

**ON THE RELATIONSHIP BETWEEN THE CONDITIONAL AND
UNCONDITIONAL DISTRIBUTION OF A RANDOM VARIABLE**

J. PANARETOS*

Trinity College, Dublin

SUMMARY. This paper studies the relationship between the unconditional and conditional distribution of the same random variable, say Y , when the distribution of the conditioning random variable X is of a known form. The problem is tackled in the general case where the distribution of Y and Y given X are mixed. Attention is focused to two particular cases. In the first X is assumed to follow a Poisson distribution; in the second X is allowed to have a mixed Poisson form. Potential applications are also discussed.

KEY WORDS. Mixed distributions, Poisson distribution, characterization.