

## Strategic Priority Of Students' Online Buying Behaviour In The Pandemic Era

Jozef R. Raco<sup>1</sup>, Yulius Raton<sup>2\*</sup>, James V. Krejci<sup>3</sup>, Johannes A. Timbuleng<sup>4</sup>, and Ronaldo Rottie<sup>5</sup>

<sup>1,4</sup>Faculty of Economics, De La Salle Catholic University, Manado, Indonesia

<sup>2,5</sup>Faculty of Engineering, De La Salle Catholic University, Manado, Indonesia

<sup>3</sup>Faculty of Business, Lewis University, Illinois, USA

### Email Address:

*jraco@unikadelasalle.ac.id, yraton@unikadelasalle.ac.id, krejcija@lewisu.edu,*

*jtimbuleng@unikadelasalle.ac.id, rrottie@unikadelasalle.ac.id*

*\*Corresponding Author*

Submitted 22-08-2022

Reviewed 10-11-2022

Revised 24-11-2022

Accepted 24-11-2022

Published 01-02-2023

**Abstract:** Online buying is growing and has become very common during the COVID-19 pandemic period. A large number of companies take advantage of this method, and many consumers find it helpful to the existing technology. In this study, the researcher wanted to investigate the strategic priority of convenience for online Shopping of the Generation Y consumer. Data were collected from college students and analysed using Analytical Hierarchy Process (AHP). The results of the analysis showed that the criteria of easy comparison of prices of the goods to be purchased are the highest value (28.544 per cent). The global weight calculation showed that the availability of information in the form of text and images is the highest (13.789 per cent). Sensitivity analysis showed that the results of this global weight are very sensitive to a change in the criteria. This study provides benefits by focusing online businesses' attention on the appearance of their application features, both text, images, and graphics. Competitive product prices must also be a concern for online businesses.

**Keywords:** Strategic; Online; Buying; Pandemic COVID - 19; Generation -Y; AHP.

**Abstrak:** Pembelian secara online mulai dilakukan dan menjadi sangat populer di masa pandemi COVID-19. Banyak perusahaan memanfaatkan cara belanja seperti ini dan banyak pelanggan merasa terbantu dengan teknologi tersebut. Melalui penelitian ini, peneliti ingin mengetahui strategi prioritas tentang kenyamanan belanja secara online bagi pelanggan Generasi Y. Data dikumpulkan dari mahasiswa dan analisisnya menggunakan metode Analytical Hierarchy Process (AHP). Hasil analisis menunjukkan bahwa kriteria kemudahan membandingkan harga barang adalah yang tertinggi (28,544 persen). Perhitungan bobot secara keseluruhan menunjukkan bahwa ketersediaan informasi dalam bentuk teks dan gambar adalah yang tertinggi (13,789 persen). Analisis sensitivitas menunjukkan bahwa hasil bobot keseluruhan ini adalah sangat sensitif terhadap perubahan kriteria. Penelitian ini memberikan manfaat bagi pelaku usaha untuk memfokuskan perhatian bisnis online pada tampilan fitur aplikasi mereka, baik teks, gambar, maupun grafik. Harga produk yang kompetitif juga harus menjadi perhatian para pebisnis online

**Keywords:** Strategis; Online; Pembelian; Pandemi COVID - 19; Generasi – Y; AHP.

## INTRODUCTION

The COVID-19 pandemic has caused severe acute respiratory syndrome (Hassen, Bilali, Allahyari, Berjan, and Fotina, 2021). This pandemic will continue to affect all areas of human life throughout the world, be it political, economic, educational, scientific, health, transportation, industrial, and economic aspects, tourism, financial markets, culture, including food and food security (Burlea-schiopoiu et al., 2021).



Policymakers around the world are responding to this pandemic by (1) recommending people voluntarily limit their direct contact with others, social distance, wear masks and wash their hands frequently or (2) Mandate various levels of self-isolation to avoid being infected with this virus (Brewer and Sebby, 2021). The pandemic has changed many patterns of human interaction, including reconsidering their shopping patterns and, in many cases, modifying or completely changing their shopping methods (Eger et al., 2021). Many consumers have begun to increase their online shopping patterns, home-delivery or cashless payments.

The pandemic has accelerated new methods of remote Shopping online (Ng et al., 2021). The digitalisation of trades increased sharply (Nanda et al., 2021), and this became a trend in almost all economic activities (Kumar and Shah, 2021). They added that most purchases of products ranging from bath soap to electronics are now made online. The Government's recommendation to stay at home, work from home and go out when it is urgent has increased the relevance and demand for online Shopping. Online Shopping is the easy solution for modern life in today's world because it avoids face-to-face transactions, saves time, and is easy to access (Anisur et al., 2018).

(Biswas et al., 2019) added that shoppers benefit from online Shopping because transactions can occur 24 hours a day with low fees and little time (Biswas et al., 2019), resulting in online Shopping experiencing explosive growth compared to the traditional shopping pattern of physically visiting the store (Vasić et al., 2021).

Online buying continues to fuel the development of internet technology. The internet is not only used as a medium of technological communication but is also increasingly used in the business world (Nabot et al., 2016) to increase business transactions across the globe. The dissemination of mobile phones and other digital communication technologies has changed the lifestyles of people worldwide (Kumar and Shah, 2021), and with their multifunctionality, smartphones have increased electronic commerce (Steel, 2021) and has led to increased development and availability of various online applications that are convenient to use. Understanding the importance of convenience in the use of online buying for students is critical for businesses and internet technology players to be able to compete in the online buying arena in the future.

The use of mobile and online Shopping is predominately among young people, especially students born after the baby boomers, who are often called Generation Y or digital natives. Their potential as economic actors is very significant since they are both the future leaders and the next generation of consumers. There is a number of studies on online convenience buying among college students, but determining the strategic priority factors is still very limited. This study will complement and bridge the limitations of the existing literature related to convenience buying behaviour amongst students.

The formulation of the research problem is: what is the dominant factor determining the convenience buying behaviour of students that leads them to shop?

This study limits its study to determine the dominant factor regarding convenience buying behaviour among students in Manado, Indonesia.

This research will provide benefits to business actors engaged in online business both during and after the pandemic. This study is also useful for other students to understand and justify shopping patterns that they feel are comfortable using smartphones.



## THEORETICAL REVIEW

**Internet Buying in Pandemic COVID-19.** Online Shopping is understood as the activity of buying or selling goods or services using the internet.

The internet is not a new phenomenon in the business world, but the current world environment has increased the volume and intensity of its use. Many shops (businesses) have used the internet to promote and sell their products. (Ng et al., 2021) added that the spread of the internet has made it easier for people to access retailers in recent years (Ng et al., 2021).

The COVID-19 pandemic has increased the use of the internet for both buyers and sellers. Buyers are reducing their visits to stores to buy goods, causing an increased demand for alternative goods distribution networks (Eger et al., 2021). The application by Government of strict rules to maintain public health by implementing five policies, namely wearing masks, maintaining distance, washing hands, avoiding crowds and limiting travel. According to (Eger et al., 2021), this encourages consumers to use an alternate channel to shop. The policy was followed by the closure of schools, restaurants, shopping centres and public services. Restrictions on human activities outside the home, reducing physical interactions, have made consumers engage in Shopping online even more. Even older, less digital-savvy consumers have started to utilise online Shopping (Eger et al., 2021).

During this time of the pandemic, consumers are starting to review their old shopping habits and are discovering the benefits of online services. Consumers are turning to online purchases, discovering the safety, convenience and benefits of home delivery, in-store pickup, and cashless payments.

**Shopping Habit Of Generation – Y.** The use of the internet in business activities encourages consumers to change their shopping patterns. Consumers from all generations are starting to make more purchases on the internet and using smartphones.

Generation Y is one of the consumer groups that has been extensively studied in market segmentation research. This group of individuals is referred to by many different names, such as millennial Generation, DotNet, Ne(x)t Generation, Nexters, iYGeneration, Net Generation, Gen Wired, Why Generation, First Globals, We generation, iPod Generation, and Echo Boomers.

There is no agreement on how this group should be defined based on the time limit of their birth (Shabrin et al., 2020). But it is clear that Generation-Y Era is those who were born in the era of globalisation where social networking and instant communication technologies are developing rapidly. In the era of generation Y, people can easily communicate with each other through sophisticated communication technology. The cognitive, emotional and social aspects of this generation are closely related to technology. In addition to the influence of technology, Generation Y is described as a unique customer segment that generally does not follow the behaviour and buying patterns of its parents.

Sanderson claims that Generation Y is different from its predecessors; having grown up in a digital world, they hold new beliefs and ideologies. Most of them are highly educated, and their expectations of products and services influence their preference for smartphone devices. This generation consumes information from electronic media five times faster than its predecessor (Shabrin et al., 2020).

The use of the internet in online Shopping is increasing in its use in Generation Y, namely those born between the 1980s and 2000s. They are also often referred to as 'digital natives' because they were born into a world that consisted of the internet and online



applications. According to (Eger et al., 2021), members of this generation are usually confident, ambitious, speak various foreign languages and are achievement-oriented. They are well-informed about all the news and look for changes and innovations, and usually make purchase decisions having undertaken prior research on the topic (Eger et al., 2021). They expanded that people of this generation do not visit the same stores as their parents did. They are always moving from one store to another and exhibit high curiosity. This generation prefers online Shopping, which offers them a range of benefits compared with traditional shops, including easy ordering and delivery and low price.

This generation wants products that match their personality and lifestyle. Consumers from this Generation tend to devote their spending more to personal or digital services than to apparel, suffer higher levels of debt and earn less on average than previous generations. They are very familiar with social media and identify with that medium (Eger et al., 2021). They use different kinds of mobile resources and platforms and are more likely to seek out a specific brand. They prefer instant gratification through the speed of internet shopping.

**Technology Acceptance Model of Buying Online.** There are a number of models developed to understand the benefits of new technologies. The most studied model for understanding why users choose or do not choose technology is the technology acceptance model (TAM). TAM can predict the level of technology acceptance and use (Deslonde and Becerra, 2018). Although this model was developed to explain and predict computer user behaviour in the work environment, it was later recognised that this method could also be used to determine e-commerce adaptation and as a theoretical basis for explaining online consumer behaviour (Mosunmola et al., 2018).

There are two constructs of TAM, namely perceived usefulness (PU) and perceived ease of use (PEU). PU describes the user's belief that technology will increase productivity. PEU refers to user beliefs about how difficult a technology will be to learn (Hanham et al., 2021).

People appreciate technology because it is easy to use (Mosunmola et al., 2018) and is relatively free of effort to learn (Deslonde and Becerra, 2018). Additionally, there are instructions for use; it's not complicated (Hanham et al., 2021) and satisfies the wishes and needs of users. It is triable, can be observed and gives advantages (Nordhoff, Malmsten, Arem, Liu, and Happee, 2021). Consumers feel the benefits and enjoy using it because it offers attractive features, graphics and colours.

Another supporting aspect of technology is trust. It has also been suggested by scholars that a consumer's willingness to use and purchase from an online store is subject to the ability of the online retailer to evoke the consumers' trust. (Mosunmola et al., 2018) argued that commitment to shop in an online store increases only when consumers "perceive trust (Mosunmola et al., 2018).

**Perceived Benefit of Buying Online.** Perceived benefit refers to the perception of a positive consequence that was caused by a specific action. Perceived benefits related to online Shopping are the benefits obtained by internet users, such as feeling convenience when they shop online. Benefits can also be perceived because they feel economically efficient through saving time (Nanda et al., 2021), low cost, a sense of privacy and feel of personalisation of Shopping.

(Vasić et al., 2021) added that there are a number of reasons why people purchase via the internet; for example, consumers can buy anything at any time without actually going to the store; consumers can stumble on the same product at a lower price by comparing different websites simultaneously; consumers want to avoid pressure felt when





communicating face-to-face with the retailer; consumers want to avoid traffic jams that can occur on the way to the store, and so on.

Online Shopping provides consumers with more information and opportunities to compare products and prices, with greater product selection, convenience and ease of finding the desired product. It has been argued that online commerce offers more satisfaction to modern consumers who seek convenience and speed (Vasić et al., 2021). It is all related to how well the experience of Shopping is perceived (Silva et al., 2019). This will encourage people to migrate from shopping in-store visits to online (Nanda et al., 2021), and this new shopping pattern will become the new normal for Shopping after the pandemic.

**Perceived Risk Of Buying Online.** Perceived risk is one of the key elements of consumer behaviour that has been found to be prevalent in most purchasing decisions, and even more so in an online shopping context. The concept of perceived risk was first proposed in 1960 by Bauer, who defined it as the unpredictable results that consumers perceive when they engage in purchasing behaviour; these results may have a negative influence on the consumer.

Consumers generally perceive more risks when shopping online compared to traditional shopping channels such as brick-and-mortar stores (Pentz et al., 2020). Apart from its negative effect on consumers' attitudes towards online Shopping, perceived risk can also exert a negative influence on consumers' willingness and intention to purchase online. Perceived risk from consumers who shop online includes a sense of uncertainty, such as the possibility of losing money or goods purchased online and fear that personal information (credit card data) will be leaked/known to other parties.

(Silva et al., 2019) mentioned that online Shopping could be hindered by direct interaction with the product and seller, leading to a higher feeling of insecurity and perceived risk (Silva et al., 2019). Studies from the literature have found that a greater level of perceived risk in online stores leads to lower purchase intention. Once online shoppers perceive both security and privacy risks, they tend to be unwilling to provide both personal and transactional information on the internet (Mosunmola et al., 2018). (Mosunmola et al., 2018) added that many studies had examined the effect of perceived risk on e-commerce. They found that the higher the level of perceived risk, the lower the purchase intention/use of online stores (Mosunmola et al., 2018).

In the context of e-commerce, a trust includes the online consumers' beliefs and expectancies concerning trust-related features of the online seller. In e-commerce, trust is critical as it reduces buyer uncertainty. Trust, in psychology, is the belief that the seller will do what is expected by the buyer of a given product/service.

**Analytical Hierarchy Process (AHP).** This study uses the AHP method both in data collection and analysis. Several papers have compiled AHP success stories in very different fields. The AHP method is usually used in decision-making involving many complex criteria; commonly used to determine priority factors and to simplify complex problems (J. Raco et al., 2021).

This method also provides an excellent combination of qualitative and quantitative methods (Raco et al., 2020); it is easy to use because respondents chose between two options; the mathematical procedure is relatively simple and has been applied by various disciplines.

The analytical hierarchy process (AHP) was developed by Saaty (Saaty, 1987) to enhance the process of making the right decisions regarding choices that are multi-criteria



and complex (Majumdar et al., 2021) and is practically used in multiple criteria decision making (Garg and Ganesh, 2020).

(Khan and Ali, 2020) continued that AHP was very helpful in processing data consistency and also identifying inconsistencies. Inconsistent data will have an impact on making the correct decisions (Khan and Ali, 2020). (Kwatra et al., 2021) uncovered that the consistency test would help reduce bias in decision-making (Kwatra, Kumar, Sharma, and Sharma, 2021). (Balwada et al., 2021) also mentioned that the main benefit of AHP is its ability to check and reduce inconsistency from professional judgments (Balwada et al., 2021)

In this study, AHP was used to solve problems related to online convenience buying (criteria and sub-criteria) so that they could be easily solved.

The questionnaire is arranged in the form of pairwise comparisons, making it easier for respondents to choose because there are only two options. AHP is also very helpful in understanding subjective and objective aspects related to decision-making (Kwatra et al., 2021). They stated that with pairwise comparison, AHP produces relative weights for each criterion and option presented by the experts. The greater the weight, the more important the corresponding options (Kwatra et al., 2021).

AHP combines the weights of the criteria and sub-criteria and then calculates the global score for each option and the corresponding ranking. Finally, the global score for each option is given through a weighted sum of the scores obtained with respect to all the criteria (Kwatra et al., 2021). In AHP, the researchers broke down (AHP 6) the problem into a hierarchy so it is easily understood and solves complex problems. The questionnaires were constructed in pairwise comparison (Garg and Ganesh, 2020).

Although there are some issues and challenges with AHP, it has proven to be a simple and extremely useful method of MCDM.

Applications of AHP have been found almost in every domain of engineering, management and social sciences, including a ranking of habitable cities, site location selection of solar thermoelectric power plants, infectious waste disposal, landfill, industry development and other disciplines (Majumdar et al., 2021).

**Sensitive Analysis.** Sensitivity analysis is also known as 'what if' analysis by determining the amount of change in priority if the value of a criterion is changed. Mu added that sensitivity analysis aims to determine how robust the results are and, at the same time, provides information about what is the main driver (Mu and Pereyra-Rojas, 2018). Sensitivity analysis helps researchers to determine the strength and stability of the against the various assessments. Sensitivity analysis helps researchers understand the strength of the decisions made and what are the determining criteria. It is an important part of the decision-making process, and no final decision can be made in the absence of a sensitivity analysis (Mu and Pereyra-Rojas, 2018).

Sensitivity analysis needs to be carried out on the results of the AHP to anticipate if additional information is required and to predict the situation where there is a change that is large enough so that the decision-maker changes his assessment and causes a change in the priority order, for example, a change in priority weight occurs due to a change in policy so that the proposed question of how to order alternative priorities arises. What is new, and what actions need to be taken? The more sensitive a parameter, either criteria or sub-criteria, the less robust the criteria or sub-criteria will be for determining the solution, as it can change the order of priority.

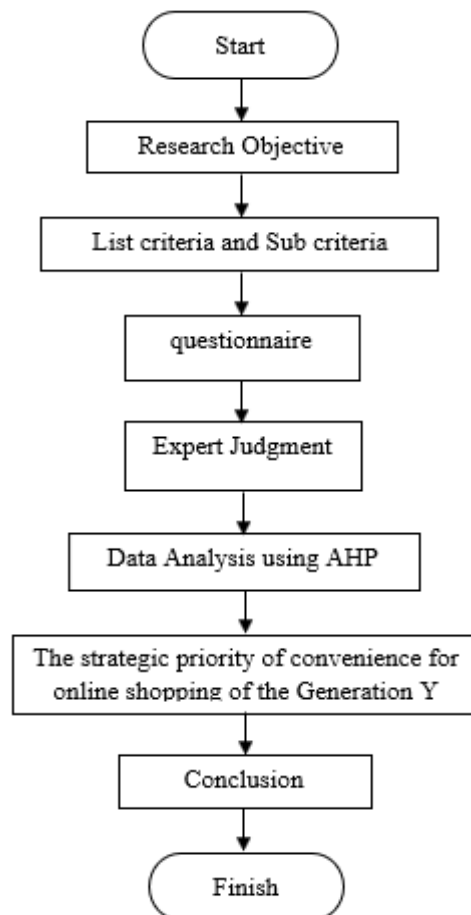


## METHODS

The Analytic Hierarchy Process (AHP), developed by Thomas Saaty, is a quantitative multi-criteria decision-making process (MCDM) by compiling multi-complex problems in a hierarchical form so that they are easy to solve (Acosta et al., 2021).

AHP is one of the most widely used methods among decision-making techniques, including in determining online buying priorities. In AHP, first, the problem needs to be clearly defined. Furthermore, targets, main criteria and sub-criteria are determined to create interactions between criteria and subcriteria in order to build a hierarchical structure formulation (Oturakci et al., 2018)

The steps in this study are shown in **Figure 1**. Starting with determining the research objectives, namely to find out the strategic priority of convenience for online Shopping of the Generation Y consumer.



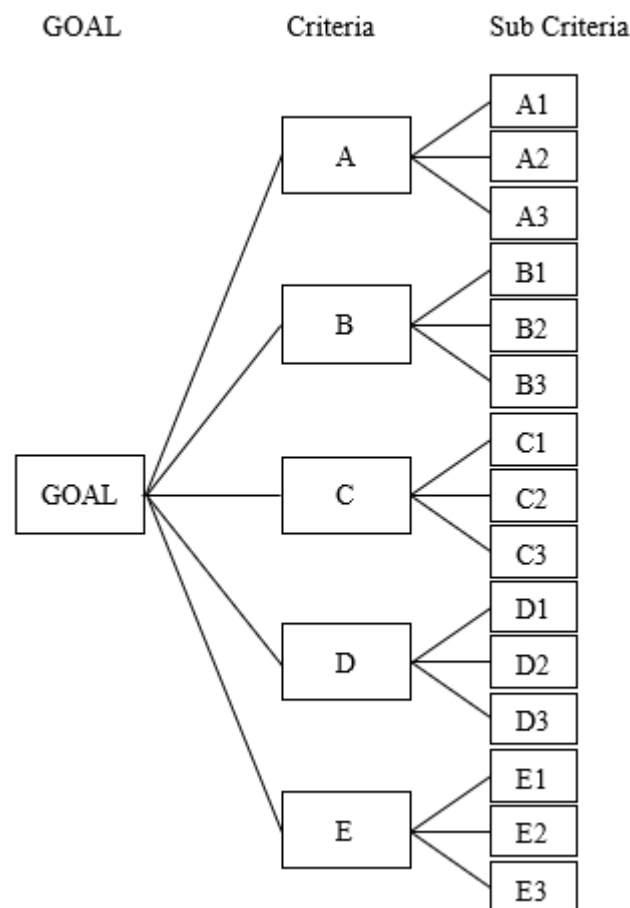
**Figure 1.** Research steps

The second step is to identify the criteria and sub-criteria that affect buying convenience by tracing previous studies. From the analysis of the literature, the authors set 5 criteria for this study. The criteria used are first, reasonable/easy to access information; second, easy to find items to buy; third, easy to compare goods and prices; fourth, easy to transact; and fifth comfortable after buying and owning the purchased product.



Each criterion in this study has its own definition. Easy access to information is defined as being able to shop and order goods anytime and anywhere, and the application is easy to access and open (Vasić et al., 2021). The criteria for easy finding of goods to be purchased are defined as quickly getting and distinguishing the desired product and easy to search (Anisur et al., 2018). The criteria for easily comparing products and prices are defined as the availability of information about product specifications and prices in the form of text, graphics, images and attractive designs (Biswas et al., 2019). The criteria for easy transactions are defined as the process being easy, flexible and simple (Zhang et al., 2021). The criteria for being comfortable buying and having online products are defined as the process does not take long, both contacting suppliers and receiving products as expected. The elements in the criteria form the sub-criteria (Fagerstrøm et al., 2021).

Goal, criteria and sub-criteria are then arranged in a hierarchical form, as shown in **Figure 2**. The purpose of this hierarchy is to break down complex problems into parts so that they are easy to analyse and solve.



**Figure 2.** Structure of the hierarchy

Explanation :

Criteria :

- A. Easy to find information
- B. Easy to find items to buy
- C. Easy to compare goods and prices
- D. Easy to do transaction
- E. Comfortable after buying and owning the purchased product



Sub Criteria :

- A1. Doing Shopping anywhere, anytime
- A2. Ordering goods anywhere
- A3. Web applications easy to open
- B1. Faster to get the products they want
- B2. The web is easy to understand and browse
- B3. Easy to distinguish the products available
- C1. Availability of products specification
- C2. Availability of information about the product and prices both in text form
- C3. Information of products in the form of graphics, design and image
- D1. The transaction process is easy
- D2. Flexible to use
- D3. Online payment is simple
- E1. Purchase time is relatively short
- E2. Contact and Communication time with the seller is short
- E3. The product was received as expected

The third step is compiling a questionnaire in the form of a pairwise comparison. Psychologists argue that it is easier and more accurate to express one's opinion on only two alternatives than simultaneously on all the alternatives.

The fourth step is to determine the number of respondents, who in this case are those who usually have experience in buying online, in addition, to experience as well as an understanding of the issue. Then proceeded with the expert judgment.

Respondents choose one of the two options they think is most important using Saaty's 1 to 9 (**Table 1**).

**Table 1.** Saaty's comparative scale

The intensity of importance on an Absolute Scale	Definition	Explanation
1	Equal Importance	Two activities contribute equally to the objective
3	Moderate importance of one over another	Experience and judgment strongly favour one activity over another
5	Essential or strong importance	Experience and judgment strongly favour one activity over another
7	Very strong importance	Activity is strongly favoured, and its dominance demonstrated in practice
9	Extreme importance	The evidence favouring one activity over another is of the highest possible order of affirmation
2,4,6,8	Intermediate values between the two adjacent judgments	When compromise is needed

Source: (Saaty, 1987)

Making the choice of two options is more accurate; this way, human feelings and thoughts can be quantified. This research focused on the human feelings and thoughts of the respondents.

Furthermore, the data in the form of expert judgment was processed using the AHP method to determine the strategic priorities of the respondents in online buying. The next step is drawing conclusions.

The steps of data processing using the AHP method are as follows



Average the data using the geometric mean as in Equation 1.

**Geometric mean equation,**

$$GM = \sqrt[n]{(x_1)(x_2) \dots (x_n)} \dots\dots\dots(1)$$

In this study, the research uses the aggregation of individual judgments using geometric mean (Raco et al., 2021). According to (Mu and Pereyra-Rojas, 2018), the geometric mean is the correct way to synthesise the judgments given by the experts as reciprocal matrices (Mu and Pereyra-Rojas, 2018). According to Mu and Pereyra-Rojas, the geometric mean is the correct way to aggregate judgments in AHP and the geometric mean aggregation for our study (Mu and Pereyra-Rojas, 2018).

Arrange the pairwise comparison matrix with the following equation. The aggregated results were then arranged in the matrix of pairwise utilising Equation 2.

**Pairwise Comparison Matrix,**

$$A = [a_{ij}], a_{ij} = w_i/w_j, a_{ji} = 1/a_{ij}, a_{ii} = 1 \dots\dots\dots(2)$$

Normalised pairwise comparison matrix using equation 3.

**Normalised Pairwise Comparison Matrix,**

$$b_{ij} = \frac{a_{ij}}{\sum_{i=1}^n a_{ij}} \dots\dots\dots(3)$$

The priority weight was calculated using equation 4.

**Priority weight equation,**

$$w_i = \frac{\sum_{j=1}^n b_{ij}}{n} \dots\dots\dots(4)$$

Consistency computation was conducted by the following steps: Calculating lambda Max from each matrix of order *n* by adding up the multiplication result between the total weights of all criteria in each matrix column with the main eigenvector value.

**Lambda max equation**

$$\lambda_{max} = \sum_{i=1}^n \frac{(Aw)_i}{nw_i} \dots\dots\dots(5)$$

Calculate the consistency index for each matrix of order by using equation 6.

**Consistency index equation,**

$$CI = \frac{\lambda_{max} - n}{n - 1} \dots\dots\dots(6)$$

Ratio consistency is calculated using equation 7. **Consistency ratio equation,**

$$CR = \frac{CI}{RI} \dots\dots\dots(7)$$

Ratio Index (RI) values for various orders of the matrix are listed in **Table 2**.

**Table 2.** The value of RI.

N	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
RI	0.000	0.000	0.580	0.900	1.120	1.240	1.320	1.410	1.450	1.490	1.510	1.480	1.560	1.570	1.590

Source: (Saaty, 1987)



The assessment between one criterion and another cannot be completely consistent. This inconsistency can be caused by incorrectly entering judgments, lack of information, and lack of concentration. We know that the real world is not always consistent.

The AHP method allows the occurrence of inconsistencies in the assessment of criteria, but the inconsistency of the assessment must not exceed the value of the consistency ratio of 10 per cent. This consistency ratio can be obtained as appeared in equations 5, 6 dan 7.

It is considered consistent if it is less than 0.100. Each criterion has a weight; each sub-criterion has a weight, and the higher the weight, the more important the position; the comparison of the sub-criteria is also made, and the multiplication between the criteria and the sub-criteria obtains a global weight. Global priority weight expresses the relative importance of an element to the overall goal.

## RESULTS

The goal of the study was to determine the most prioritised convenience factor of online buying behaviour of Generation Y. Based on the literature review, the researcher determined five criteria to be studied, namely: convenient/easy to access information, easy to find items to buy, easy to compare goods and prices, easy to transact; and comfortable after buying and owning the purchased product.

The results of the data analysis showed that both the criteria and sub-criteria were consistent, namely CR less than 0.100, so the results were valid for use. The data was calculated and synthesised using Microsoft Office Excel version 2019.

The opinion of each respondent, according to Saaty, is used as the opinion of the group by combining these opinions using the geometric mean (Saaty, 1987). (Saaty, 2008) added that the geometric mean is the best way to combine the opinions of each individual (Saaty, 2008).

Pairwise comparison matrix, the weight of criteria and the consistency ratio on **Table 3**.

**Table 3.** Pairwise comparison,  $\lambda$ -max, priority, CI and CR of Criteria

	A	B	C	D	E	Priority weight
A	1.000	0.386	0.401	0.482	0.759	0.106
B	2.589	1.000	1.180	1.154	1.323	0.257
C	2.496	0.848	1.000	1.862	2.007	0.285
D	2.076	0.866	0.537	1.000	0.926	0.185
E	1.318	0.756	0.498	1.079	1.000	0.167
$\lambda$ -max as 5.059		CI as 0.015		CR as 0.013 (CR less than 0.100)		

Source: Primary data processed

Explanation:

A. Easy to find information

B. Easy to find items to buy

C. easy to compare goods and prices

D. easy-to-do transaction

E. comfortable after buying and owning the purchased product.



**Table 3** contains the results of data analysis for the criteria consisting of a pairwise comparison matrix, starting from the first row of the first column to the fifth row of the fifth column. The Pairwise comparison matrix is an aggregation of respondents' perceptions which is calculated using **equation 1** and then arranged into a matrix based on **equation 2**. Priority weight which is the weight of the respondent's perception is in the fifth column starting from the first row to the fifth row, calculated using **equation 3** and **equation 4**, respectively. Respondents' perceptions of priority weight for criteria, starting from the largest, are criteria C, which is easy to compare goods and prices (28.544 per cent), criteria B, easy to find items to buy (25.712 per cent), criteria D, easy to do transactions (18.511 per cent), criteria E comfortable after buying and owning the purchased product (16.654 per cent), criteria A: easy to find information (10.579 per cent). While the fifth row in table 3 contains the results of the calculation of the respondent's perception consistency test using **equation 5**, **equation 6** and **equation 7**, respectively. The final result in the form of a consistency ratio value of 0.013 fulfils the consistency requirements because the CR value is less than the limit value of 0.100. These results indicate that the respondent's perception of consistent criteria and priority weight is acceptable.

Pairwise comparison matrix of sub-criteria A easy to find information, the weight of sub-criteria and consistency ratio on **Table 4**.

**Table 4.** Pairwise comparison,  $\lambda$ -max, priority, CI and CR of sub-criteria A

	A.1	A.2	A.3	Priority weight
A.1	1.000	1.573	1.320	0.414
A.2	0.636	1.000	1.730	0.337
A.3	0.757	0.578	1.000	0.249
$\lambda$ -max as 3.058		CI as 0.029	CR as 0.050 (CR less than 0.100)	

Source: Primary data processed

Explanation:

A1. Doing Shopping anywhere, anytime

A2. Ordering goods anywhere

A3. Web applications easy to open

**Table 4** contains the results of data analysis for sub-criteria A, easy-to-find information. Same as per the previous explanation, table 4 contains a pairwise comparison matrix which is the result of aggregating respondents' perceptions using **equation 1** and arranged into a matrix using **equation 2**. Priority weight for sub-criteria A is calculated using **equation 3** and **equation 4**. Priority weight results for sub-criteria A ordered from the largest is sub-criterion A1 doing Shopping anywhere any time (41.432 per cent), sub-criterion A2: ordering goods anywhere (33.671 per cent), sub-criterion A3: web application easy to open (24.897 per cent). The last line in table 4 is the result of calculating the consistency test to get a consistency ratio value using **equation 5**, **equation 6** and **equation 7**, respectively. The consistency ratio value is 0.050, below the limit value of 0.100. Thus the respondent's perception is consistent, and the priority weight for sub-criteria A easy-to-find information can be accepted.

Pairwise comparison matrix of sub-criteria B easy to find items to buy, the weight of sub-criteria and consistency ratio on **Table 5**.



**Table 5.** Pairwise comparison,  $\lambda$ -max, priority, CI and CR of sub-criteria B

	B.1	B.2	B.3	Priority weight
B.1	1.000	2.056	1.778	0.487
B.2	0.486	1.000	1.333	0.275
B.3	0.563	0.750	1.000	0.238
	$\lambda$ -max as 3.021	CI as 0.010	CR as 0.018 (CR less than 0.100)	

Source: Primary data processed

Explanation:

B1. Faster to get the products they want

B2. The web is easy to understand and browse

B3. Easy to distinguish the products available

**Table 5** contains the results of data analysis for sub-criteria B, easy-to-find items to buy, consisting of a pairwise comparison matrix which is the result of aggregating respondents' perceptions using **equation 1** and then arranging into a matrix using **equation 2**. The priority weight of sub-criteria B is calculated using **equation 3** and **equation 4**. The priority weight results for sub-criteria A, sorted from the largest, are sub-criteria B1 faster to get the product they want (48.689 per cent), sub-criteria B2 the web is easy to understand and browse (27.482 per cent), sub-criteria B3 easy to distinguish the products available (23.828 per cent). The last row of table 5 contains the results of calculating the consistency test using **equation 5**, **equation 6** and **equation 7**, respectively. The consistency ratio value is 0.018, below the limit value of 0.100. Thus the respondent's perception is consistent, and the priority weight for sub-criterion B easy to find items to buy is acceptable

Pairwise comparison matrix of sub-criteria C easy to compare goods and prices, the weight of sub-criteria and consistency ratio in **Table 6**.

**Table 6.** Pairwise comparison,  $\lambda$ -max, priority, CI and CR of sub-criteria C

	C.1	C.2	C.3	Priority
C.1	1.000	0.770	0.417	0.216
C.2	1.298	1.000	0.667	0.301
C.3	2.400	1.499	1.000	0.483
	$\lambda$ -max as 3.005	CI as 0.002	CR as 0.004 (CR less than 0.100)	

Source: Primary data processed

Explanation:

C1. Availability of products specification

C2. Availability of information about the product and prices both in text form

C3. Information of products in the form of graphics, design and image

**Table 6** contains the results of data analysis for sub-criteria C easy to compare goods and prices. Consists of a pairwise comparison matrix which is the result of aggregating the perceptions of respondents using **equation 1** and then arranged into a matrix using **equation 2**. Priority weight sub-criteria C is calculated using **equation 3** and **equation 4**, respectively. The priority weight results for sub-criteria C are sorted from the largest, namely sub-criteria C3 information on products in graphic, design and image form (48.309 per cent), sub-criteria C2 availability of information about the product and prices both in text form (30.078 per cent), sub-criteria C1 availability of product specification (21.613 per cent). The last row of



table 6 contains the results of calculating the consistency test using **equation 5**, **equation 6** and **equation 7**, respectively. The consistency ratio value is 0.004, below the limit value of 0.100. Thus the respondent's perception is consistent, and the priority weight for sub-criteria C is easy to compare goods and prices acceptably.

Pairwise comparison matrix of sub-criteria D easy to do a transaction, weight of sub-criteria and consistency ratio on **Table 7**.

**Table 7.** Pairwise comparison,  $\lambda$ -max, priority, CI and CR of sub-criteria D

	D.1	D.2	D.3	Priority weight
D.1	1.000	0.809	0.735	0.278
D.2	1.236	1.000	1.257	0.383
D.3	1.361	0.795	1.000	0.339
$\lambda$ -max as 3.012	CI as 0.006		CR as 0.010 (CR less than 0.100)	

Source: Primary data processed

Explanation:

D1. The transaction process is easy

D2. Flexible to use

D3. Online payment is simple

**Table 7** contains the results of data analysis for sub-criteria D: easy-to-do transactions consisting of a pairwise comparison matrix which is the result of aggregating respondents' perceptions using **equation 1** and then arranged into a matrix using **equation 2**. The priority weight of sub-criteria D is calculated using **equation 3** and **equation 4** successively. The priority weight results for sub-criteria D, sorted from the largest, are sub-criteria D2 flexible to use (38.258 per cent), sub-criteria D3 online payment is simple (33.932 per cent), sub-criteria D1 transaction process is easy (27.810 per cent). The last row of table 7 contains the results of calculating the consistency test using **equation 5**, **equation 6** and **equation 7**, respectively. The consistency ratio value is 0.010, below the limit value of 0.100. Thus the respondent's perception is consistent, and the priority weight for the D easy-to-do transaction sub-criterion is acceptable.

Pairwise comparison matrix of sub-criteria E comfortable after buying and owning the purchased product, the weight of sub-criteria and consistency ratio on **Table 8**.

**Table 8.** Pairwise comparison,  $\lambda$ -max, priority, CI and CR of sub-criteria E

	E.1	E.2	E.3	Priority weight
E.1	1.000	0.788	1.788	0.369
E.2	1.270	1.000	1.031	0.360
E.3	0.559	0.970	1.000	0.270
$\lambda$ -max as 3.070	CI as 0.035		CR as 0.060 (CR less than 0.100)	

Source: Primary data processed

Explanation:

E1. Purchase time is relatively short

E2. Contact and Communication time with the seller is short

E3. The product was received as expected

**Table 8** contains the results of data analysis for sub-criteria E comfortable after buying and owning the purchased product consisting of a pairwise comparison matrix which is the result of aggregating respondents' perceptions using **equation 1** and then arranging into a matrix using **equation 2**. The priority weight of sub-criteria E is calculated using **equation 3** and **equation 4**, respectively. The results of the priority weight of sub-criteria E, sorted from the largest, are sub-criteria E1 purchase time is relatively short (36.910 per cent), sub-criteria E2 contact and communication time with seller is short (36.051 per cent), sub-criteria E3 Product received as expected (27.039 per cent). The last row of table 8 contains the results of calculating the consistency test using **equation 5**, **equation 6** and **equation 7**, respectively. The consistency ratio value is 0.060, below the limit value of 0.100. Thus the respondent's perception is consistent, and the priority weight for sub-criteria E comfortable after buying and owning the purchased product is acceptable.

The result is in the form of global weight in **Table 9**.

**Table 9.** Global weight

Criteria	Sub-Crit	Weight of Criteria a	Weight of Sub Criteria	
			Local b	Global c = a*b
A	A1	0.106	0.414	0.044
	A2		0.337	0.036
	A3		0.249	0.026
B	B1	0.257	0.487	0.125
	B2		0.275	0.071
	B3		0.238	0.061
C	C1	0.285	0.216	0.062
	C2		0.301	0.086
	C3		0.483	0.138
D	D1	0.185	0.278	0.051
	D2		0.383	0.071
	D3		0.339	0.063
E	E1	0.167	0.369	0.061
	E2		0.360	0.060
	E3		0.270	0.045

Source: Primary data processed

The final results in **Table 9**. show that based on the calculation results, C, which is the criteria for easy comparison of the prices of the goods to be purchased, is the highest value (28.544 per cent), followed by criteria B, which is easy to find goods to buy (25.712 per cent) and D, which is comfortable. Transact (18.511 per cent). The most prominent sub-criteria is C3 which is the availability of information in the form of text and images (13.789 per cent), followed by B1, which is quickly getting the desired product (12.519 per cent), and next is C2, namely the availability of information for product identification and prices (8.586 per cent).

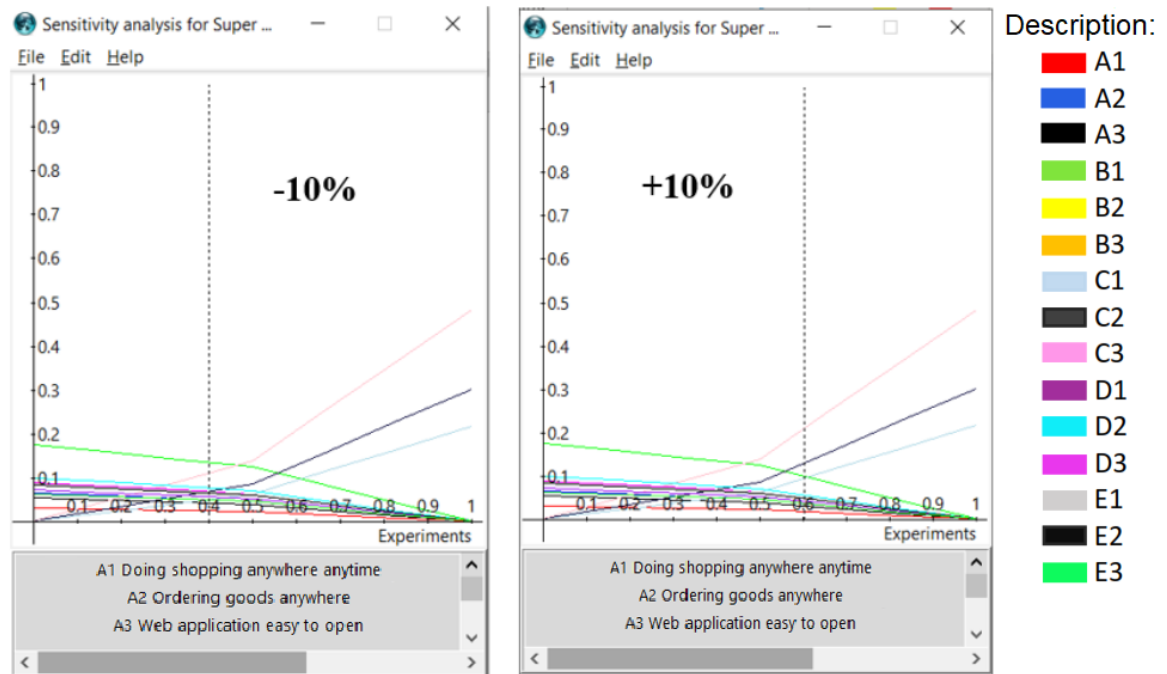
The results of the calculation of sensitivity analysis show that the priority obtained, namely C3 is very sensitive because if there is a 10 per cent decrease in criterion C, which is easy to compare the prices of the goods to be purchased, the priority will change to B1 which is to quickly get the desired product (**Figure 3**). Likewise, if there is an increase of 10 per cent in criterion B, which is easy to find the goods to be purchased, then the priority



will change to B1, which is quickly getting the desired product (**Figure 3**). That means that the priority of C3 is very sensitive.

The results of sensitivity analysis showed that when criteria C was decreased to 10 per cent (**figure 3**), it changed the priority where B1 will be the first level, followed by C3, the second level and D2 will be the third level.

However, when we increase the criteria C to 10 per cent (+10 per cent), then the first priority was C3, the second C2 and the third was B1. **Figure 3**. The increase and decrease of criteria C



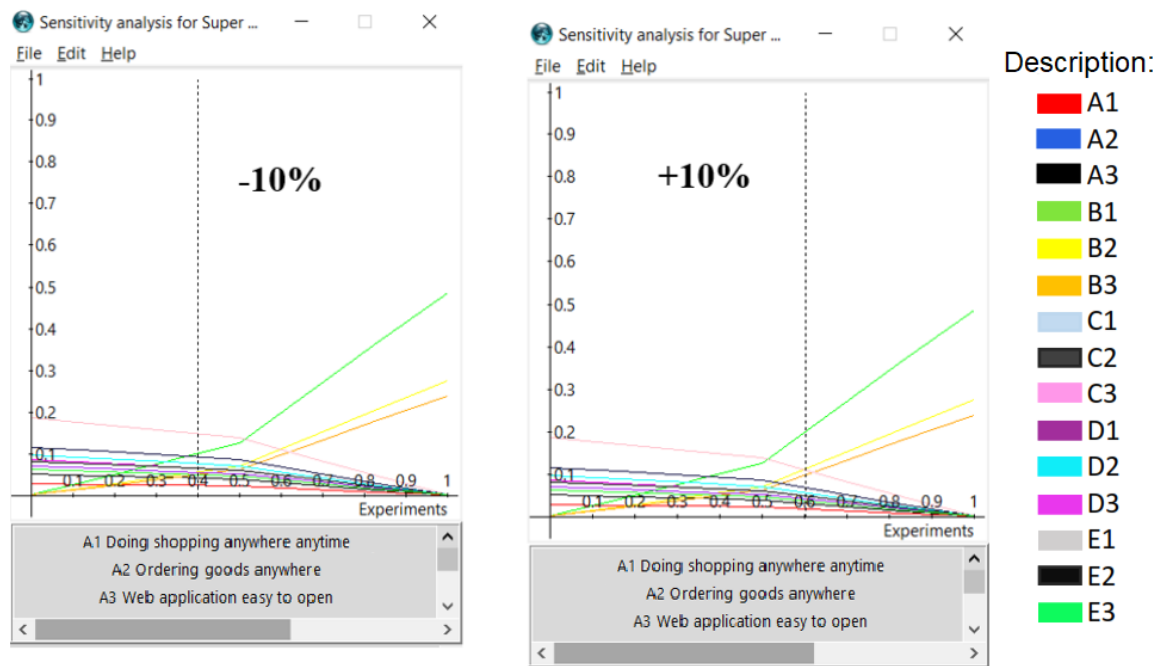
**Figure 3.** The increase and decrease of criteria C

Source: processed data, Super Decision

When Criteria B was decreased by 10 per cent (-10 per cent) then, the priority changed where C3 was the first, B1 was the second and C2 was the third.

However, when Criteria B was increased to 10 per cent (+10 per cent), then the first priority was B1, the second was B2, and the third was C3 (**Figure 3**). **Figure 4**. The increase and decrease of Criteria B.





**Figure 4.** The increase and decrease of criteria B

Source: processed data, Super Decision

## DISCUSSION

Online Shopping has experienced explosive growth due to the fact that it represents a more economical and convenient approach to purchasing in comparison to traditional Shopping. It has been argued that online commerce offers more satisfaction to modern consumers who seek convenience and speed (Vasić et al., 2021). Customers view online purchasing as a convenient and efficient shopping method.

The COVID-19 pandemic accelerated the use of online technology in marketing. Covid-19 has not just brought about the need for change; it also points a way forward: as an engine of innovation. Researchers have demonstrated that the COVID-19 pandemic is increasingly prompting consumers to undertake behavioural changes, such as shifting their consumption to online environments (Ozuem et al., 2021). For COVID-19 pandemic, it had come in favor of online shopping (Al-hattami, 2021).

Convenience is a multifaceted concept that has proved to be an essential factor in consumer purchasing decisions. In the retail context, convenience has been found to play a decisive role in the online shopping experience, particularly with respect to website accessibility and product searching, evaluation, and transactions.

When cities around the world mandated COVID-19-related restrictions, consumers' lifestyles altered drastically, leading to an increased desire for convenience services, especially for food ordering and delivery. In March 2020, over 41.700 per cent of consumers indicated that they were likely to order food delivery online due to the pandemic. It is also noted that online meal delivery services in the US grew by 14 per cent in the same month. Existing empirical research found that consumers order food online because they perceive convenience and control over the ordering process. Convenience was also found to be one of the major motivators leading to higher consumer satisfaction, positive attitudes toward

online food ordering services, and intentions to repurchase in the future (Brewer and Sebby, 2021).

The main finding (criteria) of this study is that it is easy to compare the goods and prices to be purchased (28.544 per cent), followed by the easy finding of goods to be purchased (25.712 per cent), the third is convenient/easy to transact (18.511 per cent)

Another important finding is that consumers can be interested because the information is available in the form of images, text, and graphic design (13.789 per cent).

The main result, which is easy to compare the goods to be purchased, both regarding information related to product specifications in the form of text and images, has also been conveyed by (Vasic et al., 2019). Online Shopping provides consumers with more information and opportunities to compare products and prices, with greater product selection. , with convenience and ease of finding desired products online (Vasić et al., 2021).

(Pham, 2020) added that the price of products and the costs arising from buying products online are also factors affecting customers' buying intentions because they are fully able to compare prices between many other products as well as between many different sites to make the final decision (Pham et al., 2020).

(Indiani and Febriandari, 2021) added that by Shopping on online platforms, consumers could search for information, compare prices with just a few clicks, and browse for products comfortably using devices without the pressure to buy (Indiani and Febriandari, 2021).

In global weigh, it was revealed that consumers feel the convenience and are interested in shopping online during the COVID-19 pandemic because of the availability of information in the form of images/graphics/images and also text (13.789 per cent). This is in accordance with research by (Kumar and Shah, 2021) (Kumar and Shah, 2021).

Thus, better graphics means in need for better internet (Purwantono et al., 2020) (Hayu et al., 2020).

The quality and degree of the effective design of the product are among the most important factors influencing the consumption and purchase decisions of customers (Dou et al., 2021). Affective design can raise the mental resonance of customers and improve customer satisfaction based on their emotions (Dou et al., 2021). A good design influences purchasing behaviour.

Previous studies also confirm that hedonic consumers are persuaded by the aesthetics of the interface and exhibit a variety of emotions which are evoked by the aesthetic quality of FDAs (food delivery apps). FDAs are increasingly using optimal design and interfaces, such as rich graphics or image-based interfaces, which may evoke fundamental emotions. Moreover, during the COVID-19 pandemic, FDA companies have transformed their design to evoke a sense of security and safety by clearly mentioning guidelines for food preparation and delivery.

Such details are likely to satisfy consumers and minimise the fear of getting infected during the food delivery process. The aesthetic appeal of FDAs further makes the app visits enjoyable and exciting and evokes a sense of control. Interacting with FDAs with higher aesthetic appeal may make consumers feel happy and excited or be a source of powerful persuasion. There is a sense of pleasure, and security, in using a graphic, photograph and other image-based design (Kumar and Shah, 2021).

(Vinish et al., 2021) added that website design, which encompasses emotional appeal, aesthetics, and consistency and confirmed a positive association between website



quality and trust and between service quality and gratification. The relevance of design characteristics will promote increased usability (Vinish et al., 2021).

(Parket and Kuo, 2021) found that generation-y consumers prefer large images, images of celebrities, minimal text, and search features (Parker and Kuo, 2021). Visual and textual information combined use importance as the most persuasive form of information delivery. As the participant contextualises: "...text helps me understand what is going on, but too [much] is kind of annoying and makes me do not want to read them (Parker and Kuo, 2021).

Contradiction with the results above is (Febrilia and Warokka, 2021) that features have no effect if there is a promo of particular factors such as shopping enjoyment tendency, person's situation, website quality, and product attributes are considered not to affect consumers' impulsive purchases made at online stores. (Febrilia and Warokka, 2021).

(Febrilia and Warokka, 2021) also added the effect of consumer mood on online impulse buying. The result indicates that consumers' feelings when shopping online influence their decisions to make impulsive purchases. When the mood is pleasant (consumers are feeling happy), the shopping activity becomes more fun, so the opportunity to make a purchase suddenly increases. Likewise, if the mood is bad, consumers do Shopping to reduce stress and make them feel better. It means the likelihood of unplanned purchases is getting bigger. The results of this hypothesis testing are in line with the results of previous studies conducted by (Mohan et al., 2013);(Febrilia and Warokka, 2021).

Moreover, even though the online store website is well-designed, visually attractive, and provides complete and reliable information, this does not make the respondent become an impulsive consumer. In other words, the decision to make an unplanned product purchase is not determined by how stylish a particular online store owns a website.

Promotions such as discounts, gifts, 'buy one get one free,' coupons, free shipping, and prize draws can attract consumers to shop for products they had not planned initially. The more promotional efforts made by retailers, the higher the level of consumers' impulsive buying (Febrilia and Warokka, 2021).

They also mentioned that product attributes such as price, quality, and completeness of product features do not affect consumer purchases made spontaneously. Respondents, who are mostly university-level-educated people, think that the attribute is something important which should be considered carefully even though the decision can change if the seller offers a promo (Febrilia and Warokka, 2021).

The results of the sensitivity analysis, using Super Decision version 2.10.0, show that by lowering the C criterion to 10 per cent, which is easy to compare products and prices, there will be a change in the global weight from C3 to B1. Likewise, by increasing criterion B by 10 per cent, there will be a change in global weight from C3 to B1. It means that the results of C3 are very sensitive and can easily change if something happens, whether it is a decrease in aspects of criteria C or an increase in criteria B.

The sensitivity analysis of criteria C and B was carried out because both of them have a difference in numbers that are not too far away or close together. This means that periodic measurements should be made to see if options have changed.

The decrease in criterion C and increase in criterion B must not exceed 10 per cent. If it exceeds 10 per cent, there will be a change in global weight. The position of C3 is very critical. Note that if there is a change in C and/or B, there will be a change in the global weight of CT.

This research is interesting because it is carried out among students who are future policymakers and also has a role in changing the general public's perception of a product. They are considered to have critical and innovative thinking.

## CONCLUSION

We feel that the current research adds significant depth to the field of study of online reviews. Due to a rise in customer preferences, as well as the COVID-19 pandemic forcing people to stay indoors, the rise of online shopping is only going to increase in the coming years.

The rise of Shopping on online platforms also implies that customers will see and be significantly influenced by the reviews for the products mentioned above. Hence, it becomes imperative for both the platform owners as well as the sellers of the products to identify how the reviewer writes their review, as subsequent readers tend to place a higher value on a credible review, whether it is positive or negative. It is in this space that our paper makes a significant contribution by initiating a discussion on the psychological factors that determine perceived credibility and adding an enhanced degree of richness to both the theoretical as well as practical aspects of this study.

Understanding buying convenience of consumers is a complex job, but this study revealed that easy to compare the goods and price was the top priority (28.544 per cent), followed by the easy finding of goods to be purchased (25.712 per cent) and then was the convenient/easy to transact (18.511 per cent).

The calculation of the global weight showed that consumers could be interested because C3 -information is available in the form of images, text, and graphic design (13.789 per cent). Sensitivity analysis showed that C3 is very sensitive because a 10 per cent decrease from Criterion C or an increase in Criterion B by 10 per cent will change the priority. These results help online businesses to consider the factors of images, text, graphics and design when selling products online. These results confirm previous research from Vasic et al. (Vasić et al., 2021), which stated that consumers usually compare products and prices from other websites and tend to buy products that are cheaper.

Global weight shows that graphics, images and text really determine customer satisfaction. This is in line with the research from (Hayu et al., 2020), which confirms that the effectiveness of a website that is attractive to consumers is determined, among others, by graphics, photos, sounds, images, and videos. This can increase the consumer's desire to buy the product because it increases satisfaction and affects buyer behaviour.

This research also complements the lack of research related to this issue and adds to the literature for this study. These results indicate that the AHP method is very appropriate to be used in this study, which is related to determining priority factors from multiple criteria and sub-criteria complexes. This method is also successful in capturing, analysing and quantifying the feelings and thoughts of respondents. This study adds to the literature related to convenience buying by generation-Y.

There are a number of limitations of this study. The assumption of criteria independence or having no correlation may sometimes be a limitation of AHP (and other MCDM methods). The Analytic Network Process (ANP), a generalisation of AHP with feed-backs to adjust weights, maybe a solution. However, the decision-maker must answer a significantly larger number of questions, which may be quite complex: e.g. Given an





alternative and a criterion, which of the two alternatives influences the given criterion more and how much more than another alternative?

Another limitation was the AHP uses crisp numbers, while real life cannot be determined using exact numbers. Geographical representation. This study was conducted in Indonesia. There is a need for cross-cultural analysis in different countries required to ensure the generalizability of the results.

The main limitation of this study is the sample bias. The survey participants were chosen randomly and recruited on a voluntary basis. The data was collected during the COVID-19 pandemic, which is very influential on the shopping patterns of Generation Y. This pattern may be different if it is done in normal times.

The number of respondents is also limited to only 310 who are students. This study did not determine the type of product purchased. The type of product purchased will affect the convenience of purchase.

**Implication Of The Study.** The pandemic has accelerated the rapid rate of digital transformation (Kumar and Shah, 2021) across industries. Even businesses with traditional business models have been forced to move their operations online to some extent to address the uncertainty in the business environment due to strict lockdowns and curfews imposed as measures to contain the spread of COVID-19. Many organisations and managers are making the transition to application-based deliveries of their products and services. The growth of digital as a channel has increased manifold.

This study offers practical solutions to managers of food delivery companies, but the insights can be used by other application-based companies (e.g., online payment apps, streaming apps, music apps, information apps etc.) looking to improve their customer retention rates.

The study has three implications for managers as well as FDA (food delivery apps) designers. First, findings indicate the crucial role of aesthetic formality (Eger et al., 2021).

**Theoretical Implication.** This study provides a foundation for future researchers in studying the consumer behaviour of online shoppers. Further research can be possible by increasing sample size, the inclusion of a more global population, and additional variables. Researchers may also look for factors that influence online shopping behaviour, customer satisfaction, and loyalty. The present research contributes to enriching the literature on online buying perception and behaviour with reference to new scenarios imposed by the pandemic (i.e., smart working, smart food delivery, novel time management), confirming past trends and adding new insights after the COVID-19 pandemic.

**Managerial Implications.** The findings of the paper provide managers guidelines about the attributes that must be included in their products and service quality, mode of delivery channel, payment gateway, security, trustworthiness, and pricing strategy. Managers should choose the social network for advertisement. To elevate the touch and feel concerned, managers can send alternative products to the customer to choose from options and pay after they prefer one. If the managers consider these factors, they might have a competitive advantage in the market.

**Practical Implication.** The findings of this study could increase awareness for online business practitioners to implement necessary interventions to increase their sales in online business more conveniently at any time and any place during and after the pandemic era, especially for generation Y.



## REFERENCES

- Acosta, A. R., Patricia, A., Aben, F. B., and Noroña, M. I. (2021). Selection of E-Grocery Platform Strategy in Highly Urbanised Cities in the Philippines Using Analytic Hierarchy Process (AHP) and Structural Equation Modeling (SEM), 1684–1695.
- Al-hattami, H. M. (2021). Determinants Of Intention To Continue Usage Of Online Shopping Under A Pandemic : COVID-19. *Cogent Business and Management*, 8(1), 1–16. <https://doi.org/10.1080/23311975.2021.1936368>.
- Anisur, R., Aminul, I., Humyra, B., Nahida, S., and Sujan Ch. (2018). Consumer Buying Behaviour Towards Online Shopping: An Empirical Study On Dhaka City, Bangladesh. *Cogent Business and Management*, 5(1), 1–22. <https://doi.org/10.1080/23311975.2018.1514940>.
- Balwada, J., Samaiya, S., and Mishra, R. (2021). Packaging Plastic Waste Management for a Circular Economy and Identifying a better Waste Collection System using Analytical Hierarchy Process (AHP). *Procedia CIRP*, 98, 270–275. <https://doi.org/10.1016/j.procir.2021.01.102>.
- Biswas, K. M., Nusari, M., and Ghosh, A. (2019). Confirmation Of Expectation And Customer Satisfaction Towards Online Shopping : A Theoretical Framework. *International Journal of Economics, Commerce and Management*, VII(9), 269–279.
- Brewer, P., and Sebby, A. G. (2021). The Effect Of Online Restaurant Menus On Consumers' Purchase Intentions During The COVID-19 Pandemic. *International Journal of Hospitality Management*, 94(October 2020), 1–9. <https://doi.org/10.1016/j.ijhm.2020.102777>.
- Burlea-schiopoiu, A., Ogarca, R. F., Barbu, C. M., Craciun, L., Baloi, I. C., and Mihai, L. S. (2021). The Impact Of The COVID-19 Pandemic On Food Waste Behaviour Of Young People. *Journal of Cleaner Production*, 294, 1–13. <https://doi.org/10.1016/j.jclepro.2021.126333>.
- Deslonde, V., and Becerra, M. (2018). The Technology Acceptance Model (TAM): Exploring School Counselors' Acceptance and Use of Naviance. *The Professional Counselor*, 8(4), 369–382. <https://doi.org/10.15241/vd.8.4.369>.
- Dou, R., Li, W., Nan, G., Wang, X., and Zhou, Y. (2021). How Can Manufacturers Make Decisions On Product Appearance Design ? Research On Optimal Design Based On Customers' Emotional Satisfaction. *Journal of Management Science and Engineering*, (xxxx). <https://doi.org/10.1016/j.jmse.2021.02.010>.
- Eger, L., Komarkova, L., Egerova, D., and Micik, M. (2021). The Effect Of COVID-19 On Consumer Shopping Behaviour : Generational Cohort Perspective. *Journal of Retailing and Consumer Services*, 61(March), 1–11. <https://doi.org/10.1016/j.jretconser.2021.102542>.
- Fagerstrøm, A., Arntzen, E., Volden, M., and Arntzen, E. (2021). International Conference on ENTERprice Information Systems. Motivating Events at the Points of Online Purchase: An Online Business to Business Retail Experiment. In *Procedia Computer Science* (Vol. 181, pp. 702–708). Elsevier B.V. <https://doi.org/10.1016/j.procs.2021.01.221>.
- Febrilia, I., and Warokka, A. (2021). Consumer Traits And Situational Factors : Exploring The Consumer's Online Impulse Buying In The Pandemic Time. *Social Sciences and Humanities Open*, 4(1), 1–8. <https://doi.org/10.1016/j.ssaho.2021.100182>.
- Garg, A., and Ganesh, T. (2020). An Analytical Hierarchy Process Approach For A Covid-



- 19 Risk Assessment Study Amid The Latest Re-Open And Unlock Phase In India. *International Journal of The*, 12(3), 565–576. <https://doi.org/10.13033/ijahp.v12i3.814>.
- Hanham, J., Lee, C. B., and Teo, T. (2021). The Influence Of Technology Acceptance, Academic Self-Efficacy, And Gender On Academic Achievement Through Online Tutoring. *Computers and Education*, 172(May), 1–14. <https://doi.org/10.1016/j.compedu.2021.104252>.
- Hassen, T., Bilali, H., Allahyari, M., Bergan, S., and Fotina, O. (2021). Food Purchase And Eating Behaviour During The COVID-19 Pandemic : A Cross-Sectional Survey Of Russian Adults. *Appetite*, 165(May), 1–10. <https://doi.org/10.1016/j.appet.2021.105309>.
- Hayu, R. S., Surachman, Rofig, A., and Rahayu, M. (2020). The Effect of Website Quality and Government Regulations on Online Impulse Buying Behavior. *Management Science Letters*, 10, 961–968. <https://doi.org/10.5267/j.msl.2019.11.015>.
- Indiani, P. N. L., and Febriandari, S. S. (2021). Key Antecedents Of Consumer Purchasing Behaviour In The Emerging Online Retail Market. *Cogent Business and Management*, 8(1), 1–17. <https://doi.org/10.1080/23311975.2021.1978370>.
- Khan, A. U., and Ali, Y. (2020). Analytical Hierarchy Process (Ahp) And Analytic Network Process Methods And Their Applications: A Twenty Year Review From 2000-2019. *International Journal of the Analytic Hierarchy Process*, 12(3), 369–459.
- Kumar, S., and Shah, A. (2021). Revisiting Food Delivery Apps During The COVID-19 Pandemic ? Investigating The Role Of Emotions. *Journal of Retailing and Consumer Services*, 62(November 2020), 1–11. <https://doi.org/10.1016/j.jretconser.2021.102595>.
- Kwatra, S., Kumar, A., Sharma, S., and Sharma, P. (2021). Stakeholder Participation In Prioritising Sustainability Issues At The Regional Level Using Analytic Hierarchy Process (AHP) technique: A Case Study Of Goa, India. *Environmental and Sustainability Indicators*, 11(April), 1–14. <https://doi.org/10.1016/j.indic.2021.100116>.
- Majumdar, A., Tiwari, M., Agarwal, A., and Prajapat, K. (2021). A New Case Of Rank Reversal In The Analytic Hierarchy Process Due To Aggregation Of Cost And Benefit Criteria. *Operations Research Perspectives*, 8(January), 1–10. <https://doi.org/10.1016/j.orp.2021.100185>.
- Mosunmola, A., Omotayo, A., and Mayowa, A. (2018). *Assessing the Influence of Consumer Perceived Value, Trust and Attitude on Purchase Intention of Online Shopping (ICA4E)*. San Diego. <https://doi.org/10.1145/3183586.3183594>.
- Mu, E., and Pereyra-Rojas, M. (2018). *Practical Decision Making Using Super Decisions v3. An Introduction to the Analytic Hierarchy Process*. Pittsburgh: Springer.
- Nabot, A., Garaj, V., and Balachandran, W. (2016). Consumer Attitudes toward Online Shopping : An Exploratory Study from Jordan. *International Journal of Social Ecology and Sustainable Development*, (March), 1–18. <https://doi.org/10.4018/ijsted.2014070102>.
- Nanda, A., Xu, Y., and Zhang, F. (2021). How would the COVID-19 pandemic reshape retail real estate and high streets through an acceleration of E-commerce and digitalisation ? *Journal of Urban Management*, 10(2), 110–124. <https://doi.org/10.1016/j.jum.2021.04.001>.
- Ng, J. Y., Marwaha, A., and Ans, M. (2021). The Quality Of Information Available About





- Ephedra Sinica On Online Vendor Websites: The Canadian Consumer Experience. *Complementary Therapies in Medicine*, 57(December 2020), 1–8. <https://doi.org/10.1016/j.ctim.2021.102674>.
- Nordhoff, S., Malmsten, V., Arem, B. Van, Liu, P., and Happee, R. (2021). A Structural Equation Modelling Approach For The Acceptance Of Driverless Automated Shuttles Based On Constructs From The Unified Theory Of Acceptance And Use Of Technology And The Diffusion Of Innovation Theory. *Transportation Research Part F* 78, 78, 58–73. <https://doi.org/10.1016/j.trf.2021.01.001>.
- Oturakci, M., Science, A., and Science, A. (2018). Developing New Technology Acceptance Model With Multi-Criteria Decision Technique : An Implementation Study, 7(2), 43–53. <https://doi.org/10.5539/emr.v7n2p43>.
- Ozuem, W., Howell, K., Ranfagni, S., Willis, M., and Rovai, S. (2021). Exploring Customers' Responses To Online Service Failure And Recovery Strategies During Covid - 19 Pandemic : An Actor–Network Theory Perspective, (May), 1440–1459. <https://doi.org/10.1002/mar.21527>.
- Parker, C. J., and Kuo, H. (2021). What Drives Generation-Y Women To Buy Fashion Items Online ? *Journal of Marketing Theory and Practice*, 00(00), 1–16. <https://doi.org/10.1080/10696679.2021.1934877>.
- Pentz, C. D., Preez, R., and Swiegers, L. (2020). To bu (Y) or not to bu (Y) : Perceived risk barriers to online Shopping among South African generation Y consumers. To bu ( Y or not to bu (Y): Perceived Risk Barriers To Online Shopping Among South African Generation Y Consumers. *Cogent Business and Management*, 07(01), 1–25. <https://doi.org/10.1080/23311975.2020.1827813>.
- Pham, V. K., Thi, D. H., and Le, T. H. (2020). A Study On The COVID-19 Awareness Affecting The Consumer Perceived Benefits Of Online Shopping In Vietnam. *Cogent Business and Management*, 7(1), 1–16. <https://doi.org/10.1080/23311975.2020.1846882>.
- Purwantono, H. Y., Gunawan, A. S., Tolle, H., Attamimi, M., and Bidiharto, W. (2020). A literature Review : Feasibility Technology To Improve The Shopping Experience. In *Procedia Computer Science* (Vol. 179, pp. 468–479). Elsevier B.V. <https://doi.org/10.1016/j.procs.2021.01.030>.
- Raco, J. ., Krejci, J. V, Ohoitumur, J., Adrian, A. ., Raton, Y., Rottie, R., Sumakud, E. (2021). Priority Sector Of Small And Medium Enterprises Using Ahp : A Case Study Of Yamaru Enterprise. *International Journal of Analytic Hierarchy Process*, 13(2), 220–239. <https://doi.org/10.13033/ijahp.v13i2.862>.
- Raco, J., Ohoitumur, J., Krejci, J. V, Raton, Y., Rottie, R., Peru, D., Rachmadi, R. (2020). The Dominant Factor Of Lecturers' Research Productivity Using The Ahp: Case Study Of Catholic University Of De La Salle Manado-Indonesia. *International Journal of Analytic Hierarchy Process*, 12(3), 546–564. <https://doi.org/10.13033/ijahp.v12i3.819>.
- Saaty, R. . (1987). The Analytic Hierarchy Process-What And How It Is Used. *Math Modelling*, 9(3), 161–176.
- Saaty, T. L. (2008). Decision-Making With The Analytic Hierarchy Process. *International Journal Services Sciences*, 1(1), 83–98.
- Shabrin, N., Khandaker, S., Kashem, S., Hie, C. K., and Susila, T. (2020). Factors Affecting Smartphone Purchase Decisions of Generation Y. *The Journal of Contemporary Issues in Business and Government*, 23(July 2017), 47–65.





- Silva, J., Pinho, C., Soares, A., and SÁ, E. (2019). Antecedents Of Online Purchase Intention And Behaviour : Uncovering Unobserved Heterogeneity. *Journal of Business Economics and Management*, 20(1), 131–148. <https://doi.org/10.3846/jbem.2019.7060>.
- Steel, G. (2021). Going Global – Going Digital. Diaspora Networks And Female Online Entrepreneurship In Khartoum, Sudan. *Geoforum*, 120(July 2019), 22–29. <https://doi.org/10.1016/j.geoforum.2021.01.003>.
- Vasić, N., Kilibarda, M., and Kaurin, T. (2021). The Influence of Online Shopping Determinants on Customer Satisfaction in the Serbian Market. *Journal of Theoretical and Applied Electronic Commerce Research*, 14(2), 1–16. <https://doi.org/10.4067/S0718-18762019000200107>.
- Vinish, P., Pinto, P., Hawaldar, I., and Pinto, S. (2021). Antecedents Of Behavioural Intention To Use Online Food Delivery Services: An Empirical Investigation. *Innovative Marketing*, 17(1), 0–15. [https://doi.org/10.21511/im.17\(1\).2021.01](https://doi.org/10.21511/im.17(1).2021.01).
- Zhang, K., Gu, T., and Wang, Y. (2021). International Conference on Identification, Information and Knowledge in the Internet of Things, 2020. Online Communication and Asset Price Bubbles. In *Procedia Computer Science* (Vol. 187, pp. 36–41). Elsevier B.V. <https://doi.org/10.1016/j.procs.2021.04.031>.

