



SDI Review Form 1.6

Journal Name:	Asian Journal of Physical Sciences
Manuscript Number:	Ms_AJPAS_41259
Title of the Manuscript:	SOME CHARACTERIZATIONS OF TRANSMUTED MODIFIED BURR III DISTRIBUTION
Type of the Article	Short Research Article

General guideline for Peer Review process:

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: Review Comments

	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)
Compulsory REVISION comments	This manuscript provides some characterizations of the transmuted Burr III distribution. It is basically an application of Theorem 1 appeared in Glänzel (1987) for the above distribution. Here is some compulsory revision comment: 1. The power of x, outside the parentheses, in the nominator of the fraction should be $-\beta$, not $-\beta-1$, i.e. $e_F(x) = \alpha \beta x^{-\beta} (1 + \gamma x^{-\beta})^{-1} [\dots] / \dots$ (please check). 2. Recall the proof of the Proposition 2.1.1. Please clarify how the first two expressions of this proof (concerning $E[h_i(X) X \geq x], i = 1, 2$) were derived. 3. Recall the first equation (consisting of with 4 equalities) of the proof of Proposition 2.2.1, in pg. 4. Please, clarify how the definite integral appeared in the third equality was solved. If you use some known integral, please make a relevant note (before the paragraph starting with "Conversely, taking..." by writing something like "where the following known integral was used," and write afterwards this know integral along with some reference (for example some book containing Tables of Integrals, etc.). 4. Recall the equation of the paragraph starting with "Conversely, taking..." in pg. 4. The right-hand side of this equation (where the integral is taken form x to y) in identical to the right hand side of the previous equation where the integral is taken form y to x! Please check the correctness.	We agreed with comments. Mandatory revision is done.
Minor REVISION comments	General rules about the format of the expressions: (a) When you use the MS Word template of the journal, it is suggested to use a mathematical formula editing tool like MathType, and not the MS Word's own equation editor (which is often problematic and weak). (b) All the mathematical notations/quantities that the authors use have to be in the same size as the text is, and in italics (or in "math style" in MathType), for example $X, x, f(x), i, j, t$, etc. instead of $X, x, f(x), i, j, t$, respectively, while known mathematical function should be in upright form (non-italics, or "function style" in MathType), like $\sin x, \log y, \exp(x)$, etc. instead of $\sin x, \log y, \exp(x)$ etc. Moreover, numbers should be usually in upright form. (c) When the authors refer to the probability function, you can write, for example, $\Pr(X > x)$ instead of $P(X > x)$, while the expected value of a random variable X should be written as $E(X)$ and not $E(X)$. (d) When you use indexes in mathematical notations/quantities that are textual (not variables or other mathematical quantities) please use upright form not italics. For example, you should write $f_{MBIII}(x)$ instead of $f_{MBIII}(x)$.	Thank you for general rules. Minor revisions are also adjusted as you suggested.



	(e) Please put a full stop at the end of an equation line if your sentence ends there, or put a comma if your sentence continues after the equation line. Here are some minor revision comments: <i>Note:</i> The text in red below represents the suggested changes/additions. Page 1. Title of sub-Section 1.1: Please rewrite as “The Burr family of distributions”. Line 4 of sub-Section 1.1: Please rewrite as “The BIII distribution for random variable Y has the following cumulative distribution function...”. Please apply General Rule (b) throughout the manuscript. Eqs. (1) and (2): The equations are not as the same size as the text of the manuscript. Please revise accordingly all equations/expressions of the manuscript. Please, read carefully and apply General Rules (b), (c) and (d) throughout the manuscript. Eqs. (3) and (4): Please apply General Rule (d) throughout the manuscript. Lines 1, 2 of sub-Section 1.2: Please rewrite as “Ali and Ahmad (2015) studied the Transmuted Burr III (TMBIII) distribution along with its properties. The TMBIII distribution with parameters α, β and γ, has...”. Page 2. Eq. (10): The power of x, outside the parentheses, in the nominator of the fraction should be $-\beta$, not $-\beta-1$, i.e. $e_F(x) = \alpha \beta x^{-\beta} (1 + \gamma x^{-\beta})^{-1} [\dots] / \dots$ Proposition 2.1.1: Please rewrite as “Let $X : \Omega \rightarrow (0, +\infty)$ be a continuous random variable and let the two functions h_1 and h_2 of Theorem 1 in Appendix A to be $h_1 = \dots$”. Page 3. Last line of the proof of Prop. 2.1.1: Please rewrite as “Therefore, in the light of Theorem 1, random variable X has pdf as in (5) and cdf as in (6).”. Remark 2.1.1: Please replace D with C (and put C in italics, both in eq. and in text after the eq.). Page 4. Proposition 2.2.1: Please rewrite as “Let $X : \Omega \rightarrow (0, +\infty)$ be a continuous random variable with pdf as in (5). It then holds,”. Page 5. Definition 2.3.1: Please rewrite as “...of a twice differentiable distribution function, can be defined as the one satisfying the differential equation”. Eq. (13): Please replace $h_F'(x)$ with h_F'. Proof of Proposition 2.3.1: Please delete the sentence “Now, if the differential equation holds, then” and the following equation (since this equation is the same as the equation stated before the proof.	
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	Page 6. Definition 2.4.1: Please rewrite as “...of a twice differentiable distribution function F, can be defined as the one satisfying the differential equation”. Definition 2.5.1: Please rewrite as “...of a twice differentiable distribution function, can be defined as the one satisfying the differential equation”. Page 8. Line 1 of Theorem 1: Please rewrite as “Let (Ω, F, P) be a probability space for given interval $[d_1, d_2]$ with $-\infty \leq d_1 < d_2 \leq +\infty$”. Line 4 of Theorem 1: Please rewrite as “$h_1, h_2 \in \mathcal{C}([d_1, d_2])$, $p(x) \in \mathcal{C}^2([d_1, d_2])$,”. Line 5 of Theorem 1: Please rewrite as “...function on $[d_1, d_2]$. Finally, assume that...”. Final line of Theorem 1: Please replace “picked” with “adopted such that”.	
Optional/General comments		