

CORRUPTION IN CONSTRUCTION IN ETHIOPIA: THE HIDDEN MANIPULATION OF SURVEYING DATA

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SUMMARY

In Ethiopia's rapidly expanding construction sector, one of the least discussed yet most damaging forms of corruption is the manipulation of surveying data. Surveying provides the foundation for every infrastructure project—governing design, budgeting, alignment, and land compensation. When such data are falsified, entire projects become distorted—technically, financially, and ethically. Drawing on professional experience, this paper examines how surveying data are manipulated within Ethiopian construction, the systemic causes behind these practices, and their implications for infrastructure integrity. It highlights field-based insights, identifies institutional and educational weaknesses that enable corruption, and proposes actionable measures such as independent verification, digital transparency, professional accountability, and improved education in Geomatics Engineering. Protecting the integrity of surveying data is not merely a technical issue; it is an ethical and developmental imperative essential for ensuring that Ethiopia's infrastructure serves its citizens with honesty, safety, and sustainability.

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1. INTRODUCTION

Ethiopia's construction sector plays a crucial role in national development, attracting substantial public and donor investment. However, according to the 2024 Corruption Perceptions Index (CPI), Ethiopia scored 37 out of 100 and ranked 99th among 180 countries, indicating ongoing governance challenges (Transparency International, 2024). While corruption in procurement and materials supply often receives attention, the manipulation of surveying data—a more concealed yet equally destructive form—remains under-researched. Surveying data form the foundation for design accuracy, project costing, and land administration. When falsified, they compromise the entire project lifecycle, resulting in inflated costs, design flaws, safety hazards, and land disputes.

2. THE ROLE OF SURVEYING IN CONSTRUCTION

In Ethiopia's construction process, surveying serves as the cornerstone for establishing project layouts and boundary accuracy, estimating earthwork quantities, setting alignments, and facilitating land compensation and regulatory compliance. Integrity at this stage determines the reliability and fairness of every subsequent engineering, financial, and administrative decision.

3. PERSONAL EXPERIENCE: A PRACTITIONER'S INSIGHT

Based on my professional experience as a surveyor, I have encountered direct pressure to manipulate data. In one project, a contractor requested that I lower elevation readings by 20 centimeters—a seemingly minor adjustment that would artificially increase calculated fill volumes and justify additional payments. In another case, individuals without authorization urged me to alter the road alignment to facilitate illegal right-of-way compensation claims. I refused both times. These experiences reinforced that manipulating surveying data is not a technical shortcut—it is corruption disguised as convenience. Such acts erode public trust, undermine professional ethics, and ultimately compromise national development.

4. HOW SURVEY DATA ARE MANIPULATED

Common forms of data manipulation observed in Ethiopia include inflating quantities of excavation, fill, or concrete to justify higher payments; altering boundaries or elevations to benefit specific landowners; falsifying “as-built” data to conceal deviations from approved designs; tampering with GPS, GIS, or total station files to distort results; and collusion among contractors, surveyors, and oversight officials to cover fraudulent data modifications. These acts not only distort project costs but also undermine spatial accuracy and the credibility of engineering institutions.

5. CONSEQUENCES FOR ETHIOPIA

The manipulation of surveying data has far-reaching consequences: financial loss as inflated measurements lead to overpayments; safety risks arising from misaligned or structurally unsound works; land conflicts triggered by falsified boundary and compensation data; and erosion of public trust as professional and institutional credibility diminishes. Ultimately, the cost of such corruption extends beyond projects—it damages national confidence in infrastructure delivery.

6. DETECTION AND PREVENTION MEASURES

Combating this challenge requires coordinated reforms and technological integration. Key measures include independent verification of survey data by third-party auditors; adoption of digital data management systems with traceable records; cross-checking with drone, LiDAR, and GNSS data sources; enforcement of professional accountability and ethics codes; and public disclosure of survey results in major public projects. Such initiatives can rebuild trust and foster integrity within Ethiopia's surveying and construction sectors.

7. USE OF SOPHISTICATED SURVEYING INSTRUMENTS AND SOFTWARE FOR CORRUPTION CONTROL

Modern surveying increasingly relies on advanced instruments and software to ensure accuracy, transparency, and accountability. Sophisticated tools such as Leica Infinity not only enhance technical precision but also function as effective mechanisms for corruption control. At the Ethiopian Engineering Corporation, Leica Infinity is employed to monitor and verify both the quality of surveying data and the productivity of surveyors. The software facilitates seamless data integration, verification, and traceability—making manipulation or falsification nearly impossible. It also allows supervisors to assess team performance through detailed logs, activity histories, and quality control metrics. By integrating such technologies, organizations strengthen data integrity, minimize human interference, and promote performance-based accountability.

8. THE ROLE OF EDUCATION IN GEOMATICS ENGINEERING

Long-term solutions to data manipulation must originate from education. Quality education in Geomatics Engineering should build both technical competence and ethical responsibility. Academic reform should integrate professional ethics and anti-corruption awareness into curricula; expand hands-on field training and data verification exercises; encourage student-led research on corruption prevention; strengthen collaboration between universities and industry; and promote continuous professional development through certification programs. A technically competent and ethically grounded workforce is the most powerful defense against data-related corruption.

9. CONCLUSION

Manipulation of surveying data is a systemic form of corruption that threatens the integrity, safety, and sustainability of Ethiopia's construction sector. Addressing it requires more than technical precision—it demands a culture of ethical engineering, reinforced by transparency, accountability, and modern digital systems. When the foundation of data is corrupted, every structure built upon it eventually fails. Protecting that foundation is therefore not just a professional duty—it is a national necessity.

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BIOGRAPHICAL NOTES

Solomon Woldeyesus is a professional surveyor and geomatics engineer with experience in infrastructure surveying, geospatial data integrity, and construction supervision. He holds an MSc in Geodesy and Geomatics Engineering from Addis Ababa University and currently works at the Ethiopian Engineering Corporation.

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