

Impact of Ujjwala Yojana Scheme and Its Effect on Behavioural Changes Among Rural Women

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ABSTRACT

Delivering multiple roles every single day, women are undoubtedly the backbone of any society. However, they have also been an ignored segment of the society in many parts of the world. To re-establish their rightful and distinguished status, empowerment programmes need to be started to provide a compact groundwork to encourage the inner strength and self-esteem for the rural women. This research contribute to weaker section of the women in rural areas which uplift there standard of living through PMUJ scheme in Inida. The Government of India has initiated and implemented the scheme namely Pradhan Mantri Ujjwala Yojana (PMUJ)-Liquefied Petroleum Gas (LPG) connection helping in a big way to rural women through empowering their livelihood and transforming behavioural changes from using cow dung cake, wood, kerosene to LPG in terms of improvement in health and increase the economic productivity by saving time spent on arranging cooking needs. The Ujjwala Yojana is aimed at substituting the unclean cooking fuels regularly used in the rural India with the clean LPG. It has been stated that nearly 38% of the world's population is still dependent on traditional biomass for cooking. But, in India, the women in rural area have limited access to cooking gas. According to experts, having an open fire in the kitchen by using biomass fuels is like burning 400 cigarettes an hour. Based on this background, this descriptive research paper analyses the impact of Ujjwala Yojana scheme and its effect on transforming the livelihood and behavioural changes among rural women in three select districts in Tamil Nadu, India. The sample unit in this study consist of rural women from eight villages covering six Taluk, who received LPG connection under PMUJ for cooking their food at home. The findings of the study revealed that, there is a positive impact and behavioural changes among rural women due to PMUY scheme.

KEYWORDS

Behavioural Changes, Rural Women, Transforming Livelihood, Ujjwala Yojana Scheme

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INTRODUCTION

It has been stated that approximately 38% of the world's population is still dependent on traditional biomass for cooking. As rural women play a significant role in a family because of their central accountability for dealing household and cooking needs, exposure to indoor air pollution primarily affects their health along with other family members. Their vulnerability to health risks increases due to the pollution produced from inefficient burning of biomass and use of traditional biomass cook stoves and unclean coals. The air pollution does not confine to domestic but also affect the nearby atmosphere. In rural areas cooking is one of the chores that capture day to day life majorly, especially women do not get time to look beyond these chores and pay in a productive manner. Nearly 121 million households are still using the inefficient chullahs as per the Census of India 2011. As per the World Health Organization (WHO) report, smoke inhaled by women at the time of cooking from unclean fuel is equivalent to burning 400 cigarettes in an hour (Rajnaath Ram and Shafiqat Mobarak 2018).

IMPLEMENTATION OF PRADHAN MANTRI UKKWALA YOJANA

The dream of central government is to provide clean cooking fuel to poor families in the country has been taken forward through implementation of Pradhan Mantri Ujjwala Yojana (PMUJ). It is an aspiring social welfare scheme of the Central Government launched on May 1st, 2016 from Ballia in Uttar Pradesh, targeting to replace the unclean cooking fuels mostly used in the rural India with the clean and more efficient Liquefied Petroleum Gas (LPG) through five crore LPG connections in the name of rural women living in Below Poverty Line (PBL) households across the country. This scheme is executed now across 35 states and all union territory. Some of the aims of the scheme include women empowerment, their health safety and security with respect to deaths in India due to unclean cooking fuel, avoiding young children from significant number of acute respiratory illnesses caused due to indoor air pollution by burning the fossil fuel (Pavan Pandey and Sushrut Sharma 2017).

CO-OPERATIVE FEDERALISM TO SOLVE COMMON ISSUE OF COOKING

According to Ministry of Petroleum and Natural Gas, the PMUJ has brought down open LPG cost. Earlier to this, Rs.4,500 to Rs.5,000 used to be the money spent for an LPG connection, but the bulk purchase has reduced it to Rs.3,200. Under PMUJ, half of the money is provided to the beneficiaries as a one-time grant by the central government. The user needs to take the cost of a hot plate and the first refill totalling to Rs.1,600, though, Oil Marketing Corporations (OMCs) are offering an choice of Easy Monthly Instalment (EMI) for the same. The loan availed by the families is recovered from approximately seven to eight refilling. Once the amount is recovered, the funding continues and is transferred to the customer's bank account. State Governments have also come forward to provide support by funding either stove or regulators. It is a perfect example of co-operative federalism where centre and states have joined hands to resolve a common issue of cooking panchayat villages in India.

SITUATION OF RURAL INDIA

India has a large population in her villages and majority of the population is youth. As per Census of India 2011, the total number of villages in our country is 6,40,867. The urban and rural people are 37.7 crore and 83.3 crore respectively (Manish Mohan Gore 2017). Table 1 shows the overall growth rate of Indian population due to the sharp decline in the growth rate of rural areas. The reason may be more unemployment or migration to other semi-urban area where they get all benefits and schemes like PMUJ.

Table 1. The growth rate of India's population in percent

Category	1991 to 2001	2001 to 2011	Difference
India	21.5	17.6	-3.9
Rural	18.1	12.2	-5.9
Urban	31.5	31.8	+0.3

Source: Census of India 2011

LITERACY RATE OF WOMEN IN RURAL INDIA

As per Census of India 2011, reveals that a notable increase in literacy rate among rural people. The enhancement in literacy rate in rural areas is twofold that in urban areas. In both rural and urban places, improvement in female literacy is more than males. Table 2 discloses that the pace of increase in female literacy rate is noticeably higher in rural areas. It has increased from 46.1% in 2001 to 58.8% in 2011 (Manish Mohan Gore 2017). These data say that rural population and particularly youth and female are more motivated towards education. This notable increase in the literacy rate among rural women may help the country transforming from traditional cooking like biomass fuels to LPG cooking.

REVIEW OF LITERATURE

Empirical cum descriptive studies on transforming the livelihood and behavioural changes among rural women have had at most importance with its all-inclusiveness. The socio-economic and political aspects of the rural people have always been studied along with various empowerment issues. Visualising development programmes on the one hand and executing such schemes on the other hand is always needed studies at various stages of any schemes. Therefore, the studies on behavioural changes among rural women due to getting benefit under PMUY scheme are also bright in terms of the subject matter and the perspective of study. A few such studies are reviewed to set the background for the present research paper.

Hannaet al. (2016) laboratory studies suggest that improved cooking stoves can reduce indoor air pollution, improve health, and decrease greenhouse gas emissions in developing countries. We provide evidence, from a large-scale randomized trial in India, on the benefits of a common, laboratory-validated stove with a four-year follow-up. While smoke inhalation initially falls, this effect disappears by year two. We find no changes across health outcomes or greenhouse gas emissions. Households

Table 2. Literacy rate of women in rural India

Category	2001	2011	Difference
Females			
Rural	46.1	58.8	+12.7
Urban	72.9	79.9	+7.0
India	53.7	65.5	+11.8
Males			
Rural	70.7	78.6	+7.9
Urban	86.3	89.7	+3.4
India	75.3	82.1	+6.8

Source: Census of India 2011

used the stoves irregularly and inappropriately, failed to maintain them, and usage declined over time. This study underscores the need to test environmental technologies in real-world settings where behaviour may undermine potential impacts. Pavan Pandey and Sushrut Sharma (2017) pointed out that the optimum health status is attained not by curing illnesses, but by adopting pro-motive and preventive habits. Citizens can only adopt healthy habits when they are aware of such habits and such an environment exists which encourages the adoption of such habits. Ram and Shafqat Mobarak (2018) stated that, in rural areas cooking is one of the chores that capture day to day life majorly, people do not get time to look beyond these chores and contribute in a productive manner. Nearly 121 million households are still using the inefficient chulhas as per the census 2011. As per WHO report, smoke inhaled by women from unclean fuel is equivalent to burning 400 cigarettes in an hour. Sahoo et al. (2018) disused that the implementation strategy for the scheme has been well thought out-offering subsidy in the Jan Dhan accounts of the family's woman head to curb any corruption; pro-active interest-free loans reaching the doorstep of the customer; use of mass media in advertisements, videos, pamphlets and the LPG panchayats along with thousands of safety camps have proven to be highly effective in providing accessibility of the scheme to the poor and acceptance of the scheme among masses. But certain challenges still remain like, accessibility to refilling in remote areas, higher cost of refill compared to the biomass and fossil fuels and low affordability of cooking gas because of poor income levels at the bottom.

According to Dabadge, A (2018) argued that, the central government's flagship programme is to provide free liquefied petroleum gas connections has been in operation for two years, providing more than 3.5 crore free LPG connections to poor women. This much-needed scheme is a major step to reduce indoor air pollution, drudgery faced by women, and one that promises to extend LPG access. There is need for more information about the scheme in the public domain for a comprehensive evaluation and mid-course correction. Aggarwal et al. (2018) explained that the PMUY is a flagship energy policy initiated by the government of India to provide women below poverty line (BPL) access to clean energy fuel. This policy has led to the empowerment of women and protection against health hazards. A decision support system (DSS) is proposed to quantitatively analyse the implementation of PMUY in real time. This approach is first of its kind for analysis of a national level energy policy. Malakar et al. (2018) this study explores the role that social structure plays in the perpetuation of the use of solid cooking fuels, with a particular focus on rural India. We employ a qualitative approach of inquiry for data collection in three villages in Chittoor district in the state of Andhra Pradesh. The results presented in this paper are based on in-depth household interviews and focus group discussions. The findings suggest that cooking with solid fuels is intertwined with structural elements, such as established traditions, traditional income generating practices, gender norms, and a sense of belonging. Menghwani et al. (2019). this paper describes results of a randomized controlled trial in which eight communities in two regions of rural India were presented with a range of cooking choices including improved solid fuel stoves and clean cooking options like liquefied petroleum gas (LPG) and induction stoves.

As per 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. 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. We examine this hypothesis through an experiment providing randomized health information to 550 respondents with low LPG consumption in rural Rajasthan. Our results indicate that health information significantly increases the reported willingness to pay for LPG and has a strong positive impact on consumption behaviour. Gould, C. F., and Urpelainen, J. (2019) described that the women participate in decision-making are more likely to adopt LPG for cooking than households in which a man is the sole decision-maker. Access

and cylinder costs were both negatively associated with LPG use and while LPG adoption reduced firewood use, fuel stacking remains the norm in study households.

Akileish R (2019) stated that the website of PMUY in Tamil Nadu has over 31.45 lakh LPG connections under this scheme as of April 24, 2019 and has now ensured more than 7.19 crore LPG connections to below poverty line families, had reported on February 12, 2019 that the LPG coverage in the Tamil Nadu state has touched 97.9% of the population with the extra connections under the Ujjwala scheme, which translates to 2.02 crore LPG consumers.

According to Sharma, A., Parikh, J., and Singh, C. (2019) this study uses 810 household's data collected from two states of India-Raipur district in Chhattisgarh State and Ranchi in Jharkhand to analyses the LPG cooking transition. The study finds that there could be common as well as location specific factors driving LPG transition. Income linkages with LPG usage may be weak in regions with high prevalence of home produced or collected solid fuel consumption. Duration of LPG acquisition, considered in the study as a factor of behavioral aspect, has emerged as an important variable promoting LPG transition over time. *The analysis suggests that LPG capital subsidy scheme, PMUY, has provided a trigger for LPG transition among beneficiary households. Increasing the share of LPG in monthly cooking fuel may require good LPG services such as doorstep delivery.* Abhishek Kar et. al, (2019) analyzed that, more than 70 million poor women in India have received liquefied petroleum gas (LPG) stoves within the first 35 months under a government program, PMUY. Here, we analyze multi-year LPG sales data from a district in Karnataka State to assess enrolment and consumption trends for both PMUY beneficiaries and general (non-PMUY) rural consumers. We find rapid growth in enrolments of LPG consumers, but this is not matched by an increase in LPG sales, suggesting that LPG access has not induced a full transition away from the use of polluting solid fuels. Nanda, B. C. Pradhan (2019) pointed out that women are regarded as not only at par with men in the public sphere but also more than the males in terms of efficiency and flexi-management of time and resources. A substantial portion among the rural women in India use solid and bio-mass fuels in their kitchens thus jeopardizing their physical and physiological health. It is in this context that the Union Government's 'Pradhan Mantri Ujjwala Yojana' assumes its significance.

As per Singh, S., and Dixit, P. (2019) All in developing nations about 50% population rely on solid unclean fuel in the form of animal dung cake, crop residue and wood for household energy and cooking. Aim of this review was to find out household air quality of rural areas using different solid unclean biomass fuel for example cow dung cake, crop remains and wood in terms of gaseous pollutants and particulate matter in kitchen area so the higher concentration of different gaseous pollutants i.e. carbon monoxide (CO), carbon dioxide (CO₂), nitrogen dioxide (NO₂) and sulphur dioxide (SO₂) were reported in the kitchen area during cooking hours. It can be concluded based on literature reviews that, there is significant health risk associated with increased concentration of gaseous pollutants and suspended particulate matters. Press Report (2020) stated that over 8 crore Pradhan Mantri Ujjwala Yojana beneficiaries will be entitled to a total of three 14.2-kg LPG cylinders for free between April, 2020 to June, 2020 a move that will cost the government an estimated to Rs.13,000 crore. The free cooking gas cylinders was part of the package announced by the central government to deal with the economic impact of the lockdown imposed to curb spread of coronavirus. Swain, S. S., and Mishra, P. (2020) this paper examines beneficiary households' response to the PMUY in respect of actual use of LPG and identifies the underlying factors in rural areas of the Indian state of Odisha. Using descriptive statistics and estimating limited dependent variable models the paper finds significant positive impact of household heads' education and amount of subsidy on actual use of LPG, whereas general category households have lower adoption of the same. The findings of the paper, therefore, have significant implications for fine tuning of policies and institutions towards cleaner energy transition in rural India, particularly in respect of enhancing relative price and awareness about benefits of LPG and its delivery mechanisms.

According to Kar et al. (2020) argued that the India's Ujjwala programme has encouraged adoption of modern cooking gas, households have not shifted away from using highly polluting

solid fuels. Additional incentives to encourage regular use of cooking gas are necessary to enable a more rapid and complete transition to clean cooking fuel among poor rural households. Gupta et al. (2020) survey evidenced from rural north India showing persistent solid fuel use despite increases in liquefied petroleum gas ownership is presented. Although three-quarters of survey households in these states had LPG, almost all also had a stove that uses solid fuels. Among those owning both, almost three-quarters used solid fuels the day before the survey. Household economic status, relative costs of cooking fuels, gender inequality, and beliefs about solid fuels were important contributors to high solid fuel use. To realise the full health benefits of the LPG expansion, attention must now be turned towards encouraging exclusive LPG use. Gould, C. F., and Urpelainen, J. (2020) concluded that the widespread adoption of clean cooking fuels is a necessary step toward reducing household air pollution and improving population health. Here we use large-scale surveys (10,000 households) from two Indian states, Kerala and Rajasthan, to examine how education and attitudes toward cooking associate with the adoption of liquefied petroleum gas (LPG). We report three main results. First, education is a strong predictor of LPG adoption. Second, perceptions that LPG is good and affordable and progressive health-related perceptions are associated with LPG ownership. Third, and surprisingly, education does not predict positive attitudes toward clean cooking fuels. These results suggest that education leads to LPG adoption, but not through attitudinal changes. By reviewing the above cross section of literature studies, the researcher found that there is lot of studies on PMUJ scheme for rural women to uplift their standard of living and is really an excellent scheme but only a moderate level of understand the benefits, impact, issues and importance of scheme about transforming the livelihoods of rural women through PMUY in India. The rural economy and the restrictions in the use of biomass resources and the importance of health and hygiene management among the rural people and the programmes to inculcate such incentive, and finally the newly implemented PMUY are also the subject matter for research. In this context, the present study is intended to portray the impact of PMUY scheme and its effect on behavioural changes among rural women living in select three district in Tamil Nadu. Kapsalyamova et al. (2021) in their study discusses the role of access to natural gas, free fuel, convenience or multiuse of fuels and other socio-economic factors in household fuel choice for cooking. It found that the economic factors play a substantial role, in particular, households with higher per capita expenditure and higher income are inclined to move from solid fuel to LPG. 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. They also found that no observable increase in LPG consumption among general rural consumers with pyears of experience, it suggest that mid-course policy revisions to encourage regular LPG use are needed for both PMUY and general rural consumers. Annelise Gill-Wiehl (2022) in their study on “The need to prioritize consumption: A difference-in-differences approach to analyze the total effect of India’s below-the-poverty-line policies on LPG use” found that no effect for home delivery or cooking energy access tier. Our work suggests the need to expand the policy to address consumption more effectively. Finally, this analysis advocates investigation into consumption incentives and the size of the refill subsidy beyond simply improved targeting of BPL households.

STATEMENT OF PROBLEM

PMUY is an excellent effort to make Indian rural people feel satisfied more empowered along with minimizing the health risks of household air pollution, up course, recipients of Ujjwala Yojana scheme has less awareness and village panchayat are not informing about how to properly use clean fuel and its valuable benefits. Still, rural women have less information on the benefit of LPG cooking and more wrong traditional beliefs. Even in some remove village, people use traditional cow dung and kerosene for cooking and simply ignoring the importance of their health, environment and empowerment.

Sometimes, they are afraid to use LPG cylinder for issues such as safety, quality of service provided by gas distributors and availability of refill cylinders on time. They also think that getting gas cylinder through Ujjwala Yojana scheme may not help to transform their livelihoods and no behavioural changes among rural women in their day to day life. Even some women who save time due to usage of LPG for cooking their food instead of traditional biomass cooking find that their free times may not be utilized properly for other productive purpose because they are uneducated and no employability skills, they won't find any job other than agricultural work. By seeing the above problems on Ujjwala Yojana scheme among rural women, it is found that in India more number of empirical research paper on women empowerment through PMUY, socio-economic conditions of women, issues, benefits, awareness and impact of PMUY, but very less research was conducted on impact of Ujjwala Yojana scheme and its effect on behavioural changes among rural women in select three districts namely Vellore, Ranipet and Thirupattur in Tamil Nadu, India, so the researcher desires to study the topic in order to fill the research gap through objective of the study.

RESEARCH QUESTION

The researcher wants to raise two questions from the previous of literature. There are as follows:

1. Is there any change in the behaviour among rural women after getting the benefit from the PMUJ scheme?
2. Is this scheme is really a transformation in the livelihood rural women.

OBJECTIVES OF THE STUDY

This study aims to achieve the following objectives:

1. To study the demographic profile of the rural women respondents in the study area.
2. To find out the impact of PMUY scheme and its effect on behavioural changes among rural women in three select districts.

TESTING HYPOTHESIS

Ho: Respondent's Ujjwala yojana scheme with twelve variables has no positive impact on behavioural changes among rural women.

Ho: Twelve variables related to Ujjwala Yojana Scheme has no positive impact on behavioural changes among rural women.

RESERACH METHODOLOGY

The present study in terms of aim is an empirical type, in which descriptive research method has been used to collect the data. The statistical unknown population consists of rural women in select three districts namely Vellore, Ranipet and Thirupattur (unified Vellore District) in Tamil Nadu. The sample unit in this study consist of rural women from eight villages covering five Taluk, who received LPG connection under PMUJ for cooking their food at home. This study is essentially based on both primary and secondary data. The primary data were collected through structured questionnaire having two parts, the first part of the questionnaire consist of demographic profile and the second part of the questionnaire consist of impact of PMUJ scheme and its effect with thirteen positive statement on a three point Likert's scale having 3 fully aware, 2 less aware and 1 not aware. The sample size 112 was determined as per statistical formula (Godden, 2004). Yet, 160 questionnaires in random were distributed among population, 124 questionnaires were collected and finally only 112 samples

were taken for analysis. The convenience sampling method has been used in this study, the researcher collected the samples only from those who have benefited under PMUJ Scheme. Before collecting the samples, the researcher conducted pilot study and accordingly the inputs received from the experts the final version of the questions of questionnaire were distributed and collected through direct survey method. Both English and Tamil version of the questionnaire were prepared for the benefits of the respondents. The data was collected during July 2019 to December 2019. The validity and reliability of the questionnaire have been in turn confirmed through expert's content analysis and Cronbach's alpha results of arrived at 0.721. To analyse the data, Statistical Package for Social Sciences (SPSS) has been used to get percentage analysis, frequency distribution and regression analysis. With the help of the above-mentioned tools, a critical analysis has been made which results in certain interpretations regarding the impact of PMUJ scheme among rural women. This study carries certain limitations which need to be addressed which extending this study in future. First, this study is limited to three select districts in Tamil Nadu only. This research also subject to sampling and non-sampling errors and the other limitations such as time and resource constrains. The results and the opinion given in this study may not be similar if the same study was conducted in some other districts in other states of India.

DISCUSSION AND ANALYSIS

The data relating to demographic profile of the respondents relating to location, income, age. Education and number of villages covered for the study were presented in table 3.

From table 3, it is depicted that majority of the respondents (67.86%) were belongs to rural area (village panchayat) and 32.14% of the respondents were belongs to semi urban women. Nearly 30.36% of the respondents were getting monthly income below Rs.5,000 and 33.93% of the respondents were getting monthly income below Rs.10,000. Majority of the respondents 41.07% were fall under above 36 age categories. With regards to education, 25% of the respondents were illiterate and 32.14% of the respondents were educated up to SSLC. Nearly 23.22% of the respondents were from rural villages in nearby Katpadi Taluk and 17.86% of the respondents were from Gowrapettai village in Pernambut Taluk in Vellore district.

IMPACT OF UJJWALA SCHEME AMONG RURAL WOMEN

The impact of Ujjwala Yojana scheme and its effect on behavioural changes among rural women were presented in Tables 4-6 by applying multiple regression analysis.

MULTIPLE REGRESSION MODEL - RESULTS

A regression analysis was applied to identify the impact of PMUY scheme as predictor (independent) variables and its effect on behavioural changes among rural women (dependent) variable of an individual using statistical analysis are presented in table 4. The value of standard error in our proposed model is 0.100 which is substantially less than the standard deviation (i.e.0.081) of the dependent variables. Thus, the use of proposed model is appropriate. The ANOVA table 5 indicates a significant at 5% level by the P value (0.000) of F statistic is 3.075, which further justifies the appropriateness of the proposed model said good overall. As the value of R square is 0.985, which means that the proposed model explains approximately 98% of the total variance in the impact of Ujjwala Yojana scheme and its effects on behavioural changes among rural women in the study area.

It is inferred from table 6 the standardized coefficients, the relative order of preference of the predictive factors over the effect on behavioural changes among rural women can be summarized with the results that panchayat discuss issues such as safe practices, quality of service provided by distributors and availability of refill cylinders valued at ($B = 0.409$, $t = 3.16$, $P < 0.05$), under PMUY

Table 3. Demographic profile of the respondents

Variables	Category	Frequency	Percentage
Location	Rural	76	67.86
	Rural near Semi urban	36	32.14
	Total	112	100
Family monthly income	Below Rs.2,000	11	9.82
	Below Rs.5,000	34	30.36
	Below Rs.10,000	38	33.93
	Below Rs.25,000	29	25.89
	Total	112	100
Age	18 to 20	2	1.78
	21 to 25	16	14.28
	25 to 30	21	18.75
	31 to 35	27	24.10
	Above 36	46	41.07
	Total	112	100
Education	Illiterate	28	25.00
	Up to SSLC	36	32.14
	Plus 2	21	18.75
	UG	17	15.18
	PG	3	2.68
	Diploma	7	6.25
	Total	112	100
Villages covered in unified Vellore district	One village in Katpadi Taluk	26	23.22
	Gowrapettai in Pernambut Taluk	20	17.86
	Nearby Devi Nagar in Arcot Taluk	18	16.08
	Venkatesapuram in Katpadi Taluk	10	8.92
	Maniyambattu in Ranipet Taluk	10	8.92
	Seekarajapuram in Ranipet Taluk	14	12.51
	Mottur in Ranipet Taluk	08	7.14
	RN Palayam in Vellore Taluk	06	5.35
	Total	112	100

Source: Primary data

Table 4. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.993a	.985	.983	.100	1.490

a. Predictors: (Constant).b. Dependent Variable: Due to PMUY scheme behavioural change

Table 5. ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	65.288	12	5.441	544.533	.000b
Residual	.989	99	.010		
Total	66.277	111			

a. Dependent Variable: Due to PMUY scheme behavioural change. b. Predictors (Constant)

Table 6. Standardized regression coefficient statistics

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	Beta	Std. Error	Beta		
1. (Constant)	-.018	.031	-----	-.577	.565
H1. Ujjwala Yojana to resolve wrong traditional benefits among people	.001	.079	.001	.013	.990
H2. Panchayat deal with issue of safe use of LPG and discuss its benefits on environment, health and how it empowers women	-.095	.067	-.088	-1.419	.159
H3. Panchayat discuss issues such as safe practices, quality of service provided by distributors and availability of refill cylinders	.391	.124	.409	3.163	.002
H4. Under PMUY scheme rural LPG users do not go for frequent refills due to insufficient funds	.403	.079	.404	5.121	.000
H5. Time not spent by rural women in arranging fuel woods and carrying water due to Ujjwala and utilised this time for other productive output	.007	.072	.007	.095	.925
H6. Women in rural areas transformed from fuel stacking varies from cow dung cake and wood to PMUY LPG	-.321	.147	-.338	-2.177	.032
H7. Success of PMUY scheme has direct impact on improvement in the standard of living among rural women in India	-.071	.058	-.070	-1.233	.220
H8. PMUY make Indian rural women feel empowered along with reducing the health effects of household air pollution	-.134	.076	-.139	-1.763	.081
H9. This scheme is really a transformation in the livelihoods of women	.109	.093	.109	1.163	.248
H10. This scheme is likely to result in an additional employment of around one lakh in India	.392	.087	.381	4.489	.000
H11. PMUY provide a business opportunity of at least 10,000 crores over the next three years to Indian industry	.083	.067	.084	1.245	.216
H12. PMUY scheme great opportunities under 'Make in India' campaign for all manufacture's cylinders, gas stoves, regulators and gas house	.249	.057	.242	4.351	.000

Dependent Variable: Due to PMUY scheme behavioural changes happened among rural women

scheme rural LPG users do not go for frequent refills due to insufficient funds valued at ($B = 0.404$, $t = 5.12$, $P < 0.05$), women in rural areas transformed from fuel stacking varies from cow dung cake and wood to PMUY-LPG valued at ($B = 0.338$, $t = 2.17$, $P < 0.05$), this scheme is likely to result in an additional employment of around one lakh in India valued at ($B = 381$, $t = 4.48$, $P < .05$) and PMUY scheme great opportunities under 'Make in India' campaign for all manufactures cylinders, gas stoves, regulators and gas house valued at ($B = 0.242$, $t = 4.35$, $P < 0.05$) are statistically significant. Hence, it is proved that the above five variables have positive impact on Ujjwala yojana scheme with the effect on behavioural changes happened among rural women thereby not accepting the null hypothesis (H_3 , H_4 , H_6 , H_{10} and H_{12}). The other seven factors (variables) do not have positive impact on Ujjwala scheme and its effect behavioural changes happened among rural women. Hence, the null hypothesis is accepted (H_1 , H_2 , H_5 , H_7 , H_8 , H_9 and H_{11}) at 5% level of significance.

FINDINGS OF THE STUDY

The findings of the descriptive study is that majority (67.86%) of the respondents were living in village panchayat and the remaining (32.14%) of the respondents were living in small town. Women who got gas connection under Ujjwala Yojana scheme in the study area comes to know that their maximum monthly family income does not exceeds (33.93) Rs.15,000. The study has found that the maximum number (32.14%) of the women respondents were illiterate and (32.14%) of the women respondents were educated up to SSLC. So, it can be rightly saying that women beneficiaries were less educated only. The study has highlighted that all panchayat officials and chairman were discussing regularly about the issues such as safe practices, quality of service provided by distributors and availability of refill cylinders. The study has assessed that under PMUY scheme rural LPG users do not go for frequent refills due to insufficient funds, so we should ensure them to get regular income for getting the refills regularly. The study has identified that, due to PMUY scheme women in rural areas really transformed their behaviour from fuel stacking varies from cow dung cake and wood to LPG only. The study has revealed that all rural women were aware that this scheme is likely to result in an additional employment of around one lakh in India and in near future this scheme gives great employment opportunities all women under 'Make in India' campaign through all manufactures of cylinders, gas stoves, regulators and gas house. Hence, it is proved from this study that the PMUY scheme has positive impact on behavioural changes among rural women from tradition cooking like biomasses to LPG and this may leads to have more free times to do small agricultural work or business, protect their health from air pollution, spend more time with their children's education and their by improve their standard of living.

CONCLUSION

This study, after an in-depth regression analysis, it is concluded that the PMUY is a wonderful scheme to all rural women who are all living under Below Poverty Line (BPL). At present, in India all rural women are very happy with the LPG connections availed through implemented PMUY scheme. It is really helping the beneficiaries for transforming their life from cow dung cake and wood to LPG. This scheme helps the rural women in two ways that is protecting their health and saving the nation through controlling air pollution caused by biomass. The reason is that the cost incurred by the rural women on medicine on account of health hazard due inefficient burning of biomass is always less than the cost incurred for LPG cylinder refill. It is also concluded from this study that, now-a-days in rural and remote villages the cooking style various from biomass to LPG only, where as in urban area the cooking style in the form of LPG, micro wave and induction plates. Thus, it is rightly to say that the positive behavioural changes happened among rural women in the studied area due to the

impact of the success of PMUY scheme. Still many households are willing to apply for this scheme. Earlier, all rural people were afraid to use LPG gas stoves at the beginning and later on they became familiarised to use gas stoves and they identified it as very simple and suitable for cooking, particularly, during rainy seasons as the cow dung, wood and biomass cannot be used easily. Moreover, proper awareness should be created 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.

SUGGESTION

The suggestions for development in the PMUY scheme appear to be well on stream as respects the achievement of issuing connections to the women across the country. It is found that even in rural areas women use wooden logs to cook tasty veg and non-veg items just as they believe that it is tastier than food cooked with the help of LPG. There is a need to change such type of attitude by way of campaigns as well as through village panchayat measures like banning of solid fuel in rural areas. Through the PMUY scheme, rural women have got one cylinder and it is found to be very difficult to get another refilled cylinder immediately within one or two days. Hence, the present descriptive study suggest that they may be given one more cylinder at a subsidised price or free of cost to use the LPG gas stove without disturbance of many days or weeks if the scheme truly deliberates the health problems of women.

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