

Exploring the Factors Affecting Consumer Purchase Behavior during COVID-19: A Case Study of Techno Products in Dhaka City

Syed Abdullah Al Noman¹, Takrima Jannat², Anika Meher Amin³, Md. Shafkat Imon Araf⁴, Md. Irtija Tahmid Hossain⁵ and Siha Fatima Hoque⁶

¹ Bangladesh University of Professionals

Received: 9 February 2021 Accepted: 2 March 2021 Published: 15 March 2021

Abstract

This paper proposes an exhaustive examination of investigating the variables influencing shopper/consumers' buy conduct during COVID-19 on techno items in Dhaka city. This study intends to investigate the components emerging from vulnerability like Covid pandemic on the customer buy conduct of techno items in Dhaka city. Methodology: 226 respondents were surveyed using a 19-items structured questionnaire. Exploratory Factor Analysis technique was used to identify the significant factors. Findings: Results demonstrated that five factors, namely, economic fluctuation and technological value chain, e-commerce wave, digital workplace/force, crisis attitude, motivations of changing consumer behavior were found significantly responsible for influencing shopper/consumers' buy conduct during COVID-19 on techno items in Dhaka city.

Index terms— covid-19, consumer behavior, technology industry, economy fluctuation.

1 Introduction

Initiating in December 2019, in the city of Wuhan in China, an outbreak of the COVID-19 virus drove the world into one of the largest pandemics. Though WHO declared the Pandemic on March 11, 2020. The virus is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which spreads through the respiratory systems very rapidly, becoming very difficult to contain, leading the city and eventually all other countries into lockdown for an undetermined amount of time. After the arrival of 312 citizens of Bangladesh from Wuhan, China and 14 days of quarantine, the first case of coronavirus was detected on March 8, 2020.

2 I

According to reports, as of July 8, 2020, 168, 645 Bangladeshi citizens had been diagnosed positive with the novel Coronavirus. While the number of deaths due to COVID-19 had reached 2,151 by that date. (Bangladesh Preparedness and Response Plan for COVID- 19, ??021) With the ongoing Pandemic and lockdown for a long while, especially in Dhaka due to the large population, the purchase behavior of the city's inhabitants changed noticeably. The techno industry faced significant changes in its sales and customer behavior. With the increased use of techno products and the internet, Dhaka inhabitants increasingly started buying smartphones, tabs, laptops, routers etc. Socialization and communication inclined more to the virtual ways due to the lengthy lockdown, and people relied on video calling to keep in touch with friends and family. In attempts to keep themselves out of boredom, people also increased their video streaming and video gaming times. ??Report, 2020).

While there was a significant change in consumer behavior, accelerating the purchase of techno products due to rapid digitalization, the financial strains caused by the Pandemic also decreased the purchase of techno

products for many. Unemployment and terminations have caused many people to see buying techno products as a luxury. The usage of techno products significantly increased due to digital commerce. Online shopping, digital workforces, work from home opportunities, online classes, etc., escalated the need and usage of techno products.

The broad objective of this paper is to inspect and study the factors that affected consumer purchase behavior and use of technological products in the capital, Dhaka city. Some of the specific objectives of the paper include studying crisis attitude and change in consumer behavior, investigating the effects of rapid digitalization and analyzing the relationship between the technological value chain and economic fluctuation due to the e-commerce wave.

3 II.

4 Literature Review

The covid-19 has shaped our preferences & even worldwide, the necessary foundation of many aspects has changed. From the economy to even geopolitics, everything has taken a new turn in the crisis. (Aktürk et al., 2020) The developing Asian countries have been affected by the Pandemic (though lately) in the economic sectors. Mostly the production & tourism are greatly hampered. India, Bangladesh & other south Asian countries are also included in this. Developed countries were also affected as they could not manage many of their procurement from the nations. They could import materials earlier at a cheap cost. (Debnath, 2020).

The production or GDP is impended as many of the country's export is affected by Pandemic. As the global supply chain is impeded due to this time, Bangladesh also falls in the queue as it's one of the main drives in the garments industry. The rural economy suffered due to a lack of remittance. For urban people, it is less likely to have continuous fluidity of cash for even covering basic needs & safety issues. (Amit. 2020) Covid affected 95% of household's income (Antara, 2020) But for the City areas, for instance, the capital Dhaka was not affected as the same. Banking sectors, job sectors even start-ups were slowed down, but we saw a great change in the city habitats livelihood behavior. It affected the purchase attitude (Wright & Blackburn, 2020) of the whole world population. Many fear factors, safety factors have originated that were never seen before. Other important drivers such as social presence, e loyalty have been playing a very significant role. (Addo, Jiaming, Kulbo & Liangqiang, 2020)

The E-commerce industry had to struggle a lot to gain trust in the customer for a long (ABIR, 2020). Even they were struggling to raise funds were at boom comparing to other start-ups in the pandemic situation, even in our country, except it comes to E-commerce. Pandemic is likely to open a new funnel of business attitude, thus unveiling a new perspective in the behavior of the consumer. (Price water house Coopers. (n. d.).)

This recently emerged trust on the platform implies many things. First of all, a great technological advancement movement & an extraordinary turn of the event of Dhaka city's people from an analog to technologically oriented consumer behavior. Due to the Pandemic, many curriculums have gone online, such educations, jobs, the usage of technological devices were greater. (Fatema, 2020) Also, during pandemic increment of broadband internet users is in Dhaka is very significant (from 2.82 million in February to 8.57 million in June). People spend their "leisure" on the internet, playing games (PUBG, for example), surfing randomly on the web. With the shutdown of schools, offices, shops and markets, people have started working from home, passing the time using social media. Students are attending classes over the internet; customers are buying products on ecommerce sites, internet use has gone up (Irani, 2020) So, the usage of technological devices has increased very rapidly. This means the consumer behavior towards technology is immense. Consumer behavior is a field that draws on different disciplines such as psychology, sociology & economics to explain the choices a consumer makes. It is the study of individuals and organizations and how they select and use products and services. The study of consumer buying behavior is most important for marketers as they can understand the expectation of the consumers. It helps to understand what makes a consumer buy a product. It is important to assess the kind of products liked by consumers to release them to the market. (Solomon, M., Russell-Bennett, R., & Previte, J. (2012) Another significant thing that happened is, consumers behavioral pattern is shifting to an "impulsive one." Due to immense technological access & becoming prone to online shopping, people are most likely making sudden & unplanned decisions to purchase a product. This effect was most noticed in the mobile system users, individuals who use a mobile phone to shop. It also shows that mobile phone interaction causes them more emotional reactions or attachments, resulting in the purchase. ?? Pre-Covid survey assumed that smart phone consumption is most likely to increase 7% in the crisis. ("COVID-19 and the technology industry", 2020) But the technology sector's demand fluctuated a lot. One of the reasons is overseas consumption of raw materials is hampered. Also, consumers were very much reactive with the pricing because of the crisis. But forecasting the demand was one of the most challenging issues for this sector amidst this Pandemic. ??Kosnac, 2020) Among all these fluctuations & turning of events, one thing is for sure that technological product or service industry has immense possibility & potential & significant impact on consumer behavior that could have less likely predicted earlier. Experts suggest that it will again flourish at its full extent in no longer time.

5 Research Methodology a) Sample and Procedures

The respondents of our study are mainly tech consumers of different walks of life who bought /consumed products & mostly tech services in the time of covid-19. We made a questionnaire and collected data from our respondents.

The sample of the study was determined by the followed formula suggested by Yamane (1967). $n = N / (1 + N e^2)$ Where, n = Sample Size, N = Population size, e = Level of Precision, in calculating the number of samples the following assumptions were made to determine, $n = 226$ if Population Size is more than 58,000; the level of precision is 7%.

The questionnaires were filled by 226 respondents of different age groups of people who had to buy or consume tech products/services to work from home, to attend online classes, to communicate with their close ones from home and for entertainment purposes. To collect data for this research structured survey questionnaires were distributed online among respondents living mostly in Dhaka city and a few living in the suburbs.

6 b) Participants

Out of 226 tech consumers, 4.01% aged between Below 20 Years, followed by 20-30 years (90.62%), 30-40 years (3.57%), 40-50 years (1.33%), and 50 or above (0.44%). most of the youth-centric respondent only 8.07% were married. Male-female ratio is 34.08% to 65.47%, while 0.44% preferred not to say. (Appendix 1)

7 c) Reliability

Reliability is defined as the consistency across items like the internal consistency of the variables used in the study. This study shows that the reliability score (Cronbach's Alpha) is at the acceptable limit (0.689) (Nunnally, 1978)

8 d) Questionnaire design

The structured questionnaire by Dabholker (1996) was used to collect information from literature review on the factors fluctuating consumer behavior because of Covid-19. All statements in the questionnaire were measured on five-point scale ranging from 1 to 5 -1 being strongly agree and 5 being strongly disagree.

One of the relative advantages of using this scale is its suitability for the applications of multifarious statistical tools used in marketing and social research study (Malhotra, 1999).

9 Data Analysis Technique

In descriptive analysis, demographical factors for example gender, age, profession were analyzed. Exploratory Factor Analysis (EFA) was used to analyze the data from descriptive data. The survey was conducted in January 2021. Using SPSS, principal component analysis with a varimax rotation was conducted to analyze the survey data., Multiple Regression was conducted using SPSS to recognize the relationships between the significant factors and the dependent and independent variables.

10 V.

11 Results and Discussions a) Results of Factor Analysis

The results of factor analysis show that all the variables concerning "Exploring the impact of COVID-19 on consumer purchase behavior: A case study of techno products in Dhaka city." Are very high, indicating the variables are important in this area of study (Appendix 2). Figure 5 shows the critical factors for the impact of consumer behavior towards techno products. It shows that factors such as Economy fluctuation & Technological value chain, E-commerce wave, Digital workplace/force, Crisis attitude, Motivations of changing consumer behavior are the critical factors for the impact of consumer behavior towards techno products. The Variance of factor named Economy Fluctuation & Technological value chain is the highest (23.109%) followed by Motivations of changing consumer behavior (9.887%), E-Commerce wave (7.811%), Novelty of digital workforce & environment (6.536 %), Crisis Attitude (5.782%). The total Variance of the data set is 53.125% indicates that a major portion of the data set is included in the analysis. Principal Component Analysis (PCA) and the Varimax Rotation approach were applied to derive the independent variables. Given the sample size of 226, standardized factor loadings of 0.40 and higher for evaluative purposes are considered significant in this research. A five-factor structure was developed based on the eigen values of the factors (above 1).

This paper adopted four broadly recognized hypotheses for Exploratory Factor Analysis (EFA) (Hair et al., 1998; Andy, 2000):

(i) KMO sampling adequacy value above 0.5. (ii) The minimum eigen value for each factor is 1. (iii) The factor loadings of each measured variable are above 0.40. (iv) The use of varimax rotation is the most used orthogonal rotation technique that helps to achieve a simplified factor model. (Andy, 2000). .000

Factor analysis can only be conducted if the Kaiser-Meyer-Olkin (KMO) and Bartlett's test of Sphericity value of the dataset are significant. Hair et al., (2010). Figure 6 shows that Kaiser's measures of sampling adequacy of this research are 0.795, and Bartlett's test of sphericity is significant ($p=0.000$), which indicates the viability of factor analysis in our research. The results of exploratory factor analysis show that all the variables concerning the critical factors for the impact of consumer behavior towards techno products in Dhaka city have high commonalities indicating the variables are important in this study (Figure ??).

12 VI.

13 Results of Regression Analysis

The model summary shows that the R square value of the model is 0.251 (Figure 8). Individual critical factors like Economy fluctuation & technological value chain and New motivations for changing behavior are significant factors for the impact of consumer behavior towards techno products in Dhaka city. The factors such as Ecommerce wave, Novelty of digital workforce & environment, Crisis attitude are not found significant in this study (Figure 10).

14 VII. Recommendation & Conclusion

The study is the first to correlate consumer behavior towards techno products during recent Covid pandemic. This study finds two significantly related factors to the subject among the extracted five factors. Those are Economy fluctuation & technological value chain and New motivations for changing behavior. We believe this study has a great potential for the technological companies that provides tech products & services to understand the impulse purchase behavior of the target consumer from a unique angle. This paper can give us an idea how pandemic in digital world not only shapes consumer behavior towards the necessary livelihood or health issues but also affect a bourgeoning tech-based global village very empirically.

Model		Sum of Squares	df	Mean Square	F
Regression		43.833	5	8.767	14.744
1		Residual	130.809	220	.595
		Total	174.642	225	
a. Dependent Variable: I think some factors affect consumer purchase behavior during COVID-19 to buy or connect more with techno products.					
b. Predictors: (Constant), REGR factor score 5 for analysis 1, REGR factor score 4 for analysis 1, REGR factor score 3 for analysis 1, REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1					
Model	Unstandardized Coefficients		Standardized Coefficients		Beta
	B	Std. Error			
(Constant)	1.960	.051			
Economy fluctuation & technological value chain	.273	.051			.310
1 Motivations for changing behavior	.317	.051			.360
E commerce wave	.096	.051			.110
The Novelty of the digital workforce & environment	-.093	.051			-.106
Crisis attitude	.038	.051			.043
a.					
Model	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics
1	.501 a	.251	.234	.771	.251
					14.744
					5

[Note: a. Predictors: (Constant), REGR factor score 5 for analysis 1, REGR factor score 4 for analysis 1, REGR factor score 3 for analysis 1, REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1 b. Dependent Variable: I think some factors affect consumer purchase behavior during COVID-19 to buy or connect more with techno products. ANOVA shows that all the five factors together significantly related to the impact of consumer behavior towards techno products during the Covid situation in Dhaka city (Figure9).]

Figure 1:

.1 Acknowledgement

The research has been completed due to the kind support of many. We would like to thank Lecturer Takrima Jannat ma'am for working with us and guiding us through every step. We would also like to thank all the respondents who were cooperative and helped us by answering the questions of questionnaire. It was indeed a great experience for us. Above all we would like to thank the Great Almighty, the author of knowledge and wisdom for his countless mercy.

[Bangladesh Preparedness and Response Plan for COVID-19 ()] *Bangladesh Preparedness and Response Plan for COVID-19*, http://www.mohfw.gov.bd/index.php?option=com_docman&task=doc_download&gid=23359&lang=en 2021. (Government of the People's Republic of Bangladesh)

[Wakabayashi (2020)] *Big Tech Could Emerge From Coronavirus Crisis Stronger Than Ever*, D Wakabayashi . <https://www.nytimes.com/2020/03/23/technology/coronavirus-facebook-amazon-youtube.html> 2020. March 24.

[Irani ()] *Broadband internet services surge in Covid-19 Pandemic*, B Irani . <https://www.dhakatribune.com/business/commerce/2020/09/09/broadband-internet-services-surge-in-covid-19-pandemic> 2020. September 9. Dhaka Tribune.

[Alam ()] 'Buying Behavior under Coronavirus Disease (COVID-19) Pandemic Situation: An Online Perspective Case in Bangladeshi Shoppers'. J Alam . *Chinese Business Review* 2020. 19 (3) p. .

[Solomon et al. ()] *Consumer behaviour*, M Solomon , R Russell-Bennett , J Previte . 2012. Pearson Higher Education AU.

[Amit (2020)] 'Coronavirus and Impact on the Bangladesh Economy: Assessing the Damage of the Black Swan of 2020'. S Amit . <https://apjjf.org/2020/15/Amit.html> *The Asia-Pacific Journal: Japan Focus* 2020. August 1.

[Pricewaterhousecoopers (2020)] 'COVID-19 and the technology industry'. Pricewaterhousecoopers . <https://www.pwc.com/us/en/library/covid-19/coronavirus-technology-impact.html> 18 S. O October 24, 2020. 2020. May 27. (Report) (PwC.. Amid the Covid-19)

[Antara (2020)] *Covid-19 impacts 95% households' income*, N Antara . <https://www.dhakatribune.com/health/coronavirus/2020/06/20/covid-19-impacts-95-households-income> 2020. June 20. Dhaka Tribune.

[Addo et al. ()] 'COVID-19: fear appeal favouring purchase behaviour towards personal protective equipment'. P C Addo , F Jiaming , N B Kulbo , L Liangqiang . *The Service Industries Journal* 2020. 40 (7-8) p. .

[Andy ()] *Discovering statistics using spss for windows: Advanced techniques for the beginner*, F Andy . 2000.

[LizLee (2019)] *Game Console Market Set for a Leap in 2020*, LizLee . <https://www.counterpointresearch.com/game-console-market-set-leap-2020/> 2019. September 12.

[Kosnac] *How Coronavirus Is Affecting the Technology Industry*, F Kosnac . <https://www.eisneramper.com/coronavirus-te-blog-0320/>

[Wright Blackburn (2020)] *How COVID-19 will permanently change consumer behaviour, Fastchanging consumer behaviours influence the future of the CPG industry*, Wright & Blackburn . https://www.accenture.com/_acnmedia/PDF-123/Accenture-COVID19-Pulse-Survey-Research-PoV.pdf 2020. October 20, 2020.

[Sheth ()] 'Impact of Covid-19 on Consumer Behavior: Will the Old Habits Return or Die?'. J Sheth . *Journal of Business Research* 2020.

[Debnath ()] 'Impact of COVID-19 on Consumer Purchase Behaviour in Retail Sector-Study Based in Kolkata Area'. S Debnath . *Available at SSRN* 2020. 3634598.

[Malhotra ()] *Marketing Research: an applied orientation*, N K Malhotra . 1999. London: Prentice-Hall International.

[Hair et al. ()] *Multivariate data analysis*, J F Hair , R E Anderson , R L Tatham , W C Black . 1998. 1998. Upper Saddle River.

[Nunnally ()] J Nunnally . *Psychometric theory*, 1978. 1978. 2.

[Naiya (2020)] 'One in Every Three Smartphone Users Will Cut Spending by 20% or More'. Naiya . <https://www.counterpointresearch.com/smartphone-users-cut-spending-nextsmartphone/#?%7E:text=One%20in%20three%20respondents%20to,> 2020. September 2. (by%20the%20COVID%20crisis)

[Pandemic, smartphones take a blow. The Daily Star] *Pandemic, smartphones take a blow. The Daily Star*, <https://www.thedailystar.net/amid-the-covid-19-pandemic-smartphones-take-blow-1905835>

[Zhang et al. ()] 'Research on mobile impulse purchase intention in the perspective of system users during COVID-19'. W Zhang , X Leng , S Liu . *Personal and Ubiquitous Computing* 2020. p. .

- 227 [Aktürk et al. ()] *The Covid-19 Pandemic: A Global Outlook*, ? Aktürk , M Arnold , M Ba?bay , S Birgel , T
228 Cherkaoui , R Mohydin . 2020.
- 229 [The Economic Impact of the COVID-19 Outbreak on Developing Asia1 (2020)] [https://www.adb.org/](https://www.adb.org/sites/default/files/publication/571536/adb-brief-128-economic-impact-covid19-developing-asia.pdf)
230 [sites/default/files/publication/571536/adb-brief-128-economic-impact-covid19-developing-asia.](https://www.adb.org/sites/default/files/publication/571536/adb-brief-128-economic-impact-covid19-developing-asia.pdf)
231 [pdf](https://www.adb.org/sites/default/files/publication/571536/adb-brief-128-economic-impact-covid19-developing-asia.pdf) *The Economic Impact of the COVID-19 Outbreak on Developing Asia1*, 2020. March 6.
- 232 [Fatema (2020)] *Weak infrastructure denies benefit of online classes to many. The*
233 *Business Standard*, K Fatema . [https://tbsnews.net/bangladesh/education/](https://tbsnews.net/bangladesh/education/online-class-where-education-has-turned-misery-125077)
234 [online-class-where-education-has-turned-misery-125077](https://tbsnews.net/bangladesh/education/online-class-where-education-has-turned-misery-125077) 2020. August 29.