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Reviewing the Factors Distressing Consumers Buying Behaviour During COVID-19 Pandemic with Special Reference to Kolkata using Principal Component Analysis

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ABSTRACT
The authors make an effort to empirically reviews the factors distressing consumers buying behaviour during the COVID-19 pandemic with special reference to Kolkata by applying the principal component analysis. The study is conducted from August 29, 2022, to February 6, 2023, using a convenient sampling technique. Different statistical tests like principal component analysis (PCA), Cronbach's alpha, along with frequency statistics are used for the analysis of the data using IBM SPSS Statistics 21. The study is both primary and secondary in nature. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy is close to 1 and Bartlett's Test of Sphericity is significant in nature. Moreover, 9 factors were retrieved from the existing 38 questions. Hence, it was concluded that the factors of taste and preferences, discouraging offline purchases, after-sale service, purchasing decision, the role of reference groups, change in purchase behaviour, searching the information, the role of family members, and meeting expectations are the decisive factors distressing the consumer buying behaviour in Kolkata during the COVID-19 pandemic.

Keywords: *principal component analysis, kmo, bartlett, consumers buying behaviour, kolkata, pandemic*

I. INTRODUCTION

A lower respiratory illness (SARS-CoV-2) is referred to as coronavirus disease 2019 (COVID-19) and was initially identified in Wuhan (China) in late December 2019. Subsequently, the number of COVID-19 infections has been rising daily around the world (https://coronavirus.jhu.edu/map.html). The COVID-19 outbreak was deemed an international pandemic by the World Health Organization (WHO) in March 2020 (Mahase, 2020). In order to stop the virus from spreading, numerous national governments subsequently enacted long-term complete or partial lockdown restrictions.

Although these stringent controls on the virus's propagation have proven to be extremely effective, they have had a significant negative impact on the world economy and produced an unprecedented shock to economies and labour markets (Chohan, 2020). The COVID-19 pandemic's global expansion, according to a study by the Nielsen Corporation, caused a change in consumer spending levels and behaviour (Nielsen, 2020). In particular, a rising trend in the sales of necessities has been noted: consumer priorities have shifted to focus on the most fundamental requirements, such as food, hygiene, and cleaning supplies. Throughout the epidemic, consumer shopping habits have shifted in Italy. At first, when Italy was the first nation in Europe to experience COVID-19 spreading (between March and April 2020). Consumer behaviour tended to compulsively concentrate on buying necessities, especially those that were related to preventing infection, such as safety equipment and sanitizing gel (Canito et al., 2021). The pandemic altered consumer behaviour, for example, decreasing sales for some product categories (like clothing) while increasing sales for others (like leisure products) (Degli, 2021).

It should come as no surprise that purchasing basics takes priority in an emergency circumstance (Larson and Shin, 2018). Little attention has been paid to the examination of psychological elements that preceded changes in consumer behaviour during the COVID-19 epidemic, such as attitudes, feelings, and behaviours. Understanding the psychological aspects that influence customer behaviour and product selection, however, can be essential for two major reasons. First off, such research can deepen our understanding of the factors behind the shifts in customer behaviour in the novel COVID-19 scenario. Second, the findings may aid in the creation of fresh marketing plans that take psychological aspects into account in order to address the demands and emotions of real consumers (Rajagopal, 2020). On the one hand, businesses might use this information to boost sales during the COVID-19 epidemic (Diebner et al., 2020). Moreover, recognizing these demands and emotions may be essential to enhancing the market's capacity to respond to pandemics and other emergencies in the future (Hesham et al.,2021; Song et al., 2020). Nonetheless, consumers could benefit from this new market's readiness to cater to their genuine needs and emotions. As a result, in the event of a future emergency, elements like worry

and perceived scarcity of necessities could be alleviated (Arafat et al., 2020), whilst consumers' well-being and positive self-image could be enhanced (Gelderman et al., 2019).

Many psychological factors affect consumer behaviour differently, according to earlier studies in behavioural economics and consumer psychology (Durante and Laran 2016; Asioli et al., 2017; Foxall, 2004). Consumer behaviour is the study of people or groups who are actively looking for, using, evaluating, and discarding goods and services to meet their needs (Rajagopal, 2020). It is significant to note that this also entails researching the consumer's emotional, mental, and behavioural reactions that come before or after these procedures (Kardes, 2011). Consumer behaviour can change for a variety of reasons, including a person's personal, financial, psychological, environmental, and social circumstances.

However, some elements have a greater impact on consumer behaviour in dramatic situations like a disease outbreak or a natural disaster than others. In fact, it has been demonstrated that major behavioural changes result from circumstances that could disrupt social life or endanger people's health (Leach, 1994).

II. LITERATURE REVIEW

This section deals with the literature review, research gaps, objectives of the study, and significance of the study. The authors consider extant literature from the national and international contexts where some motivating outcomes could be found. They have been summarized below. Moreover, it should be mentioned that due to the lack of literature during the pandemic, some literature from the pertinent areas before the pandemic has also been considered. We could observe that **Xu et al. (2022)** states that China's overall consumption of dairy products has decreased as a result of Corona Virus Disease 2019 (COVID-19). A critical issue that needs to be solved is how to increase the consumption potential of dairy products while reducing the negative effects the post-epidemic dairy market is experiencing. The Heckman two-stage model was applied to survey data collected from 1780 consumers in 31 Chinese provinces (municipalities and autonomous regions) to empirically test the effect of consumer health awareness on dairy product purchase behaviour during the COVID-19 pandemic and to further analyze the differences in factors affecting dairy product purchase behaviour without the restriction of consumer health awareness. Among these, the perception of a health change and the formation of healthy habits had a positive and significant impact on the purchase intention. Moreover, purchases of dairy products increased significantly as a result of all three facets of consumer health awareness. The results of a different analysis revealed that the purchasing decisions of consumer groups with various levels of health awareness clearly differed. According to component factor analysis, consumer health knowledge generally had a direct impact on purchase intention and raised the proportion of dairy products purchased. In order to promote consumer health awareness in the post-epidemic phase and thereby increase the momentum of dairy product consumption, policy proposals are made. Likewise, **Debnath, S. (2020)** studied how a novel coronavirus may affect consumer purchasing behaviour in the retail sector in terms of consumer awareness levels, online services, and significant product price increases. 152 individuals from various parts of Kolkata city participated in the study online utilizing a convenience sampling technique and an online questionnaire. Following online survey data collection, multiple regression analysis is used to determine the importance of each individual predictor, as described above. The results show that the independent variable (dramatic increases in goods prices and delayed online services) has a significant impact on how customers make purchases. Data reflects following a conclusion that the male respondents' monthly incomes, which ranged from 0 to 30,000, were the age group of 25 to 35 significantly affects consumer purchasing behaviour. Therefore, the higher income of male respondents and the study by **Kaur and Sharma (2020)** demonstrated how consumer behaviour shifts in response to the environment. The study identifies the elements that encourage customers to make impulsive purchases. The report also outlines the study's future direction and managerial implications for marketers. The findings show that impulsive buying behaviour is highly influenced by consumer psychology and danger perception. Furthermore, the impression of threat is influenced by panic attacks and the media. The results showed that consumer income affected their propensity for impulsive purchases.

After studying the prevailing studies, it can be noted that there exist some loopholes in the remaining studies. Firstly, there is a dearth of literature on the said area during the COVID-19 pandemic. Second, studies are limited only to the psychological domain. Thirdly, studies in Kolkata are rarely found. Finally, the application of advanced statistical tools is difficult to find.

On the basis of the research gaps, it was decided to apply factor analysis i.e., principal component analysis (PCA) to study the different factors which are affecting consumer buying behaviour during the COVID-19 pandemic, particularly in Kolkata.

Additionally, it needs to be mentioned that this study is exceptional of its kind as it considers different factors namely searching the information, purchasing decision, post-purchase evaluation, personal factors, the role of family members, and other key factors that can be considered to be relevant during the pandemic that helps the authors to arrive at an inference regarding the specific factors. This adds greater uniqueness to the study and is significant to the academic fraternity.

III. RESEARCH METHODOLOGY

This study includes primary data collected from the respondents through Google Forms keeping in mind the advent of the COVID-19 pandemic. The study focuses on the consumers of Kolkata with their buying products from different categories during the presence of the global pandemic COVID-19. The study is empirical in nature with a literature survey from secondary sources. The primary data is collected through a well-structured questionnaire from the consumers in Kolkata using a five-point Likert scale to quantify the same. The population of the study includes the people who are the consumers of the mentioned product categories in the Kolkata district of West Bengal.
Cochran's formula for determination of sample size (1977) is applied considering an infinite population following the below-mentioned formula that gives us a sample size of 384.16.

$$n_0 = \frac{Z^2 pq}{e^2}$$

$$n_0 = \frac{(1.96)^2 * 0.5 * 0.5}{0.05^2}$$

Where;
Z = selected critical value of desired confidence level
n_0 = sample size
p = estimated proportion of an attribute present in a population
q = 1 - p
e = desired level of precision
At a 95% confidence level with a 0.05 level of significance

The total complete sample of 384 is collected from 144 wards under the Kolkata Municipal Corporation (KMC) (https://www.kmcgov.in/KMCPortal/jsp/KMCPortalHome1.jsp) to include respondents from all over the city. The data collection work is conducted from August 29, 2022, to February 6, 2023. A convenient sampling technique is used in the data collection process. The questionnaire is composed of two sections. The first section deals with the demographic details of the respondents and the second section deals with the list of questions structured using a 5-point Likert scale where 1 = strongly disagree and 5 = strongly agree. Potential participants were informed of the survey's objectives and asked for their consent or voluntary agreement to participate before proceeding. The research also made sure that anonymity was maintained in order to protect the participants' identities. In this investigation, all operations involving human subjects were carried out in accordance with the 1964 Helsinki Declaration and any later revisions, or with similar ethical standards. The Checklist for Reporting Results of Internet E-Surveys (CHERRIES) recommendations was followed in the design and reporting of this survey. Different statistical tests like principal component analysis (PCA), Cronbach's alpha, along with frequency statistics are used for the analysis of the data. Moreover, charts and diagrams are also used for the representation of the data. Moreover, the authors applied IBM SPSS Statistics 21 to compute the results of the different statistical tools.

IV. PRINCIPAL COMPONENT ANALYSIS (PCA)

The concept of Principal Component Analysis (PCA) has been a topic of discussion since historical times. Almost all scientific fields employ principal component analysis (PCA), which is arguably the most well-liked multivariate statistical method. It is also possibly the earliest multivariate method. Although its modern instantiation was formalized by Hotelling (1933), who also coined the term principal component, its origins can actually be traced back to Pearson (1901), Cauchy (1829), Grattan-Guinness (1997), or Jordan (1874) as well as Boyer and Merzbach (1989). Its objective is to take the key evidence from the data table and represent it as a set of new main components, which are orthogonal variables. By showing the variables and observations as dots on maps, PCA also illustrates the pattern of similarity between them (for additional information, see Jolliffe, 2002; Jackson, 1991; Saporta and Niang, 2009).

Principal component analysis (PCA) creates new variables called principle components from linear amalgamations of the original variables. It is necessary for the first principal component to have the greatest amount of variance (i.e., inertia), as this component will "explain" or "extract" the greatest amount of inertia from the data table. The second component must have the most inertia and be orthogonal to the first constituent in order to be calculated.

V. DATA ANALYSIS AND DISCUSSIONS

Table 1: KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.906
Bartlett's Test of Sphericity	Approx. Chi-Square	8479.671
	df	703
	Sig.	0.000

The Kaiser-Meyer-Olkin (KMO) is a test used to evaluate how well the components explain one another in terms of partial correlation between the variables. A value closer to 1 is ideal for further factor analysis. The KMO test has a test statistic of 0.906 indicating that factor analysis can be conducted. Moreover, the value indicates that sampling is adequate marvelously (https://www.statisticshowto.com/kaiser-meyer-olkin/).

The correlation matrix's identity as an identity matrix is tested using Bartlett's test of sphericity (1951). The variables are unrelated if the identity correlation matrix persists, which makes factor analysis a poor choice. The p-value is 0.00 significant at a 1 per cent level at a 99 per cent confidence interval. Hence, it can be concluded that the correlation matrix is indeed not an identity matrix.

Table 2: Communalities		
	Initial	Extraction
I easily get the information of the product I am looking for	1	0.776
The steps taken by the company are sufficient to make the information reach to the consumers	1	0.743
Products are easy to search and compare with the alternatives	1	0.758
The quality of the products is acceptable by the consumers	1	0.701
I prefer the brand which I'm availing currently	1	0.792
The product fulfils my requirement	1	0.821
After-sale service is provided by the company promptly	1	0.686
Do not mind paying for return	1	0.623
The company provides free servicing for a specified period of time within the warranty	1	0.697
The product goes with my age	1	0.673
The product goes with my gender	1	0.721
I am able to purchase the product with my own earnings	1	0.67
The product meets up my expected requirement	1	0.69
I am knowledgeable of the product characteristics	1	0.733
I am aware of the consumer safety features	1	0.726
I am aware of the legal provisions	1	0.681

The product goes with my lifestyle	1	0.722
The product adds social status & prestige	1	0.633
I buy products on suggestions by my family members	1	0.754
My family members take the necessary decision to purchasing	1	0.694
The price of the product is paid by my family members	1	0.739
The brands are informed by my peer groups and colleagues	1	0.788
The product is widely used by my friend/ peer group	1	0.861
My friend/ peer group is satisfied with the product under the brand	1	0.844
The shipping of the product is free and delivery is not chargeable	1	0.734
The process of pick up/ return is quickly made on cancellation/ return by the nearby logistic warehouse	1	0.789
The supply of the product is steady	1	0.621
Less consumption during the pandemic for greater savings	1	0.473
Base purchase decision on essential needs	1	0.696
Reduction in unnecessary purchase	1	0.697
Increased awareness about over consumption	1	0.628
Restrictions of social distancing imposed by the government	1	0.527
Closure of physical stores during the lockdown period	1	0.638
Decrease in entertainment	1	0.497
Reduction of risk from contagious patients	1	0.562
Closing of changing rooms in shopping malls	1	0.642
Reduction in the time period of the shop to remain open during a day	1	0.551
The consciousness of individual responsibilities	1	0.575
Extraction Method: Principal Component Analysis.		

The percentage of each variable's variability that can be accounted for by the factors is known as communality. The more closely the communality resembles 1, the better the components are able to account for the variable. All the variables have a communality value of more than 0.60 except less consumption during the pandemic for greater savings, restrictions of social distancing imposed by the government, decrease in entertainment, reduction of risk from contagious patients, Reduction in the time period of the shop to remain open during a day, and Consciousness of individual responsibilities.

Table 3: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.542	30.375	30.375	11.542	30.375	30.375
2	3.995	10.512	40.887	3.995	10.512	40.887
3	2.398	6.310	47.197	2.398	6.310	47.197
4	1.839	4.841	52.037	1.839	4.841	52.037
5	1.567	4.125	56.162	1.567	4.125	56.162
6	1.320	3.472	59.635	1.320	3.472	59.635
7	1.247	3.280	62.915	1.247	3.280	62.915
8	1.206	3.175	66.090	1.206	3.175	66.090
9	1.044	2.748	68.837	1.044	2.748	68.837
10	0.829	2.183	71.020			
11	0.740	1.948	72.968			
12	0.714	1.879	74.847			
13	0.696	1.831	76.678			
14	0.620	1.632	78.310			
15	0.588	1.547	79.857			
16	0.572	1.506	81.363			
17	0.555	1.461	82.824			
18	0.521	1.371	84.195			
19	0.490	1.290	85.485			
20	0.464	1.222	86.707			
21	0.432	1.137	87.844			
22	0.413	1.086	88.930			
23	0.387	1.018	89.948			
24	0.380	1.001	90.949			
25	0.359	0.944	91.893			
26	0.334	0.879	92.773			
27	0.326	0.857	93.629			
28	0.316	0.831	94.460			
29	0.300	0.789	95.249			
30	0.271	0.713	95.962			
31	0.255	0.672	96.634			
32	0.248	0.653	97.287			
33	0.212	0.559	97.846			
34	0.197	0.518	98.363			
35	0.184	0.483	98.847			
36	0.169	0.444	99.291			
37	0.141	0.371	99.662			
38	0.128	0.338	100.000			
Extraction Method: Principal Component Analysis.						

The above table represents the results of the variance explained. The individual variances explained are provided in the 3rd column. A total of 9 variables were extracted from 38 variables. 68.837 per cent of the total variances within the model can be explained by these 9 factors extracted. Moreover, we can say that the extent of variance in the individual variable that can be clarified by the retained factors is embodied by the communalities after extraction.

Table 4: Rotated Component Matrix[a]

	Component								
	1	2	3	4	5	6	7	8	9
1	0.396	-0.129	0.177	0.094	0.117	-0.049	0.717	-0.079	0.160
2	0.340	-0.109	0.158	0.113	0.069	-0.045	0.755	0.012	0.022
3	0.032	-0.193	0.169	0.159	0.105	-0.047	0.795	0.041	0.054
4	0.113	-0.126	0.199	0.758	0.046	-0.077	0.177	0.052	0.127
5	0.114	-0.128	0.071	0.856	0.075	-0.106	0.067	-0.052	0.031
6	0.183	-0.160	0.077	0.857	0.015	-0.102	0.072	-0.046	0.056
7	0.370	-0.106	0.567	0.352	0.186	0.006	0.216	0.001	0.105
8	0.299	0.008	0.644	0.205	0.248	0.011	0.006	0.075	-0.101
9	0.373	-0.099	0.710	0.063	0.113	-0.080	0.125	-0.059	0.049
10	0.753	-0.034	0.154	0.140	0.187	-0.073	0.121	0.047	0.067
11	0.747	0.025	0.148	0.105	0.272	-0.025	0.044	0.021	-0.230
12	0.398	-0.105	0.252	0.123	0.090	-0.049	0.052	-0.491	0.409
13	0.435	-0.218	0.150	0.337	0.159	0.002	0.187	-0.159	0.481
14	0.700	-0.129	0.158	0.181	0.144	-0.077	0.303	0.053	0.217
15	0.733	-0.049	0.342	0.030	0.143	-0.170	0.131	0.037	0.027
16	0.736	-0.030	0.301	0.021	0.099	-0.091	0.140	0.095	-0.011
17	0.709	-0.133	0.216	0.131	0.107	-0.023	0.191	-0.044	0.295
18	0.623	-0.179	0.361	0.109	0.125	-0.013	0.126	-0.032	0.194
19	0.121	-0.054	0.010	0.073	0.161	0.071	0.026	0.568	0.614
20	0.102	0.033	-0.012	-0.022	0.151	0.005	-0.123	0.794	0.119
21	0.005	0.018	0.025	-0.024	0.073	-0.063	0.119	0.839	-0.095
22	0.219	0.014	0.292	0.053	0.787	-0.088	0.027	0.151	-0.024
23	0.302	-0.073	0.148	0.109	0.825	-0.074	0.141	0.129	0.086
24	0.330	-0.089	0.146	0.019	0.808	-0.073	0.142	0.060	0.155
25	0.275	-0.077	0.752	0.071	0.090	-0.098	0.200	-0.026	0.155
26	0.352	-0.097	0.761	0.038	0.145	-0.109	0.144	-0.048	0.138
27	0.118	-0.190	0.358	0.212	0.164	-0.120	0.289	-0.037	0.520
28	-0.025	0.205	-0.148	-0.090	-0.176	0.591	-0.108	-0.094	0.021
29	-0.063	0.260	-0.035	-0.044	-0.064	0.784	0.012	0.040	0.016
30	-0.140	0.251	0.077	-0.089	-0.036	0.770	-0.018	0.017	0.076
31	-0.076	0.217	-0.132	-0.069	0.052	0.706	-0.028	-0.007	-0.226
32	0.012	0.650	0.011	-0.070	-0.066	0.204	-0.196	0.085	-0.087
33	-0.031	0.733	0.002	-0.134	-0.047	0.205	-0.087	0.090	0.146
34	-0.230	0.600	0.129	-0.003	-0.006	0.164	0.006	-0.179	-0.093
35	-0.166	0.708	-0.154	-0.024	-0.063	0.061	-0.029	-0.022	0.019
36	0.090	0.674	-0.134	-0.148	0.062	0.251	-0.131	0.059	-0.230
37	-0.017	0.704	-0.129	-0.133	-0.061	0.106	-0.039	0.035	-0.047
38	-0.098	0.539	-0.077	-0.062	0.112	0.274	-0.067	-0.017	-0.416

Extraction Method: Principal Component Analysis.

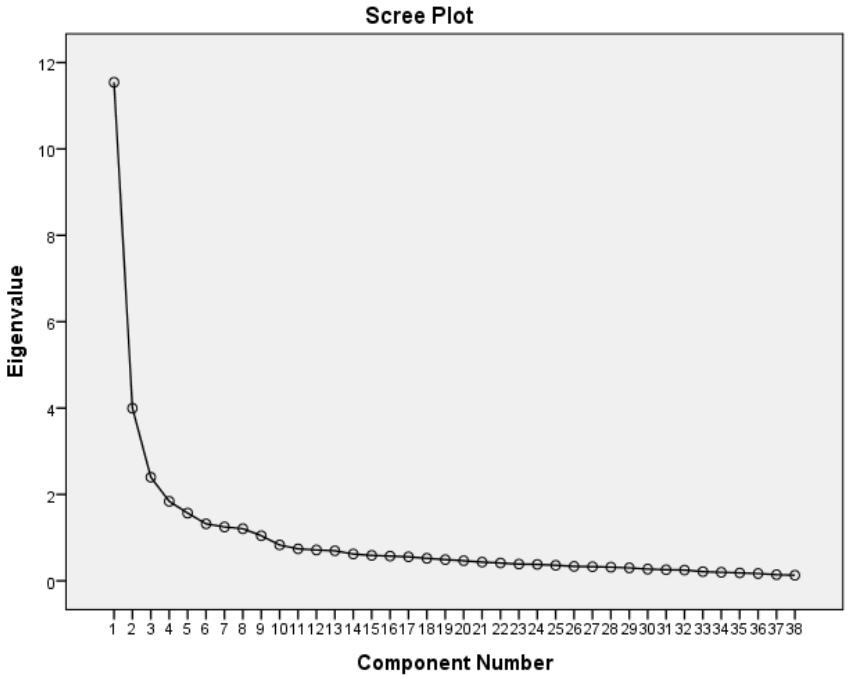
Rotation Method: Varimax with Kaiser Normalization.

Table 5: Factor Loadings

	Component								
	1	2	3	4	5	6	7	8	9
1	-	-	-	-	-	-	0.717	-	-
2	-	-	-	-	-	-	0.755	-	-
3	-	-	-	-	-	-	0.795	-	-
4	-	-	-	0.758	-	-	-	-	-
5	-	-	-	0.856	-	-	-	-	-
6	-	-	-	0.857	-	-	-	-	-
7	-	-	0.567	-	-	-	-	-	-
8	-	-	0.644	-	-	-	-	-	-
9	-	-	0.710	-	-	-	-	-	-
10	0.753	-	-	-	-	-	-	-	-
11	0.747	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	0.409
13	-	-	-	-	-	-	-	-	0.481
14	0.700	-	-	-	-	-	-	-	-
15	0.733	-	-	-	-	-	-	-	-
16	0.736	-	-	-	-	-	-	-	-
17	0.709	-	-	-	-	-	-	-	-
18	0.623	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	0.614
20	-	-	-	-	-	-	-	0.794	-
21	-	-	-	-	-	-	-	0.839	-
22	-	-	-	-	0.787	-	-	-	-
23	-	-	-	-	0.825	-	-	-	-
24	-	-	-	-	0.808	-	-	-	-
25	-	-	0.752	-	-	-	-	-	-
26	-	-	0.761	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	0.520
28	-	-	-	-	-	0.591	-	-	-
29	-	-	-	-	-	0.784	-	-	-
30	-	-	-	-	-	0.770	-	-	-
31	-	-	-	-	-	0.706	-	-	-
32	-	0.650	-	-	-	-	-	-	-
33	-	0.733	-	-	-	-	-	-	-
34	-	0.600	-	-	-	-	-	-	-
35	-	0.708	-	-	-	-	-	-	-
36	-	0.674	-	-	-	-	-	-	-
37	-	0.704	-	-	-	-	-	-	-
38	-	0.539	-	-	-	-	-	-	-

The above table provides the factor loadings where it can be seen that questions 10, 11, 14, 15, 16, 17, and 18 have been clubbed under the first factor. Questions 32, 33, 34, 35, 36, 37, and 38 have been clubbed under the second factor. Questions 7, 8, 9, 25, and 26 have been clubbed under the third factor. Questions 4, 5, and 6 have been clubbed under the fourth factor. Likewise, we can see that questions 22, 23, and 24 have been clubbed into the fifth factor. Questions 28, 29, 30, and 31 have been clubbed into the sixth factor, questions 1, 2, and 3 have been clubbed into the seventh factor, questions 20 and 21 have been clubbed into the eighth factor and finally questions 12, 13, 19, and 27 have been clubbed into the ninth factor. Hence, from 38 questions, a total of 9 factors were generated which can be identified as the key components or the factors that are influencing the consumers buying behaviour during the existence of the COVID-19 pandemic. So, on the basis of the concentration of the questions on the factors, we can name factor 1 as 'taste and preferences', factor 2 as 'discouraging offline purchase', factor 3 as 'after-sale service', factor 4 as 'purchasing decision', factor 5 as 'role of reference groups', factor 6 as 'change in purchase behaviour', factor 7 as 'searching the information', factor 8 as 'role of family members' and factor 9 as 'meeting expectations' and say that these are the decisive factors affecting the consumer buying behaviour.

Graph 1



The scree plot represents the initial eigen values in a graphical form. The term scree indicates the stones that fall from a cliff under the concept of geography. In a similar way, we are witnessing how the first observation falls to the second observation with a greater proportion after which the slopes remain almost the same. So, the graphical plot helps us to identify the components that should be retained on the basis of the change in the slope of the curve with greater proportion. So, we will certainly retain the first component as confirmed by the graph.

VI. CONCLUDING OBSERVATIONS

The COVID-19 pandemic has had a significant impact on consumer behaviour, leading to changes in the way people make purchasing decisions. In the concluding remark, the authors believe that taste and preferences, discouraging offline purchases, after-sale service, purchasing decisions, the role of reference groups, change in purchase behaviour, searching for information, the role of family members, and meeting expectations can affect consumer buying behaviour during the pandemic in Kolkata. With the pandemic, there has been an increase in demand for health and wellness products and a decrease in demand for luxury and non-essential items. Consumers are more focused on purchasing products that improve their physical and mental health. Moreover, due to the risk of infection, many consumers have shifted to online shopping, which has led to a decrease in offline purchases. Consumers are now more reliant on e-commerce platforms and home delivery services. Consumers are placing more emphasis on after-sale services, such as customer support and product warranties, as they are more cautious about the quality of the products they purchase. With the pandemic, consumers are taking more time to make purchasing decisions. They are conducting more research and comparisons before making a purchase. Consumers are seeking advice and recommendations from their reference groups, such as friends and family, before making a purchase. Online reviews and social media platforms are also playing an increasingly significant role in this decision- making process. The pandemic has led to a shift in consumer behaviour, with an increase in online shopping, contactless payments, and a decrease in impulse purchases. Consumers are conducting more extensive research and seeking out information online before making a purchase. They are looking for reliable sources of information and conducting their own due diligence.

With the pandemic, consumers are more likely to make group decisions with their family members. They are also more cautious about the safety and health of their family members when making a purchase. Consumers are placing higher expectations on brands and retailers to provide safe and reliable products and services during the pandemic. Brands that fail to meet these expectations are likely to see a decrease in customer loyalty.

In conclusion, the COVID-19 pandemic has brought about significant changes in consumer behaviour, with consumers becoming more cautious and taking more time to make purchasing decisions. Brands and retailers need to adapt to these changes and provide products and services that meet the changing needs and preferences of consumers.

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CONFLICT OF INTERESTS

The authors declare that there is no conflict of interest that are directly or indirectly related to this research work.

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DATA AVAILABILITY STATEMENT

Not Applicable.

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