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16. Abstract <p>This study analyzed two sets of performance ratings for light-duty-vehicle tires. The aim was to ascertain whether some of the ratings in either set convey redundant information. The first set included the Uniform Tire Quality Grade (UTQG) ratings for 2,734 tires, published by the U.S. National Highway Traffic Safety Administration. The second set consisted of ratings for 49 tires published by Consumer Reports. The approach consisted of using factor analysis to determine whether the number of variables in the two sets (3 in UTQG, and 11 in Consumer Reports) can be reduced to a smaller number of independent factors.</p> <p>The results indicate that the three UTQG variables form two factors. The first is dominated by tread properties, while the second factor reflects tread-abrasion resistance. The two factors accounted for 83% of the variance.</p> <p>The 11 Consumer Reports variables form four factors. These factors are dominated, in turn, by tread properties, the tire (and especially belt) construction, tread-band flexibility (particularly in the longitudinal direction), and tread-abrasion resistance. Each of the 11 variables loaded highly on at least one factor. The four factors accounted for 68% of the variance.</p> <p>The examination of the factors in each analysis suggests that each factor that is highly loaded by more than one variable represents richer and more complex information than what smaller subsets of variables could capture. Therefore, none of the variables could be excluded if one wants to provide the same information conveyed by the full sets of the variables.</p>					
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