

PalArch's Journal of Archaeology of Egypt / Egyptology

Do Attitude, Price, And Product Quality Influence The Willingness To Purchase Green Products Among Higher Education Students

¹Raja Norliana Raja Omar, ²Nik Alif Amri Nik Hashim, ³Eni Noreni Mohamad Zain, ⁴Sathish Kumar Velayuthan, ⁵Ainin Sofiya Mohd Zamri, ⁶Nurizzati Hafizah Anis Ramli, ⁷Sangetha Chandran, ⁸Zuraida Zulkifli

^{1,2,4,5,6,7,8} Faculty of Hospitality, Tourism and Wellness, Universiti Malaysia Kelantan

³ Faculty of Entrepreneurship and Business, Universiti Malaysia Kelantan

Email: ²nikalifamri@gmail.com

Raja Norliana RAJA OMAR, Nik Alif Amri NIK HASHIM, Eni Noreni MOHAMAD ZAIN, Sathish Kumar VELAYUTHAN, Ainin Sofiya MOHD ZAMRI, Nurizzati Hafizah Anis RAMLI, Sangetha CHANDRAN, Zuraida ZULKIFLI: Do Attitude, Price, and Product Quality Influence the Willingness to Purchase Green Products among Higher Education Students? -- Palarch's Journal Of Archaeology Of Egypt/Egyptology 17(9). ISSN 1567-214x

Keywords: Green Products, Purchase, Willingness, Attitude, Students.

ABSTRACT

The action of protecting and conserving green products or human ecology highly determines the quality of life of the current and future Malaysian generations, which forms a mutual system in the human environment. In view of environmental poverty, it is important that students, especially, acknowledge the introduction of green products. This study will analyse the attitude and behaviour of public university students that influence their willingness to purchase green products. Using a quantitative method via questionnaires, the objectives addressed in this study will be achieved accordingly. Before administering the questionnaires to the target respondents, the researcher conducted a pilot study to evaluate the reliability and validity of the instruments, and it was found that attitude, price, and product quality are the factors influencing their willingness to purchase green products besides the collectivism value. As this study is aimed at identifying the ways to maintain the environmental surroundings and the ecology, the students reportedly have more interest in using normal products compared to green products, thus proving attitude, price, and product quality as the factors preventing green purchase among students. The random sampling

method was used for the data collection from the respondents in this study through questionnaires

1. Introduction

Globally, the use of goods and services has recorded rapid growth, which consequently reduces the natural resources and severely damages the environment (Chen & Chai, 2010; Smith & Paladino, 2010; Nik Hashim et al., 2019). This leads to the emergence of the “sustainable development” concept due to the community and environmental awareness and concerns, which have essentially promoted sustainability and the development of strategies for reducing the environmental impact since the environmental issues have been receiving serious attention from the nations around the world. Green products, which are also termed as ecological or environmentally friendly products, refer to the products that incorporate recycling and recycled contents towards protecting the environment (Chen & Chai, 2010). The buying and selling activities of green behaviour are what defines the purchase of green products, whereby humans benefit from green products with less environmental impact by having a healthier lifestyle and improved quality of life. By definition, green purchasing intention denotes the consumers’ willingness to purchase green products that attract their motivation towards the green purchase (Hashim et al., 2019; Ramayah, Lee, & Mohamad, 2010).

This study aims to examine the factors influencing the willingness to purchase green products among public university students in response to understanding the factors influencing the competitive performance of companies in the market as a result of green product innovation. To some extent, gender was found to influence consumers’ willingness to purchase more green products. Besides, the main obstacles to sustainable economic development also include the statistics of green products, the rapid growth of the global economy, and the issues concerning resources and the environment. According to Terlau and Hirsch (2015), 60 percent of consumers are willing to purchase premium ecological products, while Roos and Nyrud (2008) asserted that pricing is the least concern among green consumers compared to the non-green consumers. Hence, to encourage green purchase among potential consumers whilst fulfilling higher profits for green companies, the green products should be affordable (Suki, 2013) since the expensive price of green products is what makes them the least option compared to regular products. According to Kumar and Ghodeswar (2015), green product awareness can be created among consumers by looking into the consumer attitude towards green products. Hence, marketers must emphasize the importance of green products so that consumers are willing to pay accordingly. As consumers have more

environmental awareness, they are willing to spend more on eco-friendly products and services, thus influencing their behaviour (Chen & Chai, 2010; Omar et al., 2020; Mohamad et al., 2020).

Global warming is a significant problem in all countries as it influences the average temperature of the affected countries. In Malaysia, about 90% of Malaysian consumers reportedly have environmental concerns, and approximately two-thirds of world consumers purchase non-environmentally harmful products. Besides, 76% of regular consumers were reportedly willing to further spend on green products (Sheehan & Atkinson, 2012; Nik Hashim et al., 2020). Green products, also known as natural products, are aimed at ensuring a quality that gives an advantage to the users and the planet as a whole. Also known as non-toxic products, green products are not only originally grown and recycled but they are also not tested on animals as well as polluting the environment. Most green products are often minimally packaged, and they also contain natural ingredients, approved chemicals, and recycled content (Mishra & Sharma, 2010). Correspondingly, this study aims to identify the factors influencing green purchase among public university students in response to the environmental issues and how ecologically sustainable living standards can be achieved. Hence, green products are the topic of interest in this study as the researcher seeks to examine the factors that influence the willingness of individuals, especially students, to opt for green products.

2. Literature Review

Perceptions of Green Products

Green products refer to products that combine strategies in recycling or with recycled content, reducing packing, or using fewer toxic substances to minimize the impact on natural surroundings (Jacquelin & Ottman, 1992). The definition also focuses on green product improvement, comprising energy, resources, pollution, and waste. Product functions such as material, production, sale, and waste cure available for recycling are used to decrease air pollution and act as an electricity saver. The definition above highlights the existence of a cycled segment in which the products exhibit friendly environmental features. Purchasing results are listed in the form of green support companies by purchasing green products (Albayrak, Aksoy, & Caber, 2013) and spending more on green products (Linton, 2010). A set of factors intrinsic to users also includes realizing their environmental responsibilities, seeking knowledge, and having self-interest and willingness to act on the conservation of resources and reduction in the environmental impact. Green products have significant patterns in the presence of businesses worldwide, yet this pattern is still fresh in Asian countries such as Malaysia (Rahbar & Abdul Wahid, 2011). Nowadays, Asian nations are turning their market focus to universal advertisers due to the rising

mindfulness and readiness in purchase intensity among Asian clients (Noor, N., Mat, N., Mat, N., Jamaluddin, C., Salleh, H., & Muhammad, A., 2012).

Attitude

Human attitude is an important issue affecting green purchase intentions and behaviours (Roberts, 1997; Anuar et al., 2020). This study examines the users' attitude towards environmental issues as a significant analyst of the intention to buy green products. This study also focuses on the relationship between attitude and the willingness to purchase green products among public university students. For example, Ireland (1993) concluded that customer attitude depends on their natural states of mind, while Mostafa (2007) found a positive relationship between the state of intellect and behaviour via the set-up of several social orders. Attitude includes a clear part in the choice to acknowledge specific conduct. Thus, attitude is presumed to influence green purchase and obtaining green products. Green purchase is depicted as the act of purchasing items that are ecologically useful from customers' recognition (Mainieri, Barnett, Valdero, Unipan, & Oskamp, 1997; Aziz et al., 2019). Similarly, a green purchase can be characterized as an eco-friendly behavior where customers complete their worry about the environment (Chan, 2001). Shoppers buy green items to curb the hurtful natural impacts by ensuring character assets, diminishing the imperativeness of utilization and product misuse, and cultivating prosperity and security. A consumer's normal state of intellect and conduct is a complex and significant concept in addressing the profile of organically cognizant buyers (Straughan & Roberts, 1999).

Price

Users describe value as the property upon the completion of green product manufacturing (Blend & Van Ravenswaay, 1999). As such, green products may still be purchased by users despite their expensive price (Chen & Chai, 2010). In fact, there is a group of buyers that is intuitively aware of the environment and willing to purchase premium green products, and they are more outstanding than 80% of Malaysian, Thai, and Korean consumers in the rising green markets (Dunlap & Scarce, 1991; Lung, 2010). According to D'Souza et al. (2006), all green products must be naturally protected, excluding any changes to the basic externally with a premium value. As asserted by Young, Hwang, McDonald, and Oates (2009), price tends to hinder green purchase behaviour as it may reduce the intention to comprehend green values and attitude in deciding the purchase. Nonetheless, price as an influential factor towards green purchase behaviour is the least concern among committed environmentalists (D'Souza, Taghian, Lamb, & Peretiakko, 2007; Hashim et al., 2020). Although Young et al. (2009) contended that the price hinders green purchase behaviour by moderating the influence of green price and attitude on buying behaviour, the majority of the environmentally-conscious consumers, however, are more willing to spend on green premiums than those who are unable to spend further or are less concerned about green products (Vlosky et al;

1999). Consumers' willingness implies the essential elements in considering price formation with respect to attitude and behaviour (Oliver & Lee2011).

Product Quality

Green product quality can be referred to as product features, designs, and packages that prioritize the environment with the focus to save energy, prevent pollution, and recycle wastes. According to William, Dodds, & Grewal (1991), consumers purchase what they are willing to spend. As such, product quality can ideally act as a preliminary factor that generates customer loyalty and encourages customers' pride. Additionally, Johnson and Ettlle (2001) described quality products as the final presentation outcome that can be classified as an adjustment level and business flexibility as well as how the products fulfil what the clients want. In general, the product quality dimension comprises product packaging, design, features, and guarantees, respectively (Abdul-Muhmin, 2002). Since consumers put their trust in retailers or wholesalers that offer high-quality products, such an impact, therefore, leads to client satisfaction, devotion, and repurchase intention.

Research Framework

A research framework has been formed to investigate the connection between attitude, price, product quality and willingness to buy green product.

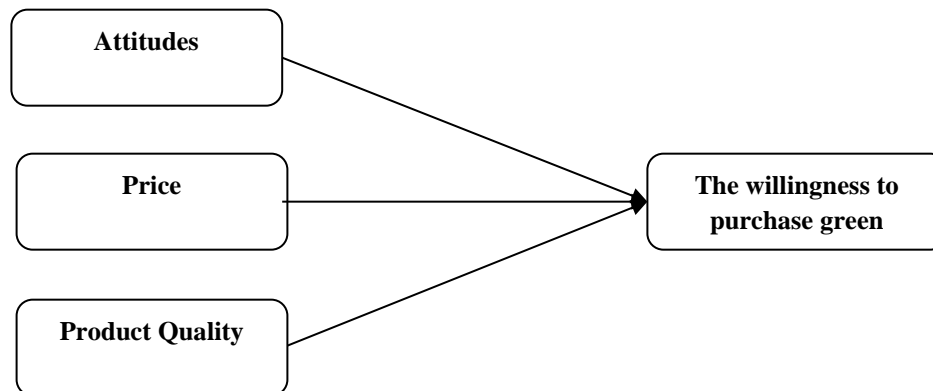


Figure 1: A conceptual framework

3. Methodology

This study employed a quantitative approach, which refers to a systematic study of phenomena by collecting quantifiable data and conducting a statistical, computational, or mathematical analysis. In the context of this study, students who are willing to purchase green products are the utmost priority; however, to compare the differences between university students, we could further examine the students who had previously purchased green products. Hence, a quantitative method was appropriate for this study. Additionally, a probability sampling method was also used in this study, and the researcher employed the simple random sampling technique since the

research samples were selected randomly. This is to ensure the fair inclusion of all individuals in the population in order to select the preferred amount at random (Suresh, 2011). As the targeted population in this study comprises public university students, the respondents were therefore selected from the following public universities: Universiti Malaysia Kelantan, Universiti Sains Malaysia, and Universiti Teknologi MARA. For the questionnaire distribution, the majority of the respondents belong to the inclusive group, which comprises students from Universiti Malaysia Kelantan, Campus City, Pengkalan Chepa, while exclusive groups such as university employees were excluded from this study. The researcher also applied Krejcie and Morgan's (1970) rule of thumb for determining the sample size to ensure the reliability and validity of the research samples (see Table 1). Approximately 320 sets of questionnaires were distributed to the respondents and the collected data were analysed using IBM SPSS version 25 software via several analyses such as descriptive statistics to summarize the sets of numerical data, a reliability test to decide the stability and consistency of the instruments measuring the constructs, and Pearson's correlation coefficient to identify the strength of a linear relationship between two or more variables (Hair, Black, Babin, Anderson, & Tatham, 2006).

Table 1: Krejcie And Morgan Sample Size

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

Source: Krejcie & Morgan (1970)

4. Findings

Descriptive Statistics

There are 21 items in the questionnaires for measuring the multi-dimensional context relative to the value of green products. Section A consists of 5 demographic questions (willingness to purchase green products), while Section B (attitude), Section C (price), and Section D (product quality) comprise questions related to the respective variables of each section. Based on the findings, attitude plays a major role in influencing the willingness to purchase green products among public university students in Kota Bharu, Kelantan (mean = 4.150). However, price was found to simultaneously attract students towards green products and help them differentiate between green and regular products (mean = 4.043), while product quality further influences the students' green purchase intention (mean = 4.137). The findings also revealed that the female students are keener on green products compared to the male students; however, the respondents in the age group between 25 and 27 years old were mostly reluctant to purchase green products. Although most of the respondents occasionally purchase green products, such a disadvantage may be attributed to the lack of attitude and belief in green products among individuals. While eco-friendly disposition among individuals tends to increase with a higher education level, individuals at the graduate level are reportedly keener on green products and are ready to purchase them compared to those at the undergraduate level.

Table 2: Mean Value of Independent Variables

	N	Mean	Standard Deviation
Attitude	320	4.150	2.93607
Price	320	4.043	3.724561
Product quality	320	4.137	3.86262

Reliability Test

A reliability test was conducted to measure the reliability of attitude, price, product quality, and the willingness to purchase green products. According to Hair, Black, Babin, Anderson, and Tatham (2006), Cronbach's Alpha value is deemed satisfactory if the range of the value is between 0.741 and 0.872.

Table 3: Reliability Test

Variable	Number of Items	Cronbach's Alpha
Attitude	5	0.815
Price	6	0.872
Product quality	5	0.741
Green product	5	0.789

Correlation Analysis

Correlation analysis was conducted to identify whether two different hypotheses were measured comparatively in terms of their characteristics and correlation values, which were neither a total value of 0 nor 1. The correlations between the three variables were examined using Pearson's correlation analysis.

Table 4: Correlation Analysis

Variable	1	2	3	4
Attitude	1			
Price	0.684	1		
Product quality	0.520	0.570	1	
Green product	0.616	0.565	0.465	1

** Correlation is significant at 0.01 level (2tailed)

Hypotheses Testing

One sample T-test is a statistical method that is used to test the mean value of distribution by indicating the statistical difference in the sample mean from a known or hypothesized mean of a population. In other words, the one sample T-test is a parametric analysis for hypotheses testing that determines the normality of the sampled distribution. The hypotheses testing in this study was conducted on all of the three research variables using T-test and correlation. As expected, the variables of price and attitude were found to significantly influence the students' willingness to purchase green products. The mean value of price with respect to the students' willingness to purchase green products is more than 3, thus suggesting that the majority of the respondents agreed that price is among the influential factors. Similarly, the mean value of product quality with respect to the willingness to purchase green products is more than 3; thus, product quality is also an influential factor. Meanwhile, the significant value (p-value) for all variables is 0.00, which is less than 0.05 and indicates a higher value of significance.

5. Discussion & Recommendations

This study will guide students towards improving their knowledge of the environment and green products in the sense that as they exhibit a more positive attitude, they are likely to have a stronger intention to perform their behaviour under control. As such, consumers should understand and be cognizant of the importance of environmentally friendly products. Besides, the government departments, for example, the Ministry of Health should initiate campaigns promoting the use of green products. Consequently, the community can control their habits and gain valuable knowledge. As revealed in this study, environmental concerns, which refer to the

consumers' emotional disposition such as their anger towards the destruction of nature, were found to significantly influence the green purchase behaviour among students at Universiti Malaysia Kelantan. In this study, environmental concerns can be defined as the consumers' emotional involvement in environmental issues as well as their willingness to solve these issues. As consumers gain more environmental knowledge, they will become more informed and they may also have a high purchase intention of green products. Besides, as they become more aware of the environmental issues, they are also encouraged to display a positive attitude towards green products. This is because environmental knowledge is positively associated with the attitude towards green products, which further influences their intention to purchase green products. Additionally, the management divisions can also strongly encourage consumers to embrace green purchase behaviour; hence, the government departments such as the Ministry of Health should organize the relevant campaigns that benefit the community members in terms of controlling their habits and gaining valuable, up-to-date information on green products since green products are acknowledged as environmentally friendly products that incorporate recycling strategies. Future researchers in this field of study should administer the questionnaires in dual language to ease the respondents when answering the questionnaires. It is also recommended that future studies expand the research scope by selecting youths as the target population instead of students. Besides, a qualitative approach can also be employed in future studies such as conducting an in-depth interview or a group discussion with different levels of green consumers, which may provide an insight into their reasons for purchase as well as their preferences. Interestingly, future researchers can also compare the findings for the types of green products and specific green consumers, which allows for a wide investigation of the consumers' viewpoints whilst attempting to understand the reason for their repurchase intention or use of certain green products.

6. Conclusions

Briefly, it can be deduced that attitude, price, and product quality are the influential factors towards the willingness to purchase green products among students in this study. Presently, the sales of green products are at their peak as individuals have become more concerned about the environment and a healthy lifestyle. Thus, taking care of health and the environment is essential to prevent health and environmental issues due to avoiding green products. Based on the report by the World Wildlife Fund (WWF) on 21 October 2004, environmental issues are a result of the direct or indirect production patterns by the industries as well as consumption and behavioural patterns of consumers. Consequently, environmental degradation has resulted in not only global warming and depletion of the stratospheric ozone layer but also sea pollution, river pollution, light

pollution, and acid rain (Ramblogan, 1997). In conclusion, university students in this study view their willingness to purchase green products similarly, and all of the tested factors are strongly associated with the students' willingness to purchase green products relative to attitude, price, and product quality. Based on the findings, attitude is strongly associated with the willingness to purchase green products among students as they are more aware of their health. Besides, students with the intention to purchase green products for daily use are also willing to spend more on these products regardless of their price.

Acknowledgements

We would like to express our appreciation to all experts who were willing to spend time and effort in this study. Also, our gratitude to the Faculty of Hospitality, Tourism & Wellness, and Faculty of Entrepreneurship & Business, Universiti Malaysia Kelantan for encouraging us to publish this article.

References

- AG Abdul-Muhmin, A. G. Effects of suppliers' marketing program variables on industrial buyers' relationship satisfaction and commitment. *Journal of Business & Industrial Marketing*, 2002;17(7), 637-651.
- T Albayrak, S Aksoy, & M Caber. The effect of environmental concern and scepticism on green purchase behaviour. *Marketing Intelligence & Planning*, 2013; 31(1), 27-39.
- JR Blend & EO Van Ravenswaay. Measuring consumer demand for eco labeled apples. *American Journal of Agricultural Economics*, 1999; 81(5), 1072-1077.
- TB Chen, T & LT Chai. Attitude towards the environment and green products: consumers' perspective. *Management science and engineering*, 2010; 4(2), 27.
- C D'Souza, M Taghian, P Lamb, & R Peretiatko. Green decisions: demographics and consumer understanding of environmental labels. *International Journal of Consumer Studies*, 2007; 31(4), 371-376.
- RE Dunlap, & R Scarce. Poll trends: Environmental problems and protection. *The public opinion quarterly*, 1991;55(4), 651-672.
- JK Eskildsen, K Kristensen, & AH Westlund. Work motivation and job satisfaction in the Nordic countries. *Employee relations*, 2004; 26(2), 122-136.
- JF Hair, WC Black, BJ Babin, RE Anderson, & RL Tatham. *Multivariate data analysis*. Uppersaddle River: NJ: Pearson Prentice Hall, 2006.
- LC Irland. Wood producers face green marketing era: Environmentally Sound Products. *Wood Technology*, 1993; 120(2), 34-36.

- MD Johnson, & JE Ettl. Technology, customization, and reliability. *Journal of Quality Management*, 2011; 6(2), 193-210.
- RV Krejcie, & DW Morgan. Determining sample size for research activities. *Educational and psychological measurement*, 1970; 30(3), 607-610.
- P Kumar, BM & Ghodeswar. Factors affecting consumers' green product purchase decisions. *Marketing Intelligence & Planning*, 2015; 33(3), 330-347.
- LHEJD Linton. New or recycled products: how much are consumers willing to pay? *Journal of Consumer Marketing*, 2010; 27, 458-468.
- K Maichum, K., S Parichatnon, & KC Peng. Application of the extended theory of planned behavior model to investigate purchase intention of green products among Thai consumers. *Sustainability*, 2016; 8(10), 1077.
- T Mainieri, EG Barnett, TR Valdero, JB Unipan, & S Oskamp. Green buying: The influence of environmental concern on consumer behavior. *The Journal of social psychology*, 1997; 137(2), 189-204.
- P Mishra, P & P Sharma. Green marketing in India: Emerging opportunities and challenges. *Journal of Engineering, Science and Management Education*, 2010; 3(1), 9-14.
- MM Mostafa. A hierarchical analysis of the green consciousness of the Egyptian consumer. *Psychology & Marketing*, 2007; 24(5), 445-473.
- N Noor, N Mat, N Mat, C Jamaluddin, H Salleh, & A Muhammad. Emerging green product buyers in Malaysia: their profiles and behaviors. Paper presented at the Proceedings of the 3rd International Conference on Business and Economic Research, Bandung, Indonesia, 2012.
- T Ramayah, JWC Lee, & O Mohamad. Green product purchase intention: Some insights from a developing country. *Resources, conservation and recycling*, 2010; 54(12), 1419-1427.
- DRBJA Roberts. Exploring the Subtle Relationships Between Environmental Concern and Ecologically Conscious Consumer Behavior. *Journal of business research*, 1997; 40, 79-89.
- E Rahbar, & N Abdul Wahid. Investigation of green marketing tools' effect on consumers' purchase behaviour. *Business strategy series*, 2011; 12(2), 73-83.
- KM Rahman, & M Haque. Exploring price sensitivity of a green brand: a consumers' perspective. *World Review of Business Research*, 2011; 1(2), 84-97.
- RD Straughan, & JA Roberts. Environmental segmentation alternatives: a look at green consumer behaviour in the new millennium. *Journal of Consumer Marketing*, 1999; 16(6), 558-575.
- K Sheehan, & L Atkinson. Special Issue on Green Advertising. *Journal of Advertising*, 2012; 41(4), 5-7.

- S Smith, & A Paladino. Eating clean and green? Investigating consumer motivations towards the purchase of organic food. *Australasian Marketing Journal (AMJ)*, 2010; 18(2), 93-104.
- NM Suki. Green Awareness Effects on Consumers' purchasing Decision: Some Insights from Malaysia. *International Journal of Asia-Pacific Studies*, 2013; 9(2).
- CH Tsen, G Phang, H Hasan, & MR Buncha. Going green: A study of consumers' willingness to pay for green products in Kota Kinabalu. *International Journal of Business and Society*, 2006; 7(2), 40-54.
- B William, KVM Dodds, D Grewal. Effect of Price, Brand and Store Information on Buyers' Product Evaluations. *Journal of Marketing Research*, 1991; 40(307-19).
- W Young, K Hwang, S McDonald, & CJ Oates. Sustainable consumption: green consumer behaviour when purchasing products. *Sustainable Development*, 2009.
- NAA Nik Hashim, AM Yusoff, Z Awang, RC Aziz, SIF Ramlee, NA Bakar, MAM No or and BS Fatt. The Effect of Domestic Tourist Perceived Risk on Revisit Intention in Malaysia. *International Journal of Innovative Technology and Exploring Engineering (IJITEE)*. 2019; 8 (10), 4591-4596.
- NAA Nik Hashim, SK Velayuthan, AM Yusoff, Z Awang and FH Muhammad Safri. Validating the Measuring Instrument for Motivation Factors towards Visiting Spa and Wellness Tourism Destinations in Kuala Lumpur. *International Journal of Innovative Technology and Exploring Engineering (IJITEE)*. 2019; 8(9S), 1106-1108.
- NAAN Hashim, Z Awang, AM Yusoff, FHM Safri, BS Fatt, SK Velayuthan, H Hashim and S Novianti. Validating the Measuring Instrument for Determinants of Tourist's Preferences Toward Revisit Intention: A Study of Genting Highland. *Journal of Advanced Research in Dynamical and Control Systems*. 2020; 12(7), 2236-2240.
- RNR Omar, NAAN Hashim, ENM Zain, SIF Ramlee, AFA Halim, AFM Rohzi, MHAN Azlin, WMNW Mat. Factors that Influence Online Behaviour in Purchasing Hotel Room via Website among Tourists. *European Journal of Molecular & Clinical Medicine*. 2020; 7(7), 219-229.
- RC Aziz, NAAN Hashim, RNR Omar, AM Yusoff, NH Muhammad, DB Simpong, T Abdullah, SA Zainuddin, & FHM Safri, Teaching and Learning in Higher Education: E-Learning as a Tool. *International Journal of Innovative Technology and Exploring Engineering (IJITEE)*, 2019; 9(1), 458-463.
- NIM Anuar, MNM Mahdi, NAAN Hashim, SR Mohamad, SA Zainuddin, NF Azmi, & WFW Zulkiffli. The Barriers towards the Adoption of

- E-Wallet Payment System. International Journal of Engineering Research and Technology. 2020; 13(11), 3772-3777.
- SR Mohamad, SA Zainuddin, NAA Nik Hashim, T Abdullah, NIM Anuar, SNS Deraman, NF Azmi, NA Mohd Razali, & ENM Zain. Validating The Measuring Instrument For The Determinants Of Social Commerce Shopping Intention Among Teenagers. European Journal of Molecular & Clinical Medicine. 2020; 7(6), 1877-1881.
- NAA Nik Hashim, BS Fatt, TM, Mohtar, Z Awang, RNR Omar, ENM Zain, M Mahshar, MJM Nasir, M.J.M. Adventure Tourism: A Study Of Tunku Abdul Rahman Park, Sabah. European Journal of Molecular & Clinical Medicine. 2020; 7(8), 2440-2446