A new modified Weibull extension distribution is proposed by Xie et al. (2002). El-Gohary et al. (2012) proposed a new distribution referred to as the generalized Gompertz distribution. In this paper, we propose a new model of a life time distribution that mainly generalizes these two distributions, in addition to many others. We refer to this new distribution as the exponentiated modified Weibull extension (EMWE) distribution. Estimation of its parameters are studied. Real datasets are analyzed using the new distribution, which show that the EMWE distribution can be used quite effectively in fitting and analyzing real lifetime data.