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A Review On: Retailer Pricing Analysis using Machine Learning

Venkata Vamshi Krishna[1] and Kandakatla Mahesh[2]
Ph.D Scholar, Department of Computer Science and Engineering[1]
Research Supervisor, Department of Computer Science and Engineering[2]
Chaitanya Deemed to be University, Hanamkonda, Telangana, India

Abstract: *In this research, investigates deeply on price competition behavior between mobile commerce retailers (MCR) and traditional off-line retailers (TOR) in m-commerce era. On this basis, two related propositions are pointed out. First, it gets MCR's and TOR's perfect prices in competition, further analysis can find that in the competition between MCR and TOR when these two kinds of retailers coexist, two exterior factors and three inner factors decide the price difference. Second, as the penetrate rate of m-commerce increasing, perfect prices of two kinds of retailers will change, and the ratio of their change speed will be stable. The problem addresses price competition decisions to assist retailers in deciding just the right price in MCR and TOR while still subject to uncertainty. Efficient time series forecasting techniques, auction based market mechanism, Spot pricing, including the use of machine learning models, will help to reduce uncertainty and improve results by offering insight on future outcome-based decisions. One of the algorithms of machine learning that is used linear regression. It is easy to implement and is used for purposes such as predicting real estate prices, financialperformances and traffic. Cluster analysis is also used for the purpose of understanding the relationship between consumers and the products they mostly search for. This work proposes a hybrid model, exploring linear and nonlinear modelling. This information is used to aid the decision-maker in an optimization problem involving both the decision on the price in MCR and TOR and the best moment for the one-time per cycle retailer price replenishment in situations where the purchase price fluctuates in time. This work aims to present Regression Random Forests (RRFs) model to predict one- week-ahead and one-day-ahead spot prices. The prediction would assist retailer to plan in advance when to acquire spot instances, estimate execution costs, and also assist them in bid decision making to minimize execution costs and out-of-bid failure probability. In addition, we contribute to the literature by developing a detailed MCR and TOR channel choice model to drive the MCR and TOR operational decisions.*

Keywords: Machine Learning.

REFERENCES

[1]. H. Chen, R. H. Chiang and V. C. Storey, "Business intelligence and analytics: From big data to big impact," *MIS Quarterly*, vol. 36, no. 4, pp. 1165–1188, 2012.
[2]. R. Jaffari, M. Memon, T. Hafiz and R. Iftikhar, "Framework of business intelligence systems for infrastructure design and management," in *Int. Conf. on Latest Trends in Electrical Engineering and Computing Technologies (INTELLECT)*, Karachi, Pakistan: IEEE, pp. 1–8, 2017.
[3]. D. Arnott, F. Lizama and Y. Song, "Patterns of business intelligence systems use in organizations," *Decision Support Systems*, vol. 97, pp. 58–68, 2017.
[4]. Z. Jourdan, R. K. Rainer and T. E. Marshall, "Business intelligence: An analysis of the literature," *Information Systems Management*, vol. 25, no. 2, pp. 121–131, 2008.
[5]. P. Wlodarczak, M. Ally and J. Soar, "Data mining in IOT: Data analysis for a new paradigm on the internet," in
[6]. *Proc. of the Int. Conf. on Web Intelligence*, Leipzig, Germany, ACM, pp. 1100–1103, 2017.
[7]. D. D. Phan and D. R. Vogel, "A model of customer relationship management and business intelligence systems for catalogue and online retailers," *Information & Management*, vol. 47, no. 2, pp. 69–77, 2010.

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[8]. F. Wang and M. Head, "How can the web help build customer relationships? An empirical study on e-tailing,"

[9]. *Information & Management*, vol. 44, no. 2, pp. 115–129, 2007.

[10]. R. Amit and C. Zott, "Value creation in e-business," *Strategic Management Journal*, vol. 22, no. 6–7, pp. 493– 520, 2001.

[11]. G. Linden, B. Smith and J. York, "Amazon.com recommendations: Item-to-item collaborative filtering," *IEEE Internet Computing*, vol. 7, no. 1, pp. 76–80, 2003.

[12]. E. Brynjolfsson, Y. J. Hu and M. D. Smith, "From niches to riches: Anatomy of the long tail," *Sloan Management Review*, vol. 47, no. 4, pp. 67–71, 2006.

[13]. D. S. Soper, "A framework for automated web business intelligence systems," in *Annual Hawaii Int. Conf. on System Sciences (HICSS)*, Big Island, HI, USA: IEEE, pp. 217a, 2005.

[14]. H. W. Ahmad, S. Zilles, H. J. Hamilton and R. Dosselmann, "Prediction of retail prices of products using local competitors," *International Journal of Business Intelligence and Data Mining*, vol. 11, no. 1, pp. 19–30, 2016.

[15]. S. Kisilevich, D. Keim and L. Rokach, "A GIS-based decision support system for hotel room rate estimation and temporal price prediction: The hotel brokers' context," *Decision Support Systems*, vol. 54, no. 2, pp. 1119–1133, 2013.

[16]. H. Zhao, "Futures price prediction of agricultural products based on machine learning," *Neural Computing andApplications*, vol. 33, no. 3, pp. 837–850, 2021.

[17]. L. Xuefeng, L. Lu, W. Lihua and Z. Zhao, "Predicting the final prices of online auction items," *Expert Systems with Applications*, vol. 31, no. 3, pp. 542–550, 2006.

[18]. N. Archak, A. Ghose and P. G. Ipeirotis, "Show me the money! Deriving the pricing power of product features by mining consumer reviews," in *Proc. of the 13th ACM SIGKDD Int. Conf. on Knowledge Discovery and Data Mining*, San Jose, California, USA: ACM, pp. 56–65, 2007.

[19]. N. B. Lassen, R. Madsen and R. Vatrapu, "Predicting iPhone sales from iPhone tweets," in *18th Int. Enterprise Distributed Object Computing Conf.*, Ulm, Germany: IEEE, pp. 81–90, 2014.

[20]. K. K. Tseng, R. F. Y. Lin, H. Zhou, K. J. Kurniajaya and Q. Li, "Price prediction of e-commerce products through Internet sentiment analysis," *Electronic Commerce Research*, vol. 18, no. 1, pp. 65–88, 2018.

[21]. S. Rajagopal, K. S. Hareesha and P. P. Kundapur, "Performance analysis of binary and multiclass models using azure machine learning," *International Journal of Electrical & Computer Engineering*, vol. 10, no. 1, pp. 2088– 8708, 2020.

[22]. F. Abramovich, V. Grinshtein and T. Levy, "Multiclass classification by sparse multinomial logistic regression,"arXiv preprint arXiv, vol. 1, e print 2003.01951, 2020.

[23]. B. Siswoyo, "MultiClass decision forest machine learning artificial intelligence," *Journal of Applied Informatics and Computing (JAIC)*, vol. 4, no. 1, pp. 1–7, 2020.

[24]. J. Yan, Z. Zhang, K. Lin, F. Yang and X. Luo, "A hybrid scheme-based one-vs-all decision trees for multi-class classification tasks," *Knowledge-Based Systems*, vol. 198, no. 4, pp. 105922, 2020.

[25]. I. D. E PyCharm Python, "For Professional Developers," (Accessed on 12-04-2021), 2000. [Online]. Available:https://www.jetbrains.com/pycharm/.

[26]. Microsoft, "SQL Server Management Studio 2018," (Accessed on 12-04-2021), 2019. [Online]. Available: https://docs.microsoft.com/en-us/sql/ssms/download-sql-server-management-studio-ssms.

[27]. Microsoft Azure, "Microsoft Azure Machine Learning Studio," (Accessed on 12-04-2021), 2021. [Online]. Available: https://azure.microsoft.com/en-us/services/machine-learning/.

[28]. Sammut and G. I. Webb, "Encyclopedia of machine learning," *Springer Science & Business Media*, Springer, New York, 2011, 978-0-387-30768-8.