Phase retrieval is an active topic recently. In this talk, we will introduce the generalized phase retrieval which includes as special cases the standard phase retrieval as well as the phase retrieval by orthogonal projections. We first explore the connections among generalized phase retrieval, low-rank matrix recovery and nonsingular bilinear form. Motivated by the connections, we present results on the minimal measurement number needed for generalized phase retrieval. Our work unifies and enhances results from the standard phase retrieval, phase retrieval by projections and low-rank matrix recovery and also explore the connection among phase retrieval, nonsingular bilinear form and topology. (Received July 27, 2018)