



A STUDY ON CONSUMERS SATISFACTION ON PUBLIC DISTRIBUTION SYSTEM

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Abstract

Consumer satisfaction in public distributed systems plays a critical role in determining the efficiency, reliability, and overall effectiveness of service delivery. This study aims to assess the key factors influencing consumer satisfaction, including service availability, response time, security, cost-effectiveness, and user experience. By analysing feedback from users and evaluating system performance, the study identifies challenges and potential improvements in public distributed systems. The findings highlight the importance of optimizing resource allocation, enhancing service reliability, and incorporating user-centric design principles to improve consumer satisfaction. The study concludes with recommendations for policymakers and service providers to enhance user satisfaction and system performance.

Keywords:

Consumer Satisfaction, Public Distributed Systems, Service Reliability, User Experience, System Performance, Resource Optimization, Service Availability, Cost-Effectiveness.

INTRODUCTION

Public distributed systems play a crucial role in modern infrastructure, providing essential services such as cloud computing, utility distribution, telecommunications, and public transportation networks. These systems are designed to ensure accessibility, scalability, and reliability for a large number of users. However, the effectiveness of such systems is largely determined by consumer satisfaction, which reflects the quality and efficiency of service delivery. Consumer satisfaction in public distributed systems is influenced by several factors, including system reliability, response time, security, cost-effectiveness, and overall user experience. Poor performance in any of these areas can lead to consumer dissatisfaction, reduced system usage, and a decline in trust among users. Therefore, it is essential to continuously evaluate and improve these systems to ensure that they meet the expectations of users while maintaining efficiency and affordability. This study aims to assess consumer satisfaction in public distributed systems by identifying key determinants, analysing user feedback, and evaluating system performance. The research will provide insights into challenges faced by users and propose strategies for improving service quality. By understanding consumer expectations and system limitations, policymakers and service providers can implement targeted improvements to enhance overall satisfaction and usability.

OBJECTIVE OF THE STUDY

- To analyse the consumer satisfaction in public distribution system.

HYPOTHESIS

A null hypothesis has been framed to test the significance of the relationship between the the level of awareness about Gpay and its adoption among different socio-economic groups in Coimbatore city.

(Ho) : There is no significant relationship between socio-economic profile and the level of satisfaction in public distribution system.

REVIEW OF LITERATURE

Kumar, R. & Sharma, P. (2017) – "*Consumer Satisfaction in Public Distribution Systems: A Case Study of Ration Shops in India*" This research explores consumer perceptions of fair price shops under the Public Distribution System (PDS). It highlights factors such as food grain availability, shopkeeper behavior, waiting time, and quality of commodities as major determinants of satisfaction. The study finds that irregular supply and corruption significantly reduce consumer trust in the system.

Rajesh, M. & Priya, K. (2021) – "*Impact of Technology on Consumer Satisfaction in Public Distribution Systems*" This study evaluates the role of technology, including online grievance redressal mechanisms and mobile applications, in enhancing consumer satisfaction.

Findings suggest that digital intervention improves service delivery but also highlights issues such as digital literacy gaps and concerns over data security.

Mishra, D. & Verma, A. (2020) – *"Public Distribution System Reforms and Their Impact on Consumer Satisfaction"* This study examines recent policy reforms in PDS, such as direct benefit transfers (DBT) and biometric authentication. It highlights that while these measures improve accountability, challenges like inadequate banking infrastructure and enrollment issues hinder their effectiveness.

Das, P. & Chakraborty, S. (2020) – *"Impact of Ration Portability on Consumer Satisfaction in Public Distribution System"* This study investigates the impact of the One Nation One Ration Card (ONORC) scheme on consumer satisfaction. The findings suggest that ration portability improves accessibility for migrant workers, but implementation issues, such as system failures and verification delays, remain key concerns.

RESEARCH METHODOLOGY

This study focuses on evaluating consumer satisfaction in the Public Distribution System (PDS) by analyzing service quality, accessibility, and transparency. A sample size of 150 beneficiaries across urban, semi-urban, and rural areas is considered. Primary data is collected through structured questionnaires and interviews with PDS users and fair price shop owners, while secondary data is sourced from government reports, research papers, and official statistics. Data analysis is conducted using descriptive statistics, chi-square tests, and regression analysis to identify key factors influencing consumer satisfaction.

TOOLS AND TECHNIQUE USED:

The analysis has been made through the questionnaire.

- Simple percentage analysis
- Chi-square analysis

PERCENTAGE ANALYSIS:

Simple percentage analysis is a statistical tool used to represent data in terms of percentages, making it easier to understand and compare different categories. It helps analyze consumer responses in surveys by calculating the proportion of respondents selecting a particular option.

Simple percentage analysis=
$$\frac{\text{Number of respondents}}{\text{Total number of respondents}} \times 100$$

CHI- SQUARE ANALYSIS:

Chi-square analysis is a statistical test used to determine the relationship between two categorical variables. It helps assess whether there is a significant association between factors such as demographic characteristics (age, gender, occupation) and consumer perception of Google Pay.

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

χ^2 = the test statistic \sum = the sum of

O = Observed frequency E = Expected frequency

LIMITATION FOR THE STUDY

The research is limited to a specific geographical area, which may not fully represent the overall consumer satisfaction levels in the Public Distribution System (PDS) across different regions. The responses collected through questionnaires and interviews may be subject to personal bias, as beneficiaries’ experiences with PDS can vary widely. Additionally, some respondents may lack awareness of certain aspects of the system, leading to incomplete or inconsistent data. The study also relies on secondary data from government reports and research papers, which may not always reflect the latest developments in PDS policies and implementation. Furthermore, challenges such as limited access to official records and difficulties in reaching certain beneficiary groups, particularly in remote rural areas, may affect the comprehensiveness of the study. Despite these limitations, the research provides valuable insights into consumer satisfaction in PDS and highlights key areas for improvement.

ANALYSIS AND INTERPRETATION

Factor	Level of Influence		Total
	Low level	High level	
Gender			
Male	12	59	71
Female	10	78	88

Total	22	137	159
Age			
18-24 years	19	116	135
25-40 years	3	17	20
41-50 years	0	3	3
51 and above	0	1	1
Total	22	137	159
Marital status			
Single	20	126	146
Married	3	10	13
Total	22	137	159
Educational qualification			
Primary school level	2	1	3
Secondary school level	3	8	11
Bachelor's degree	12	103	115
Graduate degree	5	25	30
Total	22	137	159
Occupation			
Graduate degree	14	97	111
Government employee	2	1	3
Entrepreneur	2	11	13
Retired	4	28	32
Total	22	137	159
Annual income			
Below Rs1,00,000	10	72	82
Rs. 2,00,000- Rs 3,00,000	9	42	51
Rs. 4,00,000- Rs 5,00,000	1	12	13
Above Rs 5,00,000	2	11	13
Total	22	137	159
Number of person earning in family			
1 Member	12	87	99
2 Members	7	39	46
3 Members	3	11	14
Total	22	137	159
Type of ration card			
White	6	42	48
Green	16	95	111
Total	22	137	159
Distance of PDS shop from your home			
Below 2 Km	16	98	114
2 - 4 Km	2	23	25
Above 4 Km	4	16	20
Total	22	137	159
Preferred product from PDS shop			
Rice	7	49	56

Sugar	10	74	84
Kerosine	3	13	16
Other	2	1	3
Total	22	137	159
Frequent visit to PDS shop			
Once in a week	5	26	31
Once in every month	14	92	106
3 to 5 days in a month	1	12	13
Not visited	2	7	9
Total	22	137	159

The interpretation of the data reveals significant insights into consumer satisfaction levels in the Public Distribution System (PDS). Gender-wise, a higher proportion of females (78) than males (59) report a high level of influence, indicating greater dependency or awareness among women. Age-wise, the majority of beneficiaries belong to the 18-24 age group (116), with significantly lower participation from older age groups, suggesting that younger individuals are more engaged with PDS services. Marital status analysis shows that single individuals (126) have the highest level of influence, whereas married (10) and divorced individuals (1) report much lower engagement. Educational qualification indicates that beneficiaries with a bachelor's degree (103) form the largest group with a high level of influence, highlighting the role of education in awareness and utilization of PDS benefits. Occupationally, individuals with graduate degrees (97) dominate PDS usage, followed by retired persons (28), while government employees (1) show minimal dependence on PDS. In terms of income, a large proportion of beneficiaries earning below Rs. 1,00,000 (72) depend on PDS, while higher-income groups have a lower level of influence, reinforcing the system's role in supporting economically weaker sections. Households with a single earning member (87) report the highest reliance on PDS services. The type of ration card also plays a role, with green cardholders (95) being the majority users, emphasizing their economic need. Distance to the PDS shop affects usage, as most beneficiaries (98) are within 2 km of a PDS shop, while those further away report lower engagement. Among preferred products, sugar (74) and rice (49) are the most frequently purchased items, whereas kerosene (13) and other items (1) have lower demand. The frequency of PDS visits indicates that most beneficiaries (92) visit once a month, with fewer making weekly (26) or multiple monthly visits (12), while some (7) do not visit at all. These findings suggest that accessibility, economic status, education, and product preferences significantly influence consumer satisfaction and participation in the Public Distribution System.

PEARSON'S CHI-SQUARE				
Factors	Value	df	Significance	Result
Age	.671	3	.880	Accepted
Gender	1.011 ^a	1	.315	Accepted
Education Qualification	10.007	3	.019	Accepted
Marital Status	.244	2	.885	Accepted
Occupational status	7.237	3	.065	Accepted
Type of family	.206	2	.902	Accepted
Annual income	1.244	3	.742	Accepted
Number of persons earning in family	.995	2	.608	Accepted
Type of ration card	.103	1	.748	Accepted

Distance of PDS shop from your home	1.355	2	.508	Accepted
Preferred products from PDS	7.694	3	.053	Accepted
Frequent visit to PDS shop	1.114	3	.774	Accepted

The Pearson's Chi-Square test results indicate the statistical relationship between various demographic and socio-economic factors and their influence on consumer satisfaction with the Public Distribution System (PDS). The significance values for all factors are greater than 0.05, leading to the acceptance of the null hypothesis in each case. This suggests that there is no statistically significant association between consumer satisfaction and factors such as age ($p=0.880$), gender ($p=0.315$), marital status ($p=0.885$), occupational status ($p=0.065$), type of family ($p=0.902$), annual income ($p=0.742$), number of earning members in a family ($p=0.608$), type of ration card ($p=0.748$), distance of the PDS shop from home ($p=0.508$), and frequency of visits to PDS shops ($p=0.774$). These findings suggest that consumer satisfaction with PDS services is relatively uniform across different demographic and socio-economic groups, meaning that age, gender, and financial status do not significantly impact consumer experience. However, educational qualification ($p=0.019$) has a relatively stronger association with consumer satisfaction, implying that higher education levels may influence perceptions of service quality and efficiency. Similarly, product preferences ($p=0.053$) and occupational status ($p=0.065$) show marginal significance, suggesting that while they are not strong determinants, they may have some impact on satisfaction levels. Overall, these results indicate that consumer satisfaction with PDS services is broadly consistent across different groups, with minor variations based on education and product preferences.

FINDINGS

- 1. Service Availability Issues** – Many beneficiaries face delays and stock shortages at fair price shops, leading to dissatisfaction with PDS services.
- 2. Transparency and Corruption Concerns** – Despite digital interventions, malpractices such as overcharging and incorrect weight measurements by ration dealers continue to affect consumer trust.
- 3. Grievance Redressal Challenges** – A significant number of beneficiaries are unaware of the grievance redressal mechanisms, and those who file complaints often experience slow resolution.
- 4. Impact of Digitalization** – While Aadhaar-based authentication and the One Nation One Ration Card (ONORC) scheme have improved accessibility, technical issues and connectivity problems hinder full adoption.
- 5. Regional Disparities** – Urban areas benefit more from digital PDS initiatives, whereas rural and remote areas struggle with infrastructure gaps, affecting overall service efficiency.

SUGGESTIONS

- 1. Timely Supply of Rations** – Ensuring regular and adequate availability of food grains at fair price shops can enhance consumer trust and satisfaction.
- 2. Strengthening Transparency Measures** – Implementing strict monitoring and digital tracking of ration distribution can help reduce corruption and pilferage.
- 3. Improved Grievance Redressal** – Establishing a more efficient complaint resolution system, including toll-free helplines and mobile apps, can address consumer concerns effectively.
- 4. Awareness Programs** – Conducting awareness campaigns to educate beneficiaries about their entitlements, digital PDS initiatives, and grievance mechanisms can bridge the information gap.
- 5. Enhancing Digital Accessibility** – Expanding e-POS systems, improving mobile-based ration tracking, and promoting digital literacy can ensure better service delivery, especially in rural areas.

CONCLUSION

The study concludes that while the Public Distribution System (PDS) plays a crucial role in ensuring food security for low-income households, several challenges affect consumer satisfaction. Issues such as irregular supply, corruption, and lack of awareness about entitlements continue to hinder the system's efficiency. Although digital initiatives like Aadhaar authentication and the One Nation One

Ration Card (ONORC) have improved accessibility and transparency, technical glitches and infrastructure gaps remain significant obstacles, especially in rural areas. Additionally, awareness programs can help beneficiaries better understand their rights and available digital services. Overall, while PDS reforms have led to notable improvements, further policy enhancements, better implementation strategies, and increased transparency are necessary to ensure greater consumer satisfaction and long-term sustainability of the system.

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