






Students' Subscribers Ranking of Mobile Network Operators Using Analytical Hierarchical Process

Solomon Adelowo Adepoju^(✉) , Oluwaseun Adeniyi Ojerinde ,
and Eugene Aigbogun Osaretin 

Department of Computer Science, Federal University of Technology Minna, PMB 65, Minna,
Niger State, Nigeria

solo.adepoju@futminna.edu.ng

Abstract. There have been rapid advancement and increase in the numbers of subscribers to services provided by different Mobile Network Operators (MNO) in Nigeria today. Hence, making the right choice among the available MNOs is a decision which many users especially students need to make intelligently. This study evaluates subscriber's satisfaction of quality of service provided by the four dominant MNOs in Nigeria which are MTN, GLO, AIRTEL and 9MOBILE. The assessment task is done by using Analytic Hierarchy Process model which is constructed base on some criteria so as to select the most suitable mobile network operator for users. Six criteria associated with MNO QoS were carefully selected for the study associated. Results obtained show that Customer care interaction & response is the most important criteria with a priority weight of 0.44985, while Network coverage, Promotion & Bonuses, Tariff Plan, Quality of calls and Internet speed and got the values of 0.24725, 0.11884, 0.11553, 0.04342, 0.02509 respectively in that order. Also, GLO is found to be the most preferable mobile network operator with a numerical weight of 0.45466 with 9mobile (0.24006), Airtel (0.18609) and MTN (0.08417) in 2nd, 3rd and 4th ranks respectively.

Keywords: Multi-criteria Decision Making · Quality of Service · Assessment

1 Introduction

Mobile Network Operator (MNO) is a telephone company that provides network services for mobile phone users. Other services provided by them include internet connectivity, voice and video calls, short message service (SMS) and many others services.

In Nigeria, there are majorly four MNOs which are MTN, Glo, Airtel and 9mobile. These MNOs have contributed favorably to Nigeria's economic progress in recent years as a result of unprecedented growth in the number of subscribers using the services over the years. This growth is partly due to the massive deployment of infrastructure by the four MNO in the country. However, this comes with a stiff competition in the country with each MNO trying to attract subscribers to use their services [1, 2]. As at February 2023, there are about 226 million subscribers in Nigeria with the statistics of their