South East Asian J. of Mathematics and Mathematical Sciences
Vol. 21, No. 1 (2025), pp. 135-148

DOI: 10.56827/SEAJMMS.2025.2101.12 **ISSN (Online): 2582-0850**

ISSN (Print): 0972-7752

(m, n)-FUZZY DISTANCE MEASURES AND THEIR APPLICATIONS TO PATTERN RECOGNITION PROBLEMS

Samajh Singh Thakur, Alpa Singh Rajput*, Archana Kumari Prasad and Mahima Thakur**

Department of Applied Mathematics,
Jabalpur Engineering College,
Jabalpur - 482011, Madhya Pradesh, INDIA

E-mail : ssthakur@jecjabalpur.ac.in

*Department of Mathematics,
DIT University, Dehradun, Uttarakhand, INDIA

E-mail : alpa.singh.rajput@dituniversity.edu.in

**Department of Mathematics,
Swami Vivekanand Government College,
Lakhnadon - 480886, Madhya Pradesh, INDIA

E-mail : akkumariprasad@gmail.com

(**Received:** *Jun. 24, 2024* **Accepted:** *Apr. 26, 2025* **Published:** *Apr. 30, 2025)*

Abstract: The (m,n)-fuzzy sets are an effective and efficient tool for depicting vagueness and uncertainty in information in decision making. The present paper created logarithmic and tangent inverse distance measures for (m,n)-FSs and explores some of their properties.Numerical examples are presented to show the validity and effectiveness of proposed distance measures.

Keywords and Phrases: (m, n)-fuzzy sets, distance measure of (m, n)-fuzzy sets, pattern recognition.

2020 Mathematics Subject Classification: 03E72, 68T10, 90B50.