

**On Fixed Point Theorem Related to Istratetcu Type Contraction Embedded With  
Simulation Function in b-Metric Space**

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**ABSTRACT**

In fact, fixed-point theory is a potent mathematical instrument with a wide range of practical uses. The fundamental idea behind fixed-point theory is to investigate mappings from a set to itself where at least one point is preserved. When trying to solve issues involving optimization, equilibrium, and stability, this fixed point is frequently helpful. We have reduced the contractive mapping requirement to be more weakness and expanded the and expanded the mapping domain in the thesis. and this generalization would make it possible for a greater variety of mappings to have a fixed point, which might result in novel concepts and useful applications across several scientific disciplines. We have covered the notion of  $\alpha$ -admissible with Istratiscu contraction on set  $X$  embedded with simulation function as a novel contraction, and how some fixed-point results are unique and exist. To illustrate the use and effectiveness of the generated results, we have given numerous examples and an application.