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FACTORS AFFECTING ONLINE PURCHASING BEHAVIOUR OF MANAGEMENT UNDERGRADUATES OF STATE UNIVERSITIES IN COLOMBO DISTRICT

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ABSTRACT

The online purchasing behaviour of customers has a direct impact on the revenue generation and value generation of a company. The purpose of this study is to identify the nature and intensity of factors that affect the online purchasing behaviour of management undergraduates of state universities in the Colombo district, Sri Lanka. The study was conducted based on a representative sample selected from the management undergraduates of state universities in the Colombo district. This data was collected through a questionnaire survey and analysed using a one-sample t-test and one-way ANOVA. The study finds that web design, security concerns, product information quality, and shipping/delivery time factors have an impact on the online purchasing behaviour of management undergraduates at state universities in the Colombo district. Among them, web design and shipping/delivery time are the two factors that have a significant impact on online purchasing behaviour. Furthermore, the study did not find significant differences between consumers' perceptions of online purchasing behaviour and different demographic factors such as gender, income level, and university, according to this study. The findings of the study shed light on the factors impacting the online purchase behaviour of management undergraduates at state universities in the Colombo district, which in turn reflect the implications of the value created through the financial capital and intellectual capital of companies that use online delivery systems. Hence, these findings aid managers in implementing strategies to improve customers' online purchasing behaviour by identifying factors, investors in making investment decisions on e-business channels, and the government in enacting regulations related to online purchasing.

Keywords: Colombo District, Management Undergraduates, Online Purchasing Behaviour

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1 INTRODUCTION

Online purchasing has been developed due to the expansion of the e-commerce concept and the entire world is moving towards it. E-commerce has achieved extraordinary success while providing economic and social benefits to developed countries, but it is quite different in developing countries (Peña-García et al. 2020). Companies are changing from brick organisations to click organisations in today's digital world (Trivedi & Yadav 2018). Another research found that online technology is now permeating their lives and disrupting their purchasing behaviour (Dharmesti et al. 2019). This means companies move from the physical market to the virtual market which is known as online shopping. Online purchasing is bound to human lives, and it has changed the shopping behaviour of consumers.

Based on several research done before, there are contradictions in factors that are affecting online purchasing behaviour. Various pieces of literature have indicated one factor as significant, while others have stated that the same factor is not considered significant. A recent study found that variables such as security, privacy concerns, trust, and ease of use have a positive significant relationship with online purchasing behaviour (Trivedi & Yadav 2018). However, another research found that the quality of product information and the quality of the user interface have a significant impact on online purchasing behaviour. In contrast, the quality-of-service information, purchasing process, security, and product attractiveness only have a positive impact (Madininos & Theodoridis 2010). In addition to that, another study said that in the Serbian market, shipping, pricing, and information availability have the strongest impact on e-customer satisfaction, but quality, time, and safety have a much lower impact (Vasic, Kilibarda & Kaurin 2019). According to different literature, the security factor was indicated as significant, and another study saying that the security factor has only a positive impact and another research saying that the same factor has a considerably lower impact. In addition to that, there are contradictions in the intensity of factors that affect online purchasing behaviour. One study stated that the same element is significant, while another study stated that the same component has a far lower impact. Further, there is limited research available in this respect in Sri Lanka, particularly as to the undergraduates of universities, who represent an important category of youth in Sri Lanka. In this context, this study aims to identify the factors that are affecting online purchasing behaviour and the intensity of factors that affect online purchasing behaviour of management undergraduates of state universities in the Colombo district.

Furthermore, online purchasing is directly affecting the revenue generation of the company because it mainly links with the sales of the company. According to one of the literature, online shopping is becoming an increasingly preferred channel, with sales growing year on year (Sharif & Yeoh 2018). Another research indicated that a significant portion of consumers consider the online platform to be more efficient, and there is a significant direct impact on total sales (Duch-Brown et al. 2017). In addition to that, when implementing strategies relating to any e-commerce, the knowledge on online purchasing behaviour provides a significant contribution. All businesses are aware of the significance of the factors influencing online shopping behaviour when developing and implementing an e-commerce strategy (Svatosova 2020). Further, the online purchasing decision differs from one customer to another because that decision depends on several factors. Demographics and personal, sociocultural, and psychological characteristics strongly influence consumer purchases (Dharmesti et al. 2019). Therefore, identifying the common factors which are affecting online purchasing behaviour is important for a management student. In addition, most young consumers use this method of online shopping for their daily activities (Dharmesti et al. 2019). Therefore, studying the behaviour of undergraduates with regards to online purchasing is supportive for the

identification of the behaviour of younger. Identifying online purchases and identifying factors that affect online purchasing behaviour is therefore important and will make it more helpful for companies to increase their revenue and customer base. This research focuses primarily on the Colombo district because Colombo is the country's commercial hub and has all the facilities to make online purchases. Therefore, there is a good opportunity to conduct online shopping within the Colombo district. Furthermore, most of the people of the Colombo district engage in online shopping rather than the people who are in rural areas because some online retailers are not willing to transport goods for reward distances. Therefore, people who are in other areas are not willing to engage in online purchasing. These findings aid managers in implementing strategies to improve customers' online purchasing behaviour by identifying factors, investors in making investment decisions on e-business channels, and the government in enacting regulations related to online purchasing.

The remaining sections of the study are structured as follows; the next section discusses the existing literature; the third section elaborates on the research methodology; the fourth section represents the analysis and discussion, and the conclusion is presented in the last section.

2 LITERATURE REVIEW

This section focuses on the studies conducted in many countries about online purchasing behaviours. In addition, this section focuses on some of the common factors influencing online shopping behaviour, such as web design, security, product information quality, and shipping/delivery time.

2.1 Concept of Online Purchasing

In the modern world, physically free markets now link consumers and suppliers online, mainly due to globalization, with the internet serving as a fundamental tool for online purchases. A study indicated that e-retailers need to change their focus from enabling customers to accept online shopping patterns to inspiring them to shop online (Chiu et al. 2012).

Online purchasing can be defined as a new trend across the world. The study by Perera and Sachithra (2019) indicated online shopping is now becoming a popular way to go for sales and purchase goods. Further, it elaborates online shopping is mixed with real-life shopping by today's shoppers, using Wi-Fi connectivity and the trend of showrooming (Perera & Sachithra 2019). Due to online purchasing, people are more informed about goods, features, varieties, and so on. According to recent research, it indicated that people can get complete details because of online shopping facilities, and they will check the range of items for the product they are planning to buy and can select the most compatible item for them (Perera & Sachithra 2019).

2.2 Online Purchasing Behaviour

In traditional shopping, customers and vendors are met in one place. Then customers touch and see whether the product is good or not. Then they agree to make the transaction. But in today's context, it differs, and consumers look for easy methods to purchase the goods that they want. As a result, they move with online purchasing. A study found that the online information search behaviour of young customers potentially influences their online purchasing behaviour, as their ability to access more data aids in their purchase decisions (Khare & Rakesh 2011). Online purchasing facility is now permeating their lives and disrupting their shopping behaviour. Millennials tend to be familiar with online shopping as heavy and knowledgeable web users (Khare & Rakesh 2011).

One of the research projects found that awareness and data privacy concerns are necessary and significant constructs in explaining behavioural intent (Heath, Ardestani & Nemati 2016). Reluctance to provide information has a significant impact on purchasing behaviour since electronic transactions depend heavily on the information provided by the consumer. Therefore, confidence in a particular website or software is vital for online purchases. Trust makes it convenient for consumers to share sensitive details to place orders (Bianchi & Andrews 2012).

2.3 Models of E-commerce

In history, people have used the barter system to exchange goods and services. Thereafter, they used some valuable items such as copper, gold, and silver to exchange goods and services. Then with international trading, people have found currencies such as US dollars, sterling pounds etc. to use as the exchange medium. However, with technological developments e-commerce concept has become a new trend and it has led to online shopping. Under that, there are distinct categories such as Business-to-consumer (B2C), Consumer-to-business (C2B), Consumer-to-consumer (C2C), Business-to-business (B2B), Government-to-government (G2G), Government-to-business (G2B), Government-to-citizens (G2C), and Citizens-to-government (C2G).

A recent study stated that, in the B2C business model, the online store provides a new shopping environment for the customer (Ye & Ma 2017). Any type of business can use this e-commerce form and it facilitates the purchase of products by end consumers. This research mainly focuses on this e-commerce model. The C2B model was developed primarily because of the connection between a broad community of consumers using the e-shop and a business partnership. According to Ye and Ma (2017), a powerful buying group with many users is pooled together and this has collected large amounts of consumer data using Web 2.0. The C2C model provides customers the opportunity to trade goods and services between them without any vendor or business organisation. The C2C model occurs between consumers, and it is an online transactional behaviour between people (Ye & Ma 2017).

The business-to-business model is also one of the main models used in e-commerce. According to Ye and Ma (2017), the B2B model is having between companies. Further above research emphasised that B2B e-business is mostly about combining upstream purchases from vendors and downstream marketing and sales of suppliers through internal information system platforms and external websites (Ye & Ma 2017). This model was developed between a manufacturing company and a wholesaler, or between a wholesaler and a usual retailer, or directly between a manufacturing company and a retailer.

One of the studies represents on G2G model as an aggregation of systems that link government, society and the public using information technologies to carry out functions such as effective administration, service, and internal management of public networks of computers (Ye & Ma 2017). According to this model, new technological changes have been linked with government activities.

G2B is another element of e-commerce where, using electronic network systems, the government offers companies a public service (Ye & Ma 2017). The government provides more data from this model to companies that support their functions. According to a recent study, G2C is defined as, the form of disclosure of government and online public service information (Ye & Ma 2017). This model provides the information that is requested by the citizens through various websites. A recent study stated that C2G primarily involve the public

in providing feedback on information (Ye & Ma 2017). It means that, due to the knowledge advancement of the public, they can provide information to the government up to some extent.

2.4 Factors Affecting Online Purchasing Behaviour

Based on the previous literature, there are commonly identified factors that are affecting the online purchasing behaviour of consumers. Studies by Maditinos and Theodoridis (2010) and Vasic, Kilibarda and Kaurin (2019) are used to identify the factors which are affecting online purchasing behaviour. The study by Maditinos and Theodoridis (2010) included web design, security concerns, and product information quality factors as common factors. The study done by Vasic, Kilibarda and Kaurin (2019) included security concerns, product information quality, and shipping/delivery time as common factors. According to that, there are two common factors in both studies. There are security concerns and product information quality. Web design and shipping/delivery time are two variables got from separately from each study as common factors. Therefore, these are broadly identified factors according to these two studies and from several studies as included in Table 1.

Table 1: Factors Impacting Online Purchasing Behaviour

Factors	Sources
Web design	Akram et al. (2018); Wells, Parboteeah and Valacich (2011); Erdem and Uslu (2015); Clemes, Gan and Zhang (2014); Maditinos and Theodoridis (2010); Al-Debei, Akroush and Ashouri (2015)
Security concerns	Trivedi and Yadav (2018); Al-Debei, Akroush and Ashouri (2015); Maditinos and Theodoridis (2010); Hartono et al. (2014); Vasic, Kilibarda and Kaurin (2019)
Product information quality	Maditinos and Theodoridis (2010); Dharmesti et al. (2019), Vasic, Kilibarda and Kaurin (2019)
Shipping/delivery time	Vasic, Kilibarda and Kaurin (2019); Ma (2017)

Source: Author Constructed

2.4.1 Web design

Perceived web quality is a measure of how simple, smooth, reliable, and effective a website design and processes are (Al-Debei, Akroush & Ashouri 2015). Websites are the main stores of knowledge that can allow users to search for information (Akram et al. 2018). Therefore, web design is considered in online purchasing. That same research article emphasised that these features of web design can trigger an online impulse to purchase at a different scale (Akram et al. 2018).

Turkyilmaz, Erdem and Uslu (2015) suggest that the quality of the website must emphasise willingness to strengthen and retain its customer base, whose failure can lead to customer losses. By giving evidence to the above statement, the study of Clemes, Gan and Zhang (2014) investigate the actions of Chinese customers and discovers that well-designed website features have a significant influence on the adoption of online purchasing. Therefore, having a quality website will lead to generating a vast customer base for the company. Thus, the main requirements of each website are to provide sufficient, up-to-date, understandable, and consistent information about their products (Maditinos & Theodoridis 2010). In this context, individuals would consider website information to be critical and the website's information format is important.

2.4.2 Security concerns

Online customers are always unwilling to reveal their financial and personal credentials without satisfying themselves with security (Trivedi & Yadav 2018). Therefore, without security, customers are not willing to proceed with transactions. In the context of online shopping, security and privacy can also play a leading role in building trust (Al-Debei, Akroush & Ashouri 2015). If there is proper security, it will lead to creating trust among the customers and it will generate more benefits to both customers and vendors. As a result, online vendors have used numerous types of parameters that provide security certificates to customers purchased from online stores, such as confidentiality policies, financial safety regulations, distinct purchasing usernames and passwords, training respective employees to meet the requirements of the consumer (Maditinos & Theodoridis 2010). By reducing the security risk perception of their customers, trust in e-business services can be improved (Trivedi & Yadav 2018).

E-commerce companies should take care of security mechanisms in such a way that customers can continue to believe in the e-retailer and feel very confident that they have minimised their subjective risk (Trivedi & Yadav 2018). In addition, consumers are more sensitive to security when shopping online because of certain features, such as a lack of physical and real-time contact (Hartono et al. 2014). The same article emphasises that a higher-security website can protect its customers from suffering financial losses due to security problems and it also emphasises that a high level of perceived security makes customers feel more at ease (Hartono et al. 2014).

2.4.3 Product information quality

The quality of product information is related to the merchandise category (Maditinos & Theodoridis 2010). Another study found that consumer satisfaction is strongly linked to the quality of product data and the quality of the user interface (Maditinos & Theodoridis 2010). If the quality of product information is high, customers can make purchasing decisions easily.

Online shopping is a task in a virtual place where, without being geographically inconvenient, individuals can easily explore product information, images, and promotions (Dharmesti et al. 2019). It also stated that young consumers browse through online shops to find more information about the desired products (Dharmesti et al. 2019). This means consumers can gather information even at home and they do not need to go and see the products physically. On the other hand, this will save the time of the consumers. The searching behaviour leads to more online information exposure that positively affects their intention to buy the product (Dharmesti et al. 2019). It further indicates that this result emphasises the importance of having detailed product information and transparent customer reviews available online (Dharmesti et al. 2019). This will lead customers to decide whether to purchase and from where to purchase.

2.4.4 Shipping/delivery time

Shipping or delivery is another factor when considering the factors that affect consumers' online buying behaviour. Consumers are willing to purchase a product from their residences and therefore expect the desired product to be shipped safely, efficiently, and quickly to their destination (Vasic, Kilibarda & Kaurin 2019). According to the research conducted by Ma (2017), customers gradually need a better quality of physical distribution service, especially a shorter delivery time. This means that most consumers are willing to buy at home and expect quick delivery. Otherwise, they will not be able to meet their needs at the time they want.

It is essential that the delivery is carried out following the requirements of the consumer (Vasic, Kilibarda & Kaurin 2019). When a vendor fails to deliver goods within the specified timeframe, it will lead to a loss of customers, directly affecting the profitability of the company. In an e-commerce context, they find that distribution service quality has a significant impact on both company profitability and customer satisfaction (Ma 2017). According to previous research, it indicated that, increased delivery time greatly increased the perceived uncertainty of consumers and had a negative effect on purchasing intentions (Ma 2017). Moreover, in cases of extended delivery times, offering free shipping reduced perceived ambiguity among customers. However, it heightened ambiguity perceptions when the delivery time was short (Ma, 2017).

2.5 Internet Usage in Sri Lanka and among the Young Generation

Table 2 represents the internet service providers in Sri Lanka; Dialog Broadband Network (Pvt) Ltd, TATA Communications Lanka Ltd, and Lanka Education and Research Network according to the Telecommunications Regulatory Commission of Sri Lanka (2020a).

Table 2: Internet Service Providers in Sri Lanka

No.	Category of License	Name of the Operator	Period of Validity	Date of Issue	Date of Expiry
01	Internet service providers	Dialog Broadband Networks (Pvt) Ltd.	5 years	04.12.2013	04.12.2018
02	Internet service providers	TATA Communications Lanka Ltd.	5 years	10.02.2015	10.02.2020
03	Internet service providers	Lanka Education and Research Network	5 years	01.09.2016	01.09.2021

Source: Telecommunications Regulatory Commission of Sri Lanka (2020a)

Figure 1 represents the operator-wise internet speed variation in the Colombo district. The graph indicates that Mobitel Mobile 4G and Dialog Mobile 4G secure the first and second positions, respectively, in terms of operator-wise internet speed. Numerous promotional campaigns have been carried out by internet providers, primarily Dialog, Mobitel, and Airtel, to increase awareness among Sri Lankan citizens about their network services. Therefore, everyone in Sri Lanka can easily access the networks to carry out their transactions.

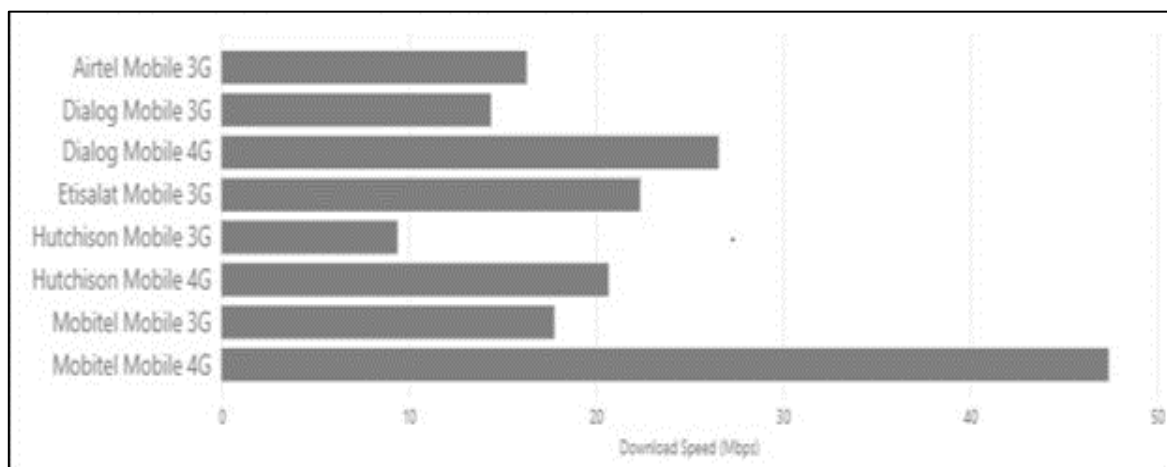


Figure 1: Operator-Wise Internet Speed Variation in Colombo District

Source: Telecommunications Regulatory Commission of Sri Lanka (2020b)

When considering the usage of the internet in Sri Lanka, there is a sharp rise in it. One of the studies mentioned that according to the most recent records, internet penetration occurred during 2016 and Sri Lanka rose by 30 percent and internet users increased to 6.1 million, primarily due to the availability of several access options, such as mobile, broadband, and dial-up options (Athapaththu & Kulathunga 2018). Figure 2 represents internet usage in Sri Lanka up to December 2020.

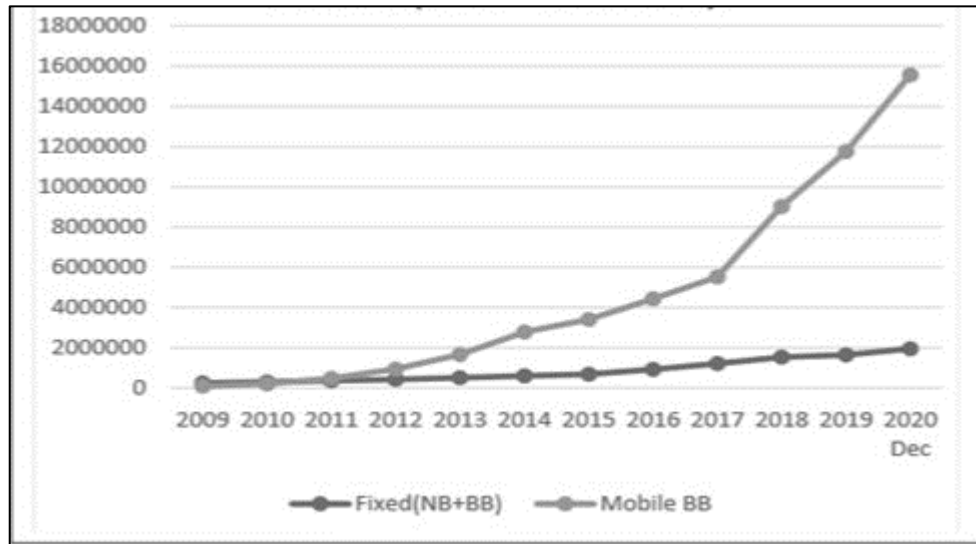


Figure 2: Internet Usage in Sri Lanka

Source: Telecommunications Regulatory Commission of Sri Lanka (2020b)

When considering the younger generation, most of the research indicated that they are more interactive with online purchasing. Young customers in Australia and the United States of America (USA) have a positive mindset toward online purchases which has a major impact on their online buying intentions (Dharmesti et al. 2019). The online purchasing process is very convenient for young consumers in Australia and the USA (Dharmesti et al. 2019).

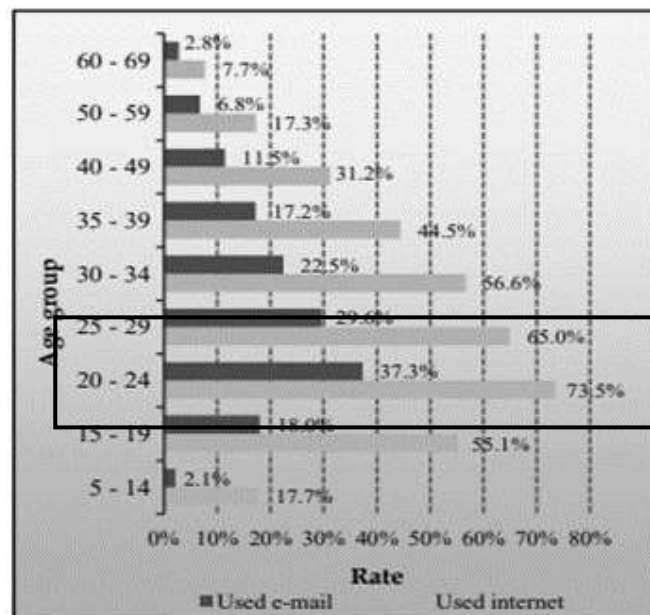


Figure 3: Percentage of Internet and E-mail Usage

Source: Department of Census and Statistics (2020)

Figure 3 represents the percentage of internet and email usage during the first six months of 2020, as reported by the Department of Census and Statistics. It indicates that young people in the age groups of 20-24 and 25-29 are the most likely to use the internet.

2.6 Significance of Online Purchasing for Revenue Generation

When considering online purchasing it is playing a vital role for revenue generation of the company because it directly connects with the sales of the company. Introducing online purchasing does not result in lower prices in general. It has a significant positive impact on total sales because a larger percentage of customers consider online purchasing to be more convenient and efficient (Duch-Brown et al. 2017). Further, another research concluded that online shopping is becoming a more popular option with sales rising year after year (Sharif & Yeoh 2018). Furthermore, another research indicated that small and medium enterprises (SMEs) also could generate benefits from e-commerce, and they are motivated to establish web profiles for their companies to increase their customer base (Peiris, Kulkarni & De Silva 2015).

3 RESEARCH DESIGN AND METHODS

This section discusses the research methodology that was used to examine the impact of factors on the online purchasing behaviour of management undergraduates in state universities in the Colombo district. This section represents the research approach, population and the sample of the study, data collection methods and pilot survey results.

3.1 Research Approach

This research focuses on identifying the impact of web design, security concerns, product information quality, and shipping/delivery time factors on the online purchasing behaviour of management undergraduates of state universities in the Colombo district. Therefore, this study is based on the deductive approach. Data was collected from the sample of management undergraduates of state universities in the Colombo district and this study was based on a quantitative approach and data collected using simple random sampling.

3.2 Conceptual Diagram

The conceptual framework (Figure 4) has been developed in the study to identify the impact of web design, security concerns, product information quality and shipping/delivery time on the online purchasing behaviour of management undergraduates of state universities in the Colombo district.

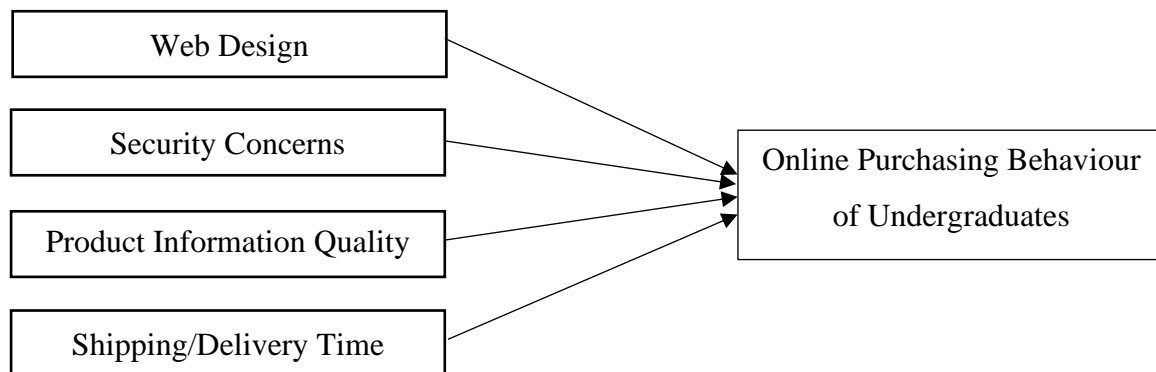


Figure 4: Conceptual Framework

Source: Author Constructed

3.3 Population and Study Sample

The population of this study is management undergraduates of state universities in the Colombo district. The reason for selecting Colombo district for the sample is most people who live in Colombo district engage with this online shopping and Colombo district is the commercial hub of Sri Lanka. Furthermore, the Colombo district has enough facilities for conducting online purchases rather than other areas. In addition to that most of the younger generation is using this method for their day-to-day activities. Therefore, to represent the younger generation, this study focuses on undergraduates. In addition to that, undergraduates know of the new technologies, and they are enthusiastic to do new innovative things. In addition, the study focuses on the state university management undergraduates in the Colombo district because it is easy to access and collect data for this study.

3.4 Sample Size and Selection of Sample

The sample of the study comprised management undergraduates from state universities in the Colombo district; the University of Sri Jayewardenepura, the University of Colombo, and the University of Kelaniya. The sample was collected using a random sampling method.

3.5 Operationalisation

This study developed the questions to measure each variable by naming each variable, the measurement questions, the source of questions and the definition of each variable (Table 3). The measurement items in Table 3 refer to the questions which are included in the questionnaire.

Table 3: Variable Measurements

Variable	Working Definition	Measurement Item	Source
Web design	The perceived quality of a website's design and processes is a measure of how easy, smooth, reliable, and effective they are (Al-Debei, Akroush & Ashouri 2015).	1. I feel that the website design helps me to search for products easily.	Maditinos and Theodoridis (2010); Clemes, Gan and Zhang (2014)
		2. I feel that the website design is convenient for ordering products.	
		3. I prefer to purchase from a vendor when its website is easy to navigate.	
		4. I feel that the screen layout of the website helps me to select products.	
		5. I prefer websites which use attractive colour combinations.	
		6. I feel that website design is easy to complete a transaction.	
		7. The links within the website allow me to move back and forth easily between its pages.	
Security concerns	E-commerce companies should ensure	1. I feel that third-party payment gateway security is important to purchase online.	Maditinos and Theodoridis

	that security mechanisms are in place so that customers can continue to trust the e-retailer and feel confident that their subjective risk has been minimised (Trivedi & Yadav 2018).	2. I am confident that payment information will be protected in online shopping. 3. I feel I can trust the vendor which I used to purchase. 4. I prefer to use an online source that provides detailed information about security. 5. I am confident that there is effective guidance to correct entry errors. 6. I am afraid that my private information will be used in an unwanted manner.	(2010); Trivedi and Yadav (2018)
Product information quality	Product information quality refers to whether an online website provides sufficient, up-to-date, understandable, and consistent information about its products (Maditinos & Theodoridis 2010).	1. I feel that the website provides sufficient product information. 2. I prefer the sites, which provide up-to-date product information. 3. I feel that the website presents product information easy to understand. 4. I feel that the product information provided on the website is precise and relevant.	Maditinos and Theodoridis (2010)
Shipping/delivery time	Consumers are willing to purchase a product from the comfort of their own homes, and they expect the product to arrive safely, efficiently, and quickly (Vasic, Kilibarda & Kaurin 2019)	1. I feel that free delivery in online shopping increases the sales volume. 2. After the online shopping, I am concerned whether the ordered product will be delivered. 3. I feel online purchase leads to the delivery of the wrong product. 4. I am anxious about whether the ordered product (clothing) will be of appropriate size when purchasing goods online. 5. I am worried about the quality or freshness of the delivered product when purchase goods online. 6. I prefer if online shopping offers shipping options on weekends.	Vasic, Kilibarda and Kaurin (2019)

Source: Author Constructed

3.6 Sources and Collection of Data

This study is based on the primary data collected through a questionnaire. The questionnaire was developed by using prior studies by Vasic, Kilibarda and Kaurin (2019); Maditinos and Theodoridis (2010); Clemes, Gan and Zhang (2014); Trivedi and Yadav (2018) that analysed the consumers' online buying behaviour in different countries.

The questionnaire is in an electronic format which consists of two parts. The first part is designed to collect demographic information such as gender, university, and income level and the second part is to collect data on perception regarding online purchasing behaviour to measure the factors impacting it. The questionnaire uses a Likert-style rating scale, giving respondents the option of strongly disagreeing or strongly agreeing with the statement with 23 main questions. Online questionnaires were distributed among the 450 undergraduates using a 'Google Form'. From the total sample, 293 responses were successfully obtained which represents 65% of the total sample. That percentage demonstrated the sample's suitability for data analysis.

3.7 Data Analysis Strategies

The first step in data analysis is to check the data set for errors to avoid questionnaire preparation errors using a pilot survey. The pilot survey consisted of a mix of management undergraduates from the University of Sri Jayewardenepura, the University of Colombo, the University of Kelaniya and some experts in the field. The reliability and validity tests are the most important measurement tools used in this study to analyse the goodness of collected data. Furthermore, this research uses the t-test analysis to evaluate the results of the data collected through a questionnaire to identify the factors that impact the online purchasing behaviour of management undergraduates of state universities in the Colombo district. The statistical analysis was done by using the IBM Statistical Package of Social Sciences (SPSS 23).

3.8 Pilot Survey Results

The pilot survey was conducted with 21 respondents. These respondents consist of 3 groups representing the managers from different divisions of the industry (Assistant Manager of Marketing, Product Manager and Assistant Manager of Supply Chain Department), a senior lecturer from the Department of Marketing of the University of Sri Jayewardenepura and a combination of management undergraduates in University of Sri Jayewardenepura, University of Colombo, and University of Kelaniya. Cronbach's Alpha and KMO values have been calculated to identify the reliability and validity of the questionnaire. Table 4 represents the summary of the pilot test results.

Table 4: Pilot Test Results

Name of the Variable	Cronbach's Alpha Value	KMO Value
Web Design	0.798	0.580
Security Concerns	0.709	0.553
Product Information Quality	0.859	0.602
Shipping/Delivery time	0.749	0.647

Source: Author Constructed

4 ANALYSIS AND DISCUSSION

This section consists of the data analysis on demographic factors and factors that are affecting the online purchase behaviour of management undergraduates of state universities in the Colombo district. In addition, it represents the findings identified through data analysis.

4.1 Profile of Respondents

This study was conducted using undergraduates of state universities in the Colombo district. The authors were able to obtain 293 responses from the 450 undergraduates, representing a 65% response rate. The demographic factors were used to analyse the respondent profile (Table 5).

Table 5: Frequency Analysis of Demographic Factors

Demographical Factors	Category	Frequency	Valid Percent %
Gender	Male	123	42.00%
	Female	170	58.00%
University	University of Sri Jayewardenepura	112	38.20%
	University of Colombo	87	29.70%
	University of Kelaniya	94	32.10%
Income level	Less than 10,000	99	33.80%
	10,000-20,000	108	36.90%
	Above 20,000	86	29.40%

Source: Author Constructed

4.1.1 Gender

The frequency and valid percentage of the questionnaire are represented in Table 5. When the gender factor is considered, 52 percent of females (L_2) and 48 percent of males (L_1) engage in online purchasing (Figure 6).

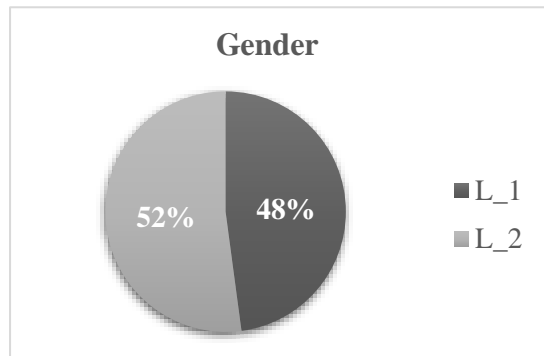


Figure 6: Responses Based on Gender

Source: Survey Data

4.1.2 University

37 % of the undergraduates of the University of Sri Jayewardenepura (L_2) have engaged in online purchasing. Students at the University of Kelaniya have engaged in online purchasing which represents 34% (L_1) and 29% of students at the University of Colombo (L_3) have engaged in online purchasing (Figure 7).

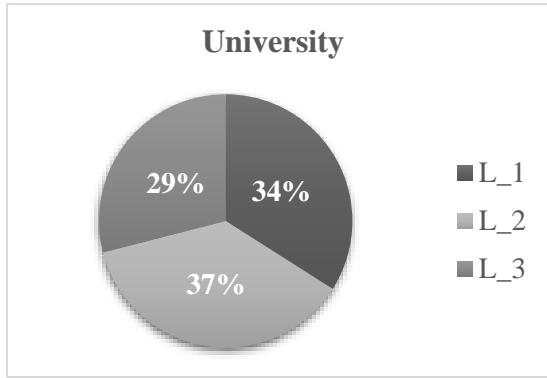


Figure 7: Responses Based on University

Source: Survey Data

4.1.3 Income level

37% of the undergraduates' monthly income level (L_2) falls into Rs. 10,000 – Rs. 20,000. 34% of undergraduates' monthly income (L_1) falls into less than Rs. 10,000 and 29% of undergraduates (L_3) get more than Rs. 20,000 income per month (Figure 8).

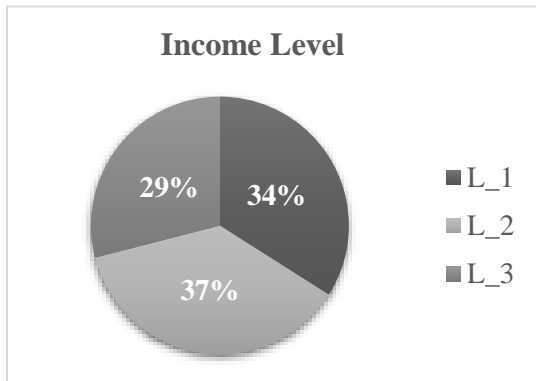


Figure 8: Responses Based on Income Level

Source: Survey Data

When considering the valid percentage of the responses, all responses are valid and there are not any missing values according to all factors (Table 6).

Table 6: Valid Responses

Factors		Valid Responses (in numbers)	Missing Values
Demographic factors	Gender	293	0
	University	293	0
	Income Level	293	0
Factors impacting online purchasing behaviour	Web Design	293	0
	Security Concerns	293	0
	Product Information Quality	293	0
	Shipping/Delivery Time	293	0

Source: Author Constructed

4.2 Testing Validity and Reliability

The pilot survey was conducted by using 21 samples. This sample includes 3 people representing the different segments of the industry (Assistant Manager of Marketing, Product

Manager and Assistant Manager of Supply Chain Department) and one of the senior lecturers from the Department of Marketing of the University of Sri Jayewardenepura and a diverse group of management undergraduates in University of Sri Jayewardenepura, University of Colombo, and University of Kelaniya. The validity and reliability of the questionnaire were confirmed, and a few changes were made to the questionnaire based on the results.

4.2.1 Validity test

Validity tests are used to ensure that an instrument can accurately measure what it is intended to measure. The validity of the questionnaire of this study was confirmed by performing Kaiser-Meyer-Olkin (KMO), a measure of sampling adequacy and Bartlett's test. The validity has been established if the KMO value is greater than 0.5. Table 7 indicates that all factors are valid for the analysis.

Table 7: Validity Test

	Web Design	Security Concerns	Product Information Quality	Shipping/Delivery Time
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.580	0.553	0.602	0.647
Bartlett's Test of Sphericity	66.119	31.489	48.580	38.592
Approx. Chi-Square				
Df	21	10	6	15
Sig	0.000	0.000	0.000	0.001

Source: Author Constructed

4.2.2 Reliability test

The reliability test measures the suitability of questions included in the questionnaire. Cronbach's alpha was used to measure the reliability and it is established if the value is greater than 0.7. According to Table 8, all factors have Cronbach's alpha value greater than 0.7.

Table 8: Reliability Test

Factors	Cronbach's Alpha Value	Number of Items
Web Design	0.798	7
Security Concerns	0.709	5
Product Information Quality	0.859	4
Shipping/Delivery Time	0.749	6

Source: Author Constructed

4.3 Frequency Analysis of Factors Influencing Online Purchasing Behaviour

The mean measure is used to identify the central tendency (Table 9). The highest mean value (4.07) was received for the web design. The second highest mean value (3.91) was received for the product information quality and the lowest mean value (3.8) was obtained for the security concerns factor. When considering the standard deviation, it measures the spread of a set of observations. According to Table 9, the highest standard deviation (0.656) is with the product information quality. Web design has the second-highest standard deviation (0.581). The lowest standard deviation (0.530) is with the shipping/delivery time. According to that, web design and product information quality factors recorded higher mean values than other factors. It represents those undergraduates are positively perceive the impact of online purchasing behaviour on web design and product information quality factors.

When considering the skewness, it is used to measure the degree and direction of asymmetry. According to Table 9, other than the security concerns factor, all other factors are negatively skewed. In addition to that, kurtosis is a measure of the heaviness of the tails of a distribution. According to Table 9, web design recorded the highest kurtosis (2.003). The lowest kurtosis (-0.324) is with the shipping/delivery time.

Table 9: Descriptive Statistics

Statistics	Web Design	Security Concerns	Product Information Quality	Shipping/Delivery Time
Mean	4.07	3.8	3.91	3.9
Std. Deviation	0.581	0.55	0.656	0.53
Skewness	-0.637	0.23	-0.547	-0.191
Std. Error of Skewness	0.142	0.142	0.142	0.142
Kurtosis	2.003	-0.352	1.213	-0.324
Minimum	1	2	1	2
Maximum	5	5	5	5

Source: Author Constructed

4.4 Analysis of Undergraduates' Perception of the Factors Affecting Online Purchasing Behaviour

The one sample t-test was used to determine factors that affect the online purchasing behaviour of management undergraduates of state universities in the Colombo district and to examine the intensity to which these factors affect the online purchasing behaviour of management undergraduates of state universities in the Colombo district.

According to the results of one sample t-test, all the factors were significant (Table 10). According to Table 10, p-values were less than 0.05. Therefore, web design, security concerns, product information quality and shipping/delivery time factors can be considered as significant factors that impact online purchasing behaviour. In addition to that, all the factors are higher than the average value of 3. With a mean difference of 1.070, undergraduates had the highest perception of web design. The second highest perception was on the shipping/delivery time with a mean difference of 0.9. The lowest perception was on the product information quality with a mean difference of 0.909. Then the second lowest perception was on the security concerns which have the 0.803 mean difference. This explains that undergraduates are more concerned with the web design and the shipping/delivery time. Furthermore, according to the results of the one sample t-test, all the mean differences are positive, and there is no negative mean difference.

Table 10: One Sample t-test

Factors	Test value =3		
	T Statistic	Sig. (2-tailed)	Mean Difference
Web Design	31.511	0.000	1.070
Security Concerns	24.963	0.000	0.803
Product Information Quality	23.726	0.000	0.909
Shipping/Delivery Time	29.038	0.000	0.900

Source: Author Constructed

In addition to that, when considering the mean values (Table 11) the highest mean value (4.07) was with the web design, the second highest mean value (3.91) was with the product information quality, the lowest mean value (3.80) was with the security and the second lowest mean value (3.90) was with the shipping/delivery time. Furthermore, according to the standard deviation, the highest standard deviation was with the product information quality (0.656) and the lowest standard deviation was with the shipping/delivery time (0.530).

Table 11: Descriptive Statistics

Factors	Mean	Std. Deviation	Std. Error Mean
Web Design	4.07	0.581	0.034
Security Concerns	3.80	0.550	0.032
Product Information Quality	3.91	0.656	0.038
Shipping/Delivery Time	3.90	0.530	0.031

Source: Author Constructed

4.5 Analysis of Demographic Factors

Based on demographic factors, it was further divided into gender, university, and income level when analysing perceptions about online purchasing behaviour.

Table 12: Independent Sample t-test and One-Way ANOVA Results

Perception based on Demographic Factors	Sig. (2-tailed)
Perception of factors affecting online purchasing behaviour based on <i>Gender</i>	
Web Design	0.055
Security Concerns	0.215
Product Information Quality	0.860
Shipping/Delivery Time	0.987
Perception of factors affecting online purchasing behaviour based on <i>University</i>	
Web Design	0.037
Security Concerns	0.084
Product Information Quality	0.686
Shipping/Delivery Time	0.241
Perception of factors affecting online purchasing behaviour based on income level	
Web Design	0.140
Security Concerns	0.400
Product Information Quality	0.340
Shipping/Delivery Time	0.219

Source: Author Constructed

Independent sample t-test and one-way ANOVA test are used to compare the demographic factors and the factors that affect online purchasing behaviour. Based on the significance levels (p-value), the impact was examined.

Male and female students were tested using independent sample t-tests to determine if their perceptions of the factors influencing online purchasing behaviour differed significantly (Table 12). The findings of this study do not support the assertion that gender differences in perceptions of factors influencing online purchasing behaviour are significant and a one-way ANOVA test was used to see if the perceptions of factors influencing online purchasing behaviour differed significantly between the University of Sri Jayewardenepura, the University of Colombo, and the University of Kelaniya. The results of this test do not support that the

perceptions of the factors impacting online purchasing behaviour significantly differ based on university. Further, a one-way ANOVA test was performed to support that the perception regarding the factors impacting online purchasing behaviour significantly differs between different income levels. The results of this test do not support that the perceptions of the factors impacting online purchasing behaviour significantly differ based on income level.

4.6 Discussion

4.6.1 Undergraduates' perception of the impact of web design on online purchasing behaviour

The study finds that management undergraduates perceive web design as the factor that has the most significant impact on their online purchasing behaviour. The KMO value for this factor was 0.58, and Cronbach's Alpha was 0.798. Furthermore, this represented a sig. value of 0.000 and the highest mean value of 4.07. Therefore, this factor can be considered as the most influencing factor on undergraduates' online purchasing behaviour. This finding is also supported by prior research. Clemes, Gan and Zhang (2014) find that well-designed website features have a major impact on the adoption of online purchasing by Chinese customers. Similarly, Wells, Parboteeah and Valacich (2011) support that the visual attractiveness, transaction security, and navigation of a website as factors that can directly affect the consumer's purchase momentum.

The factor of web design was measured by using seven questions. Among them more than 80% of the respondents agreed with the questions of 'I feel that the website design helps me to search products easily', 'I feel that the website design is convenient to order products' and 'I prefer to purchase from a vendor when its website is easy to navigate' by stating that they are agreed or strongly agreed. It represents that, web design is one of the influencing factors on undergraduates' online purchasing behaviour. In addition to that, more than 75% of respondents agreed with the questions of 'I feel that the screen layout of the website helps me to select products', 'I feel that website design is easy to complete a transaction and 'The links within the website allow me to move back and forth easily between its pages.' These results emphasized that web design is more concerned when doing online purchasing. These findings of the study confirm the findings of Akram et al. (2018), which state that web design elements can elicit an online drive to buy on a larger scale. Turkyilmaz, Erdem and Uslu (2015) suggest that the quality of the website must highlight the willingness to reinforce and retain its consumer base whose failure can lead to customer losses.

4.6.2 Undergraduates' perception of the impact of security concerns on online purchasing behaviour

Undergraduates had the third highest perception of security concerns. This factor represented Cronbach's Alpha value of 0.709 and KMO value of 0.553 through the analysis. This recorded a sig. value of 0.000 and a mean value of 3.8. These results demonstrate that security concerns are a factor that influences online purchasing behaviour.

According to previous research, there are both conflicts and acceptances regarding security concerns. Based on the previous study, security and privacy can also play a major role in generating trust when it comes to online purchasing (Al-Debei, Akroush & Ashouri 2015). Furthermore, another study stated that e-commerce enterprises should ensure that security methods are in place so that customers can continue to trust the e-retailer and feel satisfied that their subjective risk has been minimized (Trivedi & Yadav 2018). However, there is a

contradiction in previous research regarding the security concerns. According to Vasic, Kilibarda and Kaurin (2019), shipping, cost, and information accessibility have the greatest impact on e-customer satisfaction in Serbia, whereas quality, speed, and safety have a considerably lesser impact.

The factor of security concerns was measured by using six questions. The questions 'I feel that third-party payment gateway security is important to purchase online' and 'I prefer to use the online source that provides detailed security information' received more than 70% of the responses, indicating agreed or strongly agreed. But the questions of 'I am confident that payment information will be protected in online shopping' and 'I feel I can trust the vendor which I used to purchase', did not receive more favourable responses. These findings demonstrate that security concerns are also a major factor when examining the perception of online shopping behaviour. Buyers are more willing to engage in online purchases when security is high. That was proven by the study of Hartono et al. (2014) stating that it is also believed that a high level of perceived security tends to bring more comfort for the customers.

4.6.3 Undergraduates' perception of the impact of product information quality on online purchasing behaviour

Another important factor to consider when deciding on the perception of online purchasing behaviour is the quality of product information. According to the findings, the product information quality had the highest Cronbach's Alpha value of 0.859 and the second highest KMO value of 0.602. Furthermore, it indicated a sig. value of 0.000 and a mean value of 3.91, the second-highest mean value.

The above results do not contradict previous studies. According to Dharmesti et al. (2019), more online information exposure due to buyers' searching behaviour has a positive impact on their intention to purchase the product. Another study found that the quality of product data and user interface quality are strongly linked to consumer satisfaction (Madinis & Theodoridis 2010). As a result, having quality product information has an impact on consumers' online purchasing behaviour. This outcome highlights the importance of having accessible online detailed product information and transparent evaluations by prior shoppers (Dharmesti et al. 2019).

Product information quality was analysed using four questions. Among them, the questions, 'I prefer the sites, which provide up-to-date product information' and 'I feel that the website presents product information easy to understand' received more than 75% of responses indicating agreed or strongly agreed. However, a moderate number of undergraduates agreed with the questions of 'I feel that the website provides sufficient product information' and 'I feel that product information provided on the website is precise and relevant.'

4.6.4 Undergraduates' perception of the impact of shipping/delivery time on online purchasing

According to the results of the questionnaire, the second highest perception of online purchasing behaviour is on the shipping/delivery time. According to the results of the analysis, this factor emphasised the mean value of 3.9 and the Cronbach's Alpha value of 0.749. Furthermore, this factor had the highest KMO value of 0.647 and a sig. value of 0.001.

Shipping/delivery time is one of the major concerns when consumers are engaging in online purchases. This statement was proved by previous studies as well. Consumers are willing to purchase a product from the comfort of their own homes, and they expect the product to arrive safely, efficiently, and quickly (Vasic, Kilibarda & Kaurin 2019). Another study stated that customers are gradually demanding higher-quality physical distribution services, particularly faster delivery times (Ma 2017). The same study concluded that physical distribution service quality has a significant impact on both company profitability and customer satisfaction in an e-commerce context (Ma 2017). As a result, prior research has identified shipping/delivery time as a significant factor when considering the perception of factors influencing online purchasing behaviour.

This factor was assessed by administering a questionnaire with seven questions. When analysing those questions 'I feel that the free delivery in online shopping increases the sales volume', 'After the online shopping, I am concerned whether the ordered product will be delivered' and 'I am worried about the quality or freshness of the delivered product when purchase goods online', received more than 70% of responses by indicating agreed or disagreed. But the questions of 'I feel online purchase leads to delivery of the wrong product' and 'When an order cannot be fulfilled by the vendor, I believe that online shopping provides quick refunds' are not supported for the increase in the perception of online purchasing behaviour of undergraduates.

4.6.5 Differences in perception due to demographic factors

According to the independent sample t-test, gender differences did not affect management undergraduates' perceptions of factors influencing online purchasing behaviour. Independent t-tests revealed that there were no significant differences between male and female respondents for all the critical motivational parameters of buyers/users (Sahney, Ghosh & Shrivastava 2013). Another study revealed that females, younger age groups, singles, higher education levels, and occupation groups all have different chances of adopting online shopping (Clemes, Gan & Zhang 2014). However, the study by Akram et al. (2018) stated that online shopping is more common among women. According to that, previous studies on this demographic factor contain both acceptances and contradictions.

The results of one-way ANOVA do not support the assertion that perceptions of factors influencing online purchasing behaviour differ significantly depending on the university. One of the studies indicated that, when it came to their education, the majority (65.27 percent of the sample) of those who engage in online shopping had a higher education (Vasic, Kilibarda & Kaurin 2019). However, this study did not show that the perception had changed according to the university. However, most studies have emphasised that more young people have engaged in online purchasing. Young customers in Australia and the USA have a positive attitude toward online purchases, which influences their online purchasing intentions significantly (Dharmesti et al. 2019). Furthermore, the same study indicated that online shopping is very faithful and convenient for young people. Young Australian and American shoppers are quite accustomed to the online shopping experience (Dharmesti et al. 2019).

Based on the results of this study there is no verification to state that the perceptions of the factors impacting online purchasing behaviour significantly differ based on income level. But this statement contradicts the previous study by Clemes, Gan and Zhang (2014) because that study represented that Chinese consumers with high incomes are less likely to shop online. This could be because these customers prefer to buy branded goods.

5 CONCLUSION

More studies are being conducted on the online purchasing behaviour of consumers in an international context. Online purchasing behaviour is being influenced by multiple factors but only four factors were considered in this study. This study helps managers to implement strategies to enhance the online purchasing behaviour of customers by identifying the factors, investors to make investment decisions on e-business channels, and the government to make regulations regarding online purchasing. Therefore, this study contributes to identifying the factors that affect online purchasing behaviour by examining the perception of the management undergraduates of state universities in the Colombo district. As a result, based on a systematic literature review and expert review, a structured questionnaire was developed and distributed to collect the required data among the management undergraduates in state universities in the Colombo district. Following that, a descriptive statistics analysis based on demographic factors was carried out. According to that, the highest mean value was received for the web design and the second highest mean value was received for the product information quality. The lowest mean value was obtained for the security concerns factor. Following that, one sample t-test was conducted to determine the influencing factors for online purchasing behaviour and their intensity. Based on that analysis, this study determined that web design is the most important of the four factors. The importance of shipping/delivery time was then emphasised, with product information quality having the least significant impact. Even though the four factors have different levels of significance, all four factors are significant according to the one sample t-test. Finally, the independent sample t-test and one-way ANOVA test were based on the demographic factors. According to that analysis, the study recognized that demographic factors have no significant impact on online purchasing behaviour, which was also supported by previous studies. According to the overall results of the analysis, this study can conclude that the web design factor is the most significant and has the highest intensity for online purchasing behaviour, and shipping/delivery time has the second highest significance on the online purchasing behaviour of management undergraduates of state universities in the Colombo district. Furthermore, this study concluded that when considering the online purchasing behaviour of management undergraduates of state universities in the Colombo district, all four factors are significant.

As a result, this research contributes to the organisation's value generation by influencing the organisation's intellectual value generators as well as the social and relationship capital from an integrated reporting perspective. Consequently, customers will benefit from increased purchasing options. Online purchases have an impact on profit, which is captured through financial capital. Thus, this research is critical to the accounting profession's decision-making and policy-making processes. Furthermore, this research aids managers in implementing strategies to improve customers' online purchasing behaviour by identifying factors, investors in making investment decisions on e-business channels, and the government in enacting regulations related to online purchasing. This research seeks to bridge the existing knowledge gap by pinpointing the key factors that impact online purchasing behaviour. Additionally, there is a scarcity of studies specifically focused on management undergraduates from state universities in the Colombo district. Consequently, this study aims to address this gap by identifying the factors influencing the online purchasing behaviour of management undergraduates at state universities in the Colombo district.

This study is confined to management undergraduates at state universities in the Colombo district for the convenience of data collection. Due to time and budget constraints, the study did not extend data collection to other faculties or undergraduates in state universities within the Colombo district. The geographical scope was limited to the Colombo district for ease of

obtaining information on online purchasing. Future studies can broaden their samples by including other groups such as graduates, school students, businesses, and elders. Additionally, future research can explore different areas, encompassing urban and rural regions and the entire country.

The types of products and services purchased can influence customer behaviour. Moreover, the significance of factors affecting online purchasing behaviour may vary among customers based on factors like price and quantity. Despite this, the current study focused on four common factors, identified in previous research articles. Future research could expand its focus to include other factors influencing online purchasing behaviour. Further studies can examine the relationships between these factors by identifying independent, dependent, mediating, and moderating variables to understand perceptions. In contrast to quantitative studies, future research might emphasise qualitative studies to delve into the intricacies of online purchasing behaviour.

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