Impact of Covid-19 in Changing Lifestyle Notions of Green Consumers: A Case Study of Dhankuta Municipality

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Abstract

This study investigates the impact of COVID-19 on green consumer lifestyle choices in Dhankuta Municipality, Nepal, employing a mixed approach to understand global and local effects. Utilizing a theoretical framework encompassing Economic Theory, Planned Behavior Theory, and Ecological Modernization Theory, the research aims to uncover the true influence of COVID-19 on lifestyle notions and sustainable practices. The methodology involves stratified sampling to ensure diverse perspectives, with a sample size of 406 respondents aged 18 and above. Demographic findings reveal a nearly balanced gender distribution (60% male, 40% female), with a significant proportion (39.7%) in the 26-35 age group, indicating their crucial role in consumer decisions. Notably, 37.2% of respondents have experienced COVID-19 infection, providing insights into the pandemic's impact. Findings demonstrate a substantial positive correlation ($r = 0.675$, $p < 0.01$) between COVID-19 and willingness to pay for green products. Regression analysis reveals a significant relationship between the pandemic and changes in lifestyle notions, explaining 72.3% of the variance. These results underscore the need for sustained exploration of post-COVID green consumer behavior and inform strategies for policymakers and businesses in fostering sustainable consumption in Dhankuta Municipality, Nepal.

Keywords: green consumer behavior, COVID-19 impact, sustainability, Dhankuta municipality, environmental consciousness, lifestyle notion

Introduction

Background of the Study

With the continuing exploitation and destruction of the environment and natural resources, the concept of "green consumerism" has gained significant traction and garnered increasing global attention. The COVID-19 emergency that started in late 2019 has had a significant impact on people's lives everywhere around the world (IEA2020). This

phenomenon holds particular relevance in the context of Nepal, where despite the growing eco-awareness (Moisander J. , 2007), there remains a pressing need for the wider adoption of organic and green products. The outbreak of the COVID-19 pandemic has further underscored the significance of sustainable practices, as it has triggered a surge in the consumption of single-use plastics, thus highlighting the urgent necessity for eco-friendly alternatives. Additionally, the pandemic prompted the Government of Nepal to impose a nationwide lockdown on March 24, 2020, exacerbating fear and chaos within the country. The impact left behind due to the COVID-19 pandemic has been crucial in shifting consumer behavior in Nepal, leading to the adoption of green and organic products (Thapa, 2019). The pandemic's disruptive nature and increased health concerns have pushed people to reconsider their purchasing habits, looking for items that value environmental sustainability and personal well-being. As customers become more aware of the link between their health and the environment, there is a growing preference for eco-friendly alternatives, indicating a significant movement toward green consumerism in Nepal.

Green consumerism encompasses a range of consumer behaviors that prioritize sustainability and environmental consciousness (D.A.Cohe, 2014). Within this context, consumer preference for organic food has gained considerable attention in recent years. The decision to choose organic food is influenced by various factors, including consumers' understanding and perception of organic attributes related to health, the environment, animal welfare, and sensory appeal. Trust in organic certification and labeling, personal experiences with organic food, and the availability of organic food in their area also play significant roles in shaping consumers' purchasing behavior (D.A.Cohe, 2014). Additionally, demographic characteristics such as gender, family composition, education, income, and lifestyle choices provide valuable insights into the target audience for sustainable food options.In Nepal, consumer shifts toward organic or green products have the potential to greatly contribute to the achievement of numerous Sustainable Development Goals (SDGs). One of the proposed SDG 3 targets is to reduce maternal mortality to fewer than 70 per 100,000 live births by 2030. Consumers can indirectly assist this goal by embracing eco-friendly products, as the use of organic and green products fosters a better and safer environment for expecting moms and their children.

The recent rise of green consumption in Nepal presents a unique opportunity to drive progress toward long-term development goals. By aligning their purchasing habits with environmental consciousness, consumers can actively contribute to the achievement of Sustainable Development Goals (SDGs), including promoting maternal health, ensuring resource efficiency, reducing waste, and fostering sustainable economic growth. This shift towards green products signifies a commitment to a safe and healthy lifestyle and demonstrates a profound consideration for the planet's long-term well-being.

Profile of Dhankuta Municipality

Located in eastern Nepal's Mahabharat mountain range, Dhankuta is a vibrant town rich in history and culture. Once the capital of the Gauda Kingdom, it's now a bustling center for trade and commerce, especially for nearby districts. Dhankuta is known for its clean streets and beautiful surroundings, making it one of Nepal's tidiest cities. It's also famous for its organic produce, particularly its delicious Avocado.The town's name, Dhankuta, comes from its history of threshing paddy, showing its close ties to agriculture.Following the reform of the provincial structure, Dhankuta municipality now comprises 10 wards, ensuring efficient governance and representation for its residents.

Consumer Behavior and Market Dynamics

In Dhankuta Municipality, the term "consumer" encompasses the entire population of 34,156 individuals across 8,653 households. These consumers play a vital role in the local economy by engaging in the consumption of goods and products. Their consumption patterns are twofold: firstly, a segment practices farming, producing goods for self-sufficiency in food and agriculture. Secondly, consumers also rely on nearby markets for purchasing goods, reflecting a blend of local production and external sourcing to meet their consumption needs.

Table 1

The Number of Households and Population

Ward No.	Number of households	Male	Female	Total population	Population above 18 years old	Gender ratio	Average family size	Population density per square kilometer
1	1,639	3,097	3,367	6,464	3900	91.98	3.94	865
2	962	1,859	2,099	3,958	3168	88.57	4.11	189
3	506	983	1,077	2,060	1744	91.27	4.07	182
4	657	1,132	1,356	2,488	1965	83.48	3.79	697
5	719	1,163	1,466	2,629	1690	79.33	3.66	679
6	989	1,711	1,861	3,572	2614	91.94	3.61	546
7	1,162	1,902	2,332	4,234	2658	81.56	3.64	1336
8	459	906	1,067	1,973	1594	84.91	4.30	159
9	943	2,149	2,097	4,246	2804	102.48	4.50	142
10	617	1,228	1,304	2,532	1483	94.17	4.10	219
Total	8,653	16,130	18,026	34156	23620	89.48	3.95	308

Note. Dhankuta municipality survey report 2075 and election commission report.

Analyzing the data from Table No. 1 reveals notable patterns in consumer behavior and market dynamics within Dhankuta Municipality. Ward No. 1 stands out with the highest population above 18 years old, signaling a substantial consumer base. This insight suggests that businesses in Ward No. 1 should align their products and services with the preferences and needs of this demographic for effective targeting. Conversely, Ward No. 9 exhibits the highest female-to-male ratio, implying distinct consumer preferences and demands. Businesses in this ward may need to tailor their offerings to meet the specific needs of women, considering factors like affordability, bulk packaging, and family-oriented promotions to address the unique characteristics of this consumer segment.

COVID-19 Response and Infection Statistics

Nepal formally announced its first case of COVID-19 on January 23, 2020 , when a 31-year-old student, who had returned to Kathmandu from Wuhan on 9 January, tested positive for the disease. (Ministry of Health and Population, 2020).Three months later, on March 23, 2020, the second case was detected in a 19-year-old female who had traveled from France via Doha, Qatar, (Ministry of Health and Population, 2020). Subsequently, a nationwide lockdown was implemented in Nepal from March 24, 2020, to July 21, 2020, aiming to prevent the spread of COVID-19, as stated by (Pradhan, 2020).The impact of the pandemic was felt across various districts, including Dhankuta district. Until September 22, 2020, Dhankuta district had conducted 2,144 PCR tests, out of which 45 were positive cases. Among these cases, 4 were females and 41 were males, as (District Health Offic, 2020).Fortunately, there were no recorded deaths in the district due to COVID-19 during this period.

Table 2

Statistical Data of COVID-19 infections and Deaths in Dhankuta Municipality

Ward No.	Covid-19 Infected	Deaths
1	211	4
2	48	0
3	71	1
4	180	3
5	123	2
6	246	2
7	253	1
8	24	0
9	70	0
10	52	0
Total	1288	13

Note. Dhankuta Municipality Record 2022

Statement of the Problems

The problem statements address the research gaps and seek to understand the specific relationships, influences, and impacts on green consumer behavior and perception of organic food in Dhankuta Municipality during the COVID-19 pandemic.

- How has the COVID-19 pandemic changed the consumer spending patterns of green consumers in Dhankuta Municipality?
- How has the COVID-19 pandemic influenced the psychological perceptions and attitudes of green consumers in Dhankuta Municipality towards sustainable lifestyles?

Objective of the Study

The following objectives provide a comprehensive framework for studying the impact of COVID-19 on changing lifestyle notions of green consumers in Dhankuta Municipality and offer specific areas of investigation for the research.

- To investigate the impact of COVID-19 on changes in lifestyle notions among Dhankuta Municipality residents.
- To examine the relationship between changes in lifestyle notions and green consumer behavior.
- To analyze the interconnected influences of demographic factors, psychological dimensions, and social factors on sustainable consumption behavior.

Hypothesis of the Study

The following null and alternative hypotheses provide the basis for statistical testing to determine the significance and direction of the relationships between the identified factors and green consumer behavior in the given research context.

Hypothesis: Changes in Lifestyle Notions and Green Consumer Behavior

H_1: Changes in Lifestyle Notions Influence Green Consumer Behavior in Dhankuta Municipality

H_0: There is no Significant Relationship between Changes in Lifestyle Notions and Green Consumer Behavior in Dhankuta Municipality.

Rationale of the Study

The rationale of the study in the research paper holds a significant position as it explain the importance and potential usefulness of conducting such research. Provides insights into the impact of COVID-19 on consumer behavior and the shift towards green consumerism.

- Helps understand the changing preferences and demands of consumers towards organic and green products.
- Highlights the importance of promoting sustainable practices and eco-friendly alternatives.
- Explores the link between health, environment, and consumer behavior.

Theoretical Framework

The theoretical framework for this study will be built upon established theories and concepts in the field of consumer behavior and sustainable consumption. When analyzing consumer behavior and sustainability, several theories and models can provide valuable insights. Here are six theories and models that can be used as dimensions in research:

Economic Theory

Theory of Planned Behavior (TPB)

The TPB is a well-established theory that explains how attitudes, subjective norms, and perceived behavioral control influence an individual's intention to perform a behavior. The TPB has been used to explain a wide range of behaviors, including green consumer behavior. For example, a study by (Kubra S. Sajid, 2022) found that the TPB was a significant predictor of green purchase intention among consumers in Taiwan. (Maichum, Parichatnon, & Peng, 2016).

Psychological Theory

Value-belief-norm Theory (VBN)

The VBN theory is a newer theory that explains how values, beliefs, and norms influence an individual's pro-environmental behavior. The VBN theory has been used to explain a variety of pro-environmental behaviors, including recycling, energy conservation, and sustainable transportation. For example, a study by (Elsantil, 2021) found that the VBN theory was a significant predictor of recycling behavior among college students in the United States. (Ezlika M. Ghazali, 2019).

Social Theory

Social Cognitive Theory (SCT)

The SCT is a theory that explains how learning and social factors influence an individual's behavior. The SCT has been used to explain a wide range of behaviors, including green consumer behavior. For example, a study by Bandura and colleagues (2012) found that the SCT was a significant predictor of green purchase intention among consumers in the United States. (Chen X. R., 2022)

Environmental Theory

The Ecological Modernization Theory (EMT)

The EMT is a theory that explains how environmental concerns can be integrated into economic development. The EMT has been used to explain a variety of environmental policies and practices, such as the development of renewable energy sources and the adoption of energy-efficient technologies. For example, a study by (Maichum, Parichatnon, & Peng, 2016)) found that the EMT was a significant predictor of the adoption of energy-efficient technologies in European countries. (Arthur P.j. Mol, 2013).

Sustainability Theory

The Triple Bottom Line (TBL)

The TBL is a framework for measuring the sustainability of a business or organization. The TBL considers three dimensions of sustainability: economic, environmental, and social. For example, a study by Frederic found that the TBL was a useful framework for measuring the sustainability of businesses in the United Kingdom. (Frederic Narbel, 2017)

Literature Review

COVID-19 has led to a shift in consumer behavior, with increased emphasis on hygiene products, environment-friendly products, and regional products, influencing their willingness to buy Indian brands and products (Verma, 2021) . The COVID-19 pandemic has significantly influenced Chinese consumers' green food purchase intentions, with attitude, perceived behavioral control, moral attitude, health consciousness, and the impact of COVID-19 playing significant roles (Qi, 2021).According to findings from the June 2021 Global Consumer Insights Pulse Survey conducted by a consulting and accounting firm, there has been a notable surge in online shopping due to the impact of COVID-19. The study indicates that the implementation of lockdown measures and widespread remote work arrangements have significantly contributed to this shift. Consumers are now placing greater importance on factors such as comparing prices, selecting healthier options, and actively supporting local businesses to promote eco-friendly shopping practices (Survey, 2021).

The novel coronavirus, SARS-CoV-2 emerged in Wuhan, China, in early December of 2019 and is known to cause mild to severe respiratory illness when transmitted to humans (Zhu H., 2020).The origin of COVID-19 is believed to be a zoonotic transmission from animals to humans, possibly originating from a seafood market in Wuhan, China. The first variant of the virus, known as the Alpha variant or B.1.1.7, was identified in the United Kingdom and showed increased transmissibility. The second variant, called the Delta variant or B.1.617.2, was first identified in India and is highly contagious. In the context of Nepal, COVID-19 has had a significant impact. The country faced its first wave of infections in 2020, with subsequent waves and surges. The Alpha variant was detected in Nepal in late 2020, causing concerns over increased transmission. The Delta variant has also been detected in the country, leading to a surge in cases and straining the healthcare system.

Nepal has implemented various measures to control the spread of the virus, including lockdowns, travel restrictions, and vaccination campaigns. However, challenges such as limited healthcare infrastructure and vaccine availability persist. Efforts are being made to increase vaccination coverage and strengthen healthcare systems to combat the impact of COVID-19 and its variants in Nepal.

Changes in Consumer Behavior during the Pandemic

During the COVID-19 pandemic, changes in consumer behavior have been observed globally, including in Dhankuta municipality in Nepal. It is worth exploring whether these changes in consumer behavior, particularly the adoption of organic or green products, have become permanent or temporary habits. Temporary changes in habits hold less significance, so examining research on consumer behavior during the pandemic provides valuable insights.

The spread of the COVID-19 pandemic led to a globally manifested change in spending levels related to consumer behavior (Nielsen., 2020). Specifically, a growing tendency in the sales of necessities has been observed: consumer priorities have become centered on the most basic needs, including food, hygiene, and cleaning products. In Italy, consumer shopping preferences have changed throughout the pandemic (Adolfo Di Crosta, 2021). This shift can be attributed to people becoming more health-conscious and actively seeking organic food and beverages to boost immunity and overall well-being. Consequently, the adoption of organic products may have developed into a more permanent consumer habit in Dhankuta municipality.

Furthermore, the pandemic has brought about significant changes in consumer behavior, notably a surge in online shopping and e-commerce activities. The COVID-19 pandemic disrupted Nepal's economy, leading to a sharp decline in tourism. However, it also created new opportunities for businesses to embrace e-commerce. Sabji Land, an emerging online store selling organic fruits and vegetables, witnessed a significant 60% increase in online sales since the outbreak. Consumer behavior has shifted towards online shopping, allowing businesses like Sabji Land to showcase their quality and value. Additionally, government reforms and initiatives, including improved online payment options and regulatory frameworks, have further facilitated the growth of e-commerce in Nepal (Conference, 2021). Lockdowns and restrictions on physical retail stores have contributed to this shift, pushing consumers towards online platforms for their shopping needs. This change is likely to have a lasting impact on consumer behavior, as people have discovered the convenience and benefits of online shopping.

Another aspect influenced by the pandemic is the adoption of digital payment methods in Nepal (Conference, 2021). With an emphasis on contactless transactions and reducing physical cash handling, consumers have increasingly turned to digital wallets and mobile banking services to make payments and conduct financial transactions. This trend indicates a

potential long-term shift in consumer behavior towards digital payment methods. Moreover, the pandemic has transformed the education landscape, leading to a surge in online learning platforms (Global Education Summit Side Event, 2021). As schools and educational institutions shifted to remote learning, there has been a significant increase in the demand for digital devices, such as laptops and tablets, among Nepalese consumers. This change suggests that consumers are investing in technology to support remote education, indicating a potential lasting shift in consumer behavior in this domain.

In addition to Nepal, several international studies have also revealed shifts in consumer behavior during the COVID-19 pandemic. China, for instance, has witnessed a change in shopping preferences, with a growing reliance on online platforms and contactless payments. E-commerce giants like Alibaba and JD.com have become essential for fulfilling daily needs, indicating the rise of a digital economy (Xiao, 2020).Similarly, In the United States, consumer behavior has also been influenced by the pandemic. Online grocery shopping has surged, as consumers have opted for contactless and convenient methods to purchase essential items. Stockpiling of essential goods has become prevalent, reflecting concerns about future availability. Moreover, discretionary spending has declined as people prioritize essential needs (Thesia I. Garner, 2020). These changes demonstrate the impact of the pandemic on consumer priorities and spending patterns.

Overall, these international studies align with the observations made in Nepal, emphasizing the widespread impact of the pandemic on consumer behavior. The common themes that emerge include a greater reliance on online platforms, a focus on essential needs, and changes in spending habits. These shifts have not only influenced specif ic industries but have also reshaped the overall consumer landscape, indicating that the changes in consumer behavior are a global phenomenon triggered by the COVID-19 pandemic.

Definition and Characteristics of Green Consumers

Green consumers are individuals who prioritize sustainability and environmental considerations when making purchasing decisions (Xin Qi, 2020).They actively seek out products and services that have minimal negative impacts on the environment throughout their lifecycle. These consumers demonstrate a higher level of environmental consciousness and engage in pro-environmental behaviors (Moisander J. , 2007) . They are willing to pay a premium for eco-friendly products, value sustainability and environmental protection, and actively seek information about the environmental attributes of products (Yu, Gao, & Zeng, 2014) . Green consumers also exhibit a greater concern for the long-term consequences of their consumption choices and actively practice recycling, energy conservation, and waste reduction (Xin Qi, 2020) . They can be influenced by peers and environmental campaigns (Young et al., 2010).

Definition

Green consumers are individuals who prioritize environmental sustainability and make conscious purchasing decisions to minimize their ecological footprint. They are concerned about the environmental impact of products and services and actively seek out environmentally friendly alternatives.

Table-3

Characteristics and Examples of Green Products

Characteristic	Examples
Made from recycled materials	Furniture, clothing
Energy-efficient	Appliances, light bulbs
Recyclable	Packaging materials, containers
Biodegradable	Compostable food containers
Non-toxic	Natural cleaning products, organic cosmetics
Sustainably produced	Bamboo products, organic cotton clothing
Fairly traded	Fair trade coffee, ethically sourced jewelry
Ethically sourced	Conflict-free diamonds, sustainable seafood
Locally made	Locally grown produce, handmade crafts
Long lifespan	Durable reusable water bottles, metal straws

Note. (Das, 2023).

COVID-19's Impact on Green Consumer Behavior

The COVID-19 pandemic has had a significant impact on green consumer behavior worldwide, with studies documenting changes in eco-friendly purchasing habits and modifications in green consumer practices and choices. These changes have been observed in various countries, including Nepal, China, India, and Malaysia.In Nepal, for example, a study conducted during the pandemic revealed a shift towards more sustainable and eco-friendly purchasing habits among consumers. There was an increased preference for organic products, locally sourced goods, and products with minimal packaging (Thapa, 2019)This change in consumer behavior can be attributed to a heightened awareness of personal health and environmental sustainability.

Similarly, in China, there has been a noticeable increase in eco-conscious consumer practices. Consumers are now more inclined to purchase energy-efficient appliances, renewable energy products, and environmentally friendly transportation options (Xie & Wang, 2015).This shift can be attributed to the Chinese government's efforts to promote sustainable consumption

and reduce environmental impact. In India, the pandemic has influenced green consumer choices, with consumers showing a greater inclination towards eco-friendly and sustainable products. Studies have reported an increased demand for organic food, eco-friendly household products, and sustainable fashion (Thapa, 2019). This trend reflects a growing awareness of the interconnection between personal well-being, environmental preservation, and sustainable consumption. Similarly, in Malaysia, consumers have shown a shift in their priorities, making trade-offs between health concerns and environmental values. While health and hygiene considerations have gained prominence during the pandemic, there has also been an increased focus on sustainable and eco-friendly options. Consumers are opting for products that meet both health and environmental standards (Mohamad, 2020).

Overall, the COVID-19 pandemic has brought about changes in green consumer behavior globally. Consumers are increasingly considering the environmental impact of their purchasing decisions and making choices aligned with sustainable practices. The pandemic has served as a catalyst for greater awareness and appreciation of the interconnectedness between personal health, environmental sustainability, and responsible consumption.

Research Gap

Existing research has explored consumer behavior with organic products, but there's a lack of focus on post-COVID-19 shifts in green consumer behavior in Dhankuta Municipality, Nepal. Understanding these dynamics is crucial for policymakers and businesses to promote sustainable consumption. This study aims to fill this gap by providing insights into changing consumer behavior towards organic products in Dhankuta. By addressing this void, it offers valuable knowledge for decision-making and sustainability efforts in the region, emphasizing its unique socio-economic and cultural context.

Research Materials and Methods

This study employs a descriptive research design, incorporating both qualitative and quantitative approaches. Qualitative methods are utilized for open-ended questions, which are subsequently coded for thematic analysis. Quantitative methodologies are predominantly used to quantify theoretical principles into six dimensions of the questionnaire: Economic, Psychological, Social, Environmental, Sustainability, and COVID-19 pandemic factors, rated on a five-point Likert scale from strongly disagree to strongly agree. The research approach encompasses various facets including data collection, sample selection, and analytical techniques. Quantitative methods involve distributing questionnaires to green consumers in Dhankuta, covering pertinent sections aligned with research objectives. The emphasis is on numerical data analysis to gauge purchasing behaviors and perceptions of COVID-19's impact.

Population And Sample

In a research paper, a population refers to the entire group of people or things that are being studied. A sample is a subset of the population that is used to collect data. The sample should be representative of the population so that the findings from the study can be generalized to the population as a whole their family's purchasing decisions.The sampling method used for selecting participants from each ward of Dhankuta Municipality is stratified sampling. Stratified sampling involves dividing the population into distinct subgroups or strata and then selecting participants from each stratum based on predetermined criteria (Thomas., 2020). In this case, the strata are the individual wards within Dhankuta Municipality.The sample sizes for each stratum by combining the allocations from both Stratum 1 and Stratum 2. Here are the calculations using the provided population and COVID-19 infected number.

Table-4

Sample Sizes for Stratum 1 (Green Consumers) and Stratum 2 (COVID-19 Infected Population)

Ward	Population	Covid Infected	Population excluding Covid infected.	(Stratum 1	Stratum 2	Total Sample Size (Stratum 1 + Stratum 2) (approx.)
1	3,900	211	3689	64	2	66
2	3,168	48	3120	54	1	55
3	1,744	71	1673	29	1	30
4	1,965	180	1785	32	1	33
5	1,690	123	1567	27	1	28
6	2,614	246	2368	42	3	45
7	2,658	253	2405	42	3	45
8	1,594	24	1570	28	1	29
9	2,804	70	2734	47	1	48
10	1,483	52	1431	26	1	27
Total				391	15	406

These calculations provide the sample sizes for each stratum (Stratum 1: population age above 18 consumers and Stratum 2: COVID-19 infected population) based on the population and COVID-19 infected figures you provided.

Results and Discussion

This chapter provides all relevant findings of the quantitative online and physical survey. Quantitative data needs to be processed in order to turn the data into useful information (Saunders, 2012). Therefore, the author uses descriptive statistic with graphs in order to turn the data into useful information. The findings present 393 responses. Further, 13 out of total sample had to be eliminated. This exclusion happened due to the fact that the respondents did not fill in the survey properly.

Reliability and validity analysis.

The reliability and validity analyses were conducted for a research questionnaire.

Table-5

Dimensional Correlation Analysis for Construct Validity

Construct	Questions of each Dimension					
The Economic Dimension	ECO 1	ECO 2	ECO 3	ECO 4	ECO 5	ECO 6
Pearson's correlation coefficient (r)	0.778	0.799	0.750	0.767	0.796	0.819
Validity Criterion Met	Yes	Yes	Yes	Yes	Yes	Yes
The Psychological Dimension	PSY 1	PSY 2	PSY 3	PSY 4	PSY 5	PSY 6
Pearson's correlation coefficient (r)	0.743	0.722	0.799	0.799	0.420	0.415
Validity Criterion Met	Yes	Yes	Yes	Yes	Yes	Yes
The Social Dimension	SOC 1	SOC 2	SOC 3	SOC 4	SOC 5	SOC 6
Pearson's correlation coefficient (r)	0.528	0.609	0.817	0.576	0.560	0.415
Validity Criterion Met	Yes	Yes	Yes	Yes	Yes	Yes
The Environmental Dimension	ENV 1	ENV 2	ENV 3	ENV 4	ENV 5	ENV 6
Pearson's correlation coefficient (r)	0.623	0.779	0.749	0.703	0.668	0.518
Validity Criterion Met	Yes	Yes	Yes	Yes	Yes	Yes
The Sustainability Dimension	SUS 1	SUS 2	SUS 3	SUS 4	SUS 5	SUS 6
Pearson's correlation coefficient (r)	0.737	0.715	0.687	0.651	0.711	0.688
Validity Criterion Met	Yes	Yes	Yes	Yes	Yes	Yes
The Covid-19 Pandemic Dimension	COV 1	COV 2	COV 3	COV 4	COV 5	COV 6
Pearson's correlation coefficient (r)	0.860	0.842	0.824	0.872	0.891	0.865
Validity Criterion Met	Yes	Yes	Yes	Yes	Yes	Yes

To establish validity, the Pearson's correlation coefficient (r) was used, with a critical value derived from the significance level of 95%. The critical value for a two-tailed test, with 391 degrees of freedom (N - 2) at a 0.05 significance level, was determined to be approximately ±0.1265. The criterion for validity was set such that items in the questionnaire

needed to exhibit correlations higher than this critical value. Since none of the calculated correlation coefficients fell below 0.1265. The following tables shows the values of validity**.**

Table-6

Construct Reliability Analysis

Construct	Alpha	Items
The Economic Dimension	0.871	6
The Psychological Dimension	0.703	6
The Social Dimension	0.715	6
The Environmental Dimension	0.759	6
The Sustainability Dimension	0.789	6
The Covid-19 Pandemic Dimension	0.876	6

To assess reliability, Cronbach's alpha was used with a cut-off value of 0.7, and since all calculated Cronbach's alpha values were above this threshold, it indicates that the questionnaire is reliable. This is in line with the criteria established by as established by (Nunnally, 1993) .

Demographic presentation of Sample

Demographic representation is crucial in the research paper , it allows researchers and readers to understand the composition of the study's participants, providing insights into their age, gender, education, income levels, and other socio-economic factors. This knowledge is essential for analyzing how different demographic groups may have distinct attitudes and behaviors concerning green consumer choices, particularly in the context of a major disruptor like the COVID-19 pandemic. By examining these demographics, the research gains a more comprehensive understanding of the diverse perspectives and behaviors of green consumers in Dhankuta Municipality.

The following tables provides a snapshot of the demographic representation of the respondents

Table 7

Demographic Information of the Respondents (n=393)

Variables	Categories	Frequency	Percentage
Gender	Male	239	60
	Female	154	40
Age of respondents	<18	23	5.9
	19-25	86	21.9
	26-35	156	39.7
	36-45	89	22.6
	45-Above	39	9.9

Variables	Categories	Frequency	Percentage
Education of respondents	Primary or below	48	12.2
	Secondary	132	33.6
	Bachelor	121	30.8
	Degree and above	92	23.4
Income of respondents	Below or equal to 10000	102	26.0
	10001-20000	105	26.7
	20001-30000	82	20.9
	30001-40000	104	26.5
Ward Number of respondents	1	59	15.0
	2	52	13.2
	3	32	8.1
	4	34	8.7
	5	29	7.4
	6	44	11.2
	7	41	10.4
	8	28	7.1
	9	47	12.0
	10	27	6.9
Occupation of respondent	Students	82	20.9
	Business	47	12.0
	Government Service	104	26.5
	Private Service holder	56	14.2
	Foreign employment	35	8.9
	Agriculture	40	10.2
	Others	29	7.4
Covid-19 infection of respondents	Yes	146	37.2
	No	247	62.8

The demographic analysis table in the research paper paints a vivid picture of the respondents. Gender distribution is fairly even, with 60% male and 40% female, showcasing diversity. The 26-35 age group dominates at 39.7%, a pivotal range for consumer decisions. Education levels vary, with 30.8% holding a Bachelor's degree and 33.6% completing secondary education, indicating an educated respondent pool. Occupationally, there's diversity, with 26.5% in government service, 20.9% students, and others in business, private service, foreign employment, and agriculture. This mirrors the local economy's multifaceted nature, influencing consumer choices. COVID-19 infection data reveals 37.2% experiencing infection, a crucial variable for the study. This comprehensive demographic overview is vital, allowing

exploration of how socio-economic and demographic factors impact green consumer behaviors in Dhankuta Municipality, especially amid the COVID-19 pandemic

Changes in Lifestyle Notions

In this study, participants were asked to reflect on their overall lifestyle notions before the COVID-19 pandemic, and their responses were collected through various methods, including written forms, mobile device recordings, and oral responses transcribed by the researcher during data collection. The qualitative responses highlighted a prevalent theme of significant changes in participants' lifestyles during the COVID-19 period. A majority of participants expressed heightened awareness of their health, indicating a significant shift in their lifestyle notions. Many participants also conveyed increased fear associated with the pandemic. To systematically analyze and quantify these qualitative responses, a coding scheme was employed. The coded values ranged from which is presented in table below.

Table-8

Structured Overview of Participants' Coded Responses

Code (Qualitative answer)	Coded (Quantitative Convert)
Change	1
No Change	2

The coded responses were then organized into a tabular format. The table provides a, structured overview of participants' coded responses facilitating a quantitative analysis of the qualitative data. This approach allows for a nuanced exploration of the diverse ways in which participants experienced changes in lifestyle notions during the challenging period of the COVID-19 pandemic.

Table-9

Coded Responses for Changes in Lifestyle Notions during COVID-19

Participant	Before COVID-19	During COVID-19
89	1- Change	More health awareness, fear
167	2-No Change	Own farming , No any visit of city area .
……	…….	……

This table, presents the coded responses for Participant 89, and 167 and provides a template for organizing responses from other participants in a structured manner for quantitative analysis in the research paper. For instance, Participant 89's & 167 response was

coded as above: "1 - Change, 2- No change" capturing the participant's increased health awareness, significant alterations in lifestyle notions, and heightened fear during the COVID-19 pandemic.

Testing Hypothesis

a) *Regression Analysis*

To examine the hypothesis regarding the impact of COVID-19 on changes in lifestyle notions, a simple linear regression analysis was performed using SPSS. The dependent variable, Lifestyle Notions, was regressed on the predictors Total_COVID_19 and Constant. The resulting model, summarized in Table 9, provides valuable insights into how these variables collectively influence academic outcomes.

The impact of the COVID-19 pandemic on changes in lifestyle notions among green consumers in Dhankuta Municipality, is expressed as follows:

Changes in Lifestyle Notions=β0+β1(Total_COVID19)+εChanges in Lifestyle Notions=β0+β1 (Total_COVID_19)+ε

Here:

β0 is the intercept.

β1 is the coefficient representing the impact of the COVID-19 pandemic on changes in lifestyle notions.

ε is the error term

Table-10

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
				F Change	df1	df2	Sig. F Change
.850[a]	.723	.722	3.87680	2.809	1	392	.000[b]

Predictors: (Constant), Total_COVID_19

Dependent Variable: Life Style Notions

The results of the regression model showed a good correlation (R =.850), meaning that the predictor factors account for around 72.3% of the variability in lifestyle conceptions. With an adjusted R Square value of.722, the model is still considered to fit the data rather well. 3.87680 is the standard error of the estimate, which shows how far off the observed values are on average from the regression line. Total_COVID_19 was included to the model, and this

resulted in a considerable improvement, as indicated by the significant F Change statistic (F = 2.809, p <.001). Total_COVID_19 and the constant term are the two predictors in the model. In this study, Lifestyle Notions is the dependent variable.

Table-11

ANOVA Result

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15343.000	1	15343.000	1020.851	.000[b]
	Residual	5876.578	391	15.030		
	Total	21219.578	392			

The regression model demonstrates a significant relationship between the predictor variable, Total_COVID_19, and the dependent variable, Lifestyle Notions. The regression analysis reveals that the predictor variable accounts for a substantial portion of the variability in lifestyle notions, as indicated by the high sum of squares for regression (15343.000). The associated F statistic (F = 1020.851, p < .001) confirms the model's overall significance. The model includes one predictor, Total_COVID_19, and a constant term.

Table-12

Coefficients

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	5.566	1.039		5.358	.000
	Total_COVID_19	1.586	.050	.850	31.951	.000

a. Dependent Variable: Lifestyle Notions

The regression analysis reveals significant coefficients for both the constant term and Total_COVID_19 predictor. The constant term indicates that, when Total_COVID_19 is zero, the estimated value of lifestyle notions is 5.566 units. The coefficient for Total_COVID_19 is 1.586, indicating that for every one-unit increase in Total_COVID_19, there is an estimated increase of 1.586 units in lifestyle notions. The standardized coefficient (Beta) for Total_COVID_19 is .850, suggesting that Total_COVID_19 has a strong positive impact on lifestyle notions. These findings are statistically significant, with both coefficients having p-values less than .001.

b) *Correlation Analysis*

The purpose of the correlation study was to investigate any connections between the various research aspects that were examined. This analysis aids in understanding the potential relationships between variations or changes in one dimension and those in another.

Table-13

Correlation Analysis between COVID-19 Impact on Willingness to Pay for Green Products.

		Willingness to Pay	COVID-19 Impact
Willingness to Pay	Pearson Correlation	1	
	Sig. (2-tailed)		
COVID-19 Impact	Pearson Correlation	.675**	1
	Sig. (2-tailed)	.000	

N=393

The strong positive correlation coefficient (0.675) and its statistical significance ($p < 0.01$) suggest that there is a significant positive relationship between the impact of COVID-19 and the willingness to pay for green products. The COVID-19 pandemic has a significant impact on increasing the willingness to pay for environmentally friendly products in Dhankuta Municipality. The higher the impact of COVID-19, the higher the willingness to pay for green products. Fear and uncertainty of COVID-19 increase consumers' environmental concerns and green hotel brand trust, promoting their willingness to pay more and make sacrifices to stay at green hotels (Jian, 2020).

Table-14

Pearson Correlation Matrix for Key Dimensions.

Dimension		Economic	Psychological	Social	Environmental	Sustainability	Covid-19
Economic	Pearson Correlation	1					
	Sig. (2-tailed)						
Psychological	Pearson Correlation	.584**	1				
	Sig. (2-tailed)	.000					

Dimension		Economic	Psychological	Social	Environmental	Sustainability	Covid-19
Social	Pearson Correlation	.674**	.473**	1			
	Sig. (2-tailed)	.000	.000				
Environmental	Pearson Correlation	.624**	.563**	.795**	1		
	Sig. (2-tailed)	.000	.000	.000			
Sustainability	Pearson Correlation	.532**	.621**	.614**	.607**	1	
	Sig. (2-tailed)	.000	.000	.000	.000		
Covid-19	Pearson Correlation	.675**	.670**	.679**	.793**	.614**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

N=393

The correlation matrix unveils meaningful associations among diverse dimensions, shedding light on the intricate relationships influencing green consumer behavior during the COVID-19 pandemic in Dhankuta Municipality. Notably, economic considerations exhibit a positive correlation with psychological factors ($r = .584$, $p < .001$), emphasizing the interplay between financial aspects and individual mental states. Furthermore, the study identifies a significant correlation between psychological and social dimensions ($r = .674$, $p < .001$), highlighting the interconnectedness of personal mental states with broader social influences. Social factors and individual environmental considerations also demonstrate a strong positive correlation ($r = .795$, $p < .001$), indicating that societal influences align with individual environmental attitudes. Additionally, environmental considerations exhibit positive correlations with broader sustainability beliefs ($r = .532$, $p < .001$), emphasizing the alignment between personal environmental concerns and overarching sustainability perspectives. Finally, sustainability beliefs are significantly associated with perceptions related to the impact of the COVID-19 pandemic ($r = .614$, $p < .001$), underscoring the role of sustainability considerations in shaping attitudes toward the pandemic. These findings collectively provide a nuanced understanding of the multifaceted influences on green consumer behavior in Dhankuta Municipality, offering valuable insights for researchers, policymakers, and businesses.

Overall Hypothesis (Changes in Lifestyle Notions and Green Consumer Behavior):

The correlation analysis provides substantial evidence for significant relationships between dimensions. Rejecting H0 and accepting H1, changes in lifestyle notions are

significantly associated with alterations in green consumer behavior among residents of Dhankuta Municipality.

Summary and Finding

The demographic analysis revealed a balanced gender distribution (60% male, 40% female), with a significant portion (39.7%) falling within the pivotal 26-35 age group. Diverse educational backgrounds and varied income distributions were observed, and respondents exhibited diverse occupational backgrounds, with 26.5% in government service and 20.9% as students. Additionally, 37.2% of respondents had experienced COVID-19 infection. In terms of lifestyle notions, significant changes were reported post-COVID, including increased health awareness and fear. The study found strong associations between age, gender, education, occupation, income, and lifestyle notions. Regarding green consumer behavior, a majority (53.6%) expressed willingness to pay more for eco-friendly products, with 57.5% attributing the higher price to positive environmental impact. The impact of COVID-19 was evident, with a positive correlation between the pandemic and willingness to pay for green products and changes in lifestyle notions. The psychological and social dimensions exhibited positive correlations, indicating that the perception of the importance of green products and societal preferences strongly influenced pro-environmental behaviors.The finding of (Chen X. R., 2022) indicates fear of the COVID-19 pandemic significantly impacts green product behavioral intention, while green product literacy, orientation, and social influence influence green product purchase attitudes. The correlation table highlighted significant links between economic considerations and psychological factors, psychological and social dimensions, social factors and individual environmental considerations, environmental considerations and broader sustainability beliefs, and sustainability beliefs and perceptions related to the impact of the COVID-19 pandemic. In the context of green food purchases, customers displayed a preference for organic and locally farmed products, driven by increased health consciousness and awareness of the environmental impact of their choices.

Conclusion

In conclusion, our study on the "Impact of COVID-19 in Changing Lifestyle Notions of Green Consumers: A Case Study of Dhankuta Municipality" sheds light on the shifts in consumption behavior and product substitution behavior among consumers observed during the COVID-19 pandemic. Unlike existing studies, our research uniquely attributes these shifts to the profound impact of COVID-19 on consumers' way of life. The pandemic has induced significant changes in consumers' demand, both in magnitude and preference (del Rio-Chanona et al., 2020) , emphasizing the importance of understanding how external factors shape consumer behavior.

The findings of our study underscore the interconnected influences of the COVID-19 crisis, changes in lifestyle notions, and the economic, psychological, and social dimensions of sustainable consumption. We observed a willingness among consumers to pay more for environmentally friendly products, shifts in green food preferences, and a strong correlation between psychological factors and pro-environmental behaviors. These insights provide valuable implications for policymakers, businesses, and researchers seeking to promote sustainable consumer practices in the post-pandemic era. As the world continues to navigate the challenges posed by COVID-19, understanding and adapting to these shifts in consumer behavior are crucial for fostering a more resilient and sustainable society. Our research contributes to the ongoing dialogue on the evolving dynamics of environmental consciousness and provides a framework for future research and practical initiatives in sustainable consumption.

Limitation of Generalization

While shedding light on green consumer behavior in Dhankuta Municipality, the study has limitations. Relying on primary data introduces potential respondent biases, cautioning against broad generalizations. The geographic focus on Dhankuta restricts the findings applicability beyond this area. The data collection period, post-pandemic from November 2022 to July 2023, and the use of a stratified sampling method introduce context-specific biases, emphasizing the need for careful interpretation and application within the localized context.

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