

WHY THEY CAN SELL? AN ANALYSIS OF SPECIFIC PRODUCT TYPE SALES ACQUIREMENT IN INDONESIA MARKETPLACE PLATFORM USING BINARY LOGISTIC REGRESSION

Alfian Budi Primanto

M. Ridwan Basalamah

Fahrurrozi Rahman

Faculty of Economy, University of Islam Malang

ABSTRACT

There is no doubt that Indonesia presents much opportunity for e-commerce growth among other emerging Asian economies. Although many people have tried to do so, the reality tells different story. Almost 80% of online business ended in failure. This research aims to answer this practical gap by investigating what is the success factor of smartphone campaign in the Indonesia largest marketplace, Tokopedia, by using three predictors which is price, the number of store page views, and seller reputation (badges point). The researcher use pre-existing quantitative (secondary) data, simple random sampling, binary logistic regression modeling for the purposes of investigating research questions. The result shows that price and the number of store page views has significant impact toward sales acquirement. While unexpectedly seller reputation (badges point) has not significant impact toward sales acquirement.

Keywords : Marketplace, Consumer to Consumer, Reputation, Price, Sales, Views, Binary Logistic Regression

INTRODUCTION

The growth of internet retailing market in Indonesia is considered to be one of the largest in Asia. Indonesian consumers are becoming increasingly familiar with the usage of e-commerce. According to Google and Temasek research (Freischland, 2016), the number of Indonesia online shopper reached to 18 million in 2015. E-Commerce owned the highest growth rate of e-economy sectors in Indonesia annually by 39% annual growth rate.

Wang et al (2005) said that convenient of internet retailer is the important factors for people to shop online. Consumers not only look for products but also services experience that manipulated by retailer like 24 hours/7 day customer service, free shipping, guarantee, refund policy, etc. The detailed information, product and services availability, and cost/time efficiency is another factor that affect online shopping decision (Lim and Dubinsky, 2004; Prasyad and Aryasri, 2009).

Despite the fact that the promising of Indonesia ecommerce market, there are a lot of online business that ended in failure. Study from Harvard Business School stated that three out of every four startup failed (Cawley, 2016). Cabral and Hotacsu (2010) said that sellers with initial negative rating will decreases their reputation and sales. Thus, their effort levels decreases and the rate of concomitant negative feedback increasing.

While previous research has been focused on how consumer psychology effect on their online behavior. This study aimed to explain why some seller failed and others succeed by investigating the effect of store page views, seller reputation, and price on sales acquirement. The researcher chooses Samsung Galaxy J1 Mini as the object of this research due to the reason that J1 Mini ranked as the Indonesia most-popular smartphones in 2016. There is limited research that focusing on Indonesia ecommerce sector and uses their internal web metrics to determine their effectiveness. This research will cover this gap.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Store Page Views

Beri and Parminder (2013) defined page views by the number of times a page was viewed by visitor. Omidvar, Mirabi, Shokry (2011) added that the direct visitor had higher impact in making the number of page views increase while returning visitors had more impact in page views than new visitors. Previous research found that the number of repeat visits doesn't guarantee increased sales (Sismeiro and Bucklin, 2004; King, 2009) therefore the first hypthoses proposed in this research is

H_1 : Store page views has a negative effect on sales acquirement

Seller Reputation

Buyers often chooses sellers regarding their reputation. Therefore a reputable brand is an important assets which benefits loyalty and future sales. Reputation defined by Herbig and Milewics (1995) as the estimation of consistency over time of an attribute of an entity. While Berens and Van Riel (2004) defined reputation as personality traits that people attribute to companies/brand. It also can be summarized that seller reputation is seller personality traits that people consistently attribute. McDonald and Slawson (2002), Melnik and Alm (2002), Dewan and Hsu (2004), Houser and Wooders (2006), Ye et al (2009), Cabral and Hortacsu (2010), Pan et al (2013), Ye, Xu et al (2013) indicated that there is a positive, statistically significant relationship between seller reputation and sales.

H_2 : Seller reputation has a positive effect on sales acquirement

Price

Price is the amount of money charged for specific products or service (Kotler, 2009). Baubonienie and Guleviciute (2015) also added that the most beneficial factor of online shopping is consumers can buy at lower price. Previous research found that consumers always use the internet as the best resource for price comparison and in searching the lowest price offering (Morton, Zettelmeyer, and Silva-Risso, 2001; Friberg, Ganslandt, Sandstrom, 2001; Zettelmeyer, Morton, and Silva-Risso; 2005). al-Salamin and al-Hasan (2016) added that there is positive relationship between discount pricing and sales. Therefore, the researcher argued that the lower the price of goods, the higher the quantity of demand (sales).

H₃ : Price has a negative effect on sales acquirement

RESEARCH METHODOLOGY

Research Design

This research can be classified as conclusive-causal research due to reason that the aim of this research is to investigate the effect of store page views, seller reputation and price toward sales acquirement. Researcher uses pre-existing quantitative (secondary) data, simple random sampling, and binary logistic regression modeling for the purposes of investigating research questions. The researcher chooses Samsung Galaxy J1 Mini (known as J1 Mini) and Tokopedia as the object of this research due to the reason that J1 Mini ranked as the Indonesia best selling smartphones of 2016 by Counterpoint Research (Rifai, 2016) and the truth that in 2016 Tokopedia was awarded as the best Indonesia E-Commerce Award (Marketplace). The researcher use Hosmer Lemeshow (1989) guidelines in Andrew, Pedersen, McEvoy (2011) that stated the minimum number of cases required for logistic regression modeling is minimum of 10 cases per independent variable. Totally, 174 selected data to be processed for analytics requirement.

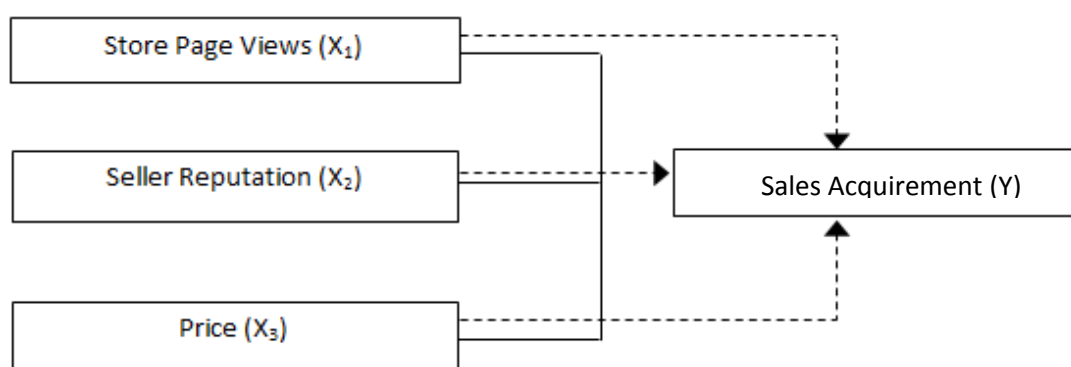
Research Variables and Framework

This research consists of three independent variables (store page views, seller reputation and price) and one variable dependent (sales acquirement).

Table XX. List of Variables Used

Variable	Variable Type	Variable Category
Sales Acquirement	Dependent	Binary – Nominal
Store Page Views	Independent	Scale
Price	Independent	Scale
Seller Reputation	Independent	Scale

The research framework that was proposed by the researcher to answer research questions can be briefly described in Figure 1.

Figure 1. Research Framework

RESEARCH RESULTS

Table XX. Profile Description

Seller Type	Population	%	Average Price	Sales (Unit)	Sales Revenue
Seller That Sells	91	29%	1089.167	1265	1377796.255
Seller With Null Sales Ach	218	71%			
Total Seller	309	100%			

The following table shows that from 309 seller of Samsung Galaxy J1 Mini in Tokopedia only 29% or 91 seller who can make a sales while the rest of them (or 218 sellers) were ended with a null sales acquirement. Moreover, the researcher also added that there are 3 sellers controlling more than a half of Samsung Galaxy J1 Mini market share in Tokopedia. Total sales revenue of Samsung Galaxy J1 Mini in Tokopedia itself estimated to reach Rp. 1.377.795.833,-.

Table XX. Hosmer and Lemeshow Test

Step	Chi-square	Df	Sig.
1	11.559	8	.172

By using binary logistic regression model, the researcher need to know whether the model fit the data. The Hosmer-Lemeshow (HL) Goodness-of-Fit (GOF) tests help to decide whether the model is correctly specified. McAlexander, Koenig, and DuFault (2014) said that this test compares the actual and predicted values of the dependent variable. Ghazali (2009) and Allison (2012) added that if the HL test produce *p-value* < 0.05 then model should be rejected. If its high (*p value* > 0.05) then the model past the test. According to table xx, it seems that the Hosmer and Lemeshow Goodness-of-Fit score is 11.559 with 0.172 probability score (*p value* > 0.05) therefore we conclude that the model accepted.

Table XX. Logistic Regression R Square

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	145.219 ^a	.423	.564

The second method in measuring goodness of fit in logistic regression is The Cox and Snell R-Square as well as Nagelkerke R-Squared, which represents the proportion of variance explained by the model. Based on table xx, The Cox and Snell R-Square and Nagelkerke R-Squared score is 0.423 and 0.564 which means that more than 50% (56.4%) the amount of variations explained by the proposed model. In other words, these values were high signifying a good fit for the model (Hosmer and Lemeshow, 2000).

Table XX. Binary Logistic Regression Equation

		B	S.E.	Wald	Df	Sig.	Exp(B)
Step 1 ^a	SP Views	6.551	1.677	15.255	1	.000	699.772
	Seller Reputation	.000	.000	.466	1	.495	1.000
	Price	-.011	.003	10.719	1	.001	.989
	Price by Seller Reputation by SP Views	.000	.000	.653	1	.419	1.000
	Constant	10.658	3.622	8.661	1	.003	42548.554

a. Variable(s) entered on step 1: SP Views, Seller Reputation, Price, Price by Seller Reputation by SP Viewer .

Based on table XX, the fitted proposed model is

$$\ln \left[\frac{\pi(x)}{1-\pi(x)} \right] = 10.658 + 6.551 \text{ SP Viewer} + 0.000 \text{ Seller Reputation} - 0.011 \text{ Price} + 0.000 (\text{Price} * \text{Seller Reputation} * \text{SP Views})$$

Or it also means

$$\ln \left[\frac{\pi(x)}{1-\pi(x)} \right] = 10.658 + 6.551 \text{ SP Views} - 0.011 \text{ Price}$$

The Wald statistics and the significance level shows that 2 out of the independent variables namely store page (SP) views and price because they had p-value less than 0.05. Seller reputation and an interaction between price, seller reputation, and SP views variables doesn't include in the model equation because they had p-value more than 0.005.

Table XX. Binary Logistic Regression Classification Table

Step	Observed		Predicted		
			Seller		Percentage Correct
			Null Sales	Achieve Sales	
1	Seller	Achieve Sales	73	10	88.0
		Null Sales	18	73	80.2
	Overall Percentage				83.9

a. The cut value is .500

A classification table shows how well the model predicts cases to the dependent variable. The proportion of the correctly classified seller that make a sales (achieve sales) was 88% and the proportion of the correctly classified seller that make null sales was 80.2%. The overall predicted model correct classification was 83.9%.

RESEARCH DISCUSSION, CONCLUSIONS, RECOMMENDATIONS, AND LIMITATION

Unlike Sismeiro and Bucklin (2004) and King (2009) who said that the number of repeat visits per se doesn't guarantee increased conversion rates instead increasing their customer acquisition cost, this research concludes the opposites. The researcher found that there is a positive and significant relationship between store page (SP) views and sales achievement. The more the number of store page viewers the more the number of sales achievement can make. This research supports Perdikaki, Kesavan, and Swaminathan (2012) conclusion that stated increase in traffic would lead to an increase in sales, as higher traffic provides more opportunities for sales. Moe and Fader (2000) also added that targeting the high purchasing probability customers impact on the higher conversion rates returns than targeting those who

identified as regular purchasing probability customers. Therefore, online retailer/seller should focus on conversions first, try to get more unique visitors that highly associated with our site.

This research also concludes that there is a negative and significant relationship between price and sales achievement. It extends the previous research about the impact of price on sales in online retailers like Morton, Zettelmeyer, and Silva-Risso (2001), Friberg, Ganslandt, Sandstrom (2001), Zettelmeyer, Morton, and Silva-Risso (2005) who stated that consumers always use the Internet to get the best price (lower prices) offering. Gaur and Fisher (2003) also added that if consumers had complete information about the quality of product, then setting the high price just makes the demand downward sloping. al-Salamin and al-Hasan (2016) conclude that there is a positive relationship between promotional price on consumer buying behavior. Consumers will naturally avoid buying a product at a higher price when all other factors that affected in consumer buying decision (like quality, guarantee, after sales services, etc) remain equal (The Law of Demand).

Another result from this research shows that there is no relationship between seller reputation and sales achievement contradictory with previous research that stated seller reputation has a positive and significant relationship toward consumers purchase decision (Melnik and Alm, 2002; Ye et al, 2009, Cabral and Hortacsu, 2010; Pate, 2011; Pan et al; 2013). The nature of consumers from this industry that typically using store page listing/rank (the higher ranking the webstore on search page result the more visitors it will receive) as their reference made seller reputation unrecognized. As it does in Google search engine, potential consumers/visitor perceived that the most relevant and recommended seller will be displayed in first page of search result systematically. Steiner (2003) added that only 16% of users would be less likely buying from low-feedback sellers. Moreover, the good reputation of Tokopedia (marketplace vendor that provide interface between buyer and seller) itself is enough to make consumer believes in making purchase decision. Consumers perceived risk will be lower when the marketplace vendor is more well-known (Dawar and Paker, 1994; Purohit and Srivastava, 2001; Biswas and Biswas, 2004; Chu and Li, 2008). Therefore, researcher suggest to use variable seller reputation in modeling ranking page for each seller. The highest seller reputation should be placed in the first page.

The finding of this research are limited in several ways. This research examined only the effect of store page views, seller reputation and price toward sales achievement. Future research should also investigate the effect of web engagement, customer service metrics (talk response time and rate), marketplace vendor image, product image on sales achievement. The use of Samsung Galaxy J1 Mini as the object of our research may reduces the ability to

generalize findings to broader population. Therefore, future research should be done by including diverse product categories.

REFERENCE

- Allison, Paul D. 2012. *Logistic Regression Using SAS: Theory and Application 2nd Edition*, Cary, North Carolina: SAS Institute.
- Al-Salamin, Hussain and Al-Hasan, Eman. 2016. "The Impact of Pricing on Consumer Buying Behavior in Saudi Arabia: Al-Hassa Case Study," *European Journal Business and Management*, Vol. 8, No.12.
- Andrew, Damon P. S., Pedersen, Paul M., McEvoy, Chad D. 2011. *Research Methods and Design in Sport Management*. Champaign: Human Kinetics.
- Baubonienie, Zivile and Guleviciute, Gintare. 2015. "E-Commerce Factors Influencing Consumers Online Shopping Decision," *Social Technologies*, Vol. 5. Issue. 1
- Berens, G. and Van Riel, C. B. M. 2004. "Corporate Associations in the Academic Literature: Three Main Streams of Thought in the Reputation Management," *Corporate Reputation Review*, 7 (2): 161
- Beri, Bhavna and Parminder, Singh. 2013. "Web Analytics: Increasing Website's Usability and Conversion Rate," *International Journal of Computer Applications*, 72 (6): 35-38.
- Biswas, Dipayan and Biswas, Abhijit. 2004. "The Diagnostic Role of Signals in The Context of Perceived Risks In Online Shopping: Do Signals Matter More On The Web," *Journal of Interactive Marketing*, Vol. 18, Issue 3, pp. 30-45.
- Cabral, Luis and Hotacsu, Ali. 2004. "The Dynamics Of Seller Reputation: Evidence From Ebay," *The Journal of Industrial Economics*, Vol. 58, Issue 1, pp. 54-78.
- Cawley, Conor. 2016. *The 8 Out Of 10 Startups Fail, Statistic Is A Myth*, TechCo, Accessed on July 1, 2017, Available at <https://tech.co/startup-failure-statistic-myth-2016-04>.
- Chu, Kuo-Kang and Li, Chi-Hua. 2008. "A Study of The Effect of Risk-Reduction Strategies on Purchase Intentions in Online Shopping," *International Journal of Electronic Business Management*, Vol. 6, No. 4, pp. 213-226.
- Dawar, N. and Paker, P. 1994. "Marketing Universals: Consumer's Use of Brand Name, Price, Physical Appearance, and Retailer Reputation as Signals of Product Quality," *Journal of Marketing*, Vol. 58, pp. 81-95.
- Dewan and Hsu (2004), "Adverse Selection In Electronic Markets: Evidence From Online Stamp Auctions," *The Journal of Industrial Economics*, Vol. 52, Issue 4, pp. 497-516.

- Freischland, Nadine. 2016. *Google: Indonesia Will Dominate Southeast Asian Ecommerce*, Tech In Asia, Accessed on July 1, 2017, Available at <https://www.techinasia.com/google-temasek-ecommerce-data-indonesia>.
- Friberg, Richard, Ganslandt, Mattias, and Sandstrom, Mikael. 2001. "Pricing Strategies in E-Commerce: Bricks vs Clicks," *The Research Institute of Industrial Economics*, Working Paper No. 559, available at <http://hdl.handle.net/10419/94969>
- Gaur, Vishal and Fisher, Marshall L. 2003. "In-Store Experiment to Determine The Impact of Price on Sales," *Production and Operations Management*, Vol 14, Issue 4, pp. 377-387.
- Ghozali, Imam. 2009. *Aplikasi Analisis Multivariate dengan Program SPSS*. Semarang: Badan Penerbitan Universitas Diponegoro.
- Herbig, Paul and Milewicz, John. 1995. "The Relationship of Reputation and Credibility to Brand Success," *Journal of Consumer Marketing*, Vol. 12, No. 4, pp. 5-10.
- Hosmer, David W. and Lemeshow, Stanley. 2000. *Applied Logistic Regression 2nd Edition*. New York: John Wiley & Sons, Inc.
- Houser, Daniel and Wooders, John. 2006. "Reputation In Auctions: Theory and Evidence From eBay," *Journal of Economics & Management Strategy*, Vol. 15, Issue 2, pp. 353-369.
- King, Andrew B. 2009. *Website Optimization: Speed, Search Engine & Conversion Rate Secrets*, Boston : O'Reilly Media.
- Kotler, Philip, Keller, Kevin Lane, Brady, Mairead, Goodman, Malcolm, Hansen, Torben. 2009. *Marketing Management*. New York: Prentice Hall.
- Lim, H and Dubinsky, A.J. 2004. "Effect of Store Design on Consumer Purchases: An Empirical Study of Online Bookstores," *Information & Management*, Vol. 39, No. 6, pp. 431-444.
- McAlexander, J., Koenig, H., and DuFault, B. 2014. "Advancement in Higher Education: The Role of Marketing in Building Philanthropic Giving Communities," *Journal of Marketing for Higher Education Routledge*, Vol. 4, Issue. 2, pp. 243-257.
- McDonald, Cynthia G. and Slawson Jr., V. Carlos. 2002. "Reputation in an Internet Auction Market," *Economic Inquiry*, Vol 40, Issue 4, pp. 633-650.
- Melnik, Mikhail I. and Alm, James. 2002. "Does a Seller's Ecommerce Reputation Matter? Evidence from eBay Auctions," *The Journal of Industrial Economics*, Vol. 50, No. 3, pp. 337-349.

- Moe, Wendy and Fader, Peter. 2000. "Which Visits Lead to Purchases? Dynamic Conversion Behavior at E-Commerce Sites," Available at https://www.researchgate.net/profile/Peter_Fader/publication/2393227_Which_Visits_Lead_to_Purchases_Dynamic_Conversion_Behavior_at_e-Commerce_Sites/links/02e7e5227aa8cb6b53000000.pdf
- Morton, Fiona Scott, Zettelmeyer, Florian, and Silva-Risso, Jorge. 2001. "Internet Car Retailing", *Journal of Industrial Economics*, Vol. 49, Issue 4, pp. 501-519.
- Omidvar, Mirabi, Shokry (2011)
- Pan, Ming-Chuan, Kuo, Chin-Ying, Pan, Ching-Ti, Tu, Wei. 2013. "Antecedent of Purchase Intention: Online Seller Reputation, Product Category, and Surcharge," *Internet Research*, Vol. 23, Issue: 4, pp. 507-522.
- Perdikaki, Olga, Kesavan, Saravanan, and Swaminathan, Jayashankar M. 2012. "Effect of Traffic on Sales and Conversion Rates of Retail Stores," *Journal Manufacturing & Service Operations Management*, Vol, 14, Issue 1, pp. 145-162.
- Prasyad, C. and Aryasri, A. 2009. "Determinats of Shopper Behavior in E-Tailing: An Empirical Analysis," *Paradigm*, Vol. 13, No. 1, pp. 73-83.
- Purohit, Devavrat and Srivastava, Joydeep. 2001. "Effect of Manufacturer Reputation, Retailer Reputation, and Product Warranty on Consumer Judgments of Product Quality: A Cue Diagnosticity Framework," *Journal of Consumer Psychology*, Vol 10, Issue 3, pp. 123-134
- Rifai, Muhaymin. 2016. 10 Smartphone Terlaris di Indonesia 2016, Accessed on July 1, 2017 from <https://jalantikus.com/tips/smartphone-terlaris-di-indonesia-2016/>.
- Sismeiro, Catarina and Bucklin, Randolph E. 2004. "Modeling Purchase Behavior at an Ecommerce Web Site: A Task-Completion Approach," *Journal of Marketing Research*, Vol. 41, Issue 3.
- Steiner, Ina. 2003. "eBay Tightens Feedback Loopholes," *AuctionBytes*, Accessed on July 1, 2017, Available at <http://www.auctionbytes.com/cab/abn/y03/m09/il7/s01>.
- Wang, C.L., Ye, L.R., Zhang, Y. and Nguyen, D.D. 2005. "Subscription to Fee-Based Online Services: What Makes Consumer Pay For Online Content?," *Journal of Electronic Commerce Research*, Vol. 6, No. 4, pp. 301-311.
- Ye, Qiang, Li, Yijun, Kiang, Melody, Wu, Weifang. 2009. "The Impact of Seller Reputation on The Performance of Online Sales: Evidence From TaoBao Buy-It-Now (BIN) Data," *ACM SIGMIS Database: The Database for Advances in Information System*, Vol. 40, Issue 1, pp. 12-19.

Ye, Qiang, Xu, Min, Kiang, Melody, Wu, Weifang, Sun, Fangfang. 2013. "In-Depth Analysis of The Seller Reputation and Price Premium Relationship: A Comparison Between eBay US and TaoBao China," *Journal of Electronic Commerce Research*, Vol. 14, No. 1.

Zettelmeyer, Florian, Morton, Fiona Scott and Silva-Risso, Jorge. 2005."Cow-boys or Cowards: Why Are Internet Car Prices Lower?", *Discussion Paper*, Haas School of Business, University of California, Berkeley.