

AN APPLICATION OF SOMBOR INDEX OF HESITANCY FUZZY GRAPHS IN MOBILE NETWORKS

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Abstract: Pathinathan T., J. Jon Arockiaraj, and J. Jesintha Rosline [5] introduced the concept of Hesitancy Fuzzy Graphs (HFGs). In this work, we discuss an application of the Sombor index of a HFG in mobile networks. This work includes the comparison of the performance levels of mobile companies — Jio, BSNL, Airtel, and Vodafone Idea — in a selected area. Then, we investigate how these mobile companies can improve their performance.

Keywords and Phrases: Hesitancy Fuzzy Graphs, Degree of a vertex in a HFG, Sombor Index.

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1. Introduction

Fuzzy sets were introduced by Lotfi A. Zadeh [10]. As an extension of this concept, Intuitionistic fuzzy sets were introduced by Krassimir Atanassov [2]. Later, Hesitant Fuzzy Sets were introduced by Vicenç Torra [8]. Azriel Rosenfeld [7] introduced Fuzzy Graph which is an extension of classical graph theory that incorporate