

# Eliminating Deceits and Enhancement of Customer Satisfaction in Petro Retail



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*Customer buying habits have influenced and evolved with the adoption and proliferation of technology in industries. It is also visible in Petro retail in the Indian context. While some technology adoption has happened in Petro retail, there seems to be some gap towards addressing the frauds leading to customer dissatisfaction and damage to the service provider's brand image. "Integrated Payment mechanism" ensures exact payment against their fuelling. A technology-led "Integrated payment mechanism" helps to enhance the efficiency of the fuelling cycle and reduce fraud by enabling acceptance of multimode of payment and confirmation of "proof of service".*

**Keywords:** Customer Experience, Indian Fuel Retail, Petro Retail, Technology in Fuel Retail, Digital Payment,

## 1. Introduction

According to the Global Energy Statistical Yearbook 2019, India ranked third in the world for energy consumption in 2019, behind the United States and China. Year-over-year growth in demand is also anticipated. Due to this prospect, the Indian fuel retail industry has received more attention. In India, fuel, including Petrol and diesel, is sold at gas stations run by Oil Marketing Companies (OMC) via their franchisees. In India, fuel was once sold as a commodity both before and throughout the early post-independence era. With little to no competition, the government and state-run oil companies set the fuel prices (PSUs) in the industry. The government's gradual deregulation of prices and the entry of private companies into the petro retail market have significantly enhanced competition among them (Purohit and Jain, 2020).

Over the past few decades, technological advancements in all industries—from manufacturing to the service sector—have transformed how industries operate globally. These developments have involved the shift from analog to digital and from digital to artificial intelligence (AI), big data, and the Internet of Things (Purohit and Jain, 2020). Customer service has changed dramatically in response to technological advancements, shifts in consumer expectations and behaviours, and other factors, resulting in a huge transformation in global retail (HCM Sales, Marketing & Alliance Excellence Essentials, 2017). The downstream oil and gas industry in India has not adopted many technologies, especially when it comes to identifying and recognizing customers and satisfying their expectations for the mix of products and services.

Petro retail has not yet caught up to general retail, which has made tremendous strides in adopting technology and improving consumer experience (Purohit and Jain, 2020). In India, the retail of Petrol, which began as a commodity under highly regulated conditions, has evolved over time to become a service-based industry in response to changing consumer purchasing patterns (Purohit and Jain, 2020).

The decision-making process of consumers has also been significantly impacted by the digital and technology sectors. According to Moran et al. (2014), social media plays a significant role in marketing, brand building, and the development of longer-lasting client relationships. Social networking is being used by businesses to provide clients with a more individualized experience. Additionally, there's a growing trend in the service industries to share customer data in order to evaluate customer purchasing patterns. This allows for the design and delivery of appropriate, customized services to target segments, improving their customer experience through better service offers ( Beglow, 2019).

Technology adoption is evident in practically every industry, and it increases efficiency and productivity. AI implementation in Indian commercial banks has improved customer services by enabling banks to provide more proactive services (Sindhu and Renee, 2019). It also affects how well-aware customers are of their banking needs and how to satisfy them (Rashmi and Nirmal, 2019). According to Sambrani and Jayadatta (2020), mobile payments with digitalization enhancement have significantly altered consumer purchasing behaviour. Information technology adoption is essential for the expansion of SMEs (small and medium-sized enterprises) (Ojinga et al., 2021). The popularity of online purchasing has increased recently. Given that information technology plays a crucial role in online purchasing, a study examined the effect of technology adoption on consumers' intentions to make additional purchases (Gupta, 2020).

Globally, online shopping is becoming more and more popular. While considering online shopping, consumers take into account a number of factors, including promotions, deals, doorstep delivery, easily accessible payment methods, and availability (Singh and Kaur, 2020). It has also been noted that marketing strategies must incorporate technology in order to effectively engage with tech-savvy consumers and satisfy their convenience and choice (Gupta, 2020). Customer purchasing behaviour has been demonstrated to be impacted by digitally led ads (Choudhary, 2020). India, a youthful nation in comparison to other nations, has grown to be a desirable market. Consumer behaviour has been significantly changed by the adoption of digital technologies during the COVID-19 epidemic (Prasad and Paharaj, 2021). Customers consider the

following while making decisions in the tourism industry: usefulness, aesthetics/visual appeal, simplicity of use, intention to purchase, and intention to suggest. The tourist industry's decision-making process regarding Internet travel plans is influenced by massive digitization (Dhanabagiyam, 2020). Four aspects influence consumers' purchasing decisions when they purchase online for FMCG products: brand name, product specifics, price consciousness, and general knowledge (Vijayalakshmi et al., 2020). According to the study, precision agriculture has been more efficient and productive in the agricultural sector due to the widespread adoption of digitalization. This includes the use of drone technology, IoTs, and other digital tools (Purohit and Purohit, 2021).

A shift in the service is apparent due to the changing needs of customers and the growing rivalry among marketing firms. The majority of consumers are also disturbed by the recent increases in the cost of Petrol and diesel. Although the skyrocketing cost of oil has put a strain on family budgets, short sales and the sale of contaminated fuel are widespread nationwide. The Government of India released data showing that from 2014 to 2017, there were several fuel station scams. Maharashtra topped the list with 1560 incidents, followed by Uttar Pradesh & Delhi with 913 and 785 cases, respectively. Since most occurrences are not recorded, this may only be a small portion (Sharma, 2018). Fuel prices are climbing, the number of automobiles on the road is growing every year, and gas station fraud is becoming more frequent ( Onemedia News,2017)

Consumers are becoming more sophisticated and demanding digital solutions driven by technology (Purohit and Jain, 2021). More digitalization also makes it more vulnerable to data hacking, which increases the likelihood of fraud. Therefore, a solution must be established to prevent payment fraud and inappropriate payment against fuel supply, which are important ways to deceive clients.

## 2. Literature Review

According to the World Economic Forum (2017), there are more than 60,000 gas stations in India, and more are opening up all the time. The research has demonstrated that three key factors—fuel price, fuel station management, and technology use in services—have a substantial impact on India's retail Petrol consumption. Purohit and Jain (2021) found a strong correlation between consumer preference and other characteristics, including fuel station image, service quality, product assortment, and extra perks. Customers' purchasing decisions are influenced by the use of technology. According to Purohit and Jain (2021), service providers must also devote more effort to creating technology-based infrastructure and services that cater to the changing needs and behaviours of Indian retail petroleum consumers. Improved customer experience and increased operational efficiency have been demonstrated by the use of IoT and AI in petro retail (Purohit et al., 2021). The organization's ability to maximize profits and provide overall service excellence has also been significantly impacted by the use of IoTs (Purohit and Jain, 2021). In the area of petroleum retail, there is, nevertheless, a general deficiency in the adoption of technology in customer service (Purohit and Jain, 2020). Additionally, it has been noted that while digital payment technology is extensively adopted in the general retail sector, there is a gap in its adoption in the Indian context for Petrol retail (Purohit and Purohit, 2020).

Numerous techniques have been reported to be used to deceive customers in the Indian context. These include: (a) attendants engaging in small talk with customers while pretending to reset the meter to zero and not guaranteeing the starting point of fuelling; (b) attendants failing to reset the meter after refuelling the previous customer's vehicle; (c) a malfunctioning meter where the attendant begins to tick even before the fuel starts to flow from the hose; and (d) fuel hoses longer than necessary (<https://bikeadvice.in/petrol-pump-attendants-cheat/>, 2020) (Scrooll. in, 2014). Additional methods of deceiving clients at gas stations have also been documented in another investigation. (i) Taking advantage of a customer's interest in a conversation that leads to a brief interruption caused by distraction. (ii) Modifying Petrol-dispensing devices with integrated chips to modify the fuel that is delivered to consumers (iii) Filling the oil's premium version without asking clients to reach the attendant's goal (iv) When customers are seated inside their cars, these incidents typically occur: blocking the customer's mirror and filling up another vehicle with Petrol. (v) The Start-Stop Trick, which locks some fuel within the fueling machine by forming an airlock. (vi) During fueling, reset the meter to the final quantity. The attendant is typically the one who commits minor deceptions and cheating. Attendants perform certain tasks independently and others with assistance from fellow attendants ( Jagoinvestor.com, 2020).

There are legal provisions under the Petroleum Act and Rules, as well as the Weight and Measures Act, that apply when frauds occur at gas stations. Ministry officers and Oil Companies conduct regular checks and inspections in accordance with guidelines, specifically the Marketing Discipline Guidelines ([www.localcircles.com](http://www.localcircles.com), 2020). Additionally, state government authorities have intensified their efforts to combat malpractices related to fuel shortages (The Hindu, 2016).

The payments ecosystem is now disrupted by the digital revolution. Through tangible advantages and benefits for both customers and service providers, contactless payment technology innovation has completely changed the payment industry. Because it's more convenient, using contactless capability in addition to traditional card payments improves the consumer experience. Additionally, service providers can decrease wait times by implementing more contactless payment methods and increase operational efficiency through speedier digital transactions. To guarantee success, the infrastructure used to process contactless payments is also certified and compliant with the most recent security requirements (KPMG Report, 2020). In the post-COVID-19 new normal, digital payment has shown to be an infallible method for businesses and enterprises to function. It is anticipated that the use of contactless payments will grow in the near future, possibly leading to additional advancements in contactless technology and a significant upheaval of the financial industries (Digipay. Guru, 2020).

OMCs are now able to place a major focus on increasing the share of digital transactions thanks to the government's 'Digital India' push. However, users are turned off by the hassle of changing cards or entering PIN numbers, and cash usage is still quite high. COVID-19 has changed consumer expectations and traditional purchasing patterns, making the aforementioned items necessities rather than just nice-to-haves. COVID-19 contamination risks are significant since a typical fueling transaction involves numerous touchpoints, including communicating the type of fuel and the amount of fuel and making payments after fueling. But if a solution like contactless payment is put in place, these can be reduced to almost nothing (Zope, 2020).

NFC is a contactless payment method that Bharat Petroleum Corporation Limited developed specifically for the Indian market. The convenient 'tap and go' feature aids customers in maintaining the privacy of their financial information as well as their health, as it never leaves their grasp (BPCL Blog, 2020). The contactless debit card was introduced by Indian Oil, a significant state-run oil and gas business in India, and State Bank of India, a state-run bank, to enable safe and convenient contactless payments utilizing "Tap and Pay" technology. Industries now have a duty to contribute to public safety and ensure the protection of their customers, always bearing both in mind (India TV Business Desk, 2021). Technology usage has been shown to increase OMCs' operational effectiveness in providing forecourt customer service (Purohit et al., 2021). Additionally, it has been noted that the application of video analytics technology enhances the client purchasing process (Purohit and Jain, 2021).

The attendants' most often employed tactic appears to be diversion; the main area of ambiguity is the money charged against the actual fueling. There appears to be a disconnect between the quantity of fuel that consumers are charged and the amount that they are dispensed, even though OMCs are working on different procedures related to checking, enforcing guidelines, etc., including establishing multiple ways of payment. To guarantee that the correct amount is charged against the fuel that is provided to the customers, some technical intervention is necessary.

### 3. Research Objectives

Fuel stations are important since they are the only places where customers may receive service. Services in today's technologically advanced world are heavily reliant on technology adoption. Recognizing consumers prior to fuelling up is a pleasure for customer service and contributes to a better shopping experience. Given the rise in digital payment methods and the scams recorded at gas stations, businesses must integrate payment with fuelling transactions to guarantee there are no payment-related frauds.

Presently, OMCs operate their fuel stations with an automation system that offers a range of features, and management information system reports to manage the fuel station's equipment and operations, as well as the dealerships' or franchisees' management of customer satisfaction and operations. Personalized invoicing, an SMS-based e-bill, and real-time electronic capture of every fuel station transaction are just a few of the customer-focused features embedded in the automation system. These industry characteristics have been highly appreciated by customers. It is not possible to completely eliminate payment-related fraud, though, by linking payments with fuelling transactions.

The "Integrated Payment Mechanism" was introduced at a few gas stations in Mumbai to assess how well it uses technology to give consumers a hassle-free fuelling experience. The purpose of the essay is to examine how fuel stations' "Integrated payment mechanism" affects consumers' purchasing decisions, experiences, and levels of satisfaction.

### 4. Methodology

In India's current Petro Retail scenario, service delivery is monitored and primarily ensured by manual systems, with periodic human intervention needed. Although OMCs have installed automation systems at the fuel outlets in response to the rising number of consumer fraud reports, these systems are mostly utilized for tracking post-incident scenarios and stock and transaction monitoring. Currently, there is virtually little use of the automation system for providing customer assistance. Currently, some essential tasks related to providing clients with service, such as verifying that the consumer is correctly charged for fuel, tracking, and avoiding fraud, are carried out manually at fuel stations. The financial and automation sectors have seen rapid technological advancements, which can aid in the development of solutions to guarantee that clients are paying the correct amount.

Through the use of technology to integrate the fuelling and payment components, we have concentrated our study on guaranteeing the accurate delivery of fuels and payment against the transaction. For four months (August–November 2023), the solution will be implemented at ten gas stations in Mumbai. A convenience sample method was used to survey 862 customers at the retail outlets before and after the technology-based solution was implemented. In addition to offering a solution based on customer behaviour, the survey evaluated the effectiveness of the solution and its influence on customer satisfaction and fuel station confidence. The gathered data has been statistically examined to determine the effectiveness and value of the solution, as well as consumer acceptability and its influence on sales volume.

### 5. Key Component of the Solution

Key elements employed in our research include:

(1) The fuel station's automation system; and (2) the Android POS (Electronic Data Capture machine), which is used as a payment device. The fuel station has been using both of the components for a considerable amount of time.

Using customer payments that are linked to the quantity and amount of fuel is the solution. The EDC machine receives information about the quantity and amount of fuel that was filled from the fuel station's automation system. A printout of the bill, the EDC machine processes the payment in relation to the transaction that was received. **Figure -1** illustrates the process flow.

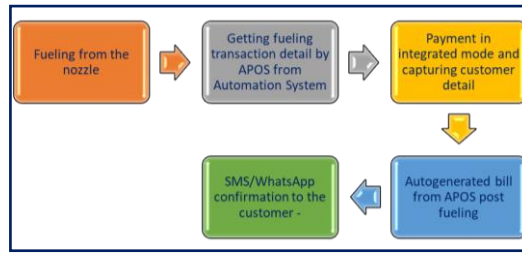


Figure 1 Process Flow of Integrated Payment System

### 6. Findings & Discussion

After four months of observation and experience with the solution, an evaluation is conducted using the data gathered from the experiment. The automation system's data, as well as the respondents' survey responses, were examined. Respondents are evenly distributed across all parameters, and responses from likely customer segments are covered according to an analysis of the respondents' age, gender, educational background, occupation, type of vehicle used, type of fuel consumed, and frequency of fuelling (**Figures 2 and 3**).

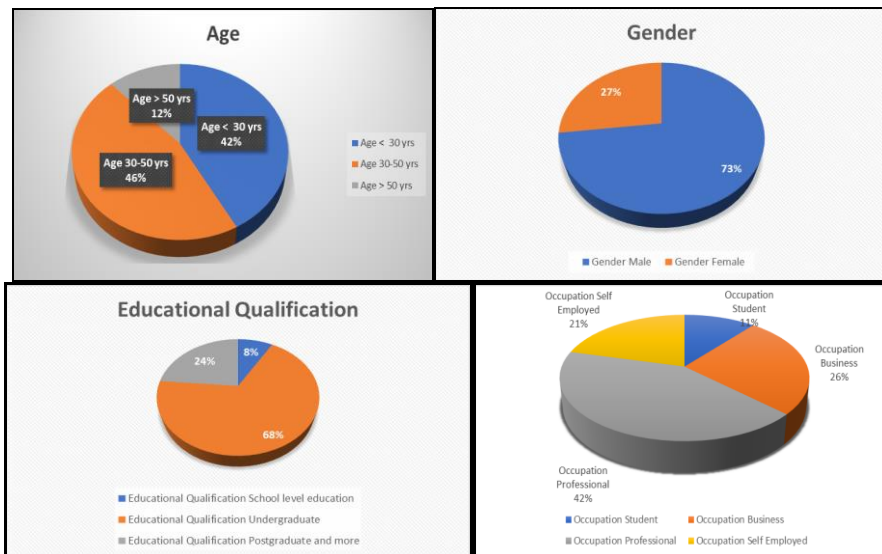


Figure 2 Demographic, Educational, and Occupational Details of Respondents

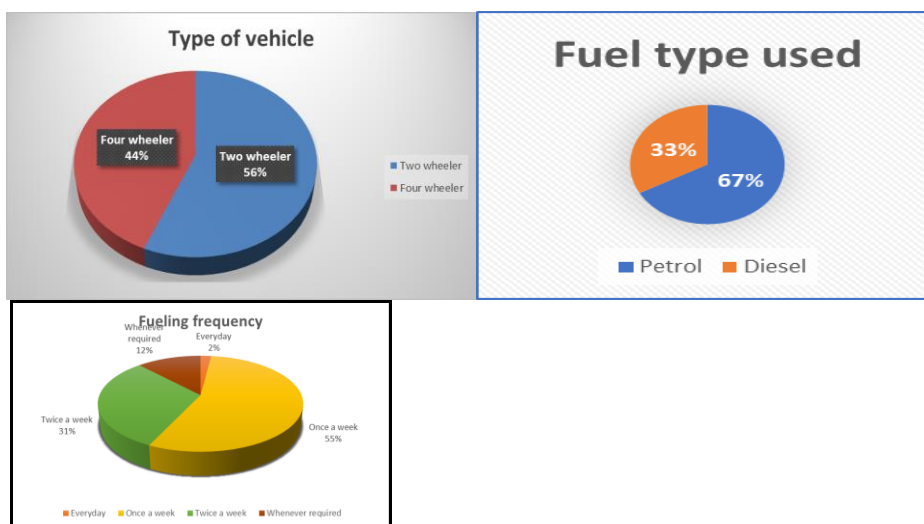


Figure 3 Type of Vehicle, Fuel used, and Frequency of Fuelling of Respondents

OMC provided the sales volume information for the four-month observation period. Month after month, there was a consistent rise in volume and, consequently, income. For every fuel station under observation, the growth was in double-digit percentages, and in just four months, it varied from 12-23% ( **Figure 4**).

Fuel Station	Growth (%)
Fuel Station 1	17%
Fuel Station 2	14%
Fuel Station 3	13%
Fuel Station 4	12%
Fuel Station 5	16%
Fuel Station 6	21%
Fuel Station 7	19%
Fuel Station 8	23%
Fuel Station 9	20%
Fuel Station 10	17%

**Figure 4 Sales Volume**

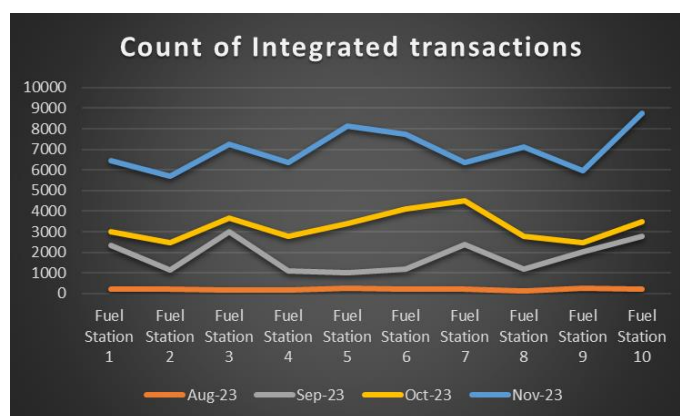
According to the survey results, 88% of consumers reported that they were satisfied with the implemented solution ( **Figure 5**). This suggests that the solution has a good effect on customer satisfaction and experience.



**Figure 5 Customer Satisfaction Feedback**

Additionally, data about the preference for integrated payment across different customer segments—such as the two- and four-wheeler segments—were analyzed. 82% of "4 wheeler" customers and 78% of "2 wheeler" customers, respectively, expressed a preference for integrated payment, including automated generated invoices. Simultaneously, there have been declines in customer complaints at the gas stations concerning quantity, payment, and services. There has been a range of 54% to 87% decrease in these complaints at fuel stations. This shows how well the solution works to win customers' trust. At these fuel stations, the fueling cycle has also been shortened. At every site, there was a noticeable increase in cycle time, ranging from 12-17%.

The fuel station has seen an increase in the percentage of integrated payments made over total receipts; in the fourth month, this percentage varied from 13.5 to 25.9. Simultaneously, the quantity of integrated transactions increased during the course of the months. For every RO, a quantum jump was seen in the fourth month (Figure -6). It suggests that it will take the clients about three months to adapt and utilize the solution.



**Figure 6 Integrated Payment Trend**

### Impact on Stakeholders

**Fuel Stations:** By eliminating the possibility of fraud, the integrated mode of payment improves consumer pleasure and experience, which in turn improves the Petrol station's brand image.

**Customer:** By using this method, clients may be guaranteed to only be paid for the precise amount of fuel they put in their cars. Additionally, by using evidence of service as a bill printout, it made sure that no impact clients are pre-engaged and diverted during fuelling. This guarantees clients a hassle-free and secure fueling experience.

**Service Providers (OMCs):** Service providers were able to provide consumers with a complete solution for a secure and safe fuelling experience thanks to the technology. Throughout the network of gas stations, the system is scalable and implementable. Now that they can see how customers are making purchases, service providers can use this data to create a unique, value-based product for their clients. With the aid of the solution, OMCs are able to keep an eye on their customers' fuelling habits and devise a strategy for preserving their relationships. In the long term, this will improve brand image, assist with protocol adherence, and improve the company's overall service quality delivery.

## 7. Conclusions

The advancement of technology has generally altered how business is conducted. Consumers' needs have changed as a result of the availability of technology-based goods and services in sectors where they are more likely to encounter them—namely, the retail industry. Customers are frequently left out of oil retail services at the same time, which is caused by a lack of technological adoption in procedures and services. Overall, digital payments have increased significantly with government support; this trend is especially seen in oil commerce. Customers are not thrilled since more frauds are occurring, including fraud using digital payments. A technology-driven strategy for implementing integrated payment and automation systems guarantees that (a) payments are made in accordance with the transaction, eliminating the possibility of making the incorrect payment, and (b) the transaction is automatically generated by the system, negating the need for human intervention and lowering the possibility of manipulation. (c) making it possible for an integrated mode to accept several payment methods. (d) SMS quantity and amount confirmation—a "proof of service" revalidation. (e) a decrease in customer complaints that results in increased customer satisfaction; and (f) an improvement in fueling and service efficiency through a shorter fueling cycle time. Using a technology-driven strategy to comprehend consumer wants and foster trust in Indian petro retail closes service gaps and helps to construct a service environment that improves customer happiness and purchase perception.

Oil Marketing Companies (OMC) in India should implement an integrated payment mechanism across all of the fuel stations for a consistent customer experience, given the significant rise in the use of digital payment methods by customers and the rise in customer fraud. The increased use of digital payments will aid in the decrease of fraud. Service providers (OMCs) would be able to accept many digital payment methods on a single platform with improved security for their clients, thanks to this. Using this technology will improve customer experiences at gas stations and pave the way for an improved customer buying trip. Simultaneously, this will provide OMCs with a competitive advantage in terms of survival and expansion.

## 8. Limitations and Scope of Future Study

This article aims to explain how automation-enabled payment systems might benefit fuel retailers from both a service provider and customer standpoint. The investigation was carried out at ten service provider fuel stations in a single city. It is possible to modify and expand the technology that OMCs deploy in order to improve consumer happiness and the purchasing experience during their fueling journey. The study utilized non-probability sampling in place of probability sampling, i.e., convenience sampling, as opposed to random sampling. In order to produce results in a broader population, probability sampling techniques like random or stratified sampling should be used in future research.

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