

A Review on Telecommunication Frauds and Fraud Detection Techniques

Yamuna Wickramasinghe¹, Poojani Rathnayake², Osanda Madumal², Rizniya Ramzan², Kethaka Galappaththi³

Abstract: Telecommunication fraud is a serious challenge which caused billions of dollars in losses for companies and led to much distress among users. The reported number of frauds has been gradually increasing over the past few years. Hence telecommunication companies tend to use new fraud detection techniques to address the sprawling fraudulent activities. Identification of frauds and application of effective fraud detection techniques are vital for the sustainability of the telecommunication industry. It will drive the industry towards a more credible and profitable direction in the future. This study provides the first systematic literature review on telecommunication frauds and fraud detection techniques. The Prisma method was applied to systematically review the past literature. Using multiple research databases, 1117 research articles were identified, which were screened based on their relevance. 62 articles that were relevant to the study were then analysed in-depth to investigate various types of telecommunication frauds and fraud detection techniques. Results show that the time number of publications is on the rise and citations appear to be saturated at a certain level. The findings emphasise the dire need to investigate fraud happening in developing countries and effective techniques to be implemented to curb fraud. Additionally, a lack of focus on people/qualitative aspects of fraud and detection techniques was identified. The significance of the study is twofold. Researchers could use this study as a steppingstone for future research in telecommunication fraud and fraud detection techniques. On the other hand, Telecommunication companies could refer to this study for understanding fraud and in determining suitable fraud detection method.

Keywords: Telecommunication, Telecommunication fraud, Fraud detection, Systematic review, PRISMA

¹ SLIIT Business School, Sri Lanka Institute of Information Technology, Malabe, Sri Lanka.
yamunaruchirani@gmail.com

² SLIIT Business School, Sri Lanka Institute of Information Technology, Malabe, Sri Lanka.

³ Lecturer, SLIIT Business School, Sri Lanka Institute of Information Technology, Malabe, Sri Lanka.