Journal of Positive School Psychology http://journalppw.com
2023, Vol. 7, No. 2, 1199-1218

A Cursory Review Of The Impact Of Covid-19 On Panic-Buying

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ABSTRACT

The corona-virus outbreak fast evolved into a worldwide crisis. This pandemic affected the triple–bottom line. Critical to impacting on the economic profile of businesses is its impact on the supply chain as panic-buying triggered further panic. Panic-buying refers to the sudden enlarged increase in demand. During COVID-19, panic-buying extended across product categories from grocery stores to medical supplies (PPEs). Panic purchasing, coupled with hoarding behaviour, caused sudden major inventory fluctuations. This was experienced globally due to the corona virus for products like toilet rolls, detergents, hand sanitisers and masks. The panic buying caused empty shelves which, when viewed by customers, put them into further panic and spiralled the demand for the empty shelves' products, causing organisations to lose potential sales and jeopardizing efficient customer service. The effect was felt by various stakeholders in the market. Suppliers and distributors were overwhelmed with their need to keep their customers happy and in efforts to deliver to their loyal customers they played 'Russian roulette' with available stock. In attempts to keep up and attempt to keep everyone happy, they also put the pressure on manufacturers, who faced an unexpected increase in demand, for which they did not necessarily have the required raw materials and staffing to produce. Evidently, COVID-19 has had a serious impact on businesses worldwide as well as their supply chains, which faced erratic bullwhip effects. When one observes the increase in demand for cleaning contracts, it becomes clear that the impact on purchases is not just immediate but also extends from medium to long term. During the COVID-19 crisis, the vacuuming of products also extended to medication (chloroquine and hydroxychloroquine). Using a literature review approach to systematically collect prior research, views and experiences, this study aims to synthesize the impact of a natural disaster like COVID-19 on panic-buying and the triple bottom line. Therefore, this study aims to assess the impact of covid-19 on people, healthcare systems and business (with the focus of the impact of consumer behaviour).

Keywords: panic-buying; Covid-19; consumer behaviour; triple-bottom line; supply chain; bullwhip effect.

INTRODUCTION

The Coronavirus disease 2019, commonly referred to as COVID-19, was first labelled amid an outbreak of respiratory illness cases in Wuhan City in China. It was initially reported to the World Health Organisation (WHO) on 31

December 2019. On 11 March 2019, the WHO declared COVID-19 a global pandemic (Cennimo, 2020). On 5 March 2020, the National Institute for Communicable Diseases (NICD) confirmed the first case of COVID-19 in South Africa which was announced by the Minister of Health, Minister Zwelini L. Mkhize. Ever since, like all over the world, the coronavirus cases and deaths increased progressively in South Attica, with an upsurge in cases and deaths in May 2021. The covid-19 vaccinations began in South Africa on 17 February 2021 and was rolled out in 3 phases with a drop in both cases and deaths being realised by early January 2022. In fact, a faster vaccination rate decreased both covid-19 deaths and health care costs (Reddy, Fitzmaurice & Scott, 2021).

Whilst some of the earliest known cases had a link to a wholesale food market in Wuhan in China, some did not (Maxmen, 2022; Gao et al., 2022; Worobey et al., 2022). Some studies imply that the coronavirus was the result of long term conduction with bat and alien species (Cronje, 2017; Hamid, Mir & Rohela, 2020; Vicente-Santos, 2020). The virus can cause an array of symptoms ranging from mild illness to pneumonia. Coronavirus symptoms include fever, cough, sore throat, fatigue, loss of taste and headaches (Maragakis, 2022. The median time for onset to clinical recovery for mild cases is approximately 2 weeks and is 3 to 6 weeks for patients with severe or critical disease (Verity, OKell, Dorigatti, Winskill & Whittaker, 2020).

Whilst many issues about the Coronavirus is still unknown, one thing we can be sure of is its impact on the triple bottom line or otherwise noted as TBL or 3BL (Figure 1). The 3BL is an accounting framework with three parts: social, environmental and financial (Slaper, & Hall, 2011).

Figure 1: Impact of the Coronavirus on the TBL or 3BL

Kenton and Berry-Johnson (2020) believe that from an economics perspective, using the triple bottom line, companies should commit to focusing on social and environmental concerns as they do on profits, thereby emphasizing the commitment of organisations to corporate social responsibility. In fact, it was Elkington who in 1994 deduced that one way to assess corporate success and sustainability is to assess the ability of an organisation not only to make money but also to improve people's lives and the planet (Elkington, 1998). However, in the

context of tis paper the three parts of social, environmental and financial will be reviewed in terms of people, health care and business as the paper relates to the covid-19 pandemic which cannot be assessed in isolation of people and health care systems and; the performance of business is evaluated in terms of the financial element. Hence, in the context of the paper Figure 1 depicts the dimensions of the study, with the central part of the image representing the covid-19 virus.

Whilst the findings of the impact of the Coronavirus pandemic on people, healthcare systems and business are explained individually in this manuscript, its combined, holistic impact on the economy is undeniable and is already being felt locally in South Africa and globally, and discussed likewise.

LITERATURE REVIEW

Coronavirus impact on People

The Coronavirus impact on people is best explained from the standpoint of the theory of equilibrium and the feeling of control and congruence. When people feel that they are losing control, they feel uneasy and this uneasiness propels them to take action to alleviate the discomfort, to restore the feeling of control and to re-establish congruence in the system. Dholakia (2020) describes this phenomenon as a remedial response to reduce fear and anxiety. Due to the overwhelming feeling of uncertainty of how long the pandemic and its subsequent lockdown will prevail, consumers feared experiencing regret at a later stage and therefore, engaged in overcompensating and panic buying. The stockpiling activity that they engaged in gave them a sense of comfort and reassurance that gets compromised in an environment of a disaster or pandemic. The need for control is so deep seated and strong that they rather have control over their supplies since they have no control over the virus. So long as they are able to establish some control, they engage in panic buying (Arafat, Kar, Menon, Kaiamoorthy et al., 2020; Guza, 2020; Ntontis et al., 2022). This phenomenon is clearly evident in the case of the Coronavirus-2019.

Coronavirus impact on Healthcare Systems

The global consumer response to insecurity in the form of panic buying impacts on the healthcare system's potential to control and treat the pandemic. The panic buying of healthcare products such as masks, hand sanitizers and gloves much needed for the healthcare fraternity attempting to control the spread of the virus and to treat patients affected by it exacerbates the problem as the sudden excessive demand causes shortages in places, where its needs is critical, thereby weakening that which is imperative to inhibit the uptrend in the spread of the virus.

Coronavirus impact on Business

The most pronounced impact on business is realised via people specifically relating to consumer behaviour and hence, retail. Consumer behaviour refers to the mental (decision-making) and physical activities that consumers engage in when searching for, evaluating and purchasing products and services in order to fulfil a felt need.

RESEARCH METHODOLOGY

Purpose of the study

This study assesses the impact of the coronavirus on the Triple Bottom Line (TBL or 3BL). The study focuses on assessing the impact of the coronavirus pandemic on people, healthcare systems and business since its inception in 2020 to date.

Sampling Technique and Description of Sample

Being a bibliometric study, all the records relating to the impact of the coronavirus on the triple bottom line represents the population. Since the coronavirus only surfaced and became known and widely communicated in the last 10 months, the records are limited and

are unique to the current year 2020. In order to draw a sample of records, the researchers ensured that only literature relating to impacts on the triple bottom line, specifically relating to people, healthcare systems and business, were extracted. The sample frame included data available over an 8-month period from March 2020 to October 2020, as researchers needed to understand the phenomenon and experience its effects before writing about it. Hence, purposive sampling was used to extract relevant references of studies undertaken. Due to the focus of the study being multidisciplinary drawing from economics, social and health, business, marketing, consumer behavior, management and supply chain, only databases within Management Studies that the University of KwaZulu-Natal (UKZN) Library subscribes to were sourced. These include:

- Business Insights
- Business Source Complete via EBSCOhost (Some full text articles)
- Global Market Information Database
- McGregor BFA Library
- MarketLine
- SA epublications (with full text articles)
- Web of Science

The delimitation adopted was to extract only academic articles as all other information was extracted using Google Scholar. The study focusses on the impact of the Coronavirus on people, healthcare systems and business and within each theme, key aspects were assessed as follows:

- People (uncertainty, psychological impact, psychosocial impact on healthcare professionals, infection and death, perceived shortage of supplies) and within this theme 11 academic articles were reviewed.
- Healthcare systems (overburdened healthcare facilities, shortage of personal protective equipment, fears of healthcare employees) and within this theme 17 academic articles were reviewed.
- Business (impact of consumer behavior on retail and inquisitiveness, panic buying, bullwhip effect, managing the supply chain) and within this theme 14 academic articles were reviewed.

Data collection

Hence, secondary/archival data or desktop research is used for data collection. The information relating to the impact of the coronavirus is extracted from the aforementioned databases and the COVID-19 statistics data are extracted from Statistics South Africa Quarterly Labour Force Surveys (QLFS) of 2020 as well as global online data.

Data Analysis

Data was analyzed using content analysis which was undertaken over the last 8 months from March 2020 to October 2020. Content analysis is the quantification of data through systematic analysis which can be made into statistical analysis (Sekaran & Bougie, 2016). The researcher retrieved data relating to the themes of the study, namely, the impact of the Coronavirus outbreak on people, healthcare systems and business and adopts a national and global perspective.

The analysis need reflects valid and reliable data. Validity is "the extent to which measures and research findings provide accurate representation of what they are supposed to be describing" (Easterby-Smith et al., 2012, p. 86). In this study, the validity was supported by the authenticity of the source, that is, Statistics South Africa which is the national statistical Service of South Africa whose aim is to produce accurate statistics timeously, the National Institute for Communicable Diseases and Press Releases and Notices about COVID-19, all of which are authentic sources that provide valid national reference statistics. The official nature of the information supports its validity. "The reliability of a measure indicates the extent to which it is without bias and hence ensures consistent measurement across time and across the various items" (Sekaran & Bougie, 2016, p. 223). This was achieved because the data was obtained from a reliable

source, which is Statistics South Africa. To ensure reliability, the data was checked repeatedly to ensure accuracy and every attempt was made to ensure that comparative analyses is checked repeatedly to ensure the data is represented accurately on the graphs and charts.

RESULTS OF THE STUDY

The results of the study are presented under the themes of the study.

Coronavirus Impact on People

Panic buying is not a behaviour pattern that is exclusive to a specific country but it was observed globally subsequent to the debut of the coronavirus. Lapperman (2020) documented the witness of empty shelves, long queues and the lockdown and believes that limited visits to stores to respect the national call for social distancing triggered trolley-buying behaviour thereby amplifying the shortage of these perceived to be 'essential items' in a crisis. Lapperman (2020, p. 1) maintains that "the first-mover advantage" triggers one to get to the front of the line and to the store in the first place and highlights that the losers are those who cannot afford to stockpile should the need arise. He thereby accentuates the inequalities in South African households whereby the majority are "unable to fill up a trolley at the best of times", let alone to fund a serious stockpile, are dependent on a social grant, and who run out of food supplies by the third week in a month (Lappermanm, 2020, p. 3).

The Coronavirus resulted in high rates of infection and death. In fact, Alvarez-Iglesias, Garman and Lund (2021) concluded that the majority of covid-19 cases in sub-Saharan Africa came from South Africa, where a third are in NEET, that is, not in employment, education or training. In addition, covid-19 caused "social disruption and a reduction in access to healthcare services and support" and in this regard its impact on people with specific health issues are probed and these include the impact on people with mental disorders (Sergeant, van Reekum et al., 2020) and visual disability (Senjam, 2020). Ivbijaro, Brooks, Kolkiewicz, Sunkel and Long (2020, p. S395) highlight that the Coronavirus outbreak has impacted "everyone's daily lives globally, especially those experiencing mental health issues" as people have changed their way of life and working to decrease infectivity, thereby "causing increased stress and increasing the potential for moral injury" (Ivbijaro et al., 2020, p. S395). In response to the demands of the Coronavirus pandemic, researchers Schuelter-Travisol, Graduação em Ciências da Saúde, Iser, et al. (2020, p. 11) in Brazil, suggested an integration between public and private health services, health service managers, and the academy for surveillance and control of COVID-19 to combat the epidemic.

A review of the impact of the Coronavirus on people is incomplete if it does not assess its impact on the most exposed people, that is, healthcare employees. The coronavirus had a psychosocial impact on healthcare workers and this encompassed elevated levels of stress, depression, overwork and fear of contracting the deadly disease especially due to the personal sacrifice made as it is known to have "a person-to-person transmission after prolonged and unprotected exposure" (Verma, Manjunath, Ettishree, et al., 2020, p 1815). These were experienced globally (as documented in Spain, Pakistan, China, Ontario, Italy (Felice, Di Tanna, Zanus & Grossi, 2020) and Nigeria (Mbachu, Azubuike, Mbachu et al., 2020). The fear of transmission is not without reason as public health officials in Ontario, Canada announced 3 coronavirus cases of frontline healthcare workers (Canada Newswire, 31 January 2020). Frontline nursing employees also faced exceptional workloads in resource constraint health facilities (Sethi, Aamir, Sethi, Ghani & Saboor, 2020). On the positive side, frontline nurses also experienced an improved self-esteem and self-image in society (Sethi et al., 2020). The psychological impact on healthcare workers during COVID-19 was studied in Spain and it was found that

"the stress perceived is parallel to the number of cases per 100 000 people" (Romero, Delgado, Catala, Ferrer et al., 2020, p. 2).

In response to the impact of the Coronavirus, many organisations like Axalta Coating Systems Ltd., prioritising public health and the health and safety of employees and customers instituted global travel restrictions for all employees and had them working remotely in efforts to promote social distancing. In addition, in response to customer demand they withdrew previous financial guidance for 2020 which were no longer relevant to the current business environment and they adjusted the Company's cost structure and reduced discretionary spend across the organisation (Axalta-COVID-19-Update, 2020).

Several countries declared a national health emergency and many reported a profound impact on private healthcare systems. Globally, India was no different as during the pandemic private hospitals and clinics in India were experiencing a reduction of patients due to the national lockdown resulting in an "inadequate utilisation of healthcare services by the patients and the decrease in medical service volumes which resulted in an acute economic crisis" (Nilakantam, Kishor, Dayananda and Shree (2020, p. S77). In fact, Kringos, Carincini, Barbazza et al. (2020, p. 1) evaluate healthcare management within and across healthcare systems and suggest that "performance intelligence is needed to coordinate a global response. In this regard, the authors (2020, p. 2) believe that "performance intelligence plays an imperative role "as part of a broader public health strategy in guiding the decisions of health system actors in the implementation of contextualised measures" to manage the coronavirus pandemic or the like. In this regard, in the United States of America, Infiniti Research, the world's leading independent supplier of strategic market intelligence solutions helped US healthcare companies to manage supply shortages and demand surges to minimize the Coronavirus impact (Business Wire, 12 May 2020). In addition, Spendage, a global procurement market intelligence firm, undertook a COVID-19 impact risk analysis of the healthcare industry and risk mitigation measures to streamline the supply chain operations in this industry emphasizing local sourcing strategy, ensuring shipment visibility and round-the-clock monitoring (Business Wire, 15 April 2020, p. 1). In response to the disruptions in the healthcare supply chain and the demand outbreak in health care, Kannan, Hassan and Behrouz (2020) suggested a decision support system for demand management which grouped people and provided an independent classification system for each group, for example, diabetics, patients with cardiac problems and patients with high blood pressure.

Coronavirus impact on Healthcare Systems

The COVID-19 pandemic has overwhelmed health systems in both developed and developing nations alike. Africa has one of the weakest health systems globally, but there is limited evidence on how the region is prepared for, impacted by and responded to the pandemic The coronavirus has overwhelmed health care systems globally irrespective of the level of development of the country. Although Africa experiences one of the weakest health care systems in the world, there is little evidence to reflect how Africa prepared for the pandemic, the level of impact and how Africa responded to the health crisis (Kinfu et al, 2021).

Globally, the consequential increase in the number of cases caused further fear and enhanced feelings of loss of control, thereby spiralling the demand for these already limited healthcare items. Fake news regarding vaccines such as hydroxychloroquine also caused a shortage in this area damaging the work of healthcare professionals needing this product to treat other conditions, thereby causing further unnecessary strain on the already saturated and exhausted healthcare system and the unnecessary deterioration in the

patients needing this drug. The impact of the panic buying on people became glaringly evident in the short and medium terms yet the impact on the supply chain and business was more long lasting and having the potential for a prolonged effect. Similarly, Koum-Besson (2020) highlights concerns that panic buying has its impact on vulnerable populations due to underlying socioeconomic inequalities. Furthermore, Koum-Besson (2020) enlightens that suppliers overwhelmed with demand whilst facing raw materials shortages, drive up prices, thereby leading the pandemic to cause a market failure as the high demand accompanied by limited supply revolves into 'a seller's market, jeopardizing the plight of the lower socio economic populations further, making essential healthcare items more unaffordable during the crisis. In addition to already being over-burdened with overcrowded hospitals as a result of the coronavirus, healthcare stocks were also getting depleted and, in this regard, Reed (2020, p. 1) highlighted that "amid investor concerns over the coronavirus pandemic and questions over the government's planned economic response some of the top hospital companies had plummeted". It becomes more a situation of 'the tail wagging the dog' for the most vulnerable in the most essential arena during a pandemic, that is, the healthcare supply chain. Its visibility is heightened by the excessive mark-ups, reduced access to popular, quality assured manufacturers, delivery delays and the consequential "new economic model that favours the wealthiest economies on the global pharmaceutical market (Koum-Besson, 2020, p. 3). Likewise, Tulenko and Vervoort (2020, p. 455) maintain that public health fragmentation and lagging regulations highlight substantial socioeconomic disparities and health system barriers". In South Africa, the COVID-19 pandemic was first and foremost a public health crisis creating the urgent need to address excessive pricing concerns during the Coronavirus pandemic (Ratshisusu & Mncube, 2020, p. 1). Mbunge (2020) noted that the underestimation of the severity of the coronavirus by the South African government resulted in delayed action against the pandemic, which resulted in the South African health care system being affected by the lack of personal protective equipment.

As if the dynamics of the coronavirus was not challenging enough, political influences and protracted conflict on public health negatively affected COVID-19 control in Syria (Abbara, Rayes, Fahham et al., 2020) and nationally Syria faced the sudden demand for rapid capacity building of health systems and staff. "Syria's conflict displaced more than half of its pre-war population, leaving 6.7 million people internally displaced" (Abbara et al., 2020, p. 192).

In attempts to limit movement many governments instituted lockdown and border restrictions. The grounding of many airlines caused disruptions in food supply chains and the resultant rise in the prices of food staples such as rice and wheat were being experienced (Seah, 2020, p. 26). Seah (2020) adds that besides the strain on healthcare systems, the COVID-19 pandemic of 2020 brought many industries to its feet. Not sparing the agri-food industry, its implications raised red flags on the food security within the region" (Seah, 2020, p. 28).

Shortage of personal protective equipment (PPE) and medical devices required during the coronavirus pandemic was widely reported and in response civic society do-it-yourself volunteers utilised their skills and tools to produce the much-needed equipment and medical crisis supplies such as face visors and masks (Richterich, 2020).

The global spread of the coronavirus pandemic had a profound effect on healthcare systems especially with regard to the production and distribution of medical and surgical supplies and devices as well as pharmaceuticals (Iyengar, Raju, Shashi & Vaish, 2020). Farrell, Francis, Brown, Ferrante et al. (2020, p. 1143) highlight concerns about potential shortages of healthcare professionals and supplies to address

severe illness and hospitalisation as a result of COVID-19 and focussed on how resources were ultimately allocated and used misguided by an arbitrary criterion that disfavours older adults in resource allocation decisions. In response to the unprecedented rise in threat to mental and physical health, Bosnia and Herzegovina organised psychiatric services to meet the increased mental health needs of citizens (Pajevic, Mevludin, Esmina et al., 2020).

The COVID-19 pandemic triggered a state of national disaster in South Africa, which was followed by excessive pricing regulations pertaining to certain consumer and medical products and services. The regulations and intertemporal comparisons assume a structural shift during the coronavirus era that changes competitive conditions, related to changes in consumer behaviour whilst taking cognisance of demand and cost changes (Boshoff, 2020).

Coronavirus impact on Business

COVID-19 brought with it uncertainty especially because a lot about the pandemic is unknown and evolving. Much of the uncertainty revolves around issues relating to how long it will take to restore normality, the "limited accessibility to daily necessities" (Sim, Chua, Vieta & Fernandez, (2020, p. 0165) and hence, uncertainty in terms of what its impact will be in terms of the availability and supply of food, grocery and necessity items such as sanitizing chemicals and wipes, cleaning agents, detergents, toilet paper and healthcare products. This feeling of uncertainty and the need to restore control triggered panic-buying amongst consumers leading to stock-out conditions and bare shelves, which triggered further panic. According to Tsivrkos (cited in Guza, 2020, p. 2), "in times of uncertainty, people enter a panic zone which makes them irrational and completely neurotic". Arafat, Kar, Menon, Kaiamoorthy et al. (2020) noted that the majority of reports about panic buying explore the causes of panic buying and fewer report on the impact of it. Irrespective, the one thing that is clear is the effect that panic buying has on the retail industry. Yuen, Wang, Ma and Li (2020) synthesize the causes of panic buying into the categories of perception (relating to perceived threat of the pandemic and perceived scarcity of products), fear of the unknown, coping behaviour and social psychological factors (relating to social influence and social trust). It must be noted that the perceived scarcity of products does not only relate to products for human consumption. Researchers noted that whilst consumers stockpile food and essential goods, they included essential goods such as pet care products. M2Presswire (27 April 2020, p. 1) observed that "cat food saw a 162% growth as panic buying extends to pet care amid coronavirus fears. In addition, Phillips (2020, p. 1) reported an increase in the purchase of puppies as people, "feeling isolated in their homes, uncertain about the future and desperate for uncontaminated unconditional love" turned to pets. Undoubtedly, COVID-19 has had an impact on small business outcomes and expectations. In exploring this impact, Bartik, Bertrand, Cullen & Luca (2020) maintain that the main impacts of the pandemic on small business relate to mass layoffs and closures, the risk of closure, which was negatively associated with the expected length of the crisis as well as the financial fragility of the business, whose only life line was to seek funding but only after surpassing the bureaucratic hassles and difficulties of proving eligibility. Anakpo and Mishi (2021) found that business responses such as virtual connection, innovative e-commerce and increasing working hours were more effective business responses, whilst decreasing work hours, laying off workers temporarily and ordinary e-commerce were less effective measures In South Africa, against the impact of the outbreak. In addition, Anakpo and Mishi (2021) found that business reliance to the coronavirus outbreak dependended on industry type. Whilst agriculture, hunting, forestry and fishing were more resilient in South Africa, the pure export market and small business were less resilient and more affected. Govinden, Pillay and Ngobeni (2020) undertook a government

survey on the business impact of covid-19 in South Africa and found that the majority of businesses that partook in the study reported turnover less than the normal range and 46.4% reflected temporary closure or paused trading activity. In a similar study, Madinga, Lappeman and Nel (2022) noted that in response to the covid-19 pandemic businesses adapted their operations by adopting bridging finance, restructuring their debts and instistuting the work-from-home (WFH) model in efforts for survival. However these adjustments did not improve profitability; rather, most businesses were anticipating that their revenue would decrease.

Panic buying happens predominantly because human beings have a deep-seated desire for "certainty and control" (Raghunathan, 2016, p. 1). In response to survival and the social learning theory, shoppers watching other consumers filling up their trollies began to do the same. This resulted in panic buying for items that consumers perceived to be necessities such as drugs, toilet paper brought about by the uncertainty relating to the duration of the lockdown when it began. Their uncertainty and ignorance of the impact of their actions on the supply chain and businesses causes them to act in an imitative manner. The uncertainty of the duration of the virus exacerbated the situation, leading to further impact on healthcare systems, supply chains and business.

Panic buying has a domino effect as panic buying gestures a false demand. This false signal causes "bullwhip effect problems further up in the supply chain" (Kinaxis, 2020, p. 1). The supply chain is the connectedness of activities, which is concerned with planning, co-ordination and controlling materials, parts and finished goods from supplier to customer. The supply chain is no longer an operational level consideration as aspiring organisations aim to skilfully integrate their management of the supply chain with the needs of the market using appropriate tools and techniques (Stevens, 1989, p. 27). Assuming that the retailer adopts the order-up-to inventory policy, Ma et al. (2013, p. 281) studied a two-level supply chain in which the demand is price sensitive and derive "the analytical expressions of the bullwhip effect on product orders and inventory using minimum mean-squared error, moving average and exponential smoothing forecasting techniques". This false demand causes a "distortion of information in the supply chain" which is known as the bullwhip effect (Lee, Padmanabhan & Whang, 1997). The bullwhip effect then is the end result of false demand. According to Rajasekharan (2020), the 'bullwhip effect' is a phenomenon that refers to increasing swings in inventory in response to shifts in demand as one moves further upstream in the supply chain and Ma, Wang, Che, Huang and Xu (2013, p. 281) refer to the bullwhip effect on inventory as "the net inventory variance amplification". This accentuates the impact of the Coronavirus on business. This happens because the false demand misguides inventory and production decisions upstream or later on in the supply chain process. This information distortion triggers risk in the supply chain which has to be carefully managed and altered (Wilding cited in Lennane, 2020, p. 300). It emphasizes the demands on business not only in terms of managing the supply chain and procurement for resilience but also in terms of regulatory and social pressures relating to stock control and maintenance. Likewise, Feldman (2020) maintains that "the supply-chain whiplash or bullwhip effect, of empty shelves simply distorts true demand information". Feldman (2020, p. 1) cautions that when consumers stockpile, they do not really need more; instead, they simply end up using those extra rolls and supplies later over time. Therefore, there is no need to optimise supply chains based on the assumption that consumption is stable, seasonal or subject to hikes in supply" (Feldman, 2020, p. 3). Cognisance has to also be given to investing in higher inventory levels as well as in long term stable security of supply (Lennane, 2020). The bullwhip effect in the supply chain puts further

pressure on organisations to manage the already tedious supply chain management process comprising of production, inventory and logistics (Goel, Toufeeq, Saxena & Sachin, 2020) and hence, the information distortion results in the disturbance of the entire supply chain activities across all types of supply chain in all types of industries. Jeong and Hong (2019) suggest information sharing as a potential strategy to reduce the bullwhip effect on the supply chain. They use a four-echelon supply chain simulation model where each echelon shared some of the customer demand information with a retailer, the lowest echelon; they demonstrate that higher information sharing rates more significantly reduce the bullwhip effect. Jeong and Hong (2019, p. 1739) go on further to exhibit that "a highly unbalanced information sharing rate may cause a reverse bullwhip effect".

The panic buying, bullwhip effects and prolonged coronavirus disruptions impacted on all businesses but severely disrupted many smaller and more financially fragile businesses (Bartik et al., 2020). The authors (2020) highlight that the risk of closure of many small businesses was negatively associated with the expected length of the crisis, the widely varying beliefs on the possible duration of the COVID-19 related disruptions and the financial fragility of many of the small businesses. The National Bureau of Economic Research (NBER) found that high income individuals reduced spending sharply in mid-March 2020 especially in areas with a high rate of the COVID-19 infection and in sectors that require social interaction. This reduction in spending substantially decreased the revenues of businesses that cater to high-income households with a noteworthy impact on small businesses in affluent areas (Chetty, Friedman, Hendren & Stepner, 2020).

The coronavirus pandemic has had an immense effect on consumer behaviour and in turn has forced brands to reconsider their approach to marketing their products today and in the future. Budgets and communication strategies have also been re-adjusted to account for how COVID-19 will further impact the economy, marketers' businesses and their customers (Bizcommunity, 14 September 2020).

DISCUSSION OF RESULTS

The results of the study will be discussed from the three focus areas of people, healthcare systems and business.

People

The impact of the coronavirus on people can best be assessed in terms of the theory of equilibrium and control. The feeling of losing control makes individuals uneasy so they take remedial action to reduce fear and anxiety. In all of the coronavirus uncertainty, consumers realize that they do not have control over the virus so in attempts to take action they adopt control over their supplies and engage in panic buying. The coronavirus has particularly impacted on healthcare employees who experienced psychosocial impacts in the form of stress, depression, overwork, fear of infection whilst also appreciating the positive impacts on their self-esteem and self-image. In addition, people faced social disruption as a result of social distancing as well as the reduction in healthcare services and support as some refer to the coronavirus as the lonely disease.

Healthcare Systems

Healthcare systems were affected by the coronavirus by a double-sided sword; firstly, by the saturated demand for healthcare and secondly, by the shortage of personal protective equipment (PPE), which placed additional pressure on the already stressed, overwhelmed and exposed frontline healthcare workers and hospital staff. The shortage of PPEs triggered the urgent need for intelligence in healthcare management relating to resource and supplies allocation as well as risk analysis and mitigation.

Business

The coronavirus impacts on business mainly through its effect on consumer behavior and

hence, retail. The uncertainty experienced by consumers causes them to yearn to regain control and they do this through panic buying which signifies their coping behavior. Panic buying creates a bullwhip effect and hence, impacts dramatically on the retail industry. In attempts to survive, businesses had to engage in mass layoffs and this unemployment affected people further. Business closures also quickly became a reality. Small businesses were more especially affected due to their financial fragility. However, the World Bank Group (2021) maintains that there is a potential to build back better from covid-19 with a focus on jobs. In particular, the World Bank report (2021) believes that the South African labour market can benefit from young entrepreneurs and self-employment. This will help to solve South Africa's job crisis, revialise the job market, improve the investment climate and lead to the formulation and implementation of policies that can preserve macroeconomic stability (The World Bank, 2021). Asmal and Rooney (2021) add to this, the importance of infrastructure development, the fiscal environment labour market regulation and containing corruption.

Panic buying and the bullwhip effect, hampered the retail industry due to the impact on product orders and inventory control and placed unprecedented demands on inventory and production decision-making. A similar scenario was experienced in the healthcare sector with the shortage of PPEs and the collapsing healthcare environment. Hence, corporate and healthcare businesses were handed the same plight by the coronavirus thereby emphasizing the interrelated impact of the coronavirus on people, healthcare systems and business. The impacts have been researched in academia and practice alike as documented in the bibliometric profiles in Table

Table 2: Bibliometric sources regarding the impact of the Coronavirus on the TBL

People	Healthcare systems	Business
Alvarez-Iglesias, Garman & Lund (2021).	Abbara, Rayes, Fahham, et al. (2020).	Anakpo & Mishi (2021).
Dholakia (2020).	Aday, S., & Aday, M.S. (2020).	Asmal & Rooney (2021).
Felice, Di Tanna, Zanus, … & Grossi, U. (2020).	Business Wire (12 May 2020).	Axalta-COVID-19-Update. (24 March 2020).
Ivbijaro, Brooks, Kolkiewicz, et al. (2020).	Business Wire (15 April 2020).	Bartik, Bertrand, Cullen et al. (2020).
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Aday and Aday (2020) stipulate the strategic preparedness of the World Health Organisation (WHO) to include issues relating to coordination, planning and monitoring at the country level, risk communication and community participation, surveillance, quick response teams and case investigation, national laboratories, prevention and control of infection, situation management and operational support and logistics.

RECOMMENDATIONS AND CONCLUSION

The findings obtained from the bibliometric search and recommendations emanating there from and derived based on findings, which are presented in Figure 2.

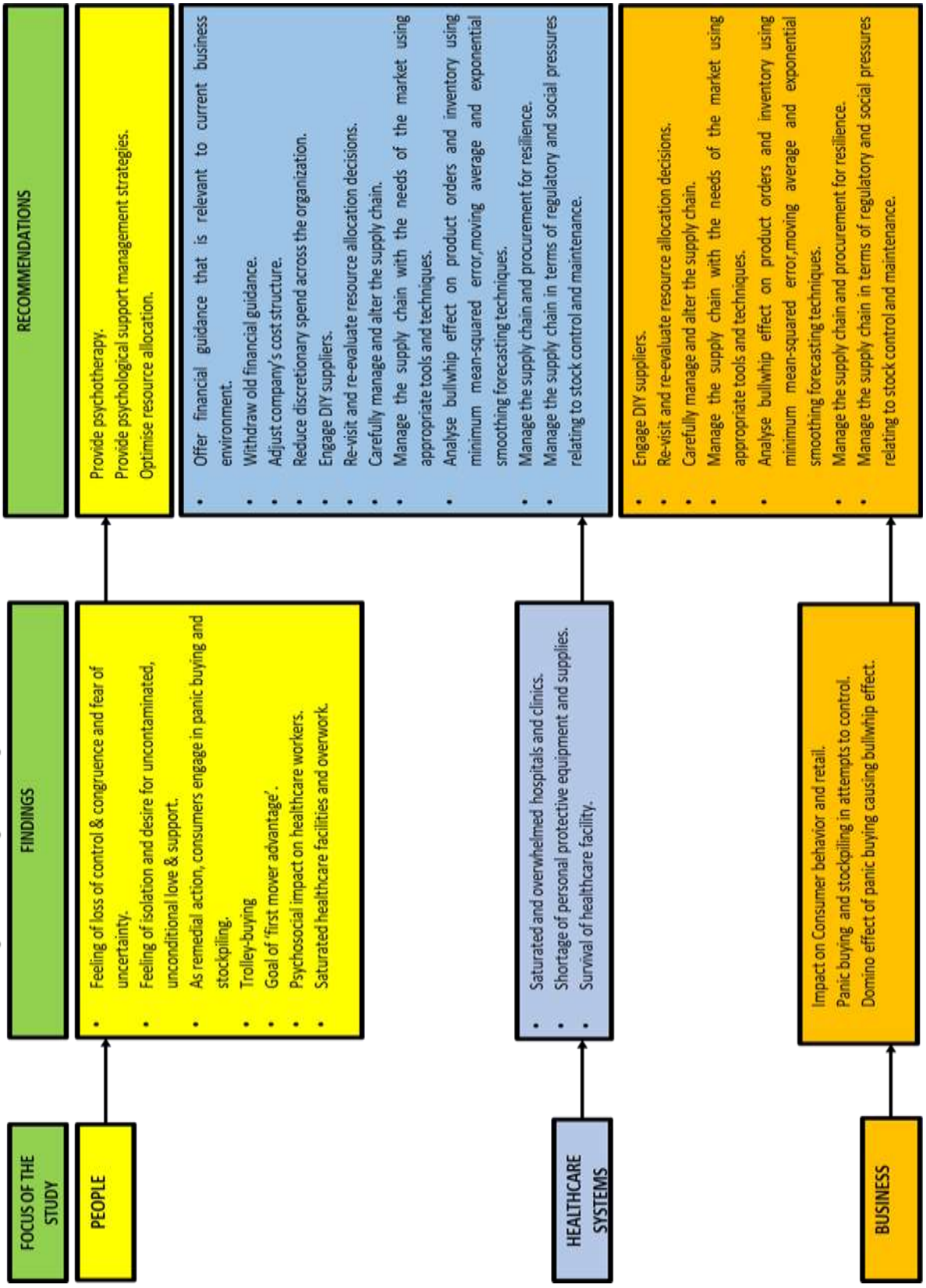

Figure 2: Findings of the impact of the Coronavirus on the TBL and Recommendations

CONCLUSION

The findings clearly depict the impact of the Coronavirus on the TBL. In particular, its impact on people, healthcare systems and business are noted and the lessons highlighted in terms of the do's and do nots in a crisis or pandemic. The recommendations that emanated from the learning derived from the coronavirus experience can help marketers, business organisations, management healthcare systems and governments to prepare and react more effectively in the future. Evidently, the Coronavirus has an interrelated, integrated and inter-twined impact on people, health care systems and business. For example, when it affects peple, it affects the efficiency and effectiveness of the healthcare system and the survival and viability of the healthcare facility. Also, the shortage of personal protective supplies enhances transmission, saturates the healthcare environment and causes more deaths of people, affects healthcare professionals when doing their work and resource allocation and effectiveness of healthcare systems as functioning institutions. In addition, people being unwell causes death and affects support systems, reduces personnel in health care facilities and threatens the survival of healthcare facilities, businesses and ultimately causes closure.

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