

A PROPERTY OF THE YULE DISTRIBUTION AND ITS APPLICATIONS

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ABSTRACT

The relationship  $Y = RX$  between two random variables  $X$  and  $Y$ , where  $R$  is distributed independently of  $X$  in  $(0,1)$ , is known to have important consequences in different fields such as income distribution analysis, inventory decision models, etc.

In this paper it is shown that when  $X$  and  $Y$  are discrete random variables, relationships of similar nature lead to Yule-type distributions. The implications of the results are studied in connection with problems of income underreporting and inventory decision making.