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# A taxonomy of financial market manipulations: establishing trust and market integrity in the financialized economy through automated fraud detection

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## Abstract

Financial market manipulations represent a major threat to trust and market integrity in capital markets. Manipulations contribute to mispricing, market imperfections and an increase in transaction costs for market participants and in costs of capital for issuers. Manipulations are facilitated by increased transaction velocity, speculative trading and abusive usage of new trading technologies, i.e., they are directly linked to financial sector changes that drive financialization. Research at the intersection of financialization and IS might support regulatory authorities and market operators in improving market surveillance and helping to detect fraudulent activities. However, confusing terminology is prevalent on

financial markets with respect to different manipulation techniques and their characteristics, which hampers efficient fraud detection. Furthermore, recognizing manipulations is challenging given the large number of information sources and the vast number of trades occurring not least because of high-frequency traders. Therefore, automated market surveillance tools require a comprehensive taxonomy of financial market manipulations as a basis for appropriate configuration. Based on a cluster analysis of SEC litigation releases, a review of the latest market abuse regulation and academic studies, we develop a taxonomy of manipulations that structures and details existing manipulation techniques and reveals how these techniques differ along several dimensions. In a case study, we show how the taxonomy can be utilized to guide the development of appropriate decision support systems for fraud detection.

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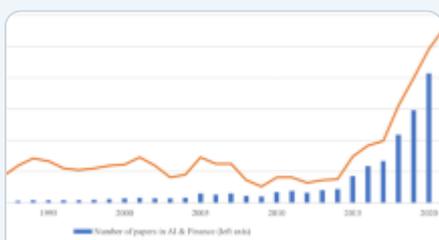
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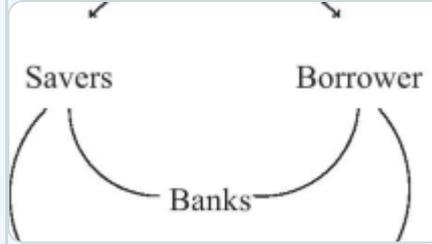


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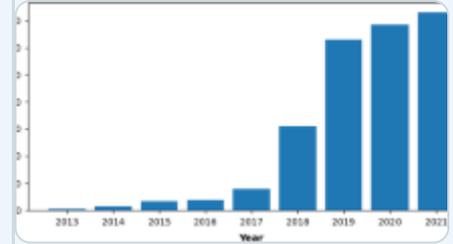
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## References

Aalbers, M. (2016). Corporate financialization. In D. Richardson, N. Castree, M. F. Goodchild, A. Kobayashi, W. Liu, and R. A. Marston (Eds.), *International Encyclopedia of Geography: People, the Earth, Environment and Technology*. Oxford: Wiley.

[Google Scholar](#)

Abbasi, A., Zhang, Z., Zimbra, D., Chen, H., Nunamaker, Jr, and Jay, F. (2010). Detecting Fake Websites: The Contribution of Statistical Learning Theory. *MIS Quarterly*, 34(3), 435-461.

[Google Scholar](#)

Abrantes-Metz, R. M., Kraten, M., Metz, A. D., and Seow, G. S. (2012). Libor Manipulation? *Journal of Banking & Finance*, 36(1), 136-150.

[Article](#) [Google Scholar](#)

Aggarwal, R. K., and Wu, G. (2006). Stock Market Manipulations. *Journal of Business*, 79(4), 1915-1953.

[Article](#) [Google Scholar](#)

Akhigbe, A., Madura, J., and Martin, A. (2005). Accounting Contagion: The Case of Enron. *Journal of Economics and Finance*, 29(2), 187-202.

[Article](#) [Google Scholar](#)

Aliguliyev, R. M. (2009). Performance Evaluation of Density-Based Clustering Methods. *Information Sciences*, 179(20), 3583–3602.

[Article](#) [Google Scholar](#)

Allen, F., and Gale, D. (1992). Stock-Price Manipulation. *Review of Financial Studies*, 5(3), 503–529.

[Article](#) [Google Scholar](#)

Allen, F., Litov, L., and Mei, J. (2006). Large Investors, Price Manipulation, and Limits to Arbitrage: An Anatomy of Market Corners. *Review of Finance*, 10(4), 645–693.

[Article](#) [Google Scholar](#)

Allen, S., and Ramanan, R. (1995). Insider Trading, Earnings Changes, and Stock Prices. *Management Science*, 41(4), 653–668.

[Article](#) [Google Scholar](#)

Arshadi, N. (1998). Insider Trading Liability and Enforcement Strategy. *Financial Management*, 27(2), 70–84.

[Article](#) [Google Scholar](#)

Bailey, K. D. (1984). A Three-Level Measurement Model. *Quality & Quantity*, 18(3), 225–245.

[Article](#) [Google Scholar](#)

Baker, N. (2005). Fraud and Artificial Intelligence. *Internal Auditor*, 62(1), 29–32.

[Google Scholar](#)

Bartels, K. C. (2000). Click Here to Buy the Next Microsoft: The Penny Stock Rules, Online Microcap Fraud, and the Unwary Investor. *Indiana Law Journal*, 75(1), 353-378.

[Google Scholar](#)

**Biais, B. and Woolley, P.** (2011). High frequency trading [WWW document] <http://www.eifr.eu/files/file2220879.pdf> (accessed 24th February 2016).

Bonner, S. E., Palmrose, Z.-V., and Young, S. M. (1998). Fraud Type and Auditor Litigation: An Analysis of SEC Accounting and Auditing Enforcement Releases. *The Accounting Review*, 73(4), 503-532.

[Google Scholar](#)

Bouwman, M. J. (1983). Human Diagnostic Reasoning by Computer: An Illustration from Financial Analysis. *Management Science*, 29(6), 653-672.

[Article](#) [Google Scholar](#)

Carhart, M. M., Kaniel, R., Musto, D. K., and Reed, A. V. (2002). Leaning for the Tape: Evidence of Gaming Behavior in Equity Mutual Funds. *The Journal of Finance*, 57(2), 661-693.

[Article](#) [Google Scholar](#)

Carroll, J. B. (1993). *Human Cognitive Abilities: A Survey of Factor-Analytic Studies*. Cambridge: Cambridge University Press.

[Book](#) [Google Scholar](#)

Carroll, B. (2006). How to Prevent Investment Adviser Fraud. *Journal of Accountancy*, 201(1), 40-43.

[Google Scholar](#)

Cataldo, A. J., and Killough, L. N. (2003). Market Makers' Methods of Stock Manipulation. *Management Accounting Quarterly*, 4(4), 10-13.

[Google Scholar](#)

Chaturvedula, C., Bang, N. P., Rastogi, N., and Kumar, S. (2015). Price Manipulation, Front Running and Bulk Trades: Evidence from India. *Emerging Markets Review*, 23, 26-45.

[Article](#) [Google Scholar](#)

Coffee, J. C. (2005). A Theory of Corporate Scandals: Why the USA and Europe Differ. *Oxford Review of Economic Policy*, 21(2), 198-211.

[Article](#) [Google Scholar](#)

Comerton-Forde, C., and Putnins, T. J. (2011). Measuring Closing Price Manipulation. *Journal of Financial Intermediation*, 20(2), 135-158.

[Article](#) [Google Scholar](#)

Cooper, D. J., and Donaldson, R. G. (1998). A Strategic Analysis of Corners and Squeezes. *The Journal of Financial and Quantitative Analysis*, 33(1), 117-137.

[Article](#) [Google Scholar](#)

Cumming, D., and Johan, S. (2008). Global Market Surveillance. *American Law and Economics Review*, 10(2), 454-506.

[Article](#) [Google Scholar](#)

**Cumming, D., Zhan, F. and Aitken, M.** (2012). High Frequency Trading and End-of-Day Manipulation [WWW document]

[https://www.legacy.wlu.ca/documents/54105/Cumming-Zhan-Aitken-15012013\\_2.pdf](https://www.legacy.wlu.ca/documents/54105/Cumming-Zhan-Aitken-15012013_2.pdf) (accessed 24th February 2016).

Davis, H. A. (2007). Summary of Selected FINRA Regulatory Notices. *Journal of Investment Compliance*, 8(4), 60-67.

[Article](#) [Google Scholar](#)

Denney, A. S., and Tewksbury, R. (2013). How to Write a Literature Review. *Journal of Criminal Justice Education*, 24(2), 218-234.

[Article](#) [Google Scholar](#)

Easley, D., Prado, De, Lopez, Marcos M., and O'Hara, M. (2011). The Microstructure of the "Flash Crash": Flow Toxicity, Liquidity Crashes, and the Probability of Informed Trading. *Journal of Portfolio Management*, 37(2), 118.

[Article](#) [Google Scholar](#)

**European Parliament and Council** (2014). Market Abuse Regulation No 596/2014 [WWW document] <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32014R0596> (accessed 24th February 2016).

**European Parliament and Council** (2016). Benchmark Regulation 2016/1011 [WWW document] <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R1011&from=EN> (accessed 4th August 2016).

Fama, E. F. (1970). Efficient Capital Markets: A Review of Theory and Empirical Work. *The Journal of Finance*, 25(2), 383-417.

[Article](#) [Google Scholar](#)

Fatudimu, I., Musa, A., Ayo, C., and Sofoluwe, A. B. (2008). Knowledge Discovery in Online Repositories: A Text Mining Approach. *European Journal of Scientific*

Fayyad, U., Piatetsky-Shapiro, G., and Smyth, P. (1996). From Data Mining to Knowledge Discovery in Databases. *AI Magazine*, 17(3), 37–54.

**Financial Conduct Authority (FCA)** (2014). FCA Final Notice: Reference Number 124491 [WWW document] <http://www.fca.org.uk/your-fca/documents/final-notice/2014/jpmorgan-chase-bank> (accessed 25th August 2016).

**Financial Conduct Authority (FCA)** (2015). Call for Input: Supporting the Development and Adoption of RegTech [WWW document] <https://www.fca.org.uk/publication/call-for-input/regtech-call-for-input.pdf> (accessed 12th September 2016).

**Financial Services Authority (FSA)** (2012). FSA Final Notice: Reference Number 122702 [WWW document] <http://www.fsa.gov.uk/static/pubs/final/barclays-jun12.pdf> (accessed 25th August 2016).

Fischel, D. R., and Ross, D. J. (1991). Should the Law Prohibit “Manipulation” In Financial Markets? *Harvard Law Review*, 105(2), 503–553.

Fouquau, J., and Spieser, P. K. (2015). Statistical Evidence About LIBOR Manipulation: A “Sherlock Holmes” Investigation. *Journal of Banking & Finance*, 50, 632–643.

**Frank, J.** (1994). Artificial Intelligence and Intrusion Detection: Current and Future Directions, in 17th National Computer Security Conference; Baltimore, USA, 1994, pp. 1-12.

Gerety, M., and Lehn, K. (1997). The Causes and Consequences of Accounting Fraud. *Managerial and Decision Economics*, 18(7-8), 587-599.

[Article](#) [Google Scholar](#)

**Golmohammadi, K., Zaiane, O.R. and Diaz, D.** (2014). Detecting Stock Market Manipulation Using Supervised Learning Algorithms, in International Conference on Data Science and Advanced Analytics (DSAA); Shanghai, China, 2014, pp. 435-441.

**Gomber, P., Sagade, S., Theissen, E., Weber, M.C. and Westheide, C.** (2016). Competition Between Equity Markets: A Review of the Consolidation Versus Fragmentation Debate, *Journal of Economic Surveys* (forthcoming).

Hanke, M., and Hauser, F. (2008). On the Effects of Stock Spam e-Mails. *Journal of Financial Markets*, 11(1), 57-83.

[Article](#) [Google Scholar](#)

Hazen, T. L. (2010). Are Existing Stock Broker Standards Sufficient? Principles, Rules and Fiduciary Duties. *Columbia Business Law Review*, 2010(3), 710-761.

[Google Scholar](#)

Hellwig, M. F. (1980). On the Aggregation of Information in Competitive Markets. *Journal of Economic Theory*, 22(3), 477-498.

[Article](#) [Google Scholar](#)

Hillion, P., and Suominen, M. (2004). The Manipulation of Closing Prices. *Journal of Financial Markets*, 7(4), 351-375.

[Article](#) [Google Scholar](#)

Humpherys, S. L., Moffitt, K. C., Burns, M. B., Burgoon, J. K., and Felix, W. F. (2011). Identification of Fraudulent Financial Statements Using Linguistic Credibility Analysis. *Decision Support Systems*, 50(3), 585-594.

[Article](#) [Google Scholar](#)

**IIROC** (2012). Proposed Guidance on Certain Manipulative and Deceptive Trading Practices [WWW document]

[http://www.iroc.ca/Documents/2012/f62c746a-b5c9-448a-b57f-f1c04c88de14\\_en.pdf](http://www.iroc.ca/Documents/2012/f62c746a-b5c9-448a-b57f-f1c04c88de14_en.pdf) (accessed 19th February 2016).

Ionescu, L. (2010). Madoff's Fraudulent Financial Scheme, His Decades-Long Swindle, and the Failure of Operational Risk Management. *Economics, Management, and Financial Markets*, 5(3), 239-244.

[Google Scholar](#)

Jarrow, R. A. (1992). Market Manipulation, Bubbles, Corners, and Short Squeezes. *Journal of Financial and Quantitative Analysis*, 27(03), 311-336.

[Article](#) [Google Scholar](#)

Jones, K. S. (1972). A Statistical Interpretation of Term Specificity and Its Application in Retrieval. *Journal of Documentation*, 28(1), 11-21.

[Article](#) [Google Scholar](#)

Jones, M. J. (2011). *Creative Accounting, Fraud And International Accounting Scandals*. Hoboken: Wiley.

[Google Scholar](#)

Karz, G., and Wagner, W. H. (2006). Should I Fire My Trader or Pay Him A Million? *The Journal of Trading*, 1(4), 85-89.

[Article](#) [Google Scholar](#)

Kim, Y., and Sohn, S. Y. (2012). Stock Fraud Detection Using Peer Group Analysis. *Expert Systems with Applications*, 39(10), 8986-8992.

[Article](#) [Google Scholar](#)

Kirkos, E., Spathis, C., and Manolopoulos, Y. (2007). Data Mining Techniques for the Detection of Fraudulent Financial Statements. *Expert Systems with Applications*, 32(4), 995-1003.

[Article](#) [Google Scholar](#)

Klein, L. R., Dalko, V., and Wang, M. (2012). *Regulating Competition in Stock Markets: Antitrust Measures to Promote Fairness and Transparency Through Investor Protection and Crisis Prevention*. Hoboken: Wiley.

[Book](#) [Google Scholar](#)

Kumar, P., and Langberg, N. (2009). Corporate Fraud and Investment Distortions in Efficient Capital Markets. *The Rand Journal of Economics*, 40(1), 144-172.

[Article](#) [Google Scholar](#)

Kyle, A. S., and Viswanathan, S. (2008). How to Define Illegal Price Manipulation. *American Economic Review*, 98(2), 274-279.

[Article](#) [Google Scholar](#)

**Lagoarde-Segot, T.** (2016). Financialization: Towards a New Research Agenda, *International Review of Financial Analysis*. doi:[10.1016/j.irfa.2016.03.007](https://doi.org/10.1016/j.irfa.2016.03.007).

Ledgerwood, S. D., and Carpenter, P. (2012). A Framework for the Analysis of Market Manipulation. *The Review of Law & Economics*, 8(1), 253-295.

[Article](#) [Google Scholar](#)

Lee, E. J., Eom, K. S., and Park, K. S. (2013). Microstructure-Based Manipulation: Strategic Behavior and Performance of Spoofing Traders. *Journal of Financial Markets*, 16(2), 227-252.

[Article](#) [Google Scholar](#)

Leinweber, D. J., and Madhavan, A. N. (2001). Three Hundred Years of Stock Market Manipulations. *The Journal of Investing*, 10(2), 7-16.

[Article](#) [Google Scholar](#)

Lenard, M. J., and Alam, P. (2009). An Historical Perspective on Fraud Detection: From Bankruptcy Models to Most Effective Indicators of Fraud in Recent Incidents. *Journal of Forensic & Investigative Accounting*, 1(1), 1-27.

[Google Scholar](#)

Levy, Y., and Ellis, T. J. (2006). A Systems Approach to Conduct an Effective Literature Review in Support of Information Systems Research. *Informing Science: International Journal of an Emerging Transdiscipline*, 9(1), 181-212.

[Google Scholar](#)

Lomnicka, E. (2001). Preventing and Controlling the Manipulation of Financial Markets: Towards a Definition of "Market Manipulation". *Journal of Financial Crime*, 8(4), 297-304.

[Article](#) [Google Scholar](#)

Losiewicz, P., Oard, D. W., and Kostoff, R. N. (2000). Textual Data Mining to Support Science and Technology Management. *Journal of Intelligent Information Systems*, 15(2), 99-119.

[Article](#) [Google Scholar](#)

**LR 17346** (2002). Litigation Release No. 17346: Securities and Exchange Commission v. Patrick O. Wheeler, Steven S. Gallers, and Robert L. Carberry, Case No. 02-60131-CIV-GRAHAM (S.D. Fla.) [WWW document]

<http://www.sec.gov/litigation/litreleases/lr17346.htm> (accessed 19th February 2016).

**LR 17645** (2002). Litigation Release No. 17645: Securities and Exchange Commission v. Michael A. Ofstedahl, et al., United States District Court for the Northern District of California, Civil Action No. C-02-3685 RS. [WWW document]

<http://www.sec.gov/litigation/litreleases/lr17645.htm> (accessed 19th February 2016).

**LR 21423** (2010). Litigation Release No. 21423: Securities and Exchange Commission v. Frank J. Custable, Jr., et al., Civil Action No. 03-CV-2182 (N.D. Ill.) [WWW document] <http://www.sec.gov/litigation/litreleases/2010/lr21423.htm>

(accessed 19th February 2016).

**LR 22545** (2012). Litigation Release No. 22545: SEC v. Berton M. Hochfeld et al., Civil Action No. 12-CV-8202 (S.D.N.Y.) [WWW document]

<http://www.sec.gov/litigation/litreleases/2012/lr22545.htm> (accessed 19th February 2016).

**MacQueen, J.** (1967). Some Methods for Classification and Analysis of Multivariate Observations, in Fifth Berkeley Symposium on Mathematical Statistics and Probability (Berkeley, USA, 1967), pp. 281-297.

Miller, G. A. (1956). The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information. *Psychological Review*, 63(2), 343–352.

[Article](#) [Google Scholar](#)

Miller, J. G., and Roth, A. V. (1994). A Taxonomy of Manufacturing Strategies. *Management Science*, 40(3), 285–304.

[Article](#) [Google Scholar](#)

Møllgaard, H. P. (1997). A Squeezer Round the Corner? Self-Regulation and Forward Markets. *The Economic Journal*, 107(440), 104–112.

[Article](#) [Google Scholar](#)

Ngai, E., Hu, Y., Wong, Y., Chen, Y., and Sun, X. (2011). The Application of Data Mining Techniques in Financial Fraud Detection: A Classification Framework and an Academic Review of Literature. *Decision Support Systems*, 50(3), 559–569.

[Article](#) [Google Scholar](#)

Nickerson, R. C., Varshney, U., and Muntermann, J. (2013). A Method for Taxonomy Development and Its Application in Information Systems. *European Journal of Information Systems*, 22(3), 336–359.

[Article](#) [Google Scholar](#)

Öğüt, H., Doğanay, M. M., and Aktaş, R. (2009). Detecting Stock-Price Manipulation in an Emerging Market: The Case of Turkey. *Expert Systems with Applications*, 36(9), 11944–11949.

[Article](#) [Google Scholar](#)

Pagano, M., and Immordino, G. (2012). Corporate Fraud, Governance, and

[Article](#) [Google Scholar](#)

**Pelleg, D. and Moore, A.** (2000). X-Means: Extending K-Means with Efficient Estimation of the Number of Clusters, in 17th International Conference on Machine Learning; Stanford, USA, 2000, pp. 727–734.

Porter, M. F. (2006). An Algorithm for Suffix Stripping. *Electronic Library and Information Systems*, 40(3), 211–218.

[Article](#) [Google Scholar](#)

Pozza, C. L., Jr., Cox, T. R., and Morad, R. J. (2009). Review of Recent Investor Issues in the Madoff, Standford and Forte Ponzi Scheme Cases. *Journal of Business and Securities Law*, 10, 113–132.

[Google Scholar](#)

Putnins, T. J. (2012). Market Manipulation: A Survey. *Journal of Economic Surveys*, 26(5), 952–967.

[Article](#) [Google Scholar](#)

Rapoport, N. B. (2012). Black Swans, Ostriches, and Ponzi Schemes. *Golden Gate University Law Review*, 42, 627–661.

[Google Scholar](#)

Rehman, Z., Anwar, W., Bajwa, U. I., Xuan, W., Chaoying, Z., and Patterson, R. L. (2013). Morpheme Matching Based Text Tokenization for a Scarce Resourced Language. *PLoS ONE*, 8(8), e68178.

[Article](#) [Google Scholar](#)

Roddenberry, S., and Bacon, F. (2011). Insider Trading and Market Efficiency: Do Insiders Buy Low and Sell High? *Journal of Finance & Accountancy*, 8, 1-15.

[Google Scholar](#)

**Rokach, L. and Maimon, O.** (2005). Clustering Methods, in O. Maimon and L. Rokach, (eds.), *Data Mining and Knowledge Discovery Handbook*, New York: Springer US, pp. 321-352.

Rowley, J., and Slack, F. (2004). Conducting a Literature Review. *Management Research News*, 27(6), 31-39.

[Article](#) [Google Scholar](#)

Sabherwal, S., Sarkar, S. K., and Zhang, Y. (2011). Do Internet Stock Message Boards Influence Trading? Evidence from Heavily Discussed Stocks with no Fundamental News. *Journal of Business Finance & Accounting*, 38(9-10), 1209-1237.

[Article](#) [Google Scholar](#)

Scopino, G. (2015). The (Questionable) Legality Of High-Speed Pinging and Front Running in the Futures Market. *Connecticut Law Review*, 47(3), 607-697.

[Google Scholar](#)

Shapiro, S., Kinkela, K., and Harris, P. (2012). Churning and Suitability of Investments: A Financial Industry Regulatory Authority Arbitration Case Study. *Review of Business & Finance Case Studies*, 3(1), 61-67.

[Google Scholar](#)

Shleifer, A., and Vishny, R. W. (1997). A Survey of Corporate Governance. *The Journal of Finance*, 52(2), 737-783.

[Article](#) [Google Scholar](#)

Tabrizi, S. A., Shakery, A., Asadpour, M., Abbasi, M., and Tavallaie, M. A. (2013). Personalized PageRank Clustering: A Graph Clustering Algorithm Based on Random Walks. *Physica A: Statistical Mechanics and its Applications*, 392(22), 5772-5785.

[Article](#) [Google Scholar](#)

Thel, S. (1993). 850,000 in Six Minutes-The Mechanics of Securities Manipulation. *Cornell Law Review*, 79(2), 219-298.

[Google Scholar](#)

Tripp, M. J. W. (1963). Securities Regulation: Stock Scalping by the Investment Adviser: Fraud or Legitimate Business Practice? *California Law Review*, 51(1), 232-245.

[Article](#) [Google Scholar](#)

**U.S. Commodity Futures Trading Commission (CFTC)** (2016). Education Center: CFTC Glossary [WWW document] [http://www.cftc.gov/consumerprotection/educationcenter/cftcglossary/glossary\\_b](http://www.cftc.gov/consumerprotection/educationcenter/cftcglossary/glossary_b) (accessed 4th August 2016).

**Vaughan, L.** (2016). Broken Benchmarks: Six Years of Probes into Financial Fiddling [WWW document] <https://www.bloomberg.com/quicktake/broken-benchmarks> (accessed 25th August 2016).

Vila, J.-L. (1989). Simple Games of Market Manipulation. *Economics Letters*, 29(1), 21-26.

[Article](#) [Google Scholar](#)

Webster, J., and Watson, R. T. (2002). Analyzing the Past to Prepare for the Future: Writing a Literature Review. *Management Information Systems Quarterly*, 26(2), 3.

[Google Scholar](#)

Wheeler, R., and Aitken, S. (2000). Multiple Algorithms for Fraud Detection. *Knowledge-Based Systems*, 13(2), 93-99.

[Article](#) [Google Scholar](#)

Willett, P. (1988). Recent Trends in Hierarchic Document Clustering: A Critical Review. *Information Processing and Management*, 24(5), 577-597.

[Article](#) [Google Scholar](#)

Willett, P. (2006). The Porter Stemming Algorithm: Then and Now. *Electronic Library and Information Systems*, 40(3), 219-223.

[Article](#) [Google Scholar](#)

Ye, J. (2011). Cosine Similarity Measures for Intuitionistic Fuzzy Sets and Their Applications. *Mathematical and Computer Modelling*, 53(1), 91-97.

[Article](#) [Google Scholar](#)

Zahedi, F. M., Abbasi, A., and Chen, Yan. (2015). Fake-Website Detection Tools: Identifying Elements that Promote Individuals' Use and Enhance Their Performance. *Journal of the Association for Information Systems*, 16(6), 448-484.

[Google Scholar](#)

Zhou, L., Burgoon, J. K., Twitchell, D. P., Qin, T., Nunamaker, Jr, and Jay, F. (2004). A Comparison of Classification Methods for Predicting Deception in Computer-

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