

**SOME RELATION THEORETIC NONUNIQUE FIXED POINT
THEOREMS FOR CERTAIN CONTRACTION MAPPINGS IN A
NON-COMPLETE METRIC SPACE**

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Abstract: In this paper, we establish some nonunique fixed point results for the orbital relationally continuous self-mappings of orbital relationally complete metric space satisfying a more generalized contraction condition than given in the literature. Our nonunique fixed point results include some interesting similar results in an orbital partially complete metric space as the special cases. Our abstract results are also illustrated with the help of a couple of numerical examples.

Keywords and Phrases: Relational complete metric space, Relational contraction mapping, Nonunique fixed point theorem, Successive iteration method.

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1. Introduction

Ciric [3] proved some nonunique fixed point results for a certain class of contraction mappings on a metric space into itself under weaker version of continuity and completeness of a metric space. Thereafter, several authors extended and generalized the above results to other classes of contraction mappings in a metric space which is not necessarily complete. See for example, Achari [1], Dhage [4,5,6, Pachpatte [15] and references therein. Similarly, Alam and Imdad [2] proved a basic relation theoretic fixed point theorem for relational contraction mappings in relational complete metric spaces. Later, this result is generalized to a wider class