

MULTIPLICATIVE VERSIONS OF BANHATTI INDICES

T. V. Asha, V. R. Kulli* and B. Chaluvvaraju

Department of Mathematics,
Bangalore University,
Jnana Bharathi Campus, Bangalore - 560056, INDIA

E-mail : asha.prashanth0403@gmail.com, bchaluvvaraju@gmail.com

*Department of Mathematics,
Gulbarga University, Gulbarga - 585106, INDIA

E-mail : vrkulli@gmail.com

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Abstract: A topological index is a numeric quantity obtained from a graph structure that is invariant under graph isomorphism. Generally, vertex degree-based topological indices take into account the contributions of pairs of adjacent vertices. But, in Banhatti indices are contributions of pairs of incident elements. Particularly, the concept of Zagreb and Banhatti indices was established in chemical graph theory based on vertex degrees. Analogously, we initiate the study of multiplicative versions of the Banhatti indices of a graph. The main goal of this paper is to shed light on the relationship between the multiplicative Banhatti indices and other degree-based topological indices by using certain classical inequalities.

Keywords and Phrases: Graphical indices, Multiplicative Banhatti indices, multiplicative Zagreb indices and inequalities.

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1. Introduction

Throughout this paper, graph is simple, connected, undirected, and without loop. Let $G = (V, E)$ be graph with $|V(G)| = n$ vertices and $|E(G)| = m$ edges. The maximum and minimum degrees of the graphs represented by $\Delta = \Delta(G)$ and