

Grammarly adoption among higher-education students in Yogyakarta

Muhammad Thoyib Amali ^{1*}

¹)Department of Communication Science, Faculty of Literature, Culture, and Communication, Ahmad Dahlan University, Yogyakarta, Indonesia

Received December 24, 2023/ Accepted March 18, 2024

Abstract

Education has experienced significant changes due to recent advances in information technology. Technological developments, such as Grammarly, are pivotal in enhancing language education, benefiting learners of English as a Second Language. This research's primary objective is to examine the impact of online ad exposure and reference groups on the adoption of Grammarly while considering trust as the mediating role. This research utilized a quantitative approach by surveying 120 higher-education students in Yogyakarta. The analysis technique used in this research is path analysis using the SmartPLS program. Based on hypothesis testing, online ad exposure and reference groups have a positive and significant impact on Grammarly adoption behavior, where trust takes the role of full mediation on the relationship between online ad exposure and adoption behavior. Meanwhile, trust serves as partial mediation in the relationship between reference groups and adoption behavior. Furthermore, the managerial implications the researcher can suggest for Grammarly are to improve the performance of the features offered further, where improvements to the feedback provided by Grammarly should be more contextual and relevant.

Keywords: grammarly adoption, online ad exposure, reference group, trust

Introduction

Over the past few decades, significant advancements in information technology have led to increased innovations that effectively enhance various aspects of our daily lives. Education is one of the aspects influenced by technological advancements, especially with the COVID-19 pandemic breaking out in 2020 (Panigrahi, 2020). Moreover, advancements in information technology such as artificial intelligence, big data analysis, cloud computing, augmented reality, and virtual reality are already establishing their presence. These advancements will revolutionize educational paradigms and redefine how students engage with and approach learning (Awalin et al., 2023). Artificial intelligence tools such as Grammarly have become pivotal in language education, presenting an innovative approach to improving language learning and writing abilities. Those learning English as a Second Language (ESL) frequently encounter difficulties mastering intricate grammar and subtle stylistic elements (Alotaibi, 2023; Fitria, 2021). Grammarly can examine and correct grammar, punctuation, spelling, wordiness, usage, and style. Besides, it can detect plagiarism. It also offers word recommendations to aid students in enhancing their writing (Oktaviani et al., 2022).

As an artificial intelligence-based writing assistant platform, Grammarly is considered helpful and widely used in various colleges and universities around the world (Vo & Nguyen, 2020). Previous research has explored the positive effects of Grammarly in enhancing students' grasp of grammar principles and boosting their self-assurance in writing (Ventayen & Orlanda-Ventayen, 2018). Previous studies have also revealed that Grammarly has had a noteworthy influence on the quality of students' writing, fostering precision in their writing and improving their English writing skills (Fadhilah et al., 2019; Ghufron, 2019). As an innovation, Grammarly has revolutionized how higher-education students learn by providing real-time grammar and writing assistance, empowering them to improve their writing skills and excel academically. Its user-friendly interface and comprehensive feedback make it an invaluable tool for students seeking to enhance their writing proficiency (Alotaibi, 2023; Armanda et al., 2022).

An innovation is an idea, object, or practice perceived as new by an individual or group. Four essential components to the diffusion of innovations theory help determine how to enhance the rate and efficiency of innovation adoption: time, the innovation itself, communication channels, and social system (Rogers, 2003). The adoption rate of an innovation is determined by how people

*Corresponding Author:

E-mail: muhammad.amali@comm.uad.ac.id

perceive the characteristics of the innovation, such as its relative advantages compared to existing choices, compatibility with their current values and experiences, the complexity of the innovation, trialability, and observability (Rogers, 2003). The more these perspectives showcase the potential aspects of innovation characteristics, the more likely people will adopt the innovation (Littlejohn et al., 2017). Furthermore, an innovation must be practical and contain elements of comfort and convenience. The decision-making process and implementation of the innovation are inseparable from the characteristics of the innovation itself, and these characteristics play an essential role in determining the speed of an innovation process (Agag & El-Masry, 2016). This diffusion model is also viewed as a form of social transformation, specifically as a process where the structure and operation of a social system change (Muntaha & Amin, 2023)

Grammarly's adoption among higher-education students is closely tied to its promotional efforts, especially online advertising campaigns across digital platforms (Ambarwati, 2021). These ads play a crucial role in the diffusion of innovation, where the first stage includes spreading awareness and knowledge about Grammarly. However, the effectiveness of these ads varies based on factors like the product category, target audience, and ad format (Liu-Thompkins, 2019). A good advertisement should make the audience trust the product. The effectiveness of the ads will be significantly affected when consumers distrust online ads (Leong et al., 2020). Previous studies found that online ad exposure impacts trust and actual product use (Clemens et al., 2017; Nugroho et al., 2022; Purnama et al., 2019; Zheng et al., 2021). Conversely, other studies also found that sources of information, such as online ad exposure, do not impact consumer trust or product usage (Piarna, 2014). Still, interestingly, in some cases, mass media exposure, including online media, may not always affect individual trust (Armaya et al., 2014). Furthermore, online ad exposure can be measured using the general exposure model with several components, including frequency, duration, and attention a person pays to an online ad (Febrida & Oktavianti, 2020; Rakhmat, 2003)

Grammarly's utilization among higher-education students is also part of the roles of early adopters who introduced this innovation to them. Early adopters are typically the second group to adopt an innovation in the diffusion of innovation. They are crucial in diffusion because they serve as opinion leaders and influencers within their social networks (Rogers, 2003). Early adopters, such as lecturers or college friends, are a reference group that can influence college students. Perceptions of reference groups influence individual trust in the information reference groups provide. Therefore, the reference group is a factor that can influence consumer purchasing decisions (Dewi et al., 2023). Previous studies found that reference groups impact trust and actual product use (Faidah & Harti, 2021; Rakhmawati & Sudarwanto, 2021; Sarah & Artanti, 2020). Other studies also found that reference groups do not impact consumer trust and product usage (Angraini & Sanjaya, 2020; Kurniawan & Dwijayanti, 2022). Furthermore, reference groups can be measured using group function components, including informational, utilitarian, and value expression (Peter & Olson, 2013; Rajanikanth, 2023).

Among the four crucial elements in the diffusion of innovation, online ad exposure and reference groups are integral components of the communication channels (Littlejohn et al., 2017). These two communication models can be categorized as a form of a two-step flow model of communication that can effectively influence an individual. The first step of the two-step theory of media influence is transmitting information to a mass audience, and the second step is validating the message by people the viewer respects (Griffin, 2012). Grammarly was created in response to the challenges of non-native English speakers or even the general public in achieving proficient grammar in their writing (Armanda et al., 2022; Marliyanda et al., 2022; Vo & Nguyen, 2020). This innovative solution has gained widespread adoption, particularly in the education sector. Grammarly has received numerous accolades, such as being recognized as one of the most innovative companies by Fast Company and making Forbes' list of the top 100 cloud companies while also earning millions of active users (Lytvyn et al., 2023). Furthermore, in the diffusion of innovation, adoption behavior can be measured using actual use on technology acceptance model with several components, including the desire to use, the attempts to use, and continuation to use (Murti et al., 2023; Pal & Triyason, 2018)

This research's primary objective is to examine how online ad exposure and reference groups impact the adoption of Grammarly while considering the mediating role of trust. Trust

involves one party's reliance on another to fulfill their responsibilities in a transactional relationship, stemming from the belief that the trusted individual will meet their obligations as required (Wong, 2017). Building a better brand will be easier if trust is established well between customers and the company, where the relationship between the company and customers is reflected in the level of trust (Kasinem, 2020). Furthermore, trust in e-transactions can be measured using several components, including ability, benevolence, and integrity (Gefen & Straub, 2004; Novita & Wulandari, 2020). In strategic communication principles, trust can be considered as a form of positive attitude that determines the success of a program or campaign. In addition to utilizing trust as a mediating variable, this research introduces a more concentrated subject area as a novelty. This research also tries to validate the previously identified research gap. There is a hope that this investigation can serve as a valuable resource for assessing and gaining insights into strategic communication in the digital era, particularly in the context of spreading innovation.

Method

This research uses a quantitative method to measure variables, test hypotheses, and explain the relationships between variables (Scharrer & Ramasubramanian, 2021). The variables tested in this research are online ad exposure (X1), reference group (X2), trust (Z), and adoption behavior (Y). The analysis technique used is path analysis using the SmartPLS program. Path analysis is a development of regression statistics, which is used to test models of relationships between variables in the form of cause and effect (Olobatuyi, 2006). The research collected the primary data through a survey using a purposive sampling technique to 120 respondents who have used Grammarly and are currently pursuing their studies in Yogyakarta. In partial least squares and structural equation models calculation, the sample size is considered sufficient if it is more than ten times the model's most significant number of informative indicators (Hair et al., 2017). Furthermore, the questionnaire measurement scale uses a Likert scale, with the following options: (1) strongly disagree, (2) disagree, (3) doubtful, (4) agree and (5) strongly agree. Meanwhile, the number of questions asked to respondents was twenty-one, with the number of questions for each variable shown in Table 1 below.

Table 1 Variable Indicators & Number of Questions

Variables	Indicators	Number of Questions
Online ad exposure	Frequency	2
	Duration	1
	Attention	2
Reference group	Informational	2
	Utilitarian	1
	Value expression	2
Trust	Ability	1
	Benevolence	2
	Integrity	2
Adoption behavior	Desire to use	2
	Always try to use	2
	Continue to use	2
Total		21

Source: Author, 2023

Based on the introduction and methodology above, the two main hypotheses developed in this research are: (1) there is an impact of online ad exposure on Grammarly adoption behavior among higher-education students in Yogyakarta, which is mediated by trust, and (2) there is an impact of reference group on Grammarly adoption behavior among higher-education students in Yogyakarta which is mediated by trust.

Results and Discussion

This research examines the impact of online ad exposure and reference groups on adopting Grammarly while considering trust as the mediating role. The diffusion of innovation theory became a fundamental hypothesis for the development of a two-step flow model of communication that can be evaluated for its effectiveness in a social system. Furthermore, to obtain data that is truly representative of the particular social system as the respondents of this research, a survey was conducted on 120 higher-education students in Yogyakarta.

Table 2 Respondent Data

Attribute	Category	Percentage
Sex	Male	45.0%
	Female	55.0%
Age	18-19	15.0%
	20-21	52.5%
	22-23	30.0%
	24-25	2.5%
University	UAD	27.5%
	UGM	20.0%
	UPNYK	20.0%
	UNY	15.0%
	UMY	10.0%
	Others	7.5%
Major	English Literature	38.3%
	English Language Education	26.7%
	Communication Science	16.6%
	Management	10.0%
	Others	8.4%
Duration of internet access per day	< 4 Hours	0.0%
	4-5 Hours	25.0%
	6-7 Hours	50.0%
	> 7 Hours	25.0%

Source: Primary data processing, 2023

Table 2 shows that most respondents are aged 20-21 years. In other words, many are undergraduate students in their third or fourth year of college. Students mainly use Grammarly in the academic writing process because it is handy and practical (Faisal & Carabella, 2023). Meanwhile, most respondents are majoring in English literature. This department uses English in its teaching and learning activities, including writing. Further, if we look at the respondents' internet access habits, most respondents spend 6-7 hours daily online. This result is one level below the average internet access in Indonesia, which is seven hours and forty-two minutes per day (Kemp, 2023). These internet access habits also indicate that most respondents use the internet daily by spending one-sixth of their time connected to it.

Outer Model: Validity and Reliability Test

Data validity techniques in the SmartPLS program can be done by examining the loading factor and average variance extracted (AVE) values on the outer model tested using the PLS Algorithm. The data is considered valid if the loading factor value is more than 0.70 and the AVE value is more than 0.5 (Ghozali, 2008). The loading factor value for each indicator in this study exceeded 0.70 after the program removed three invalid informative indicators (Figure 1).

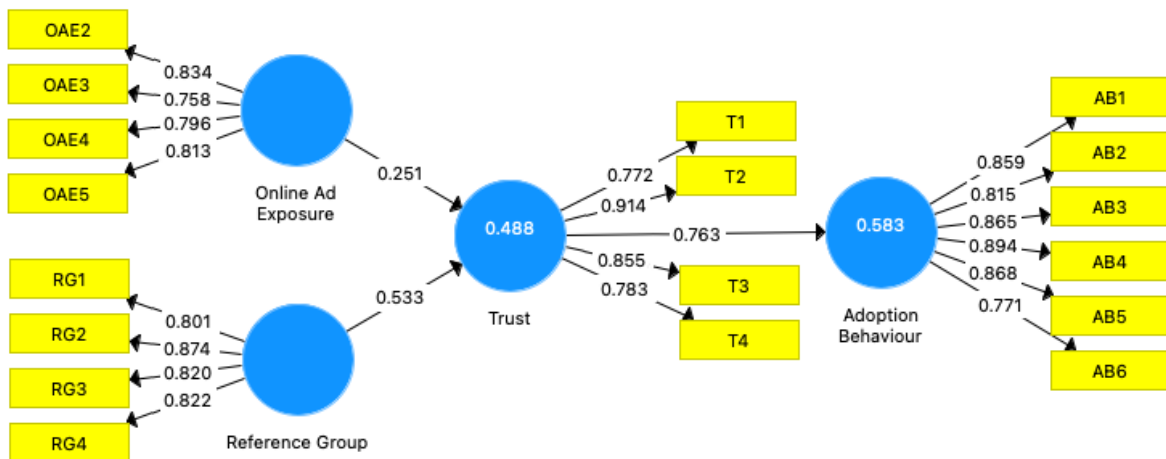


Figure 1. Outer Model PLS Algorithm
 Source : Author

At the same time, the AVE value for the variables in this study also exceeded 0.50 (table 3). Meanwhile, the reliability test can be done by looking at Cronbach's Alpha value, which must be higher than 0.60 (Ghozali, 2008), where in this study, Cronbach's Alpha value for each variable has exceeded 0.60 (table 3)

Table 3 Validity & Reliability Test

Variable	AVE Value	Cronbach's Alpha
Online ad exposure	0.641	0.815
Reference group	0.688	0.849
Trust	0.693	0.850
Adoption behavior	0.716	0.920

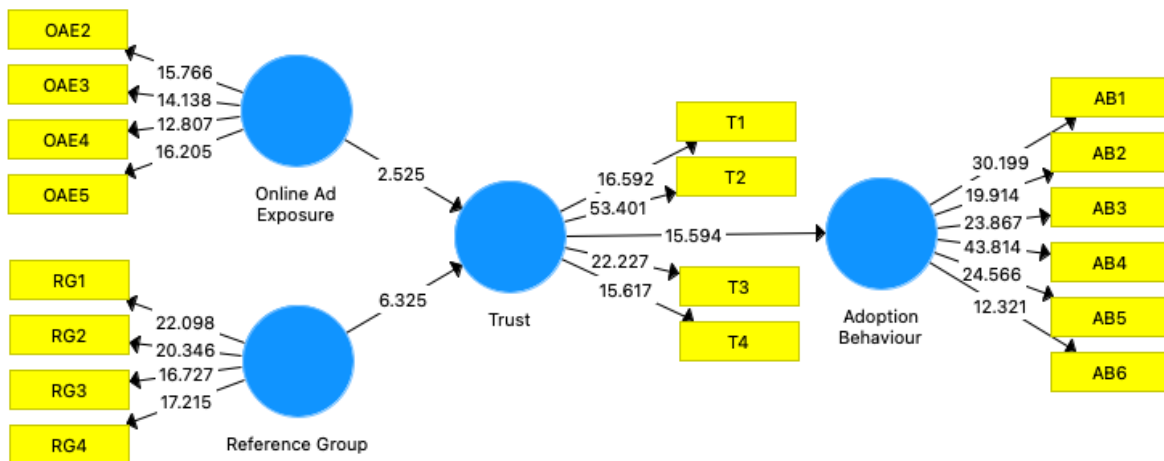
Source: PLS Algorithm Output, 2023

Outer Model: Structural Model Test

The R-square value shows the extent to which the independent construct explains the dependent construct or shows the model's predictive power. The rule of thumb used is 0.75, 0.50, and 0.25, indicating that the model is strong, moderate, and weak (Hair et al., 2017). Based on the outer model test (picture 1), the R-square value on adoption behavior is 0.583. In other words, the model in this study is classified as moderate, and together, the two independent variables and the existing mediating variables have a sufficient influence on Grammarly adoption behavior of 58.3%. The R-square calculation results also show that other variables outside this research model influenced grammar adoption behavior, with the remaining percentage being 41.7%. Furthermore, if calculated separately, online ad exposure and reference groups influence higher-education students' trust in Grammarly, which is 0.488 or 48.8%. The percentage classifies the trust arising from online ad exposure and reference groups as almost moderate because it is less 1.2 points from 5.0.

Inner Model: Hypothesis Test

The bootstrap sampling method tests the inner model or the hypothesis. Testing with the bootstrap technique in SmartPLS aims to minimize problems caused by interference with research data. In the PLS model, the sampling method that has been applied allows freely distributed data that does not require a normal distribution assumption (Ghozali, 2008).



Picture 2 Inner Model PLS Bootstrapping
 Source : Author

The statistical test used is the t-statistic parameter significance test, where the t-statistic value must exceed the t-table value of 120 samples, which amounts to 1.658.

Table 4 Path Coefficients

	O	M	Std. Err.	T-Stat.	P-Val.
<i>Direct Effect</i>					
OAE → T	0.251	0.264	0.099	2.525	0.012
RG → T	0.533	0.532	0.084	6.325	0.000
T → AB	0.763	0.766	0.049	15.594	0.000
<i>Indirect Effect</i>					
OAE → T → AB	0.192	0.203	0.077	2.480	0.013
RG → T → AB	0.407	0.409	0.076	5.371	0.000

Source: PLS Bootstrapping Output, 2023

Based on Table 4 and Figure 2, both independent variables and moderating variables have a significant influence if we look at the resulting t-statistics, which exceeds the t-table number 1,658 and its p-value or significance level of less than 5 percent or 0.050 on both direct and indirect effects. In other words, the two main hypotheses developed in this research are accepted. Thus, it can be concluded that the model described is a good fit with the accepted hypothesis based on the hypothesis testing criteria (Ghozali, 2008). Table 4 also explains that the independent variables have positive original sample values (O), which means that the higher online ad exposure and reference groups, the higher higher-education students trust in Grammarly. When the trust increases, Grammarly's adoption among higher-education students also increases.

Overall, the results of this study are in line with previous studies, which found that online ad exposure has an impact on trust and actual product use (Clemens et al., 2017; Nugroho et al., 2022; Purnama et al., 2019; Zheng et al., 2021), and reference group also has the same impact on these two variables (Faidah & Harti, 2021; Rakhmawati & Sudarwanto, 2021; Sarah & Artanti, 2020). The results of this study also confirm that trust indeed serves a mediating role in the impact of online ad exposure and reference groups on Grammarly adoption. Trust in innovation determines whether an innovation is accepted or rejected in the social system (Luo et al., 2010). It is a form of individual perception of relative advantage over existing options, the degree to which innovation is superior to the idea it supersedes. The higher the perceived relative advantage of the innovation, the faster it will be adopted by the social system (Rogers, 2003).

Furthermore, calculations using the Sobel formula are necessary to determine the nature of the existing mediating variables. The mediating variable is considered to be full mediation if the

influence of the independent variable on the dependent variable becomes insignificant when controlled by the mediating variable. Meanwhile, the mediating variable is considered to be partial mediation if the influence of the independent variable on the dependent variable remains significant when controlled by the mediating variable (Ghozali, 2019). The Sobel Test calculation is done by entering the original sample and Std. The error between the direct effect and indirect effect on the path coefficient of the online ad exposure and reference group variables is controlled by the trust variable in the Online Sobel Test Calculator at <http://quantpsy.org/sobel/sobel.htm> (Preacher & Leonardelli, 2001).

Table 5 Sobel Test Calculation

Trust Control	Std. Err.	T-Stat.	P-Val.
OAE → AB	0.027	1.778	0.075
RG → AB	0.053	4.092	0.000

Source: Sobel Test Results, 2023

The comparison between the t-table value of 1.658 and the t-statistics in Table 5 and the observation of the significance value of the existing Sobel test conclude that trust plays a full mediating role when controlling the influence of online ad exposure on adoption behavior. On the other hand, trust also partially mediates when controlling the influence of reference groups on adoption behavior. These differences in mediation functions show that in a goodness fit model, mediation variables can have distinct roles depending on the influence value of the existing independent variables. The role is especially significant when we see that the influence of peer groups is partially much higher on trust than the influence brought by online ad exposure (picture 1). However, the extensive online ad exposure about Grammarly has provided much information that is more favorable or trusted to a person's point of view and will be evaluated more positively than the unfavorable or untrusted (Rogers, 2003).

Exposure to Grammarly's online ad will provide individuals with knowledge regarding the innovations, or in this case, the features offered by Grammarly through their services. Today, the internet and social media play a significant role in the diffusion of innovation (Littlejohn et al., 2017). Similarly, reference groups are crucial in forming beliefs that ultimately lead to adoption behavior. In this case, the reference group is the lecturer and college friends. Their recommendations make individuals decide to adopt Grammarly. The pattern of multiple communication in this model is a highlight in the diffusion of innovation theory, where innovation will be much more accepted if spread through various channels, especially using the two-step flow model with a mass communication approach for a wider audience reach and interpersonal communication for changes in attitudes and behavior (Venus, 2019).

The two-step flow model of communication in the diffusion of innovation posits that information does not always flow directly from mass media to individuals. The efficacy of mass media in altering human attitudes and behaviors is not always guaranteed. In some cases, exposure to the mass media did not significantly affect changes in behavior (Sulistiawati et al., 2021; Yusnita, 2021). On the other hand, opinion leaders who interpret and disseminate the information to their peers can boost this exposure to media. This model suggests a two-step process that emphasizes the importance the role of opinion leaders and interpersonal communication in shaping public opinion and influencing the adoption of new ideas, products, or behaviors within a society (Kamau et al., 2023; Li et al., 2023). It highlights the significance of social networks and interpersonal relationships in the diffusion of innovations. Combining interpersonal trust with deliberate change efforts increases technology adoption (Lippert & Davis, 2006).

Conclusion

The research results and discussion conclude that (1) there is an influence of online ad exposure on Grammarly adoption behavior among higher-education students in Yogyakarta, which is fully mediated by trust, and (2) there is an influence of reference groups on Grammarly adoption behavior among higher-education students in Yogyakarta which is partially mediated by trust.

These results show that trust from the two-step flow communication model in the diffusion of innovation plays a different role in adoption behavior. Furthermore, the managerial implications researchers can suggest for Grammarly are to improve the features offered further. Improvements on the feedback provided by Grammarly should be more contextual and relevant, allowing their integrity as an artificial intelligence-based writing assistant platform to be much higher. Meanwhile, the current study suggests expanding other issues for further research, including exploring other variables such as innovation characteristics, sales promotion, user experience, or individual character. Also, identifying the function of these variables and using SEM-AMOS to test the research hypothesis are highly recommended.

References

- Agag, G., & El-Masry, A. A. (2016). Understanding Consumer Intention to Participate in Online Travel Community and Effects on Consumer Intention to Purchase Travel Online and WOM: An Integration of Innovation Diffusion Theory and TAM with Trust. *Computers in Human Behavior*, 60, 97–111. <https://doi.org/10.1016/j.chb.2016.02.038>
- Alotaibi, A. H. E. (2023). The Impact Of AI-Powered Grammarly on Enhancing Grammar Proficiency Among Saudi EFL Students. *Remittances Review*, 8(4), 3718–3726.
- Ambarwati, E. K. (2021). Indonesian University Students' Appropriating Grammarly for Formative Feedback. *ELT in Focus*, 3(1), 1–11. <https://doi.org/10.35706/eltinf.v4i1.5216>
- Anggraini, M., & Sanjaya, V. F. (2020). Pengaruh Kelompok Referensi, Media Sosial, Word of Mouth terhadap Keputusan Pembelian pada Generasi Milenial. *Jurnal Ekonomak*, 6(3), 1–8.
- Armanda, M. L., Nugraheni, A. F., Wulansari, A., & Imron, A. (2022). “Grammarly” as English Writing Assistant from EFL Students' Perspective. *English Education: Journal of English Teaching and Research*, 7(2), 128–137. <https://doi.org/10.29407/jetar.v7i2.17988>
- Armaya, T., Herieningsih, S. W., Pradekso, T., & Yulianto, M. (2014). Terpaan Pemberitaan Media Massa dan Tingkat Kepercayaan Masyarakat pada Kompetensi Jokowi sebagai Pemimpin terhadap Minat Masyarakat Memilih Jokowi sebagai Capres. *Interaksi Online*, 2(4).
- Awalin, A. S., Iftanti, E., & Umami, M. S. M. (2023). Students' Perceptions On The Impact Of Artificial Intelligence On English Grammar Learning. In *International Conference on Education*, 169–174.
- Clemens, F., Hanewinkel, R., & Morgenstern, M. (2017). Exposure to Gambling Advertisements and Gambling Behavior in Young People. *Journal of Gambling Studies*, 33(1), 1–13. <https://doi.org/10.1007/s10899-016-9606-x>
- Dewi, R., Azis, N., Syafii, M., & Basalamah, A. (2023). Persepsi Referensi Kelompok Terhadap Keputusan Pembelian Produk Halal Kosmetik Pada Mahasiswi FEB Universitas Muslim Indonesia. *Jurnal Ilmiah Dan Bisnis Kewirausahaan*, 12(2), 152–165.
- Fadhilah, U., Lizawati, & Saribu, H. J. D. (2019). Effectiveness Of Grammarly Application For Writing Abstract. *International Journal of Science and Research (IJSR)*, 8(12), 163–166. <https://doi.org/10.21275/ART20202994>
- Faidah, E. N., & Harti, H. (2021). Pengaruh Intensitas Browsing dan Kelompok Referensi terhadap Keputusan Pembelian Sabun Pembersih Wajah (Studi pada Mahasiswa Universitas Negeri Surabaya). *Jurnal Pendidikan Tata Niaga (JPTN)*, 9(1), 1167–1173.
- Faisal, F., & Carabella, P. A. (2023). Utilizing Grammarly in an Academic Writing Process: Higher-education Students' Perceived Views. *Journal of English Language Teaching and Linguistics*, 8(1), 23–42.
- Febrida, R., & Oktavianti, R. (2020). Pengaruh Terpaan Iklan di Media Sosial Youtube terhadap Persepsi Konsumen (Studi terhadap Pelanggan Iklan Tiket.com di Youtube). *Prologia*, 4(1), 179. <https://doi.org/10.24912/pr.v4i1.6471>
- Fitria, T. N. (2021). Grammarly as AI-powered English Writing Assistant: Students' Alternative for Writing English. *Metathesis: Journal of English Language, Literature, and Teaching*, 5(1), 65. <https://doi.org/10.31002/metathesis.v5i1.3519>
- Gefen, D., & Straub, D. W. (2004). Consumer Trust in B2C e-Commerce and the Importance of Social Presence: Experiments in e-Products and e-Services. *Omega*, 32(6), 407–424.

- <https://doi.org/https://doi.org/10.1016/j.omega.2004.01.006>
- Ghozali, I. (2008). *Structural Equation Modeling: Metode Alternatif dengan Partial Least Square (PLS)*. Badan Penerbit Universitas Diponegoro.
- Ghozali, I. (2019). *Aplikasi Analisis Multivariate dengan Program IBM SPSS 23*. Universitas Diponegoro Press.
- Ghufron, M. (2019). Exploring an Automated Feedback Program ‘Grammarly’ and Teacher Corrective Feedback in EFL Writing Assessment: Modern vs. Traditional Assessment. *Proceedings of the 3rd English Language and Literature International Conference, ELLiC*. <https://doi.org/http://dx.doi.org/10.4108/eai.27-4-2019.2285308>
- Griffin, E. (2012). *A First Look at Communication Theory, 8th Edition*. McGraw-Hill.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). In *Sage Publications*.
- Kamau, M. J., Mberia, H., & Muchunku, I. G. (2023). Opinion Leaders in Interpersonal Communication and Their Influence on Alcohol Consumption among Students in Government Tertiary Colleges in Kenya. *Matondang Journal*, 2(2), 59–69.
- Kasinem. (2020). Pengaruh Kepercayaan dan Kualitas Pelayanan Terhadap Kepuasan Konsumen Pada Hotel Bukit Serelo Lahat. *Jurnal Media Wahana Ekonomika*, 17(4), 329. <https://doi.org/10.31851/jmwe.v17i4.5096>
- Kemp, S. (2023). *Digital 2023: Indonesia*. We Are Social & Meltwater. <https://datareportal.com/reports/digital-2023-indonesia>
- Kurniawan, A., & Dwijayanti, R. (2022). Pengaruh Ekuitas Merek Dan Kelompok Referensi Terhadap Keputusan Pembelian Sepeda Merek Polygon Pada Masyarakat Kabupaten Gresik. *Jurnal Pendidikan Tata Niaga (JPTN)*, 10(1), 1512–1522. <https://doi.org/10.26740/jptn.v10n1.p1512-1522>
- Leong, L. Y., Hew, T. S., Ooi, K. B., & Dwivedi, Y. K. (2020). Predicting Trust in Online Advertising with An SEM-Artificial Neural Network Approach. *Expert Systems with Applications*, 162, 113849. <https://doi.org/10.1016/j.eswa.2020.113849>
- Li, Z., Chan, C., Chen, Y.-F., Chan, W. W. H., & Im, U. L. (2023). Millennials’ Hotel Restaurant Visit Intention: An Analysis of Key Online Opinion Leaders’ Digital Marketing Content. *Journal of Quality Assurance in Hospitality & Tourism*, 1–30. <https://doi.org/https://doi.org/10.1080/1528008X.2023.2219467>
- Lippert, S. K., & Davis, M. (2006). A Conceptual Model Integrating Trust into Planned Change Activities to Enhance Technology Adoption Behavior. *Journal of Information Science*, 32(5), 434–448. <https://doi.org/https://doi.org/10.1177/0165551506066042>
- Littlejohn, S. W., Foss, K. A., & Oetzel, J. G. (2017). *Theories of Human Communication, 7th Edition*. Waveland Press.
- Liu-Thompkins, Y. (2019). A Decade of Online Advertising Research: What We Learned and What We Need to Know. *Journal of Advertising*, 48(1), 1–13. <https://doi.org/10.1080/00913367.2018.1556138>
- Luo, X., Li, H., Zhang, J., & Shim, J. P. (2010). Examining Multi-dimensional Trust and Multi-Faceted Risk in Initial Acceptance of Emerging Technologies: An Empirical Study of Mobile Banking Services. *Decision Support Systems*, 49(2), 222–234.
- Lytvyn, V., Pukach, P., Vysotska, V., Vovk, M., & Kholodna, N. (2023). Identification and Correction of Grammatical Errors in Ukrainian Texts Based on Machine Learning Technology. *Mathematics*, 11(4), 904.
- Marliyanda, A., Wachyudi, K., & Kartini, D. (2022). Analisis Survei Terhadap Pengguna Grammarly. *Jurnal Educatio FKIP UNMA*, 8(3), 1147–1152. <https://doi.org/10.31949/educatio.v8i3.3171>
- Muntaha, N. G., & Amin, A. (2023). Difusi Inovasi, Diseminasi Inovasi, Serta Elemen Difusi Inovasi. *Jurnal Pendidikan Dan Konseling (JPDK)*, 5(2), 2548–2554.
- Murti, H. T., Lakoni, I., & Safrianti, S. (2023). Pengaruh Literasi Keuangan Dan Literasi Teknologi Terhadap Adopsi Uang Elektronik Pada Mahasiswa di Kota Bengkulu Melalui Mediasi Attitude Toward Adoption. *JMB: Jurnal Manajemen Dan Bisnis*, 12(2), 89–99.
- Novita, D., & Wulandari, S. (2020). Pengaruh Dimensi Kepercayaan (Trust) Terhadap Partisipasi

- (Participation) Pelanggan Wulan Rent Car. *JABE (Journal of Applied Business and Economics)*, 6(3), 259–273.
- Nugroho, M. I. Y., Efendi, A., & Abdullah, W. (2022). Pengaruh Iklan Online Dan Merek Terhadap Minat Beli Dengan Kepercayaan Merek Sebagai Variabel Intervening Pada Toko Online Shopee Di Makassar. *Study Of Scientific And Behavioral Management*, 3(2), 8–20.
- Oktaviani, S., Bahrani, B., & Noor, W. (2022). Students' Perception Towards The Use of Grammarly In English Writing Skill Of Fourth Semester English Education Department at UINSI Samarinda. *Jurnal SIPPAG: Sultan Idris Pendidikan Profesi Guru*, 1(1), 135–159. <https://doi.org/10.21093/sippg.v1i1.5465>
- Olobatuyi, M. E. (2006). *A User's Guide to Path Analysis*. University Press of America.
- Pal, D., & Triyason, T. (2018). User Intention towards a Music Streaming Service: A Thailand Case Study. *KnE Social Sciences*, 3(1), 1. <https://doi.org/10.18502/kss.v3i1.1393>
- Panigrahi, A. (2020). Role of Artificial Intelligence in Education. *SSRN Electronic Journal*, 4(4), 3150–3158. <https://doi.org/10.2139/ssrn.3666702>
- Peter, J. P., & Olson, J. C. (2013). *Perilaku Konsumen dan Strategi Pemasaran*. Salemba Empat.
- Piarna, R. (2014). Pengaruh Sumber Informasi dan Kualitas Website terhadap Kepercayaan Pelanggan dalam Menentukan Keputusan Bertransaksi pada E-commerce (Studi pada Pelanggan E-commerce di Indonesia). *Jurnal Aplikasi Manajemen*, 12(1), 10–21.
- Preacher, K. J., & Leonardelli, G. J. (2001). *Calculation for the Sobel Test: An interactive Calculation tool for Mediation Tests*. Quantity. <http://quantpsy.org/sobel/sobel.htm>
- Purnama, P., Anggraini, R., Hartono, A., Irwansyah, & Ernungtyas, N. F. (2019). Terpaan Iklan Digital, Word Of Mouth dan Komunikasi Pemasaran Interaktif pada Keputusan Pembelian Produk Perawatan Tubuh. *KOMUNIDA : Media Komunikasi Dan Dakwah*, 9(2), 192–209. <https://doi.org/10.35905/komunida.v9i2.1123>
- Rajanikanth, M. (2023). Influence of Reference Group on Tractor Purchasing Decision of Farmers In Telangana. *Academy of Marketing Studies Journal*, 27(5), 1–12.
- Rakhmat, J. (2003). Psikologi Komunikasi. In *Remaja Rosdakarya*. Remaja Rosdakarya.
- Rakhmawati, I. Y., & Sudarwanto, T. (2021). Pengaruh Citra Merek dan Kelompok Referensi Terhadap Keputusan Pembelian Produk Shake Herbalife. *Jurnal Pendidikan Tata Niaga (JTPN)*, 9(2), 1244–1250.
- Rogers, E. M. (2003). Diffusions of Innovations, 5th Edition. In *Macmillan Publishing*. Free Press.
- Sarah, S. F., & Artanti, Y. (2020). Pengaruh Religiusitas dan Kelompok Referensi Terhadap Keputusan Pembelian. *BISNIS : Jurnal Bisnis Dan Manajemen Islam*, 8(1), 37. <https://doi.org/10.21043/bisnis.v8i1.6732>
- Scharrer, E., & Ramasubramanian, S. (2021). *Quantitative Research Methods in Communication: The Power of Number for Social Justice* (New York). Routledge.
- Sulistiawati, A., Fatchiya, A., Rahmadhony, A., & Puspita Sari, D. (2021). Tingkat Keterdedahan Media Massa dan Perilaku Ber-Kb pada Keluarga Pra-Sejahtera di Pedesaan dan Perkotaan. *Jurnal Penyuluhan*, 17(2 SE-Articles), 246–257. <https://doi.org/10.25015/17202135542>
- Ventayen, R. J. M., & Orlanda-Ventayen, C. C. (2018). Graduate students' perspective on the usability of Grammarly® in one ASEAN state university. *Asian ESP Journal*, 14(7), 9–30.
- Venus, A. (2019). *Manajemen Kampanye: Panduan Teoritis Dan Praktis Dalam Mengefektifkan Kampanye Komunikasi, Edisi Revisi*. Simbiosia Rekatama Media.
- Vo, N. H. K., & Nguyen, Q. T. (2020). Applying Grammarly as an Online Grammar Checker Tool to Enhance Writing Skills for English-Major Students. *OpenTESOL International Conference 2020, June*, 454–467.
- Wong, D. (2017). Pengaruh Ability, Benevolence Dan Integrity Terhadap Trust, Serta Implikasinya Terhadap Partisipasi Pelanggan E-Commerce: Studi Kasus Pada Pelanggan E-Commerce Di Ubm. *Jurnal Riset Manajemen Dan Bisnis (JRMB) Fakultas Ekonomi UNIAT*, 2(2), 155–168. <https://doi.org/10.36226/jrmb.v2i2.46>
- Yusnita, M. (2021). Relationship between Social Media Exposure and Adolescents' Knowledge, Attitude and Behaviour to HIV/AIDS Prevention. *Jurnal Komunikasi Indonesia*, X(1), 42–53. <https://doi.org/10.7454/jkmi.v10i1.1019>
- Zheng, X., Li, W., Wong, S. W., & Lin, H. C. (2021). Social Media and E-Cigarette Use Among

US Youth: Longitudinal Evidence on the Role of Online Advertisement Exposure and Risk Perception. *Addictive Behaviors*, 119, 106916. <https://doi.org/10.1016/j.addbeh.2021.106916>

