

**Application of Graph Theory in determining the existence of Cliques and
Dominance in Families in Ragati Village, Nyeri District, Central Kenya.**

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Agnes Ngima Ngetha

KUJAT LIBRARY

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ABSTRACT

Graph theory is moving into the mainstream of mathematics mainly because of its many applications. In this work, we applied two aspects of graph theory, namely, clique graphs and dominance graphs, to determine the patterns of cliques and dominance in a rural village set-up in Ragati village, Central Kenya. The research was carried out by administering questionnaires to members of ten different families to determine how the family members influence each other on different day to day activities. Analysis was then done and vertex matrices were then obtained at different influence levels. These were then used to determine the existence of cliques or dominance in the family. In this research, out of the ten families investigated, three had cliques and three had dominant members. In most of the cases, the cliques had a female majority and the females dominated the other family members which appear to confirm common belief that Nyeri females dominate their males.