

Customer Perception on Digital Transformation of Public Distribution System

GIRIJA C

*Assistant Professor Department of Commerce & Management Studies
M.P.M.S.N.Trusts College, Shoranur, Palakkad, Kerala
&*

PRASHEEDHA V P

*IVth Sem M.Com Department of Commerce & Management Studies
M.P.M.S.N.Trusts College, Shoranur, Palakkad, Kerala*

Date of Submission: 28-07-2020

Date of Acceptance: 12-08-2020

ABSTRACT: Public distribution system is primarily a social welfare and antipoverty programme of the government of India. Essential commodities like rice, wheat, sugar, kerosene and like are supplied to the people under the PDS at subsidized prices. . It has been one of the most important elements in India's safety net system for almost 50-years and also the most far reaching in terms of coverage as well as public expenditure on subsidies. PDS provides rationed amounts of basic food items (rice, wheat, sugar, edible oils) and other non-food products (kerosene, coal, standard cloth) at below market prices to consumers through a network of fair price shops disseminated over the country. The main objectives of the study was to analyze the attitude of customers' towards e-pos machine in public distribution system and study the satisfaction level of customers' about e-pos machine in PDS . The primary data were collected from 100 respondents. Analysis and interpretations were done by using percentage analysis, tables, pie diagrams, and testing is done along with t-test. The study revealed that the bio-metric E-POS would help to prevent leakage at every stage in the public distribution system. It also assures maximum benefits to actual beneficiaries.

(Public Distribution system, Electronic Point of sale, E-POS PDS)

I. INTRODUCTION

The Civil Supplies Department discharges the important Responsibilities of Public Distribution, enforcement of markets discipline and Promotion of consumer awareness and protection of their interest. In the 60s and 70s it won many accolades for the pioneering achievements in the implementation of Universal Rationing System. The Department of Civil Supplies functions under the Department of Food, Civil Supplies and

Consumer Affairs of the Government of Kerala. Kerala State has the privilege of having the best system of Public Distribution in the whole country. The system is evenly spread over the whole state without any distinction between urban or rural to ensure equitable distribution of the food grains at a fairly low cost to all people especially to the weaker Sections of the population. There is a very good network of wholesale and Retail outlets for the distribution of rationed articles under the Public Distribution System. In order to make the Rationing system high tech the government implemented E-POS (Electronic

Point of Sale digital System) machine in Ration shop with this, the public distribution Mechanism in the state will move into the Aadhaar-enabled PDS (AePDS) mode. As part of enforcing the National Food Security Act (NFSA), the E-POS machines are expected to bring in transparency in the distribution of the food grain quota and check the corruption that has been rampant in PDS. Under the new system, ration goods will be distributed to the beneficiaries after Validation of biometric identification. Government provides food, oil, fuel to economically challenged people at subsidized rates which are distributed to the public through ration shops. The Stock for these ration shops collected from the farmers and then sold at subsidized rates. Every month fresh stock arrives at these shops and that needs to be distributed to public. The owner of most of the ration shops Resorts to malpractice, and amount of ration is not distributed to authorized people.

To counter these fraudulent activities, this system is developed which incorporate the following features:

1. Finger print authentication system.
2. The commodity and its needs to be selected using android application.

3. Predefined information about the amount of ration to be distributed.

4. Automatic ration distributing mechanism.

Public distribution system in the country has undergone organic changes from the rationing system introduced during World War 2 to an important Social safety program to ensure food security of the country. Under the PDS the central government, procures and supplies special essential commodities to fair prices at fixed central issue prices. In the past, a number of items like iodized salt, palm oil, candles, ghee etc... Have been distributed to PDS, however at present department of food and supplies have confined the fair price distribution to few wheats, rice, sugar, kerosene oil, etc. Department of food and supplies is providing ration cards to the citizens based on their economic conditions. Mainly four cards

Against the essential commodities Act there are many fraudulent activities going on unfair price shops. Users are forced to waiting long queues for hours Together to purchase the essential commodities. Card holders and their family member's details are stored in a note book. Maintenance of record in book is difficult. Thus, an efficient and automated system is required to minimize misappropriations. So, the government.

II. LITERATUREREVIEW

KURIEN (1981) in his study, he examined the food situation in India with reference to the socio-economic aspects of the food problem. He found that increased under nutritional problem coexisted with a growing food output. The conflicts arising out of the differences between the objectives of the private production system and that of the Public Distribution System were examined by him. His study underlined the deplorable reality that in spite of the huge buffer stock with the Government, even the quantitative problems could not be solved. He concluded that this only reflected the helplessness and ineffectiveness of public policy and the public Distribution System in India.

PODUVAL (1984) in his study, he examined the functioning of the Public Distribution System in Tamil Nadu. In his overall assessment, Poduval concluded that in respect of accessibility to food or entitlement to food grains, the Public Distribution System supplies in Tamil Nadu were highly inadequate to make any impact on the consumption levels of Public Distribution System consumers. He concluded that Tamil Nadu Civil Supplies Corporation has prevented the Open Market Price from falling below the Open Market Prices.

UMA AND LELES (1973) in the study pointed out the significance of the relationship between the private trading activities and the Government's food policies. It confirmed that the grain trade in India operated efficiently within the technological and policy confines. It concluded that if Government's policies could be made to facilitate investment in the new storage and transport sectors and could be made to encourage technological improvement, the traditional market structure will be able to function economically and 15 still more efficiently. This study did not examine the question of how to solve the food problem of the weaker sections under the free market system, given the real problem of extreme economic inequality in the society.

RAMAMURTHY (1974) in his study, he examined the levels of poverty and destitution in Tamil Nadu

Ration Card Color	Beneficiaries
Yellow Card	<ul style="list-style-type: none"> Most economically backward section of society Antyodaya Anna Yojana beneficiaries (AAY)
Pink Card	<ul style="list-style-type: none"> Priority or Below Poverty Line (BPL) Priority
Blue Card	<ul style="list-style-type: none"> Non - Priority subsidy or Above Poverty Line (APL) NPS
White Card	<ul style="list-style-type: none"> Non - Priority NPLS

vis-a vis the trends in the production and distribution of wage goods (cereals, pulses, sugar, tea and cotton) for the period 1960-61 to 1970-71.

Ramamurthy emphasized the significant role that the Public Distribution System could play in the eradication of poverty and destitution in Tamil Nadu after establishing that the Public Distribution System is superior to all other anti-poverty measures.

GULATI AND KRISHNAN (1975) evaluated the PDS and concentrated primarily on

1) The estimation of quantity of cereals needed for protecting the economically vulnerable sections against price rise.

2) The development of an appropriate and suitable internal procurement system for meeting the estimated requirements. The study identified the problem of inequity in the distribution levy burden among the farmers and recommended that the principles of equi-marginal sacrifice should become the basis for the fixation of levy rates between different classes of farmers within a state and across states and come out with an alternative PDS proposed.

RAJAPUROHIT (1978) in his study, he stated the segments of the population who consumed less than the state average quantity of cereals was treated as the target group. The study suggested the exchange of superior cereals like Rice and Wheat with coarse cereals like Jowar, Ragi and Bajra through open market operation and distribution of coarse grains through the Public Distribution System.

GUPTA (1979) examined the formulation and implementation of the PDS policies at the national level for the period 1942-1977. The study focused on the objective of protection of weaker section of society by PDS. The relevant factors like the movement in real income, consumption changes in food grains, the price indices and the quantity of PDS supplies were analyzed. This study brought to the limelight the gaps observable between the expected role of PDS at the conceptual level and its actual performance.

AMARTYASENS (1982) in his study, he concentrated on the three serious conflicts encountered (or battles persistently waged) by the Economically Vulnerable Sections even during the non-famine situations. Sen remarked thus "India's so-called self-sufficiency in food goes hand in hand with a quarter-perhaps a third of the rural population as persistent losers in food battles, suffering from regular hunger and systematic malnourishment.

INDIAN INSTITUTE OF PUBLIC ADMINISTRATION (1987) in its study presented a "Status Report" on the Public Distribution System in India, covering the period up to 1986-87. The papers of BhabatoshDatta, Kamal NayanKabra and Anil ChandyIttyerah and of Barbara Hams discussed the problems and issues of the Public Distribution System and offered certain alternative strategies to be adopted for achieving the maximum effectiveness of the Public Distribution System

2.13SHANKARAI AH AND SUDARSHAN (1984) of the Kakatiya University showed that the Public Distribution System was used as a device for making private profit by unfair

means and consumers were helpless even in assessing to draw the monthly rations from Fair Price Shops. This study too lacked rural coverage.

SUIYAN BARAYANA (1985) analyzed the PDS operation in the Vishakhapatnam at A.P. The study concluded that all the consumer households had gained in varying proportion and hence fitted by the existence of PDS. The identification of target groups for PDS was not at all attempted in the above studies. Such identification becomes an imperative in order to protect the poorer sections from low consumption standards and inflation. Further the benefits are no to be extended to the rich people. This implies that the PDS should benefit the rural families more than the urban families because majority of the poor lives in rural areas but PDS scheme to have a strong urban bias of Kerala adopted the new digitalized system in the public distribution system.

STATEMENT OF THE PROBLEM

Customer perception towards the digital transformation of Public Distribution System is purely dependent on the responses of regular consumer of Public Distribution System. To understand the effective changes by adopting E-pos (Electronic Point of Sale digital system) machine and the attitude of consumers can be perceived from the ideal consumers. Thus, this study is mainly concerned for aiming a detailed investigation of Public Distribution System through regular PDS consumers.

OBJECTIVES

1. To understand the acceptance of the new E-POS (Electronic Point of Sale) machine in PDS (Public Distribution System).
2. To know the attitude towards the E-POS (Electronic Point of Sale) machine.
3. To know the literacy of rural beneficiaries towards the new technology
4. To find the overall satisfaction about the EPOS (Electronic Point of Sale) machine

III. RESEARCH METHODOLOGY

It is a systematic way to find customer perception towards digital transformation of public distribution system. Research means a process which attempts to achieve systematically and with support of data the answer to a question, the reliable data collected from the users of public distribution system helps to meet the objectives of study. This process is frequently called as research methodology.

SOURCES OF DATA

Both primary and secondary data are collected for the whole study

PRIMARY DATA

The collection of primary data is done with the use of interview schedule.

SECONDARY DATA

Data collected from various sites on the internet, magazines and editorials in the newspapers.

SAMPLING SIZE

Samples collected from 100 respondents residing in Chalavara Grama Panchayath, Palakkad District, Kerala.

TOOLS FOR DATA ANALYSIS AND INTERPRETATION

Analysis and interpretations were done by using percentage analysis, tables, pie diagrams, and testing is done along with T-test.

IV. DATA ANALYSIS AND INTERPRETATION

Table 1 shows the gender classification of the respondents

GENDER	NO.OF RESPONDENTS	PERCENTAGE
Male	46	46
Female	54	54
Total	100	100

Source: primary data

Interpretation: The above table shows that 54 percent of people are male and 46 percent female.

Table 2 shows the age group of the respondents

AGE	NO.OF RESPONDENTS	PERCENTAGE
20-30	21	21
30-40	33	33
40-50	27	27
50-60	19	19
TOTAL	100	100

Source: primary data

Interpretation: The above table shows the range of age group of people who are regular PDS consumer. As much as 21 percent of people belong to the age group of 20-30; 33 percent belong to the age group of 30-40; 27 percent of people in the age group of

40-50; 19 percent is in the age group of 50-60; It shows people belongs to the age group of 30-40 are regular customers of PDS. This information is depicted in the above diagram.

Table 3 shows the various type of card in which the respondents belongs

CARD TYPE	NO.OF RESPONDENTS	PERCENT AGE
YELLOW CARD AAY	20	20
PINK CARD BPL	36	36
BLUE CARD APL	26	26
WHITE CARD	18	18
TOTAL	100	100

Source: primary data

Interpretation: The table shows the various type of card in which the respondents belongs, 36 percent of people belongs in the BPL card and 26 percent of people in the APL card; 20 percent comes under AAY category and the remaining 18 percent in white card. This information is depicted in the above graph.

Table: 4 shows the quality of E-POS machine

CATEGORY	NO.OF RESPONDENTS	PERCENTAGE
POOR	7	7
AVERAGE	10	10
GOOD	12	12
VERY GOOD	35	35
EXCELLENT	26	26
OUTSTANDING	10	10
TOTAL	100	100

Source: primary data

Interpretation: This table analyses the quality of E-POS machine. Easy to use is taken as a quality and about 10 percent of respondents are having average opinion; about 12 percent having good opinion; about 35 percent of respondents are having that opinion as very good; about 26 percent having excellent opinion ;10 percent having outstanding opinion and Only about 7 percent were said that easy to use quality is poor with E-POS.

Table 5 shows the fast working of E-POS machine.

CATEGORY	NO. OF PEOPLE	PERCENTAGE
POOR	7	7
AVERAGE	11	11
GOOD	16	16
VERY GOOD	27	27
EXCELLENT	26	26
OUTSTANDING	13	13
TOTAL	100	100

Source: primary data

Interpretation: This table analyses another quality of EPOS machine. Fast working is taken as a quality and about 27 percent of respondents are having that opinion as very good; about 13 percent having outstanding opinion; about 26 percent having excellent opinion; 16 percent having good opinion; 11 percent having average opinion and only about 7 percent were said that fast working quality is poor with EPOS.

Table 6 shows the accuracy of E-POS machine

CATEGORY	NO. OF PEOPLE	PERCENTAGE
POOR	5	5
AVERAGE	8	8
GOOD	32	32
VERY GOOD	25	25
EXCELLENT	16	16
OUTSTANDING	14	14
TOTAL	100	100

Source: primary data

Interpretation: This table analyses the quality of E-POS machine. Accuracy is taken as a quality and about 32 percent of respondents are having that opinion as good; 8 percent are having opinion as average; 25 are having very good opinion; 16 percent are having excellent opinion; 14 percent are having outstanding opinion; only about 5 percent were said that accuracy as a quality it is poor with E-POS.

Table 7 shows the efficient time management of E-POS machine

CATEGORY	NO. OF PEOPLE	PERCENTAGE
POOR	11	11
AVERAGE	13	13
GOOD	22	22
VERY GOOD	27	27
EXCELLENT	18	18
OUTSTANDING	9	9
TOTAL	100	100

Source: primary data

Interpretation: This table analyses the quality of E-POS machine. Efficient time management is taken as a quality and about 27 percent of respondents are having that opinion as very good; about 13 percent having average opinion; about 22 percent having good opinion; about 18 percent having excellent opinion; about 9 percent having outstanding opinion; Only about 11 percent were said that efficient time usage as a quality is poor with E-POS.

Table 8 shows the overall opinion of the respondents about the E-POS machine.

CATEGORY	NO. OF PEOPLE	PERCENT
YES	69	69
NO	31	31
TOTAL	100	100

Source: primary data

This last table of analysis is about the overall opinion of the respondents about the E-POS machine from their experience. By considering all the factors, 69 percent of the respondents are satisfied with the new technology; the remaining 31 felt dissatisfied from their experience. This is depicted in the above diagram.

Hypothesis testing

Null hypothesis (H0): there is no significant difference between male and female on attitude towards Epos.

Alternative Hypothesis (H1): there is significant difference between male and female on attitude towards Epos.

Test statistics is independent sample t test

Hypothesis testing

Null hypothesis (H0): there is no significant difference between male and female on attitude towards Epos.

Alternative Hypothesis (H1): there is significant difference between male and female on attitude towards Epos.

Test statistics is independent sample t test.

Result of independent sample t test

Gender	Mean	Standard deviation	T value	P value
Male	3.34	.91	-1.18	.24
female	3.66	1.10	-1.33	

Here p value is more than level of significance (.24 > .05). So, the null hypothesis (H0) is accepted. It can be concluded that male consumers and female consumers has the same attitude towards the E-pos.

V. FINDINGS

- ❖ Majority of regular customers comes under this study is female and customers age group is in between 30-40 age group.
- ❖ Respondents include most of them are having the qualification above SSLC.
- ❖ Occupation status of majority of customers belongs to the category others; self-employed and home makers took a great part in the other category.
- ❖ People having Income level ‘equal or above five thousand’ are regular customers of PDS (Public Distribution System)
- ❖ Most of the respondents are regular customers, they depended on ration commodities.
- ❖ This study includes most of peoples having pink card-BPL.
- ❖ Before implementation of E-POS they took about half hour for their purchase.
- ❖ And about half of the respondents said after implementation of E-POS the time spent for purchase has been increased.
- ❖ New buying behavior along with E-POS is more comfortable for the customers.
- ❖ The major problem of finger print recognition of E-POS felt only sometimes to the customers.
- ❖ Availability of instant receipt immediately after purchase is possible.
- ❖ People have trust with that E-POS implementation will make major contribution to PDS
- ❖ It is able ensure the availability of actual monthly quantity through E-POS
- ❖ Government can able to make direct control on public distribution system.
- ❖ Online uploading of daily records of ration shops reduces the paper records and it makes a trusty purchase on customer’s mind.
- ❖ And the reliability of the online records are far better than traditional book keeping.

- ❖ The respondents also believe that the machine implementation itself cannot make anything against the inefficiencies.
- ❖ Can make purchase from any ration shop is a new invention and is more acceptable to the customers.
- ❖ But only a member i.e.; his name is in the ration card is able to make purchase by using that ration card is acceptable and same time make difficult for them to bring commodities from ration shop as in the case of old ages.
- ❖ Machine having troubles with its working, but most of them feel neutral that external abnormalities makes major problem for working of E-POS.
- ❖ They argued that there was a need for such a machine to ensure ready supply of commodities.
- ❖ Lack of knowledge of the dealer is a great problem behind the machine inefficiency.
- ❖ Recovery from the malpractices and unfair trade practice can be achieved through the E-POS implementation.
- ❖ Inefficiencies at the beginning stage would be compensated in the coming days is another expectation of customers.
- ❖ E-POS machine is Easy and compatible for most of the customers.
- ❖ And it has a fast working condition when the connections are safe and smooth.
- ❖ They believe that high accuracy is there in the immediate updating of daily records.
- ❖ They didn’t state that E-POS machine not at all a time-consuming process, it can make efficient usage of time.
- ❖ Customers are satisfied with the new machine implementation not in all terms, the reason behind that was the troubles they had experienced at the beginning.
- ❖ According to the study there is no significant difference between male and female on attitude towards E-POS.

VI. CONCLUSION

The study can be concluded that the respondents were partly dissatisfied with the implementation of E-POS system in ration shop. Even after the implementation of the machine lack of knowledge of both shop dealer and beneficiaries, technical problems of the machine are the major problems faced by the respondents in ration shops.

And also, from this study it is clear that the E-POS system is more secure and transparent than the traditional system. Influence of fraud data entry in the ration database can be maintained simply with the use of this E-POS system. Using this E-POS

system there have better management of the ration distribution system. And also, people have trust with that E-POS implementation will make major contribution to PDS. Recovery from the malpractices and unfair trade practice can be achieved through the E-POS implementation.

The study reveals that customers are satisfied with the new machine implementation not in all terms, the reason behind that was the troubles they had experienced at the beginning. E-POS system, helps to monitor the functioning of ration shops through the web portal of the Civil Supplies Department.

VII. RECOMMENDATIONS

- As a machine with modern technology E-POS has to ensure more capabilities for the sake of customers.
- Fast working with finger print recognition
- Reduce purchase time always preferential.
- People have trust with E-POS will bring tremendous changes, but it should make as far as possible to keep their trust with E-POS.
- A good change in the working condition from the traditional system and modern technology, to prove that the digital transformation with E-POS machine is a better decision in PDS.
- To reduce the inefficiencies in the PDS, it must be initiated with more actions as like E-POS.
- Try to avoid external abnormalities as far as possible to provide a good working condition, then it makes the fast working of E-POS.
- To measure the literacy knowledge of the customers about the new technology an E-POS machine an awareness about these is necessary.
- For reducing the technical problem caused by lack of knowledge of the dealer, a separate training for them regarding all working aspects of machine should be conducted.
- It must compensate the Inefficiencies at the beginning stages with the coming days as far as possible, it will keep the customers trust.
- Full satisfaction of the consumers should be the main focus.
- From the testing, it is proved that education and satisfaction factors are dependent, when literate know the aspects of working of machine, they can understand how the machine can work with the available conditions.

REFERENCES

- [1]. KURIEN (1981) Mitra, S. K. (2017). *Politics in India: structure, process and policy*. Routledge.

- [2]. PODUVAL (1984) Sahoo, A. K., Krishna, D. K., &Kumbh are, N. V. (2019). Effectiveness of the Public Distribution System: A Critical Review. *Asian Journal of Agricultural Extension, Economics & Sociology*, 1-8.
- [3]. UMA AND LELES (1973) Velmurugan, R., &Lavanya, M. D. Problems in Public Distribution System.
- [4]. RAMAMURTHY (1974) Jain, T. L. (1987). *Poverty in India: An Economic Analysis*. New Delhi: EssEss Publications.
- [5]. RAJAPUROHIT (1978) Yiu, Y. Z. (1980). The prospects of Chinese population growth from 1978 to 2028. *Renkouyanjiu= Renkouyanjiu*, (3), 18.
- [6]. Information.
- [7]. AMARTYASENS (1982) Wisner, B., Gaillard, J. C., &Kelman, I. (Eds.). (2012). *Handbook of hazards and disaster risk reduction*. Routledge
- [8]. INDIAN INSTITUTE OF PUBLIC ADMINISTRATION (1987) Jain, S. (2016). Food security in India: Problems and prospects. *OIDA International Journal of Sustainable Development*, 9(1), 11-20.
- [9]. GULATI AND KRISHNAN (1975) Roy, S. (1992). Public Distribution of Cereals: An Alternative Model. *Economic and Political Weekly*, 1209-1213.
- [10]. GUPTA (1979) Gupta, V. K., Waymire, E., & Wang, C. T. (1980). A representation of an instantaneous unit hydrograph from geomorphology. *Water resources research*, 16(5), 855-862.
- [11]. DHOLAKIA AND KHURANA (1979) NikhileshDholakia and RakeshKhurana *Journal of Public Policy & Marketing vol.2 (1993),pp 171-182*
- [12]. KAMTAPRASAD (1981); Kumar, K., & Kerr, J. M. (2012). Democratic assertions: the making of India's recognition of Forest Rights Act. *Development and Change*, 43(3), 751-771.
- [13]. SHANKARAIHAH AND SUDARSHAN (1984) Shankaraiah and Sudarshan, Empirical Assessment of Public Distribution System, *Indian Journal of Maturity*, January 1984, Vol. XIV, No. 5
- [14]. SUIYAN BARAYANA (1985) Chen, X., & Mao, S. S. (2007). Titanium dioxide nanomaterials: synthesis, properties, modifications, and applications. *Chemical reviews*, 107(7), 2891-2959.

- [15]. THE NATIONAL SAMPLE SURVEY ORGANISATION in 1986-87 Coady, D., Grosh, M., &Hoddinott, J. (2004). *Targeting of transfers in developing countries: Review of lessons and experience*. The World Bank.
- [16]. WORLD BANK REPORT (1986)' Huggins, R., Thompson, P., &Prokop, D. (2019). UK Competitiveness Index 2019.
- [17]. GEORGE (1979, 1980, 1985, and 1989) Paul, S., Balakrishnan, S., Gopakumar, K., Sekhar, S., & Vivekananda, M. (2004). State of India's public services: benchmarks for the states. *Economic and Political Weekly*, 920-933.
- [18]. SARVEKSHANA (1990) 'Coady, D., Grosh, M., &Hoddinott, J. (2004). *Targeting of transfers in developing countries: Review of lessons and experience*. The World Bank.
- [19]. TYAGI (1990) Radhakrishna, R., Subbarao, K., Indrakant, S., & Ravi, C. (1997). *India's Public Distribution System: A national and international perspective*. The World Bank.
- [20]. U.K. SINGH (1991) Chakraborty, S., &Sarmah, S. P. (2019). India 2025: the public distribution system and National Food Security Act 2013. *Development in Practice*, 29(2), 230-249.
- [21]. SINGH (1991) George, N. A., & McKay, F. H. (2019). The Public Distribution System and Food Security in India. *International journal of environmental research and public health*, 16(17), 3221.

WEBLIOGRAPHY

www.google.com
www.shodhaganga.com
www.scribd.com
<https://epos.kerala.gov.in>
<https://www.thethindu.com>



**International Journal of Advances in
Engineering and Management**
ISSN: 2395-5252



IJAEM

Volume: 02

Issue: 01

DOI: 10.35629/5252

www.ijaem.net

Email id: ijaem.paper@gmail.com