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Patterns of Mobile Ad Fraud: Incentives, Strategy, and Moral Hazard
[Working Title]

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Date: As of now
Type: Bachelor's Thesis, Master's Thesis
Language: German or English

Motivation: Mobile advertising is now a dominant form of digital spend, yet it remains plagued by fraud strategies that are increasingly sophisticated and evasive. Recent empirical work reveals that fraudsters do not act randomly. They strategically "smooth" traffic to mimic organic user behavior and time their attacks to minimize detection.

However, the persistence of fraud is not merely a technical failure but likely an economic one. The advertising supply chain is a classic Principal-Agent relationship where intermediaries (agents) may lack the incentive to police fraud rigorously if they are compensated on volume (pay-per-click). If the cost of monitoring is high and the penalty for "shirking" is low, ad networks may tacitly tolerate fraud to maintain liquidity.

Goal: The thesis should synthesize the emerging empirical literature on mobile ad fraud and interpret these findings through the lens of information economics. The review must contrast the "cat-and-mouse" dynamics of technical detection against the deeper incentive misalignment between advertisers, networks, and publishers.

Guiding Questions:

- *Phenomenon:* What are the dominant forms of mobile ad fraud (e.g., SDK spoofing, click injection) and how do they differ from desktop fraud?
- *Strategy:* How do fraudsters empirically adjust their behavior (e.g., traffic smoothing, weekend effects) to evade current detection filters?
- *Incentive Structure:* Using Principal-Agent theory, why might ad networks tolerate this fraud? Does a pay-per-click model create a "double moral hazard" where neither publisher nor network wants to invest in security?
- *Solution:* Do emerging prevention methods (e.g., device attestation) effectively alter the payoff structure for fraudsters, or do they merely shift the attack vector?

Starting Literature:

- Ad-tech specific:
  - Chen, X. J., Chen, Y., Xiao, P., & Zhang, J. (2024). Mobile ad fraud: Empirical patterns in publisher and advertising campaign data. *International Journal of Research in Marketing*, *41*(2), 265-281.
  - Chen, M., Jacob, V. S., Radhakrishnan, S., & Ryu, Y. U. (2015). Can payment-per-click induce improvements in click fraud identification technologies?. *Information Systems Research*, *26*(4), 754-772.
  - Mungamuru, B., & Weis, S. (2008). Competition and fraud in online advertising markets. In *International Conference on Financial Cryptography and Data Security* (pp. 187-191). Berlin, Heidelberg: Springer Berlin Heidelberg.
- Theoretical foundations:
  - Holmstrom, B. (1979). Moral hazard and observability. *Bell Journal of Economics*, *10*(1), 74-91.
  - Laffont, J. J., & Martimort, D. (2002). *The theory of incentives: the principal-agent model*. Princeton university press. (*Hint:* focus on moral hazard chapters)