

Women's Satisfaction and Challenges Under PMUY: Evidence from Narayangarh Block, West Bengal

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Abstract: *This study examines the satisfaction and challenges of women beneficiaries under the Pradhan Mantri Ujjwala Yojana in selected villages of Narayangarh Block, Paschim Medinipur District, based on primary survey data collected in 2023 to 2024. Using a structured questionnaire and Likert scale analysis of 60 respondents, the study evaluates documentation processes, subsidy access, refill availability, training, and perceived welfare outcomes. Findings indicate high satisfaction regarding reduced drudgery and improved cooking efficiency, but persistent concerns about refill affordability and procedural barriers. The results highlight the need for policy interventions focused on subsidy delivery efficiency, supply chain accessibility, and behavioural awareness to ensure sustained clean energy adoption.*

Keywords: Clean cooking transition, fuel stacking, rural energy policy, and LPG adoption behaviour

1. Introduction

Liquefied Petroleum Gas (LPG) plays an important role in the quality of women's lives in every household, and it is an essential element for the development of socio-economic identity. Cooking has usually been dependent on firewood, cow dung cakes, and other biomass coals in rural India. The use of such traditional fuels not only leads to severe indoor air pollution but also imposes drudgery on rural women, who are largely responsible for fuel collection and cooking. The administrative cost of Rs. 1600 per connection, which includes a cylinder, pressure regulator, booklet, safety hose, etc. would be borne by the Government. The identification of eligible BPL families will be made in consultation with the State Governments and the Union Territories. This Scheme would be implemented over three years, namely, the FY 2016-2017, 2017-2018 and 2018-2019 (Mall & Rani, 2020). Under the scheme, Rs 8000 crore has been earmarked for providing five crore LPG connections to BPL households. The scheme aimed at reducing health hazards associated with smoke from traditional cooking, empowering women, and ensuring environmental sustainability.

In India, the Pradhan Mantri Ujjwala Yojana (PMUY) was introduced in 2016 with the objective of extending subsidized Liquefied Petroleum Gas (LPG) connections to women from Below Poverty Line (BPL) households. While the scheme has significantly expanded LPG access across the country, the extent of actual usage and the level of satisfaction among women beneficiaries remain crucial indicators of its success. Narayangarh Block in Paschim Medinipur district of West Bengal is a mainly rural area, with a significant proportion of households earlier dependent on firewood and other biomass fuels. With the expansion of PMUY, a large number of women in this block have received LPG connections, which has the potential to transform their cooking practices, health conditions, and overall standard of living. However, the true success of PMUY lies not only in the distribution of LPG connections

but also in its actual adoption, sustained usage, and the satisfaction level of women beneficiaries.

Therefore, studying women's satisfaction under PMUY in some selected villages of Narayangarh Block is essential to understand how far the scheme has been able to achieve its objectives, what challenges persist in terms of affordability, refill accessibility, and awareness, and to what extent women feel empowered by the shift to clean cooking fuel. If beneficiaries are not satisfied with the variables of PMUY, the scheme will not achieve their goal i.e., empowerment of women and protect their health. This analysis can provide useful insights for policy makers and local administrators to strengthen the effectiveness of the program and ensure sustainable rural energy transitions.

2. Review of Literature

Aggarwal et al. (2018) explained that the Pradhan Mantri Ujjwala Yojana is a flagship energy policy made by the government of India to provide women below poverty line (BPL) access to clean energy fuel. This policy has led to the women's empowerment and protection against health risks. A decision support system (DSS) is expected to quantitatively analyse the implementation of PMUY in real time.

Chindarkar et al. (2021) examine the willingness-to-pay (WTP) for exclusive use of liquefied petroleum gas (LPG) for cooking in rural area's women. They also find that awareness of rural women about LPG's health benefits and diffusion of LPG within the community are the strongest determinants of WTP for exclusive use of LPG. Households with irregular cash flows are less likely to pay for exclusive use of LPG.

Dhaka et al. (2004) examine only 10 crore household's poor of LPG as cooking fuel and have to conviction on firewood, coal, dung – cakes, as the primary source of cooking with the most immediate sufferers as rural women who are largely in charge of cooking food. Many further expansions

continued to happen subsequently, however, despite the difficult work by the government under this scheme, many challenges still wanted to be tackled especially considering women’s empowerment.

Gould, C. F., and Urpelainen, J. (2020) explained that the widespread adoption of clean cooking fuels is a necessary step toward reducing household air pollution and improving population health condition. Here they also use large-scale surveys as well as 10,000 households from two state in Indian i.e., Kerala and Rajasthan, to examine how education and attitudes toward cooking assist with the adoption of liquefied petroleum gas (LPG).

Jain et al. (2021) observed that although the dissemination of LPG connections increased, many households continued to practice “fuel stacking,” i.e., using LPG along with traditional biomass fuels due to cost and availability issues.

Kar, A., Pachauri, S., Bailis, R. et al (2021) more than 70 million poor women in India have received liquefied petroleum gas (LPG) stoves within the first 35 months under a government Programme. They found rapid growth in enrolments of LPG consumers, but this is not matched by an increase in LPG sales, so suggesting that LPG access has not induced a full transition away from the use of polluting solid fuels.

Kaur-Sidhu et al. (2019) the study concludes that women cooking with SBF and mix fuels have an impact on lung function and increased prevalence of respiratory symptoms. The findings suggest that women who cook using LPG have improved lung function and respiratory health status. Hence, it is suggested to increase the scope of clean fuel programmes such as PMUY by identifying the barriers for the choice of clean fuel uses for household energy

Kumar et al. (2019) highlighted that PMUY significantly improved access to LPG among Below Poverty Line (BPL) households, particularly in rural areas, thereby reducing women’s exposure to indoor air pollution. However, they noted that affordability of refills remained a major barrier to sustained adoption.

Mall & Rani (2020) emphasized PMUY beneficiaries are not satisfied with the LPG refill subsidy/cost. Women beneficiaries are extremely pleased with simplification of kitchen work and leisure of time in cooking. They also look, some beneficiaries are satisfied with connection documentation and process but some are not satisfied, overall beneficiaries showed neutral satisfaction about connection documentation and process. They also indicate that PMUY beneficiaries are satisfied with the connection subsidy, LPG refill availability and training programme.

Table 1: Connection Documentation & Process of Sample Households

Characteristic	Response				
	1=Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
Satisfaction with connection documentation & process	33.3	23.3	18.3	15.0	10.0

Sources: *Field Survey, 2023-24*

This figure 1 indicates that Most of women beneficiary responded negatively as compared to positive ones. This

Zahno et al. (2019) pointed that, worldwide nearly 2.9 billion people cook and heat using open fires and simple stoves burning solid biomass like wood, dung or agricultural residues.

3. Research Objective

The following objectives are laid down for the study

- 1) To examine the scope of coverage of PMUY in the selected villages of Narayangarh Block.
- 2) To assess the level of satisfaction of women beneficiaries with LPG connections received under PMUY.

Sources of Data and Methodology

It is based on primary data relating to Pradhan Mantri Ujjwala Yojana (PMUY) in Narayangarh Block of Paschim Medinipur District. Basically, it has been collecting from field survey during the year 2023-24. Some related information has been extracted from various websites. 60 women beneficiaries of PMUY from the Narayangarh blocks have been selected from Paschim Medinipur district by systematic random sampling. A questionnaire schedule was constructed to record the data obtained. The data were categorized using a five point Likert scale (Mall & Rani, 2020) range i.e., 1=strongly disagree, 2=disagree, 3=neutral, 4=agree & 5= strongly agree. The questions were analyzed using descriptive narrations. The data obtained is subjective to percentage analysis.

Plan of the Study

The rest of the paper is divided into four sections. Sections II discuss the women’s satisfaction level in Narayangarh block of Paschim Medinipur District. Section III determine Women’s ensuring the well-being of Ujjwala Yojana. Finally, Section IV makes the concluding observations.

1) Women’s satisfaction Level

The responses of women beneficiaries regarding their satisfaction with the connection documentation and process under PMUY in some selected villages in Narayangarh Block of Paschim Medinipur District are shown in Table 1. The data show that a large proportion of respondents expressed dissatisfaction with the documentation procedure. Specifically, 33.3% strongly disagreed and 23.3% disagreed with the statement that the connection documentation and process is satisfactory. Most of the women respondents are dissatisfied with connection of documentation and process. Presently, only 18.3% of women respondent are neutral, suggesting either lack of awareness about the process due to dependence on intermediaries during documentation process with LPG connection under PMUY scheme. Now only 15.0% agree and 10 % disagree are satisfied with connection document and process. We can say that relatively few of women beneficiary under PMUY have been positively experience.

reflects that this scheme has achieved partially coverage in terms of LPG distribution under PMUY, the procedural

aspects- such as documentation requirements, delays, and lack of transparency- remain a challenge for many rural family households.

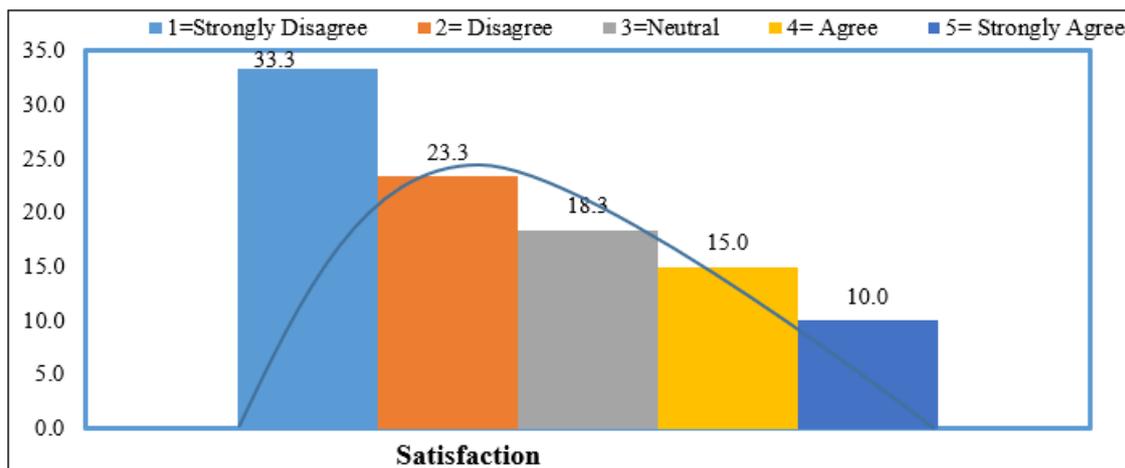


Figure 1: Connection Documentation & Process of Sample Households

Sources: Field Survey, 2023-24

The respondents of women beneficiary regarding their satisfaction with connection subsidy under PMUY of the sample household in Narayanarh block of Paschim Medinipur district are shown in Table 2. These data clearly identify a predominantly positive perception among women beneficiaries. A significant portion, 46.7% agreed and 23.3% strongly agreed are satisfied with connection subsidy in Narayanarh block of Paschim Medinipur district. So, we can say that most of the beneficiary have been received subsidy at time to time with LPG connection under PMUY. Only small proportion of women beneficiary of sample household have received subsidy with LPG connection

under PMUY i.e., only 5 percent strongly disagree and 8.3 percent disagree are dissatisfied with LPG connection under PMUY. Another 16.7% remained neutral, which may reflect either limited awareness of the subsidy structure or lack of clarity regarding the actual financial benefit received.

The curve is skewed toward the right side (figure-2) showed that the beneficiaries are satisfied with the connection subsidy. This suggests that the financial relief offered through the subsidy has played a crucial role in motivating rural women to adopt LPG connections.

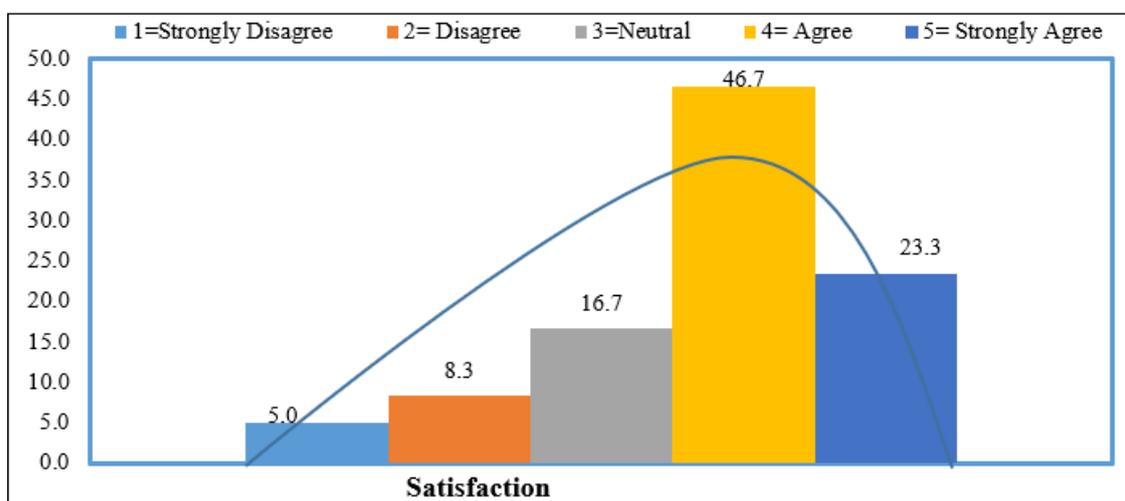


Figure 2: Connection Subsidies of Sample Households

Sources: Field Survey, 2023-24

Table 2: Connection Subsidy of Sample Households

Characteristic	Response				
	1=strongly disagree	2= disagree	3=neutral	4= agree	5= strongly agree
Satisfaction with connection subsidy	5.0	8.3	16.7	46.7	23.3

Sources: Field Survey, 2023-24

Table 3: LPG Refill Availability of Sample Households

Characteristic	Response				
	1=Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
Satisfaction with LPG refill availability	13.3	21.7	30.0	26.7	8.3

Sources: Field Survey, 2023-24

The responses of rural women beneficiaries regarding their satisfaction with LPG refill availability under PMUY scheme are shown in Table 3. Our data indicate that household experiences are mixed, with neither overwhelmingly positive nor negative responses dominating. Only 13.3% strongly disagree and 21.7% disagree are dissatisfied with LPG refill availability. Only 35% of sample households was reported their own problems with LPG refill availability. These issues of beneficiary are highly serious problem of the rural household for their better livelihood.

We can say that these issues may be irregular because it is may be distance from distribution centres or delays in delivery. On the other hand, 26.7% agree and 8.3% strongly agree of women beneficiary are satisfied with LPG refill availability. We have observed that nearly one-third (35%) of the respondents has a positive experience. A notable 30.0% of rural households remained neutral, which could indicate occasional satisfaction depending on supply cycles, or indifference due to the continued practice of fuel stacking.

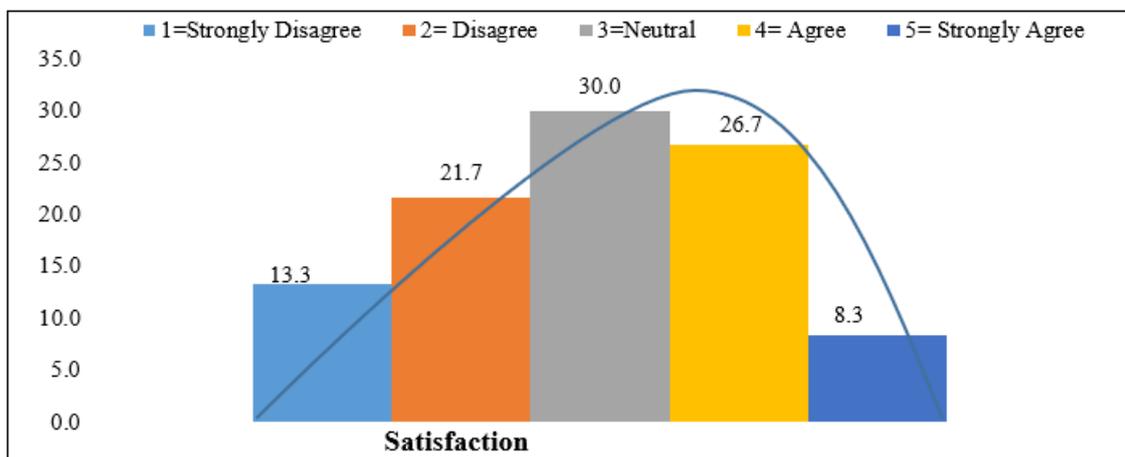


Figure 3: LPG Refill Availability of Sample Households
Sources: Field Survey, 2023-24

Figure 3 clearly reflects this balance, showing that satisfaction levels with refill availability are not as strong as with the initial subsidy (Table 2), but slightly better than the perception of documentation process (Table 1).

Table 4: Refill subsidy/caste of Sample Households

Characteristic	Response				
	1=Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
Satisfaction with Refill subsidy/caste	26.7	23.3	20.0	16.7	13.3

Sources: Field Survey, 2023-24

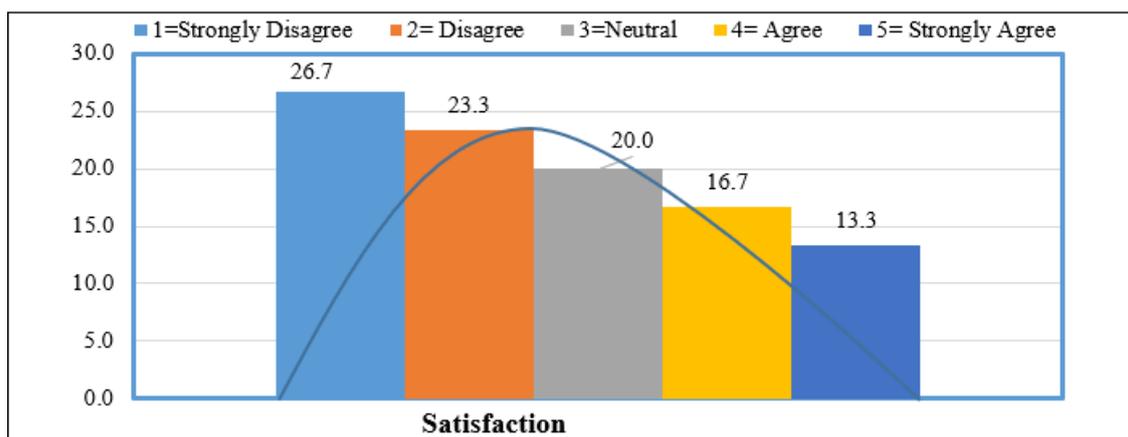


Figure 4: Refill subsidy/caste of Sample Households
Sources: Field Survey, 2023-24

Table 4 shows the responses of women beneficiaries regarding their satisfaction with the refill subsidy or refill cost under PMUY in Narayangarh block of Paschim Medinipur districts. Our data express that the majority of sample households are dissatisfaction with connection Refill Subsidy. Specifically, 50 percent of women respondents are dissatisfaction with account of refill subsidy in Narayangarh block of Paschim Medinipur district. Because they cannot

buy with rising price of LPG refills. The Major problem arises; they cannot get refill subsidy time to time for rural households. Meanwhile, 20.0% of respondents remained neutral, possibly due to irregular awareness about the subsidy transfer mechanism or because they occasionally use alternative fuels to manage costs. On the positive side, only 16.7% agreed and 13.3% strongly agreed that they have satisfied with the refill subsidy/cost, making up just 30% of

the respondents. Figure 4 visually reinforces this imbalance, with dissatisfaction levels clearly outweighing satisfaction levels. This finding highlight that although the initial connection subsidy (Table 2) was widely appreciated, the ongoing affordability of LPG refills remains a significant barrier to sustained usage in Narayangarh Block of Paschim Medinipur District.

The responses of women beneficiaries regarding their satisfaction with the training programs for using LPG under PMUY has presented in Table 5. About 45 percent of women respondents are highly satisfied regarding with training program. Our table identified that only 25 percent agree and 20 percent strongly agree are highly satisfied for useful training programme. This shows that nearly half of the beneficiaries appreciated the orientation, demonstrations, and safety instructions provided during or after connection.

Table 5: Training Program for using LPG of Sample Households

Characteristic	Response				
	1=Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
Satisfaction with training Program	10.0	15.0	30.0	25.0	20.0

Sources: *Field Survey, 2023-24*

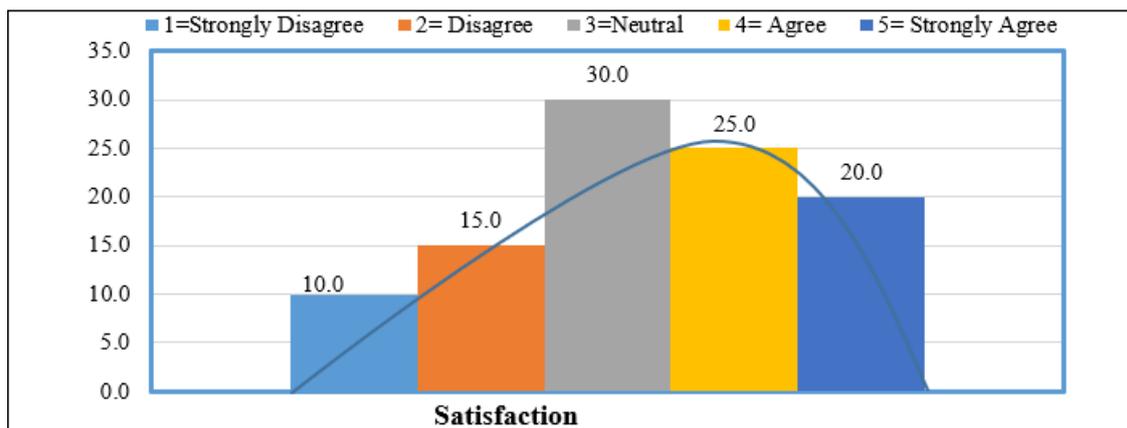


Figure 5: Training Program for using LPG of Sample Households

Sources: *Field Survey, 2023-24*

However, only 30.0% of women respondents remained neutral, which express that many women either received only limited exposure to training or did not perceive it as significantly impacting their cooking practices. At the same time, 10.0% strongly disagreed and 15.0% disagreed, indicating that about one-fourth (25%) of respondents have

been dissatisfied—likely due to inadequate follow-up, lack of accessibility of training sessions. Figure 5 reflects this distribution, with satisfaction levels moderately higher than dissatisfaction, though neutrality occupies a considerable proportion.

Table 6: Simplification of Kitchen Work of Sample Households

Characteristic	Response				
	1=Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
Satisfaction with simplification of kitchen work	3.3	5.0	10.0	31.7	50.0

Sources: *Field Survey, 2023-24*

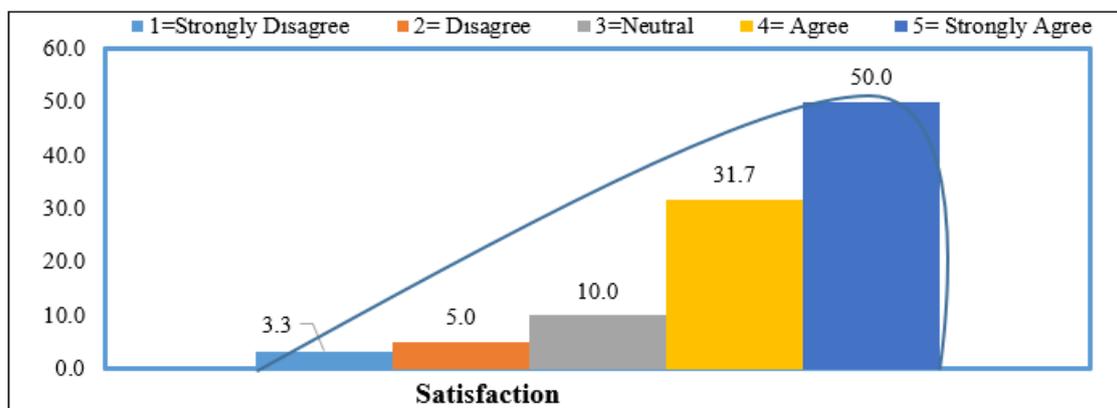


Figure 6: Simplification of Kitchen Work of Sample Households

Sources: *Field Survey, 2023-24*

Women beneficiaries' satisfaction with the simplification of kitchen work after adopting LPG under PMUY are presented in Table 6. The data indicate a highly positive response, demonstrating that LPG has significantly contributed which improved household cooking experiences in Narayangarh Block. Our data suggested it clearly reflects the time saving,

more efficiency and convenience that LPG provides compared to traditional cooking fuels such as firewood, coal, or dung cakes. Figure 6 explain that dominant share of respondents acknowledging the positive impact of LPG in reducing drudgery, smoke exposure, and time spent on collecting traditional fuels.

Table 7: Response of Leisure of time in cooking of Sample Households

Characteristic	Response				
	1=Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
Satisfaction with leisure of time in cooking	3.3	8.3	20.0	26.7	41.7

Sources: *Field Survey, 2023-24*

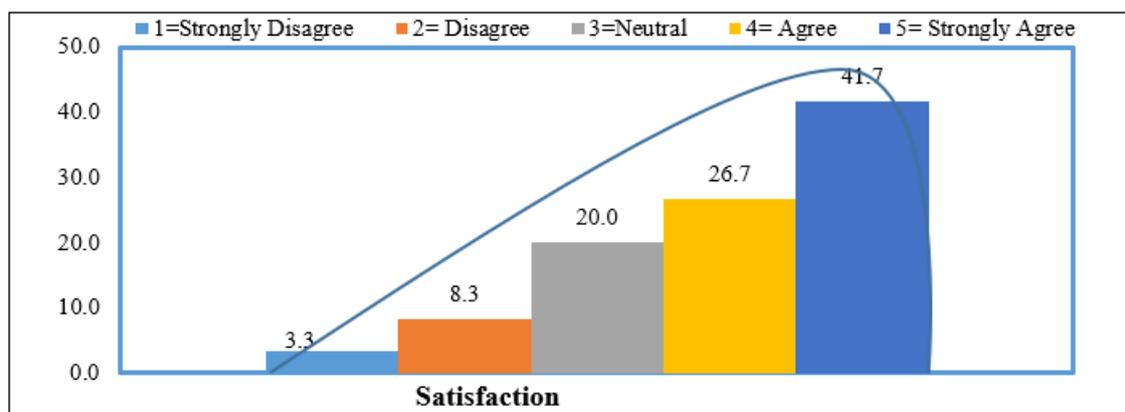


Figure 7: Response of Leisure of time in cooking of Sample Households

Sources: *Field Survey, 2023-24*

Table 7 presents the beneficiaries' view regarding relaxation of time in cooking after implementing LPG under PMUY. The responses reflect a strong sense of time-saving satisfaction, which is one of the most significant consequences of shifting from outmoded fuels to LPG. Its shows that LPG implementation not only makes cooking faster but also frees women from the time-consuming task of gathering firewood or preparing dung cakes. When LPG has reduced cooking time, affordability constraints or partial confidence on traditional fuels might still avoid them from enjoying full time-related benefits. Figure 7 shows this positive distribution, highlighting that the majority of women beneficiaries now experience more leisure and flexibility in household activities. This saved time can potentially be utilized for child care, education, income-generating work, or rest, contributing indirectly to women's empowerment and well-being.

2) Women's ensuring the well-being of Ujjwala Yojana

Figure 8 highlights the perceived needs for LPG cylinders among sample households in Narayangarh Block of Paschim Medinipur District. The responses clearly show that LPG has emerged as an essential household requirement rather than a luxury, especially among women who are directly involved in cooking.

The field data reveal that:

- A majority of women emphasized the necessity of LPG for everyday cooking due to its accessibility, time productivity, and clean burning.
- Many respondents linked LPG usage with improved health outcomes, as it reduces indoor smoke pollution compared to firewood or dung cakes.
- Several households stressed the need for multiple cylinders to ensure continuous availability, particularly in large families or during festivals and agricultural peak seasons when cooking demand is higher.

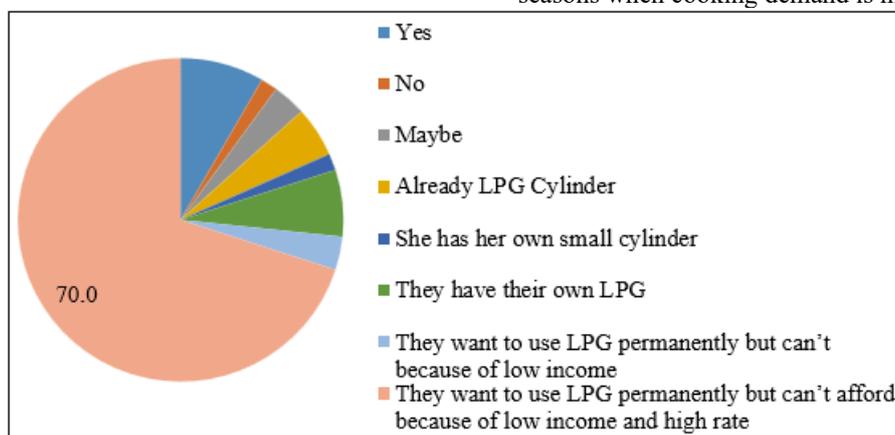


Figure 8: Needs for LPG Cylinder of the Sample Household

Sources: *Field Survey, 2023-24*

- However, affordability concerns were raised, as some households indicated that although LPG is needed, the refill cost acts as a barrier, forcing them to rely on traditional fuels intermittently.
- Women also expressed that LPG is needed to reduce their workload, giving them more time for childcare, rest, or income-generating activities.

Thus, the figure reveals that LPG is no longer perceived as optional, but as a basic household necessity. Still, the extent to which this need is fulfilled depends on subsidy support, timely availability of refills, and affordability.

Figure 9 illustrates the fuel choices adopted by women beneficiaries in the selected villages of Narayangarh Block. Although the Pradhan Mantri Ujjwala Yojana (PMUY) has expanded LPG access to rural households, the survey data reveal that fuel stacking- the simultaneous use of LPG

alongside traditional fuels- remains a common practice. Many women reported that while LPG is their preferred fuel for quick and convenient cooking, especially for preparing tea, breakfast, or urgent meals, traditional fuels such as firewood, dung cakes, and coal are still used for cooking meals that require longer durations (like rice, curry, or animal fodder preparation). The primary reasons for this dual usage are:

- Affordability constraints – high refill costs discourage exclusive LPG use.
- Availability issues – irregular supply or distance from LPG distribution points leads households to rely on locally available fuels.
- Cultural and habitual factors – some women perceive food cooked on firewood as tastier or more suitable for certain dishes.

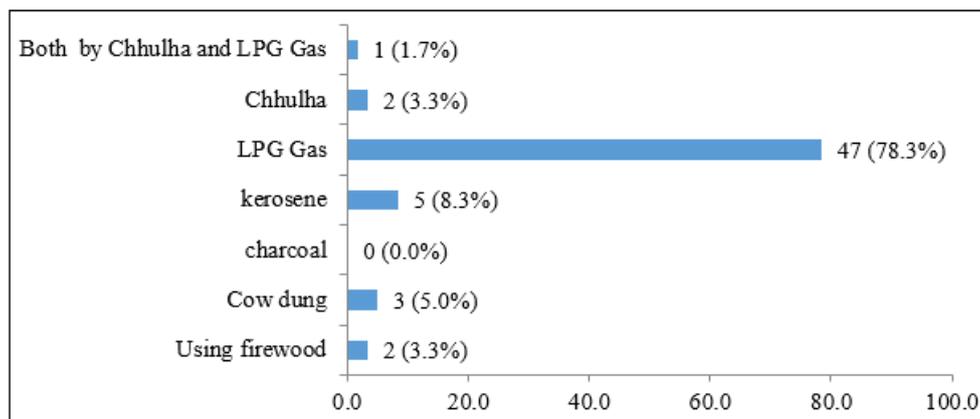


Figure 9: Women cook food with different fuel

Sources: *Field Survey, 2023-24*

Thus, while LPG adoption has clearly improved convenience, reduced drudgery, and lowered indoor pollution exposure, complete transition to exclusive LPG usage remains limited. Instead, households balance between modern and traditional fuels depending on affordability, availability, and cultural preferences.

4. Concluding Observation

The study demonstrates that PMUY has significantly improved cooking convenience and reduced drudgery among rural women in Narayangarh Block. However, sustained adoption is constrained by refill affordability, subsidy delivery delays, and procedural barriers in connection processes. While training initiatives and initial subsidies have enhanced acceptance, continued fuel stacking reflects structural limitations in access and affordability. Strengthening subsidy mechanisms, improving distribution networks, and promoting awareness initiatives are essential for ensuring long term clean energy transition and women's empowerment in rural households. Women also expressed that LPG is needed to reduce their workload, giving them more time for childcare, rest, or income-generating activities. Moreover, Targeted awareness programmes should be implemented in rural area by the panchayat leader, Non-Governmental Organization (NGO) and Government officials this will definitely bring transforming their

livelihood among rural people. Therefore, awareness also has major role to play (Selvam V et. al 2022)

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