



Constraints Perceived by Dealers and Households for Execution and Adoption of Pradhan Mantri Ujjwala Yojana

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ABSTRACT

Considering the perception of the LPG dealers and households towards *Pradhan Mantri Ujjwala Yojana*, the current study was carried out in the Samastipur district of Bihar in 2022. A total of 110 respondents i.e., 100 women households and 10 LPG dealers were taken for the study from 4 villages of 2 blocks under Samastipur district. 21 specific constraints perceived by households and 18 specific constraints perceived by dealers were categorized into 4 broad constraints, viz., social, cultural, economic, and physical constraints. Analysis was performed by using Garrett's ranking method, and specific constraints were ranked accordingly. Garrett's mean scores of specific constraints ranged 29.38 to 73.41 for social constraints, 30.15 to 69.03 for cultural constraints, 27.73 to 71.77 for economic constraints, and 29.50 to 70.60 for physical constraints as perceived by households. The mean score of constraints perceived by dealers were 30.4 to 71.3 for social constraints, 31.5 to 73.5 for cultural constraints, 26.5 to 70.5 for economic constraints, and 34.5 to 66.7 for physical constraints. The paper may provides a better insight into the grassroots level constraints for implementation and acceptance of *Pradhan Mantri Ujjwala Yojana* in rural villages of India.

INTRODUCTION

Cooking is one of the chores that captures most of the time in the day-to-day life of Indian women. The practice of cooking in traditional *chulha* has detrimental health effects due to inhaling pollutants released during the combustion of solid fuels like firewood, cow dung cake, crop residue and coal (Jaiswal et al., 2022). It can adversely affect the respiratory system of women and young children because they spend maximum time at home. To get rid of household air pollution (Sidhu et al., 2017) Pradhan Mantri Ujjwala Yojana' (PMUY) was launched as largest flagship scheme, 'on 1st May 2016 in Ballia district of Uttar Pradesh, intending to provide clean cooking fuel such as Liquefied Petroleum Gas (LPG) to the underprivileged and deprived households using traditional cooking fuels (National Portal of India, n.d.). The scheme

achieved 8 Crore LPG connections before the targeted period. In 2022 additional allocation was sanctioned for 1.6 Crore new LPG connections under '*Ujjwala Yojana 2.0*' (Ministry of Petroleum and Natural Gas, n.d.). Even though PMUY achieved the milestone for providing new connections, numerous factors are affecting the adoption and continuation of the same. In the financial year 2015-16 to 2016-17, increases in new customers were from 10.2 per cent to 16.2 per cent, while consumption rose from 9 per cent to 9.8 per cent only (The Wire, 2017). Many families had enrolled under PMUY (Gould et al., 2020), but never returned to refill their LPG cylinders once (Jha, 2017; Kar et al., 2019; Mani et al., 2020). A state like Bihar has 88.70 per cent population residing in rural areas while nearly half (49.16%) population is still illiterate (Census, 2011). So, factors like high refilling cost, low socio-economic status, and lack of awareness are prime indicators for the

discontinuance of the scheme (Patil et al., 2021; Swain & Mishra, 2019; Cabiyo et al., 2020). Swain & Mishra (2019) reported that many households face various social, economic, cultural and environmental constraints to shifting towards cleaner energies. Sahani et al., (2020) identified six constraints viz., Production, Economic, Post-harvest and Marketing, Social and Institutional by the farmers in adoption of groundnut cultivation technology. In the research, constraints perceived by both dealers and households were categorized into four broad constraints, viz., Social constraint, Cultural constraint, Economic constraint, and Physical constraint. The study was carried out to prioritize the perceived constraints confronted by dealers and households for smooth execution and adoption of PMUY in the study locale.

METHODOLOGY

The study was conducted in 2022 by using an exploratory research design. State Bihar ranked third in the number of beneficiaries covered under PMUY followed by UP and West Bengal was selected purposively for the study (Bank Bazaar, 2022). For data collection, Samastipur district was selected. Samastipur district consists of 20 blocks, out of that, Pusa and Kalyanpur blocks were selected. Two villages were selected from each of the blocks i.e. 4 villages and 25 women respondents from each village and 5 dealers from each block were included in the final sampling. A total of 100 women respondents and 10 dealers were finalized for the study. To determine the constraints perceived by the respondents and dealers, a semi-structured interview schedule was prepared. Primary data was collected through personal interviews and open discussion methods with respondents.

Individual constraints under four broad constraints were ranked by using Garrett's ranking method through MS Excel (Version, 2007). Each of the constraints obtained a certain mean value and ranked accordingly. Singh et al., (2021) also used Garrett's ranking method to determine (Personal, Infrastructural, and Organizational) constraints faced by the students in the usage of ICT initiatives. Standard formula was used for calculation purpose.

RESULTS AND DISCUSSION

Constraints faced by beneficiaries

Easy availability of conventional fuels was most significant among social constraints, with a mean score (73.41). It could be concluded that beneficiaries from the rural area easily access conventional fuels like firewood, cow dung cake, agriculture residues and kerosene oil. So they could not motivate towards the scheme. The result is in line with (CAG Report, 2019). "Unaware of the interest-free loan provided by gas companies for new connections" was perceived as the second most important constraint, with a mean score (58.80). Generally, respondents were unaware of the yojana and it was difficult for them to access the information regarding loans available for it (Patil et al., 2021). In the following order Lengthy application process (54.67), Long distance of the dealer location (46.17), Unable to consult the dealer about LPG connection and subsidy" (37.57) were the constraints. Illiterate respondents assumed that application for a new LPG connection was time-consuming and lengthy. There were fewer gas agencies in the study locale, so distance matters a lot for respondents to regular contact with dealers and respondents were not comfortable

Table 1. Garrett's ranking score for various constraints perceived by households

S.No.	Social constraints (Range: 23-77)	Mean score (x)	Rank
i.	Easy availability of conventional fuels	73.41	1
ii.	Unaware of the interest-free loan provided by gas companies for new connections	58.80	2
iii.	Lengthy application process	54.67	3
iv.	Long distance of dealer location	46.17	4
v.	Unable to consult the dealer about LPG connection and subsidy	37.57	5
vi.	Limited doorstep delivery	29.38	6
Cultural constraints (Range: 27-73)			
i.	Large cooking pots unfit on cooking stove	69.03	1
ii.	Time is taken to prepare cooked feed for cattle	54.87	2
iii.	Excessive consumption of gas during winter to boil water	45.95	3
iv.	Differ in the taste of cooking food in LPG stove over chulha	30.15	4
Economic constraints (Range: 23-77)			
i.	High refilling cost	71.77	1
ii.	Arranging money for immediate refilling when cylinder is empty	61.89	2
iii.	Subsidy amount doesn't credit in account timely	53.73	3
iv.	Regular maintenance of gas stove	46.48	4
v.	Transportation cost to dealer location	38.40	5
vi.	Extra money charged by agents during refilling	27.73	6
Physical constraints (Range: 25-75)			
i.	Lack of proper infrastructure in kitchen to install stove	70.60	1
ii.	Chance of explosion of cylinder in kutcha houses	59.40	2
iii.	Backache or leg pain during long cooking period	50.20	3
iv.	Carrying heavy LPG cylinder from dealer location to home location	40.30	4
v.	Depend on male members to reinstall new LPG tank	29.50	5

talking with dealers about their problems. Devi & Jain (2012) stated that lack of education and support from family, poor attendance, and lack of motivation were major social constraints among the rural women of Rajasthan.

A large cooking pots unfit on the cooking stove (69.03) was the prime cultural constraint. Joint families residing in the study area experienced difficulties when preparing food. The standard stove in the scheme was up to medium container capacity but could not use large utensils. Time is taken to prepare cooked feed for cattle (54.87), excessive consumption of gas during winter to boil water (45.95) were important because most families had livestock, and depend upon hot water for daily usage, and gas cannot fulfill the demand compared to conventional fuels (Patil et al., 2021). Smoked food items give an aroma and better taste when cooked over firewood and coal (Lakshmi, 2020) supports the findings.

Among economic constraints; High refilling cost (71.77), arranging money for immediate refilling when cylinder is empty (61.89), subsidy amount doesn't credit in account timely (53.73), regular maintenance of gas stove" (46.48) and transportation cost to dealer location scored (38.40) were major constraints. Even though the central government provided cash assistance of Rs. 1600 for a new connection, the refilling cost of the cylinder increased to Rs. 1132. Cabiyo et al., (2020) confined that due to low control over the money refill gap was usually from 3 to 10 days or more. Patil (2021) reported that respondents unwillingly used chulha due to a non-regular and inadequate income and women were dependent upon the earning member of the family for refilling. Sahoo et al., (2023) reported that unavailability of a loan during the proper time also create economic constraint among organic turmeric farmers in Odisha. Respondents cited, since COVID-19 they were purchasing LPG cylinders at actual cost without getting any subsidy amount.

Respondents perceived lack of proper infrastructure in the kitchen to install stove (70.60), chance of cylinder explosion in kutch houses (59.40), backache or leg pain during the long cooking period (50.20), carrying heavy LPG cylinder from dealer location to home location (40.30) were important physical constraints.

Constraints perceived by LPG dealers

It is apparent from Table 2 that the socio economic condition of poor families (71.3), improper documents for new connection (50.7) and lack of exact data regarding the beneficiaries (47.6) were social constraints. Sawshilya (2018) reported that in the absence of authenticated data on the BPL population, identifying poor households for allotment of free LPG connection was a big challenge. The education level of the respondents was crucial for adopting and using these fuels (Behera et al., 2015).

Free availability of solid fuels for traditional chulha (73.5) ranked as the most important cultural constraint. Many rural households in these countries still use these cooking fuels (Ekholm et al., 2010). In India, around 63 per cent of rural households use firewood and 23 per cent depend on crop residue and cow dung cake for cooking (Census of India, 2011b). Almost every family prepared dung cake from livestock waste so the sellers dominated the study locale. Most respondents had no personal bank accounts, and it was difficult to transfer the benefit of subsidy money directly. Large-scale irregularities, negligence on the part of the administration and illegal collection of money from women beneficiaries reduces participation of women in training programmes (Sawshilya, 2018). Jaiswal et al., (2022) found that some cultural factors like traditional cooking practices and the slow cooking process in chulha when the women were at work checked the durability of the scheme.

Table 2. Garrett's ranking score for various constraints perceived by dealers

S.No.	Social constraints (Range: 27-73)	Mean score (x)	Rank
i.	Socio-economic condition of poor families	71.3	1
ii.	Improper documents for new connection	50.7	2
iii.	Lack of exact data regarding the beneficiaries	47.6	3
iv.	Communication with illiterate beneficiaries	30.4	4
Cultural constraints (Range: 25-75)			
i.	Free availability of solid fuels for traditional chulha	73.5	1
ii.	Dominance of cow dung sellers and users in the locality	55	2
iii.	Less number of Bank account holders among beneficiaries	46.5	3
iv.	Poor attention and response of rural women during training programme	43.5	4
v.	Value system of the beneficiaries	31.5	5
Economic constraints (Range: 25-75)			
i.	Difficult to recover EMI amount from beneficiaries	70.5	1
ii.	Selling of LPG cylinders by beneficiaries in open market	63.5	2
iii.	Transportation & accessibility cost of LPG cylinders	49	3
iv.	Credit system prevailed in rural areas	40.5	4
v.	Transaction and record keeping for the entire logistics system	26.5	5
Physical constraints (Range: 27-73)			
i.	Stretch far beyond the catchment areas to enroll beneficiaries	66.7	1
ii.	Poor road connectivity to households for delivery of cylinder	52.4	2
iii.	Supplying LPG cylinder in summer	46.4	3
iv.	Bottling of small cooking gas cylinder	34.5	4

Difficult to recover EMI amount from beneficiaries (70.5) was the dealers' first important constraint. Oil companies provided interest-free loan assistance and recovery through subsidy amounts during refilling, but poor beneficiaries did not refill their cylinder for the second time (CAG Report, 2019). Dealers bore the transportation cost from go down to consumer location, discouraging them from smooth execution of the scheme in rural areas (Patil et al., 2021). Purchasing cylinders with credit and paying for the next refill was troublesome for dealers.

Stretch far beyond their catchment areas to enroll beneficiaries (66.7) ranked first among physical. It wasn't easy to enroll all beneficiaries by motivating them. Dealers could not provide home delivery service in remote areas due to unavailable all-weather road connectivity. Due to the high temperature, there was a chance of an explosion so; special care was taken during the delivery of the cylinders. Dealers Though LPG companies were providing small LPG cylinders of 5 kg capacity the price was higher per kg of gas limiting the adoption.

CONCLUSION

Surprisingly PMUY is breaking its records by successfully issuing new LPG connections to adult women under BPL since 2016. Also, it is important to examine the loopholes underlying for execution and adoption of LPG at both dealers and households level. An effort was made to pinpoint the practical constraints perceived by the respondents. Constraints such as easy availability of conventional fuels and the high refilling cost of LPG Cylinders ranked top among the respondents. Free availability of solid fuels for traditional *chulha* and socio-economic condition of poor families were top-ranked constraints for the execution of PMUY. Government and policymakers must take appropriate action to minimize the constraints mentioned above for the long life of such an extensive scheme.

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