

Digitalisation of Public Distribution System and Food Security: A Study of Risia Block of Bahraich District of Uttar Pradesh

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Abstract:

The digitalisation of the public distribution system represents a significant stride towards food security and transparency in the distribution of essential commodities such as wheat, rice, and kerosene etc. Governments ensure that everyone has access to basic food supplies. Food security is a fundamental human right, and it implies that everyone should have sufficient food to support their physical and mental well-being. Through the implementation of digital technologies in the public distribution system, governments have ensured more efficient and effective food supply management. The research is based on primary and secondary data. The interview schedule was used in this research article for primary data collection from fair price shop dealers and ration card holders. The study area is Risia Block of Bahraich district of Uttar Pradesh. The main objectives of this study are to examine the role of digitalisation of ration cards to stop corruption in the Public Distribution System, to identify the problems ration card holders face at fair price shops, and to identify the technical and other challenges faced by Fair Price Shop Dealers when they distribute food and grains to ration card holders.

Key Words - Public Distribution System, Food Security, Ration Card, Digitalization and Fair Price Shop

Introduction-

In India, the Public Distribution System (PDS) is an effective means of improving food security, since it involves the distribution of subsidized food grains and other essentials through Fair Price Shops (Khera, 2010). However, recent studies by academics and policymakers have revealed flaws in the system, including loopholes and corruption. Some critics have suggested replacing the PDS with a cash-based stipend (Basu, Deepankar & Debarshi Das 2015).

The concept of food security has been defined by the 1996 World Food Summit, which states that "everyone should have access to sufficient, safe, and nutritious food to maintain a

healthy lifestyle." Ensuring food security is crucial as it ensures the availability of food to all citizens, regardless of their socioeconomic status. Although food security has been a concern for centuries, it is not a new policy term. In 1974, Henry Kissinger declared at the inaugural world food conference that "no child would go to bed hungry in ten years." The governments at the world food conference endorsed the Universal Declaration on the Eradication of Hunger and Malnutrition, which states that every individual has the inherent right to be free from hunger and malnutrition. Thus, the concept of food security was initially articulated in 1974 by the World Food Conference. "Availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices". Indian literature, food distribution security is defined similarly to the West.

Lee, Richard Philip (2013) explored trade-oriented food security in international agriculture. An author discusses an international social movement that promotes food sovereignty. NGOs, spearheaded by Via Campesina, promote the concept of food sovereignty, which involves a rejection of agricultural biotechnology and energy-intensive (industrial) farming practices. Instead, they advocate for localized food production and rural living for all nations. Food sovereignty "works with nature," they say. But trade-oriented food security focuses on technology-driven agriculture. The concept of food sovereignty, as articulated by the International Planning Committee for Food Sovereignty (IPC), unequivocally opposes the private control of natural resources and the genetic modification of crops and animals. This tenet is grounded in the fundamental principle that people have a basic right to define their own food and agriculture systems and to have access to the means of production necessary for their implementation. The IPC maintains that private ownership of natural resources and genetic engineering of crops and animals are impediments to achieving food sovereignty, and instead advocates for community-based approaches that prioritize the needs and interests of small-scale farmers, fishers, and indigenous peoples. By rejecting private control of natural resources and genetic engineering, the IPC seeks to create a more equitable and sustainable food system that respects human rights, cultural diversity, and ecological integrity.

Food security as a policy endeavour within a democratic government in post-independent India has been launched by empowering the Agriculture sector. Former Prime Minister Indira Gandhi and Indian Agriculture Scientist M.S. Swaminathan led the Green Revolution in the 1960s when Indian society lacked nourishment. It was a big stride for Food Security in India. As time passed, the Central and State governments took several policy efforts like Kaam Ke Badale Anaj Yojana, Antodaya Yojana, Annapoorna Yojana, etc. But the Food Security Bill, 2013 passed subsequently may be a game changer for Food Security guarantee for the country's people.

Literature Review-

Nicholson and Esseks (1978) "The politics of food scarcity in developing countries" explored the political implications of hunger in third-world countries. There was a public uproar over growing prices that slowed the evolution of India's current system of food grain management following the inflationary consequences of the second five-year plan (1956–1962). The observer talked about the food problem in the developing world. Writers provided a quick

overview of the politics of production and domestic political issues that influence solutions to the food crisis in different Third World countries. International dependence is one political aspect of the food issue. As part of the emerging answer to each country's portion of the global food crisis, ideological problems were also considered.

George (1996) "Public distribution system, food subsidy and procurement incentives" he went over the purchasing procedure as well as the distribution of food. Throughout the nation, there is a network of stores called Fair Price Shops that is responsible for the distribution of food grains. The rate of food subsidy is determined by procurement prices, the Food Corporation of India's dealing costs, and the issue price. The number of food grains that are distributed through the PDS is also a factor in determining the amount of food that is subsidized. In addition to that, he went over policy concerns and PDS coverage.

Balakrishnan (1997) "Quality of public distribution system: why it matters" contributed this insightful piece on the significance of public distribution system quality. PDS grains are of inferior quality compared to those acquired on the open market. The availability of PDS does not deter market purchases for some customers.

Indrakanth (1997) "Coverage and leakages in PDS in Andhra Pradesh" discussed whether or not all those who need food are receiving it and whether or not there are any gaps in the distribution system. While the author focused on the potential for leaks at the go-down level, these same leaks may happen at the municipal level as well. FPS distributors are permitted to sell off a portion of their quota to the public. According to household-level leakages, cardholders are buying grains from FPS at a subsidized rate and then reselling them on the open market at a higher price. Likewise, PDS insurance protection is covered. Fake cards are produced by dealers, and the quota earned from their use may be sold on the black market. Since their salary is so little, the writer claims, corruption is inevitable. A few middle-class families, the researcher told me, are considering applying for BPL cards (white cards) so they may take advantage of reduced healthcare costs at government hospitals and other benefits.

Jha and Srinivasan (2001) "Taking the PDS to the Poor: direction for further reform." discussed the costs and benefits associated with the operation of the PDS for food grains in India. The paper revealed inefficiencies in the system. The changing role of PDS, the performance of FCI and private traders, procurement, storage and distribution are briefly discussed.

Mooij (2001) "Food and power in Bihar and Jharkhand: PDS and its functioning" In his article, PDS and food security in Bihar and Jharkhand are examined. The author characterizes PDS not only in terms of its failures and shortcomings but also in terms of its successes. In addition to describing the Mafia and Rangdars, he also described the bureaucracy and politicians in PDS. The researcher added that it is quite difficult for PDS dealers to earn a profit without being crooked. Dealers create counterfeit ration cards for financial gain.

Thorat (2005) "Caste discrimination and food security programmes" This research investigates whether or not midday meal (MDM) and PDS programmes exhibit caste prejudice. This paper exposes the fact that Dalit chefs are opposed. The caste system prevents hiring Dalit chefs. Caste discrimination occurs in the Public Distribution System (PDS), and favouritism is evident in the Fair Price Shops.

Balakrishnan (2008) "Imagining an economy of plenty in Kerala" detailed in his article on land reforms has not been a spectacular success in terms of food production. Instead, there has been a significant failure. He talked about the importance of PDS. One can only be considered self-sufficient if he or she generates everything they need. He made the statement after an unsuccessful attempt at land distribution in Kerala. He also discussed the time India requested grain from the United States, which had a foreign policy crisis with food aid. As a response, Lyndon Johnson dispatched shiploads of wheat to the east coast in order "to keep India on a short lease." This was a message that Prime Minister Mrs Indira Gandhi kept close to her heart. The "green revolution" began, which quickly and permanently increased the rate of development of food production. As a result, India was able to become food self-sufficient for the first time in its history.

Banerjee (2011) "Decentralized procurement and universalized PDS" reviewed NFSA and the right to food. In doing so, he exposed patronage politics that undermine public confidence in India's democratic system. A village's political and administrative elite is more likely to be classified as poor and receive welfare programs, especially the Public Distribution System (PDS). No one should ever go hungry because everyone has the right to adequate nutrition. Green revolution technology was designed to increase wheat and rice production across the country, he said. Nutritional, not mere food security is discussed, including the sourcing procedure and the incorporation of millets and other grains into the architecture of NFSA. 35 kg worth of cereal grains. According to the ICMR, 67 kg of grain is crucial for adequate nutrition. In villages or panchayats, grain banks and storage facilities can be built with MGNREGA.

Khera (2011) "Revival of the PDS: evidence and explanations" A concise discussion was held on the respondents' socioeconomic backgrounds, the PDS, PDS entitlements, the reduction in PDS prices, and the universalization of the PDS. A researcher spoke about Antyodaya cards, the inadequacy of the PDS, corruption in relation to the PDS, the need for an increase in the purchase ratio, and other grains not included in the PDS. Overcharging customers, awareness of entitlements, corruption in other commodity markets, and PDS assessment data were shared by the investigator. As well as the high quality of the food distributed through the PDS (FPS), she commented on the consistency and reliability of fair price shop opening times. The author talked about the diversity of food grains, the difference between cash and food, and the preferences that people have between food and currency. During the meeting, the observer discussed PDS changes, complaints from PDS dealers, the issue of computerizing PDS records, the function of ration cards, and the transparency of the BPL list. The PDS coverage area could be expanded, PDS prices lowered, PDS records computerized, grains delivered to people's doorsteps, and a grievance channel established.

Khera (2011) "Trends in the diversion of grains from the PDS "compares official off-take numbers with purchases by households to determine the percentage of grain diverted from PDS to the free market during the past few decades. Grass-roots activists in India are working to combat a severe problem: the illegal sale of grain. We also speculate on why PDS might have gotten better and present those ideas in this study.

Mander (2011) "Ending Differences: A law of exile hunger" It was said in his piece that millions of people, including men and women as well as little boys and girls, go to bed hungry. In addition to this, he talked about the issue of child malnutrition. One of the paradoxes he brought up was the fact that one out of every two children in India does not

have access to sufficient food to allow her body and brain to develop to their full potential. Because, within households, women take the least and are the only ones left to eat after all of the other family members have been fed, two out of three women suffer from anemia. It was ordered by the Supreme Court that governments cannot withdraw from food schemes; all schoolchildren should receive hot cooked school meals. All children under the age of six, nursing mothers and pregnant women should receive supplementary feeding through Integrating Child Development Services (ICDS); and ration cards should be given to vulnerable groups.

Kumar Basanta and Brajraj Mohanty (2012). "Public distribution system in rural India: implications for food safety and consumer protection" revealed the shady dealings of PDS officials in India. Corruption at the local level is to blame for the failure of the PDS to safeguard the interests of the rural poor. He has offered advice on how to improve PDS. He explained how traders are not given any margin. He spoke about the importance of consumer clubs in spreading information about PDS and improving the lives of people in rural areas.

Swaminathan (2015) "Combating Hunger and Achieving Food Security" This book is a compilation of articles. Professor Swaminathan provides a high-level overview of the topics of the Green Revolution, the Nutria farm movement, food losses and food waste, monsoon management, food security, and vigilance for sustainable food security in this book. In his work, "The Role of Food Security in the Year of Science, Agriculture, and Humanism," the Investigator outlined the difficulties the topic presented in that year. He also spoke about banks and ways to combat food price increases.

Frongillo et al (2017) The connection between food security and subjective well-being is highlighted in the Gallup World Poll, which underscores the significance of food security as a vital component of living standards that affect one's overall quality of life. In fact, research shows that food insecurity is linked to not only physical health problems but also a decrease in subjective well-being. This surpasses other indicators of living conditions.

Pingali, et al (2017) "The bumpy road from food to nutrition security-slow evolution of India's food policy" Strategies for food security, including the PDS and the green revolution, are examined. The authors discussed the International Classroom Dishwashing Service (ICDS) and the Midday Meal Scheme (MDMS), stating that both programmes helped alleviate student hunger in the classroom. Is there more to NFSA than just calories? To ensure everyone has access to healthy food, we need an updated food policy. The focus needs to go beyond the calorie count. It has been proposed that farmers diversify their crop output beyond just wheat and rice. Food and money are compared. The essay suggests that PDS be expanded to include coarse grain and pulses to improve the nutritional value of food distributed to the poor.

Objective of the study-

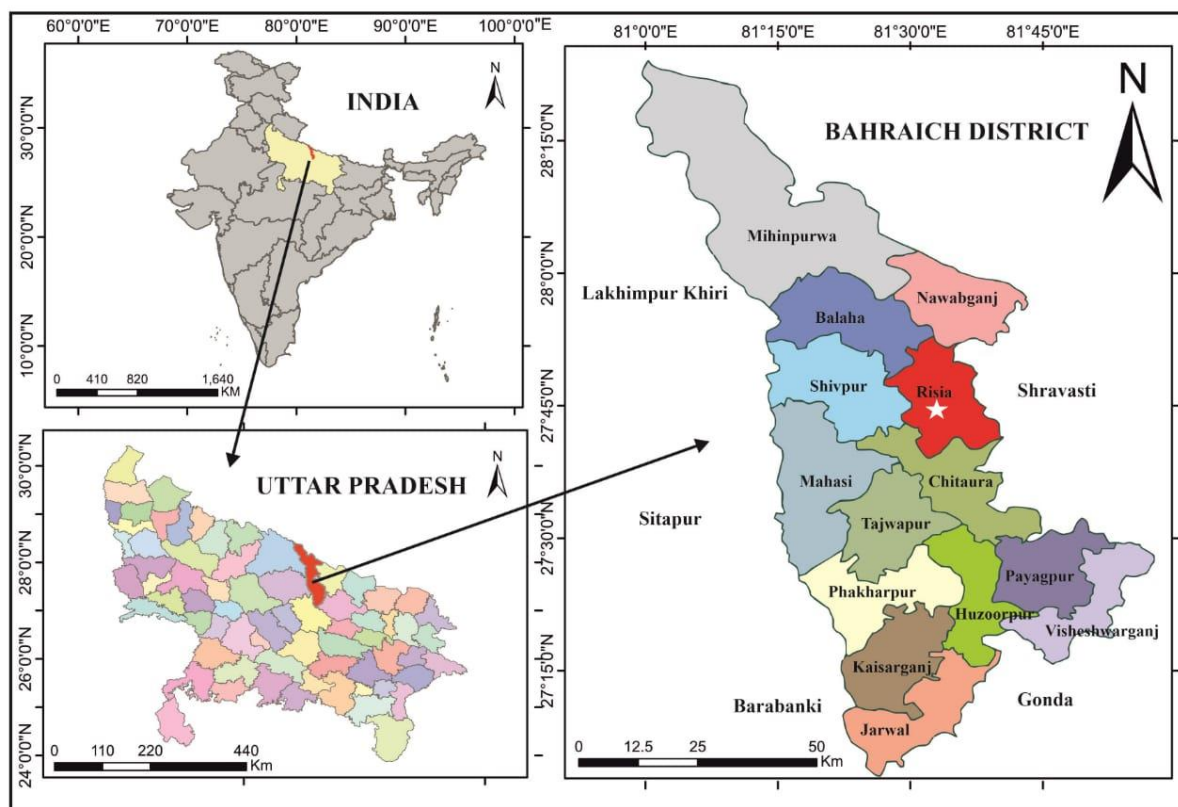
1. Role of digitalisation of ration cards to stop corruption in Public Distribution System.
2. To know the problems faced by ration card holders at fair price shops.

3. To know the technical and other challenges faced by Fair Price Shop Dealers in distributing food grain to the ration card holders.

Research Methodology- The study has adopted a descriptive and exploratory research design by incorporating primary as well as secondary data. The present research paper is based on primary as well as secondary sources and the researcher's own observation in the field. The primary data is collected from 75 ration card holders and 10 fair price shop dealers from Risia block which is located in the Bahraich district of Uttar Pradesh, India. The secondary data were gathered from various research journals and websites etc.

The public distribution system arose to alleviate hunger and manage food shortages by making staples like wheat and rice available to the public at low cost. PDS has evolved into a significant policy component in the administration of the nation's food system. Supplemental in nature, PDS is not meant to provide an individual or group with all of the necessities of the commodities supplied under it.

Study of area - Risia block is one of the administrative divisions in the Bahraich district of Uttar Pradesh, India. The block is primarily rural, with agriculture being the primary source of income for the residents. Agriculture is the backbone of the economy in the Risia block, and the area is known for producing a wide range of crops, including wheat, rice, sugarcane, and pulses etc. The agricultural practices are primarily traditional, with a heavy dependence on monsoon rains. However, in recent years, the government has been promoting the use of modern technologies such as drip irrigation and hybrid seeds to increase agricultural productivity.



Source- This map is created by Arcgis Software

The Risia block faces several challenges, including a lack of infrastructure, poor healthcare facilities, and limited access to education. The literacy rate in the area is relatively low, with only around 40% of the population being literate. There is a shortage of schools, and the quality of education is not up to the mark. Moreover, the healthcare facilities in the area are inadequate, with only a handful of government-run hospitals and dispensaries.

The area has a predominantly rural population, and the people are mostly dependent on agriculture for their livelihood. However, due to limited access to modern technologies and marketing channels, they face several challenges in improving their income levels. The government has initiated several programs to improve the living conditions of the people, including providing housing, sanitation, and electricity. The government is also promoting small and medium-sized industries to create employment opportunities in the area.

In conclusion, the Risia block of Bahraich district, Uttar Pradesh, is a predominantly rural area with a rich cultural heritage and a strong agricultural base. The area faces several challenges, including a lack of infrastructure, poor healthcare facilities, and limited access to

quality education. However, with government support, the area has the potential to overcome these challenges and emerge as a prosperous and thriving region.

Table number-1

Number of Ration Cards in Risia block of Bahraich District					
Primary House Hold (PHH) Ration Cards		Antyodaya Ann Yojna (AAY)		Total	Total
Ration Cards	Beneficiaries	Ration Cards	Beneficiaries	Ration Cards	Beneficiaries
16931	160614	7106	17679	44037	178293

Source- <https://nfsa.up.gov.in>

The table provides data on the number of Ration Cards in the Risia block of Bahraich district, categorized by the type of card and the number of beneficiaries.

There are two types of ration cards: Primary House Hold (PHH) Ration Cards and Antyodaya Ann Yojna (AAY) Ration Cards. The total number of ration cards in the Risia block is 21,037, which includes 16,931 PHH Ration Cards and 7,106 AAY Ration Cards. The number of beneficiaries associated with the PHH Ration Cards is 160,614, while the number of beneficiaries associated with the AAY Ration Cards is 17,679. The total number of beneficiaries in the Risia block, therefore, is 178,293. Overall, this data suggests that there is a significant need for food assistance in the Risia block of Bahraich district, with 24037 ration cards holders and 178293 individuals receiving benefits from these cards.



Image source primary source



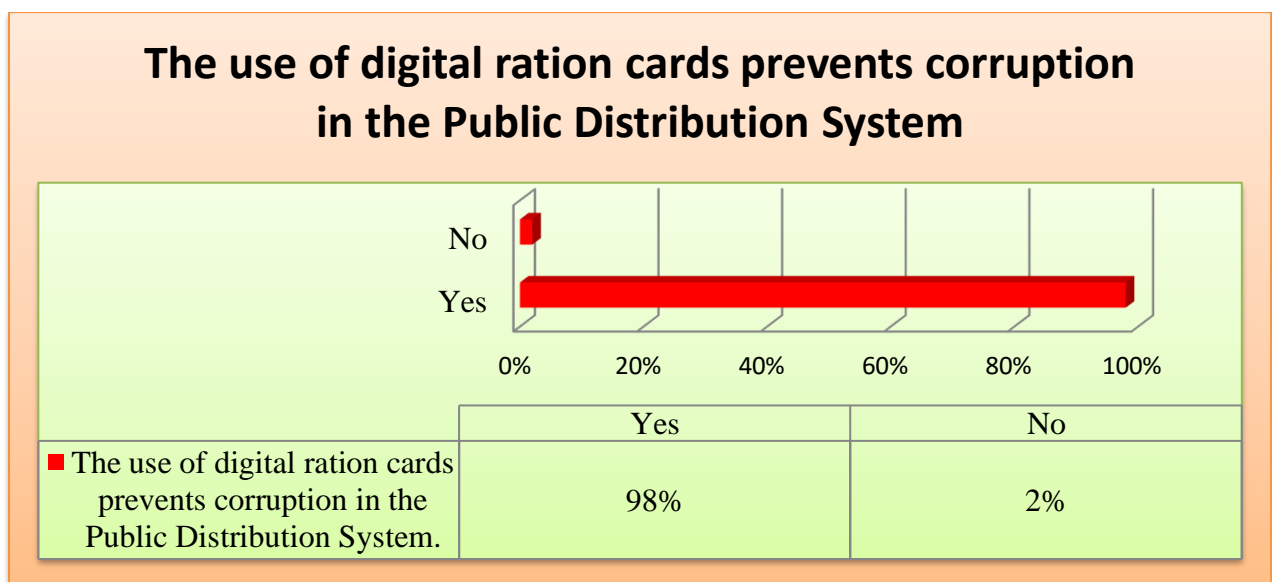
Image source- Primary Data

Use of technology in PDS- Using a person's unique physical traits, including fingerprints, hand shape, eye and face characteristics, and behavioral traits, like signature and speech patterns, biometric identification technology automates the identifying process. With the help of technology the scholars are trying to minimize the corrupt practices in public distribution System.

This article investigates the efficiency of technological solutions to the issues of corruption in the PDS (Public Distribution System) and the delivery of grains to ration card holders. Distributing grains to ration card users over the internet and E-POS (electronic Point of Sale) equipment at PDS Shops is a major step toward more open and accountable public distribution system. A biometric system serves as the foundation for the E-POS terminal. Following the rollout of biometric systems, the Civil Supplies Department has begun using IRIS technology to verify the identities of ration cardholders before allowing them to purchase food from Fair Price Shops in the Public Distribution System (PDS). The difficulties that Fair Price Shop vendors have adopted new technology are also investigated.

Result and Discussion -

Figure number -1



Source – primary data

Fig. 1. Show that the system of digitalisation in PDS works properly, in the above figure the percentage of 98% shows that there are only 2% respondents Disagree to the system of digitalization. This means there is low chance of misused the right of people.

Problems with Ration Card Holders - Many cardholders' fingerprints can not be recognised by biometric technology systems. In numerous instances, fingerprints were obliterated or did not match biometric equipment. Although field-level officers were empowered to identify such cases and approve PDS grains release, some field officers abused their authority. This resulted in the diversion of PDS grains intended for the beneficiary to the open market. The civil supply department received complaints and decided to install IRIS (Intelligent Retinal Identification System) to prevent grain diversion to the open market. The digitalization of

ration cards causes difficulty for cardholders because ration card holders complain that the units of ration cards were deleted. Fingerprints have not recognized for some time. Rational cardholders also report underweight problems.

Problems of FPS dealers - Fair Price Shop dealers are experiencing many difficulties due to technology. Some FPS dealers have stated that illiterate FPS dealers cannot use the most advanced technical equipment, such as POS and IRIS machines. They cannot use them. Training for FPS dealers is not conducted periodically. Internet connectivity is required for POS and IRIS devices to function, yet many rural areas lack high-speed data infrastructure. In many cases, the POS machine does not accept the fingerprints of daily labour cardholders. Ration Card Holders visit Fair Price Shop frequently for biometric identification. Fair Price Shop dealers reported that commission was very little and demanded monthly salaries for their work. There is no contingency provided to FPS owners for mobile recharge, high-speed internet data, pens, stamp pads, etc. FPS owners sell ration bags to earn income.

Suggestions: During festive occasions, other commodities like sugar, edible oil, salt, etc. should be given to all PHH (Primary Household) and AYY ration card holders. FPS dealers should be paid labour wages. Salaries should be given to FPS owners.

Conclusion-

Biometric identification technology has improved ration cardholders lives. Ration card holders receive consistent rations. Many ration cardholders have reported problems in getting food and other necessities since their biometric identification was not processed. Village internet access is spotty, and Fair Price Shop vendors who are not tech-savvy are having trouble adapting to the digital world. Due to biometric identification, FPS dealers can deliver grains very smoothly. False ration cards and a large number of memberships were prevented by biometric identification. Therefore, PDS has less room for corruption. When it comes to PDS using technology, things are looking up. In some ways, corruption can be combated through technology. There have been some issues with ration cards digitalisation, despite the smooth process. Digitalisation of ration cards made system transparent and less room for corruption. Biometric identification made system transparent. Digitalisation of Ration Cards and public distribution system helped very much in insuring food grains to the ration card holders. Aadhar seeding is done of every member of ration card with therefore the problem of fake ration cards is solved and aadhar based biometric identification increased the transparency and ensured ration grain to every ration card holders.

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