The Use of Growth Mixture Modeling for Studying Resilience to Major Life Events: Application to Spousal Loss, Divorce, and Unemployment in the SOEP

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We examine the extent to which individuals are able to show stable, healthy levels of life satisfaction that are indicative of resilience, before and after three major life events: spousal loss, divorce, and unemployment. Our approach and focus is methodological in that we tested common held assumptions of growth mixture modeling (GMM). GMM combines latent growth curve and mixture modeling approaches and is a commonly used method to extract sub-groups or trajectories of change underlying the data. For example, GMM has been used to show that most individuals exhibit a resilient trajectory of stable, healthy levels of functioning following major life events (MLE). However, GMMs are often applied to data that does not meet the statistical assumptions of the model (e.g., normality) and researchers often do not test additional model constraints (e.g., homogeneity of variance across classes), which can lead to incorrect conclusions regarding the number and nature of the latent classes. We evaluate whether these methodological assumptions of GMM are tenable and how they influence class size and identification in the study of resilience to MLE. To address our research questions, we use data on changes in life satisfaction before and after spousal loss, divorce, and unemployment from the German Socio-Economic Panel Study. Our findings show that relaxing the assumption of variance homogeneity across classes results in a better fitting model through better class identification and contrary to previous research, a fewer proportion of individuals show a resilient trajectory, with a recovery trajectory being most prominent. Assuming normally distributed data increases the over-extraction of classes. Our findings showcase that the assumptions underlying GMM are not tenable, leading to errors in class size and identification and misinforming conceptual models of resilience. The discussion focuses on how GMM can be leveraged to effectively examine trajectories of resilience, recovery, and other forms of adaptation following MLE and avenues for future research.