

In this work we will discuss the basics of a multivariate geometric distribution, especially its two-dimensional version. First of all, we establish a fundamental definition in which we consider two types of failures. Next, we compute some of its properties. We then focus on a different version of the two-dimensional case which we obtain by conditioning and for which we again compute its properties. We extend this approach to the case where we consider three types of failures. We further generalize the obtained results for the case of a multivariate negative binomial distribution. Lastly, we focus on the estimates of the parameters of the fundamental two-dimensional version of the multivariate geometric distribution and present a simple simulation in which we demonstrate the accuracy of the obtained estimates.