with case studies".	
Is the abstract of the article comprehensive? If your answer is No, please provide suggestions	No. There should be more details in the abstract. What is going to be done and why? Especially, something must be said about the case studies and their motivation. This also applies to the introduction that is now only 2 sentences. Moreover, in the introduction, the work is referred to as "this paper", though this is for a book chapter.	
Do you think the English quality of the article is suitable for scholarly communications? If your answer is No, please provide suggestions	No. There are several serious shortcomings. The language, including grammar and punction, must be throughly revised. There is even French in the manuscript. The reviewer will be happy to revise the language once a serious attempt to improve the language has been made.	
Please provide your comments regarding the appropriateness of different sections of the manuscript.	Note that it is the real part of n that needs to be strictly greater than zero for (1) to converge. The derivation of (7) seems to be correct, though "by posing cos2 theta = t" should be replaced by something more common like "plugging in cos2 theta = t yields (equation)." Note the period in the end. Such language improvements should be made in several parts. In "3. Random Variable", a random variable assigns numerical values to events. There are also many spelling mistakes (here and in general). In "We describe in [2] and [3]…" the references were not written by the current authors, right? In section 4.2. Remarks, write out the gamma lawexplicitly. Sections 4.3.1 and 4.3.2 references are completely missing. In section 4.4 "normal curve" should be omitted. In general, it is strongly suggested that the authors read well-established mathematics books to learn the language, grammar, punctuation, sentence structures, reference handling and layout of proper mathematics writing. "THEOREME 1." Is probably again French, it is "Theorem" in English, and with "if" one does write the biconditionalarrow ⇔. Section 4.5 lacks references. Section 4.7: there is no motivation written for the opening sentence. Further, e.g. "…we seek the distribution of." Is a not English. Section 4.7 again lacks references. While it might be acceptable not to include a reference for the normal distribution, the other distributions should have references. Alternatively, one may include derivations. Principal references to well-established probability theory books should be considered though.	

	In section 5.1, include page numbers for [5] and [6]. Explain why “n degrees of freedom” and “(n-1) degrees of freedom”. Section 5.2 is very badly written, as an example. In math, one typically starts with “Let…” or “Consider…”, not “Be two normal populations…”. Further, “respectively” needs a comma in front of it. Such widely-used details to language are almost completely missing in the work. Also see, e.g. “Therefor”, after which it says that “F is distributed as F”, and without any reference to the Fisher distribution with no idea about referring to equation numbers. In section 5.3 a capital Z is used for a “variate”. It should say e.g. “Let Z follow the normal distribution with zero mean and unit variance”. The result in section 5.3 has no derivation not reference. Consider the text: “As shown in Figure 1, the distribution of age (life expectancy) follows a normal distribution in both samples and the table confirms by the normality test that these data follow a normal distribution. Once the Student’s t test conditions have been met, we can use the SPSS procedure (mean comparison) to compare the averages using the t-test for independent samples.“ This completely lacks motivation regarding why the table confirms normality. Further, the “SPSS procedure” is not a well-known procedure in this sense. SPSS is software. It should be described how it was used. Note that what are known as “Figure 1” and “Figure 2” are actually tables. Nothing is explained about significance levels and hypothesis testing. Yet they are used. These should be explained before using them. In the end the statement “The SPSS software gives the same result.” lacks motivation. Is it connected to the last sentence? Is the last sentence two sentences really because there is “otherwise, As P-value…” as there is a capital letter after a comma. While many of the equation and the derivations seem to be correct, much more effort needs to be put into the readability, the language and the structuring of the work. Moreover, may parts must be better motivated and there should be more references. Also the quality of the references should be considered. The results here are well-know and more fundamental works and text books should be considered. Better structure should be however considered. For example, section “3. Randon Variable” (should be of course Random), should come in the beginning just like PDF and CDF. There should be a better flow of thought. First introduce random variables, then PDFs, CDFs, and then go into the Gamma function, the Gamma distributions, and then derive the related distributions. Explain how the distributions are related to each other. The reviewer will be happy to reconsider if the authors seriously address all the comments above and significantly improve the work.	

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Do you think that the references in the manuscript are proper, recentand sufficient? If you have any suggestions, please write here.	There should be page numbers for the references when citing. Equation (3) has no derivation or reference. See comments above about references.2016 Guinea Statistical Yearbook should be a reference.	

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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