CHAPTER 7

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SUMMARY

The whole thesis is about the study of neutrosophic topological groups. Many researchers studied topological groups based on different angles, such as in the sense of fuzzy and intuitionistic fuzzy sets. In this thesis, we studied topological groups based on the neutrosophic sense.

A brief summary of the basic concepts, definitions, and results of the neutrosophic set of the thesis is found in **Chapter-1**.

In **Chapter-2**, the truth membership function, indeterminacy membership function, and falsity membership function are all employed in the neutrosophic set to overcome uncertainty. First, the definitions of NSOS, NSCoS, NROS, NRCoS, NCM, NOM, NCoM, NSCM, NSOM, NSCoM, set in order to propose the definition of NACM are developed. Some properties of NACM have been demonstrated. Expect that this study may spark some new ideas for the construction of the NACM.

In **Chapter-3**, the NS's most distinguishing feature is its ability to deal with both imprecise and inconsistent data. As a result of this observation, the NBTG based on the NS is investigated in order to address the topological group's many issues in regard to the NS. Some new def-

initions of NBTGs are presented in this study, which also investigates some properties and proves some NBTG propositions. It is hoped that this work will aid in the research of extended NBTGs, as well as a NATG and a NABTG.

In **Chapter-4**, the definitions of the neutrosophic semi-open set, neutrosophic semi-closed set, neutrosophic regularly open set, and neutrosophic regularly closed set are introduced to study the neutrosophic almost continuous mapping. Finally, by using the definition of neutrosophic almost continuous mapping, the neutrosophic almost bitopological group is introduced and some of its properties are proved. Hope that this work will bring some new ideas in the development of neutrosophic almost bitopological groups.

In **Chapter-5**, the concept of the PNHATG is studied. To study PNHATG, some definitions related to PNHATG are introduced, and some theorems about PNHATG are proved. Hope this, work will encourage the reader to do future work on PNHATG.

In **Chapter-6**, to generalize the idea of an almost topological group to an NMATG. First, the definitions of NMSOS, NMSCoS, NMROS, NMRCoS, NMCM, NMOM, NMCoM, NMSCM, NMSOM, and NMSCoM are developed to propose the definition of NMATG. Some properties of NMACM were demonstrated. Finally, defined NMATG and demonstrated some of their properties using the definition of NMACM. In this study, an NMATG is conceptualized for the environments of the NS along with some of their elementary properties and theoretic operations. Novel numerical examples are given for definitions and remarks on studying NMATG.