

---

# Journal of Sustainable Economic and Business (JOSEB)

Vol. 2 No. 1 January 2025: 106-116

ISSN (Online): 3063-0207

<https://journal.arepublisher.com/index.php/joseb>

---

## The Influence of Fear of Missing Out as the Mediating Variable against Purchase Decision

Dudi Permana<sup>1\*</sup>, Hana Natania Abiyyah<sup>2)</sup>, Mohammed Hokroh<sup>3)</sup>

<sup>1)</sup> [dudi.permana@mercubuana.ac.id](mailto:dudi.permana@mercubuana.ac.id), Universitas Mercu Buana, Indonesia

<sup>2)</sup> [hanaaabiyyah@gmail.com](mailto:hanaaabiyyah@gmail.com), Universitas Mercu Buana, Indonesia

<sup>3)</sup> [mohammed.hokroh@gmail.com](mailto:mohammed.hokroh@gmail.com), Saudi Aramco, Saudi Arabia

(\*) Corresponding Author

---

### ABSTRACT

**Objectives:** This research aims to analyze the effects of Perceived Scarcity and Social Anxiety on Purchase Decision with FoMO as a mediation variable in the context of McDonald's limited-edition products.

**Methodology:** A sample of 105 consumers who had purchased these products was used for the study, with data collected through questionnaires. The analysis was carried out using statistical techniques like SEM-PLS.

**Findings:** The results show no mediation. No mediation assumes that the independent variable does not have a mediator effect or intermediary variable on the interaction between the independent variable and the dependent variable. So in this study, the FoMO variable does not mediate the relationship between variables X and Y which is indicated by the results being rejected or not significant.

**Conclusion:** The results in this study indicate that (1) FoMO (Fear of Missing Out) has a negative and insignificant effect on Purchase Decision, (2) Perceived Scarcity has a positive and significant effect on FoMO (Fear of Missing Out), (3) Perceived Scarcity has a positive and significant effect on Purchase Decision, (4) Social has a positive and significant effect on FoMO (Fear of Missing Out), (5) Social Anxiety has a positive and significant effect on Purchase Decision, (6) FoMO (Fear of Missing Out) has a negative and insignificant effect in mediating the influence of Perceived Scarcity on Purchase Decision, (7) FoMO (Fear of Missing Out) has a negative and insignificant effect in mediating the influence of Social Anxiety on Purchase Decision.

**Keywords:** Perceived Scarcity; Social Anxiety; FoMO (Fear of Missing Out); Purchase Decision

**Article Doi:** <https://doi.org/10.70550/joseb.v2i1.85>

**How to Cite:** Permana, D., Abiyyah, H. N. ., & Hokroh, M. . (2025). The Influence of Fear of Missing Out as the Mediating Variable against Purchase Decision. *Journal of Sustainable Economic and Business*, 2(1), 106-116. <https://doi.org/10.70550/joseb.v2i1.85>

---

Submitted: 01-12-2024

Revised: 10-01-2025

Accepted: 11-03-2025

---

### INTRODUCTION

The popularity of Korean culture in Indonesia makes Indonesian people very enthusiastic about following every latest trend. BTS (Bangtan Sonyeondan) or Bangtan Boys is a popular group in the world. BTS's popularity makes loyal fans want to always follow the news or trends that are spread around their Idol. McDonald's is a fast-food company from the United States. Famous for its burger and fries menu, McDonald's also often provides limited edition menus

(Limited Editions) that are only available for a certain period of time. In 2021, in collaboration with the K-Pop Group BTS, McDonald's presented a Limited-Edition Menu called the BTS Meal. McDonald's and BTS collaborated through a limited-edition packaging design featuring the BTS logo. The BTS meal package consists of a drink, medium-sized fries, and chicken nuggets with cajun sauce and sweet chili sauce.

The presence of the BTS Meal from McDonald's makes BTS fans not want to miss the opportunity (FoMO). McDonald's collaboration with Korean boyband BTS has caused several problems that McDonald's has to face, including the queue for purchases in the midst of a pandemic and has attracted the government's attention to overcome the queue and resulted in the temporary closure of certain branches to prevent overcrowding. McDonald's Indonesia finally apologized for the crowds that occurred and announced that BTS Meal would be available at all outlets in Indonesia. This had become a hot topic of discussion on social media, the public's enthusiasm for BTS Meal encouraged people to buy this product.

Feelings of anxiety are one of the reasons why Indonesian people, especially BTS fans, buy this product. Social anxiety can encourage individuals to buy a product, especially limited-edition products because members of their group, be it family or friends, have bought it. By buying this product, an individual may feel recognized by their social environment. Generally, people experience social anxiety when they are motivated to make a good impression at real or imaginary meetings but are unsure whether they will be able to do so. (Lussier, et al., 2021).

The occurrence of this phenomenon has also created a significant spike in orders and enthusiasm from fans and other communities. The high number of orders on the first day of sales caused this product to experience a shortage in Indonesia. Initially, BTS Meal would be available for 4 weeks or 1 month, but the enthusiasm of BTS fans made BTS Meal available in stores shorter than previously determined. Scarcity can be defined as a real or perceived threat to consumers' ability to meet their needs and wants because

Consumer decisions to purchase McDonald's products are highly motivated by limited edition marketing strategies. Based on empirical studies conducted in previous studies, seven variables were found to have a significant influence on consumer purchasing decisions. Research by Gupta & Gentry (2019) states that Perceived Scarcity has an influence on purchasing decisions. FoMO influences purchasing decisions (Hoskinson, 2019). Previous research by Omar et al., (2021) Social Anxiety influences purchasing decisions. Research by Kusmaharani and Halim (2020) states that social influence influences consumer decision making.

Research by Septianti et al., (2021) states that brand image influences purchasing decisions. Brand awareness has a positive influence on purchasing decisions (Utami and Ellywati, 2020). Research by Naeem and Sami (2020) states that brand loyalty has a positive influence on purchasing decisions. Then a pre-survey was conducted to find out what factors most influence consumer decisions to buy McDonald's limited-edition products and obtained three variables that most influence purchasing decisions from McDonald's limited-edition products. Among the variables most chosen by respondents are Perceived Scarcity, FoMO, and also Social Anxiety.

## **LITERATURE REVIEW**

### **Purchase Decision**

Purchase Decision is an effort to combine all the knowledge that consumers have to become a useful consideration value when they choose between two or more options to buy one of the products. (Peter and Olson, 2020). In previous research, according to Kim and Sung, (2009) that the purchasing decision is stated as an individual's decision to choose certain goods or services provided by a company rather than those offered by its competitors.

### **Fear of Missing Out (FoMO)**

According to Tomczyk (2021) FoMO (Fear of Missing Out) is a feeling of fear of being cut off (or lacking the ability to access) from access to new information in cyberspace. Psychologically, Santoso et al., (2021) stated that having a strong emotional bond with a group causes fear of missing something or Fear of Missing Out experienced by young people. Fear of Missing Out (FoMO) is the feeling that other individuals have valuable experiences that someone does not have (Riordan et al, 2020).

### **Social Anxiety**

Social Anxiety is a condition characterized by irrational thoughts and persistent fear of social performance. (Abdollahi, et al. 2022). According to Stefan & Cheie (2020) social anxiety is characterized by intense fear reactions triggered by exposure to social situations and negative evaluations of one's performance in a situation. Previous studies have explained that anxiety is generally associated with the pressures, demands, and stresses of everyday life (Clark & Beck, 2010 in Jabeen et al., 2023).

### **Perceived Scarcity**

Scarcity can be defined as a real or perceived threat to a consumer's ability to satisfy their needs and wants due to lack of access to goods, services, or resources (Hamilton et al., 2019). According to Rambe and Kusnadi (2018), scarcity occurs when demand for something is greater than supply. Scarcity is a situation where production is less but people want to consume more or a situation where people want more than is available. In previous research by Gentry (2019) it was stated that Perceived Scarcity is defined as the perception of a product shortage experienced by consumers for a particular style or size that is strategically created by retailers.

## **Research hypothesis and Theoretical Framework**

### **1. The influence of Perceived Scarcity on FOMO (Fear of Missing Out)**

Previous research by Wei (2018) stated that Perceived Scarcity has a resonance with FoMO (Fear of Missing Out). However, previous research by Zhang (2020) stated that Perceived Scarcity does not automatically trigger FoMO (Fear of Missing Out). In the research of Zhang, et al. (2021) it was stated that scarcity has a positive effect on FOMO (Fear of Missing Out). Meanwhile, the study by Zhang, et al. (2022) stated that consumer Perceived Scarcity leads to fear of 'missing out' (FoMO) and therefore influences consumer choices and decisions. Thus, the following hypothesis is formulated:

H1: Perceived Scarcity have a positive and significant impact on FoMO (Fear of Missing Out)

## **2. The influence of Social Anxiety on FoMO (Fear of Missing Out)**

Previous research by Tanrikulu and Mouratidis (2021) stated that Social Anxiety has a relationship with FoMO (Fear of Missing Out). In a study conducted by Lyngdoh (2022), it was stated that FoMO can create anxiety about loss. The results of previous research by Jabeen (2023) stated that anxiety has a positive effect on FOMO (Fear of Missing Out). Based on the research above, the following hypothesis is formulated:

H2: Social Anxiety have a positive and significant impact on FoMO (Fear of Missing Out)

## **3. The influence of FoMO (Fear of Missing Out) on Purchase Intention.**

Previous research by Son, et al., (2019) stated that FOMO (Fear of Missing Out) can put pressure on consumers to make purchasing decisions. Research conducted by Ilyas, et al (2021), supports this, stating that FoMO has a positive and significant effect on Purchase Decision. The results of research by Zhang (2021) also found that FoMO greatly influences purchasing decisions. Therefore, the following hypothesis is formulated:

H3: FOMO (Fear of Missing Out) have a positive and significant impact on Purchase Intention

## **4. The influence of Perceived Scarcity on Purchase Intention.**

Perceived Scarcity refers to an individual's expectation that a product may be inaccessible after an incident (Sheu and Kuo, 2020). Researchers have found that perceived scarcity has a significant influence on an individual's purchase intention. This is supported by research conducted by Hamilton, et al. (2019) which states that scarcity affects consumers' thoughts, feelings, and actions during their decision journey, scarcity has important implications for marketing managers and policy makers. The results of previous research by Gupta & Gentry (2019) stated that Perceived Scarcity will cause a higher urgency to buy among consumers. Based on the research above, the following hypothesis is formulated:

H4: Perceived Scarcity have a positive and significant impact on Purchase Intention

## **5. The influence of Social Anxiety on Purchase Intention**

In previous research by Omar et al., (2021) stated that the perception of anxiety can increase the level of individual purchasing decisions. Previous research by Youzbazky & Hanna (2022) also stated that anxiety has a positive relationship with purchasing decisions. The results of previous research by Omar, et. al (2021) stated that anxiety has a positive relationship with consumer panic purchasing. Based on the research above, the following hypothesis is formulated:

H5: Social Anxiety have a positive and significant impact on Purchase Intention

## **6. The influence of FOMO in mediating the relationship between Perceived Scarcity on Purchase Intention**

In a study by Zhuofan Zhang, et al. (2020) it was stated that the influence of perceived scarcity on purchasing decisions is mediated by FOMO. This is supported by the results of a study conducted by Jingjing Zhang, et al. (2021) that FOMO mediates the relationship between scarcity and impulsive buying. From the research that has been done, it can be assumed that FOMO mediates the influence between Perceived Scarcity on Purchase Decision. Therefore, the following hypothesis is formulated:

H6: FOMO (Fear of Missing Out) are able to mediate the influence between Perceived Scarcity and Purchase Decision.

### 7. The influence of FOMO in mediating the relationship between Social Anxiety on Purchase Intention

FoMO is a phenomenon that is closely related to consumption and marketing Çelik et al., (2019). Previous research stated that businesses try to encourage FoMO tendencies and influence customer purchasing decisions by creating the perception that goods and services are not available through various campaigns, making customers afraid of missing out. (Hodkinson, 2019). Previous research by Dempsey, et al. (2019) stated that FOMO mediates the relationship between social anxiety. Purchasing decisions can be influenced by strong feelings of "missing out"; someone may decide to buy a better or more expensive product because they want to take advantage of the opportunity to get it. Based on the research above, the following hypothesis is formulated:

H7: FOMO (Fear of Missing Out) are able to mediate the influence between Social Anxiety and Purchase Decision.

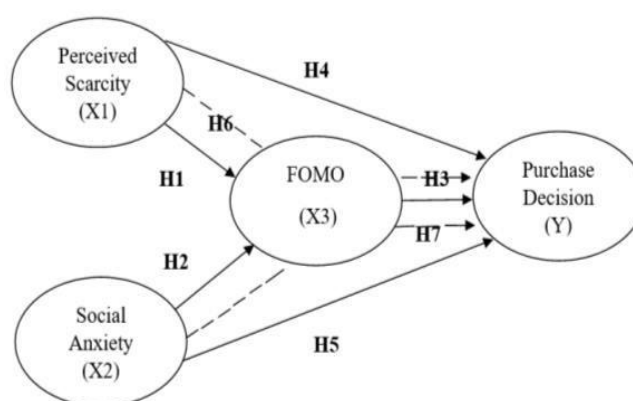


Figure 1. Theoretical Framework

## METHOD

The research was conducted with a quantitative approach. The quantitative approach is data in the form of numbers obtained from structured questions (Sekaran & Bougie, 2019). Researchers also use causal research methodology with the aim of testing hypotheses about the influence of one or more variables. The use of the causal method in this study aims to determine whether or not there is an influence between the independent variable, namely the Purchase Decision, on the dependent variable, namely Perceived Scarcity and Social Anxiety with FOMO as a mediating variable.

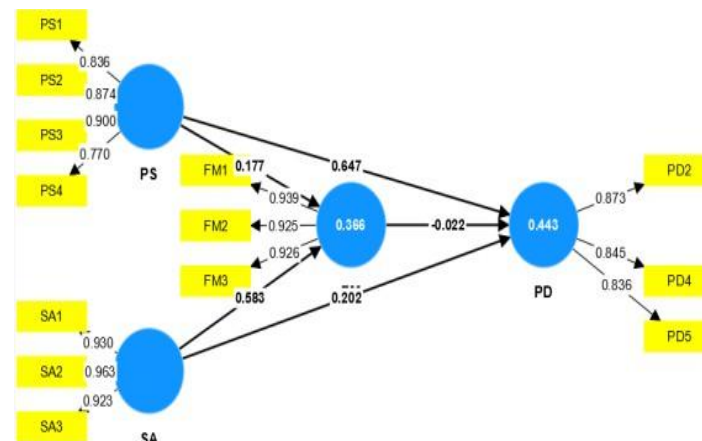
## RESULTS AND DISCUSSION

This research uses the Structural Equation Modeling (SEM) model with the Partial Least Squares (PLS) analysis method. The supporting program used is Smart-PLS 4.0 to conduct testing processes on the research model, which is done in two stages: testing the Outer Model and Inner Model.

## Results

### Evaluation of Measurement Model (Outer Model)

The ideal outer loading measurement is above 0,7, so Convergent validity can be considered valid if the loading factor value is greater than 0,7 and the Average Variance Extracted (AVE) value is at least 0,5. Based on these criteria, it can be concluded that if the loading factor value is below 0,7, it will be removed from the model.



**Figure 2.** First PLS Output Results

Based on figure 2, The process of removing PD1 and PD 3 indicators was carried out by the author which resulted in changes in the output of the path diagram. Figure 2 shows the output of the path diagram after the modification process.

**Table 1.** Discriminant Validity (Fornell Larcker) Testing

	FoMO (Z)	Purchase Decision (Y)	Perceived Scarcity (X1)	Social Anxiety (X2)
Purchase Decision (Y)	0.232			
Perceived Scarcity (X1)	0.214	0.759		
Social Anxiety (X2)	0.618	0.204	0.108	

**Source:** Output PLS 4.0

Constructs have good discriminant validity when each loading factor has the highest value compared to other loading factors towards other latent variables. Based on table 1 of Fornell-Larcker discriminant, it can be explained that the loading factor values for each indicator of each variable are not higher when connected to other variables This means that each variable has good discriminant validity

**Table 2.** Composite Reliability Test Results

Variable	Cronbach's alpha	Composite reliability (rho_a)	Average variance extracted (AVE)
FoMO (Z)	0.922	0.924	0.865
Purchase Decision (Y)	0.811	0.815	0.725
Perceived Scarcity (X1)	0.867	0.868	0.716

**Source:** Output PLS 4.0

The results of data processing in table 4.13. above show that the results of the composite reliability test of all variables have a value of more than 0.70, which means that the value is satisfactory and shows that all variables are reliable. The construct has good reliability or the questionnaire used as a research tool has been consistent or reliable and the Average Variance Extracted (AVE) value already has a value greater than the correlation between one construct and another in the model. So the Average Variance Extracted (AVE) value has met the requirements for conducting the next step test.

#### Evaluation of Structural Model (Inner Model)

**Table 3.** Results of R-Square Value

Endogenous Variables	R-square
FoMO (Z)	0.366
Purchase Decision (Y)	0.443

**Source:** Smart-PLS 4.0

The FoMO variable has an R square value of 0.366, which means that the FoMO variable is stated in a weak criterion but can be explained by Perceived Scarcity and Social Anxiety by 36.6%. Furthermore, the Purchase Decision variable has an R square value of 0.443, which is also stated as a weak criterion and can be explained by Perceived Scarcity, Social Anxiety, and also FoMO by 4.43%. The rest is explained by other variables that were not examined in this study.

**Table 4.** Results of F-Square Value

Connection	FoMO	Purchase Decision
FoMO (Z)		0,001
Perceived Scarcity (X1)	0,050	0,715
Social Anxiety (X2)	0,537	0,047

**Source:** Smart-PLS 4.0

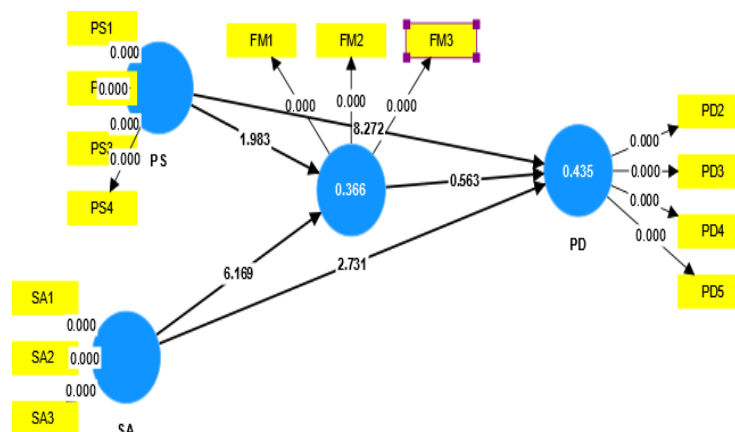
The model on the FoMO variable towards Purchase Decision has a small effect size. Meanwhile, Perceived Scarcity and FoMO have small effect sizes. The Perceived Scarcity variable towards Purchase Decision has a large effect size. Then the Social Anxiety variable towards FoMO has a large effect size, while the Social Anxiety and Purchase Decision variables have small effect sizes.

**Table 5.** Results of Q-Square Value

FoMO (Z)	0.306
Purchase Decision (Y)	0.290

**Source:** Smart-PLS 4.0

The results of the calculation of the Q square value on the FoMO variable are 0.306 and Purchase Decision is 0.290, where this value is greater than 0 (zero) which proves that this research model has predictive relevance because it is greater than 0.



**Figure 3.** Bootstrapping

**Table 8. Hypothesis of Mediating Relationship**

No	Variables	$\beta$ value	t value	P value	Information
1.	Perceived Scarcity (X1) -> FoMO (Z) -> Purchase Decision (Y)	-0,004	0,162	0,871	Rejected
2.	Social Anxiety (X2) -> FoMO (Z) -> Purchase Decision (Y)	-0,013	0,180	0,857	Rejected

**Source:** Output PLS 4.0

The results show no mediation. No mediation assumes that the independent variable does not have a mediator effect or intermediary variable on the interaction between the independent variable and the dependent variable. So in this study, the FoMO variable does not mediate the relationship between variables X and Y which is indicated by the results being rejected or not significant. There are many factors that make the mediating variable in this study rejected, including because the sample from the population is less representative, the lack of independent



variables in this study so that it cannot explain the mediating variable, namely FoMO, and respondents who do not provide rational answers to the questionnaire given.

### ***Discussion***

From the results of the hypothesis test, the level of significance of the latent variables used in this study can be seen.

1. The Influence Perceived Scarcity on FOMO (Fear of Missing Out) (H1)
2. The Influence Social anxiety on FOMO (Fear of Missing Out) (H2)
3. The Influence of FoMO (Fear of Missing Out) terhadap Purchase Decision (H3)
4. The Influence Perceived scarcity on Purchase Decision. (H4)
5. The Influence Social anxiety on Purchase Decision (H5)
6. The Influence of FoMO mediates between Perceived scarcity on Purchase Decision (H6)
7. The Influence Of FoMO mediates between social anxiety on Purchase Decision. (H7)

The results of the sixth hypothesis test (H7), namely the mediation relationship test in this study, show that FoMO (Fear of Missing Out) has a negative and insignificant effect in mediating the influence of social anxiety on Purchase Decision. This is evidenced by the T statistic being smaller than the t table ( $0.180 > 1.96$ ) or the P values  $0.002 < 0.005$  and the original sample value of -0.022 which indicates a negative relationship direction.

### **CONCLUSION**

This study aims to determine the effect of Perceived Scarcity and Social Anxiety on Purchase Decision on McDonald's limited-edition products. Based on data analysis and discussion in the previous chapter, the study can reach the following conclusions:

1. Perceived Scarcity has a positive and significant effect on Purchase Decision.
2. Social Anxiety has a positive and significant effect on FoMO (Fear of Missing Out).
3. FoMO (Fear of Missing Out) has a negative and insignificant effect on
4. Purchase Decision.
5. Perceived Scarcity has a positive and significant effect on FoMO (Fear of Missing Out).
6. Social Anxiety has a positive and significant effect on FoMO (Fear of Missing Out).
7. FoMO (Fear of Missing Out) has a negative and insignificant effect in mediating the effect between Perceived Scarcity on Purchase Decision
8. FoMO (Fear of Missing Out) has a negative and insignificant effect in mediating the effect between Social Anxiety on Purchase Decision.

### **REFERENCES**

- Abdollahi, A., Ahmed, A. A. A., Suksatan, W., Kumar, T., Majeed, M. S., Zainal, A. G., ... & Allen, K. A. (2022). Courage: a potential mediator of the relationship between personality and social anxiety. *Psychological Studies*, 67(1), 53-62.
- Çelik, I. K., Eru, O., & Cop, R. (2019). The effects of consumers' FoMo tendencies on impulse buying and the effects of impulse buying on post-purchase regret: An investigation on retail stores. *BRAIN. Broad Research in Artificial Intelligence and Neuroscience*, 10(3), 124- 138.

- Dempsey, A. E., O'Brien, K. D., Tiamiyu, M. F., & Elhai, J. D. (2019). Fear of missing out (FoMO) and rumination mediate relations between social anxiety and problematic Facebook use. *Addictive Behaviors Reports*, 9, 100150.
- Gupta, S., & Gentry, J. W. (2019). 'Should I Buy, Hoard, or Hide?'-Consumers' responses to perceived scarcity. *The International Review of Retail, Distribution and Consumer Research*, 29(2), 178-197.
- Hamilton, R., Thompson, D., Bone, S., Chaplin, L. N., Griskevicius, V., Goldsmith, K., & Zhu, M. (2019). The effects of scarcity on consumer decision journeys. *Journal of the Academy of Marketing Science*, 47, 532-550.
- Ilyas, G., Rahmia, S., Tamsah, H., & Yusriadi, Y. (2022). Does fear of missing out give satisfaction in purchasing based on social media content?. *International Journal of Data and Network Science*, 6(2), 409-418.
- Jabeen, F., Tandon, A., Sithipolvanichgul, J., Srivastava, S., & Dhir, A. (2023). Social media-induced fear of missing out (FoMo) and social media fatigue: The role of narcissism, comparison and disclosure. *Journal of Business Research*, 159, 113693.
- Jooyoung, Kim and Yongjun, Sung. (2009). Dimensions of purchase-decision involvement: Affective and cognitive involvement in product and brand. *Journal of Brand Management*. DOI: 10.1057/bm.2008.39.
- Kusmaharani, A. S., & Halim, R. E. (2020). Social influence and online impulse buying of Indonesian indie cosmetic products. *MIX: Jurnal Ilmiah Manajemen*, 10(2), 314604.
- Lussier, B., Philp, M., Hartmann, N. N., & Wieland, H. (2021). Social anxiety and salesperson performance: The roles of mindful acceptance and perceived sales manager support. *Journal of Business Research*, 124, 112-125.
- Lyngdoh, T., El-Manstrly, D., & Jeesha, K. (2023). Social isolation and social anxiety as drivers of generation Z's willingness to share personal information on social media. *Psychology & Marketing*, 40(1), 5-26.
- Naeem, M., & Sami, A. (2020). Product brand loyalty and purchase decision: a comparative study of automobile industry of Pakistan. *International Journal of Entrepreneurial Research*, 3(3), 76-87.
- Omar, Nor Asiah, Nazri, Muhamad Azrin, Ali, Mohd Helmi, and Alam, Syed Shah. (2021) The panic buying behavior of consumers during the COVID-19 pandemic: Examining the influences of uncertainty, perceptions of severity, perceptions of scarcity, and anxiety. *Journal of Retailing and Consumer Services*. <https://doi.org/10.1016/j.jretconser.2021.102600>
- Peter, Paul, J. and Olsen, SC. (2020). *Consumer Behavior and Marketing Strategy*. New York. Mc Graw-Hill.
- Riordan, Benjamin, Cody, Louise and Flett, Jayde. Conner, Tamlin, Hunter, John and Scarf, Damian. (2020). The development of a single item FoMO (Fear of Missing Out) scale. *Current Psychology*. DOI: 10.1007/s12144-018-9824-8
- Santoso, Ignatius Hari, Widyasari, Suzy and Soliha, Euis. (2021). Fomsumerism: Mengembangkan Perilaku Conformity Consumption dengan Memanfaatkan Fear of

- Missing Out Konsumen. *Jurnal Ilmiah BIsnis dan Ekonomi Asia*. DOI: 10.32815/jibeka.v15i2.230
- Sekaran, U., & Bougie, R. (2019). *Research methods for business: A skill building approach*. John Wiley & sons.
- Septianti, W., Setyawati, I., & Permana, D. (2021). The Effect of Halal Products and Brand Image on Purchasing Decisions with Purchase Interest as Mediating Variables. *European Journal of Business and Management Research*, 6(6), 271-277.
- Stefan, C. A., & Cheie, L. (2022). Self-compassion and social anxiety in late adolescence: Contributions of self-reflection and insight. *Self and Identity*, 21(2), 210-222.
- Tomczyk, Lukasz. (2021). FOMO Among Polish Adolescents. Fear Of Missing Out as a Diagnostic and Educational Challenge. *Advances in Intelligent Systems and Computing*. DOI: 10.1007/978-3-030-72657-7\_54
- Tanrikulu, G., & Mouratidis, A. (2022). Life aspirations, school engagement, social anxiety, social media use and fear of missing out among adolescents. *Current Psychology*, 1- 11.
- Utami, Anggi Tri & Ellyawati, Jeanne. (2020). Pengaruh Citra, Kualitas Produk, Celebrity Endorser terhadap Keputusan Pembelian. *Jurnal Ilmiah Manajemen dan Bisnis*. Vol. 21, No. 2. pp.123-135.
- Zhang, J., Jiang, N., Turner, J. J., & Pahlevan Sharif, S. (2021). The impact of scarcity of medical protective products on Chinese consumers' impulsive purchasing during the COVID-19 epidemic in China. *Sustainability*, 13(17), 9749.
- Zhang, J., Jiang, N., Turner, J. J., & Pahlevan-Sharif, S. (2022). The impact of scarcity on consumers' impulse buying based on the SOR theory. *Frontiers in Psychology*, 13.
- Zhang, Z., Jiménez, F. R., & Cicala, J. E. (2020). Fear of missing out scale: A self- concept perspective. *Psychology & Marketing*, 37(11), 1619-1634.