

Computational Architecture of Digital Marketing of Toyota Corporation

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Abstract: Toyota uses social media marketing strategies Instagram to promote its products and include important information about the automotive industry to influence social media marketing, e-wom, brand image, brand trust, and purchase intention. The research aims to determine the influence of Toyota's social media marketing, brand image, brand trust, and purchase intention. The sample taken in this research was 385 respondents using quantitative methods and data analysis techniques using SmartPLS. Based on the results of the analysis it was found that Social Media Marketing has a significant and positive effect on Purchase Intention, Social Media Marketing has a significant and positive effect on Brand Trust, Social Media Marketing has a significant and positive effect on the Brand Image, Brand Trust has a significant and positive effect on Purchase Intention, Brand Image has a significant and positive effect on Purchase Intention, E-Wom moderate Social Media Marketing has a significant and positive effect on Purchase Intention at Toyota.

Keywords: Artificial Intelligence; Digital Bureaucracy; Integrated

Introduction

In this modern era, transportation is a very important activity (Cullen et al., 2021). Transportation is a useful tool for moving goods or people in a certain quantity, to a certain place, within a certain period (Bekrar et al., 2021; Diao et al., 2021; Vural et al., 2020). When compared to sea and air transportation, land transportation has the highest routine of the three. As the function of cars as a means of transportation develops (Rajper & Albrecht, 2020), consumer demand for cars will increase. Because of this, the development of the automotive world in Indonesia is currently increasing very rapidly, especially in the car industry. One of the things that has triggered the increase in the number of car industries is the increase in the population in Indonesia. Based on data from GAIKINDO (*Gabungan Industri Kendaraan Bermotor Indonesia*) in 2023 Toyota was still ranked first in car sales in Indonesia (Juliano, 2023; Sugandi et al., 2023). Toyota cars dominate the market share in Indonesia and sales of Toyota brand cars

are in first position compared to other car brands. This shows that people trust Toyota products because they have good product quality and reliable car performance (Gaikindo, 2023).

In this modern century, the development of science and technology is more advanced (Stone, Kosack, et al., 2020). This contributed to the rapid development business world and increasing competition in the market, which requires a system of better marketing for every company engaged in goods and services. Marketing is a way for companies to achieve their goals has been established (De Bruyn et al., 2020; Eriksson et al., 2020; Rosário, 2021; Yau et al., 2021). To achieve these goals, every business must make efforts to produce and deliver goods or services according to the wishes of consumers through convenient personal service and support opportunities. One of the most effective and efficient ways to market products or services is through word of mouth via online media. eWOM has become an important part of people's purchasing decisions (Chong & Ali, 2022).

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During the increasingly tight competition in the automotive industry, Toyota has succeeded in becoming one of the most confiscated car brands in consumer attention by entering the largest automakers by market capitalization. In its marketing strategy, Toyota uses social media especially Instagram as a tool to promote its products and includes important information about the product. The Toyota Instagram account is very active in promoting the Toyota automotive industry. Besides providing information about the automotive industry, Toyota also often shares useful information about the automotive industry. The amount of information consumers receive about car brands Toyota on Instagram influences consumer purchasing intentions (Instagram, 2023).

According to Sholihin & Ratmono (2021), purchase intention is a situation where consumers have the intention to purchase a product or service that has the highest level of expectations. Based on this explanation, it can be said that consumers have the intention to make purchases of Toyota products with a high level of expectation. As recommendations and online reviews or e-WOM have a high influence on consumers, the writer is interested in researching and understanding the influence of e-WOM, brand image, and trust towards the purchase intention of the Toyota brand. the writer is taking the case because they accomplished trends and popularity compared to similar competitors.

The utilization of information technology aims to provide better public services, improve the relationship between government and business and industry, empower the public through access to information, and improve the efficiency of government management. Other benefits of the utilization of information technology by government institutions include reducing corruption, increasing transparency, increasing convenience, increasing revenue, and or reducing costs. Furthermore, this study will discuss how to apply AI technology in bureaucracy, with a theoretical approach. The study is also directed at how the implementation runs carefully so that the benefits are optimal.

Method

Research methodology using Partial Least Squares (PLS) is a statistical method used to analyze the relationship between variables, with a focus on predicting the dependent variable. It is commonly used in structural equation modeling (SEIM), which is a statistical technique used to analyze complex relationships between variables. SMARTPS is one of the software that can be used to perform PLS analysis. According to Henseller et al. (2009) explained that PLS is a method for estimating the relationship between

variables by maximizing the variances explained by the dependent variable. PLS can handle large data sets and is especially useful when dealing with complex models. Meanwhile (Hair, 2017) explained that PLS is a multivariate analysis method that can be used for both exploratory and predictive purposes. PLS is especially useful when there are many variables and the simple size is small, or when the relationships between variables are complex and nonlinear. SEM is a multivariate analysis technique developed to cover the limitations of previous analytical models that have been used extensively in statistical research. The models in question include regression analysis, path analysis, and confirmatory factor analysis (Hox & Belchgelr, 1998)

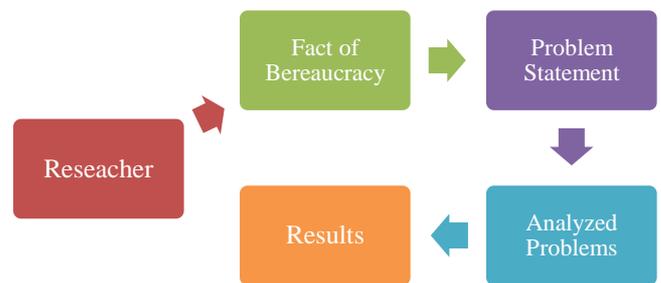


Figure 1. Research Flow Logic

Applies artificial intelligence technology to supervision methods and means, and improves the degree of supervision automation and intelligence (Tong, 2020). In this section of the article, we review some of the research in areas that are closely related to the topic of this article and need to be tied in more closely (Stone, Aravopoulou, et al., 2020).

Result and Discussion

The effect of social media marketing on brand image, The results of this research show that the T statistic value for the Social Media marketing variable has a positive and significant influence on Purchase Intention because the T-statistics value of 14,554 exceeds the criteria value, namely 1.65, and the P value is 0.000, which is less than the criterion value, namely 0.05, so It can be concluded that the Social Media Marketing variable have a positive and significant effect on Purchase Intention. These results are in line with research according to Kelly et al. (2010) which found that social media marketing, makes it easier for business people to interact with their customers online. The costs incurred are not too large and there is no time limit if you are connected to the internet. Social media plays a role in company marketing activities, forming individual relationships with customers and giving companies the opportunity to access customers.

The effect of social media marketing on brand image, the results of this research show that the T statistic value for the Social Media Marketing variable has a positive and significant influence on Brand Image because the T-statistics value of 33,434 exceeds the criterion value, namely 1.65, and the P value is 0.000, which is less than the criterion value, namely 0.05, so it can be concluded that the Social Media Marketing variable has a positive and significant effect on Brand Image. These results are in line with research according to Oktriyanto et al. (2021) found that produced the following indicators consisting of entertainment, interaction, trends, customization, and advertising.

The effect of social media marketing on brand trust, The results of this research show that the T statistic value for the Social Media Marketing variable has a positive and significant influence on Brand Trust because the T-statistics value of 22,188 exceeds the criterion value, namely 1.65, and the P value is 0.000, which is less than the criterion value, namely 0.05, so it can be concluded that the Social Media Marketing variable has a positive and significant effect on brand trust. These results are in line with research according to Santoso et al. (2017) which found that social media marketing is a form of marketing that is used to create awareness, recognition, memory and even action towards a brand, product, business, individual or group either directly or indirectly using tools from the social web such as blogging, microblogs, and social networks.

The effect of brand image on purchase intention, The results of this research show that the T statistic value for the Brand Image variable has a positive and significant influence on Purchase Intention because the T-statistics value of 4.222 exceeds the criterion value of 1.65 and the P value of 0.000, which is less than the criterion value of 0.05, so it can be concluded that the Brand Image variable had a positive and significant effect on Purchase Intention. These results are in line with research according to Alelksandar & Milovanov (2017) which found that Brand Image is a brand that has special fusion of practical and emotional traits that consumers perceive as added value, a singular experience, and a promise kept. It can represent interests outside the scope of the brand itself and has a symbolic value distinct from everything else that is available. It is the most important strategic resource and most valuable inestimable asset for the organization.

The effect of brand trust on purchase intention, the results of this research show that the T statistical value of the Brand Trust variable has a positive and significant influence on Purchase Intention because the T-statistics value of 6.283 exceeds the criterion value of 1.65 and the P value of 0.000, which is less than the criterion value of 0.05, so it can be concluded that the Brand Trust variable had a positive and significant effect on Purchase

Intention. These results are in line with research, and it was found that Trust is considered a fundamental social force Lewis & Weligerlt (1985) that promotes cooperative behavior, facilitate the development of adaptive organizational structures within network relations (Milels & Snow, 1992), reduces transaction costs (Melyelrson et al., 1996), enhances strategic partnerships (Shapiro et al., 1992), and provides a crucial mechanism for control (Nootelboom et al., 1997).

The effect of e-wom moderate social media marketing and purchase intention. The results of this research show that the T statistic value on the Social Media Marketing Moderation e-WOM variable has a positive and significant influence on Purchase Intention because the T-statistics value of 2.682 exceeds the criterion value of 1.65 and the P value of 0.008, which is less than the value. The criterion is 0.05 so it can be concluded that the E-Wom variable Social Media Marketing moderation has a positive and significant effect on Purchase Intention. These results are in line with research according to Chu & Kim (2018) which found that Consumer information sharing and exchange about a brand or organization over the Internet, social media, and mobile communication is known as e-WOM. When people talk about a brand online, it's easy for others to join in and keep the conversation going. This can cause more people to share the information.

Conclusion

The Social Media marketing has a significant and positive effect on purchase intelligence at Toyota, which shows that the higher the Social media marketing, the Purchase Intention at Toyota will increase. Conversely, if Social Media Marketing decreases, the Purchase Intention at Toyota will also decrease. The Social Media Marketing has a significant and positive effect on Brand Trust in Toyota, which shows that the higher the Social Media Marketing, the Brand Trust in Toyota will increase. Social Media marketing has a significant and positive effect on the Brand image of Toyota, which shows that the higher the Social media marketing, The Brand image has a significant and positive effect on purchase intelligence at Toyota, which shows that the higher the Brand image, the Purchase Intention at Toyota will increase, conversely if the Brand image decreases, Purchase Intention at Toyota will also decrease. 6. Based on the test results, it shows that E-Wom moderate Social Media Marketing has a significant and positive effect on Purchase Intention at Toyota, which shows that the higher E-Wom moderate Social Media marketing will increase Purchase Intention at Toyota, conversely if E-Wom moderate Social Media

Marketing decreases, so Purchase Intention at Toyota will also decrease.

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Conflicts of Interest

There is no interest conflict in this research.

References

- Aleksandar, G., & Milovanov, O. (2017). Brand Strategies in the Era of Sustainability. *Interdisciplinary Description of Complex Systems*, 15(1), 78–88. <https://doi.org/10.7906/indelcs.15.1.6>
- Bekrar, A., Ait El Cadi, A., Todosijeovic, R., & Sarkis, J. (2021). Digitalizing the closing-of-the-loop for supply chains: A transportation and blockchain perspective. *Sustainability*, 13(5), 2895. <https://doi.org/10.3390/su13052895>
- Chong, D., & Ali, H. (2022). Literature Review: Competitive Strategy, Competitive Advantages, and Marketing Performance on E-Commerce Shopee Indonesia. *Dinasti International Journal of Digital Business Management*, 3(2), 299–309. <https://doi.org/10.31933/dijdbm.v3i2.1198>
- Chu, S. C., & Kim, J. (2018). Keadaan pengetahuan terkini tentang promosi mulut ke mulut elektronik dalam penelitian perikanan. *Jurnal Peliklanan Internasional*, 37(1), 1–13. <https://doi.org/10.1080/02650487.2017.1407061>
- Cullen, D. A., Neyerlin, K. C., Ahluwalia, R. K., Mukundan, R., More, K. L., Borup, R. L., Weber, A. Z., Myers, D. J., & Kusoglu, A. (2021). New roads and challenges for fuel cells in heavy-duty transportation. *Nature Energy*, 6(5), 462–474. Retrieved from <https://www.nature.com/articles/s41560-021-00775-z>
- De Bruyn, A., Viswanathan, V., Beh, Y. S., Brock, J. K.-U., & Von Wangenheim, F. (2020). Artificial intelligence and marketing: Pitfalls and opportunities. *Journal of Interactive Marketing*, 51(1), 91–105. <https://doi.org/10.1016/j.intmar.2020.04.007>
- Diao, M., Kong, H., & Zhao, J. (2021). Impacts of transportation network companies on urban mobility. *Nature Sustainability*, 4(6), 494–500. Retrieved from <https://www.nature.com/articles/s41893-020-00678-z>
- Eriksson, T., Bigi, A., & Bonera, M. (2020). Think with me, or think for me? On the future role of artificial intelligence in marketing strategy formulation. *The TQM Journal*, 32(4), 795–814. <https://doi.org/10.1108/TQM-12-2019-0303>
- Gaikindo. (2023). *Indonesian Automobile Industry Data*. Retrieved from <https://shorturl.asia/LEPr6>
- Hair, J. (2017). *Advanced issues in partial least squares structural equation modelling*. SaGe publications.
- Henseller, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modelling in international marketing. In *Netw challeInngels to intelrnational marketling*. Elmelrald Group Publishing Limited.
- Hox, J. J., & Belchger, T. M. (1998). *An Introduction to Structural Equation Modelling*. Family Science.
- Instagram, T. (2023). *Toyota.id reltrielveld* from. Retrieved from <https://www.instagram.com/toyotaid/>
- Juliano, A. D. E. (2023). *Design Strategy To Improve Automobile Industry Transition To The Era Of Electric Vehicle Based On Quantitative Study: A Structural Equation Modelling*. Retrieved from <https://dspace.uui.ac.id/handle/123456789/44956>
- Kelly, L., Kelrr, G., & Drelnnan, J. (2010). Avoidance of Advelrtising in Social Networking Sitels. *Journal of Intelractivel Advelrtising*, 10(2), 16–27. <https://doi.org/10.1080/15252019.2010.10722167>
- Lewis, J. D., & Weligerlt, A. (1985). Trust as a social reality. *Social Forcelts*, 63(4), 967–985. <https://doi.org/10.2307/2578601>
- Melyelrson, D., Welick, Ke., & Kramelr, R. M. (1996). Swift Trust and Temporary Groups. In R. M. Kramelr, T. R. Tylelr, & Elds (Eds.), *Trust in Organizations: Frontielrs of Thelory and Relselarch* (pp. 166–195). <https://doi.org/10.4135/9781452243610.n9>
- Milels, R. E., & Snow, C. C. (1992). Causes of Failure in Network Organizations. *Californi Managemelnt Relvielw*, 34(4), 53–72. <https://doi.org/10.2307/41166703>
- Nootelboom, B., Belgelr, H., & Noordelrhaveln, N. G. (1997). Effects of Trust and Governance on Relational Risk. *Thel Academy of Management Journal*, 40(2), 308–338. <https://doi.org/10.2307/256885>
- Oktriyanto, B., Listya Budiarto, G., Oktavianus Siahaan, S., & Sanny, L. (2021). Effects of Social Media Marketing Activities toward Purchase Intention Healthy Food in Indonesia. *Turkish Journal of*

- Computelr and Mathelmetics Elducation*, 12(10), 6815–6822.
<https://doi.org/10.17762/turcomat.v12i10.5548>
- Rajper, S. Z., & Albrecht, J. (2020). Prospects of electric vehicles in the developing countries: a literature review. *Sustainability*, 12(5), 1906.
<https://doi.org/10.3390/su12051906>
- Rosário, A. (2021). The Background of artificial intelligence applied to marketing. *Academy of Strategic Management Journal*, 20, 1–19. Retrieved from <https://shorturl.asia/DbAce>
- Santoso, A. P., Baihaqi, I., & Persada, S. F. (2017). *Pengaruh konten post instagram terhadap online engagement: Studi kasus pada lima merek pakaian wanita*. Retrieved from <https://www.neliti.com/publications/193101/pe-ngaruh-konten-post-instagram-terhadap-online-engagement-studi-kasus-pada-lima>
- Shapiro, D. L., Shelppard, B. H., & Chelraskin, L. (1992). Business on a Handshake. *Nelgotiation Journal*, 8, 365–377. <https://doi.org/10.1111/j.1571-9979.1992.tb00679.x>
- Sholihin, M., & Ratmono, D. (2021). *Analisis SEM-PLS dengan WarpPLS 7.0 untuk hubungan nonlinier dalam penelitian sosial dan bisnis*. Yogyakarta: Andi Offset.
- Stone, M., Aravopoulou, E., Ekinci, Y., Evans, G., Hobbs, M., Labib, A., Laughlin, P., Machtynger, J., & Machtynger, L. (2020). Artificial intelligence (AI) in strategic marketing decision-making: a research agenda. *The Bottom Line*, 33(2), 183–200.
<https://doi.org/10.1108/BL-03-2020-0022>
- Stone, M., Kosack, E., & Aravopoulou, E. (2020). Relevance of academic research in information technology and information management. *The Bottom Line*, 33(3), 273–295.
<https://doi.org/10.1108/BL-05-2020-0034>
- Sugandi, A. M. D. S., Kencanawati, A. A. A. M., & Sanjaya, I. (2023). *Peranan dan Strategi Public Relations Dalam Memperkuat Brand Image Pada PT. Agung Toyota Cabang Kuta [Politeknik Negeri Bali]*. Retrieved from <https://repository.pnb.ac.id/9529/>
- Tong, S. (2020). *Artificial intelligence (AI) applications in automating customer services and employee supervision*. Temple University. Retrieved from <https://shorturl.asia/YbQ5q>
- Vural, C. A., Roso, V., Halldórsson, Á., Ståhle, G., & Yaruta, M. (2020). Can digitalization mitigate barriers to intermodal transport? An exploratory study. *Research in Transportation Business & Management*, 37, 100525.
<https://doi.org/10.1016/j.rtbm.2020.100525>
- Yau, K.-L. A., Saad, N. M., & Chong, Y.-W. (2021). Artificial intelligence marketing (AIM) for enhancing customer relationships. *Applied Sciences*, 11(18), 8562.
<https://doi.org/10.3390/app11188562>