

1. Let X_1, X_2, \dots, X_n be independent identically distributed random variables with density function

$$h(t; \theta) = \begin{cases} 0, & \text{if } t \notin [0, 1] \\ \theta t^{\theta-1}, & \text{if } t \in [0, 1]. \end{cases}$$

Find a moment estimator for θ .