Comparison of reliability measures under factor analysis and item response theory

The relationship between an IRT-based reliability coefficient under the normal ogive model (2)) and two factor-analysis-based reliability measures ( and ) was investigated.

It was found that both of the  and 2) are always smaller than the maximal reliability  because of information loss.

Another finding shown that there is no dominant relationship between2) and . That is, 2) is not always smaller than . As the number of response categories increase, 2) may surpass 

Questions:

(1) In terms of IRT-based reliability, as the number of response categories increase, 2) will definitely increase. But will the number of categories affect the factor-analysis-based reliability measures 

Whetheris overestimated because the measurement error was ignored when calculating 