

## Investigating the Reliability of Smartphone LiDAR for Outer Boundary Surveys

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The field of land surveying has been influenced by the development of modern technology over the years. Modern instruments have made data collection faster, easier, and more efficient. The surveying instruments have been made lightweight, compact, and user-friendly in the present. Light Detection and Ranging (LiDAR) is one such sophisticated technology that has revolutionized the field of land surveying. However, the affordability of such sophisticated instruments for surveyors in developing countries has become an issue. In such situations, the ability to utilize already available technology to perform surveying tasks would become much more helpful. This study analysed the use of LiDAR sensors that are built into smartphones as a viable option for surveying outer boundaries. The LiDAR sensors in smartphones are designed to assist in computer vision tasks such as biometrics and image enhancement even though the working principle of the LiDAR sensor remains the same. By using the assistance of other sensors integrated into the smartphone and the smartphone camera itself, spatial data collection can be done. This study compared the accuracy of the outer boundary survey of smartphone LiDAR with the surveys done using Total Station (TS). The results of the study show that the extent generated from different land plots using smartphone LiDAR has little variation to the extent generated from the data collected using Total Station.

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