

Abstract

Within-group competition for food resources is the primary cost faced by group-living females. Asian elephant females form fission-fusion societies in which competition might be minimized by the potential for temporary group fission. However, a constraint on female group size was still found previously in the Kabini elephant population in southern India, suggesting that there might be competition for food resources. In this study, I examined the effects of age, dominance rank, group size, and feeding activity type on individual behavioural characteristics of adult females, such as food-site residence time, feeding rates and feeding costs (number of steps and time taken to move between successive feeding sites). I also examined if quantitative measures of grass distribution explained the observed behavioural measures. I found that there seemed to be a moderate level of patchiness in grass resources based on the average food site residence time and the steps moved to a new feeding site. Dominance rank (based on contest competition) had an effect on food-site residence time, with more dominant females spending more time at feeding sites. Grass abundance also affected food-site residence time positively. Feeding rates, apart from being influenced by feeding activity type, increased with increasing group size, suggesting that scramble competition was also significant. However, I did not find patch depletion (another measure of scramble competition) by groups at the temporal scale that I examined, suggesting that there were sufficient feeding sites available at that scale.