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CONTENTS

ISSN – 2394 - 0298	Volume 9 (I), 2022	
16	AN ANALYSIS OF CUSTOMER PERCEPTION AND GOVERNMENT POLICY TO ENSURE FOOD SECURITY THROUGH PUBLIC DISTRIBUTION SYSTEM Vasanthi P, Nigitha K G, Sarija V V, Sandhya Nair	96
17	CASHLESS ECONOMY: THE IMPACT OF DEMONETIZATION AND INADEQUATE CURRENCY CIRCULATION ON PURCHASING POWER OF SMALL AND MEDIUM INDUSTRIES IN RURAL KERALA DURING COVID-19 PANDEMIC Meena Ramaswamy, Ambika K, Divya A, Sruthi P V	108
18	IMPACT OF E- LEARNING AND E –RESOURCES ON STUDENT ENGAGEMENT AMONG HIGHER EDUCATION STUDENTS – A STUDY Meena Ramaswamy, Dr. Byju k, Mrs. Nisha Sasikumar, Mrs. Rema K R	120
19	IMPACT OF GREEN PROMOTION AND GREEN PRODUCT ON CONSUMER BUYING BEHAVIOUR Sandhya O S, Anila M G, Ranjini P, Dhanya K	131
20	IMPACT OF SOCIAL DISTANCING AND SOCIAL MEDIAS ON MENTAL HEALTH OF STUDENTS DURING COVID19 PANDEMIC PERIOD Mr. Rajan K, Ms. Sheeja V, Ms. Anusha P Nair, Mr. Anilkumar C	142
21	THE EFFECT OF UNHEALTHY FOOD HABIT AND LACK OF EXERCISE IN WOMANHOOD; A CASE STUDY ON THE INCIDENCE OF POLYCYSTIC OVARY SYNDROME [PCOS] AMONG ADOLESCENT GIRLS IN KERALA Sarala K T, Jisha K, Prajitha P S, Uma M	153
22	LABOUR LAW RELAXATIONS DURING COVID-19 AND CHILD RIGHTS CONCERNS WITH SPECIAL REFERENCE TO CHILD LABOUR IN INDIA Dr. Sukhvinder Singh Dari, Ahmar Afaq, Amish Abdullah	163
23	RELATIVE OF GOVERNMENT AND PRIVATE SECONDARY SCHOOL OF PHYSICAL FACILITIES ON STUDENTS' OUTCOMES, IN IMPHAL EAST DISTRICT, MANIPUR Moirangthem Kunjaraj Singh	173
24	PEASANT REVOLT AGAINST BRITISH GOVERNMENT IN MAHARASHTRA Dr. Ganesh Pandhrinath Bhame	179
25	THE CULTURAL ASPECT OF GENOCIDE THROUGH THE PRISM OF INTER WAR TRIALS Dr. Loveleen Kaur	185

AN ANALYSIS OF CUSTOMER PERCEPTION AND GOVERNMENT POLICY TO ENSURE FOOD SECURITY THROUGH PUBLIC DISTRIBUTION SYSTEM

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Abstract

Purpose—This study is descriptive and analytical in nature focusing to make apparent the relationship of Government policies, consumer perception and consumer satisfaction on Public distribution system in Kerala. Design/methodology/approach – Descriptive and Analytical approach is followed in this study. It is based on variables namely Government policy, consumer perception and consumer satisfaction which are derived from theory related to PDS. The data for the study was collected through structured questionnaire. Sample for the present study was collected from the PDS beneficiaries in Kerala. A total number of 600 questionnaires were returned by the respondent, this representing response rate of 75%. The questionnaire uses five point Likert scale response format for all the measures ranging from highly satisfied to highly dissatisfied, from highly effective to highly ineffective and from highly agreed to highly disagreed. SPSS and Microsoft excel are the statistical packages and correlation and regression are the tools used in this study. Findings: Here, this study establishes a positive correlation between variables namely Government Policy (0.664), Consumer perception (0.612) and Satisfaction of PDS beneficiaries that is consumers (0.751) with reference to households of 4 districts in Kerala (Palakkad, Ernakulam, Thrissur and Malappuram). The study indicates that households provide great preference to the PDS and they are satisfied with the working of PDS upto a particular extent. It was found that all sections of people have used PDS articles and the lower price was the motivating factor. Majority of the respondents are satisfied with quality and quantity of goods supplied by PDS. The study also highlights the policies taken during COVID 19 pandemic. On testing the hypothesis, ANOVA table exhibit that the dependent variable is substantially predicted by independent variables at a 99% level of significance. Originality/value – This study provides insightful findings in understanding the role of Public Distribution System(PDS) in ensuring food security within Kerala by considering the four districts namely Palakkad, Thrissur, Ernakulam and Malappuram. This study also shows the importance of Government policies and consumer perception in satisfying the PDS beneficiaries' needs.

Keywords: Consumer perception, Effectiveness of Govt policy, Public distribution system, Customer satisfaction.

Introduction

Food security as the physical and economical accessibility of basic food among all people (FAO)
India is an agrarian and a developing economy. Most of the people have been depending on agricultural sector. Agriculture plays an important role in supplying adequate food to the masses. Indian population is health conscious and for this reason, the consumer perception is to get the quality food in sufficient quantity. This could be one of the reason why recently most of the population has turned towards organic farming which is another sustainable source of income and quality food. In spite of the fact that India is a developing, UN still consider it under the middle income countries and the per capita income if considered

would reveal that the majority is destitute and in need of food security. Public Distribution System is an important step adopted by the Government of India to ensure food security among the poor by providing food grains and essential commodities (wheat, rice, sugar kerosene etc) at affordable price through Fair Price Shops. (Datt and Sundharam -Indian Economy). Public Distribution System is operated by the joint responsibility of state government and central government. Several studies found that the poor people are not satisfied due to irregular and inadequate supply of commodities. A study shows that the beneficiaries indicated irregular supply, insufficient quantity, bad quality and dishonesty to be the major problems in the PDS operation (Nidhi Arora, P.D Singh Prof. V A Bourai – 2018) and (Dr.Ruth Kattumuri, 2011). Nevertheless, it has the power to act as a remedy to the food security in India. To remove the loopholes in Public Distribution System, Government of India launched Targeted Public Distribution System (TPDS) with a focus on the poor by supplying 10 kg food grains at highly subsidised price. The allocation was increased from 10 kg to 20 kg with an aim to aid the poor families. Further it was implemented as a universal system in Tamil Nadu to eradicate poverty and improve the standard of living of the people living below the poverty line as reported by a study. (Bhagyasree P G 2017) This same study provides details regarding PDS, its working, network accessibility, utilization and satisfaction of cardholders. National Sample Survey points out that 5% of the total population in the country sleeps without two square meals a day. So under TPDS, various schemes were introduced, card holders divided into APL and BPL. Antyodaya Anna Yojana was started in 2000 for one crore poorest of the poor families covered under TPDS within the state with supply foodgrains at Rs 2/ per kg for wheat and Rs 3/ per kg for rice. To increase the support towards poor families, the allocation was increased from 10 kg to 20 kg. (Datt and Sundharam). ICDS and Mid day meal programme was introduced in 1976 and 1995 respectively to improve nutritional status of children in primary classes. According to the 2019 Global Hunger Index, India's rank was 94 out of 107 countries. According to the National Family Health Survey, more than half of the country's children are reported to be anaemic. (Hindustan times, October 06th 2020) The number of consumers depending on PDS are reported to be satisfied in the quality, level of nutrition, availability etc after the implementation of NFSA(National Food Security Act) in 2013. (P H Neethu, Abey George Fiona H McKay – 2019) The state GOVT (Kerala, Tamil Nadu etc) also implemented technology based policies like e.pose system, smart cards etc as it is more reliable than traditional methods. In spite of these policies taken by the govt, still the beneficiaries are not fully satisfied due to improper quantity, quality, and smuggling.(P H Neethu, Abey George Fiona H McKay – 2019). A study on the perception of beneficiaries of Colachel municipality found that 37.5% of the beneficiaries were not satisfied with the supply of commodities. Some of the respondents strongly agree to the problem of improper working hours. According to this study 65.6% of respondents agreed with the overall performance of PDS and 34.3% do not agree with the same. (Bhagyasree P G –2017). The perception of beneficiaries in Arunachalpradesh towards working hours, timely supply, adequate supply, proper weight etc do not complete satisfaction according to another study. (Dr. Tame Ramya, Tame Ranjuk – June 24 2018). The same study found certain irregularities in management such as leakages and existence of large number of bogus ration cards. Only negligible percentage of the respondents expressed their dissatisfaction towards reasonability of price under PDS. Another study found that the quality of the products distributed through PDS was poor and there is no proper grading and standardisation of commodities. (Ms; Ramandeep Kour – research scholar – 2014)

Kerala government took further step to provide free food kits to support APL and BPL card holders during the pandemic situation. Each kit worth amount Rs 1000 / in the initial month was provided. It covered four categories of cardholders (yellow card, pink card, blue card and white card). A sample online survey conducted between April 28th and May 6th in Kochi based centre for socio-economic and environmental studies, revealed that, 91% blue card holders, 98% priority category card holders and 85% of the white card holders made purchases used their ration card to make purchases during lock down. There are studies that report the consumer satisfaction regarding the quality of the products in these free kits and that the same reason persuaded many to buy the same in this ration card scheme without any

hesitation. The entire scheme would cover 87 lakh ration card holders and 3.66 crores beneficiaries (Press report of India April -2020).

Government Policies to ensure food Security through PDS.

Public Distribution System (PDS) in India is an important food security policy through which basic food and non-food commodities are distributed to the needy people at affordable price. The system is often criticized for not achieving the objectives and corruption and black marketing were associated with PDS. The National Food Security Act, 2013 was passed by the parliament of India which aims to provide subsidised food grain to approximately 2/3rd of India's 1.2 billion people. The Act came into force in Kerala on March 2018 [Economic Review 2017]. Major products of PDS include rice, wheat, kerosene, sugar etc. PDS is one of the most important policy of Government of India (GOI). Central and State Government share the responsibility of smooth running of PDS and it includes fair price shops or ration shops through which food grains are available at affordable prices. Central Government procures food grains from farmers at a Minimum Support Price (MSP), through Food Corporation of India (FCI) and ration cards and items are distributed to the needy people. [Deepa Ravi and Ambili S Nair, June 2019]. Priority households are entitled to 5kg food grains per month and Antyodaya households entitled 35kg per household per month. Ration cards are issued to the eldest woman of the household of age 18 years or above. For transparency, electronic point of sale devices is used by the government. Civil supplies department is entrusted with the implementation of schemes connected with distribution of rice, wheat, sugar and kerosene. Central Government allot stock to PDS and on the basis of ration cards, families are divided into Above Poverty Line (APL) & Below Poverty Line (BPL). Cards are in different colours.

1. Pink Cards – Priority or BPL – 4kg rice and 1kg wheat per head per month @ Rs.2/- per kg and 500ml kerosene @ Rs.33/- per litre.
2. Yellow Cards – most economically backward section – 35kg food grains per month free of cost, 1kg sugar @ Rs.21/- and 500ml kerosene @ Rs.33/- per litre.
3. Blue Cards – Non priority subsidy or APL – 2kg rice per head per month @ Rs.4/- per kg, 3kg wheat flour per month @ Rs.17/- per kg.
4. White Cards – Non priority – 4kg rice per card @ Rs.11/- per kg, 3kg wheat flour per card @ Rs.17/- per kg.
5. Annapurna Scheme – Citizen above the age 65 who does not have any source of income – 10kg food grains per month free of cost.

The total number of consumers depending totally on the PDS for their food need increased and they are satisfied in the quality of food grains after the implementation of NFSA. They are also satisfied with the quantity. In order to serve the BPL people and to overcome the failure of universal PDS, Targeted PDS was introduced. It is implemented through 3 tier system – APL, BPL and Antyodaya [T. Jayan, 2015]. To a large extent, PDS attained its objectives through eradication of poverty among poorest people and in providing food and non-food items at below market price [Dr. Deepa K Thomas and Dr. V Basil Hans, November 2019]. Public distribution of food in Kerala is undertaken at 2 levels: subsidised food grains to households through ration cards; food to primary school children. The PDS system had an impact on consumption level of low income people. Subsidised PDS is more useful in raising the consumption level of low income people. [P. S George, March 1979]. 92% of card holders purchased from ration shops. Keralites relied heavily upon PDS during lockdown days. (The Hindu May 23, 2020). Government has introduced free ration, essential food kits and economic stimulus plans to aid the people to survive the current emergency. Government announced free ration for all for one month, meaning that the government will provide 35kg rice for BPL families and 15kg of rice for others through PDS and Supply Co. Government distributed food kits consisting of 17 items starting on April 08, 2020 irrespective of income status distributed through ration shops under PDS. It includes Sugar-1kg, Tea—250gms, Beans-1kg, Coconut Oil-500ml, Sunflower Oil-1l, Atta-1kg, Cornflour-1kg, Chilly powder-100gms, Coriander powder-100gms, Dal-250gms, Turmeric powder-100gms, Fenugreek seed-100gms, Mustard-100gms,

Urad Dal-1kg, Chickpeas-1kg, Soaps-2. Setting up of community kitchen is another policy in which cooked food is distributed for the needy people. Anganwadies are entrusted with the duty of providing nutritious meals for children under the age of 6 whose name is registered under Integrated Child Development Services (ICDS). Food kit by the Government of Kerala is a great helping hand to meet their basic food needs (Pramitha Elizabeth Pothan et. al). In a meeting, Kerala Chief Minister Sri.Pinarayi Vijayan along with representatives of other departments, it was decided that an action plan to maximise the food production including poultry, fish farming, milk production to become self sufficient and to meet the needs and satisfy the customers. (Gireesh Babu, April 22, 2020). The rate of Satisfaction Index of BPL is little more than APL, indicates BPL cardholders are relatively more satisfied. Overall satisfaction index shows that the delivery system has to be improved. Customers to a large extent have no complaints, but the quality of the functioning of the ration shops have to be improved and care should be given while including in priority cards. Quality cannot be 100% satisfactory and quantity is 100-200 gms lesser from the marked weight (Jaya S. Anand).

H1: there is a positive relationship between government policies and consumer perception

Consumer perception on public distribution system.

Public Distribution System (PDS) is viewed as the most important food security network in India in terms of its coverage and public expenditure. The government spends around `750 billion per year on food grains. the PDS has become a popular food security system in the country which is managed jointly by the central government and district governments. It has been distributing subsidized food and non-food to the targeted beneficiaries including the poor. Major commodities distributed include staple food grains such as wheat, rice, sugar and kerosene through a network of public distribution shops. Public Distribution System (PDS) has been an important food security measure meant for vulnerable sections of the society, especially in underdeveloped district. The consumers of the two districts were satisfied with the performance of PDS although significant differences exist in their perception in respect of some issues. The study also highlights the need to eliminate the bogus ration cards to avoid the wastage of resources and to strengthen the existing system.. The overall analysis indicates that the vast majority of the respondents in the select districts were satisfied with the functioning of PDS in their respective district. They were particularly satisfied with the reasonable prices of the goods distributed through the PDS, and the role being played by PDS in their well-being. Almost all the respondents in both the districts still prefer PDS over cash transfer which would imply the need to support and strengthen the existing policy of supplying the commodities at subsidized prices through PDS. A few studies have been reviewed in brief relating to the functioning, performance and impact of PDS in the country. Study on district response to food security in Anantapur district of Andhra Pradesh observed that the main weakness found out in the PDS has been its inability to reach the poor effectively (Ananda 2008). Cardholders face problems of irregular and inadequate supplies and lack of information about when the ration would be available. The villagers were poorly informed, and certainly not in advance. No respondent was happy with quantity of rice supplied. There is an analysis between the performance and inefficiencies of Targeted Public Distribution System in the states of Assam, Mizoram, Rajasthan, Chhattisgarh, Bihar, and UP during 2006-2007(Kumar 2010). Majority of the households in the six districts opined that the shop owners were indulging in delivering food items to the open market or they were involved in black marketing of PDS food items. Around 35% to 40% households were not happy with PDS quality of rice. But among the two states of Assam and Mizoram, majority did not prefer local variety over the PDS variety. PDS is working quite successfully in Tamil Nadu (Alamu 2011). Tamil Nadu has a universal PDS where all households are entitled to food rations, including up to 20 kg of rice per month. People are aware of their entitlements. At least one person in every household is aware of the details of PDS ration shops and prices. The dissemination of information is impressive. Awareness amongst the masses reduces corruption. Moreover, it is not just awareness amongst people but also politics that makes the PDS perform. Between 2004-05 and 2007-08, the proportion of households getting any grains from the PDS has progressively risen, from

about a quarter of rural households (27%) to just over one third (35%) (Khera 2011). In different states the proportion of households that the government is willing to subsidize i.e. BPL households has increased by more than 10% points i.e. 6% to 18% in UP, 22% to 36% in Orissa, 25% to 47% in Chhattisgarh, and Tamil Nadu 40% to 59% in Kerala. In addition, in states such as Andhra Pradesh, Himachal Pradesh, and Tamil Nadu access was high to start with 81%, 69%, and 88% respectively. There is a significant increase in the contribution of in-kind food transfers to both poverty reduction and nutrition (Himanshu & Sen 2013). The authors also highlight that a 12 district NCAER study reports high satisfaction level except in Bihar (Kumar 2010). Various reports have similar results from a nine-state study, noting further that 80% of respondents considered PDS "very important" in their lives and 98% at least "quite important" and that a large majority prefer in-kind food to cash transfers, again except in Bihar (Khera 2011). The impact of PDS in poverty reduction in the district of Papum Pare district where PDS was successfully implemented (Dreze & Khera 2013). In Papum Pare district (2009-10), 73% households purchased PDS and the poverty gap index was reduced by 39%. In Bihar, only 18% of the BPL households did not get their full PDS entitlement while 97% BPL households in Papum Pare district got their full entitlement under PDS. The authors concluded that India's PDS has a significant impact on rural poverty. The impact is particularly large in districts with a well-functioning PDS. The study attempts initially to bring out the overall consumer perception of cardholders and later, brings out the overall satisfaction of the customers on the prevailing PDS system. The customer perception is looking on quality of products, timely distribution, availability of products, proper measurement etc..

H2: there is positive effect between consumer perception and consumer satisfaction on PDS

Consumer Satisfaction

Customer satisfaction is related to consumer perception and effectiveness of Govt policy in PDS. Many studies are entered in this area. Many people's are do not awareness in the Govt. policy. But the main motto of establishing fair price shops have not been fulfilled, as essential commodities are liberally diverted in open market than distributing to the beneficiaries. The Targeted PDS was begun in 1996. In March 2000, the prices of grain for Above Poverty Line (APL) cardholders were hiked and the gap between prices for below-poverty-line (BPL) and APL households widened. In many States, APL prices of grain were close to market prices and, as a result, households with APL cards stopped buying grain from the PDS. The Antyodaya programme introduced a new category, the "poorest of the poor" for which rice and wheat are available at even lower prices than for BPL households. In the present situation, a person who belongs to a household that has neither a BPL nor an Antyodaya card is effectively excluded from the PDS. The recent report of the National Sample Survey gives us an insight into the magnitude and nature of this exclusion from the PDS. At the all-India level, 70.5 per cent of rural households either possessed no card or held an APL card. Since households with APL cards are effectively excluded from the PDS, the majority of rural households in India are excluded from the PDS. The customer satisfaction on the food delivery mechanism of universal PDS in Tamil Nadu (Mahendren 2013). The study shows that more than three-fifths of poor families are satisfied with the effective delivery mechanism of universal PDS. Only a few people were satisfied with the current PDS in Mysore District and most of the people were not purchasing anything from the PDS due to the poor quality of commodities supplied by PDS (Ashok and Naveena 2014). Also to get their limited quota people have to wait in long queues. More than half of the beneficiaries were not satisfied with the quality of the food grains supplied through PDS (Chandanshiv and Narwade 2013). But still, they purchase food grains at the Fair Price shop as they don't have enough money to purchase it from the open market. In Chhattisgarh revealed that the majority of the households were satisfied with the functioning of their ration shops and were getting their food grains regularly at current prices (Puri 2012). In their study noted that The PDS customers would be satisfied only if they could obtain goods from the PDS regularly or if it should be inaccurate quantity, if the shops have adequate staff members, if these shops are located at an easily accessible place, if the commodities were distributed in time, if the distributed goods were fitted for their consumption and so

on(Lavanya and Velumurugan 2017). Barada and Mahalik 2016 in their study applied Kano model by chosen ten factors for the identification of customer satisfaction. The study perceived that when the early PDS system is compared to the current system, the current PDS has improved a lot in the fields of minimally delivery days, better customer grievance system, e-ration card and SMS system that enhanced customer satisfaction. But the same study identified some of the dissatisfactory elements too. BPL card holders are not at all satisfied with the quality of food grains which are distributed through ration shops (Sheetal and et.al 2017). The main reasons for the non-consuming PDS for its fuller levels (Iyer and et al. 2011). It depended upon the non-availability of goods in ration shops, lack of qualitative food grains, under-weighment of the commodities, non- availability of the ration cards, etc. These negative factors had badly affected the efficiency of the PDS system and satisfaction level of customers. A technology-based reform of the targeted public distribution system has also been implemented by states. Even though measures taken, still the beneficiaries are not fully satisfied due to the difficulties encountered to obtained the family cards, improper quantity and quality allocation of PDS goods, frequent smuggling of large quantities of PDS commodities, irregular shop functioning, inability of the poorest to access PDS commodities, lack of community monitoring and rampant corruption at various levels by the implementing agencies. Thus, an attempt has been made to ascertain the level of satisfaction of card holders and factors influencing their satisfaction.

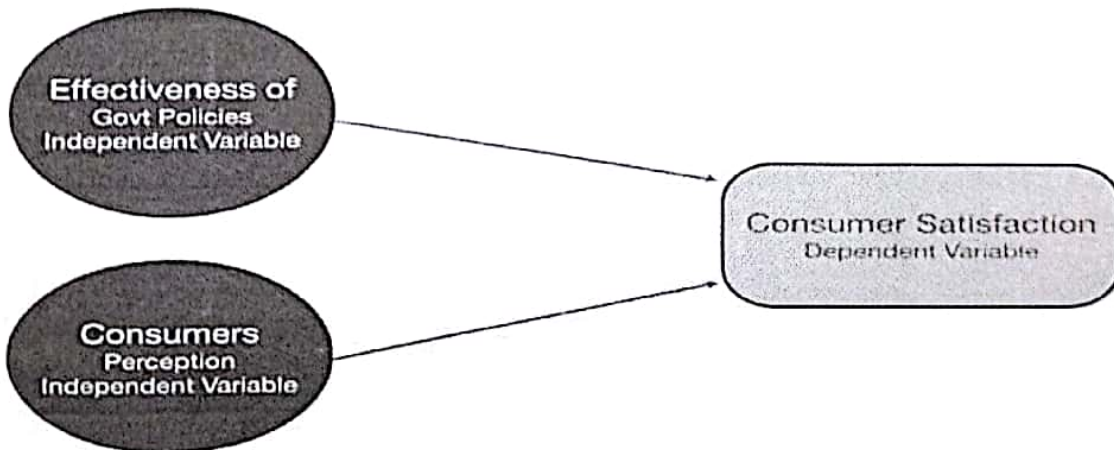
H3: there is a positive relationship between government policies and consumer satisfaction.

Objective of the study

This research aims to assess the level of satisfaction through the relationship between government policy and consumer perception towards PDS to ensure food security and to know the relationship between Effectiveness of Govt Policies, Consumers Perception , and Consumer Satisfaction, thereby studying whether Effectiveness of Govt Policies with Consumers Perception impacts the Consumer Satisfaction of households of Palakkad, Thrissur, Ernamkulam and Malappuram districts in Kerala .

Conceptual model

Figure 1: Conceptual model



Pilot study

A pilot study of the questionnaire was carried out to ensure food security through public distribution system in Kerala before doing the core study. One hundred samples were chosen for the study, with 25 nos from each rural districts in Kerala. The validity along with reliability of the measured scales were verified to ensure correction of any obscurities in the measurements. Based on the feedback suggested by

the respondents, minor corrections were made to the questionnaire.

Population and Sample

The population of the present research comprises of ensure food security through public distribution system of four districts in Kerala. Stratified Random Sampling technique (Kothari C.R. (2004) was employed for this research. A total of 800 questionnaires were circulated through google forms to the four district in Kerala (200 in each), along with letter emphasizing the privacy and anonymity of the responses. A total of 693 questionnaires were collected back, representing a response percentage of 86%, which is treated as a reasonable response rate because of the nature of the research. Out of the 693 questionnaires received, 93 questionnaires were rejected because of missing data. 600 questionnaires were considered for the core study (75%).

The sample included 432 (72%) male and 168 (28%), female employees. Majority of the respondents that is 222 (37%) are Under Graduates and 150 (25%) are Graduates, 90 (15%) are Post Graduates and 138 (23%) below higher secondary. The majority of the respondents were below 45 years 348 (58%), and balance 252 (42%) belongs to above 45 years.

Measuring instruments

Effectiveness of Govt Policies

Effectiveness of Govt Policies was measured adopting self-reported data, the reliability measured by using Alfa score of 0.82. and normality tested by using skewness and kurtosis it is in between - 1.96 and + 1.96. Here 5-point Likert scale was used; 1- highly ineffective and 5- highly effective .

Consumers Perception

Consumers Perception was measured adopting self-reported data, the reliability measured by using Alfa score of 0.76. and normality tested by using skewness and kurtosis it is in between - 1.96 and + 1.96. Here 5-point Likert scale was used; 1- highly disagreed and 5- highly agreed .

Consumer Satisfaction

Effectiveness of Govt Policies was measured adopting self-reported data, the reliability measured by using Alfa score of 0.78. and normality tested by using skewness and kurtosis it is in between - 1.96 and + 1.96. Here 5-point Likert scale was used; 1-highly dissatisfied and 5- highly satisfied .

Normality

De Carlo (1997) stated that kurtosis and sketches are "the most important indicators to the extent the regularity in the analysis of instability is affected." Frequent data testing is a requirement for statistical tests since general statistics are a basic assumption in parametric tests. Skewness is explained as a measure of symmetry or the lack of symmetry of the normal distribution. Kurtosis is a measure of peak distribution. If the distribution center, or set of data, is synchronized, it seems to be similar to the left and right of the middle point. If the mean, median, and mode coincide, it is called a symmetric distribution: skewness = 0, kurtosis (excess) = 0. A distribution is called approximate normal if skewness or kurtosis (excess) of the data is between - 1.96 and + 1.96.

Descriptive Statistics		
	Skewness	Kurtosis
	Statistic	Statistic
Effectiveness of Govt Policies	.220	.789

on(Lavanya and Velumurugan 2017). Barada and Mahalik 2016 in their study applied Kano model by chosen ten factors for the identification of customer satisfaction. The study perceived that when the early PDS system is compared to the current system, the current PDS has improved a lot in the fields of minimally delivery days, better customer grievance system, e-ration card and SMS system that enhanced customer satisfaction. But the same study identified some of the dissatisfactory elements too. BPL card holders are not at all satisfied with the quality of food grains which are distributed through ration shops (Sheetal and et.al 2017). The main reasons for the non-consuming PDS for its fuller levels (Iyer and et al. 2011). It depended upon the non-availability of goods in ration shops, lack of qualitative food grains, under-weighting of the commodities, non- availability of the ration cards, etc. These negative factors had badly affected the efficiency of the PDS system and satisfaction level of customers. A technology-based reform of the targeted public distribution system has also been implemented by states. Even though measures taken, still the beneficiaries are not fully satisfied due to the difficulties encountered to obtained the family cards, improper quantity and quality allocation of PDS goods, frequent smuggling of large quantities of PDS commodities, irregular shop functioning, inability of the poorest to access PDS commodities, lack of community monitoring and rampant corruption at various levels by the implementing agencies. Thus, an attempt has been made to ascertain the level of satisfaction of card holders and factors influencing their satisfaction.

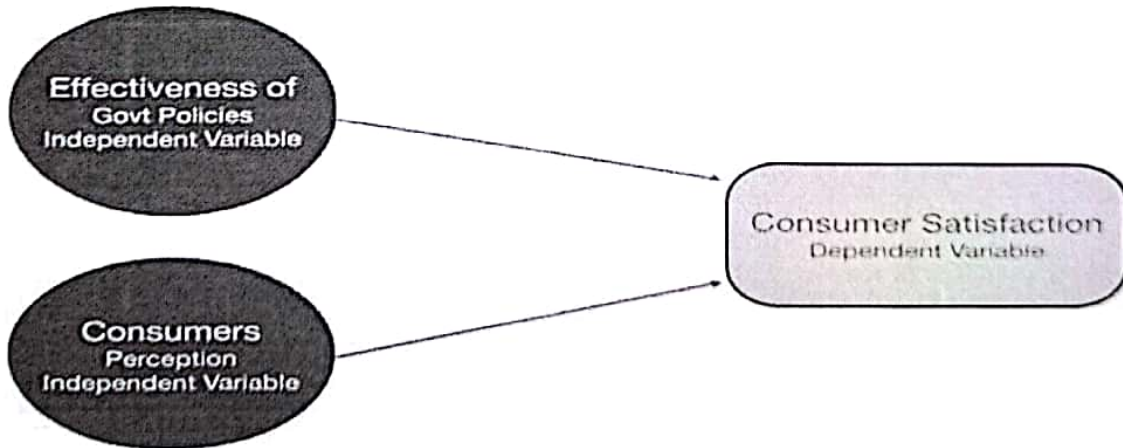
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Effectiveness of Govt Policies was measured adopting self-reported data, the reliability measured by using Alfa score of 0.78. and normality tested by using skewness and kurtosis it is in between - 1.96 and + 1.96. Here 5-point Likert scale was used; 1-highly dissatisfied and 5- highly satisfied .

Normality

De Carlo (1997) stated that kurtosis and sketches are "the most important indicators to the extent the regularity in the analysis of instability is affected." Frequent data testing is a requirement for statistical tests since general statistics are a basic assumption in parametric tests. Skewness is explained as a measure of symmetry or the lack of symmetry of the normal distribution. Kurtosis is a measure of peak distribution. If the distribution center, or set of data, is synchronized, it seems to be similar to the left and right of the middle point. If the mean, median, and mode coincide, it is called a symmetric distribution: skewness = 0, kurtosis (excess) = 0. A distribution is called approximate normal if skewness or kurtosis (excess) of the data is between - 1.96 and + 1.96.

Descriptive Statistics		
	Skewness	Kurtosis
	Statistic	Statistic
Effectiveness of Govt Policies	.220	.789

Consumers Perception	.732	.892	
Consumer Satisfaction	.632	.668	

Reliability

Cronbach Alpha was done to analyse the reliability of data, and that is seem to be similar to the literature. The scales used for measuring the three constructs, effectiveness of government policy, consumer perception, consumer satisfaction, were taken from the research. Cronbach’s alpha coefficient of the studied variables was more significant than 0.7, hence it can be concluded that the data is reliable.

Study variable	Cronbach’s Alpha
Effectiveness of Govt Policies	.901
Consumers Perception Satisfaction	.855
Consumer Satisfaction	.732

Tools and software

The data were analyzed employing the statistical techniques with SPSS21; Correlation as well as Regression analysis were done to check the association within the variables.

Data Analysis

Samples for the present research were 600 numbers which covered 4 rural district in Kerala, around 20% each namely Palakkad (n1= 146, 24.34%), Thrissur (n2 = 150, 25.11%), Eranamkulam (n3= 159, 26.50%) and Malappuram (n4= 144, 24.04%). The statistical techniques correlation with regression were adopted to describe the consumer satisfaction towards PDS in each district , to detect the relationship between variables measured and to validate the significance of these variables.

Correlation

The statistical device correlation was adopted for finding the relationship between the variables and hypothesis.

H1: there is a positive relationship between Effectiveness of Govt Policies and Consumers Perception .

H2: there is a positive relationship between Effectiveness of Govt Policies and Consumer Satisfaction.

H3: there is a positive relationship between Consumers Perception and Consumer Satisfaction.

Variable	Pearson Co efficient	Significance
Effectiveness of Govt Policies	0.664	0.00
Consumers Perception	0.612	0.00
Consumer Satisfaction	0.751	0.00

Multiple Regression Model

By examining positive and robust association between Effectiveness of Govt Policies, Consumers Perception and Consumer Satisfaction, a multiple regression was done to analyze the impact of Effectiveness of Govt Policies with Consumers Perception predicted on Consumer Satisfaction

H4: there is a substantial association between Effectiveness of Govt Policies and Consumer Satisfaction

H5: there is a substantial association between Consumers Perception and Consumer Satisfaction

Model Summary ^b				
Model I	R	R Square	Adjusted R Square	Std. Estimated error

1	.792 ^a	.627	.623	.319
a. Predictors: (Constant), Effectiveness of Govt Policies, Consumers Perception				

Interpretation

The testing of the hypothesis on the correlation among the variables shows a very significant positive correlation between them. R is the correlation, its value is 0.792, and R square is the degree of determination, its value is 0.627. The degree of determination shows the extent to which Effectiveness of Govt Policies and Consumers Perception influence Consumer Satisfaction. Here the employee productivity is determined to the extent of 62.7% by Effectiveness of Govt Policies and Consumers Perception

ANOVA table:

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.012	4	11.506	13.288	.000 ^b
	Residual	234.246	473	.782		
	Total	298.478	446			
a. Dependent Variable: Consumer Satisfaction						
b. Predictors: (Constant), Effectiveness of Govt Policies, Consumers Perception						

ANOVA analysis table exhibits that significant value to be lower than 0.01, that shows the dependent study variable, namely Consumer Satisfaction, is substantially predicted by the independent study variables, Effectiveness of Govt Policies and Consumers Perception, has a confidence level of at 99%.

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.342	.245		78.866	.000
	Effectiveness of Govt Policies	0.556	.58	.453	12.564	.000
	Consumers Perception	0.642	.58	.234	5.743	.000
a. Dependent Variable: consumer satisfaction						

Consumer Satisfaction = 1.342 + 0.556 (Effectiveness of Govt Policies) + 0.642 (Consumers Perception)

Among these above given two factors, Consumers Perception has a substantial and maximum negative impact over Consumer Satisfaction. Effectiveness of Govt Policies has significant negative impact on Consumer Satisfaction. The hypothesis [H4] is accepted and it displays a positive association between the variables Effectiveness of Govt Policies and the Consumer Satisfaction. Hypothesis [H5] is accepted and it displays a positive association between Consumers Perception and the Consumer Satisfaction.

Suggestion for Future Research

Upcoming researches can be done by accumulating data from other areas in India which will provide a deep understanding on Government policy and consumer perception on public distribution system and the

satisfaction of consumers on it. Because of the data was collected from Palakkad, Thrissur, Ernakulam and Malappuram, the study shows difficulty in generalizing consumers of other areas in India.

Implications of the study

This study reveals that the two variables viz, the Government policy to ensure food security through PDS(0.664) and consumer perception towards PDS(0.612) are positively correlated with consumer satisfaction(0.751). The findings of our study have its implications primarily on policies to increase the level of satisfaction and to meet the basic needs during Covid 19 pandemic. Prior studies display that the state government takes all efforts in order to make the PDS more effective by ensuring availability, affordability and accessibility of PDS articles to the poor (Dr. S. Nakkiran, 2004). Introduction of Electronic Point of Sale (E PoS) machines are another satisfying factor (Swapna Shaji and Annie John 2018). This study found that the beneficiaries of four districts in Kerala were satisfied with the various policies like MDMP, AAY, ICDS etc. launched by the govt to ensure food security through PDS (Velmurugan Ramaswamy & Mrs.D. Lavanya D. Lavanya. 2017). This study found that the beneficiaries were satisfied with the food items (rice, wheat, sugar etc.) and non-food items received at fair prices through Fair Price Shops (C. Muhammed Kasim & S. Hari Kumar 2018). Our study covers both normal situation and Covid 19 situation.

Discussions with Conclusion

PDS is an important food and nutrition security measure meant for vulnerable sections of the society. Over the years PDS has managed to survive the innumerable challenges but still, it is intensively scrutinized. At Government level all efforts are taken to make the system more effective and ensure the availability, affordability and accessibility of PDS articles to the poor. This study presented the information about the PDS, details of its working, utilization and satisfaction of consumers towards PDS in 4 Districts. The prime aim of PDS is to ensure adequate supply of essential commodities of adequate quality at affordable price to general public. The customers of the 4 districts were satisfied with the performance of the PDS although significant differences exist in their perception. Variables namely effectiveness of govt policy and consumer perception helps to evaluate the satisfaction of customers. The study shows the policies and measures taken during Covid 19 pandemic in order to cope up with the situation. Respondents gave the positive feedback about functioning of fair price shop in terms of timing, location, opening and attitude of distributors. The study reveals that the general public will be satisfied when they could get the products regularly in all months with adequate quantity and quality.

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