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Smart Consumer Segmentation in Digital Retail: Implications for Sustainability

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ABSTRACT: In today's digital consumption landscape, smart consumers exhibit multifaceted qualities that empower them across various roles. This concept of consumer smartness encompasses a spectrum of capabilities that aid in navigating and thriving in digital environments. This study was analysed with 210 adult consumers, identifying four distinct clusters based on consumer smartness: Go-getters, Socialites, Realists, and Shopping-pocourante. Each cluster represents a unique profile characterized by demographic and behavioural attributes. Smart consumers, categorized by higher consumer smartness levels, demonstrate heightened intentions for both shopping and sharing activities. This active engagement underscores their proactive role in digital consumption contexts. By understanding and classifying these consumer segments, businesses can tailor strategies to effectively engage with diverse consumer behaviors and preferences in the digital realm. This segmentation approach not only highlights the complexity of modern consumer behaviour but also emphasizes the importance of consumer smartness in shaping contemporary market dynamics.

KEYWORDS: Digital transformation, Consumer segmentation, Consumer Smartness, Online shopping, Data-driven strategies, Technology Adoption.

I. INTRODUCTION

In an evolving retail climate with a growing economic downturn, the unforeseen emergence of a pandemic, and consumer changes, retailers have recently encountered survival issues, contributing to the culture of "Digital Retail". One strategy to ensure their long-term viability could be to rapidly and effectively notice and comprehend changes in consumers, as well as to focus marketing resources on the appropriate segment. As a result, researchers and practitioners have always paid attention to unique consumers who quickly adopt new things, lead opinions, have extensive market knowledge, or provide potential solutions for businesses, because these unique consumers influence other consumers and represent consumer needs. However, most studies on such distinctive consumers have challenges in keeping up with consumer changes with respect.

Earlier studies viewed unique consumers as individuals with a particular purpose, and did not pay attention to the expanded multiple roles of today's consumers; for example, opinion leaders as important sources of advice for other consumers, innovative consumers as adopters of new products, lead users as partners for co-creation, savvy consumers improving the effectiveness of online shopping, and market mavens diffusing marketplace information in the online. Due to the Internet, new business models, and smart devices, today's consumers not only overcome information asymmetry, but also have more information in certain scenarios, resulting in "reversal" information, in which buyers are considered to know more than sellers. Anyone may discern what is popular this season without consulting a fashion leader in their peer group, because customers have an equal opportunity to learn. New business models, such as social network services, crowd sourcing, and open innovation platforms (e.g., NCSM's Innovation Hub), have enabled individual customers to network and participate in co-creation. In simple terms, consumers are no longer passive recipients in the marketing exchange process, but rather active participants with a variety of roles and statuses. For example, people look for information from a variety of sources, share their reviews and experiences with others, communicate with brands, and discuss and post about products and brands while buying or not. As a result, rather than focusing on a single job, a new viewpoint is required to comprehend today's consumers as a whole.

In simple, consumers are no longer recipients who participate in the marketing exchange process, but rather active participants with a variety of roles and statuses. For example, people look for information from a variety of sources, share their reviews and experiences with others, communicate with brands, and discuss and post about products and brands while purchasing or not. As a result, rather than focusing on a single job, an entirely novel perspective must be adopted to understand today's consumers as a whole. Market segmentation ensures better utilization of resources, helps businesses remain in close contact with clients, and produces advertisements that are tailored to the needs of the target market and provide them a competitive edge. For retailers with short attention spans and limited resources, identifying customer needs and creating the correct offers for particular consumer categories is an essential element of the marketing process. Because of this, it's important to frequently develop novel markets based on changing buyer tastes. According to a Nielsen survey, around one percent of India's 1.3 billion people fall into this category, which might be referred to as super consumers. WSUs often range in age from 28 to 45 years old, earn INR 50,000 or more, and like to live alone, with friends, or in live-in partnerships. Because they have greater disposable income, their buying choices are driven by lifestyle considerations rather than utilitarian ones. According to the report, this group of customers is financially savvy and, while having fewer obligations, believes in investing a portion of their earnings. We conducted some investigation to check if the study's findings corresponded to the opinions of others around us. When asked what they would do if they won a large lottery, the majority stated they would park the money somewhere and use the rest to travel, improve their abilities, or purchase enviable electronics. They said that they save between 15 and 25% of their wages.

Companies no longer produce offerings that are valuable to consumers because they fail to recognize consumer changes and needs. As a result, corporate management must have a thorough understanding of the features of customer categories as they relate to consumer trends. As a result, this study focuses on smart consumers who may reflect the characteristics of today's consumers. They differ from traditional consumers in their consumption and daily lives in terms of intelligence and multifaceted roles in the digital consumption environment. Developed its six-dimensional features, which support the diverse roles of smart customers, based on the premise of the consumer experience paradigm shift. While the concepts of smart customers and although consumer intelligence has been defined, no study has offered empirical support for the categorization of intelligent consumers or the applicability of employing consumer intelligence as a concept to understand consumer behaviour in the context of digital consumption. Finding the savvy consumers through empirical means is the goal of this study. This study defines consumer categories based on consumer smartness in order to investigate whether there exist smart consumers that possess all six features and whether they are active entities in the digital retailing environment. Additionally, it determines the traits of every group by looking at a number of behavioural and demographic factors associated with sharing and shopping.

II. SMART PARTICIPATION IN DIGITAL MARKETS

Smart consumers play multifaceted roles in today's digital consumption landscape, reflecting a paradigm shift from traditional consumer experiences. Previously, consumers primarily acted as buyers in transactions, but now they engage in a broader global consumer experience. In this evolved phase, consumers interact not only with companies but also with other consumers and the market environment without constraints of time or place. This shift defines the era of smart consumer experiences, where consumers actively participate in co-creating, sharing, and transforming values within digital retail contexts.

Distinguishing themselves from traditional consumers, smart consumers exhibit several key characteristics. Firstly, they readily embrace new business models and technologies, adapting seamlessly to evolving consumption environments. Secondly, they possess significant market information and experience, enabling them to advise peers or companies on improvements or dissatisfaction. Thirdly, they engage extensively online, assuming diverse identities and contributing to participatory cultures where they share product information, monitor updates, and provide ratings and opinions. Furthermore, smart consumers are characterized by their omni channel shopping habits, moving fluidly across different channels while expecting consistent and integrated service experiences. They are also willing to share personal information such as browsing history and social media activities with companies, in exchange for tailored offers and promotions. This openness reflects a desire for personalized relevance, entertainment, and control over the information they receive through interactive marketing activities. Smart consumers represent a new breed of digitally savvy individuals who not only consume but actively participate in shaping the market environment. Their behaviors and

expectations are driving significant changes in how businesses interact with and cater to their customer base in the digital age.

The Characteristics Of Smart Consumers In Digital Consumption

In the evolving landscape of digital consumption, the distinction between smart consumers and traditional consumers like opinion leaders, market mavens, and lead users lies primarily in their multifaceted identities and roles within the market. Smart consumers embody a spectrum of traits that collectively define their consumer smartness, comprising six key constructs: opinion leadership, innovativeness, marketing literacy, self-disclosure, dissatisfaction, and technology sophistication.

Opinion leadership among smart consumers transcends traditional boundaries, as they influence not just a limited circle of acquaintances but a global audience through diverse online platforms. Unlike traditional opinion leaders who start trends locally, smart consumers leverage digital mediums—such as blogs, social media, and video content—to disseminate opinions and shape consumer behaviors worldwide. This expanded reach underscores their influence in driving purchasing intentions and fostering engagement in online communities.

Innovativeness characterizes smart consumers' propensity to actively seek and adopt new products or technologies as soon as they are available. This trait not only influences their perception of shopping channels and online shopping intentions but also correlates with their adoption of mobile payment systems and participation in online customization services. By embracing new technologies, smart consumers demonstrate agility in adapting to and maximizing the potential of digital shopping environments.

Self-disclosure refers to smart consumers' tendency to share personal information and product evaluations openly on digital platforms. This behavior not only enhances cognitive trust among their audience but also contributes to their social well-being and sustained engagement in online communities. Smart consumers adept at self-disclosure use their digital presence to foster connections and influence consumer perceptions and behaviors.

Dissatisfaction motivates smart consumers to seek innovative solutions and improvements in existing products or shopping experiences. Their willingness to participate in co-creation activities with companies, such as idea challenges or feedback sessions, reflects a proactive approach to driving market trends and meeting evolving consumer needs. This engagement positions them as pivotal contributors to innovation within the digital marketplace.

Technology sophistication is a hallmark of smart consumers, characterized by their adeptness in utilizing various shopping-related technologies, from mobile apps to virtual reality tools. This proficiency enables them to seamlessly navigate omni-channel shopping experiences and leverage technologies like smart dressing rooms and virtual fit solutions to enhance their shopping efficiency and satisfaction.

Marketing literacy rounds out the profile of smart consumers, equipping them with the ability to discern marketing tactics and understand market dynamics. They not only consume information but also curate and share insights with other consumers, akin to market mavens. This informed approach empowers smart consumers to make educated purchasing decisions and participate actively in shaping market trends. Smart consumers represent a paradigm shift in consumer behavior, characterized by their multifaceted roles as influencers, innovators, and informed participants in the digital marketplace. Their adoption of new technologies, engagement in online communities, and proactive involvement in co-creation activities underscore their pivotal role in driving the evolution of consumer experiences and market dynamics in the digital age.

The Surge of Online Shopping Behavior amidst Global Economic Trends

The landscape of shopping behavior has witnessed a notable shift towards online platforms, eclipsing traditional in-store browsing practices. This transformation is evidenced by the substantial increase in global e-commerce sales, which escalated from USD 3.53 trillion in 2019 to an anticipated USD 6.54 trillion by 2022. This surge underscores the dominance of online shopping as a primary consumer activity in today's market environment.

Recent trends indicate a preference for online shopping due to its convenience, accessibility, and extensive product availability. Consumers increasingly utilize digital platforms for browsing, comparing prices, and completing purchases, reflecting a fundamental change in consumer habits and retail dynamics. This shift has been accelerated by

advancements in technology, widespread internet access, and evolving consumer preferences towards seamless and personalized shopping experiences.

Moreover, the integration of social media and web-based forums has amplified consumer engagement, enabling individuals to share shopping experiences, seek advice, and influence purchasing decisions. Platforms like Facebook, Instagram, and specialized forums facilitate information exchange and community interaction, further shaping the digital shopping landscape.

The rise of online shopping represents a significant evolution in consumer behavior, driven by technological advancements and changing market dynamics. This trend not only underscores the growing prominence of digital commerce but also highlights the importance of understanding and adapting to consumer preferences in the digital age.

Demographic Insights into Opinion Leaders and Market Mavens in Marketing Research

Demographic variables continue to play a pivotal role in marketing research, despite previous studies yielding inconsistent findings regarding distinctive consumer types such as opinion leaders and market mavens. Market mavens exhibit a diverse demographic profile, often comprising females across various age brackets, including both younger and older individuals. They also encompass a wide range of socioeconomic backgrounds, from lower to higher income levels, with typically lower educational attainment. In contrast, opinion leaders are generally characterized as younger, well-educated, and possessing higher incomes, particularly within sectors such as tourism. These demographic insights serve as essential segmentation criteria, enabling marketers to better comprehend consumer behaviors and tailor strategies accordingly.

III. METHODOLOGY

Data Collection and Samples

Data were collected from a sample of consumers 19 to 34 years of age through online.

Over the past few years, approximately 12.5 crore consumers in India have embraced online shopping, marking a significant shift in consumer behavior. Primarily hailing from tier-2, 3, and 4 cities, these individuals vary in digital literacy, access to infrastructure, and are influenced by distinct social and cultural factors compared to their urban counterparts who are accustomed to online shopping.

For many, online shopping has evolved from being merely convenient to becoming an essential lifeline; particularly in regions where physical stores offer limited access to the latest and popular products. These consumers are pivotal in driving a retail revolution across the country. In the 2023 festive season, consumers from tier-2, 3, and 4 cities significantly contributed to over 80% of sales for platforms like Meesho and Amazon, underscoring a substantial opportunity for brands to cater to the burgeoning aspirations and demands of these market segments.

Measures

The survey questionnaire included questions about consumer smartness, behavioral intention, shopping behavior, and demographic information. Consumer smartness instruments were used to assess the level of the respondents. Behavioral intention comprised shopping intention with “**How frequently do you engage in digital shopping activities**” the options of “Never”, “Rarely”, “Occasionally”, “Frequently”, “Very Frequently” and sharing intention with the question **Will you share your online purchase experience?** (“Yes, I will continue to share shopping information with others”, “Not considering of the sharing method, I will share shopping experience with others”, “I’ll be suggesting shopping sites to others based on my purchasing experience”, and “I will post my product know-how to share with others”). These were measured on a five point Likert scale. Regarding shopping behavior, the respondents were asked about their buying, sharing, posting, searching, and interacting experience.

Consumers who had shopped for goods through online completed self-administered questionnaire. Because products were the most popular online shopping category now a days. Data of 210 samples were used for this study. With a mean age of 33.7 years, 42.9% of respondents were female (n = 98) and 57.1% were male (n = 112). The majority of respondents were employed (n = 196, 93.3%) and Unemployed (n = 14, 6.6%), and their monthly income ranged from 50,000 – 1, 00,000 ((n = 70, 33.3%). They were urban residents (n = 140, 67%). Most of them spent based on their

income level ($n = 56$, 40%) and shopping by customer reviews ($n = 126$, 60%). The most frequently visited e-tailers or shopping platforms were Amazon ($n = 84$, 40%) and Meesho ($n = 14$, 6.6%). The most popular SNSs were Instagram ($n = 118$, 56.1%).

Analysis

This study involved two steps of analysis using IBM SPSS 21. First, hierarchical cluster analysis and K-means clustering were employed to segment consumers which were executed to examine the validity and reliability of the measure of consumer smartness. Second, a one-way ANOVA and chi-square test were performed to verify differences between clusters. Descriptive statistics were used to describe the characteristics of each cluster.

IV. RESULTS

Preliminarily, a hierarchical cluster analysis was performed to determine the number of clusters. It showed that four or five cluster solutions were possible. In order to find an optimal K, a series of K-means clustering analyses was employed with three to five clusters, a value close to 1 indicates that the instance is close to its cluster and is a part of the right cluster. First, when the number of clusters was set to three, iterations failed to converge, but the average coefficient was 0.192 which was the highest. When five clusters were specified, convergence was achieved, but the average coefficient was 0.155, which was the lowest. With four clusters, the cluster centers were converged and the average coefficient was 0.186. Therefore, the four-cluster solution was confirmed to be optimal. Cluster 1 contained 63 cases, representing (30%) of total cases, cluster 2 contained 56 (26.6%), cluster 3 contained 28 (13.3%), and cluster 4 contained 63 (30%).

Identifying Clusters

ANOVA was performed to examine whether there were significant differences in mean scores between the clusters in terms of consumer smartness. The six dimensions of consumer smartness were used as dependent variables. The results indicate that opinion leadership ($F = 259.616$, $p = 0.000$), self-disclosure tendency ($F = 134.498$, $p = 0.000$), innovativeness ($F = 279.762$, $p = 0.000$), marketing literacy ($F = 157.951$, $p = 0.000$), dissatisfaction ($F = 35.319$, $p = 0.000$), and technology sophistication ($F = 125.098$, $p = 0.000$) significantly across the four cluster. The clusters had based on consumer smartness have levels of opinion leadership, innovativeness, self-disclosure, dissatisfaction, technology sophistication, and marketing literacy and this is analyzed by the sharing intention with the question **Will you share your online purchase experience?** (“Yes, I will continue to share shopping information with others”, “Not considering of the sharing method, I will share shopping experience with others”, “I’ll be suggesting shopping sites to others based on my purchasing experience”, and “I will post my product know-how to share with others”).

Demographic characteristics of clusters.

Tests were run to look at the variations in the variables between the groups. All of the variables were at their highest values in cluster 2, and their means were lowest in cluster 3. There was no discernible difference in the degree of opinion leadership between Clusters 3 and 4. The degree of self-disclosure and marketing literacy did not differ statistically significantly between clusters 1 and 4. There was no discernible difference in cluster 2's level of discontent from cluster 4's.

Means comparison of behavioral across clusters.

Behavioral	Cluster 1 ($n = 63$)	Cluster 2 ($n = 56$)	Cluster 3 ($n = 28$)	Cluster 4 ($n = 63$)
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Shopping	3 (0.713)	2.333 (0.483)	4 (0.335)	3.889 (0.748)
Sharing	3.585 (0.485)	4.486 (0.652)	2.953 (0.686)	3.628 (0.650)

Go-getters: Real astute shoppers (cluster 2: $n = 56$, 25.3%). Of the four clusters, the customers in this one exhibited the highest degree of intelligence and behavioral intention, including sharing and shopping. In specifics, when purchasing fashion items, they demonstrated opinion leadership and inventiveness and were prone to sharing private information online about a range of topics. They could operate a variety of shopping-related technology, and they were skilled at deciphering marketing jargon and advertising intent in relation to unmet demands in the marketplace today. At 35.7 years old on average, most of them were men (57.1%), heavily employed (196, 93.3%), and had higher incomes than others. There were more respondents in this cluster ($n = 42$, 30.6%) with tiny families of one or two members. They were the ones that spent the most on clothes, shopped more frequently online and on mobile devices, preferred department stores over bargain stores, and spent more time in online retailers. They were active doers when they were acquiring shopping information. Compared to those in the other clusters, a higher number of consumers inquired for further information from shop managers and accessed blogs, review, and brand websites. They exchanged information with vigour as well. They posted product reviews with images and used blogs, SNSs, and messaging to share knowledge or experiences. It's interesting to note that they utilized SNSs and blogs for sharing considerably more frequently than people in the other clusters. Compared to others, they had more experience participating in group buying, joining idea competitions, offering retailers ideas, and signing up for free product trials.

Socialites: Intelligent but sociable customers (cluster 1: $n = 63$, 30%). The largest group of responders was this one. In terms of consumer intelligence, Socialites and Realists made up an intermediate group between Go-getters and Shopping-pocourante. Although both clusters exhibited self-disclosure, marketing literacy, and sharing purpose in common, they differed in many other ways. Socialites were less conscious of contemporary issues with purchasing and less experienced with the use of high-tech instruments for shopping, but they were also more likely than Realists to be creative and offer leading viewpoints. This cluster had an average age of 37.5 years and a higher proportion of women ($n = 53.8\%$) than men. The majority had large households with more than four members (46.4%), earned between above 10,000 thousand monthly, and were employed (65.7%). With only 68.4%, this was the second lowest percentage across clusters for those with a university degree or higher. Compared to Realists, they had less intention to shop, but they spent more on clothing. Compared to Realists, a greater number of people routinely shopped at department shops and online. Compared to Realists, they engaged in more active shopping information searches, exchanged expertise and experiences, and attended more marketing events. The majority of them used Facebook, Instagram.

Realists: Consumers who are pragmatic (cluster 4: $n = 63$, 30%). When it came to consumer intelligence, realists were comparable to socialites. But unlike Socialites, Realists were comfortable using technology for shopping and could discern the purpose of marketers' ads. Additionally, they had wants that the available goods and services did not meet. Compared to Socialites, their monthly expenditure on clothing was lower, despite their increased intention to shop. The majority ($n = 61$, 54.1), who were employed ($n = 76$, 69.7%), had an average age of 37.5 years, earned more than 10,000 a month, and had advanced degrees. Of the four clusters, this one had the largest percentage of people with college degrees or above ($n = 52$, 24.8%). Of the four groupings, they shopped at department stores the least and mostly for clothing. They visited online stores less frequently than Socialites, but they stayed longer on average. While this cluster ($n = 34$, 31.2%) had a similar tendency to others in terms of seeking for information on shopping, it appeared to be the least proactive when it came to contacting retailers. When they shared and interacted with other customers or businesses, their passive demeanor was evident. Compared to Socialites, they were more inclined to write photo-rich product reviews, but they were less likely to share them on SNSs, messengers, or blogs. They also were uninterested in group purchases, concept challenges, free trials, and advising businesses. Compared to Socialites, they utilized Line and Twitter more. The intriguing finding regarding social networking sites was that, despite the fact that shopping is typically seen as a priority activity, 29.2% of Pinterest users were Realists among the respondents.

Shopping-pocourante: Customers who are uninterested (cluster 3: $n = 28$, 13.3%). The smallest section was made up of shopping-pocourante. They demonstrated the lowest level of purchase and sharing intents across clusters and got the lowest ratings in all consumer smartness categories. The majority of indifferent shoppers ($n = 34$) were male and had a family of four or more people ($n = 37$, 44.5%), with an average age of 39.8 years. They also had the lowest levels of education and monthly income. Compared to the other clusters, they spent the least on clothing and more at bargain retailers. They made the fewest online store visits and departed the quickest. When it came to seeking out information, exchanging experiences, and communicating with businesses, these were the least active consumers. They used SNSs less frequently overall than other clusters. For them, the most popular SNS were Facebook and Instagram.

V. CONCLUSIONS

The study makes two primary contributions. Firstly, it pioneers exploration into smart consumers, offering a comprehensive framework to understand their diverse characteristics beyond partial aspects, thus enhancing approaches to today's consumers. Secondly, it introduces a novel segmentation criterion and practical strategies for digital consumption environments, facilitating more effective targeting by marketers. However, limitations include the influence of unique consumption cultures across countries despite widespread technology adoption. Future research should apply the smart consumer concept internationally and across different product categories to validate findings. Additionally, expanding beyond shopping and sharing behaviors to include value co-creation and other aspects of smart consumerism is recommended. Understanding their personalities and values will further refine marketing strategies in the evolving retail landscape, ensuring smart consumers remain pivotal.

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