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Changes in consumer behavior in the BRICS countries during the COVID-19 pandemic: The role of trust and anxiety

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Abstract

In the spring of 2020, the COVID-19 pandemic created a new reality. Each country has implemented different measures to contain the pandemic, which has had many consequences for society and businesses. The purpose of this paper is to improve understanding of how the COVID-19 pandemic has changed consumer behavior in the BRICS countries and discuss the role of consumer trust and anxiety. A systematic literature review with a bibliometric analysis was carried out to identify research directions and reveal the role of trust and anxiety in consumer behavior. Differences in consumer responses to the COVID-19 pandemic challenges in Brazil, Russia, India, and South Africa were identified based on an analysis of an international database of online surveys. An empirical study of Russian consumers was conducted in the spring of 2020. Cluster and factor analyses were applied to reveal different consumer strategies of coping with the crisis. The study revealed differences in consumer trust and the level of anxiety in the BRICS countries. In the empirical study of Russian consumers, anxiety was identified as one of the factors in changing consumer behavior in response to the COVID-19 pandemic.

Keywords: consumer behavior, consumer trust, consumer anxiety, consumer well-being, BRICS, COVID-19.

JEL: P36, D10, M31, M20.

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Introduction

The global lockdown in the spring of 2020 resulted in a new reality with consequences for society and businesses. The body of literature examining changes in consumer behavior caused by the world-wide spread of the COVID-19 infection is constantly growing (Verma & Gustafsson, 2020). The theoretical basis for the recent research is the study of the reactions of people and changes in consumer behavior as a result of the epidemics of Ebola (Gamma et al., 2019) and influenza A H1N1 (Rubin et al., 2009; Seale et al., 2009). Specifically, researchers analyze the impact of ambiguity, product shortages, stockpiling, contrived obsolence, isolation, increasing use of online channels, trust and anxiety, and other factors that cause immediate and long-term shifts in how consumers buy and consume products and services (Laato et al., 2020). While many of the new practices observed during the peak of the pandemic are likely to disappear when the epidemiological situation improves (e.g., buying unusual products and self-isolation), the experiences of consumers will form the basis for changes in their behavior and preferences in the long term (Sheth, 2020). Precautions introduced by governments have forced a digital transformation for both businesses and consumers.

Lack of consumer trust is one of the key challenges for businesses,[1] but digital platforms provide new opportunities to increase transparency and contain opportunistic behavior of consumers and producers (Nikishina, 2020). It is equally important to pay some attention to consumer anxiety that was affected by the COVID-19 pandemic and the measures imposed by governments to contain it.

The purpose of this paper is to improve understanding of how the COVID-19 pandemic has changed consumer behavior in the BRICS countries and discuss the role of consumer trust and anxiety. The structure of the article is as follows. First, we focus on the main changes in consumer behavior in response to the COVID-19 pandemic. Second, we provide a theoretical background for consumer trust. Then we describe the differences in consumer trust and anxiety in the BRICS countries during the COVID-19 pandemic, based on an international survey database. Finally, the findings of an empirical study of Russian consumers are discussed.

1. Theoretical framework for the transformation of consumer behavior as a result of the COVID-19 pandemic: Trust and anxiety

The COVID-19 pandemic has simultaneously affected all the different social roles we play in society and has required to reconsider not only the way we behave as consumers, employees, citizens, or partners, but also interconnections these roles have with each other (Alessandri et al., 2021). This tremendous self-evaluation process, coupled with continuous restrictions and overexposure to fake or semi-fake news, has caused an

[1] https://www.pwc.ru/ru/publications/2018-insights.html

emergence of certain patterns of consumption behavior that has been noticed all over the world (Naeem, 2021). In order to cope with an overwhelming crisis caused by the pandemic consumers first developed defensive strategies that included avoidance and distrust of the authorities, companies that followed them, and other consumers (Kirk & Rifkin, 2020). Later, it was noted that consumers adapted and become resilient rather than defensive, thanks, among other things, to integration of different social roles and the subsequent clarity of self-concept. However, an understanding of the role which the initial defensive mechanism played in further adaptation and the emergence of a renewed concept of self is still in question.

Another phenomenon that consumers have experienced during the lockdown is a necessity to adopt digital decisions for shopping, learning, and leisure activities. Despite its overall positive effect on adoption and opening up opportunities for disruptive technology development (Heinonen & Strandvik, 2020), there is increasing concern among researchers that the regulatory nature of the growth of e-commerce and online entertainment may cause a significant setback in willingness to commit, trust, and implement technologies after the pandemic threat is gone (Septianto & Chiew, 2021; Sheth, 2020). Thus, it is vital to develop an understanding of trust mechanisms in the digital environment beyond the current pandemic situation.

Recent research states that consumers reduce their eating out habits and other social activities, such as going to the cinema, theatre, or concert, and that consumers spend more time at home and socialize virtually. According to a Euromonitor research, online shopping habits are increasingly taking root in consumers' minds.[2]

Overall, the COVID-19 pandemic has had a huge influence on consumer behavior:

1) *Consumer digitalization:* Addo et al. (2020) focus their research on the life-saving purchase decision and demonstrate the link between fear appeal, social presence, e-loyalty, and online purchase behavior. Donthu and Gustafsson (2020) underline the need to study both negative and positive types of behavior caused by social distancing. In the post-COVID-19 world, consumers can take a more "digital" approach in social interaction and work, meaning virtual participation as a part of their daily routine;
2) *Self-isolation experience:* during the COVID-19 pandemic, consumers experienced unprecedented practice of self-isolation during the lockdown period, and their attitude to shopping also changed (Laato et al., 2020);
3) *Increase in the number of uncharacteristic purchases:* it is necessary to mention the increase in purchases that are uncharacteristic of the usual pre-pandemic time, which occurred during the self-isolation (Laato et al., 2020);
4) *Consumer trust:* consumer trust in other people, companies, and the government was highly affected, because customer rights were temporarily suspended by the government. Daily routines, lifestyles, and well-being of consumers are changing to accommodate the continued social distancing;

[2] https://www.euromonitor.com/covid-19-survey-2020-a-year-in-review/report

5) *Switching to e-commerce:* almost three quarters of respondents in the latest Euromonitor survey agree that the switching to e-commerce will be permanent, and 45% of respondents now expect the decline in in-store shopping to be permanent, up from 28% in April, 2020;[3]
6) *Economic anxiety:* Fetzer et al. (2020a) stress the importance of pandemic risk factors that seriously affect individuals' economic anxieties;
7) *Mental health issues:* mental health issues connected with the COVID-19 pandemic are highly likely to affect society and community well-being in the longer run. Growing mental health concerns are the result of being forced to stay at home and adjusting daily routines (Barari et al., 2020; Sheth, 2020; Zhou et al., 2020);
8) *Hygiene concerns:* hygiene remains a serious concern during the COVID-19 pandemic (Fetzer et al., 2020b), as consumers have changed their attitudes to this factor (for example, packaging and personal safety in public transport or in carsharing services).

Consumer trust has been studied by management and marketing researchers for several decades (Bozic, 2017; Ejdys, 2020; Morgan & Hunt, 1994; Singh & Sirdeshmukh, 2000; etc.) Research confirms that consumers who trust a company or brand demonstrate higher levels of loyalty (Chai et al., 2015; Singh & Sirdeshmukh, 2000; Watson et al., 2015), adoption of innovative technology (Kasilingam & Krishna, 2021; Oh et al., 2009; Pitardi & Marriott, 2021; Slade et al., 2015), and commitment to long-term relationships (Aaker et al., 2004; Bozic, 2017; Morgan & Hunt, 1994), which allows companies to increase profit by using trust as a sustainable competitive advantage. Moreover, consumer trust in the digital environment is actively studied from a sociological point of view (Veselov, 2020; Vidiasova et al., 2020a; Vidiasova et al., 2020b).

Among the multitude of approaches to the definition of trust, the following definition is consensual: "Trust is a psychological state comprising the intention to accept vulnerability based on positive expectations of the intentions or behaviors of another" (Rousseau et al., 1998, p. 395). According to this definition, it was proposed to identify two parts / sides of the construct: expectations and actual behavior (Singh & Sirdeshmukh, 2000). This approach has led to the identification of two trends in the literature on trust studies.

Researchers working with a focus on expectations management study the antecedents of consumer trust (Bart et al., 2005; Das, 2016; Golovacheva et al., 2020; Michler et al., 2020; Rebiazina et al., 2020; Sichtmann, 2007; ZiYing, 2018). Meanwhile, another group of researchers choose to study behavioral consequences, such as the role of consumer trust in building relationships with a company (Chai et al., 2015; Marinova & Singh, 2014; Pyle et al., 2021; Singh & Sirdeshmukh, 2000; Sirdeshmukh et al., 2002), behavior on online platforms (Aiken, 2006; Beldad et al., 2010; Nikishina, 2020; Ozdemir et al., 2020; Touré-Tillery & McGill, 2015; Urban et al., 2009; Wongkitrungrueng & Assarut, 2020), and participation in digital collaboration (Kong et al., 2020; Möhlmann, 2016, 2021; Zhao et al., 2019).

[3] Ibid.

2. The role of trust and anxiety in changing consumer behavior: A bibliometric analysis

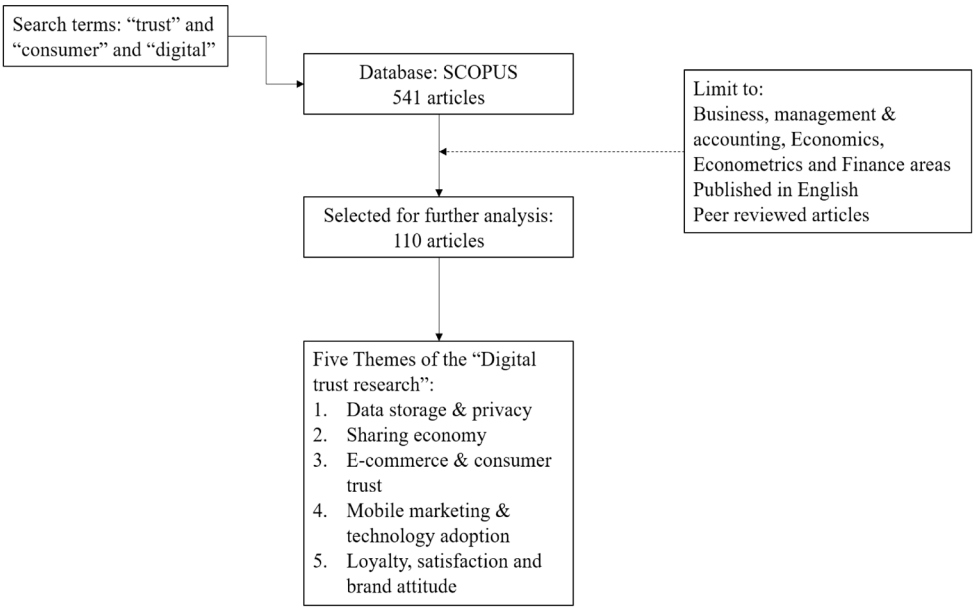
The growing number of digital services is changing the way consumers interact with each other and with companies (Kannan & Li, 2017; Ozdemir et al., 2020; Raju et al., 2021). Since the beginning of the active use of online resources, the importance of studying the process of building trust in the digital environment has been repeatedly emphasized by leading researchers (Aaker et al., 2004; Sirdeshmukh et al., 2002; Urban et al., 2009). An online environment in which a consumer can get any information about a product and a company, including feedback from real users, allowed consumers to become loyal faster (Bart et al., 2005). However, the downside was the rapid spread and scandals associated with companies, brands, and their ambassadors. In addition to image scandals that affected the attitude towards brands, including trust, as one of the most emotional-based indicators, consumers are especially meticulous about those related to data leakage. The development of distrust of "faceless" technologies, coupled with the effect of anxiety about one's own security, made trust one of the key barriers to the development of digital services (Golovacheva et al., 2020; Möhlmann, 2021; Pitardi & Marriott, 2021; Tishchenko et al., 2019).

The active development of digital technologies is transforming approaches to the study of consumer trust. In modern conditions, it is more important for researchers to understand both perspectives: the role of shifts in public trust in changing economic outcomes (Bakhtigaraeva & Stavinskaya, 2020; Ejdys, 2020; Michler et al., 2020; Ozdemir et al., 2020), and the role of changes in innovations in transforming trust development mechanisms (Hildebrand & Bergner, 2020; Möhlmann, 2021; Pitardi & Marriott, 2021; Wongkitrungrueng & Assarut, 2020). The accumulated amount of knowledge requires systematization for a deeper understanding of the state of the art in this field and determining future research directions that will strengthen the scientific foundation in the study of consumer trust, its antecedents, and consequences.

At the first stage, a bibliometric analysis was carried out using a VOSviewer 1.6.16 software. Publications were selected from the Scopus database to provide a selection from a wider range of leading peer-reviewed journals in management and economics compared to EBSCO, Google Scholar, or others (Ferreira et al., 2016). We retrieved the existing literature dedicated to the study of trust in digital environment using the keywords: "trust," AND "consumer," AND "digital." The keyword search was set to include matching in titles, abstracts, and keywords to retrieve the most relevant sources. The search period was not set in order to obtain a comprehensive body of literature. Only articles published in English were included in the search queue. A summary of the research design can be found in Figure1.

To identify areas of research on consumer trust in the digital environment among 110 articles in the field of business, management, economics, and finance, we performed a co-word analysis of keywords using VOSviewer. We manually eliminated duplicates and meaningless co-words (e.g., country names, methods names, standard statistics description

words) in order to obtain meaningful keywords clustering. Keyword clustering shows the existing relationships between co-words and the whole network. This allowed us to identify five main clusters, within which the research directions were named.



Source: compiled by the authors.

Figure 1. Research design for the bibliometric study

Cluster 1: Data storage & privacy. Despite certain concerns that consumers have towards data storage on digital platforms (e.g., clouds), the underlying mechanism for its continuous usage is almost the same as for technology adoption. Perceived utility and ease of use are stronger predictors of behavior than perceived risk (Mariani et al., 2021), and both variables are influenced by trust. At the same time, trust helps to mitigate the relationship between the perception of power holders (e.g., a government or a company) and intentions to develop defensive behavior towards a digital marketplace (Bandara et al., 2020). Developing trust between social media users and marketers, or *marketing comfort* (Jacobson et al., 2020), allows to improve the efficiency of the process for all parties involved (Jai & King, 2016).

Cluster 2: Sharing economy. Consumer trust is one of the key structural components of the mediation process between consumers' ethical perception and intention to engage in co-creation activities with sharing services (Nadeem & Al-Imamy, 2020). Trust development mechanisms on sharing economy platforms differ in certain consumer characteristics, such as familiarity with the platform (Möhlmann, 2021), and peer pressure to avoid negative feedback (Berg et al., 2020). Another type of trust emerges from the study of sharing economy trust — *digital trust* (Möhlmann, 2016), which is a hierarchical, complex concept requiring a comprehensive study.

Cluster 3: E-commerce & consumer trust and anxiety. The sustainable assumption about the role of trust continues to be confirmed. Trust in a digital marketplace, even in "born online" brands, is an effective mediator between attitude and behavioral loyalty (Das, 2016; Kolotylo-Kulkarni et al., 2021). It was recently noted that trust served as an enabler for consumers to use naïve theories when analyzing or producing eWOM in digital marketplaces to cope with consumer anxiety and avoid uncertainty (Pyle et al., 2021). It is an interesting discovery that opens up a conversation about real and declared trust in the e-commerce market and its antecedents.

Cluster 4: Mobile marketing & technology adoption. The relationship between trust and mobile marketing is mainly based on the theories of reasoned action, the technology acceptance model (TAM), and risk perception (Sarkar et al., 2020). These relationships are moderated by personal characteristics of users (propensity to trust) and ubiquity (Liébana-Cabanillas et al., 2017). Basically, the research shows that mobile marketing is still defined by the relationship consumers have with the device itself, and not by the actions of marketers.

Cluster 5: Loyalty, satisfaction, and brand attitude. Traditionally, consumer trust research is linked to studies of loyalty, commitment, satisfaction, and consumer relationships with companies (Ladwein & Sánchez Romero, 2021; Sirdeshmukh et al., 2002; Watson IV et al., 2015). Despite the transformation of trust antecedents on digital platforms (Pitardi & Marriott, 2021) and the emergence of digital trust due to the sharing economy development (Möhlmann, 2021), the interconnection between trust, loyalty and satisfaction still interests researchers (Michler et al., 2020).

The initial analysis of consumer trust in the digital environment showed some promising research areas, but in current circumstances, the majority of conclusions can be called into question due to a potential modification of consumer behavior under the influence of the COVID-19 pandemic. The problems that have arisen in the global economy have become the object of close attention of scientists and business representatives (Fetzer et al., 2020b; Laato et al., 2020; Sheth, 2020). Researchers agree that the COVID-19 pandemic is a society-changing event that can have a profound impact on marketing philosophy and corporate social responsibility (Crick & Crick, 2020). To investigate possible changes, we have gathered additional data.

At the second stage of the literature review, we used the Scopus database to search for articles which would include such keywords as "trust," "consumer," and "COVID-19," OR "coronavirus." 15 articles were available for further analysis after we limited the search to business, management, economics, and finance areas. 3 articles were excluded after consideration, since the main focus was on sociological aspects. The remaining articles were analyzed in detail to identify the key behaviors influenced by COVID-19 and designate their potential link with consumer trust research (Table 1).

Table 1. Influence of the COVID-19 pandemic on consumer behavior: Theoretical background

Author (year)	Industry	Behavior	Motivation	Link to trust	Area for future research
Kim et al., 2021; Troise et al., 2020	Food delivery service	Intention to use/accept drones (robots)	Safety	Increase in trust can lead to further acceptance and change in logistics and communication	Relationship between privacy, trust, drone acceptance and attitude towards risk after the COVID-19 pandemic
Kirk & Rifkin, 2020	Retail	Reacting, coping, and adapting	Dealing with stress	Certain new coping patterns might change trust baseline → increase expectations at an early stage of consumer journey	A thorough investigation of trust-attitude-behavior relationship at different stages of consumer journey in an online vs offline marketplace
Ding & Li, 2021; Heinonen & Strandvik, 2020	Service innovation	Recognition and acceptance of innovation	n/a	Emergence of innovations during the pandemic might influence attitude towards it in the future. Trust would work as mediator	Trust or digital trust, role of rise or fall of different newly introduced (or forced) technologies
Foroudi et al., 2021; Im et al., 2021	HoReCa	Risk aversion	Safety	Local tourism → other expectations → other role of trust	Role of culture or national branding in building trust in local destinations
Hall et al., 2020; Islam et al., 2021; Naeem, 2021	Retail	Panic buying	Coping	Overexposure to social media and uncertainty damage trust	Different levels of trust and digital trust, and its role in managing panic buying
Peng & Chen, 2021; Yost & Cheng, 2021	HoReCa	Eating out	Risk aversion	Uncertainty and increased anxiety might influence the credibility of public dining places in the long run	Testing previously existing engagement instruments to compare them with the previous level using trust as a mediator

Source: compiled by the authors.

3. Consumer behavior adjustments in response to the COVID-19 pandemic: Consumer trust and anxiety in Brazil, Russia, India, and South Africa

The study is of an explorative nature as its main objective is to identify, systematize, and rank the factors affecting consumers' well-being in the BRICS countries during the COVID-19 pandemic. The purpose of this part of the paper is to reveal the impact of the COVID-19 pandemic on consumers' well-being and behavior and identify strategies aimed at coping with the crisis. Thus, the research questions are as follows:

(1) How does the COVID-19 pandemic change consumer behavior?

(2) How much do consumers trust other people and companies?

Quantitative data from online studies was analyzed using factor analysis and cluster analysis in R (https://www.rdocumentation.org/). The questionnaires include 6 blocks: (1) general behavior and personal precautions, (2) consumer anxiety, (3) consumer trust, (4) hygiene concerns, (5) changes in consumer preferences and experience, (6) social and demographic profile.

Research on consumer behavior in transition economies indicates at least five key characteristics that distinguish them from developed economies: market heterogeneity, socio-political governance, chronic shortage of resources, unbranded competition, and inadequate infrastructure (Sheth, 2011). The COVID-19 pandemic seems to be one of the most dramatic environmental changes of the past few decades, and it could have a big impact on the way consumers behave, meaning that companies must adapt to a transformed marketing philosophy and call for corporate social responsibility. The effect of COVID-19 may be different depending on the specifics of a country. Each country implements different measures to contain the COVID-19 pandemic. The analysis of the survey database created by Fetzer et al. (2020b), which covered 58 countries, was conducted to identify how people in the BRICS counties (except China) had adjusted the recommendations and had adopted precautions introduced by the governments. China was not included in the analysis because COVID-19 started to spread there much earlier, and the first wave of the infection was almost over at the time of the survey. Thus, we focus on four BRICS countries: Brazil (11 589 respondents), Russia (3399 respondents), India (992 respondents), and South Africa (548 respondents). The data was collected between March 20 and April 7, 2021. Table 3 shows the number of confirmed COVID-19 infections and deaths to illustrate the epidemiological situation. In the reference period, the highest spread rate was registered in Russia: the number of confirmed COVID-19 cases has increased 29 times.

Table 3. COVID-19 cases at the start and end dates of the reference period

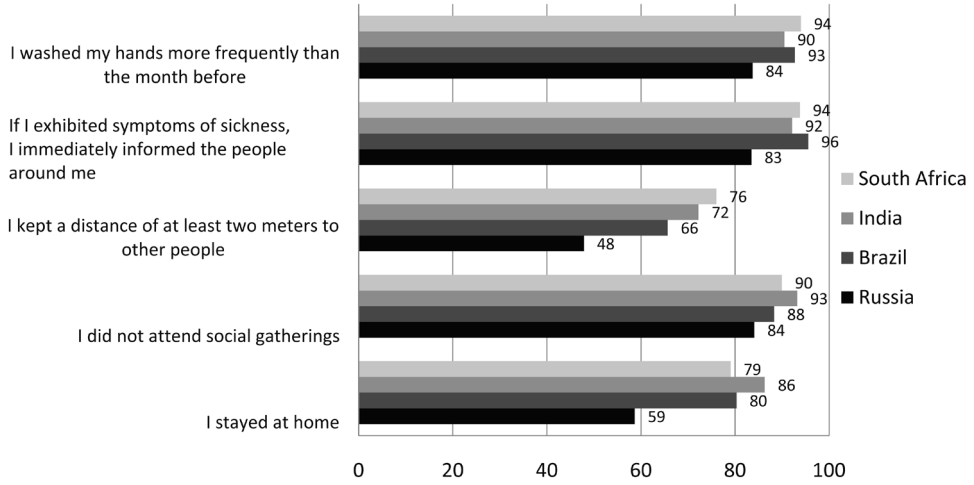
	Russia	Brazil	India	South Africa
Confirmed COVID-19 cases as of March 20, 2020	253	793	244	202

Table 3. Continued

	Russia	Brazil	India	South Africa
Confirmed cases as of April 7, 2020	7497	14034	5311	1749
Confirmed COVID-19 deaths as of March 20, 2020	1	11	5	0
Confirmed COVID-19 deaths as of April 7, 2020	58	686	150	13
Median of confirmed COVID-19 cases	367	1546	499	402
Median of confirmed COVID-19 deaths	1	25	10	0

Source: (Fetzer et al., 2020b).

Respondents from Russia reported fewer changes in their behavior aimed at slowing down the spread of the COVID-19 pandemic than South Africans and Indians, with the lowest estimations coming from social distancing and stay-at-home behavior (Figure 2).



Source: calculated by the authors based on (Fetzer et al., 2020b) data.

Figure 2. Compliance with precautions, % of respondents by countries. Mean of the answers by country (0 = Does not apply at all; 100 = Applies very much)

The anxiety indexes were calculated as a z-scored sum of the 5 worries questions from the Fetzer et al. (2020b) approach (Table 4). The highest score was found for Brazil; India and South Africa demonstrate similar scores; and the lowest score was found in Russia. Hence, Russian respondents were not very concerned about the spread of the infection and did not feel an urgent need to adjust their behavior.

Table 4. Anxiety index by country in March-April 2020

Country	Mean	Standard deviation
Russia	–0,077	0,954
Brazil	0,307	0,936
India	0,113	1,017
South Africa	0,110	0,989

Source: calculated by the authors based on (Fetzer et al., 2020b) data.

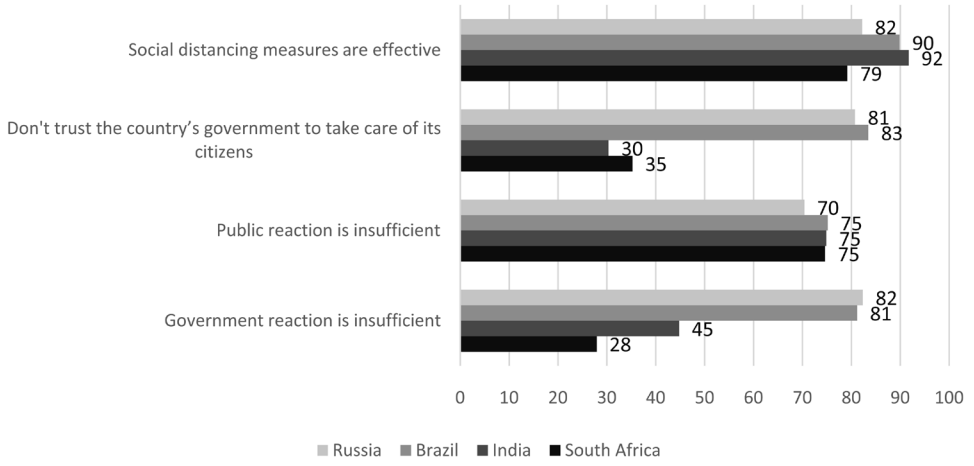
The value of misperception is calculated in percentage points as the difference between the average value of the respondents' actual attitudes and their perceptions of the attitudes of others (Table 5). High misperception value indicates consumers do not believe in public reaction and do not trust the observance of precautions and social responsibility.

Table 5. Misperception of personal attitudes with perception of others' beliefs about COVID-19 precaution measures (percentage points)

Statement	Russia	Brazil	India	South Africa
People should withdraw from participation in social gatherings	49,10	35,32	33,32	40,16
People should not shake other people's hands	49,40	29,32	24,12	27,99
All shops in the country, except for the most important ones, should be closed	30,36	36,51	25,71	28,98
A general curfew should be imposed	25,33	38,49	31,16	39,09

Source: calculated by the authors based on (Fetzer et al., 2020b) data.

At the same time, 82% of respondents from Russia consider the measures to prevent the spread of the pandemic taken by the state authorities to be insufficient. Moreover, 70% of respondents from Russia claim that the public response to the pandemic was insufficient. Similar estimates of the public response were obtained for Brazil, India, and South Africa, where 75% of respondents rated the measures as insufficient. But the assessment of the government's reaction differs dramatically across countries: 28% think that the government reaction was insufficient in South Africa, and 81% think the same about Brazil (see Figure 3 for details). Most of the respondents from Russia and Brazil do not trust their government to take proper care of citizens by taking measures to contain the spread of the COVID-19 pandemic.



Source: calculated by the authors based on (Fetzer et al., 2020b) data.

Figure 3. Perceptions of the government/public response and trust in the government's care for citizens, % of responses: "The reaction is somewhat insufficient" and "The reaction is completely insufficient" by country. Mean of the answers by country [0 = Does not apply at all; 100 = Applies very much]

These estimates for the traditional economies in question are higher than the median for the overall database (58 countries). The median values in the sample are as follows: 41% believe that state authorities take insufficient measures against the pandemic, and 60% consider public response to be insufficient. In South Africa, 63% of respondents report a lack of public response to epidemiological changes, but only 37% consider government measures insufficient.

4. Consumer behavior changes during the COVID-19 pandemic: Empirical evidence from Russia

The first cases of COVID-19 were registered in January 2020, but the threat of fast spread of the novel coronavirus infection was discovered in March 2020: the high-alert regime was first declared in Moscow (Decree of the Mayor of Moscow 2020[4]), and three weeks later — in all Russian regions. A wide range of measures to slow down the spread of the COVID-19 pandemic was introduced. Some precautionary measures, such as social distancing, cancellation of social gathering, and transfer of schools and universities to remote format, were introduced in all regions. But some other measures (lockdowns, curfews, closures of shops, restaurants, and cultural institutions) differed from region to region. This determined the motivation for a more detailed study of consumer response to the COVID-19 pandemic in Russia. A questionnaire was developed following the

[4] https://rg.ru/2020/03/29/moscow-ukaz34-reg-dok.html

Fetzer et al. (2020b) approach. It includes 45 indicators to identify changes in consumer behavior.

4.1. Sample description

The link to the survey was distributed among attendees of the online course "Marketing" held on the Russian National Educational Platform "Open Education" in April-May 2020. Filling out the questionnaire was voluntary, 445 valid responses from Russian consumers were received and used in further analysis (Table 6). 74,38% of respondents were female, 25,39% were male. The largest age group consisted of people aged 18–25 (77,98%), their income level, in general, corresponds to the mean income of Russia's population. The majority of the respondents represented large cities (Moscow, Vladivostok, St. Petersburg, etc.).

Table 6. Sample description (N = 445)

Item	Sample characteristic	Share of respondents (%)
Age	<18	1,80
	18–25	77,98
	26–35	7,64
	31–35	7,64
	36–40	2,22
	41–50	2,69
	51+	0,23
Gender	Male	25,39
	Female	74,38
Income	Low	4,72
	Middle	66,74
	High	27,86

Source: empirical study.

4.2. Results and discussion

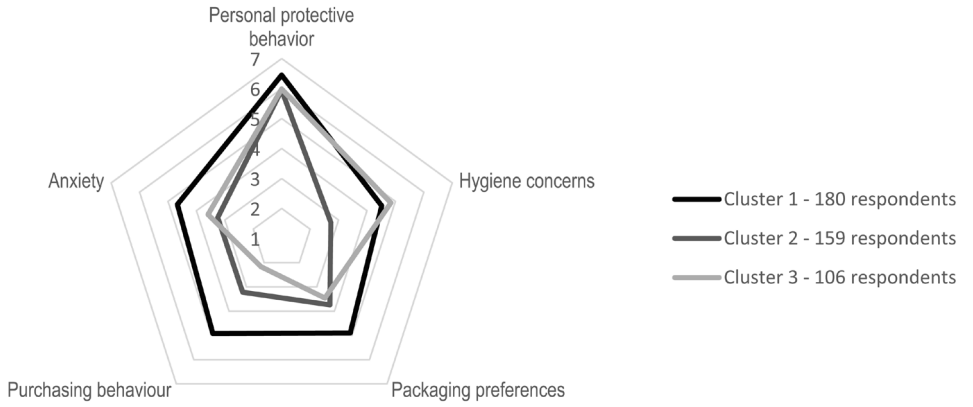
To reveal the factor structure behind the scale items, the exploratory factor analysis (EFA) and the confirmatory factor analysis (CFA) with Maximum Likelihood method in R were applied. Five latent variables (factors) with 15 indicators were formed (Table 7). Cronbach's Alpha for each of the factors is not less than 0,7. The model has good fit characteristics (Chi-square =131,34, df = 92; TLI = 0,971; CFI = 0,978; RMSEA = 0,031, GFI = 0,965).

Table 7. Latent variables and indicators

Latent variables	Statement
1. Personal protective behavior	I did not attend social gatherings
	I did not use public transport
	I kept a distance of 1.5–2 meters from other people
	I stayed at home
2. Hygiene concerns	Carsharing has no hygiene risks (reverse scale)
	Taxi has no hygiene risks (reverse scale)
	Clothes rentals have no hygiene risks (reverse scale)
3. Packaging preferences	I prefer brand packaged products to bulk products
	I prefer products with an additional layer of packaging
4. Purchasing behaviour	I shop grocery products online more often than before
	I shop clothes online more often than before
	I order ready-to-eat food online more often than before
5. Anxiety	I am stressed about leaving my home
	I am nervous when I meet difficulties buying personal protective equipment (e.g. masks, gloves)
	I am nervous when I think about current circumstances

Source: empirical study.

As a result of the cluster analysis applied with 5 latent variables, three clusters of Russian consumers were identified to understand their behavior and strategies of coping with the crisis (Figure 4). The first cluster (180 respondents) are consumers who have



Source: empirical study.

Figure 4. Description of clusters of Russian consumers: Average values of factors

the highest level of anxiety, they quite intensively adopted personal protective practices. The second cluster (159 respondents) is represented by consumers who are less concerned about hygiene risks and have the lowest level of anxiety. Finally, the third cluster (106 respondents) demonstrates a higher level of anxiety than the second cluster, but these consumers are much more concerned about hygiene.

In contrast with the first two clusters, many respondents of the third cluster are located in cities with a population of less than 500 thousand people (small and medium-sized cities). The empirical study revealed an increase in anxiety in connection with the COVID-19 pandemic, as well as an increase in consumer attention and exactingness to hygienic aspects, and, accordingly, a special request and needs are formed to create services and products that meet new requirements. A special attention is paid to consumer trust indicators. They were measured on a 7-point scale, where higher values mean stronger consent with the statement. Estimates of consumer trust by cluster are presented in Table 6.

Table 6. Consumer trust indicators

Statement	Cluster		
	1	2	3
To what extent can companies be trusted?	4.54	4.43	4.57
Nowadays, it is difficult to understand who can be trusted or with whom you need to be very careful	4.92	4.54	4.84
In the modern world, only a few people can be trusted	5.00	4.95	5.01
Most people can be trusted	3.44	3.50	3.23
Most people are fair to others	3.37	3.54	3.26
Most people don't care what happens to others	5.09	5.10	5.22

Source: empirical study.

No significant difference in consumer trust was found between clusters, and the respondents in all three clusters were concerned about whether people can be trusted and how to understand who is trustworthy, whereas the highest estimates were received for trust in companies.

Conclusion

The COVID-19 pandemic has changed the way consumers live, work, and shop, and it has become a starting point for a transformation in consumer behavior. Currently, it is crucial to pay close attention to the transformation of consumer behavior due to the COVID-19 pandemic and the potential consequences for business. Environmental changes and precautions introduced by governments have forced dramatic changes in consumer

behavior. All this creates a need to improve the understanding of how consumers adapt to this situation and what has changed in their preferences and behavior. Moreover, it is important to continue research activities aiming to foresee what long-term impact it can have, as many general consumer habits have been discarded and replaced by new ways of consumption, taking into account psychological consequences after the pandemic and transformations in consumer trust in digital services and platforms.

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