

Online shopping behaviour and service quality perceptions of young people in South Africa: A COVID-19 perspective

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Dates:

Received: 31 Mar. 2022
 Accepted: 01 June 2022
 Published: 31 Aug. 2022

How to cite this article:

Heyns, G.J. & Kilbourn, P.J., 2022, 'Online shopping behaviour and service quality perceptions of young people in South Africa: A COVID-19 perspective', *Journal of Transport and Supply Chain Management* 16(0), a777. <https://doi.org/10.4102/jtscm.v16i0.777>

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Background: The coronavirus disease 2019 (COVID-19) pandemic had a significant impact on business operations and consumer behaviour across the world. The South African online retail environment also encountered different opportunities and last-mile logistics challenges. However, the impact of the COVID-19 pandemic on online consumer behaviour has received limited attention. Furthermore, limited studies exist which have measured the online buying behaviour of young people, an important online market segment.

Objectives: The primary purpose of this study was to determine whether the onset of the COVID-19 pandemic significantly influenced the online shopping behaviour of young people and to provide online retailers and consumer behaviour theorists with a better appreciation of young consumers' online purchasing needs, which will assist them in developing and effecting appropriate last-mile logistics strategies.

Methods: A quantitative research design was used, and empirical data were collected from two non-probability sampling surveys conducted in 2019 (before the COVID-19 pandemic) and in 2020 (during the COVID-19 pandemic) of 461 young people in the Johannesburg area. A self-administered online questionnaire was used to collect the research data.

Results: The results indicate that online shopping behaviour either did not change or increased because of the COVID-19 pandemic for most respondents. Young online consumers consider order fulfilment aspects to be more important than the tangible considerations of online retailers.

Conclusion: This research study provides a distinct perspective of young people's perceptions of online shopping and makes a meaningful contribution by identifying the important fulfilment-related service quality expectations of young online customers in South Africa.

Keywords: COVID-19; consumer behaviour; online shopping behaviour; young consumers; last-mile logistics; last-mile delivery; order fulfilment.

Introduction

Since late December 2019, the coronavirus disease 2019 (COVID-19) pandemic has had a significant impact on people globally, affecting them in many ways. Over and above the fear and anxiety brought about by the virus through death and illness, people have had to deal with economic setbacks, social restrictions through social distancing measures and a lack of mobility. The first confirmed COVID-19 case in South Africa was reported on 05 March 2020, and the World Health Organization (WHO) declared COVID-19 a pandemic on 11 March 2020 (De Villiers, Cerbone & Van Zijl 2020). In line with other countries worldwide, the South African government adopted a fast and relatively strict approach to curb the spread of the virus (Durizzo et al. 2021). President Ramaphosa declared a National State of Disaster on 15 March 2020, followed by a national Alert Level 5 ('stay at home or lockdown') order on 27 March 2020 for 3 weeks but ultimately extended it to 5 weeks (South African Government 2022). These stringent lockdowns were followed by periods of reduced alert levels. Alert Level 3 was in effect from 01 June to 17 August 2020. Alert Level 2 was in effect from 18 August to 20 September 2020, and Alert Level 1 was in effect from 21 September to 28 December 2020 (South African Government 2022).

Alert Level 5 regulations (the most stringent level) prevented individuals from leaving their homes, except for exceptional circumstances. Furthermore, people were not allowed to go to work unless they were employed with essential services organisations and were restricted in terms of the products and services they could buy during this time (South African Government 2022).

The closing of non-essential industries led to production decline, loss of employment and generally a significant decline in the demand and supply of many industries, notably the service sectors (restaurants, entertainment, travel, tourism, etc.) (Arndt et al. 2020). During Alert Level 4 lockdowns, other sectors were allowed to open; however, social gatherings were still prohibited. Alert Level 3 still implied a curfew on the movement of people, with all of them being confined to their places of residence between 22:00 and 04:00 daily, unless some special exceptions were applied. Alert Level 3 did allow for some domestic travel between provinces, limited social gatherings, funerals and religious events and the opening of restaurants to sell meals for off-site consumption (South African Government 2022). This shows that the COVID-19 pandemic significantly impacted South African society during the year 2020.

Some studies found the impact of the pandemic on consumer behaviour to be consistent with that of historical shock events (Gupta, Nair & Radhakrishnan 2021; Loxton et al. 2020). However, Guthrie, Fosso-Wamba and Arnaud (2021) maintained that government regulations during the COVID-19 pandemic resulted in restricted consumer environments, which had a different impact on consumer behaviour compared with the impact of other stressful events such as the SARS outbreak, terrorist attacks and the 2008 financial crisis. During the pandemic, there was a greater need for the use of digital applications and Internet technologies, resulting in innovative business solutions (Alan 2020). Some studies suggest that the combined effect of the pandemic and the global move towards digitisation will result in structural changes in consumer behaviour (Kim 2020). According to Sheth (2020), most consumer habits will return to normal after the pandemic. Still, some will change because of the discovery of alternatives that are more convenient, affordable and accessible. However, uncertainty remains over the factors driving online purchasing behaviour during the pandemic and warrants further investigation (Guthrie et al. 2021).

E-commerce, including business-to-consumer (B2C) e-commerce, continues to grow and proliferate on a global scale. Furthermore, the COVID-19 pandemic has acted as a catalyst to inject further speed into the growth of this sector (Kim 2020), with South Africa being no exception in this regard. In the first half of 2020, e-commerce spending in South Africa grew by 30% compared with the previous year, with 68% of consumers shopping more online since the beginning of the COVID-19 pandemic (Mastercard 2020). The potential for further growth in e-commerce in the country is significant since the sector only accounts for 2.8% of South Africa's total retail spending in 2020 (Daniel 2021). Rand Merchant Bank expects the value of the e-commerce sector to surge by 150% to R225 billion by 2024 (Thenga 2020). In the same period, the number of e-commerce users in South Africa is expected to grow by 44% to 32 million users (Statista 2020).

The rapid growth of e-commerce creates intense competition for organisations operating in this space. With fierce

competition, it becomes more difficult and expensive to gain and retain customers (Javed & Wu 2020), and it is imperative for business organisations to ensure that their products and services are aligned with the needs of future and existing customers. Furthermore, the important last-mile delivery component of online sales is very costly, and organisations typically charge less for this activity than what it costs them, thereby eroding profits (Capgemini 2019). Therefore, organisations will have to fully understand their markets served so that efficient and effective channel strategies can be devised and implemented (Thenga 2020).

Although online consumer behaviour and service quality perceptions are well researched from an international perspective (Gustafsson & Jönsson 2014; Hu & Acar 2018; Ige 2004), limited South African research exists that is contemporary. The study of Brink, Heyns and Kilbourn (2019) measured service quality perceptions of South African online consumers and determined their most preferred choice of last-mile delivery options. However, this study was limited to the buying of grocery products online by grocery shoppers with access to the Internet. Badenhorst and Weber (2018) conducted a study to understand the nature of last-mile logistical challenges impacting the performances of an omni-channel grocery retailer in South Africa. The study was limited to a single case study.

Young people engaged in tertiary studies are more likely to adopt online buying practices because they are more prone to explore and experiment (Chawla, Khan & Pandey 2015). The more educated people are, the more likely they are to engage in online buying activities (Naseri & Elliott 2011). University students can therefore be regarded as early adopters of online buying habits. Globally, extensive academic studies have been conducted on the online behaviour of young people and, more specifically, university students (Gustafsson & Jönsson 2014; Jadhav & Khanna 2016; Pawar, More & Bhola 2014; Saprikis, Chouliara & Vlachopoulou 2010; Zendehdel, Paim & Osman 2015). It should be noted that most of the existing studies were conducted pre-COVID-19. Although it is well reported that the COVID-19 pandemic acted as a strong growth stimulus for online shopping, relatively little scholarly attention was paid to the impact of COVID-19 on consumer behaviour (Guthrie et al. 2021; Kim 2020). A question that emerged is whether the pandemic changed the behaviour of young online shoppers and whether such change is structural in nature with a long-term impact. A literature review of South African studies of the online behaviour of young people resulted in finding limited research relevant to the topic. An older study by Veerasamy, Govender and Jadwat (2011) studied the online consumer buying behaviour of tertiary students in the greater Durban area. Makhitha and Dlodlo (2014) conducted a survey amongst university students with the purpose of determining the dimensions that influence the uptake of online shopping. Swiegers (2018) investigated the perceived risk barriers relevant to online shopping, as demonstrated by technologically enabled South African Generation Y consumers. In the context of

rapid online market growth, technology changes and the impact of the COVID-19 pandemic, a research gap exists in terms of a contemporary study focusing on the online shopping behaviour of young people in South Africa. This study is an attempt to fill that gap.

Against this background, the purpose of this study was to ascertain the online shopping behaviour of young consumers before and during the COVID-19 pandemic, gauge the fulfilment-related service quality perceptions of online grocery consumers and determine their most preferred choice of last-mile delivery options in the Gauteng region. The information generated from this research study provides consumer theorists and e-commerce managers in South Africa with a greater understanding of young people's online buying behaviour. The study also assists with developing order fulfilment strategies for an organisation's online business, commensurate with the needs of young people.

The remainder of the article is structured as follows: firstly, a theoretical framework explaining the key constructs relevant to the study is provided. After that, the research methodology is explained, followed by a discussion of the results and the conclusion of the study.

Theoretical framework

Market segments based on generational cohort theory

It is important for business organisations to have a deep understanding of the various customer segments they target with their online business strategies (Saprikis et al. 2010). To that end, it is important to understand the determinants of online shopping behaviour (Tiwari & Joshi 2020). Market segments can be defined based on generational cohorts (Hume 2010). The generational theory was developed by Strauss and Howe in 1991, who identified five cohorts of generations (Moreno et al. 2017). Each of those cohorts is different in terms of experiences, expectations, history, attitudes, values, world perspectives and lifestyles, and each manifests different buying behaviours as consumers (Levickaitė 2010). This study focuses on young people and more specifically on the following two generational cohorts: Generation Z (people born mid-1990s) (Levickaitė 2010) and Generation Y (also known as the Millennials), who represent the people born in the time period 1981–1995 (Junker, Walcher & Blazek 2016).

Generation Z people were born in an era dominated by computers and the Internet and did not have to get accustomed to this technology, and as a result, they place value on technology, speed and individualism (Berkup 2014). From this description, it can be deduced that the technological nature coupled with the speed and convenience of online shopping will naturally appeal to Generation Z people. Even though a significant part of the South African Generation Z population lives in poverty, many have the ability to access the Internet and social media via mobile devices, and therefore, they present a lucrative target market for companies

(Duffett 2017). This concurs with the finding of Dabija and Lung (2018) that Generation Z members in an emerging market mostly prefer online shopping using their smartphones.

Millennials can be considered a demographic generation which is also significantly influenced by technology, including the Internet, and they are considered the largest market segment currently. Millennials are also considered a very attractive niche market because of the influence members of this cohort have on the formation of purchasing trends with peers (Moreno et al. 2017). As a market segment, Millennials are also considered highly skilled in using the Internet for product searches, comparison and buying (Naumovska 2017). For the purpose of this study, Generation Z and Millennials are considered young people who constitute the ideal market segment for business organisations targeting online sales growth.

Predictors of online student consumer behaviour

The past few studies have found many factors influencing the online shopping behaviour of young people. In a study of the online retail buying behaviour of Indian college students, Jadhav and Khanna (2016) found the main influencing factors to be availability, competitive prices, comparison, promotions, convenience, customer service, perceived ease of use, attitude, time consciousness, trust and variety seeking. In a similar vein, a study of Greek university students by Saprikis et al. (2010) found the main reasons for adopting online buying to be lower prices when compared with conventional stores, the ease of the online buying process and the wide variety of available products. The main reasons for not buying were found to be security and privacy reasons, a need to physically examine products, preference for buying from brick-and-mortar stores and the non-usage of credit cards (Saprikis et al. 2010). Similarly, a study by Zendehdel et al. (2015) on the factors driving the adoption of online practices amongst Malaysian students found that the perceived risk of online transactions is an influencing factor negating the growth of online buying in the country. The latter study confirmed cost benefits as the main perceived benefit of online buying amongst the youth in Malaysia. A study of young consumers in Australia and the United States of America found a positive attitude towards online shopping as a strong influencing factor. The study also found that young consumers are very familiar with online shopping processes (Dharmesti et al. 2019).

Logistics capabilities influencing online purchasing behaviour

Online shopping is an aspect of e-commerce that can be described as the process of researching and buying goods using the Internet (Varma & Agarwal 2014). In order to understand how business tactics influence customers' online behaviour, one needs to deconstruct the online buying process into its main phases. For this study, three key phases of online buying have been identified: product search,

payment and fulfilment execution. The product search phase entails the accumulation of information by prospective buyers to consider factors, such as prize, size and availability (Riley & Klein 2019). The payment phase can be either owned by the supplier or outsourced to external providers such as PayPal (Ascarza et al. 2017). The fulfilment phase mainly concerns delivery of products to their final destinations in an efficient and effective manner (Ascarza et al. 2017) and includes product returns (Nguyen et al. 2019). Research has indicated that the delivery of products has a strong impact on customer satisfaction in e-commerce (Mofokeng 2021), and that as many as 85% of customers have selected online retailers based on their delivery service reliability and trustworthiness (UPS 2021). This research focuses on the fulfilment part of online transactions because it is an important success factor in e-commerce and because of the wide variety of related factors that influence the behaviour of consumers buying online.

Last-mile delivery in e-commerce

Last-mile delivery can be explained as the activities required for physical delivery to the final destination (Olsson, Hellström & Pålsson 2019), and it is a critical success factor for online business. The findings of an international study conducted by Capgemini (2019) suggested that last-mile delivery is becoming increasingly important, with 40% of consumers considering delivery services as a necessary requirement when selecting food and grocery retailers for purchases. The study also found that the provision of last-mile services constitutes 41% of overall supply chain costs, which is more than double the cost of any other category of logistics costs in the supply chain (Capgemini 2019). Last-mile delivery costs are variable, implying that total last-mile delivery costs as a component of total logistics costs will increase as the volume of online sales increases (Capgemini 2019). Furthermore, delivery timeframes are shortening on the back of consumer demand, and shippers are compelled to find efficient ways to operate the last mile (Hu & Acar 2018).

Service quality variables related to last-mile delivery are wide and varied. Critical service aspects include delivery information or options that consumers want before they decide to order products and include information about carriers, shipping dates and delivery time slots (Nguyen et al. 2019). Various studies have measured the effects of various aspects of last-mile delivery on online customer behaviour. Nguyen et al. (2019) found that in their evaluation of online delivery services, consumers attribute the greatest importance to delivery fee, followed by delivery speed, time slot, delivery date and daytime or evening delivery. Rao et al. (2011) found that delivery options provided with online transactions contribute significantly to service quality and customer satisfaction. Agatz et al. (2011) found that consumer behaviour was affected by the number of delivery time slots offered.

Service quality

Service quality can broadly be explained as the disparity between customer expectations and customer perceptions of

the service (Luke & Heyns 2017). According to Rust and Oliver (1994), the perception of service quality is grounded in customers' comparison of prior experiences of excellent service encounters. Bitner and Hubert (1994) support this and posits that service quality is a customer's assessment of an entity's overall excellence or worth. This suggests that, in essence, service quality entails a level of relativity where the consumer compares their service experience with prior experiences of similar types of services. There is an array of approaches that are used to measure service quality, including several national indexes that are centred on customer perceptions and expectations (Andreassen & Lervik 1999; Johnson et al. 2001); service quality indexes (SQIs) that are grounded on random utility theory; and discrete choice models (DCM). Service quality indexes differ from customer judgement ratings because they use choice data for their measurements (Eboli & Mazzulla 2007; Hensher, Stopper & Bullock 2003). Customer service is also measured through customer satisfaction indexes (CSIs), which assess user opinions through a numeric scale (Eboli & Mazzulla 2009; Hill, Brierley & MacDougall 2003). The SERVQUAL methodology, developed by Parasuraman, Zeithaml and Berry (1985), has also been used extensively across many industries (including retailing, tourism, banking, education and transport) to measure and compare a customer's perceived service expectations with their perceptions of actual service experience (Barabino & Deiana 2013; Luke & Heyns 2020; Morton, Caulfield & Anable 2016). The SERVQUAL model was adapted by Zeithaml, Parasuraman and Malhotra (2002) to measure customers' perception of the quality of certain aspects of e-services (such as website quality). Lee and Lin (2005) also developed an E-SERVQUAL framework that investigated the association between the overall service quality and specific quality characteristics; however, a limitation of these models is that they exclude last-mile distribution. Xing and Grant (2006) developed an electronic physical distribution service quality (e-PDSQ) framework that focussed on B2C e-commerce models, which revealed that price is a key online purchasing measure. A study by Xing et al. (2011) explored retailers and logistics service providers' physical distribution service quality challenges (LSPs).

Research methodology

The purpose of this study was to ascertain the online shopping preferences of young people before and during the COVID-19 pandemic, gauge the fulfilment-related service quality perceptions of online consumers and ascertain their most preferred last-mile delivery options in the Gauteng region.

In order to acquire an informed understanding of consumers' online shopping issues, a quantitative research approach was used. The research instrument, a structured self-administered online questionnaire, was developed through a review of the relevant literature and a previously developed survey (Brink et al. 2019) to assess young people's online shopping behaviour and last-mile delivery preferences for their online purchases.

To obtain the research data, a non-probability sampling strategy was applied. In population research, convenience sampling (or opportunity sampling) is frequently employed because of the relative ease of collection, cost-effectiveness, simplicity, accessibility and the willingness of respondents to participate in the survey (Stratton 2021; Saunders, Lewis & Thornhill 2019). However, non-probability sampling is inclined to be biased, and generalised interpretations of research outcomes must be deliberated on with caution (Zikmund et al. 2013; Saunders et al. 2019). The research data were collected from two data collection campaigns that were conducted in 2019 (before the COVID-19 pandemic) and in 2020 (during the COVID-19 pandemic). The original aim of the 2019 data collection campaign was to collect research data to investigate the online shopping preferences and service quality perceptions of young people shopping online. Before this research project was concluded, there was an outbreak of COVID-19 leading to a global pandemic. The researchers decided to extend the original research design to include the potential impact of the pandemic on the online shopping preferences and perceptions of young consumers. Accordingly, a second data collection drive was conducted to gauge the online shopping behaviour and fulfilment-related service quality expectations of young consumers during the COVID-19 pandemic.

The research instruments used in both data collection campaigns consisted of four parts. In the first section, respondents were requested to provide demographic information, including gender, age group, student and employment status; the second part assessed the respondents' online shopping behaviour and patterns; part three assessed the respondents' last-mile delivery preferences, and the last section covered the respondents' perceptions of the key service quality variables that influenced their online shopping decisions. However, in the 2020 questionnaire, two additional questions were included, specifically to gauge how the initial national lockdown period instigated by the COVID-19 pandemic changed the respondents' online shopping activities and impacted the purchasing of discretionary products.

For the 2019 data collection campaign, a chain-referral sampling technique (or snowball sampling), which was initiated amongst a small group of postgraduate students at the University of Johannesburg (UJ), was used to recruit respondents by distributing the research instrument amongst their acquaintances or family members via emails or various social media platforms (such as WhatsApp). Although the sampling technique encounters some criticism, such as selection bias, low response rates, lack of external validity and generalisability, it has become popular because of its flexibility, quickness and relatively low costs (Kaliszewski et al. 2021; Parker, Scott & Geddes 2019). The target population included consumers between the age of 18 and 45 years who conducted online shopping in Gauteng, South Africa.

For the 2020 data collection campaign, a self-administered online questionnaire was distributed amongst students studying logistics and supply chain-related courses at the UJ. The survey was circulated to approximately 4500 tertiary students in June 2020 and completed by 446 respondents, with a response rate of around 10%.

The data collection phases provided a total of 461 usable responses, 268 from the 2019 survey and 193 from the 2020 survey. Although the sample size could be considered a limitation of the study, the authors are of the opinion that the results do offer an important contribution to understand the impact of the COVID-19 on the online shopping behaviour and service quality perceptions of consumers in South Africa. The research data were analysed using the Statistical Package for the Social Sciences (SPSS) for Windows, version 27.

Discussion of research results

To achieve an appropriate representative sociodemographic sampling, the research instruments required demographic information such as age, gender and employment status. The results revealed that most respondents in both surveys were female, viz. 61% (2019) and 66% (2020). This result is supported by several studies which indicate that women are more likely to participate in online surveys than male respondents (Dykema et al. 2012; Keusch 2015). For this research project, the age of the respondents varied between 18 and 45 years, of which 42% (2020) and 68% (2019) of the respondents were between 18 and 24 years and 39% (2020) and 31% (2019) of them were between 25 and 34 years. These two age groups mostly constitute Millennials (age group 26–41) and Generation Z (age group 10–25), the newest consumer generations that are dictating the future of shopping through their influence, decision-making and preferences that are shifted even more towards online shopping (Businesswire 2020; McKinsey 2020). The 2019 survey was mostly completed by full-time students (75%), whereas the 2020 survey mostly had respondents who were part-time students and who were employed to some extent (51%). The demographic information provided by respondents also indicated that more than 94% and 97% of the respondents for 2019 and 2020, respectively, have completed tertiary qualifications. The respondents' profile is summarised in Table 1.

The first section of the research instrument included questions to obtain a better understanding of the respondents' online shopping behaviour. Most of the respondents (41%) of the 2019 survey indicated that they accessed the Internet via free Wi-Fi and that they were full-time students with access to free Wi-Fi at various campuses. The results from the 2020 survey indicated that most respondents made use of their own service provider (31%) or accessed the Internet from home (47%). In 2020, South Africa endured various levels of lockdown with students attending lectures online and unable to access the various university campuses.

Online shopping preferences

When asked to indicate the frequency of their online purchases, most of the respondents, in both surveys, indicated that they only occasionally carry out online shopping, whilst the 2020 survey respondents revealed a noticeable increase (4%) in only shopping online once a week (see Figure 1). Based on the study conducted by Deloitte in 2020 on South African online consumer behaviour, more than 70% of the respondents (aged over 18 years) shopped online at least once a month (Deloitte 2021). According to Business Insider SA (2021), South Africa's online retail business has more than

TABLE 1: Respondents profile.

Characteristics	Respondents	Total	2020	2019
		461	193	268
Gender	Male	170	66	104
	Female	291	127	164
	18–24 years	264	82	182
Age	25–34 years	159	76	83
	35–44 years	38	35	3
Qualification	Matric and Certificate	20	5	15
	Diploma	132	109	23
	Degree	153	17	136
	Advanced Diploma	41	29	12
	Postgraduate degree	115	33	82
Student status	Full time	250	49	201
	Part-time	211	144	67
Employment	Full time employed	78	78	
	Part-time employed	21	21	
	Not employed	94	94	
Internet access	Home	167	90	77
	Work	65	26	39
	Own service provider	102	59	43
	Free WiFi	127	18	109

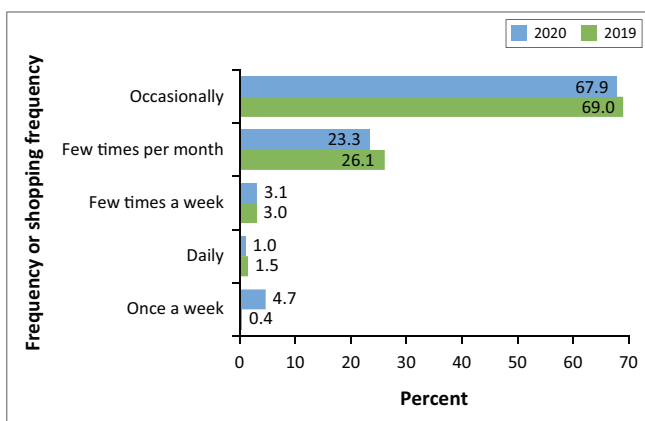


FIGURE 1: Online shopping frequency.

TABLE 2: Online shopping products.

Products	Total		18–24 years		25–34 years		35–44 years	
	2020	2019	2020	2019	2020	2019	2020	2019
Non-perishables (incl. clothing) (%)	37.1	32.1	40.2	34.5	36.5	29.1	31.6	0.0
Airtime /data (%)	21.6	19.7	20.6	18.4	22.9	21.6	21.1	28.6
Electronic devices (%)	16.3	20.7	16.3	20.0	15.1	21.1	18.9	42.9
Entertainment (%)	7.5	13.8	7.7	13.4	6.3	14.6	9.5	14.3
Groceries (incl. perishables) (%)	11.1	8.4	9.6	9.9	12.0	5.6	12.6	14.3
Furniture (%)	4.2	2.6	3.8	1.6	4.7	4.2	4.2	0.0
Other (%)	2.2	2.7	1.9	2.2	2.6	3.8	2.1	0.0

doubled in recent years from R14 bn in 2018 to over R30 bn in 2020. Research conducted by Mastercard (2020) indicates that nearly 68% of SA consumers shopped more online since the start of the COVID-19 pandemic.

The research results indicate that the respondents mostly purchased non-perishable products (37%) and airtime or data (22%) during 2020 (see Table 2). It seems that during the early lockdown phases of the COVID-19 pandemic, respondents under the age group of 18–34 years purchased more non-perishable and airtime or data than during 2019. A considerable increase in online shopping for groceries is also noticeable in the 25–34 years age cohort. The noteworthy decrease in online purchases of electronic equipment could be the result of limited availability and inflated prices for integrated circuits (i.e. semiconductor chips) experienced globally (Casper et al. 2021). The significantly reduced spending on entertainment highlighted by the 2020 survey is probably the result of the stringent lockdown regulations imposed by the South African government, which brought most of the entertainment industry to a complete stop.

The respondents of the 2020 survey (during the COVID-19 pandemic) were requested to indicate any changes in their online shopping behaviour. Most of the respondents (32%) indicated that at that time, the COVID-19 pandemic and related restrictions did not have a significant impact on their online shopping behaviour. Approximately the same percentage of respondents (25%) increased or decreased their online shopping frequency during the COVID-19 pandemic. However, it is observed that 29% of the more mature age group made their first online purchases during this time, which was somewhat higher than the other age cohorts (see Table 3).

The Deloitte (2021) report on South African online consumer shopping insights, however, presents a slightly different picture, with 29% of respondents indicating no change in shopping frequency, 9% indicating less online shopping and 62% stating that they would increase their online purchases.

Respondents were also asked to select all the factors they considered to be important when deciding on an online service provider. The respondents of both surveys indicated *delivery costs* (2020% – 69.4%, 2019% – 69.8%) as the most important factor, followed by *waiting time to delivery* and *order accuracy* (as the second and third most important factors, respectively (see Figure 2). When considering the

different age cohorts, 42% of the 18–24-year-old respondents from 2020 (during the COVID-19 pandemic) considered *order accuracy* as an important factor, compared with only 26% in 2019 (before the COVID-19 pandemic). However, when reflecting on the 25–34-year-old respondents, 51% of the respondents from 2019 and only 38% of the respondents from 2020 considered *order accuracy* to be important.

According to the Deloitte (2021) survey, 86% of South African online consumers also viewed low delivery fees as an important factor in choosing an online retailer. Other factors identified include effective checkout (88%), reassurance regarding returns and refunds (83%) and trust in the brand.

When asked to indicate their preferred delivery time slot, the majority (66%) of the respondents from the 2020 sample preferred to receive their deliveries in the morning (between 8:00 and 12:00), whilst the majority (55%) of the respondents from 2019 preferred to receive their deliveries between 12:00 and 18:00, as shown in Figure 3. The variance is probably attributable to the differences between the respondent profiles of the two samples, with 2019 comprising of mostly younger, full-time student respondents as opposed to slightly older, employed and part-time students and not necessarily because of the COVID-19 pandemic.

When asked to indicate their most preferred delivery choice option, the majority of the respondents, 77% and 74%, from the 2020 and 2019 samples, respectively, preferred attended delivery. The noticeable increase in 2020 could most possibly be attributed to the fact that many individuals were working from home at this time and that most students were studying online and off-campus.

TABLE 3: Change in online shopping behaviour.

Change in shopping behaviour	Total	18–24 years	25–34 years	35–44 years
No impact on my online shopping behaviour (%)	31.6	34.1	28.9	31.4
I bought my first products online during this time (%)	18.1	18.3	15.8	22.9
I increased the frequency of my online purchases during this time (%)	25.4	28.0	22.4	25.7
I reduced the frequency of my online purchases during this time (%)	24.9	19.5	32.9	20.0

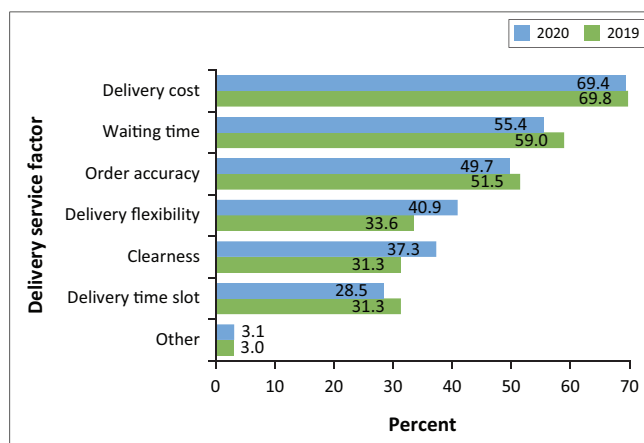


FIGURE 2: Important delivery service factors.

Respondents were also asked to rate, on a five-point Likert-type scale (where 1 = never and 5 = always), the possibility of them making use of the different delivery options. As depicted in Figure 4, *attended home or work delivery* is rated the highest likelihood of usage before ($M = 4.05$, $SD = 1.05$) and during the COVID-19 pandemic ($M = 4.22$, $SD = 0.87$). The higher mean rating in the year 2020 is also attributed to the South African government's lockdown conditions imposed at the time. The results also show that the 2020 respondents continued to be somewhat hesitant to make use of *unattended delivery* services ($M = 2.29$, $SD = 1.11$), with 59% of the respondents indicating that they never or rarely made use of this delivery option. All the delivery options, except *attended delivery*, were ranked below the mid-point value of 3, further indicating that the most desired delivery option was *attended delivery*.

When asked to assess on a five-point Likert-type scale (where 1 = very unimportant and 5 = very important), the importance of various delivery-related factors that could impact their decision to shop online instead of going to the brick-and-mortar shop, the respondents of both samples indicated that *easy returns* (2020 – $M = 4.24$, $SD = 1.36$; 2019 – $M = 4.57$, $SD = 0.99$), followed by *delivery in preferred time slot* (2020 – $M = 4.07$, $SD = 1.35$; 2019 – $M = 4.40$, $SD = 1.08$) were the most essential factors that influenced their decision. For both surveys, all the factors presented were considered important as they were all ranked above the mid-point value of 3. *Delivery in the preferred time slot* and *same-day delivery* seemed to be somewhat less important during the COVID-19 pandemic, which could be attributed to the fact that respondents were possibly working or studying from home at the time and thus more flexible when receiving online deliveries (Figure 5).

These results are also supported by Deloitte (2021), who affirms that the majority of the surveyed respondents believe that high delivery fees (86%) and policy on returns and refunds (85%) are key factors that influence South African online customers' decisions.

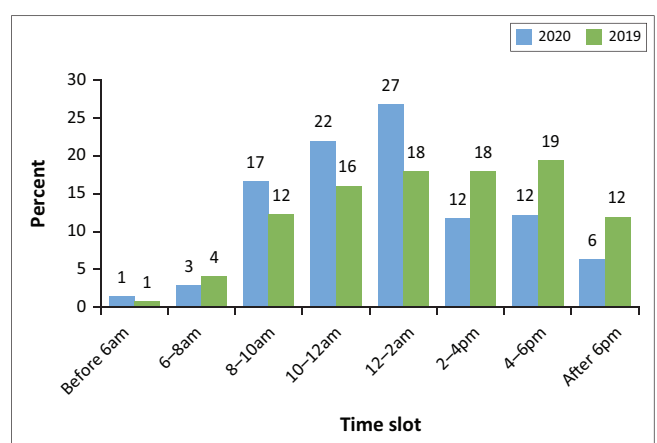


FIGURE 3: Preferred delivery time slot.

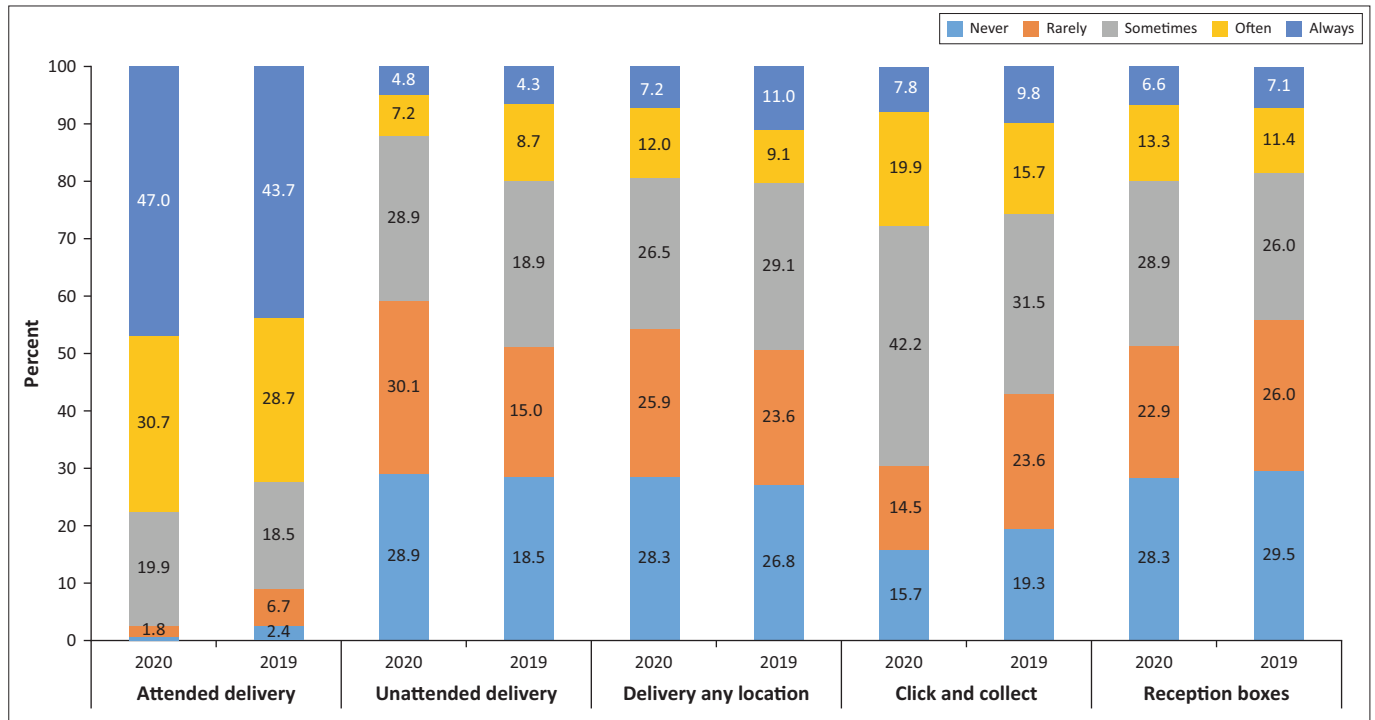


FIGURE 4: Online delivery options.

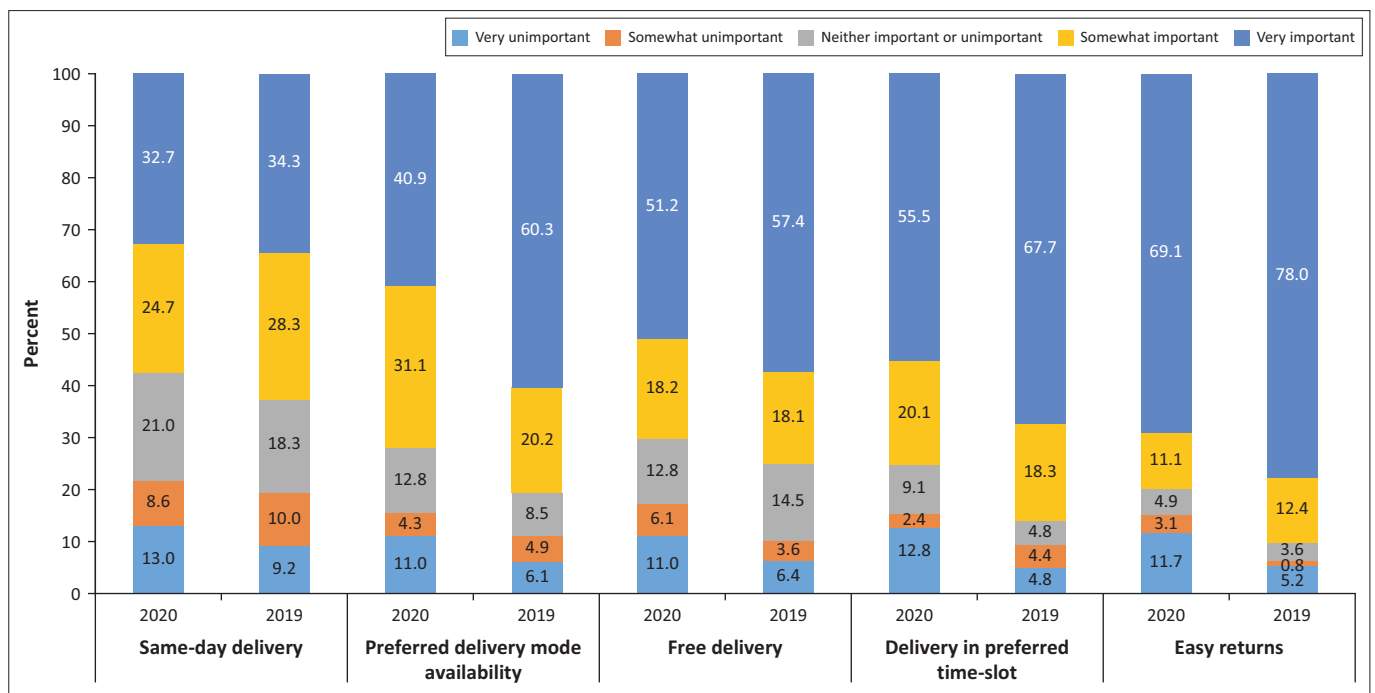


FIGURE 5: Important factors influencing online shopping decisions.

Consumers' service quality expectations

The participants were also requested to assess on a five-point Likert-type scale (where 1 = not important and 5 = extremely important) the importance of various fulfilment-related online shopping service quality variables. The measurement scale for the service quality variables was evaluated to determine the reliability and internal consistency. The internal consistency measurement indicated overall Cronbach's α values of 0.877 and 0.857 for 2019 and 2020, respectively,

which revealed that the reliability of both surveys was perceived as *good* (Field 2018).

Table 4 depicts the descriptive statistical results and the importance of ranking of various service quality variables for both 2019 and 2020. The top four service quality variables for both samples were *order conditions*, *order completeness*, *order accuracy* and *returns channel options*. Likewise, the six least important service quality variables were also the same for both samples, of which most relate to tangible aspects. For

both sample years, the *colour of product packaging* and the *size of the delivery vehicle* were the only two variables that were ranked below the mid-point value of three, indicating no meaningful influence on respondents' online shopping behaviour.

The Mann–Whiney U test was conducted to assess any statistical differences between the service quality variable scores for the 2019 (before the COVID-19 pandemic) and 2020 (during the COVID-19 pandemic) samples. The results are shown in Table 5. The Mann–Whitney U test revealed significant differences in three variables, viz. *colour of product packaging* in 2020 ($Md = 2$, $n = 164$) and 2019 ($Md = 2$, $n = 249$), $U = 17484$, $z = -2.57$, $p = 0.01$, $r = 0.13$; *method of delivery*, in

2020 ($Md = 4$, $n = 164$) and 2019 ($Md = 4$, $n = 250$), $U = 17015$, $z = -3.08$, $p = 0.02$, $r = 0.15$; and *substitutions offer*, in 2020 ($Md = 3$, $n = 160$) and 2019 ($Md = 4$, $n = 249$), $U = 16811$, $z = -2.77$, $p = 0.006$, $r = 0.14$.

An exploratory factor analysis (EFA) was completed to reduce the number of variables that potentially influence the service quality perceptions of online shoppers. Guidelines obtained from the literature to determine the appropriateness of the sample size for factor analysis vary to a great extent, and according to Beavers et al. (2013), it can be portrayed by the minimum number of cases or subjects-to-variables (STV) ratio. According to Field (2018), a sample of at least 300 would most likely provide a stable solution; however, other researchers have suggested that relatively small sample sizes could provide adequate results. The recommendations vary from a minimum STV ratio of five cases for each item (Bryant & Yarnold 1995); (Suhr 2006); (Hair et al. 2010) to a minimum sample size of at least 100 cases (Gorsuch 1983), at least 150 cases (Hutcheson & Sofroniou 1999) or at least 200 cases (MacCullum et al. 1999). Costello and Osborne (2005), who surveyed over 300 EFA articles, found that a large percentage of the observed research used relatively small sample sizes. Over 40% of the researchers conducted their analyses with an STV ratio of less than 5:1. However, according to Zhao (2009), it is difficult to state if the total sample size or the STV ratio should be used as a general rule-of-thumb to determine the minimum sample size, as it is dependent on other aspects of design, including communalities of the variables' degree of overdetermination of the factors and item loadings. Costello and Osborne (2005:4) asserts that a smaller sample size is acceptable when there are high communalities without cross-loadings, as well as quite a few variables that load strongly on each factor. Thus, the adequacy of the sample size is reliant upon the strength and the stability of the solution, and it can only be

TABLE 4: Mean ranking of service quality variables.

Item	2020			2019		
	Rank	Mean	Standard deviation	Rank	Mean	Standard deviation
Order condition	1	4.61	0.764	1	4.61	0.743
Order completeness	2	4.60	0.781	3	4.56	0.850
Order accuracy	3	4.58	0.828	2	4.57	0.800
Returns channel options	4	4.54	0.791	4	4.54	0.824
Order tracking and tracing	5	4.44	0.888	8	4.39	0.927
Confirmation of availability	6	4.37	0.909	5	4.50	0.826
Method of payment	7	4.33	0.938	9	4.35	0.946
Promptness of replacement	8	4.31	0.951	7	4.43	0.846
Specify delivery date	9	4.28	1.014	6	4.45	0.922
Waiting time in case of out of stock	10	4.21	0.955	11	4.31	0.943
Delivery in time slot	11	4.20	0.994	13	4.27	0.995
Delivery on the first date arranged	12	4.18	1.053	10	4.32	1.008
Promptness of collection	13	4.12	0.992	14	4.18	1.010
Quick delivery	14	4.11	1.006	12	4.28	0.959
Choice of delivery time window	15	3.96	1.094	15	4.02	1.097
Method of delivery	16	3.63	1.198	16	3.98	1.158
Substitutions offer	17	3.49	1.127	17	3.79	1.230
Retailer's logo	18	3.21	1.285	18	3.40	1.436
Colour of product packaging	19	2.15	1.271	19	2.56	1.494
Size of the delivery vehicle	20	2.09	1.284	20	2.36	1.536

TABLE 5: Statistical differences between perceptions of service quality variables.

Variable	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)	Effect size
Choice of delivery time window	19 485.50	32 688.50	-0.691	0.489	0.03
Colour of product packaging	17 483.50	31 013.50	-2.567	0.010	0.13
Confirmation of availability	19 078.50	32 444.50	-1.392	0.164	0.07
Delivery on the first date arranged	19 050.00	32 745.00	-1.492	0.136	0.07
Delivery in time slot	19 485.50	32 526.50	-0.684	0.494	0.03
Method of delivery	17 015.00	30 545.00	-3.082	0.002	0.15
Method of payment	20 340.50	34 035.50	-0.278	0.781	0.01
Order accuracy	20 168.00	51 543.00	-0.504	0.614	0.02
Order completeness	20 138.00	51 263.00	-0.316	0.752	0.02
Order condition	19 996.00	51 622.00	-0.517	0.605	0.03
Order tracking and tracing	19 802.00	50 927.00	-0.618	0.536	0.03
Promptness of collection	19 147.00	32 188.00	-0.688	0.491	0.03
Promptness of replacement	19 182.50	32 548.50	-1.010	0.312	0.05
Quick delivery	18 239.50	31 605.50	-1.776	0.076	0.09
Retailer's logo	18 545.50	31 911.50	-1.518	0.129	0.07
Returns channel options	19 735.50	32 776.50	-0.248	0.804	0.01
Size of the delivery vehicle	18 767.50	31 970.50	-1.258	0.208	0.06
Specify delivery date	18 285.00	31 326.00	-1.627	0.104	0.08
Substitutions offer	16 810.50	29 690.50	-2.771	0.006	0.14
Waiting time in case of out-of-stock	18 778.50	31 981.50	-1.243	0.214	0.06

ascertained after the analysis is concluded. Beavers et al. (2013) suggest that researchers design for at least 150 cases for initial exploratory analysis because factor analytical techniques are multivariate tools that require larger sample sizes. This is reinforced by Darlington (1997), who asserts that a clear factor structure may be obtained by 100 or more cases. The 461 cases and an STV ratio of more than 20 are thus viewed as sufficient to provide a clear factor structure.

The correlation matrix was inspected, and a sufficient number of coefficients above 0.3 were found, indicating that the data were suitable for factor analysis (Tabachnick & Fidell 2013). Bartlett's test for sphericity and the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy were generated to further assess the factorability of the data. Bartlett's test was significant ($p = 0.000$), and the KMO measure was calculated at 0.907, which suggested that factor analysis could be conducted on the sample data (Pallant 2016). A value closer to 1 suggested that the correlation configurations were relatively dense, indicating that factor analysis should yield reliable factors. Field (2018:1287) suggests that KMO values between 0.7 and 0.8 are perceived to be *good*, between 0.8 and 0.9 are seen as *great*, and values above 0.9 are recognised to be *superb*.

The principal component analysis was conducted on the 20 items to reveal the number of factors that best characterised the underlying correlation between the variables. The initial analysis resulted in four factors with eigenvalues over the Kaiser criterion of 1 (eigenvalues > 1). These four factors explained 55.30% of the variance. The scree plot was unclear and indicated inflexion points that suggested retaining either two or four components. To avoid possible overestimation of components, a parallel analysis was performed, which indicated that only two factors with eigenvalues exceeding the corresponding criterion values for randomly generated data (461 respondents $\times$ 20 variable items) should be retained for further investigation (Pallant 2016).

Subsequently, a factor analysis with two factors was performed, and the factors were rotated using the direct Oblimin rotation method with Kaiser normalisation to obtain a clearer picture of the factor loadings. According to Tabachnick and Fidell (2013), if an oblique rotation (e.g. Oblimin) with the preferred number of factors provides correlations that exceed 0.32, there is enough variance in the data to warrant oblique rotation. The resulting correlation matrix indicates many correlations that exceed the 0.32 threshold; thus, the solution remains oblique. The initial two-factor solution explained 44% of the variance, with factor 1 contributing 33.95% and factor 2 contributing 10.05%, respectively. This two-factor solution provided a clean factor structure with no communality values with a value less than 0.3, no significant cross-loadings and no factors with less than three variables. Table 6 shows the factor loadings after rotation.

Although the results do not identify the absolute list of service quality variables which may be considered when conducting online shopping, the research does indicate that

the main underlining decision variables are clustered into two latent groups (factors), namely order fulfilment and tangibles. These findings are supportive of the various international research mentioned in the literature review.

Managerial implications

The results of this study suggest several implications for business concerns providing or planning for online sales. The COVID-19 pandemic has further ignited the already fast-growing online buying sector. Young people are an important market segment that warrants careful consideration by management when planning online business strategies. When considering the all-important delivery aspect of online sales, managers should take note that delivery cost is the most important factor considered by young people when selecting online sales providers. As a very costly component of the last-mile logistics process, management will have to find ways to provide delivery services within the service requirements of customers and at the lowest possible costs and charges. To this end, it is also observed that the majority of respondents are willing to pay a delivery fee when buying online. Other critical delivery factors to give managerial attention to are waiting time to delivery and order accuracy.

Knowing when and how deliveries are expected can assist managers in achieving the highest level of customer service. Results from this study suggest that most Generation Z members surveyed prefer early morning deliveries (08:00–

TABLE 6: Pattern and structure matrix.

Item	Pattern coefficients		Structure coefficients		Communalities
	Factor 1	Factor 2	Factor 1	Factor 2	
Order completeness	0.812	-0.199	0.759	0.016	0.613
Order condition	0.801	-0.284	0.737	-0.029	0.602
Order accuracy	0.801	-0.242	0.726	-0.071	0.597
Promptness of replacement	0.702	-0.042	0.691	0.145	0.479
Order tracking and tracing	0.670	-0.020	0.664	0.158	0.442
Returns channel options	0.659	-0.076	0.659	0.285	0.414
Specify delivery date	0.628	0.119	0.648	0.288	0.448
Promptness of collection	0.619	0.051	0.639	0.098	0.403
Method of payment	0.614	0.125	0.637	0.265	0.434
Delivery in time slot	0.610	0.103	0.633	0.216	0.416
Confirmation of availability	0.603	0.050	0.616	0.209	0.381
Waiting time in case of out-of-stock	0.535	0.169	0.580	0.311	0.363
Delivery on the first date arranged	0.527	0.190	0.577	0.330	0.367
Choice of delivery time window	0.485	0.239	0.561	0.464	0.354
Quick delivery	0.471	0.339	0.548	0.368	0.422
Size of the delivery vehicle	-0.146	0.788	0.063	0.749	0.581
Colour of product packaging	-0.042	0.681	0.139	0.669	0.450
Retailer's logo	0.017	0.568	0.167	0.573	0.328
Method of delivery	0.291	0.490	0.421	0.567	0.400
Substitutions offer	0.255	0.427	0.369	0.495	0.306
Eigenvalues	6.79		2.01		
% of variance	33.94		10.05		
Cronbach's alpha (α)	0.894		0.652		

Bold values represent the factor items that are grouped together.

12:00), whilst most Millennials want afternoon deliveries (12:00–18:00). Most respondents of both generational cohorts indicated that they want to attend home deliveries (before and during the COVID-19 lockdown periods). Marketing managers focused on growing online sales away from brick-and-mortar sales need to notice that the ease of returning products together with delivery in preferred time slots is considered the most important factor by all cohort respondents when considering replacing traditional buying with online buying. One may argue that having products delivered in the desired condition and correctness in terms of order quantity is the first step in ensuring that product returns are not a problem with online sales. To this end, it should be observed that order correctness, order accuracy and returns channel options were rated as the most important customer service quality expectations of the young people surveyed.

Conclusion

The purpose of this research study was to determine whether the COVID-19 pandemic had any significant impact on the online shopping behaviour of young people in South Africa and to identify the key fulfilment-related service quality variable that influences their online shopping decisions. Research data were collected from two self-administered surveys that were conducted in 2019 (before the COVID-19 pandemic) and 2020 (during the COVID-19 pandemic).

In general, the study found that the majority (75%) of respondents indicated that their online shopping behaviour will either not change or increase because of the COVID-19 pandemic. One may therefore deduce that COVID-19 had a positive and lasting impact on the growth of online sales. A significant number of respondents purchased online for the first time during the COVID-19 time period. The increase in online shopping can further be attributed to its convenience, health and safety concerns amidst the pandemic and short waiting period.

Although many consumers faced increased financial concerns during the COVID-19 pandemic (e.g. fear of losing their employment), young people's online purchases of non-perishable products such as clothing and airtime or data presented a moderate increase, whilst the online buying of electronic equipment and entertainment expenses showed a noticeable decline.

For young people, delivery costs, the time they wait for a delivery and order accuracy are the most important factors when selecting online service providers, indicating that online retailers have the challenge of not only being able to deliver on high service-level expectations but doing it at an acceptably low cost. The study results also indicate that attended home or work delivery are the consumers' most preferred last-mile delivery mode, especially during COVID-19-induced lockdown times. An *easy returns* policy and *delivery in preferred time slot* are important factors that will

influence young people to migrate from brick-and-mortar shopping to online shopping.

The ranking of various service quality variables indicated that young online consumers consider order fulfilment items, such as order condition, order completeness and order accuracy, more important than tangible considerations of online retailers, such as the size of the delivery vehicle and packaging aspects.

The contribution of this study to the body of logistics and supply chain management knowledge can be seen as follows: firstly, the research provides a distinct perspective of young people's perceptions of online shopping in South Africa, which can be compared with research conducted in other countries. Secondly, this research provides important information to any online retailer who wants to have a better understanding of young people's online shopping perceptions, requirements and expectations, especially from a last-mile delivery perspective. This can assist online service providers with formulating a last-mile delivery strategy specifically focused on young people. Finally, this research makes a meaningful contribution by identifying the important service quality expectations of young online consumers in Gauteng, South Africa.

The COVID-19 pandemic has acted as a catalyst for e-commerce, not only globally but also in South Africa, and the appealing attributes of online shopping will further accelerate the shift from in-store to online shopping. It is important to note that online stores pay careful attention to their last-mile delivery strategies, as it is not only a significant cost component but also a key determinant when prospective online customers make their buying decisions.

Limitations to the study

As with any research, this study is subject to limitations. The study placed an emphasis on last-mile delivery-related issues when considering the online buying service quality variables to be measured. As alluded to early in the study, the online buying process consists of several processes, including product or service search, payment and fulfilment execution. This study placed the emphasis on fulfilment execution and the delivery function more specifically.

Acknowledgements

Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

Authors' contributions

Both authors contributed equally in the conceptualisation, writing and preparation of the article.

Ethical considerations

Ethical clearance was granted by the Research Ethics Committee (REC) of the Department of Transport & Supply Chain Management at the University of Johannesburg (ref. no. 2019TSCM-008/9/10HON; 2020TSCM-0006).

Funding information

This research work received no specific funding from any agency in the public, commercial or not-for-profit sectors

Data availability

Data are stored according to institutional policy.

Disclaimer

The views and opinions expressed in this research article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors

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