



RESEARCH ARTICLE

Consumers' Intent to Purchase Alcohol-Based Hand Sanitizer (abhs) with Ylang Ylang Essential Oil

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ARTICLE INFO	ABSTRACT
Received: Oct 25, 2024 Accepted: Dec 19, 2024	In compliance with the standards established by the World Health Organization (WHO) during the pandemic, Tarlac State University heeded the call of the times by producing Alcohol-Based Hand Sanitizer (ABHS) for its employees. The TSU Analytical Testing Laboratory and Natural Products Research Center and the College of Science led this initiative. Although it was suitable for topical and antibacterial applications, the original formulation of ABHS has a distinct chemical odor. The researchers addressed this concern by incorporating the ylang-ylang essential oil produced locally in the municipality of Anao, Tarlac. Using product knowledge and involvement as independent variables, the customer purchase intention for ABHS was explored after the project had completed its second phase. 237 respondents received the modified questionnaire, and regression analysis was used to test the research hypotheses. The findings indicated that (1) Consumers' involvement with ABHS with ylang-ylang oil considerably influenced their purchase intention, and (2) Consumers' product knowledge of ABHS with ylang-ylang oil had no sufficient information to establish a discernible influence on purchase intention. These show that respondents choose products based on their needs, preferences, and values rather than on product brands or labels. This confirmed other studies that found consumers who are strongly involved with a product pay less attention to pricing and give more weight to cues relating to information about where the product was made. Furthermore, the results provided significant recommendations for consumer behavior strategies.
Keywords	
Purchase Intention	
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1. INTRODUCTION

Since the pandemic began in 2020, the globe has recognized the necessity of appropriate hygiene and sanitization in preventing illness transmission among families, public spaces, and health institutions. It was demonstrated that hand cleaning with alcohol and sanitizers is one method of preventing the transmission of germs, and there was a rise in product demand, resulting in market scarcity.

There had also been "pandemic pantries," a phenomenon pertaining to hoarding emergency products worldwide. Public health organizations advocated frequent hand washing and sanitization. For this reason, rubbing alcohol and hand sanitizer products have been flying off the shelves, and according to research, the sales have increased by 300% since 2020. In Italy, one of the most affected countries by COVID-19, of the most affected nations by COVID-19, sales of hand sanitizers increased by 561% during the first three weeks of the pandemic (24th February-15th March 2020). There have been complaints among hospitals and healthcare institutions that they have run out of hand sanitizer supplies, and manufacturers and pharmacies struggled to keep up with the demands.

To address the serious scarcity of hand sanitizers, perfumeries, pharmacies, and chemical industries have started manufacturing hand sanitizers (Bomgardner et al., 2020). Many requests have been related to hand sanitizers as educational institutions and pharmacists address the growing demand

in laboratories. Pharmacists may manufacture hand sanitizers; nevertheless, they require a suitable formula and production guidelines to provide a consistent product of adequate quality. Consumer behaviors and patterns are fast changing because of the COVID-19 problem (McKenzie, 2020), and the extraordinary need for hand sanitizers is expected to persist for a lengthy period.

To respond to this concern, Tarlac State University Analytical Testing Laboratory and Natural Products Research Center and College of Science followed the standards established by the World Health Organization to develop an Alcohol-Based Hand Sanitizer (ABHS). They incorporated ylang-ylang oil, a product sourced from the municipality of Anao, Tarlac.

2. LITERATURE REVIEW

This paper will discuss the theory of planned behavior (TPB) as the overarching theory and the variables included in this research.

2.1. Theory of planned behavior

This research is rooted in the Theory of Planned Behavior (TPB). According to Ajzen (1991), the purpose seems to be the best predictor of conduct. Before deciding, individuals are taught to analyze the useful information gained logically and foresee the repercussions of the conduct. Moreover, TPB is the most widely utilized theory in sustainable consumption and has been embraced as the underlying theory by various research (Marvi et al., 2020).

Additionally, TPB is derived from the Theory of Reasoned Activity (TRA). Ajzen and Fishbein (1975) felt that attitude and subjective norms determine readiness to act. Attitude is seen as an appraisal of conduct, showing the degree of approval or disagreement. Personal criteria relate to the social pressure that an individual feels from individuals who are highly important to them. The TRA model was first designed to predict behavioral intention to take acceptable measures in daily life, such as utilizing contraception. Moreover, TRA was then utilized to predict behavioral preferences in marketing and consumer behavior and was very predictive (Asih et al., 2020; Zhao et al., 2019).

TRA, on the other hand, believed that behavioral decision-making is solely governed by the will, ignoring the importance of unique opportunities and resources (Marvi et al., 2020). In one instance, some consumers support a sustainable product but forsake it owing to budgetary restrictions or a lack of availability. As a result, TRA has been questioned. As a result, TPB enhanced TRA and included the non-volitional aspect known as perceived behavior control, considerably improving the theory's predictability. Perceived behavior control offers customers knowledge about constraints such as money, time, and technology. It is believed that if volition cannot completely control individual behavior, perceived behavior control becomes the most important element (Xu et al., 2020). Hence, TPB includes the three factors mentioned above to predict intention.

2.2 Product knowledge

Product knowledge is an essential research issue because it contributes to studying consumer behavior. According to Brucks (1985), product knowledge pertains to customers' recollections or information about a product. According to Lin and Zhen (2005), it is dependent on the consumer's consciousness or comprehension of certain products or services, as well as the consumer's trust in them. According to Brucks' (1985) definition of product knowledge, it may be separated into three primary sections: topic knowledge or perceived information, objective knowledge, and experience-based knowledge. Nevertheless, Alba and Hutchinson (1987) state that product knowledge should be divided into two parts: expertise and product familiarity.

2.3 Product involvement

Customer involvement refers to a customer actively participating in service/product processes (Inuzuka and Chang, 2022). There are other situations when a company considers the demands of its customers to deliver an immersive experience, which is referred to as customer engagement (Lu, Marjerison, and Seufert, 2022). These concepts are somehow related to involvement. However, this research pertains to involvement as a customer's level of interest in purchasing a specific product and their commitment to purchasing a specific brand (N. M. Nguyen & Nguyen, 2020; Peng et al., 2019). Consumer involvement tends to be higher for higher-priced things acquired after thorough study and contemplation (Belanche et al., 2017; Handriana & Wisandiko, 2017; Soliha & Widayarsi,

2018). The previously mentioned marketing activities and government actions boost advertising, consumer research, and product participation. As a result, this study assesses these outward indications of action by assessing consumer product involvement. According to studies, more product involvement influences purchasing decisions favorably (Hollebeek et al., 2007; O'Cass, 2000; Prendergast et al., 2010; Shirin & Kambiz, 2011). When external clues to a certain product or service are positive, it motivates people to try the product or service.

2.4 Purchase intention

According to Athapaththu and Kulathunga (2018), purchase intention is the customer's eagerness to acquire a given item or service. Buying intent is frequently tied to customer conduct, discernments, and attitudes. This is consistent with earlier research, which defines purchase intention as the likelihood that a client would buy a product (Wijayaningtyas & Nainggolan, 2020) and his actions toward a brand (Spears & Singh, 2004).

Purchase intention is an individual's subjective inclination to select a specific product (Wang et al., 2013). Furthermore, it is recognized as an excellent predictor of conduct in various scenarios. Dezdard (2017) discovered that buying intention has a considerable influence on real purchase behavior, even when used as a proxy for actual behavior. Purchase intention is an important explanatory component of sustainable purchasing behavior in sustainable consumption (Ajzen, 1991). As a result, researching customers' buying intentions toward TSU ABHS aids in analyzing actual purchasing behavior. Additionally, sustainable buying intention is defined as the possibility of customers prioritizing items with pro-environmental performance above other similar products on the market.

2.5 Proposed framework

Based on the discussion above, past work indicates that product knowledge and involvement influence customers' purchase intentions for items and services. This study uses TPB as the underlying theory to establish a relationship between these three classical factors. Accordingly, this research presents a theoretical framework for investigating the effects of product knowledge and product involvement on intent to purchase. Below is a framework presented by Chang and Chen (2022), which is also adapted in this research:

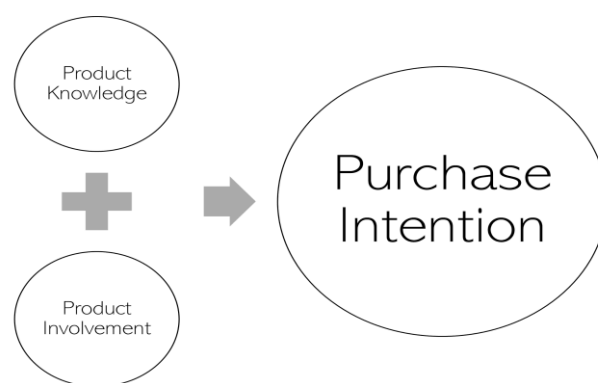


Figure 1: Framework

People's standards influence their decision-making and purchasing intent for a certain item as the scenario and surroundings change (Soelton et al., 2021). It is a scenario where individuals become more considerate of one another than before. After all, the health and safety of one another and others are of utmost priority (Handoko et al., 2020). Simply put, purchasing behavior changes occur (Wijayaningtyas et al., 2019).

For this reason, this research sought to respond to the following questions in particular:

1. To what extent does product knowledge, and product involvement relate to the intent to purchase?
3. What are the recommendations of the research results in the discipline of consumer behavior?

Following the questions above, the proposed hypotheses were:

H1: *Product knowledge has a significant influence on consumers' intent to purchase ABHS.*

H2: *Product involvement has a significant influence on consumers' intent to purchase ABHS.*

Significance of study

There has been a rise in the importance of hand sanitizer and wellness. Now is an important opportunity for healthcare businesses to grow and extend their digital audience. Prospective customers are growing rapidly, and hand cleaning is becoming an increasingly important aspect of personal hygiene habits (35 Berardi et al., 2020). Nonetheless, the pandemic remains a fluid, fast-moving issue for everyone. Consumer demand has become increasingly variable and unpredictable. Consumer intention research is essential to forecast an individual's actual behavior in purchasing hand sanitizers on a strong basis (36 Brahmana et al., 2018; 37 Dobewall et al., 2018).

As a result, this research intends to study the link between the aspects that might persuade clients to purchase hand sanitizers, particularly TSU ABHS. Additionally, the Theory of Planned Behavior (TPB) serves as the framework for determining which aspects are extremely significant in this continual shift in consumer behavior. Hand sanitizer was deemed an excellent health merchandise that some, if not all, people might make or sell for profit during and even after the COVID-19 epidemic.

3. RESEARCH METHOD

The research framework intends to evaluate the impacts of product knowledge and product involvement on purchase intention regarding Alcohol-Based Hand Sanitizer (ABHS). Considering the purposes, the two research hypotheses were addressed as shown in Figure 1.

This tested the explanations and tenets of the Theory of Planned Behavior. It was also intended to establish the causality of the model's variables. The study used quantitative methods, with online questionnaires as the primary data-collecting instrument to examine the relationship between the variables.

3.1 Population, sample, and sampling techniques

The respondents included those who were in the Philippines during the COVID-19 outbreak. Using the purposive sampling approach, the respondents should have purchased hand sanitizer in the last eight months, were at least 18 years old, and lived in the Philippines during the epidemic. The survey for the research was done online using Google Forms, with 237 respondents. As a result, the data included in the study was data obtained straight from respondents.

The survey was conducted from October to December 2022. The purpose of this study was summarized in the questionnaire's introductory section. Before answering the survey, respondents were asked to express their agreement and were assured that their participation was fully optional and that they may withdraw from the research at any time.

3.2 Instrumentation

Respondents were given four components of an online questionnaire modified from the ones used internationally. The researcher also requested permission from the instrument's designers through email. The researcher also created a self-report survey based on the respondents' age, gender, affiliation, and industry.

The Product Knowledge Scale asked questions like "I have had the experience of purchasing alcohol products/hand sanitizer with ylang-ylang essential oil" and "I know the function and purpose of the improve Alcohol-Based Hand Sanitizer (ABHS) with ylang-ylang essential oil," comprised the second section of the questionnaire. This component is graded on a 5-point Likert scale from Strongly Disagree to Strongly Agree.

The third component was the Product Involvement Scale, which was likewise graded on a scale of Strongly Disagree to Agree. It requested customers to answer questions like "Alcohol products/hand sanitizers with ylang-ylang oil are significant to me" and "I am interested in alcohol products/hand sanitizer with ylang-ylang essential oil."

The fourth component concerns customer purchase intentions toward ABHS with ylang-ylang essential oil. It posed questions such as "The likelihood of me buying an upgraded Alcohol-Based Hand Sanitizer (ABHS) with ylang-ylang essential oil is high." and "I will recommend that people buy

alcohol products/ hand sanitizer with ylang-ylang essential oil. This, like the second and third parts, was on a 5-point Likert scale, with answers ranging from Strongly Disagree to Strongly Agree.

3.3 Data analysis procedure

The responses to the questions were analyzed, and the scores were put to regression analysis to assess the link between Product Knowledge, Product Involvement, and Buy Intention. Analysis of variance (ANOVA) was performed to assess significant levels of all theoretical model variables across distinct groups of respondents based on their age, gender, affiliation, and industry. The current study's confidence level was 95%, with a 5% level of significance. As a result, the variable's level of significance was determined to be 5%. Product knowledge, product involvement, and purchase intention were all measured using a correlation matrix.

4. RESULTS AND DISCUSSION

The total number of respondents in this survey is 238, of which only 237 fulfill the respondent conditions stated for this study and have complete replies after additional screening.

4.1. Purchase intention

Table 1: Model summary – purchase intention

Model	R	R ²	Adjusted R ²	
H ₁	0.75	0.563	0.559	

Table 1 revealed that approximately 56% of the variation in Purchase intention can be explained by the independent variables, product knowledge or product involvement. The 44% variation could be attributed to other factors that may affect Purchase Intention that were not included in this research.

4.2. Multiple linear regression results

ANOVA						
Model		Sum of Squares	df	Mean Square	F	p
H ₁	Regression	52.601	2	26.3	150.861	< .001
	Residual	40.794	234	0.174		
	Total	93.395	236			

Table 2. Multiple regression

Table 2 describes the significance of the model. Based on the statistical analysis (F=150.861, df=2, 234, p<.001), the overall model is significant since at least one of the independent variables between knowledge and involvement is significant.

Table 3. Product Knowledge and Product Involvement

Coefficients						
Model		Unstandardized	Standard Error	Standardized	t	p
H ₁	(Intercept)	0.869	0.167		5.199	< .001
	PK	-0.067	0.049	-0.073	-1.369	0.172
	Involvement	0.858	0.058	0.791	14.819	< .001

The analysis in Table 3 reported that out of the two independent variables, only Product Involvement (t=14.819, p<.001) has a significant influence on Purchase Intention. Consumers' Product Knowledge (t=-1.369, p=0.172) of ABHS had no sufficient information to establish a discernible influence on Purchase intention.

5. CONCLUSION

Three variables were employed in this study: Product Knowledge (PK), Product Involvement (ProdI), and Purchase Intention (PI_n) to evaluate the characteristics that may drive consumers to purchase alcohol-based hand sanitizer products during the COVID-19 pandemic.

Product Involvement and Purchase Intention have a strong relationship. Results validated that customers were free of extra knowledge and information sources when deciding whether to buy ABHS. Towards the tail end of the pandemic, people thought that any product containing alcohol was vital for bacterial prevention, and the fact that the ABHS was developed by a university laboratory (which also supports local livelihood) made it more enticing. Research demonstrated that customers valued everything connected to their health, increasing the likelihood of acquiring a product. Akir and Othman (2010), Lin and Shui (2011), and Jurniati and Hafasnudin (2017) all supported these findings.

While Product Knowledge is required to identify the quality of a product, it does not affect consumers' buying intentions. This was corroborated by Akir and Othman's 2010 study.

Some of the research limitations were attributable to pandemic conditions during further analysis. The core data for the research were only gathered using a Google Form link. Meanwhile, the optimal technique was to interview the respondents right after the questionnaires were finished to avoid the danger of misunderstanding and acquire more information during the Focus Group Discussion.

The major source for the research data was a small sample of just 237 respondents in this study. Those who seek to benefit from the findings of this study should be cautious in generalizing or analogizing the research findings.

Additional research is required to assess the influence on the intent to purchase ABHS and other healthcare items in the Philippines by undertaking a more extensive investigation of other factors, such as origin, word-of-mouth advertising, price, etc. Future post-pandemic research will be advised to analyze the intention to re-purchase with the other factors in the existing framework, utilizing a certain brand of hand sanitizers as another research variable.

6. RECOMMENDATIONS

In some markets, subpar items may be offered to the consumers. When this is due to the use of ineffective components or formulation procedures, but the alcoholic concentration remains within the accepted disinfection standard (i.e. 60-95% for ethanol), the risk for buyers is primarily the reduced opinion of the product's quality and attractiveness, as well as reduced ease of use, while maintaining overall product efficacy. Inappropriate usage and sanitization techniques may also be used for poorly designed products.

Perhaps more concerning is the existence of hand cleansers containing substandard quantities of alcohol that are not marketed as antiseptics. There is a real risk that customers would use hand cleansers that look like hand disinfectants, oblivious to the fact that such products cannot provide disinfection and are not safe to use during the COVID-19 epidemic. To reduce this danger, pharmacists and merchants must assist customers in purchasing products for CoViD-19 contamination management; 2) the public is discouraged from purchasing hand sanitizer online from unknown or untrustworthy e-commerce sites; 3) awareness campaigns should be promoted to educate the public on the difference between products fit for general and personal hygiene; and finally, 4) regulatory institutions should reexamine policies and procedures on hand sanitizers to better protect buyers.

The need for hand sanitizers is expected to remain strong during the COVID-19 pandemic until more effective infection prevention methods are available. Furthermore, even beyond the pandemic, public consciousness of hand sanitization is expected to have longstanding repercussions on hygienic practices worldwide. People are likely to accept hand sanitizers as a new self-hygiene standard.

Understanding how people buy alcohol-based hand sanitizers can be useful for researchers, ABHS makers, and merchants. ABHS purchasing is growing in popularity among Filipino customers. Furthermore, the urgent demand for health and sanitation development has increased the procurement of ABHS and other health goods. Furthermore, the additional empirical study will help authorities and legislators involved in developing alcohol and hand sanitizers, as well as medical and educational institutions.

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Authors' contributions

Ms. Maria Sheila Garcia Medina

Ms. Garcia- Medina gathered the necessary literature, collected the data and wrote the manuscript.

Robert V. Marcos, Ph.D.

Dr. Robert V. Marcos conceptualized the idea for the research and helped in the statistical analysis. He also served as the adviser who read and approved the final manuscript.

REFERENCES

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- Akir, O., & Othman, M. N. (2010). Consumers' shopping behavior pattern on selected consumer goods: empirical evidence from Malaysian consumers. *International Review of Business Research Papers*, 6(4), 279-294.
- Alba, J. W., & Hutchinson, J. W. (1987). Dimensions of consumer expertise. *Journal of Consumer Research*, 13(4), 411-454.
- Asih, I, Purba, H.P., Sitorus, T.M. (2020). Key Performance Indicators: A Systematic Literature Review. *Journal of Strategy and Performance Management*, 8(4), 142- 155.
- Athapaththu, J. C., & Kulathunga, K. M. S. D. (2018). Factors affecting online purchase intention: Effects of technology and social commerce. *International Business Research*, 11 (10), 111-128.
- Belanche, Daniel, Carlos Flavián, and Alfredo Pérez-Rueda (2017). Understanding Interactive Online Advertising: Congruence and Product Involvement in Highly and Lowly Arousing, Skippable Video Ads. *Journal of Interactive Marketing*, 37, 75-88.
- Berardi, A., Perinelli, D. R., Merchant, H. A., Bisharat, L., Basheti, I. A., Bonacucina, G., and Palmieri, G. F. (2020). Hand sanitizers amid CoViD-19: A critical review of alcohol-based products on the market and formulation approaches to respond to increasing demand. *International Journal of Pharmaceutics*, 584, 119431.
- Bomgardner M.M., Mullin R., Scott A. (2020). Stepping up to the hand sanitizer shortage. *Chem. Eng. NEWS*. 98.
- Brahmana, R. K., Brahmana, R. K. M., & Memarista, G. (2018). Planned behavior in purchasing Health Insurance. *The South East Asian Journal of Management (SEAM)*, 12(1), 53-64.
- Brucks, Merrie. (1985). The Effects of Product Class Knowledge on Information Search Behavior, *Journal of Consumer Research*, Volume 12, Issue 1, 1-16.
- Chang, M.-Y.; Chen, H.-S. (2022). Understanding Consumers' Intentions to Purchase Clean Label Products: Evidence from Taiwan. *Nutrients* 14, 3684.
- Dezdar, S. (2017). Green information technology adoption: Influencing factors and extension of theory of planned behavior. *Social Responsibility Journal*, 13(2), 292-306.
- Dobewall, H., Tark, R., & Aavik, T. (2018). Health as a value and its association with health-related quality of life, mental health, physical health, and subjective well-being. *Applied Research in Quality of Life*, 13, 859-872.
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.
- Handoko, F., Wijayaningtyas, M., Kusuma, I. H. A., Hidayat, S., Ismail, A., & Abdullah, Z. (2020). The occupational health and safety effect on road construction worker performance. *Civil Engineering and Architecture*, 8(5).

- Handriana, T., & Wisandiko, W. R. (2017). Consumer attitudes toward advertisement and brand, based on the number of endorsers and product involvement: An experimental study. *Gadjah Mada International Journal of Business*, 19(3), 289-307.
- Hollebeek, L. D., Jaeger, S. R., Brodie, R. J., & Balemi, A. (2007). The influence of involvement on purchase intention for New World wine. *Food Quality and Preference*, 18(8), 1033-1049.
- Huddleston, J.T., 2020. The history of hand sanitizer—how the coronavirus staple went from mechanic shops to consumer shelves [WWW Document]. URL <https://www.cnn.com/2020/03/27/coronavirus-the-history-of-hand-sanitizer-and-why-its-important.html>.
- Inuzuka, A. and Chang, L. (2022). Is Participation in Services a Burden on Customers? Optimizing the Customer's Role of Participation. *Review of Integrative Business and Economics Research*, vol 12 (1), 111-123.
- Jurniati, L., and Hafasnudin, R. (2017). Pengaruh Consumer Involvement, Kredibilitas Sumber Informasi Dan Keuasan Konsumen Terhadap Keputusan Pembelian Ulang (Studi Pada Konsumen Obat Pada Apotek Di Kota Banda Aceh), *Jurnal Perspektif Manajemen dan Perbankan*, 8,3:137-157.
- Lin, L., & Zhen, J. (2005). Extrinsic product performance signaling, product knowledge, and customer satisfaction: an integrated analysis—an example of notebook consumer behavior in Taipei city. *Fu Jen Management Review*, 12(1), 65-91.
- Lin, Y., Shui C.C., Chuan, S.H. (2011). The Impacts of brand equity, brand attachment, product involvement, and repurchase intention of bicycle users. *African Journal of Business Management*, 5 (14), 5910-5919.
- Lu, S., Marjerison, R.K., and Seufert, J.H. (2022). Experiential Marketing, Customer Engagement, and Brand Loyalty in the Luxury Fashion Industry: Empirical Evidence from China. *Review of Integrative Business and Economics Research*, vol 12 (2), 58-79.
- Marvi, M. H., Minbashrazgah, M. M., Zarei, A., & Baghini, G. S. (2020). Knowledge foundation in green purchase behavior: Multidimensional scaling method. *Cogent Business & Management*, 7(1), 1773676.
- McKenzie, S., 2020. COVID-19 forces recalibration of priorities as the world embraces new habits [WWW Document].
- Nguyen, N.M. and Nguyen, H.T. (2020), "How do product involvement and prestige sensitivity affect price acceptance on the mobile phone market in Vietnam?", *Journal of Asia Business Studies*, Vol. 14 No. 3, pp. 379-398.
- O'Cass, A. (2000). An assessment of consumers product, purchase decision, advertising and consumption involvement in fashion clothing. *Journal of Economic Psychology*, 21(5), 545-576.
- Peng, L., Zhang, W., Wang, X., and Liang, S. (2019). Moderating effects of time pressure on the relationship between perceived value and purchase intention in social e-commerce sales promotion: considering the impact of product involvement. *Inform. Manag.* 56, 317–328.
- Prendergast, G. P., Tsang, A. S., & Chan, C. N. (2010). The interactive influence of country of origin of brand and product involvement on purchase intention. *Journal of Consumer Marketing*, 27(2), 180-188.
- Shirin, K., & Kambiz, H. H. (2011). The effect of the country-of-origin image, product knowledge, and product involvement on consumer purchase decisions. *Chinese Business Review*, 10(8).
- Soelton, M., Ramli, Y., Wahyono, T., Saratian, E. T. P., Oktaviar, C., & Mujadid, M. (2021). The impact of impulse buying on retail markets in Indonesia. *The Journal of Asian Finance, Economics and Business*, 8(3), 575-584.
- Soliha, E. & Widyasari, S. (2018). "Message Framing and Source Credibility in Product Advertisements with High Consumer Involvement," *European Research Studies Journal*, Vol. 0 (Special 3), pages 413-422.
- Spears, N., & Singh, S. N. (2004). Measuring attitude toward the brand and purchase intentions. *Journal of Current Issues & Research in Advertising*, 26(2), 53-66.
- Wang, J. C., & Chang, C. H. (2013). How online social ties and product-related risks influence purchase intentions: A Facebook experiment. *Electronic Commerce Research and Applications*, 12(5), 337-346.

- Wijayaningtyas, M., Handoko, F., & Hidayat, S. (2019). The millennials' perceived behavioural control on an eco-friendly house purchase intention. *Journal of Physics: Conference Series* (Vol. 1375, No. 1, p. 012060). IOP Publishing.
- Wijayaningtyas, M., & Nainggolan, T. H. (2020). The millennial generation's purchase intention toward the green residential building. *International Journal of Scientific and Technology Research*, 9(2), 2054-2059.
- Xu, Z., Shi, L., Wang, Y., Zhang, J., Huang, L., Zhang, C., et al. (2020). Pathological Findings of COVID-19 Associated with Acute Respiratory Distress Syndrome. *Lancet Respir. Med.* 8, 420–422.
- Zaichkowsky, Judith Lynne. (1994). The Personal Involvement Inventory: Reduction, Revision, and Application to Advertising. *Journal of Advertising*, 3, (4), pp. 59-70.
- Zhao, L., Lee, S. H., & Copeland, L. R. (2019). Social media and Chinese consumers' environmentally sustainable apparel purchase intentions. *Asia Pacific Journal of Marketing and Logistics*, 31 (4), 855-874.
- Zhu N, Zhang D, Wang W, Li X, Yang B, Song J, Zhao X, Huang B, Shi W, Lu R, Niu P, Zhan F, Ma X, Wang D, Xu W, Wu G, Gao GF, Tan W. (2019). China Novel Coronavirus Investigating and Research Team. A Novel Coronavirus from Patients with Pneumonia in China. *N Engl J Med.* 2020 Feb 20;382(8):727-733.