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Analysis of consumer behaviour attributes for domestic water purifiers in West Bengal: A perceptual pricing approach

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Abstract
Materials must continuously flow through food webs, soil, water, and air in order to support life. Life as we know it-that is, carbon-based life-requires liquid water. Freshwater is a scarce yet crucial resource that is readily contaminated.Because of water contamination, there is a growing need for fresh water in the twenty-first century. Numerous activities have resulted in the presence of heavy metals, hazardous chemicals, inorganic wastes, and even organic muck in the water. However, undesired items, chemicals, and biological pollutants can be eliminated from contaminated water using a number of novel water filtration technologies.Nowadays, a variety of water purification methods are used in homes, including UV, microfiltration (MF), ultrafiltration (UF),reverse osmosis (RO), forward osmosis (FO), and nanofiltration (NF).There are few major power plants in rural areas of developing nations like India, making it impossible to supply a steady supply of electricity for water purifying operations. Over the past ten years, India's residential water purifier industry has grown due to rising awareness of waterborne illnesses and rising disposable incomes.

Keywords: Drinking Water, Water Purifiers, Consumers, Consumer Behaviour, RO, UV, WQI

Introduction

Water is essential to the human body's mechanics. Without it, the body cannot function. The entire anatomy and physiology, consisting of all the organs, is actually dependent on water to function. Apart from its significance in everyday bodily functions, water also has a major role in disease prevention. The physiology depends so heavily on water that both the quantity and quality of the water are crucial. Drinking water ought to be pure and uncontaminated at all times to guarantee good health and wellbeing [1, 2].

A person's body contains almost 75% water. A basic requirement for maintaining human economic activity is water. Life requires the presence of water to exist. Most of a human body is composed of water. Food can be skipped for up to 30 days, but water cannot be skipped, not even for a few days. Thirst is the result of a one percent decrease in the body's water content. There is a risk of mortality if it falls by 10%. Most of the time, water cannot be replaced. Water is an irreplaceable resource, but energy resources can be swapped out for others. Not only does water facilitate a multitude of activities, but it also serves as a major symbolic function in ceremonies and is regarded by numerous religions as a divine gift **[3]**.

However, West Bengal, India faces a challenge in terms of clean drinking water. Fertilizer and pesticide runoff from agricultural fields, untreated and partially treated wastes from industry, home sewage, and other sources contaminate the majority of water supplies. Worldwide, Water pollution murders people and creates illnesses; it kills over 14,000 people every day [4].

Disease caused by Polluted Water

Today water-borne illnesses are one of the leading causes of morbidity and mortality. Nations across the globe are concerned about the effects of dirty water. Health and disease are significantly impacted by water, sanitation, and hygiene. Infections known as "waterborne diseases" are primarily spread by contact with or ingestion of contaminated water. Pathogenic bacteria, the primary cause of waterborne infections, are typically spread through contaminated fresh water [5, 6]. 2007, World Health Organization report states that 88% of the 4 billion cases of diarrheal sickness that occur annually are caused by inadequate sanitation and hygiene [7].

India's Water Purifier Industry

India's water purifier market is going through significant changes in terms of competition, pricing, and technology. Product distinctiveness and innovation are the company's two main tenets. Lack of standards and insufficient knowledge are obstacles, whereas the drivers include limited access to safe drinking water, low penetration of water purifiers, rising urbanization, and waterborne illnesses **[8]**.In the market, there are three different kinds of water purifiers: (i) Based on ultra violet; (ii) Based on reverse osmosis; and (iii) Utilizing chemicals. In India, UV water purifiers are commonly utilized because they successfully changemicrobe's cell framework. UV water purification systems are far more expensive than chemical-based filters [8, 9].

Among the businesses in India that provide the greatest services are Whirlpool India, Kent, Hindustan Unilever Limited, Ion Exchange, and Eureka Forbes. He Shapoorji Pallonji Group includes Eureka Forbes, a multi-product, multi-channel company. In August of 2002, a different intranet portal known as Euro Share was introduced. It gives workers the ability to realise and make the most of the skills, information, and experiences of partners and colleagues in order to accomplish company goals [10].

Technology for Water Purification Industry

Eureka Forbes: A company with a forward-thinking approach to technology is Eureka Forbes. India, it received the Platinum Award for both Aqua guard and Euro clean in the "Household Products" category. Aqua guard won the title of "Bengal's Best" in the Anandabazar Patrika's Brand Watch Bengal 2011 competition for water purifiers. In 2011, it was granted the Computer Society of India Award [11].

Kent: In 1999, Kent began operations in a single room located in West Bengal, India. Despite having a modest beginning, Kent has grown into a powerful company with locations all throughout the nation. One of the leading companies in the reverse osmosis (RO) water filtration market is Kent. Kent has gained its dominant position by prioritizing customer happiness and innovating continuously **[12]**.Kent is the recipient of the Water Digest International and UNESCO awarded the Best Domestic Water Purifier Award for 2006-2007. In 2007, Kent is the recipient Golden Peacock Award for the most innovative environmental product [13].

HUL, or Hindustan Unilever Limited: Two out of every three Indians are impacted by Hindustan Unilever Limited (HUL), the largest fast-moving consumer goods (FMCG) company in India with a history spanning more than 75 years.The top providers of FMCGs in the world, having deep local roots in over 100 nations. The company's operating divisions are all ISO 9001:2008 certified **[14-16]**.For their exceptional contributions to the water sector in India, Ion Exchange and Zero B RO have been named "The Best Water Company" and "The Best Domestic RO Water Purifier Award," respectively [17].

The health advantages of water purifiers

A water purifier is a machine that removes contaminants from water, including artificial chemical pollutants, bacteria, viruses, minerals, fungi, algae, and hazardous metals. Both dissolved and undissolved impurities are eliminated by water purifiers **[18-20]**.Water purifier's eliminatecontaminants that are dissolved as well as those that are not. It purifies all kinds of polluted water, no matter how much **[20]**. Water purifiers eliminate these microbes from untreated raw water, making it safe for human consumption. They also improve water's taste, aroma, and appearance. There are several health advantages to drinking water from a filter [21].

Different type of water treatment method

Disinfection and clarity are the two most widely used surface water treatment techniques. Clarification is usually accomplished by combining sedimentation, filtration, and coagulation-flocculation [22].

1. **Flocculation and Coagulation:** Some of the tiny colloids that generate turbidity will not settle out of suspension on their own without the help of gravity, therefore simple settling is not always enough to remove suspended particles from water. If certain materials, referred to as coagulants, are rapidly mixed with water and then gently swirled before sedimentation can occur, the particles will settle. Conversely, the influence of the colloidal charges is offset by the coagulant chemical. Furthermore, the coagulant and the natural alkalinity of the water combine to form a firm, sticky precipitate that separates from the solution and helps produce floc by ensnaring particles. Slow stirring produces a mild agitation after the first flash-mix of the coagulant and water, increasing the number of particle collisions and facilitating the floc formation [22, 24].

2. **Sedimentation:** In some cases, sedimentation basins will receive water from flocculation basins, which are also called clarifying and settling basins.Sedimentation basins can be either rectangular, with water flowing from one end to the other, or circular, with water flowing outward from the centre. Typically, a weir covers the only the thin top layer that is furthest away from the sediment can leave a sedimentation basin.The surface tension and retention time of the basin determine how much floc settles out of the water [25].

3. **Filtration:** The physical process that follows is filtration. Sand or another porous granular material is used as a bed or layer to remove suspended particles from water. The suspended particles are trapped in the pore spaces of the filter material, also known as filter media, as the water passes through the filter bed. Filtration is an essential stage in the purification process of surface water treatment [26, 27].

4. **Ultraviolet Radiation:** One potential use for UV radiation is as a disinfectant. UV light is referred to as ultraviolet germicidal radiation when it falls within the UV-C band (200-280 nm), and it is frequently used to inactivate germs in food and water, sterilize equipment, and produce sterile surroundings. It has a far higher energy level than visible light and destroys large amounts of germs and viruses [28, 29].

Literature Review

One of the largest development issues the globe is currently experiencing is water sanitation. The World Health Organization reports that at least 140 million individuals in 50 different nations drink arsenic-contaminated water. The public opposes a number of government water supply projects, primarily due to opposition to privatization, public awareness concerns, and false information regarding tariff policies. Consumer behaviour is the study of how individuals choose which consumption-related products to purchase with their restricted resources **[30, 31]**. Delays in installing subterranean drainage connections to every location have caused sewage water to leak into the ground, contaminating it, according to Wada's (2012) study, "Quality of Ground Water is Going Down and Down." The groundwater table is being reduced as a result of inadequate rainwater gathering systems and the conversion of agricultural lands for residential and commercial uses **[31]**.

According to a number of research studies, individuals in Afghanistan drank filtered water.

74% of Afghans, or more than 30 million people, reside in rural areas. Only 57% of Afghan families have access to better water sources, which is a serious problem given the country's expanding population? The market is categorized by technology; lower-end products employ chemicals like chlorine and bromine, which are classified as non-electric. The two basic types of electricity are UV and RO **[32, 33]**. For her thesis, Zhu (2010) assessed the kind and severity of water issues in six distinct Chennai neighbourhoods in

addition to the water quality. Numerous economic issues are examined in this study, such as the price of damage control, treatment, lost production, and willingness to pay for better water quality [33].

According to Gupta's 2011 dissertation, an analysis of Aqua Guard water purifier customer satisfaction in Erode Town, with particular reference to Eureka Forbes, most respondents opt to purchase water purifiers independently. Health concerns were the main driving force behind purchasing an Aqua guard water purifier. The water's quality was the second important deciding factor [34]. In her dissertation "Buyer behaviours towards Water Purifier-A Study with Reference to Virudhunagar," M. Brindha Devi (2010) investigated the attitudes of consumers in Virudhunagar towards water purifiers. Female members have a significant influence on the preference for water purifiers. Customers investigate the features, prices, financing options, and credit availability of water purifiers before making a purchase. Consumers are satisfied with the water purifier's output purity, warranty length, availability of spare parts and expert personnel, and post-purchase servicing [35].

Data and Methodology

1. **Construction of tools and pre-test:** With the assistance of the research supervisor, the researcher organized the interview schedule for this study.Before the interview schedule was finalized, exploratory discussions were held with twenty dealers to gain insight into the technical aspects of water purifiers, the prices charged, challenges encountered in the industry, and customer expectations.The interview schedule is divided into five sections. In the first stepwasthe consumers' socio-economic profile and second phasewasprocedure of choosing water purifiers. The purpose of the third phase was to gather customer feedback regarding the purifier's use, cost, and after-sale support. The issues encountered when using the water purifier are the subject of the fourth phase. The purpose of the fifth step was to ascertain the respondent's perspective on the water purifier.

2. **Sampling design:** The approximate population that owns a water purifier must be determined in order to determine the ideal sample size.Based on the data provided by the merchants; an approximate population estimate of between 25,000 and 30,000 was produced. Online sample size with a population range of 25,000-30,000, a 95% confidence interval, and a 5% threshold of significance, 366 was found to be the ideal sample size.The protocol was used to select 366 people at random from the study area for the random sample.There are 100 wards in Kolkata City, all under the control of four zones. Ward-by-ward, the clients' names were listed.A shortlist of wards with at least 50 clients was created. Of the 100 wards, it was discovered that 56 met this requirement. Out of these 56 wards, one respondent was chosen at random.

3. **Fieldwork and data collection:** The studies fieldwork took place between March 2018 and September 2023. The data was directly gathered by the researcher from water purifier customers. Interview was done allowed for the extraction of pertinent data for the study.We have taken a Water sample from different sites.Primary data was collected through impacted water problems, interviews, inventories, and surveys, and secondary data was collected through past history or heredity. Data was collected between March 2018 and September 2023 from Respondents living in Kolkata of West Bengal. Ms excel to test hypothesized relationships between variables.

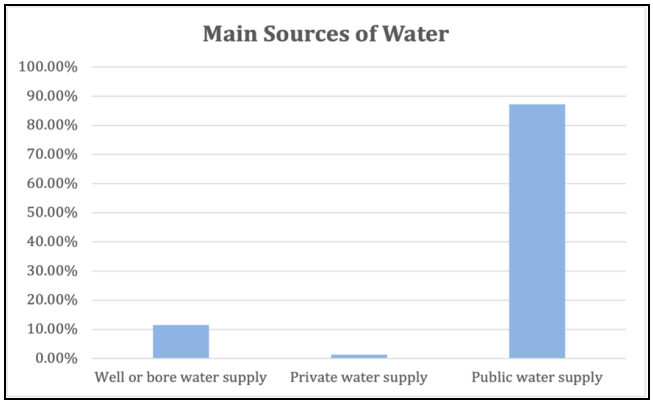
Results and Discussion

1. **Primary Water Sources in the Residential Area:** The city of Kolkata uses surface and subsurface sources as well as bore wells to supply its citizens with the water they require. Public water supplies should be safe to drink, aesthetically pleasing, edible, odourless, and appropriate for a variety of residential and commercial applications. Human existence has historically depended on access to clean water, and improvements in health have been associated with increased water availability.

According to Table 4.1.2.1a, 87.16% of respondents use the public water supply, whereas 11.47% of respondents obtain their needs from bore water. Only one person (1.37%) uses a private water source. This proves that the groundwater supply in Kolkata is a substantial water source. The reality that a large number of respondents are unable to obtain the required quantities of drinking water without relying on the public water supply. There is a lack of confidence in the public water supply and badly maintained pipes in the public water distribution system. The second and most important factor is supply.

Table 4.1.2.1a: Main Sources of Water

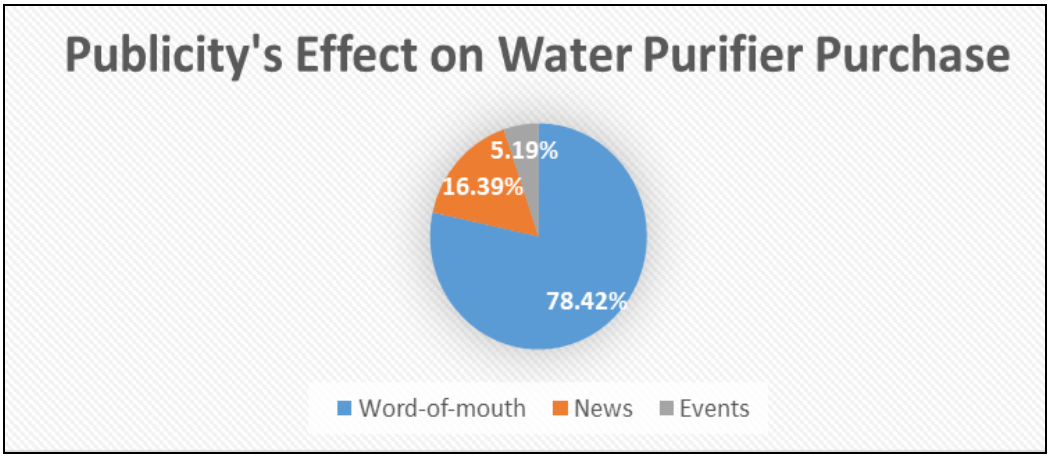
Sl. No.	Source	Respondentsin Number	Percentage
1	Well or supply of bore water	42	11.47
2.	Water supply byPrivatise	5	1.37
3.	Water supplyPublic	319	87.16
Total:		366	100.00



Publicity's effect on water purifier purchase: Any information about companies, products, or services that is disseminated without payment or approval from the company is considered publicity.Word-of-mouth communication has gained a new dimension thanks to online social networking sites like Facebook and Orkut, in addition to the participation of review websites like mouthshut.com. Table 4.2.2.3 shows how publicity affects the demand for water purifiers.Table 4.2.2.3 shows only 5.19% of people are motivated by events, but 16.39% are impacted by news.

Table 4.2.2.3: Publicity's Effect on Water Purifier Purchase

Sl. No.	Type	Respondents in Number	Percentage
1.	Word-of-mouth	287	78.42
2.	News	60	16.39
3.	Events	19	5.19
Total:		366	100.00



Water Purification's Technology: Of the 78 respondents who drank water from the public water supply, half had UV water purifiers, 1.35% had UF water purifiers, and just 87.78 percent had RO water purifiers, according to Table 4.3.2.3. One person who owns a RO water filter uses a private water supply for drinking water. One respondent had a purifier with functions for UF, TDS Controller, RO, and UV, 16.67% of respondents had purifiers with both RO and UV characteristics. All responders with access to bore water supplies own RO water purifiers since they cut down on the amount of saltand are used to purify water with high TDS. UV and UF purifiers can be used to purify water from public water systems. Supplied by public water systems can be purified using UV and UF purifiers.

Table 4.3.2.3: Source of Water Purification's Technology and Drinking Water Supply

Sl. No.	Source of Drinking Water	Water Purification's Technology					Total
		RO	UV	Both RO and UV	UF	RO, UV, UF and TDS Controller	
1.	Public water supply	280 (87.78)	35 (10.97)	0 (0.00)	4 (1.35)	0 (0.00)	319 (100.00)
2.	Private water supply	1 (20.00)	0 (0.00)	0 (0.00)	0 (0.00)	4 (80.00)	5 (100.00)
3.	Bore water Supply	8 (19.05)	0 (0.00)	7 (16.67)	26 (61.90)	1 (2.38)	42 (100.00)
Total:		289 (78.96)	35 (9.56)	7 (1.92)	34 (9.29)	1 (0.27)	366 (100.00)

Note: Figures in parenthesis represent percentage

Purifier nature and Technology: The respondents own water purifiers with different brands, different constructions, and different technology. The type of purifier owned and the technology it uses are described in Table 4.3.2.2. Reveals that 34.60% of the 290 respondents who said they owned RO purifiers use branded units, while 57.14% use assembly units. Each owner of a UF purifier has a purifier that is branded. Of the eight respondents with RO and UV technology purifiers, three had self-branded purifiers and the other five had self-assembled purifiers [36, 37].

Table 4.3.2.2: Describes the type of purifier that is owned and the technology that it uses.

Sl. No.	Technology	Nature of Water Purifier		Total
		Branded	Assembled	
1.	RO	100 (34.60)	189 (65.40)	289 (100.00)
2.	UV	30 (85.71)	5 (14.29)	35 (100.00)
3.	Both RO and UV	3 (42.86)	4 (57.14)	7 (100.00)
4	UF	30 (88.24)	4 (11.76)	34
5.	RO, UV, UF and TDS controller	1 (100.00)	0 (0.00)	1 (100)
Total:		164 (44.81)	202 (55.19)	366 (100.00)

Note: Figures in parenthesis represent percentage

After purchase activities: Analyzing post-sale actions is equally as important as understanding the elements that affect consumers' initial purchasing decisions.Consumers are excited when a product meets their expectations, satisfied when it does not, and disturbed when it does.The respondents' views regarding water purifiers are shown in Table 4.3.5.4.78.69% of participants strongly agrees that water purifiers provide safe drinking water, according to Table 4.3.5.2. 20.77% of respondents agree with this statement, while only 0.27% disagrees. Of those surveyed, 0.27% is unsure. 54-90% of respondents agreed with this statement, while 0.27% disagreed. 87.43% of the respondents think that purchasing a water filter is more cost-effective than purchasing drinking water in a packet.18.58%

of respondents strongly agree that service personnel should provide user instructions during installation. The claim that there being less water waste is strongly disagreed with by 49.74%. Of those surveyed, 17.76% disagree, 6.64% agree, 0.27% strongly agree, and 19.95% are unsure.According to 53.16% of respondents, the warranty period is adequate. According to 45.52% of respondents, the warranty duration is too short.According to 51.05% of respondents, the expense of maintaining a water purifier is reasonable. 27.37% are not in agreement.Of the responders, 46.05% think that the AMC is helpful. 182.58% have not voiced an opinion, whereas they have stated that maintenance costs can be incurred as and when necessary. 51.91% concur that dissolved materials are removed by RO water purifiers.Of those surveyed, 46.72% stated that they were unsure about this claim. Of those surveyed, 42.37% stated they were unsure. 1.09% of respondents disagree with this statement [36, 37].

Table 4.3.5.2: Respondents' perspectives regarding water purifiers

Sl. No.	Attitude	Opinion					Total
		SA	A	NA/DA	DA	SDA	
1.	Safe drinking water is provided by water purifiers	288 (78.69)	76 (20.77)	1 (0.27)	1 (0.27)	0 (0.00)	366 (100.00)
2.	Water Purifiers reduce the spate of water borne diseases	179 (48.91)	168 (45.90)	18 (4.92)	1 (0.27)	0 (0.000	366 (100.00)
3.	Water Purifiers reduce the Total Discovered Solids in Water	120 (32.79)	200 (54.65)	41 (11.20)	4 (1.09)	1 (0.27)	366 (100.00)
4.	It is worth investing in water purifier	139 (37.98)	200 (54.98)	22 (6.01)	4 (1.09)	1 (0.27)	366 (100.00)
5.	Purchase of Water Purifiers is less expensive	170 (46.45)	142 (38.80)	20 (5.46)	32 (8.74)	2 (0.55)	366 (100.00)
6.	The Service personnel provide user instruction	68 (18.58)	290 (79.24)	0 (0.00)	4 (1.09)	4 (1.09)	366 (100.00)
7.	The prospects of Water purifier	180 (49.18)	171 (46.72)	11 (3.01)	4 (1.09)	0 (0.00)	366 (100.00)
8.	Wastage of water is less	1 (0.27)	17 (4.64)	73 (19.95)	65 (17.76)	210 (57.38)	366 (100.00)
10.	Output per hour is high	19 (5.19)	287 (78.42)	26 (7.10)	29 (7.92)	5 (1.37)	366 (100.00)
11.	The Water Purifier's is not subjected to frequent repairs	14 (3.83)	305 (83.34)	20 (5.46)	23 (6.28)	4 (1.09)	366 (100.00)
12.	The dealers follow the terms of warranty	78 (21.31)	270 (73.77)	3 (0.82)	10 (2.73)	5 (1.37)	366 (100.00)
13.	The warranty period is adequate	7 (1.91)	190 (51.91)	4 (1.09)	85 (23.23)	80 (21.86)	366 (100.00)
14.	Call for service is attended promptly	81 (22.13)	229 (62.57)	0 (0.00)	40 (10.93)	16 (4.37)	366 (100.00)
15.	The Water Purifier works to the standard as mentioned by the dealer	26 (7.10)	320 (87.43)	0 (0.00)	20 (5.47)	0 (0.00)	366 (100.00)
16.	The maintenance cost of Water Purifiers is responsible	51 (13.93)	190 (51.91)	23 (6.29)	70 (19.13)	32 (8.74)	366 (100.00)
17.	It's highly advantageous to join AMC.	23 (6.28)	95 (25.96)	68 (18.58)	170 (46.45)	10 (2.73)	366 (100.00)

Study findings

Customer behaviour can be connected to the actions of a group, a person, or an organization. Understanding consumer needs, wants, attitudes, and beliefs can help businesses improve their marketing strategies by gaining insight into how consumers think, feel, comprehend, and choose among competing brands; how the environment affects them; what shopping patterns they are exposed to. The consumer behaviour of Kolkata's household water purifiers has been examined in this study. A large number of respondents must use public water they need to consume. A significant contributing factor to the use of public water supply is mistrust of the bore water. The rural self help groups and environment-friendly product marketing system has a positive impact in this context [36, 37, 38, 44].

Conclusion

Consumer behaviour studies the behaviours and mental processes of consumers-the final users. Businesses can improve their marketing and management strategies by studying customer behaviour, and the government can make better public policy decisions about consumer welfare. Enhancing comprehension of society and human behaviour can also be achieved through it. Water purifier dealers that deal in branded or assembled units may be found in Kolkata. Dealers should organize their promotions to boost market penetration because there is fierce competition. The demand for water purifiers will be shaped by trends that are predicted to continue in the future, including shifting consumer living standards, rising income levels, changing demographics, and a rise in families with two careers. It can be deduced from observation, exchanges, debates, and the interview schedule that the respondents experience some inconvenience. The manufacturers of water purifiers must to offer quick after-sale support.

A few respondents who owned branded water purifiers explicitly mentioned that they changed the service staff after a certain amount of time and that there was a delay in attending services by more than two days. The service warranty period may be extended by the dealers to two years. For a year, parts can be changed, and for two years, services can be rendered without charge. Customers must to be informed about the steps necessary in purifying their water. However, Services shall be rendered to AMC clients in accordance with the conditions of the agreement

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Conflict of interest

The author declares no conflict of interest.

References

1. Westall F, Brack A. The importance of water for life. Space Science Reviews,2018:214:1-23.
2. Esfahani MR, Aktij SA, Dabaghian Z, Firouzjaei MD, Rahimpour A, Eke J, *et al*. Nanocomposite membranes for water separation and purification: Fabrication,

modification, and applications. Separation and Purification Technology,2019:213:465-499.
3. Yongabi KA. Biocoagulants for water and waste water purification: a review. International review of chemical engineering,2010:2(3):444-458.
4. Chaudhry FN, Malik MF. Factors affecting water pollution: a review. Journal of Ecosystem and Ecography,2017:7(1):225-231.
5. Nwabor OF, Nnamonu EI, Martins PE, Ani OC. Water and waterborne diseases: a review. International Journal of Tropical Disease and Health,2016:12(4):1-14.
6. Singh S, Aparnna VP, Chauhan AK, Chaurasia PK, Bharati SL, Konar A, *et al*. Antibacterial coatings: current applications and its future prospects. Antimicrobial Materials and Coatings,2025:79-109.
7. Lauren CT, Garzon MC. Clinical syndromes and cardinal features of infectious diseases: approach to diagnosis and initial management. Principles and Practice of Pediatric Infectious Diseases,2012:98-505.
8. Anis SF, Hashaikeh R, Hilal N. Reverse osmosis pretreatment technologies and future trends: A comprehensive review. Desalination,2019:452:159-195.
9. Bartram J, Howard G. Drinking-water standards for the developing world. Handbook of Water and Wastewater Microbiology,2003:221-240.
10. Otorkpa OJ, Chinazom A, Adamu AS. Drinking water quality parameters in Africa and the United States: Implications for public health. Engineering Science and Technology Journal,2024:5(8):2466-2478.
11. Nwabor OF, Nnamonu EI, Martins PE, Ani OC. Water and waterborne diseases: a review. International Journal of Tropical Disease and Health,2016:12(4):1-14.
12. Achenbaum WA. 2008 Kent Award Lecture: An historian interprets the future of gerontology. The Gerontologist,2010:50(2):142-148.
13. Worthen H. The administration of military welfare in Kent, 1642-79. BattleScarred: Mortality, Medical Care and Military Welfare in the British Civil Wars,2018:174-191.
14. Prakash A, Prakash M, Mubarak S. A Study on Working Capital Management of Hindustan Unilever Limited. St Terasa's (autonomous) Ernakulam, 2023.
15. Nayak AK. Unilever PLC, 1932-2004. Multinationals in India: FDI and Complementation Strategy in a Developing Country,2008:107-134.
16. Keogh C. A study critically analysing the CSR activities of UK Supermarkets and how they compare when evaluated using a framework based on ISO 26000. University of Huddersfield, 2016.
17. Psomas E, Kafetzopoulos D. Performance measures of ISO 9001 certified and non-certified manufacturing companies. Benchmarking: An International Journal,2014:21(5):756-774.
18. Aithal S, Aithal PS. Concept of ideal water purifier system to produce potable water and its realization opportunities using nanotechnology. International Journal of Applied Engineering and Management Letters (IJAEML),2018:2(2):8-26.
19. Vandana, Kumar V, Lenka U. Aquaguard-on-the-Go: Purified Water Anywhere Anytime. South Asian Journal of Business and Management Cases,2017:6(1):109-112.
20. Vardhan KH, Kumar PS, Panda RC. A review on heavy metal pollution, toxicity and remedial measures: Current trends and future perspectives. Journal of Molecular Liquids,2019:290:111197.
21. Dietrich AM. Aesthetic issues for drinking water. Journal of water and health,2006:4(S1):11-16.
22. Zhang W, Ma F, Ren M, Yang F. Application with Internet of things technology in the municipal industrial wastewater treatment based on membrane bioreactor process. Applied Water Science,2021:11(3):52.
23. Argaman Y, Kaufman WJ. Turbulence and flocculation. Journal of the Sanitary Engineering Division,1970:96(2):223-241.
24. Andreen WL. The Evolution of Water Pollution Control in the United StatesState, Local, and Federal Efforts, 1789-1972: Part II. Stanford Environmental Law Journal,2003:22:21.
25. Patterson C, Waskar M, Muhammad N, Sinha R, Krishnan ER, Shah N. Evaluation of a pour-through water treatment device for use as microbiological purifier. World Environmental and Water Resources Congress 2010: Challenges of Change,2010:281-288.
26. Hérard R. Coagulation and Treatment of Drinking Water in Cold Conditions Using Alum and Dissolved Air Flotation. Université d'Ottawa/University of Ottawa, 2023.
27. Chinn TD. Water treatment. Environmental Engineering: Water, Wastewater, Soil and Groundwater Treatment and Remediation,2009:133-281.
28. Blatchley III ER, Brenner DJ, Claus H, Cowan TE, Linden KG, Liu Y, *et al*. Far UV-C radiation: An emerging tool for pandemic control. Critical Reviews in Environmental Science and Technology,2023:53(6):733-753.
29. Shafiee M, Reza M, Taghavi L. Health effects of trihalomethanes as chlorinated disinfection by products: A review article. World Academy of Science, Engineering and Technology,2012:68:2090-2096.
30. Dasgupta S, Roy J, Ghosh M, Talukder J. Willingness to pay (WTP) for arsenic-safe drinking water: A case study to understand societal embedding of ECAR technology in rural West Bengal, India. Development Engineering,2022:7:100096.
31. Das R, Laishram B, Jawed M. Perception of groundwater quality and health effects on willingness to procure: The case of upcoming water supply scheme in Guwahati, India. Journal of Cleaner Production,2019:226:615-627.
32. Wada Y, Van Beek LP, Van Kempen CM, Reckman JW, Vasak S, Bierkens MF. Global depletion of groundwater resources. Geophysical research letters,2010:37(20).
33. George DR. Evaluation of Alternative Technologies to Supply Drinking Water to Marines in Forward Deployed Locations, 2010.
34. Gupta S, Kumar PK. Study of Service Quality Satisfaction of Water Purifiers with Special Reference to Aquaguard, NCR. Journal of Management and Research,2011:1(1):67-73.
35. Ramaswamy V. Historical dictionary of the Tamils. Rowman and Littlefield, 2017.
36. Das I, Ghosh S, Ghosh P. Future of domestic water purifiers in the Indian market. International Journal of Research in Management,2024:6(2):305-309.
37. Das I, Ghosh S, Ghosh P. Marketing strategy for low cost gravity-based water purifier in the West Bengal

market. International Journal of Research in Management and Sales,2024:6(2):160-166.
38. Behera HB, Ghosh P, Koley J, Chakraborty S, *et al*. The Role of Women in Rural Marketing: Empowerment and Economic Drivers. Asian Journal of Management and Commerce,2024:5(1):468-474.
39. Behera HB, Ghosh P, Koley J, Chakraborty S. Rural Marketing, Self Help Groups and Women Entrepreneurships in Birbhum District, West Bengal, India: A Brief Review. International Journal of Research in Marketing Management and Sales,2024:6(2):73-77.
40. Gayen D, Ghosh S, Ghosh P. From Insight to Action: Translating Mixed Methods Research into Effective Management Strategies for Addressing Health Hazards among Rural Girls in West Bengal. IPE Journal of Management,2024:14(2):15-24.
41. Behera HB, Ghosh P, Chakraborty S. Predictive intelligence in finance: Emerging trends in AI and NLP for customizing services. International Journal of Computing and Artificial Intelligence,2025:6(1):1-8.
42. Behera HB, Ghosh P, *et al*. Role of Self Help Groups of Birbhum District in Women Empowerment through Green Supply Chain Management. Calyx-International Journal of Business Management,2025:6(1):59-77.
43. Gayen D, Ghosh S, Ghosh P, Sinha Ray A. From lunch boxes to health risks: Uncovering teenage malnutrition in West Bengal. Asian Journal of Management and Commerce,2025:6(2):361-367.
44. Behera HB, Chakraborty S, Konar A, Tabia T, Ghosh P, Koley J. Role of self-help groups in environment-friendly product marketing for rural development and women empowerment. International Journal of Research in All Subject,2025:1(2):1-5.