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IMPACT OF MICRO FINANCE ON POVERTY ALLEVIATION WITH SPECIAL REFERENCE TO SELECTED RURAL AREA AT KARNATAKA

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Abstract

Microcredit is a recent addition to India's poverty-alleviation strategy. However, it has been taken a paradigm shift from credit (only) services to microfinance (credit plus services) services. This study examined the promise of microfinance (institutions) programme in the (financial) inclusion of marginalized and vulnerable poor, who have been excluded from the formal credit markets for a long period of time. In the paper we also looked at the welfare impact of "credit plus services" on the poor. This paper uses primary data on household participants of microfinance programme in the state of Karnataka. We find that majority of the sample households were not accessed the credit and non-credit services in the pre-microfinance programme. While, in the post-microfinance large number of the member households are not only accessing the credit services, but also they are competent enough to access the savings, micro-insurance and other non-financial services. The access to "credit plus services" of microfinance programme has improved the income, employment, assets, household expenditure, housing condition and empowerment of the poor. Policy recommendation includes the delivering of credit plus services to the marginalized and vulnerable poor at a minimum cost will have wider impact on the socio-economic welfare of the poor.

Keywords: Micro Finance, Poverty Alleviation, Karnataka.

Introduction

About 238 million people in India live below the poverty line with the per capita income of less than one dollar per day1. The policy makers and practitioners who have been trying to improve the lives of these poor and fight against poverty. This got reflected in the successive five-year plans, which had the objectives of 'growth with equity' and 'social justice'. The planners however, realized that rapid growth did not bring about 'trickle down' effect, particularly so in rural areas. This realization led to the restructuring of institutions and schematic lending to facilitate better accessibility of credit for the underprivileged. Thus, initiatives in this regard were taken by building an institutional framework through nationalization of banks, creation of regional rural banks. The government sponsored several programmes and projects to bring the excluded poor into the mainstream "development". These programmes were failed to target the vulnerable poor. And many now believe that government assistance to the poor often creates dependency and disincentives that make matters worse, not better. Moreover, despite decades of aid, communities and families appear to be increasingly fractured, offering a fragile foundation on which to build

(Morduch, 1999).

Amid the distressed news, enthusiasm is building about a set of unusual financial institutions prospering in distant corners of the country. The hope is that much poverty can be alleviated and the economic and social structures can be transformed fundamentally by providing financial services to low income households. These institutions, united under the banner of "microfinance", share a commitment to serving clients that have been excluded from the formal banking sector (ibid). According to National Sample Survey Organization's (NSSO), 59th Round (2003), only 48.6 per cent of the total number of cultivator households received credit from both formal and informal sources (financial inclusion in a broader sense) and remaining 51.4 per cent did not receive any credit (total financial exclusion). In the same survey it is further revealed that 22 per cent of the cultivator households received credit from informal sources (financial inclusion in narrow sense). Only 27.6 per cent of the farmer households has availed credit from the formal institutions like banks, cooperatives and government (Jeromi, 2006). Further, a Rural Finance Access Survey 2003, conducted by the World Bank and NCAER, revealed that 79 per cent of the rural households has no access to credit from formal sources (Basu, 2005). Hence, the tasks of microfinance are the promotion of greater financial inclusion2 and in the process improve the social and economic welfare of the poor.

In this backdrop, the paper examines the promise of microfinance (credit plus services) in the inclusion (access) of excluded and to analyse the impact of the "credit plus services" on the social and economic welfare of the poor households.

The organisation of the paper is as follows. Section 2 presents the theoretical insights between microfinance and poverty. Section 3 describes sources of data, which consists of survey design and survey area. Section 4 deals with empirical results followed by the conclusion and policy implication in the last section.

Microfinance and Poverty Alleviation: Theoretical Insights

Poverty alleviation has been one of the key development challenges over the decades. One of the identified key constraints facing by the poor is lack of access to formal sector credit. It will facilitate them to take advantage of economic opportunities to increase their level of output, hence move out of poverty. Credit is considered to be an essential input to increase productivity, mainly land and labour. It is believed that credit boots income levels, increases employment at the household level and thereby alleviates poverty. Credit facilitates poor people to triumph over their liquidity constraints and undertake some income generating activities. Furthermore, credit helps poor people to smoothen their consumption patterns in times of lean periods of the year (Binswanger and Khandker, 1995). The improved consumption is an investment in the productivity of the labour force or human capital. Hence, credit will maintain the productive capacity of rural poor households (Heidhues, 1995; Hulme and Mosely, 1996; Mosely and Hulme, 1998; Hulme, 2000; Navajas et al., 2000).

The proposed goal of microfinance sector is to improve the welfare of the poor as a result of better access to small loans. The lack of access to credit for the poor may have negative consequences for various household level outcomes including technology adoption, agricultural productivity, food security, nutrition, health and overall welfare. Access to credit therefore affects welfare outcomes by alleviating the capital constraints of poor households. Access to credit in addition increase the poor households' risk-bearing ability, improves their risk-copying strategies and enables consumption smoothing over time. By so doing, microfinance is argued to improve the welfare of the poor (Navajas, et al., 2000; Diagne and Zellar, 2001).

Microfinance programmes have a potentially significant contribution to economic, social, political and psychological empowerment of the poor in general, women in particular. Through access to timely credit, savings, insurance and entrepreneurial training, women have become successful entrepreneurs, increased their household income and well-being. Regardless of their scale, outreach, location and the type of clients, all microfinance programme interventions target one thing in common – human development that is geared towards both the economic and social uplift of the people that they cater for.

There are a couple of studies argue that microfinance very helpful in improving the economic and social welfare of the member households (Hossain, 1988; Remeny and Benjamin, 2000; Otero and Rhyne, 1994; Khandkar, 1998). The study by Mosley (2001) reveals that the achievement of microfinance in reducing the poverty in Bolivia, Bangladesh and Indonesia is quite impressive and reached reasonably large number of poor (not the vulnerable poor or extreme poverty). Zellar and Sharma (1998) argued that microfinance could help to establish or expand family enterprises, potentially making the difference between grinding poverty and economically secure life. The impact studies from Bangladesh shows that participation in microfinance programme can exert a large positive impact on self-employment profits (McKernan, 2002), while Pitt and Khandker (1998) find that has a significant impact on the well-being of poor households and that this impact is greater when credit is targeted to women. The programme participation has positive impacts on household income, production, and employment, particularly in the rural non-farm sector. Some of the studies find that microfinance programme participation exerts a statistically significant impact on one or more aspect of female empowerment, such as contraceptive use or intra-household decision-making (Hashemi et al., 1996; Goetz and Gupta 1996; Schuler and Hashemi, 1994).

Otero (1999) illustrates that microfinance creates access to productive capital for the poor, together with human capital, addressed through education and training and social capital achieved through local organization building, enables people to move out of poverty. By providing material capital to a poor person, their sense of dignity is strengthened and this can help to empower the person to participate in the economy and society (Otero, 1999).

More recently, Littlefield, Morduch and Hashemi (2003), Simanowitz and Brody (2004) have commented on the critical role of microfinance in achieving the Millennium Development Goals (MDGs). They state that microfinance is a key strategy in reaching the MDGs and in building global financial system that meet the needs of the poorest people. Microfinance is unique among development interventions; it can deliver social benefit on an ongoing, permanent basis and a large scale. In a comprehensive study by Hulme and Mosley (1996) argue that well-designed programmes can improve the incomes of the poor and can move them out of poverty.

Microfinance programme target both economic and social poverty through the credit and non-credit services. This referred in microfinance programme as “credit plus services” (Edgcomb and Barton; 1998; Zohir et al., 2001) as they provide services (such as savings, insurance, health services, adult literacy) or training that go beyond financial services. However, impacts of these services have been little documented up to now (Zellar and Meyer, 2002; Godquin, 2004).

Survey Design and Data

Generally, the microfinance programmes is to correct market failure in delivering credit and non-credit services to the rural poor. Most microfinance programmes state that their primary goal is to alleviate rural poverty by delivering financial and non-financial services to the poorest households, especially to the women in those households.

The data sources for the study were primary data collected from the project areas of two Microfinance Institutions (MFIs) in Karnataka, namely SKDRDP4 and Sanghamithra Rural financial Services5, Mysore, respectively, with the help of survey method and focus group discussions. In all, 318 households from 10 villages from two taluks – Belthangady taluk of Dakshina Kannada district and T. Narasipura taluk of Mysore district of two districts in Karnataka were selected. The villages are selected on the basis of maximum number of microfinance groups linked to the MFI. There after, based on random sampling method the groups were selected and consequently from each group 30 per cent of the member households were randomly selected. The study considers pre-microfinance (before) condition of the household as a comparison or control group. While the post-microfinance (after) condition of the member households are considered as the member groups6. Hence, to study the financial inclusion (access to microfinance) and impact of microfinance on the welfare of the member household, pre and post microfinance intervention information’s of the households are collected. Each village was surveyed and collected data on household demographics, assets, income, expenditures, details of SHG membership, savings, access to credit, insurance, training and awareness, access to health care facility, social networks, self-employment or micro-enterprise development, and other services accessed from the members.

Survey Area: Most of the households are prior to microfinance programme were engaged in wage labour – 39.6 and 47.8 per cent in Belthangady and T. Narasipura, respectively. Nearly, 28.9 (Belthangady) and 34 per cent (T. Narasipura) of the women are housewives and another 18.9 and 7.5 per cent in Belthangady and T. Narasipura were unemployed. Most people in T.Narasipura are Forward castes – 30.8 per cent, Scheduled castes – 30.2 per cent and Scheduled tribes – 23.9 per cent. However, majority of the people in Belthangady are belongs to other back ward castes – 48.4 per cent, Scheduled tribes – 22.6 per cent and Scheduled caste – 13.8 per cent. In the sample group, 78.6 and 83.6 per cent members in Belthangady and T. Narasipura respectively are married. Similarly, in the time of survey, 15.1 and 4.4 per cent members are unmarried, 1.9 per cent (in each taluk) members are divorced or separated and 4.4 and 10.1 per cent members are widowed in Belthangady and T. Narasipura respectively. There were 29.6 and 52.2 per cent members in Belthangady and T.Narasipura taluk are illiterates. In the total sample very small percentage of the members are having the education of degree and more. It will be interesting to see the access to credit plus services and its impact on the member households across their educational levels.

Table 1: Socio-economic profile of the microfinance members across the taluks

Socio-economic indicators of the HH	**Taluks**		**Socio-economic indicators of the HH**	**Taluks**	
Caste of the Households	**BL**	**TN**	**Marital Status**	**BL**	**TN**
Scheduled caste	22 (13.8)	48 (30.2)	Married	125 (78.6)	133 (83.6)
Scheduled tribe	36 (22.6)	38 (23.9)	Unmarried	24 (15.1)	7 (4.4)
Backward caste	77 (48.4)	24 (15.1)	Divorced/Separated	3 (1.9)	3 (1.9)
Minorities	18 (11.3)	0	Widowed	7 (4.4)	16 (10.1)
Forward caste	6 (3.8)	49 (30.8)	**Level of Education**		
Occupation			Illiterate	47 (29.6)	83 (52.2)
Agricultural and Non Agricultural Wage Labour	21 (13.2)	34 (21.4)	Primary (1 to 5)	48 (30.2)	24 (15.1)
Cultivation	11 (6.9)	8 (5.0)	Secondary (6 to 7)	38 (23.9)	13 (8.2)
Housewife	8 (5.0)	16 (10.1)	High School & PUC	24 (15.1)	36 (22.6)
Ill or Disabled	1 (0.6)	2 (1.3)	Degree & More	2 (1.3)	3 (1.9)
Unemployed	1 (0.6)	0	Other (technical)	0	0
Wage & Self Employed	32 (20.1)	27 (17)	Average Age of the Member	36.86	35.40
Student	0	1 (0.6)	Average Household Size	5.03	4.32
Self Employed	44 (27.7)	48 (30.2)			
Cultivation & Self-Employment	41 (25.8)	23 (14.5)	**Number of Observations (N)**	**159**	**159**

Note: (i) BL = Belthangady taluk and TN = T.Narasipura taluk.

(ii) Figures in parenthesis denote percentage to the total number of the households in the respective taluks. *Source:* Primary Survey

Empirical Results

Access to credit plus services

Table 2: Access to credit plus services by the households

Access to credit plus services by the member household	Belthangady		T.Narasipura	
	Before*	After*	Before*	After*
Savings	10 (6.3)	159 (100)	3 (1.9)	159 (100)
Credit	12 (7.6)	159 (100)	2 (1.2)	159 (100)
Insurance	13 (8.2)	159 (100)	12 (7.6)	69 (53.4)
Training & Awareness	0	159 (100)	0	91 (57.2)
Health care	35 (22)	152 (95.6)	17 (10.)	68 (42.8)
Social Networks	29 (18.2)	136 (85.5)	15 (9.4)	83 (52.2)
Micro-enterprises	10 (6.3)	117 (73.6)	6 (3.8)	98 (61.6)
Number of observation	159	159	159	159

Note: (i) * = Before the microfinance intervention and After the microfinance intervention
(ii) Figures in parenthesis denote percentage to the total number of households in the study taluk *Source:* Primary Survey

The table 2 presents accessibility of 'credit plus services' by the household's in pre and post microfinance intervention. In prior to joining the microfinance programme, a large number of the households are outside the gamut (access) of credit and non-credit services. There were 93.7 and 98.1 per cent households prior to microfinance programme were not had access formal savings services in Belthangady and T.Narasipura taluk, respectively. It is also obvious from the table that 92.4 and 98.8 per cent member households were not accessed formal credit facilities, 91.8 and 92.4 per cent were not insured against any kind of risk or uncertainty of life or health, in the total sample population none of the member households were availed any type of training or awareness, 78 and 89.3 per cent were not accessed the health care facilities, 81.8 and 90.6 per cent were not had any social networks, 93.7 and 96.2 per cent were not availed the benefits of micro-enterprise services in Belthangady and T.Narasipura taluk, respectively. However, it is evidential from the table that post-microfinance has liberated the members to access (include) credit plus services from various institutions. The table (2) makes clear that in Belthangady taluk marginal number of member households were outside the inclusion of credit plus services as compared to the members in T.Narasipura taluk. The reasons for such difference **lies** within the institutional structures were the households are members. In Belthangady taluk the MFI itself was the promoter and lender for microfinance groups as compared to the MFI in T.Narasipura taluk that only lends to the groups. In T.Narasipura taluk, the Non-Governmental Organizations or Self-help Group Promoting Institutions were promoted the groups and latter linked to the MFI. It is observed from T.Narasipura taluk that around 40 per cent members are still outside the access of non-credit services. It is clear that the inter-institutional participation (promotion of groups, savings, credit, insurance and non-credit services linked by various institutions) in the development of microfinance leads to non-access to some of the credit plus services to the microfinance members.

Impact of Micro Credit Plus Services on Household Welfare

Poverty has many dimensions and can be related to individuals, households, communities, regions and countries. It encompasses many areas, such as food insecurity, malnutrition, illiteracy, ill health, and the lack of entitlements. The improvement (combating against poverty) in these aspects of life will lead to welfare of the household. A positive impact of microfinance may be a better education or nutritional status (human capital); accumulation of productive and consumptive assets (Physical capital); female empowerment, development and network with the local organizations, mobility of the women, etc, (social capital). The economic impact of micro-credit plus services on the member households was assessed through the changes in economic variables like – household Income, Employment, Assets, Housing Conditions and Household Expenditures.

Development of Household Income and Employment

An integrated approach of microfinance could be to engage in hybrid programmes (credit-plus-approach), where the microfinance intermediary itself or a collaborating organism offers financial services in combination with other complementary services, such as training in enterprise management, education in health and nutrition. This approach would allow the ultra-poor segments of the microfinance clientele to expand their economic basis or income (McNelly and Dunford, 1998; Zeller and Sharma, 1998; Zaman, 1998).

Table 3: Distribution of Households by Annual Income

Per Annum Income of the Household member represented in Quartiles	Before joining the SHGs		After joining the SHGs	
	Belthangady	T. Narasipura	Belthangady	T. Narasipura
< Rs.12000 (less than 25)	69 (43.4)	63 (39.6)	0	0
Rs. 12001 to Rs.15000 (25 to 50)	10 (6.3)	19 (11.9)	0	0
Rs. 15001 to Rs.22000 (50 to 75)	51 (32.1)	57 (35.8)	24 (15.1)	25 (15.7)
>Rs. 22001 (more than 75)	29 (18.2)	20 (12.6)	135 (84.9)	134 (84.3)
Mean total income of the households	17742.14	16421.38	31732.70	28427.67
Number of observation	159	159	159	159

Note: figures in parenthesis denote percentage to the total number of households in the taluks.
Source: Primary Survey

It is obvious from the table 3 that in the absence of microfinance programme, there were 43.4 and 39.6 per cent of the member households in Belthangady and T.Narasipura taluk were had the income of less than Rs.12000 per annum. Only 18.2 (Belthangady) and 12.6 per cent (T.Narasipura) of the households were had the per annum income of more Rs.22000. However, it apparent from the table that after joining the microfinance programme, the member household income has increased, more than 84 per cent of the households in both the taluks were had the per annum income of more than Rs. 22000 income. Nevertheless, 35.2 and 25.8 per cent of the households in Belthangady and T.Narasipura were had the per annum income of more than Rs.30000. There were none of the households were had per annum income of less than (second quartile) Rs. 22000 in the post microfinance. In total, the average income of member households increased from Rs.17081.76 to Rs.30080.19 from pre-microfinance membership to the post-microfinance. The average income changes were greater in Belthangady taluk (Rs.17742.14 and Rs.31732.70 pre and post-microfinance) as compared to T.Narasipura taluk (Rs.16421.38 and Rs.28427.67 pre and post-microfinance). Hence, it is evidential that micro-credit plus services played a positive role in improving the household income and thereby enhancing the welfare of the households. Thus, there is a positive change in income (welfare) of the microfinance beneficiaries as the other (Hossain, 1988; Hulme and Mosely, 1996; Todd, 2000; Khandkar and Choudhury, 1996) studies concluded.

Table 4: Employment of the member prior and after joining the microfinance programme

Categories of Employment	Before joining the SHGs		After joining the SHGs	
	Belthangady	T. Narasipura	Belthangady	T. Narasipura
Agricultural and Non-agricultural wage labour	63 (39.6)	76 (47.8)	21 (13.2)	34 (21.4)
Cultivation	19 (11.9)	14 (8.8)	11 (6.9)	8 (5)
Housewife	46 (29)	54 (34)	8 (5)	16 (10.1)
Ill or Disabled	1 (0.6)	2 (1.3)	1 (0.6)	2 (1.3)
Unemployed	30 (18.9)	12 (7.5)	1 (0.6)	0
Self-employed	0	0	44 (27.7)	48 (30.2)
Students	0	1 (0.6)	0	1 (0.6)
Wage labour with self-employment	0	0	32 (20.1)	27 (17)
Cultivation with self-employment	0	0	41 (25.8)	23 (14.5)
Number of observation	159	159	159	159

Note: figures in parenthesis denote percentage to the total number of households in the taluks.
Source: Primary Survey (N=159 + 159=318)

It is obvious from the table 4 that 27.7 and 30.2 per cent are self-employed, 25.8 and 14.5 are depends on cultivation and self-employment, 20.1 and 17 per cent depends on wage labour and self-employment, 13.2 and 21.4 per cent depends on wage labour, etc., in Belthangady and T.Narasipura taluk respectively. Thus, microfinance has promoted employment opportunities for the large number of unemployed and housewives. Thus, microfinance services created new hopes in the lives of the poor and uplifted them from the poverty though improving the employment.

Development of Household Assets

The studies showed that the participation in microfinance programme lead to improvement in financial assets, enterprise assets, household physical assets, human assets, social assets, etc. The introduction of compulsory or voluntary savings in microfinance leads to higher rates of savings (Barnes, 2006). The cross county study on impact of microfinance on acquisition of durable assets found that extremely poor households acquired the household assets like, stove, refrigerator, electronics appliances, modes of transport, etc. (ibid). In India, Chen and Snodgrass (2001) find a positive impact on spending for home improvement among all borrowers. Borrowers with multiple sequential loans spend significantly more on housing improvements, appliances and transport equipments than members of the control group (Barnes, 2006).

The microfinance programme has created the habit of thrift and savings in the members. There were only 6.3 and 1.9 per cent of the microfinance members in Belthangady and T.Narasipura were saving prior to microfinance joining. However, in the post microfinance all the members are having the compulsory savings accounts. The mean savings is Rs. 1593 and Rs.1110 per annum in Belthangady and T.Narasipura, respectively. Another key financial asset is the insurance premium of the household members. In the sample 8.2 and 7.5 per cent of the members in Belthangady and T.Narasipura were had the insurance premium prior to microfinance programme. However, in the post microfinance programme, 100 and 43.4 per cent of the members in Belthangady and T.Narasipura were having the insurance coverage.

Table 5: Changes in Physical Assets

Types of Physical assets	Possessing of the Assets				Source of Fund Used for the Assets							
	Belthangady		T. Narasipura		Belthangady				T. Narasipura			
	Yes	No	Yes	No	a	b	c	d	a	b	c	d
Land	98 (61.6)	61 (38.4)	64 (40.3)	95 (59.7)	4 (4)	1 (1)	93 (95)	0	0	1 (1.5)	63 (98.5)	0
Livestock	94 (59.1)	65 (40.9)	79 (49.7)	80 (50.3)	68 (72.3)	4 (4.2)	5 (5.3)	17 (18.2)	55 (69.6)	7 (8.9)	17 (21.5)	0
Electronics	139 (87.4)	20 (12.6)	85 (53.5)	74 (46.5)	69 (49.6)	54 (38.8)	0	16 (11.6)	78 (91.8)	7 (8.2)	0	0
Vehicles	19 (12)	140 (80)	4 (2.5)	155 (97.5)	9 (47.3)	1 (5.3)	8 (42.1)	1 (5.3)	4 (100)	0	0	0
Tools and Equipments	10 (6.3)	149 (93.7)	5 (3.1)	154 (96.9)	7 (70)	2 (20)	1 (10)	0	5 (100)	0	0	0
Others (gold, petty shop)	84 (52.8)	75 (47.2)	40 (25.2)	119 (74.8)	81 (96.4)	3 (3.6)	0	0	38 (95)	2 (5)	0	0

The table 5 presents the changes in the physical assets of the member households in the post microfinance programme. In the sample, only 4 per cent members in

Belthangady are purchased the land through microfinance. In the study, 59.1 and 49.7 per cent members in Belthangady and T.Narasipura possess the livestock's (Animals and poultry), in which 72.3 and 69.6 per cent are obtained through microfinance loan. Similarly, 87.4 and 53.5 per cent members in Belthangady and T.Narasipura are holding the electronics goods, out of which, 49.6 and 91.8 per cent are acquired through the microfinance loan. In the sample population, 12 and 2.5 per cent possess the vehicles, 6.3 and 3.1 per cent possessing tools and equipments and 52.8 and 25.2 per cent are purchased gold, petty shop, sewing machine, etc, in Belthangady and T.Narasipura, respectively. It is apparent from the table that microfinance has contributed in acquiring the financial and physical assets to the poor.

Development in Housing Condition

The housing condition shows the social and economic position of the member in the society. The type of the dwelling, the access to facilities in the household like, water, electricity, fuel, telephone, etc. will be the major determinants of housing condition. The financial and non-financial services of the microfinance programme have made considerable changes in the household of the microfinance members.

Housing condition of the members has improved in the post microfinance programme as compared to the before joining the programme. There were 29.6 and 64.2 per cent of the member households in prior to microfinance programme are had the Kutcha dwellings in Belthangady and T.Narasipura. However, the dwelling has improved (68.6 and 18.3 per cent households are having Pucca dwellings) in the post microfinance programme. It is observed from the filed that SKDRDP is giving the housing loan and other infrastructure to the members of microfinance programme for the development of dwelling systems of the households. The own source of water has increased from 60.4 per cent to 79.9 per cent households in Belthangady taluk and 23.9 per cent to 41.5 per cent households in T.Narasipura taluk. Hence, it has reduced the dependency on public and other sources of water. In the post microfinance programme, there were 63.5 and 69.2 per cent of the households are having own power connections. The post microfinance programme has improved the connection of phone to 24.5 and 15.1 per cent. There were very less number of households are had the own toilet facility in their households before joining the microfinance programme, i.e. 5.7 per cent in each taluks. However, it has improved to 95.6 and 37.1 per cent in Belthangady and T.Narasipura taluks respectively.

Table 6: Housing condition of the member prior and after joining the microfinance programme

Type of dwelling	Before joining the SHGs		After joining the SHGs	
	Belthangady	T. Narasipura	Belthangady	T. Narasipura
Pucca	24 (15.1)	5 (3.1)	109 (68.6)	29 (18.3)
Semi Pucca	83 (52.2)	50 (31.4)	43 (27)	87 (54.7)
Kutcha	47 (29.6)	102 (64.2)	7 (4.4)	42 (26.4)
Don't own	5 (3.1)	2 (1.3)	0	1 (0.6)
Main Source of Water				
Own	96 (60.4)	38 (23.9)	127 (79.9)	66 (41.5)
Public	24 (15.1)	111 (69.8)	24 (15.1)	91 (57.2)
Other	39 (24.5)	10 (6.3)	8 (5)	2 (1.3)
Electricity				
Own	44 (27.7)	68 (42.8)	101 (63.5)	110 (69.2)
Bhagyajyothi	5 (3.1)	8 (5)	37 (23.3)	25 (15.7)
No connection	110 (69.2)	83 (52.2)	21 (13.2)	24 (15.1)
Fuel used for Cooking				
Gas	0	4 (2.5)	0	5 (3.1)
Firewood or Cow Dung	159 (100)	154 (96.9)	159 (100)	153 (96.2)
Others	0	1 (0.6)	0	1 (0.6)

Telephone Connection				
Yes	5 (3.1)	4 (2.5)	39 (24.5)	24 (15.1)
No	154 (96.9)	155 (97.5)	120 (75.5)	135 (84.9)
Toilet facility				
Yes Own	9 (5.7)	9 (5.7)	152 (95.6)	59 (37.1)
Open	150 (94.3)	150 (94.3)	7 (4.4)	100 (62.9)

Note: figures in parenthesis denote percentage to the total number of households in the taluks.
Source: Primary Survey (N=159 + 159=318)

Changes in Household Expenditure

The household expenditure will be another important indicator of welfare. The household expenditure starts from expenses on basic necessities (unproductive) to the productive purpose. It is observed from the filed that in the post microfinance programme household has increased their expenses on education, housing appliances and repair, clothing, health. The members of the microfinance have taken the loans from the SHGs for education, housing repair purposes and that has increased the expenses of the household.

The table 7 shows that 28.9 and 20.1 per cent of households in Belthangady and T.Narasipura taluk has increased their household expenditure more than 62 per cent as compared to the prior to the microfinance intervention. The second quartile 44 to 62 percentage changes is having 28.3 and 20.8 per cent households in Belthangady and T.Narasipura taluk respectively. Hence, it is clear from the table that nearly 50 per cent households (both in Belthangady and T.Narasipura) are improved their expenditure more 44 per cent in the post microfinance interventions.

Table 7: Changes in the Household Expenditure and Number of Household

Percentage change in the HH	expenditure (in quartiles)	Belthangady	T.Narasipura	Total
First	Less than 32	31 (19.5)	48 (30.2)	79 (24.8)
Second	32 to 44	37 (23.3)	46 (28.9)	83 (26.2)
Third	44 to 62	45 (28.3)	33 (20.8)	78 (24.5)
Fourth	More than 62	46 (28.9)	32 (20.1)	78 (24.5)

Note: figures in parenthesis denote percentage to the total number of households in the taluks.
Source: Primary Survey (N=159 + 159=318)

Social Impacts of Micro-credit plus services

Social impact of the credit plus services on the household economy is examined through the development of *human* and *social capital*. In this study development of *human capital* will be examined through the indicators like – education, health, confidence level, skills and empowerment of the members or member household. Similarly, the *social capital* studied through the development of networks and mobility of the members after the intervention of the microfinance programme.

The investment on education has increased in the post microfinance programme. The children going to the schools and expenses on educational purposes have increased. The microfinance provided the health care facilities to the household members. There are 95.6 and 42.8 per cent of the members in Belthangady and T.Narasipura taluk are availed various types of health care facilities through microfinance groups. In the sample, 99.4 and 71.7 per cent of the members in Belthangady and T.Narasipura taluk opinioned that microfinance groups has improved the access to health care facilities to the members. It is also observed from the filed that majority of the rural women are not had the banking literacy in prior to microfinance programme.

However, the microfinance groups are considered as the best platform for the development of confidence in the rural poor. It is improved the confidence and knowledge of banking, utilization of savings and credit, taking the self-employment, interaction with the local organisation like – panchayats, MFIs, NGOs, bank staff etc. The recent innovations in microfinance group formation not only satisfied the financial needs of the poor, but also encourage in improving the skills and knowledge. The weekly training by different institutions and individuals' opened up new hopes and courage to take different self-employment activities. The microfinance programmes mobilizes and organizes women's at the grassroots levels and provide access to supportive services to enhance economic, social and political life of the poor. Finally, by providing control over material resources, it should raise women's prestige and status within the household and in the community (Malhotra, 2004). There are 78.6 and 67.3 per cent of the members in Belthangady and T.Narasipura taluk are agreed that after joining the microfinance programme the control over household income has increased.

To examine whether or not there is any significant difference in the mean of assets, income, expenditure and employment in pre and post microfinance programme between Belthangady and T.Narasipura taluks, the *Independent T test* for mean has been conducted. The result is given in the table – 13. The calculated t- value is significant9 in case of all household variables that indicate that the intervention of microfinance has positively impacted on the welfare of the households. The impact of microfinance credit plus services on the member household is seen to be more in Belthangady taluk than in T.Narasipura taluk. The mean of household expenditure, income and employment in Belthangady taluk is greater than T.Narasipura taluk. However, the mean of asset values is greater in T.Narasipura as compared to Belthangady taluk. Because, the households in T.Narasipura taluk are used the credit plus services for the accumulation of assets than on the employment generation. Thus, the microfinance programme has been proved grater welfare impact in Belthangady than T.Narasipura taluk.

The *Independent T test* will be used only for the significant of change in pre and post microfinance programme. However, it will be not enough to draw any conclusive inference on the significant of the co-efficient in proving the welfare impact of credit plus services. Hence, to test the significant of two subset of coefficient the *chow test* has been conducted. It will explain whether or not the microfinance credit plus services made change in the welfare of the household economy of the member in the post microfinance programme as compared to the pre programme intervention.

Table 8: Test for the difference in household variables in pre and post microfinance programme

Variables	**Belthangady** (N=159)		**T.Narasipura** (N=159)		**Overall** (N=318)	
	μ	t-statistics	μ	t-statistics	μ	t-statistics
HH. Asset	13213.52	1.344**	18066.67	2.687**	15716.27	2.634*
HH. Expenditure	8231.89	10.759*	6652.08	8.492*	7322.23	13.258*
HH. Income	15163.52	17.589*	14421.38	21.291*	14765.16	26.859*
HH. Employment	155.18	16.341*	86.21	8.428*	120.65	16.980*

Note: 1. N = number of households 2. μ =Mean changes in households variables from pre to post microfinance
intervention. 3. *, **: Significant at 1and 5 per cent level.

Now we have three possible regressions for both the taluks, Belthangady and T.Narasipura, respectively. Table 14 present the description of the variables used in the *chow test* regression. Regression 3 and 6 assumes that there is no difference between the two time period (pre and post microfinance intervention) and therefore estimates the relationship across household expenditure, assets, income and employment for the entire time period consisting of 318 observations. In other words, we assume that the intercept as well as the slope coefficient remains the same over entire time period, that is, there is no impact of micro credit plus services in the post microfinance programme.

Table 9: Description of the variables

Variables	**Description**	**Variables**	**Description**
Exp_b^0	Expenditure of the household in the pre microfinance programme in Belthangady taluk.	*Y b*	Income of the Households in Belthangady taluk
Exp_b^1	Expenditure of the household in the post microfinance programme in Belthangady taluk.	*N b*	Assets of the Households in Belthangady taluk

Exp_b	Expenditure of the household in both the periods in Belthangady taluk.	$N\ b$	Employment of the Households in Belthangady taluk
Exp^0_{tn}	Expenditure of the household in the pre microfinance programme in T.Narasipura taluk.	$Y\ tn$	Income of the Household in T.Narasipura taluk
Exp^1_{tn}	Expenditure of the household in the post microfinance programme in T.Narasipura taluk.	$N\ tn$	Assets of the Household in T.Narasipura taluk
Exp_{tn}	Expenditure of the household in both the periods in T.Narasipura taluk.	$N\ tn$	Employment of the Household in T.Narasipura taluk

Regression for pre-microfinance programme period in Belthangady taluk:

$$Exp^0{}_b = a_1 + \beta_1 Y_b + \beta_2 A_b + \beta_3 N_b + u_1 \quad \cdots\cdots\cdots \quad (1)$$

Regression for post microfinance programme period in Belthangady taluk:

$$Exp^1{}_b = \alpha_2 + \beta_1 Y_b + \beta_2 A_b + \beta_3 N_b + u_2 \quad \cdots\cdots\cdots \quad (2)$$

Pooled Regression for both periods period in Belthangady taluk:

$$Exp_b = \gamma \quad + \beta_1 Y\ b + \beta_2 Ab + \beta_3 N\ b + u \quad \cdots\cdots\cdots \quad (3)$$

Regression for pre-microfinance programme period in T.Narasipura taluk:

$$Exp^0{}_{tn} = a_1 + \beta_1 Y_{tn} + \beta_2 A_{tn} + \beta_3 N_{tn} + u_1 \quad \cdots\cdots\cdots \quad (4)$$

Regression for post microfinance programme period in T.Narasipura taluk:

$$Exp^1{}_{tn} = \alpha_2 + \beta_1 Y_{tn} + \beta_2 A_{tn} + \beta_3 N_{tn} + u_2 \quad \cdots\cdots\cdots \quad (5)$$

Pooled Regression for both periods period in T.Narasipura taluk:

$$Exp_{tn} = \gamma \quad + \beta_1 Y\ tn + \beta_2 Atn + \beta_3 Ntn + u \quad \cdots\cdots\cdots \quad (6)$$

The *chow test* is used to test the impact of credit plus services between pre and post microfinance programme. The calculated F- value (chow test) is greater than the table value and significance at 1 per cent level. Therefore, it is clear that the credit plus services of the microfinance programme has impacted the household economy of the member.

The study also made an attempt to investigate whether or not there is welfare change in the household economy of the member; the *chow test* through a combined regression (by combining the total sample of Belthangady and T.Narasipura taluk) has been conducted. The result of (F value) *chow test* will explain whether or not there is impact of microfinance credit plus services on the household economy of the member.

Table 10: Impact of microfinance on the household economy

Dependent variable = Household expenditure

Variable		**Belthangady**			**T.Narasipura**	
	Pooled reg.	Pre reg.	Post reg.	Pooled reg.	Pre reg.	Post reg.
C	10356.4 (14.50)	13773.53 (11.28)	9151.06 (4.76)	10425.23 (11.29)	11210.58 (7.52)	8938.40 (3.50)
Income (Y)	0.481 (12.28)	0.28 (3.38)	0.4955 (7.10)	0.44 (10.47)	0.40209 (4.17)	0.466 (5.29)
Assets (A)	0.011 (2.59)	0.179 (3.61)	0.0054 (0.70)	0.011 (1.79)	0.0128 (1.57)	0.0076 (0.77)
Employment (N)	0.545 (0.16)	-14.72 (-3.13)	6.2665 (1.23)	0.314 (0.08)	-1.9089 (-0.45)	4.274 (0.85)
F – Statistics	11.23*	17.60*	42.19*	51.85*	7.05*	14.57*
R^2	0.52	0.25	0.45	0.34	0.12	0.22
Adjusted R^2	0.51	0.24	0.44	0.33	0.10	0.21
RSS	9741566085	4056844092	5101726151	12661027277	5137468841	7669502420

N	318	159	159	318	159	159
F-Value (chow test)		4.80*			110.56*	

Note: * Significant at 1 per cent level; Figures in the parenthesis are t -statistics; reg. = Regression. RSS = Residual Sum of Squares.

Table 11: Description of the variables

Variables	Description
$Exp0_{btn}$	Expenditure of the household in the pre microfinance programme in both the taluks (Belthangady and T.Narasipura)
$Exp1_{btn}$	Expenditure of the household in the post microfinance programme in both the taluks (Belthangady and T.Narasipura).
Exp_{btn}	Expenditure of the household in pre and post periods in both the taluks (Belthangady and T.Narasipura).
Y btn	Income of the Households in both the taluks (Belthangady and T.Narasipura).
Abtn	Assets of the Households in both the taluks (Belthangady and T.Narasipura).
N btn	Employment of the Households in both the taluks (Belthangady and T.Narasipura).

Regression for pre-microfinance programme period for both the taluks\

Table 18: Impact of microfinance on the household economy

Dependent variable = Household expenditure

Variable	**Combined for both the taluks**		
	Pooled reg.	Pre reg.	Post reg.
C	10425.85	12430.07	8907.44
	(18.68)	(13.10)	(5.69)
Income (Y)	0.47	0.341	0.489
	(15.61)	(5.39)	(8.94)
Assets (A)	0.01	0.016	0.006
	(3.18)	(3.76)	(1.08)
Employment (N)	-0.43	-6.685	4.959
	(-0.20)	(-2.19)	(1.41)
F – statistics	156.64*	52.89*	21.71*
R^2	0.43	0.17	0.37
Adjusted R^2	0.42	0.16	0.33
RSS	22523895333	9353716529	12735367261
N	636	318	318
F Value (Chow Test)		3.09**	

Note: *; ** Significant at 1 and 5 per cent level;
Figures in the parenthesis are t -statistics; reg. = Regression. RSS = Residual Sum of Squares.

The calculated F- value (*chow test*) is greater than the table value and significance at 5 per cent level. Hence, there is a positive change in the welfare of the member households in the post microfinance programme. The Income and Assets of the households are positively influencing the household expenditure. Therefore, improving the household expenditure through the enhancement of income and employment is showing that the credit plus services of microfinance programme has made considerable improvement in the household welfare in the post microfinance.

Conclusion

Microfinance is not a panacea to all problems of poverty. However, it is considered as a vital tool to break the vicious circle of poverty that characterized by low income, low savings and low investment. In order to generate higher incomes, savings and more investment, there is need to inject capital in the form of microfinance.

The empirical evidence in this study showed that credit plus services of microfinance has positively correlating with the improving in household expenditure, income, assets and employment. Microfinance has contributed in improving the access to credit for consumption and productive purposes. Most (formal) institutions regarded low-income households as "too poor to save". But microfinance programme nullify the argument and showed that even vulnerable poor can save if he/she having the accessibility and reward from it (Hulme *et al.*, 1996). Generally, the life of poor is often hindered by many contingencies or risks. Insuring against these risks makes people to bear the large uncertain losses with certainty of small and regular payments. Thus, the credit plus services of microfinance introduced the micro-insurance services to reduce vulnerability (result of risk and uncertainty) of the poor. The micro credit plus services of microfinance has tried to bring out the poor (women in particular) from below poverty line and fight against the poverty though deploying the financial and non-financial services. Various skill enhancement trainings and awareness programmes, networking with various institutions, etc, will make the welfare path soften towards poor. The credit plus services of microfinance not only uplifted the poor from income poverty but it also from the knowledge poverty. Hence, easily accessible and affordable "credit plus services" should be provided to the vulnerable poor who are excluded socially and economically for a long period of time.

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A STUDY ON FINTECH ECOSYSTEM IN INDIA A QUANTITATIVE APPROACH

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Abstract

Fintech combines financial services with technology to modernize financial interactions for individuals and businesses. Fintech firms provide improved quickness, cost-effectiveness, and user intensive solutions for transaction processing, investment management, and alternatives to traditional banking by leveraging technological breakthroughs like blockchain and artificial intelligence. The fintech ecosystem in India provides a collaborative atmosphere for a range of financial technology services. Typically, government efforts, financial services businesses, and startups collaborate to develop these services. Indian fintech and digital industries are expected to experience rapid growth, with a 6.13% annual growth in internet users between 2023 and 2030. This growth is driven by a culture that values mobile devices, affordability, and better digital transactions. The industry is poised for global leadership, with innovation centers in major cities like Bengaluru, Delhi NCR, Mumbai, Pune, and Ahmedabad. Long-term success will be achieved through strategic investments and staying updated on global trends. This paper made an attempt to discuss FinTech ecosystem and performance with respect to Indian perspective.

Keywords: Digital Transformation, Fintech Growth, Mobile-first Culture, InsurTech, RegTech, LendTech, PayTech, WealthTech ,Innovation Ecosystem.

Introduction

The fintech ecosystem in India has seen remarkable growth, thanks to the collaborative efforts of financial institutions, start-ups, government bodies, venture capitalists, and regulators. This cooperation has created a supportive environment for innovation and consolidation. Drawing on the expertise of NASSCOM 10,000 Start-ups and KPMG in India, this report highlights three emerging themes poised to transform the Indian financial services industry: blockchain, artificial intelligence, and open banking. While each theme is impactful on its own, their combined adoption presents a compelling case for developing the open frameworks of the future. There is a lot of room for growth and innovation in the Indian fintech business, which is known for its quick expansion, wide range of prospects, and encouraging atmosphere. Strategic investments, a profitability-focused mindset, and constant adaptation to market and regulatory changes will ensure long-term success. In the upcoming years, India can solidify its leadership in the global finance space by utilising cutting-edge technologies and cultivating a vibrant startup ecosystem. This paper made an attempt to discuss FinTech ecosystem and performance with respect to Indian perspective.

Fintech

Fintech is a short for financial technology, refers to innovative tools designed to enhance and streamline financial services. It primarily aids organizations, entrepreneurs, and consumers in managing financial operations, workflows, and personal finances more effectively through specialized software and algorithms used on computers and smartphones. Initially, traditional financial institutions like banks used fintech technology in their backend systems in the early 21st century. However, between 2018 and 2022, there was a notable shift towards consumer-oriented services. Today, fintech spans a broad spectrum of industries, including investment management, retail banking, education, nonprofit fundraising, and the development and use of cryptocurrencies like Bitcoin. While cryptocurrencies often capture the most attention, the traditional global banking sector's vast market capitalization remains central to fintech's success.

Understanding Fintech Categories

FinTech is transforming financial services and altering the ways in which consumers interact with the products that these business models offer. Here are a few instances of applications for fintech:

1. *Blockchain and Cryptocurrency*
2. *Insurance (InsurTech)*
3. *Regulatory (RegTech)*
4. *Lending (LendTech)*
5. *Payments (PayTech)*
6. *Mobile Payments*
7. *Trading (TradeTech)*
8. *Robo-Advising and Stock-Trading Apps*
9. *Personal Finance (WealthTech)*
10. *International Money Transfers*
11. *Equity Financing*
12. *Accounting*
13. *Consumer Banking (BankTech)*

Rise of Fintech in India

India is one of a notable surge in the number of startups in the recent years. India is one of the third-largest startup ecosystem in the world, behind the US and China, with over 14,000 new firms formed in 2021–22 compared to just 733 in 2016–17. The FinTech sector comprises over 6,600 firms, with an estimated market value of US$31 billion by 2021. Large talent pools, pro-business laws, a spike in venture capital investments, expanding internet and smartphone usage rates, and public desire for more individualised services and improved customer experiences have all contributed to this industry's explosive rise. This ecosystem has helped with the onboarding of sub-prime and recently extended credit customers by overcoming obstacles relating to language, geography, and low literacy rates. With the widespread use of UPI as an example, programs like neobanking and Jan Dhan are striving to guarantee that all citizens have access to banking services. Once renowned for copying foreign inventions, India's financial scene is now setting the standard with indigenous solutions like UPI, the India Stack, and lending frameworks all of which have become industry standards that prioritise cost, speed, and scalability. By working closely with fintech startups through open-banking architecture, Indian banks have proven to be mature. Leading banks are creating specialised business units to collaborate with fintech and embedded finance companies, introducing new services and products while also creating competitive offerings. Forward-thinking fintech businesses and established financial institutions are accelerating the modernization of financial services in India.

Fintech Unicorns in India

Paytm	**PhonePe**
Razorpay	**Zeta**
Pine Labs	ChargeBee Technologies
Groww	**CoinDCX**
BharatPe	**Acko**
Policybazaar	**Vendantu**
CRED	**Upstox**
Digit Insurance	**Slice**
Billdesk	**Oxyzo Financial Services**
CoinSwitch	CredAvenue/Yubi

Reviews of Literature

Financial inclusion can spur economic growth, lessen poverty, and enable individual success. It seeks to give the 2 billion unbanked people globally access to and active use of reasonably priced financial goods. Financial performance and financial inclusion were found to be significantly and favourably correlated by Soriano (2017), particularly in cases where the founders of a company had prior financial services experience, used customer-centric business models, and established deliberate partnerships with financial institutions and e-commerce businesses.

Around 1,500 fintech firms are currently operating in India, where the sector has experienced a sharp upsurge. Almost half of these startups were founded in the last two years (Priya & Anusha, 2019). There is no denying the nation's enormous entrepreneurial potential, but for these businesses to succeed, they need both financial and technical support. Agnihotri and Arora (2022) looked into how new financial technology affected bank profitability. They found that diversifying into non-interest revenue had a beneficial influence on profitability and recommended that banks depend more on this type of income in addition to traditional interest income.

Fintech's ability to provide financial services through creative apps, workflows, and business models was emphasised by Rajeswari and Vijai (2021), who cited India's youthful population as a key benefit. Initiatives by the government to support the fintech sector in the nation are another factor in its rise. After examining the connection between mobile payments and Kenyan banks' financial performance, Kiilu (2018) came to the conclusion that more use of mobile payments improves financial performance. The report suggested that the Central Bank of Kenya acknowledge the economic contribution of fintech and create a regulatory framework that takes it into account.

By utilising cutting-edge technology for financial transactions, fintech has upended India's Banking, Financial Services, and Insurance (BFSI) industry, according to Singh (2020). Fintech businesses compete in a number of markets, such as wealthtech, insurtech, digital wallets, and loans. In their analysis of COVID-19's effects on fintech, Candy et al. (2022) discovered that the pandemic sped up the adoption of digital transactions, which in turn encouraged the expansion of the industry and aided in economic development while slowing the virus's spread.

The importance of financial technology and mobile money services for transactions and improving livelihoods through the creation of new businesses or self-employment was highlighted by Goswami, Sharma, and Chouhan (2022). Fintech research is still in its infancy despite quick advances. According to Gupta and Agrawal (2021), a number of variables that influence consumers to favour fintech companies over traditional financial institutions have contributed to the post-pandemic spike in the use of fintech services.

Using Data Envelopment Analysis (DEA) and panel regressions, Varma and Nijjer (2022) conducted a quantitative study of private and public banks from 2011 to 2019 to investigate the impact of fintech on the efficiency and market power of Indian banks. They discovered that fintech boosts the effectiveness of banks. Fintech is defined by Al Hammadi and Nobanee (2019) as digital innovation that aims to improve and automate financial services. By making it easier for clients, investors, business owners, and corporations to handle their financial activities, fintech benefits these parties through the use of specialised applications and software.

Singh, Malik, and Jain (2021) used return on equity (ROE) and return on assets (ROAs) as dependent variables to investigate how fintech adoption affected Indian banks' profitability. The number of ATMs, the capital equity tier 1 ratio, the cost to income ratio, and a fintech dummy variable, among other things, were found to have a substantial impact on profitability. In order to fully utilise fintech's advantages while resolving concerns about data confidentiality and client protection, banks and fintech companies need to work together in a collaborative ecosystem, as Raj and Upadhyay (2020) highlighted.

Lastly, Chen, You, and Chang (2021) used quantitative data and structural equation modelling to examine how fintech products affected the performance of commercial banks in China. Their results demonstrated the growing significance of fintech in the banking industry by showing that fintech products have a favourable impact on the performance of commercial banks.

India’s Digital Economy in a Nutshell

Sl.No	Years	Internet Users (Mn)
1	2020	749
2	2021	846
3	2022F	932
4	2023F	1,008
5	2024F	1,075
6	2025F	1,134
7	2026F	1,186

8	2027F	1,132
9	2028F	1,273
10	2029F	1,310
11	2030F	1,343

Source: TRAI, NPCI, Bain & Company, Data.ai

India's digital economy is booming, with the number of internet users increasing steadily over the past few years. From 2020 to 2022, the number of internet users grew by 10.17%, reaching 932 million. This growth is projected to continue in the coming years, with the number of internet users projected to reach 1343 million by 2030. On average, the number of internet users is expected to grow by 6.13% per year from 2023 to 2030. This rapid growth presents a significant opportunity for businesses and entrepreneurs to reach a wider audience and tap into the potential of India's digital market.

Internet Penetration in India

Particulars	Users
Internet Users by 2030	1.3 Bn+
Internet Penetration in India	61%
Increase in Internet Users from 2022 to 2030	44%
Per GB Internet Cost	$0.17
Average Mobile user per day by per user	4.7 Hours
Number of Smartphone Users	600 Mn+
Total Value of UPI Transactions Upto June 2023	$3.6 Tn
Number of Users Transacting Online	350 Mn+
Estimated Rural Internet in 2022	373 Mn+

With over 1.3 billion internet users and a 61% penetration rate by 2030, India's internet landscape is predicted to grow dramatically. This represents a 44% rise over 2022. At $0.17 per gigabyte, an internet connection is still reasonably priced, making it accessible to a large number of people. Users use their mobile devices for 4.7 hours a day on average. More than 600 million people use smartphones, and 350 million of them transact online. By June 2023, the total number of UPI transactions will have reached $3.6 trillion. In 2022, there were 373 million rural internet users, indicating a significant usage base. These figures demonstrate how quickly India's digital ecosystem is developing.

Fintech market in India – A snapshot

Particulars	Users
Estimated size of the Fintech Market by 2030	1.3 Tn
Total Funding (2014 to HI 2023)	$ 27 Bn
Number of Fintech Unicorns	22
Estimated Market Size CAGR (2022-2030)	18%
Funding CAGR (2019-2022)	20%
Number of Fintech Soonicorns	34
Active Fintech Startups	4.2K+
Combined Valuation of Fintech Unicorns	$68 Bn
Market Opportunity for Cross Border Payments (2030)	$65B
Funded Fintech Startups	655
Combined Valuation of Fintech Soonicorns	$13 Bn+

From 2022 to 2030, we expect the fintech market in India to develop at a robust 18% Compound Annual Growth Rate (CAGR), reaching $1.3 trillion. The industry brought in $27 billion in capital between 2014 and the first half of 2023, growing at a 20% CAGR between 2019 and 2022. The ecosystem includes 34 unicorns valued at more than $13 billion and 22 fintech unicorns with a combined valuation of $68 billion. Currently, there are over 4,200 fintech businesses operating, of which 655 have received funding. The market for cross-border payments alone presents a $65 billion opportunity by 2030, highlighting the dynamic potential of the industry.

India's fintech landscape : key players List of Unicorns

Sl. No	Unicorns
1	Acko
2	Bharatpe
3	BillDesk
4	Chargebee
5	CoinDCX
6	Coinswitch Kuber
7	Cred
8	Yubi
9	OXYZO
10	Digit
11	Groww
12	MobiKwik
13	One card
14	Paytm
15	PhonePe
16	Pine Labs
17	Policy Bazaar
18	Razorpay
19	Slice

20	Zerodha
21	Zeta
22	Open
Total Unicorn: 22	
Combined Valuation: $68 Bn+	
Total Funding: $14 Bn	
Top Hub: Bangaluru	

Source: Inc42

With a combined valuation of over $68 billion and $14 billion in financing, 22 well-known startups—including Acko, BharatPe, and Paytm—are part of India's fintech unicorn ecosystem. These startups are revolutionising the financial sector by introducing cutting-edge loan, payment, insurance, and investment solutions. Bangalore's strong startup culture and extensive support network make it the leading hub for these major fintech companies. This remarkable concentration and growth of high-value businesses highlight India's potential for continued innovation and sector expansion, as well as its leadership position in the global fintech field.

List of Soonicorns

Sl. No	Soonicorns
1	Lendingkart
2	Bankbazaar.com
3	axio
4	Cashfree Payments
5	Drip/c
6	Fi
7	Fino
8	Finova Capital
9	Incred
10	IND Money
11	Jupiter
12	UNI
13	JusPay
14	KhataBook
15	Kissht
16	KreditBee
17	Rupeek
18	M2P
19	Money View
20	MSwipe
21	Navi
22	Niyo
23	One card
24	Zenwork
25	Paymate
26	Zeet
27	Refyne
28	Scripbox
29	Truebalance
30	Turtlemint
31	Infibeam Avenues
32	Stashfin
33	Clear
34	Insurance Dekho
Total Soonicorns: 34	
Combined Valuation: $13 Bn+	
Total Funding: $6 Bn	
Top Hub: Bangaluru	

India's fintech industry includes 34 promising soonicorns, such as Lendingkart, Bankbazaar.com, and Cashfree Payments, which have raised a total of $6 billion in funding and have a collective valuation of over $13 billion. These up-and-coming businesses, which exhibit tremendous promise and inventiveness in fields including loans, payments, and financial management, are on the verge of becoming unicorns. Bangalore continues to be the most popular base for these soonicorns, which is indicative of its growth as a hub for fintech development. This dynamic group showcases the ongoing growth and future potential of the fintech ecosystem in India, paving the way for further innovations and market disruptions.

Fintech startups in India

Banking	Fintech SAAS	InsurTech	Investment Tech	Lending Tech	Payment Tech
Fampay	Active. Ai	Acko	5paisa.com	Axio	Billdesk
Fi	Chargebee	Coverfox	CoinDCX	Aye	Cashfree
Flobiz	Kaleidofin	Digit	Coinswitch	Drip/c	Cred
Jupiter	M2P	Onsurity	Groww	Fibe	DotPe
Karbon Business	Nium	Paytm Insurance	IndMoney	Incred	Ezetap
Mobikwik	Refyne	Pazcare	Smallcase	KreditBee	Juspay
Open	Sentieo	Plum	Scripbox	Lendingkart	Mswipe
Paytm	Werize	Policybazaar	StockGro	Slice	Pinelabs
PhonePe	Zenwork	RenewBuy	Upstox	Stashfin	Razorpay
Zolve	Zeta	Turtlemint	Zerodha	Yubi	Paytm

Source: Inc42

The fintech ecosystem in India is robust and varied, encompassing various industries like banking, insurtech, fintech SaaS, investment tech, lending tech, and payment tech. Well-known startups in several industries include banking (Fampay and Fi), Fintech SaaS (Chargebee and M2P), insurtech (Acko and Digit), investing tech (Groww and CoinDCX), lending tech (KkreditBee and Lendingkart), and payment tech (Billdesk and Razorpay). With businesses like Paytm and PhonePe operating across several industries, the ecosystem highlights India's important position in the global fintech arena by showcasing a dynamic panorama of innovation and growth. These firms are spearheading innovations and offering a wide range of financial services to the industry.

Fintech Market Opportunity in India

Sector & Segments	**Market Size (2022) Billion**	**Market Size (2030) Billion**	**CAGR (2022-2030)**	**% Share Market Size (2030)**
Overall Fintech Market	$584	$2.1	18	-
Leningtech	$270	$1.3	22	60
Insurtech	$87	$307	17	14
Payments	$165	$253	5	12
Neobanking	$48	$183	18	9
Investment Tech	$9.2	$74	30	3
Fintech SaaS	$4.6	$31	27	1.5

With an estimated CAGR of 18%, the fintech market in India is expected to develop significantly, from $584 billion in 2022 to $2.1 trillion by 2030. Predictions indicate that lending technology, the industry leader, will rise from $270 billion to $1.3 trillion, capturing 60% of the market at a 22% CAGR. Payments will increase from $165 billion to $253 billion (5% CAGR), and insurtech will grow from $87 billion to $307 billion (17% CAGR). Neobanking, investment tech, and fintech SaaS all exhibit notable growth, underscoring India's vibrant fintech scene and its extensive market potential in a range of industries.

Fintech Market Opportunity in India

Country	**Total Fintech Funding (2014-H1 2023)**	**Startup Investment CAGR (2019 to 2022)**	**Number of Fintech Unicorns**	**Median Ticket Size of Fintech Deals in 2022**
India	$27 Bn	20%	22	$7.5 Mn
USA	$357 Bn	75%	134	$5 Mn
China	$96 Bn+	50%	15	$10 Mn

India's fintech sector has attracted $27 billion in funding from 2014 to the first half of 2023, with a startup investment CAGR of 20% from 2019 to 2022. The country boasts 22 fintech unicorns and a median ticket size of $7.5 million for fintech deals in 2022. In comparison, the USA leads with $357 billion in funding, a 75% CAGR, 134 unicorns, and a $5 million median ticket size. China follows with over $96 billion in funding, a 50% CAGR, 15 unicorns, and a $10 million median ticket size. This data highlights India's growing prominence in the global fintech landscape.

Fintech in India – Funding Trends

Sl.No	**Fintech**	**Total Funding**	**Funding Deals**	**Mergers & Acquisitions**	**Median Ticket Size**
1	Q2 2023	$0.8 Bn	35	6	$4.8 Mn
		(-57%) YoY	(-56%) YoY	-	(-41%) YoY
2	Q1 2023	$1.3 Bn	29	5	$6.5 Mn
		(-26%) YoY	(-63%)YoY	-	(-16%) YoY
3	Q2 2022	$1.8 Bn	79	8	$8.2 Mn
		(+28%) YoY	(+32%)YoY	-	(+49%) YoY

With a median ticket size of $4.8 million, the Indian fintech sector saw $0.8 billion in total funding in Q2 2023 across 35 deals and 6 M&As. This is a notable year-over-year (YoY) decline: the number of deals fell by 56%, the median ticket size dropped by 41%, and the overall funding declined by 57%. With 29 deals and a median ticket size of $6.5 million, Q1 2023 saw increased funding at $1.3 billion, indicating a YoY fall of 26% in financing and 63% in deals. With 79 deals, $1.8 billion in investment, and a median ticket size of $8.2 million in Q2 2022, the sector was more active, and all metrics showed YoY growth.

Top 10 Biggest Fintech Startup Rounds in H1 2023

Startup Name	HQ	Subsector	Round Stage
Phonepe	Bangaluru	Banking	$850 Mn
DMI Finance	Delhi NCR	Lendingtech	$400 Mn
Insurance Deckho	Delhi NCR	Insurtech	$150 Mn
Mintifi	Mumbai	Lendingtech	$110 Mn
Kreditbee	Bangaluru	Lendingtech	$100 Mn
Stashfin	Delhi NCR	Lendingtech	$100 Mn
UGRO	Mumbai	Lendingtech	$41 Mn
Sarvagram	Mumbai	Lendingtech	$35 Mn
Indifi	Delhi NCR	Lendingtech	$35 Mn
Aviom	Delhi NCR	Lendingtech	$30 Mn

In the first half of 2023, the top 10 largest fintech startup funding rounds in India were led by PhonePe, headquartered in Bengaluru, which secured $850 million in the banking subsector. DMI Finance, based in Delhi NCR, followed with $400 million in lendingtech. Other notable rounds included Insurance Dekho in Delhi NCR with $150 million in insurtech, and Mumbai-based Mintifi with $110 million in lendingtech. Additionally, KreditBee and Stashfin, both from Bengaluru and Delhi NCR respectively, each raised $100 million in lendingtech. The list is dominated by lendingtech startups, indicating a strong investor interest in this subsector.

Indian Fintech Startup Since 2024

Years	Funding Amount ($ Bn)	Deal Count
2014	0.2	38
2015	1.6	85
2016	0.8	108
2017	3.1	140
2018	1.5	140
2019	2.8	132
2020	2.1	144
2021	7.9	282
2022	4.8	253
H1 - 2023	2.1	65

Fintech businesses in India have seen varying trends in investment since 2014. 38 acquisitions totaling $0.2 billion were made in 2014. With 85 deals, funding shot up to $1.6 billion in 2015, but fell to $0.8 billion in 2016 despite 108 acquisitions. There was a notable increase of $3.1 billion over 140 agreements in 2017. Funding ranged from $1.5 billion to $2.8 billion in 2018 and 2019, with about 140 deals. In 2020, the trend persisted at $2.1 billion. With $7.9 billion from 282 deals, the peak was reached in 2021. After that, there was a drop to $4.8 billion in 2022 and $2.1 billion from 65 deals in the first half of 2023.

Indian Fintech Startups Encounter Major Slump in Growth Capital in Q2 2023

Sl.No	Investment Stage	Funding Amount	YoY Change %	Deal Count	YoY Change %
1	Seed Stage	$18 Mn	-85%	16	-48%
2	Bride Funding	$29 Mn	-36%	7	-13%
3	Growth Stage	$82 Mn	-85%	5	-81%
4	Late Stage	$709 Mn	-32%	7	-50%

Indian fintech businesses saw a sharp drop in growth capital in Q2 2023, with funding available at all investment levels. Funding for the seed stage fell by 85% to $18 million, and the number of deals fell by 48% to 16. Bridge finance fell by 36% to $29 million, and there were just 7 agreements, a 13% decline. Growth stage funding fell by 85% to $82 million, and there were only 5 agreements, an 81% decrease. With only 7 deals, late-stage capital dropped 32% to $709 million. These numbers highlight a general decline in investment activity, which is indicative of increased investor caution and difficulties in the market.

India's Top Five Fintech Startups Hubs in Q2 2023

HQ	Funding Amount ($ Mn)
Delhi NCR	476
Bengaluru	279
Mubai	50
Pune	27
Ahmadabad	4

In Q2 2023, Delhi NCR emerged as India's leading fintech startup hub, attracting $476 million in funding. Bengaluru followed with $279 million, reflecting its strong fintech ecosystem. Mumbai secured $50 million, showcasing its continued relevance in the sector. Pune received $27 million, while Ahmedabad garnered $4 million, highlighting their growing but smaller fintech presence. These funding amounts indicate a significant concentration of investment in Delhi NCR and Bengaluru, underscoring their dominance as fintech innovation centers. The disparities in funding across these hubs illustrate varying levels of investor confidence and development within India's fintech landscape.

India's Top Five Fintech Startups Hubs in Q2 2023

Sl.No	HQ	Deal Count ($ Mn)
1	Bengaluru	13
2	Delhi NCR	10
3	Mubai	6
4	Pune	2
5	Chennai	2

In Q2 2023, Bengaluru emerged as India's leading fintech startup hub, securing 13 deals, underscoring its status as a vital innovation center. Delhi NCR followed with 10 deals, showcasing its growing prominence in the fintech landscape. Mumbai, traditionally a financial powerhouse, secured 6 deals, indicating sustained interest but slightly lagging behind the top two regions. Pune and Chennai, with 2 deals each, highlighted their emerging roles in the fintech ecosystem, signaling potential growth areas. This distribution reflects a strong concentration of fintech activity in the southern and northern regions of India, with Bengaluru and Delhi NCR at the forefront.

Fintech in India - Startup M&A Trends

Sl.No	Years	M&A Deal Count
1	2015	5
2	2016	10
3	2017	13
4	2018	17
5	2019	6
6	2020	9
7	2021	27
8	2022	23
9	H1 - 2023	13

The table shows a dynamic trend over time in India's fintech startup M&A activity. There was five agreements in 2015, but by 2018, there were seventeen, a sign of the industry's increasing interest. With just 6 acquisitions in 2019, there was a noticeable decline; however, the numbers increased in the following years, reaching a peak of 27 in 2021, which was indicative of increased consolidation activity throughout the pandemic. Despite a minor decline to 23 deals in 2022, 13 agreements were completed in the first half of 2023, indicating a continuous momentum and investor confidence in the Indian fintech market.

Major Findings

We predict that India's internet user base will rise by 6.13% annually on average between 2023 and 2030, reaching 1.343 billion people by that time. This expansion will slow down in later years within the predicted timeframe. The developing mobile-first culture, rising affordability, and an increase in digital transactions have all contributed to the progress of the digital economy, which offers businesses and entrepreneurs enormous potential to reach a large and interested audience. Furthermore, the government's efforts to increase internet coverage in rural areas should lead to inclusive growth and further accelerate digital transformation.

The financial industry in India is mounting at an exponential rate, propelled by a substantial and active user base, substantial capital, and a flourishing startup ecosystem that has produced a multitude of unicorns and soonicorns. By prioritising innovation, cooperation, and sustained investment, the fintech industry is well-positioned to realise its enormous potential and become a worldwide leader in the financial technology space. 22 unicorns across a variety of sectors and significant funding highlight the industry's maturity and potential. Bangalore's status as one of the leading locations for fintech unicorns emphasises how vital a role it plays in fostering innovation and entrepreneurship.

The Indian fintech ecosystem has produced 34 Soonicorns, indicating significant room for future growth and innovation. Focusing on investment and assistance in Bangalore, these youthful unicorns are poised to significantly influence the direction of Indian fintech and aid in its international recognition. More than 12 companies in the growth stage have grown, indicating a strong talent pool and a viable pipeline for further development. These startups heavily influence the future of Indian fintech and its ability to maintain its growth and leadership in the global market.

Due to favourable legislative frameworks, growing smartphone usage, and more internet penetration, India's fintech business is poised for rapid expansion. The dominance of LendingTech and the enormous growth potential of InsurTech and Neobanking highlight the primary industries propelling this rise. Furthermore, the expansion of fintech SaaS, investment tech, and payments highlights the variety of prospects in the fintech industry. Due to its quick expansion, the Indian fintech business offers a plethora of chances for investors, entrepreneurs, and well-established financial institutions to capitalise on.

India has made a name for itself in the global fintech scene by drawing large sums of money and creating profitable firms. India's steady growth and high median ticket size suggest that it has the ability to overtake the US as a significant global competitor, despite the US leading the world in total financing and unicorn numbers. The Indian fintech market still has a lot of room to develop and innovate in the future, even in the face of short-term obstacles like funding volatility and regulatory scrutiny.

Recommendations

We propose the following strategic recommendations for businesses, investors, and entrepreneurs looking to capitalise on the booming Indian market from 2023 to 2030, based on our extensive analysis of the Indian digital and fintech landscape.

India expected to reach 1.343 billion internet users by 2030, businesses should focus on enhancing their online presence and digital marketing strategies. The internet penetration rate reaches a large audience, particularly in rural areas, where the government's emphasis on internet access promises inclusive growth.

Given India's mobile-first culture, businesses should prioritise mobile-friendly platforms and applications. Optimising services for smartphones will ensure better reach and user engagement.

The Indian fintech market is experiencing exponential growth, driven by a large and engaged user base, substantial funding, and a thriving startup ecosystem. Investors should focus on key segments such as LendingTech, InsurTech, Neobanking, and fintech SaaS, which are poised for significant expansion.

Bengaluru, Delhi NCR, and Mumbai are the top fintech hubs in India, with a concentration of unicorns and soonicorns. Businesses and investors should consider establishing a presence in these cities to tap into their robust ecosystems, talent pools, and capital access.

The existence of numerous growth-stage startups and soonicorns indicates a strong pipeline for future success. Supporting early-stage fintech startups with funding and mentorship can yield significant returns as these companies mature and innovate.

The Indian fintech market is undergoing a period of consolidation and increased regulatory scrutiny. Businesses should stay informed about regulatory changes and adapt their strategies accordingly. Collaboration and strategic partnerships can help navigate the evolving landscape.

India’s position as the world’s largest recipient of personal remittances and the dynamic cross-border payment market present lucrative opportunities. Businesses should innovate and invest in B2B neobanking and international payment gateways to address the growing demand for efficient cross-border transactions.

While market expansion and user acquisition are crucial, fintech startups should also prioritise operational profitability. Sustainable growth strategies, cost optimisation, and potential mergers and acquisitions will be key to long-term success.

Continuous innovation is vital for staying competitive. Businesses should leverage emerging technologies such as AI, blockchain, and advanced analytics to enhance their offerings and improve the customer experience.

The global economic climate and investor preferences significantly influence the fintech market. Staying attuned to global trends and maintaining flexibility in business strategies will help mitigate risks and seize new opportunities.

By implementing these strategies, stakeholders can effectively navigate the dynamic Indian digital and fintech landscapes, ensuring sustainable growth and a strong competitive edge in the global market.

Conclusion

Between 2023 and 2030, the Indian fintech and digital industries are expected to grow significantly, presenting previously unheard-of chances for investors, companies, and entrepreneurs. Due to rising affordability and a mobile-first mentality, the digital economy is predicted to flourish, with 1.343 billion people estimated to be online by 2030. Inclusive growth has the potential to be further amplified by the government's focus on rural internet connectivity. Fintech is unique in that it is growing at an exponential rate, supported by significant capital, a vibrant startup ecosystem, and the development of many unicorns and soonicorns. Significant returns can be obtained by making strategic investments in important fintech sectors including Neobanking, InsurTech, and LendingTech. It will be beneficial to have a presence in important centres with strong ecosystems and talent pools, such as Bengaluru, Delhi NCR, and Mumbai. Navigating this changing landscape requires supporting early-stage fintech businesses and making adjustments for legislative changes and industry consolidation. Furthermore, there are significant prospects in the rapidly expanding cross-border payment business, which is fuelled by India's status as the world's largest recipient of personal remittances. Long-term success will be guaranteed by placing a strong emphasis on operational profitability, sustainability, and ongoing innovation. Utilising cutting-edge technology such as blockchain and artificial intelligence will improve services and client interactions. Remaining aware of worldwide patterns and investor mood can help stakeholders reduce risks and take advantage of fresh opportunities. Through adoption of these strategic ideas, stakeholders can proficiently navigate the ever-changing Indian fintech and digital landscapes, guaranteeing long-term growth and a robust competitive advantage in the international market. This is a promising time for fintech innovation and fast digital transformation; those that move quickly and intelligently will make a lot of money in this emerging field.

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THE ROLE OF NATIONAL EDUCATION POLICY IN ACHIEVING SUSTAINABLE DEVELOPMENT GOALS (SDGS) IN INDIA

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Abstract

The most important way to make our planet environment-friendly is through Education, which is necessary for all. Sustainable development has become very important in daily life, without practicing it, we cannot make changes to make the world more economical, social, and environmentally friendly. India is now one of the most important countries in the world for its hasty progress. The sustainable development policy balances opposing elements such as economic growth and climate change. SDG 4 emphasizes the importance of providing inclusive and equitable quality education. The National Education Policy (2020) has placed particular emphasis on SDG 4 to guarantee quality education across the country. It is essential to recognize that education is the foundation of sustainable development, and merely discussing the concept of 'Sustainable Development' in schools and institutions will not lead to progress. We must all take action, not individually, but collectively. This article focuses on the role of quality education in higher education to achieve the goals of sustainable development and also emphasizes the importance of quality education in promoting sustainable development.

Keywords: Sustainable Development, Environmentally Friendly, National Education Policy, Quality Education.

Introduction

Literacy and education are key pillars that shape a society's cultural identity and are critical for a nation's socioeconomic progress. They enhance individual potential and contribute to the development of a skilled workforce, which is essential for driving economic growth, innovation, and overall societal well-being. The United Nations General Assembly adopted the 2030 Agenda for Sustainable Development, which includes 17 goals aimed at addressing a wide range of global challenges. These Sustainable Development Goals (SDGs) focus on issues like quality education, poverty, inequality, climate change, environmental sustainability, and global peace, with the overarching aim of creating a more just, equitable, and sustainable world by 2030. The Sustainable Development Goals (SDGs) were officially implemented in January 2016 and are set to guide global development efforts over the next fifteen years. Goal 4 of this agenda, which focuses on Quality Education, emphasizes the provision of equitable education promoting lifelong learning opportunities for all. This agenda underscores the necessity of shifting fundamental perspectives, recognizing the dynamic interconnections between economic, social, and environmental dimensions, thereby driving integrated and sustainable development across all nations. The education is often regarded as one of the most powerful tools for self-reliance and development. However, the focus of this paper is on how quality education contributes to individual development, which, in turn, influences the overall growth and prosperity of a country. The argument here is that without the upliftment of individuals, a nation cannot truly flourish. The paper seeks to examine the extent to which education is accessible to all students, whether some sections of society benefit disproportionately while others remain excluded, and whether the education provided today aligns with the standards proposed under the Sustainable Development Goals (SDGs). We must all take action, not individually, but collectively.

Review of Literature

Leder and Bharucha (2015) This paper examines the application of Basil Bernstein's pedagogical theory in teaching the concept of water in geography classrooms at English-medium schools in Pune. It highlights the shift from traditional, teacher-centered methods to more participatory, student-focused approaches, in line with the UN Decade of Education for Sustainable Development (2005-2014). The study identifies challenges such as outdated teaching methods, teacher competency, large class sizes, and curriculum relevance. It concludes that for education for sustainable development to be effective, there needs to be a focus on student participation, modernized teaching practices, and a curriculum that equips students with practical sustainability skills and values.

Fulford (2016) The analysis of returns to education in India revealed that individuals with more years of education experienced higher per capita consumption, with each additional year of education increasing consumption by about 4 percent. However, this effect was not observed for females. The study also found that the average returns to education were lower for women compared to men, primarily due to the underutilization of female workers in the production process.

Sen and Cekerol (2018) The development of open universities in Turkey has been recognized for offering affordable, high-quality education to a large number of students, with program diversity playing a key role in increasing enrollment. Cekerol (2018) highlighted the importance of distance education in Turkey, despite challenges like quotas and organizational issues. In Nigeria, Cherechi (2018) identified the need for policy reforms in teacher education to address 21st-century challenges. These studies reflect ongoing educational transformations worldwide.

Moyo et. al. (2018) This study investigates the role that teacher education (TE) can play in fostering a culture of technology design, innovation, and digital literacy as essential drivers of Africa's socioeconomic transformation. The analysis revealed that TE institutions face significant challenges in integrating techno-digital teaching methods, often relying on traditional, chalk-and-talk approaches that set an outdated precedent. Using the qualitative "analytical model of constant comparison" for data collection and analysis, the study concluded that if TE institutions incorporate technology-focused courses into their curricula, graduates are more likely to promote and nurture a sustainable scientific culture in schools. This, in turn, would benefit both immediate educational outcomes and long-term socio-economic development.

Objectives of the Study

This study aims to examine the crucial role of education in fostering sustainable development in India, focusing on how education and sustainable development are interconnected. It will explore how various aspects of education—such as curriculum, teaching methods, and access—contribute to the broader goals of sustainability.

Significance of the Study

Education plays a crucial role in the sustainable development of economies by fostering skilled labor, promoting sustainable lifestyles, and combating poverty. The integration of sustainability into education depends on innovation and government support. As sustainability has become an urgent issue in contemporary society, various academic fields have started revising their curricula to include sustainable development, extending beyond just specialized sustainability courses. According to UNESCO (2020), education is key to creating a more sustainable future for all. To ensure students grasp the interconnectedness of environmental, social, and economic systems, it is essential to embed sustainability into all areas of study (Gamage, 2022). Education must provide students with the knowledge, skills, and ethical values necessary to understand and responsibly address global challenges. However, despite the growing need, sustainable development is still not widely reflected in teaching practices. A study in the Journal of Cleaner Production highlights that sustainable development is often missing from higher education practices and materials. As a result, educators must take a more active role in incorporating sustainability into all subject areas.

Research Methodology

This study is primarily based on secondary data, which serves as the foundation for the analytical approach used to achieve the research objectives. The research is qualitative and descriptive in nature, relying on information gathered from prior studies and authoritative books and journals focused on 21st-century education in India and sustainable development. The study is theoretical, and content analysis is the main method employed. Additionally, the researcher gathered data from a range of sources, such as books, primary census data, research abstracts, academic journals, publications by renowned authors, and reputable academic websites.

National Education Policy 2020 and Sustainable Development

India's National Education Policy (NEP) 2020 emphasizes the importance of incorporating sustainability principles across all levels of education and underscores the role of schooling in promoting sustainable development. The policy includes several provisions designed to integrate sustainability into the education system, recognizing it as a key priority for the future of education in India. The NEP highlights the need to embed environmental education throughout all stages of learning, from primary to higher education. This includes raising awareness of environmental issues, encouraging sustainable practices, and fostering the skills essential for advancing sustainable development. acknowledges the essential role of educators in advancing sustainable development within education. It emphasizes the importance of incorporating sustainability into teacher preparation courses and encourages learning through practical, hands-on experiences. This includes real-world experiential learning to develop the skills and attitudes needed to support sustainability. Additionally, the policy promotes technical education and skill development programs that are suited to local contexts, fostering sustainable livelihoods and income opportunities. The use of technology in education to enhance awareness and promote sustainable behavior. It recognizes technology's potential to drive sustainable development. The policy includes provisions that support environmental conservation and education for sustainable development, covering areas such as instruction, hands-on learning, career education, teacher training, and the application of sustainability through technology. By integrating sustainable practices across all levels, the NEP aims to create a more inclusive and sustainable educational system that equips students with the knowledge, skills, and mindset needed for long-term progress.

Challenges to the Advancement of Sustainable Education in India

There is a general lack of awareness about sustainable development and its principles among the wider public, including educators, parents, and students, which hinders the advancement of sustainable development education. Many schools and educational institutions in India are also inadequately equipped, with insufficient access to essential resources such as quality laboratories, libraries, and teaching facilities. Additionally, the significant financial investment required to develop and implement sustainable development education initiatives is often unavailable, as the education system faces persistent funding shortages. This creates substantial challenges in incorporating sustainable development into the educational framework. In India, significant socioeconomic disparities hinder access to quality education for sustainable development, particularly in underprivileged areas. As a result, there are challenges in providing high-quality educational resources that foster sustainable growth in these regions. Furthermore, India's educational system largely prioritizes traditional subjects such as science, mathematics, and language, with limited emphasis on sustainable development. This makes it difficult to incorporate sustainability concepts into the curriculum. Additionally, key stakeholders such as policymakers, educators, and parents, who are accustomed to conventional educational structures, often resist embracing new ideas.

Recommendations

Public awareness campaigns play a critical role in highlighting the importance of sustainable development and creating a demand for education focused on sustainability. Teachers are central to driving sustainable progress in education, making it essential to equip them with the necessary training and skills to effectively teach sustainable development concepts. Implementing education for sustainable development (ESD) requires significant financial investment to design and execute relevant programs, underscoring the need for adequate funding for initiatives that promote sustainability within the education sector. Sustainability principles should be integrated into the curricula across all academic disciplines and educational levels, with a particular emphasis on project-based and experiential learning. Infrastructural support, including well-equipped classrooms, libraries, and laboratories, is essential to facilitate effective ESD. To ensure broad-based support and successful implementation, it is vital to involve policymakers, educators, parents, and community stakeholders in the development and execution of ESD programs. Additionally, fostering research and development will help identify effective approaches and models for the integration of sustainability in education. Special attention should be given to underprivileged communities, including rural and marginalized populations, ensuring they have access to high-quality education and the necessary resources for ESD.

Conclusion

The successful implementation of NEP 2020 necessitates overcoming substantial resource constraints. To address this challenge, it is imperative to explore innovative financing mechanisms that extend beyond traditional government funding. Public-private partnerships, along with alternative models such as social impact bonds, present promising avenues for securing the required resources. Quality education plays a crucial role in addressing sustainability challenges. As a youthful nation, India has the opportunity to empower its young population by creating more opportunities and providing access to quality education. This can instill a sense of responsibility, raise awareness, and equip individuals with the knowledge and skills necessary to tackle sustainability issues. Essentially, it is about leveraging the demographic dividend. India's education system has increasingly aligned itself with the goals of sustainable development. The government's commitment to achieving SDG-4 is reflected in the design of the National Education Policy (NEP) 2020, which incorporates the principles of sustainable development to promote and advance sustainability efforts, fostering the holistic development of the nation.

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A STUDY ON ACCOUNTING PRACTICES WITH RESPECT TO DEMOGRAPHIC PROFILE OF SMALL ENTERPRISES IN RAMANATHAPURAM DISTRICT

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Abstract

Accounting procedures are essential for understanding how businesses operate over time. In order to pay for operating and administrative expenses, businesses aim to turn a profit through trade, manufacturing, and service operations. Well-established companies follow the methodical accounting processes required by company rules, and they hire experts to handle accounting records. On the other hand, micro and small businesses frequently use daily reference and single-entry accounting instead of formal accounting. Promoting accounting awareness among SMEs is critical, given the rapid advancements in technology and the need to remain competitive globally. The purpose of this study is to investigate the knowledge and awareness levels of small businesses and highlight the importance of accounting practices. The study uses a descriptive methodology to gather primary and secondary data. Structured questionnaires are used for data collection, and the SPSS Package is used for statistical analysis. This study aims to improve small businesses' financial management by illuminating accounting procedures.

Keywords: Accounting practices, Growth, Awareness, Problems, performance, SMEs.

Introduction

Accounting data is essential for making critical financial decisions and assessments, and it is the foundation of long-term profitability for small and medium-sized businesses (SMEs). Using various accounting methodologies including depreciation, payment procedures, and assessment of bad debts to judge financial health, loan officers use this data to assess SMEs for creditworthiness. Many SMEs underuse technology improvements, leading to inadequate computerized accounting systems, even when they follow basic accounting rules. Accounting functions include keeping track of financial transactions and producing detailed financial statements, which help companies bill customers, keep an eye on cash flow, and assess profitability. For the purpose of producing yearly financial statements, which include all financial transactions such as purchases, expenses, and payments, accuracy in accounting processes is critical. SMEs can learn a great deal about their general health and financial performance by keeping accurate records. The SMEs Standard highlights the significance of Accounting Information Systems (AIS) for effective planning and decision-making, and it is designed for companies that are not governed by the public.

Governments all throughout the world acknowledge the role that SMEs play in economic development, however many definitions of SMEs exist, such as asset ownership, workforce size, and market price. SMEs, which are defined as independent businesses with less than fifty employees, are important to international business operations. The general view is that SMEs are important contributors to economic growth, even though each nation has its own set of requirements. This emphasizes the necessity of strong accounting procedures to support SMEs' operations and promote financial transparency.

Review of Literature

Zhou Li Juan (2010) conducted a study that demonstrates the strong correlation between the rapid expansion of information technology, especially in large enterprises, and the progress made in computerized accounting. Accounting information is widely used by SMEs in China, but there are a number of obstacles that prevent it from being implemented effectively, which has an influence on the country's economic progress.

Mohamed Dahlan Ibrahim and Mohd Azian Husin (2014) explore the role of accounting services and their impact on SME productivity. Using a conceptual framework to clarify the link between accounting firms and SMEs, their study looks at differences in service quality metrics between the two groups.

In their 2015 study, **Susan Peter Teru and Daw Hla** explore how well Accounting Information Systems (AIS) support internal controls, business transactions, and management decision-making processes. They highlight the vital role that AIS play in these areas. Additionally,

Glynn Lowth Nottingham, Malcolm Prowle, and Michael Lucas (2013) highlight how management accounting education can enhance the performance of SMEs and encourage SMEs' executives to become more aware of and use decision-support tools.

Despite the help from SIDBI, **Katia (2014)** highlights difficulties such labor skills, technological access, banking facilities, and labor skills growth and obstacles encountered by MSMEs in India.

Goyal et al. (2012) investigate the incidence of sick units among MSMEs in India, stressing the difficulties these businesses confront and the government's attempts to lessen their effects.

Jegede et al. (2012) emphasize the necessity for specialized knowledge and regulatory support, attributing the expansion of small and medium-sized firms in Nigeria to profitability and the desire for self-employment.

Ngoc Bul Thi et al. (2020) examine how management accounting is used in Vietnamese companies and find differences in how large and small organizations use contemporary tactics. In 2020,

Rapiah Mohamed and Che Zuriana Muhammad Jamil investigate how environmental management accounting affects the performance of Malaysia's industrial sector, pointing up shortcomings in the state of the art. In the meantime,

SaseelaBalagobei (2020) highlights the significance of objective achievement and record-keeping while examining the connection between accounting practices and organizational performance in Sri Lankan SMEs. In conclusion,

Banele Dlamini and Daniel P. Schutte (2021) investigate how SMEs in Zimbabwe implement management accounting methods, emphasizing the need for more study to fully comprehend how these practices are used and how they affect the success of businesses.

Statement of the Problem

The literature analysis identifies issues unique to the setting of MSMEs in developing nations like Nigeria and India. Katia (2014) underscores challenges such limited availability of banking services, technology, and experienced people, even with the backing from organizations like SIDBI. In a similar vein, Goyal et al. (2012)'s research illuminates the incidence of sick units among MSMEs in India, pointing to structural obstacles that obstruct their expansion and viability. According to Jegede et al. (2012), there are a number of obstacles preventing small and medium-sized businesses in Nigeria from growing, including a lack of regulatory support and specialized knowledge. This emphasizes the need for focused interventions to address these issues and create an environment that is supportive of SME development. As noted in the study by Ngoc Bul Thi et al. (2020), the literature review draws attention to differences in the adoption of management accounting methods between large and small firms. Small organizations frequently rely on outdated techniques, which may hinder their capacity to allocate resources and manage costs efficiently. In contrast, large businesses use contemporary management accounting methodologies to improve their decision-making processes. This emphasizes the necessity of capacity-building programs meant to provide SMEs with the know-how and resources they need to improve their financial management capacities. With this , examination of the literature highlights a number of issues that SMEs confront with regard to accounting procedures, such as poor technology adoption, restricted access to high-quality accounting services, and a deficiency of financial literacy among SME leaders. In order to improve SMEs' overall performance and financial management skills and, eventually, support their long-term growth and sustainability, it is imperative that these issues be addressed.

Objective of the Study

To study accounting practices with respect to demographic profile of small enterprises in Ramanathapuram district

Research Methodology

A systematic approach will be used as part of the research methodology for the study "Accounting Practices of Small Enterprises in Ramanathapuram" in order to collect detailed information and insights into the accounting procedures and difficulties that small businesses in the area experience. For a thorough examination of the material, the methodology will combine quantitative and qualitative research methods.

Results and Discussions

Gender And Community in Accounting Practices Of Small Enterprises

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Accounting Method	Male	226	2.0133	.79151	.05265
	Female	169	1.9645	.80099	.06161
Payment Method	Male	226	2.0664	.82732	.05503
	Female	169	2.0473	.77775	.05983
Bad Debts Estimation	Male	226	2.0796	.80710	.05369
	Female	169	2.0296	.81960	.06305
Depreciation Method	Male	226	2.1150	.78034	.05191
	Female	169	2.0592	.78455	.06035
Business Documents	Male	226	2.0929	.79735	.05304
	Female	169	2.1420	.80398	.06184
Reporting Aspects	Male	226	2.1504	.81346	.05411
	Female	169	1.9941	.82734	.06364
Accounting System Aspects	Male	226	2.1593	.83869	.05579
	Female	169	2.0533	.79627	.06125
Recording Aspects	Male	226	2.0221	.85085	.05660
	Female	169	2.0473	.83674	.06436
Record Aspects	Male	226	2.1460	.79493	.05288
	Female	169	2.0178	.73576	.05660
Report Aspects	Male	226	1.9823	.76574	.05094
	Female	169	2.1716	.74811	.05755
Accounting Knowledge	Male	226	2.1504	.73902	.04916
	Female	169	2.0592	.73763	.05674
Accounting Disclosure	Male	226	2.1106	.77240	.05138
	Female	169	1.9822	.78280	.06022
Recording Control	Male	226	2.0575	.88003	.05854

	Female	169	2.0473	.83674	.06436
Financial Control	Male	226	2.1681	.81544	.05424
	Female	169	2.0000	.77919	.05994

With a focus on a number of topics, including accounting method, payment method, bad debts estimation, depreciation method, business documents, reporting aspects, accounting system aspects, recording aspects, record aspects, report aspects, accounting knowledge, accounting disclosure, recording control, and financial control, Table 1 provides descriptive statistics on gender differences in accounting practices among small businesses.

The majority of accounting procedures have mean scores that are generally similar for both male and female respondents, suggesting that both genders adhere to accounting rules to a similar extent. On the other hand, several noteworthy variations have been noted in particular places. When it comes to aspects like payment methods, depreciation methods, estimation of bad debts, business documents, reporting aspects, accounting system aspects, record aspects, report aspects, accounting knowledge, accounting disclosure, recording control, and financial control, for example, men tend to score slightly higher than women. This implies that businesses controlled by men could adhere to these accounting norms and practices a little bit more.

However, when it comes to recording aspects, female responders typically receive slightly higher scores. This suggests that slightly greater attention might be paid to the recording and documenting of financial transactions by female-owned businesses. Overall, the patterns indicate a somewhat similar level of adherence to accounting rules across small firms in both gender groups, despite some disparities in specific accounting practices between male and female respondents. These results offer insightful information about the gender dynamics of accounting procedures in small business settings.

Gender Vs Accounting Practices of Small Enterprises

Ho: There is no significant difference between gender with respect to accounting practices based in accounting practices of small enterprises.

Levene's Test for Equality of Variances				t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Accounting Method	Equal variances assumed	.207	.649	.603	393	.547
	Equal variances not assumed			.602	359.713	.548
Payment Method	Equal variances assumed	3.244	.072	.232	393	.817
	Equal variances not assumed			.234	373.123	.815
Bad Debts Estimation	Equal variances assumed	.001	.973	.606	393	.545
	Equal variances not assumed			.605	359.028	.546
Depreciation Method	Equal variances assumed	.117	.733	.702	393	.483
	Equal variances not assumed			.702	360.993	.483
Business Documents	Equal variances assumed	.314	.575	-.603	393	.547
	Equal variances not assumed			-.603	360.429	.547
Reporting Aspects	Equal variances assumed	.312	.577	1.876	393	.061
	Equal variances not assumed			1.872	358.719	.062
Accounting System Aspects	Equal variances assumed	4.930	.027	1.270	393	.205
	Equal variances not assumed			1.280	371.472	.201
Recording Aspects	Equal variances assumed	.139	.710	-.293	393	.769
	Equal variances not assumed			-.294	365.213	.769
Record Aspects	Equal variances assumed	8.710	.003	1.638	393	.102
	Equal variances not assumed			1.656	375.608	.099
Report Aspects	Equal variances assumed	.623	.431	-2.455	393	.015
	Equal variances not assumed			-2.463	366.424	.014

** Significance at 5% level ** Significance at 1% level*

The findings of independent t-tests used to investigate the variations in accounting procedures across different small business groups are shown in Table 2. The null hypothesis (Ho) postulates that there are no appreciable variations in accounting procedures among communities. To ascertain whether the group variances are equal, the Levene's Test for Equality of Variances was run. With a few exceptions, including Reporting Aspects, Accounting System Aspects, Record Aspects, and Report Aspects, where the variances were not equal, the assumption of equal variances was met in the majority of cases. Then, taking into account both equal and unequal variances, the t-tests for equality of means were performed. P-values ($p > 0.05$) show that the difference in means between communities for factors such Accounting Method, Payment Method, Bad Debts Estimation, Depreciation Method, Business Documents, and Recording Aspects was not statistically significant.

With p-values less than 0.05, the t-tests for Reporting Aspects and Report Aspects, however, showed statistically significant variations between communities. This implies that different groups of small businesses have rather distinct reporting methods and financial reporting elements. It's interesting to note that, whereas Accounting System Aspects initially revealed a large difference when assuming equal variances, this difference vanished when uneven variances were taken into account. Overall, our results show that although most accounting processes do not differ much amongst communities, small businesses do differ noticeably in terms of reporting practices and financial reporting features, which may call for additional research and action.

Marital status Vs Accounting Practices of Small Enterprises

Ho: There is no significant difference between Marital status with respect to Accounting practices based in Accounting practices of small enterprises.

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Accounting Method	Equal variances assumed	.842	.359	-.675	393	.500
	Equal variances not assumed			-.685	238.118	.494
Payment Method	Equal variances assumed	.544	.461	-.265	393	.792
	Equal variances not assumed			-.268	237.152	.789
Bad Debts Estimation	Equal variances assumed	1.569	.211	-.262	393	.793
	Equal variances not assumed			-.258	220.584	.797
depreciation Method	Equal variances assumed	.125	.724	.981	393	.327
	Equal variances not assumed			.965	220.831	.336
Business Documents	Equal variances assumed	.067	.796	1.612	393	.108
	Equal variances not assumed			1.580	219.371	.115
Reporting Aspects	Equal variances assumed	2.349	.126	-.649	393	.517
	Equal variances not assumed			-.668	245.931	.505

Accounting System Aspects	Equal variances assumed	.379	.539	-.560	393	.576
	Equal variances not assumed			-.567	237.012	.571
Recording Aspects	Equal variances assumed	.658	.418	-1.037	393	.300
	Equal variances not assumed			-1.033	227.313	.303
Record Aspects	Equal variances assumed	1.435	.232	2.135	393	.033
	Equal variances not assumed			2.143	231.802	.033
Report Aspects	Equal variances assumed	1.171	.280	-.907	393	.365
	Equal variances not assumed			-.898	224.524	.370

** Significance at 5% level ** Significance at 1% level*

The results of independent t-tests examining the differences in accounting methods between different marital status groups of small businesses are shown in Table 3. Based on marital status, there should be no discernible differences in accounting methods, according to the null hypothesis (Ho). The original purpose of Levene's Test for Equality of Variances was to evaluate the equality of variances between groups. The assumption of equal variances was met for the most part, with the exception of a few variables that displayed uneven variances, namely Record Aspects.

After that, t-tests were run, taking into account both equal and unequal variances, to check for equality of means. The variations in averages between the marital status groups were not statistically significant ($p > 0.05$) for the Accounting Method, Payment Method, Bad Debts Estimation, Depreciation Method, Business Documents, Reporting Aspects, Accounting System Aspects, Recording Aspects, and Report Aspects. With a p-value less than 0.05, a statistically significant difference was found for Record Aspects, showing a noteworthy variation in recording methods between the various marital status groups. Overall, the substantial difference in Record parts indicates that marital status may have an impact on some parts of accounting practices among small firms, even though most accounting practices do not show significant variances across marital status groups. Lawmakers and small business owners may find great value in further research into the causes of this discrepancy.

Age and Accounting Method in Small Enterprises

Null Hypothesis (Ho): There is no significant association between age group of the respondents and Accounting method of community in Accounting practices of small enterprises.

Cross tabulation:

Age Group	Accounting Method	Low	Moderate	High	Total
Up to 30 years	Count	38	42	49	129
	% within Age	29.5%	32.6%	38.0%	100.0%
31 to 50 years	Count	70	87	55	212
	% within Age	33.0%	41.0%	25.9%	100.0%
Above 50 years	Count	18	17	19	54
	% within Age	33.3%	31.5%	35.2%	100.0%
Total	**Count**	**126**	**146**	**123**	**395**
	% within Age	**31.9%**	**37.0%**	**31.1%**	**100.0%**

Chi-Square Tests:

Pearson Chi-Square: 6.491 (df = 4, p = .165)

Likelihood Ratio: 6.486 (df = 4, p = .166)

Linear-by-Linear Association: 1.048 (df = 1, p = .306)

**Significance at 1% level *Significance at 5% level*

Chi-square test was applied to test the association between age group and accounting period of community based in Accounting practices of small enterprises in Ramanathapuram District. The test reveals that the calculated chi-square value is 6.491[a] p-value is .165 at 1 per cent level of significance. Since the p-value is less than 0.01 ($x^{2} = 6.497^{a,}$ p< 0.01) the null hypothesis is rejected. Hence, there is a significant association between age group and Accounting Method of community based in Accounting practices of small enterprises. It is clear that age group is one of the major parameters to measure the Accounting Method.

Age And Payment Method in Small Enterprises

Null Hypothesis (Ho): There is no significant association between age group of the respondents and Payment method of community in Accounting practices of small enterprises.

Cross tabulation:

Age Group	Payment Method	Low	Moderate	High	Total
Up to 30 years	Count	32	46	51	129
	% within Age	24.8%	35.7%	39.5%	100.0%
31 to 50 years	Count	74	76	62	212
	% within Age	34.9%	35.8%	29.2%	100.0%
Above 50 years	Count	11	16	27	54
	% within Age	20.4%	29.6%	50.0%	100.0%
Total	**Count**	**117**	**138**	**140**	**395**
	% within Age	**29.6%**	**34.9%**	**35.4%**	**100.0%**

Chi-Square Tests:

Pearson Chi-Square: 11.209 (df = 4, p = .024)

Likelihood Ratio: 11.133 (df = 4, p = .025)

Linear-by-Linear Association: 0.017 (df = 1, p = .896)

**Significance at 1% level *Significance at 5% level*

Chi-square test was applied to test the association between age group and Payment Method of community based in Accounting practices of small enterprises in Ramanathapuram District. The test reveals that the calculated chi-square value is 11.209[a] p-value is .024 at 1 per cent level of significance. Since the p-value is less than 0.01 ($x^{2} = 11.209^{a,}$ p< 0.01) the null hypothesis is rejected. Hence, there is a significant association between age group and Payment Method of community based in Accounting practices of small enterprises. It is clear that age group is one of the major parameters to measure the Payment Method.

Age And Bad Debts Estimation in Small Enterprises

Null Hypothesis (Ho): There is no significant association between age group of the respondents and Bad debts estimation of community in Accounting practices of small enterprises.

Cross tabulation:

Age Group	Bad Debts Estimation	Low	Moderate	High	Total
Up to 30 years	Count	38	55	36	129
	% within Age	29.5%	42.6%	27.9%	100.0%
31 to 50 years	Count	65	55	92	212
	% within Age	30.7%	25.9%	43.4%	100.0%
Above 50 years	Count	16	24	14	54
	% within Age	29.6%	44.4%	25.9%	100.0%
Total	**Count**	**119**	**134**	**142**	**395**
	% within Age	**30.1%**	**33.9%**	**35.9%**	**100.0%**

Chi-Square Tests:

Pearson Chi-Square: 15.772 (df = 4, p = .003)

Likelihood Ratio: 15.904 (df = 4, p = .003)

Linear-by-Linear Association: 0.171 (df = 1, p = .679)

*Significance at 1% level *Significance at 5% level*

Chi-square test was applied to test the association between age group and Bad debts estimation of community based in Accounting practices of small enterprises in Ramanathapuram District. The test reveals that the calculated chi-square value is 15.772[a] p-value is .003 at 1 per cent level of significance. Since the p-value is less than 0.01 ($x^{2} = 15.772^{a,}$ p< 0.01) the null hypothesis is rejected. Hence, there is a significant association between age group and Bad debts estimation of community based in Accounting practices of small enterprises. It is clear that age group is one of the major parameters to measure the Bad debts estimation.

Age And Bad Debts Estimation in Small Enterprises

Null Hypothesis (Ho): There is no significant association between age group of the respondents and Bad debts estimation of community in Accounting practices of small enterprises.

Cross tabulation

Age Group	Bad Debts Estimation	Low	Moderate	High	Total
Up to 30 years	Count	38	55	36	129
	% within Age	29.5%	42.6%	27.9%	100.0%
31 to 50 years	Count	65	55	92	212
	% within Age	30.7%	25.9%	43.4%	100.0%
Above 50 years	Count	16	24	14	54
	% within Age	29.6%	44.4%	25.9%	100.0%
Total	**Count**	**119**	**134**	**142**	**395**
	% within Age	**30.1%**	**33.9%**	**35.9%**	**100.0%**

Chi-Square Tests:
Pearson Chi-Square: 15.772 (df = 4, p = .003)
Likelihood Ratio: 15.904 (df = 4, p = .003)
Linear-by-Linear Association: 0.171 (df = 1, p = .679)
*Significance at 1% level *Significance at 5% level*

Chi-square test was applied to test the association between age group and Bad debts estimation of community based in Accounting practices of small enterprises in Ramanathapuram District. The test reveals that the calculated chi-square value is 15.772[a] p-value is .003 at 1 per cent level of significance. Since the p-value is less than 0.01 (x^2 = 15.772[a], p< 0.01) the null hypothesis is rejected. Hence, there is a significant association between age group and Bad debts estimation of community based in Accounting practices of small enterprises. It is clear that age group is one of the major parameters to measure the Bad debts estimation.

Age And Depreciation Method in Small Enterprises

Null Hypothesis (Ho): There is no significant association between age group of the respondents and Depreciation Method of community in Accounting practices of small enterprises.

Cross tabulation:

Age Group	Depreciation Method	Low	Moderate	High	Total
Up to 30 years	Count	40	47	42	129
	% within Age	31.0%	36.4%	32.6%	100.0%
31 to 50 years	Count	48	81	83	212
	% within Age	22.6%	38.2%	39.2%	100.0%
Above 50 years	Count	16	23	15	54
	% within Age	29.6%	42.6%	27.8%	100.0%
Total	**Count**	**104**	**151**	**140**	**395**
	% within Age	**26.3%**	**38.2%**	**35.4%**	**100.0%**

Chi-Square Tests:
Pearson Chi-Square: 4.789 (df = 4, p = .310)
Likelihood Ratio: 4.823 (df = 4, p = .306)
Linear-by-Linear Association: 0.143 (df = 1, p = .706)
*Significance at 1% level *Significance at 5% level*

Chi-square test was applied to test the association between age group and Depreciation Method of community based in Accounting practices of small enterprises in Ramanathapuram District. The test reveals that the calculated chi-square value is 4.789[a] p-value is .310 at 1 per cent level of significance. Since the p-value is less than 0.01 (x^2 = 4.789[a], p< 0.01) the null hypothesis is rejected. Hence, there is a significant association between age group and Depreciation Method of community based in Accounting practices of small enterprises. It is clear that age group is one of the major parameters to measure the Depreciation Method.

Age And Business Documents in Small Enterprises

Null Hypothesis (Ho): There is no significant association between age group of the respondents and Business Documents of community in Accounting practices of small enterprises.

Cross tabulation:

Age Group	Business Documents	Low	Moderate	High	Total
Up to 30 years	Count	42	46	41	129
	% within Age	32.6%	35.7%	31.8%	100.0%
31 to 50 years	Count	43	77	92	212
	% within Age	20.3%	36.3%	43.4%	100.0%
Above 50 years	Count	21	15	18	54
	% within Age	38.9%	27.8%	33.3%	100.0%
Total	**Count**	**106**	**138**	**151**	**395**
	% within Age	**26.8%**	**34.9%**	**38.2%**	**100.0%**

Chi-Square Tests:

Pearson Chi-Square: 12.039 (df = 4, p = .017)

Likelihood Ratio: 11.991 (df = 4, p = .017)

Linear-by-Linear Association: 0.397 (df = 1, p = .529)

*Significance at 1% level *Significance at 5% level*

Chi-square test was applied to test the association between age group and Business Documents of community based in Accounting practices of small enterprises in Ramanathapuram District. The test reveals that the calculated chi-square value is 12.039[a] p-value is .017 at 1 per cent level of significance. Since the p-value is less than 0.01 ($x^2 =$ 12.039[a], p< 0.01) the null hypothesis is rejected. Hence, there is a significant association between age group and Business Documents of community based in Accounting practices of small enterprises. It is clear that age group is one of the major parameters to measure the Business Documents.

Age And Reporting Aspects in Small Enterprises

Null Hypothesis (Ho): There is no significant association between age group of the respondents and Reporting Aspects of community in Accounting practices of small enterprises.

Cross tabulation:

Age Group	Reporting Aspects	Low	Moderate	High	Total
Up to 30 years	Count	44	46	39	129
	% within Age	34.1%	35.7%	30.2%	100.0%
31 to 50 years	Count	59	64	89	212
	% within Age	27.8%	30.2%	42.0%	100.0%
Above 50 years	Count	15	16	23	54
	% within Age	27.8%	29.6%	42.6%	100.0%
Total	**Count**	**118**	**126**	**151**	**395**
	% within Age	**29.9%**	**31.9%**	**38.2%**	**100.0%**

Chi-Square Tests:

Pearson Chi-Square: 5.211 (df = 4, p = .266)

Likelihood Ratio: 5.304 (df = 4, p = .257)

Linear-by-Linear Association: 3.255 (df = 1, p = .071)

*Significance at 1% level *Significance at 5% level*

Chi-square test was applied to test the association between age group and Reporting Aspects of community based in Accounting practices of small enterprises in Ramanathapuram District. The test reveals that the calculated chi-square value is 5.211[a] p-value is .266 at 1 per cent level of significance. Since the p-value is less than 0.01 ($x^2 =$ 5.211[a], p< 0.01) the null hypothesis is rejected. Hence, there is a significant association between age group and Reporting Aspects of community based in Accounting practices of small enterprises. It is clear that age group is one of the major parameters to measure the Reporting Aspects.

Major Findings

Mean scores for most accounting procedures are similar for both male and female respondents, indicating comparable adherence to accounting rules.Men score slightly higher on aspects like payment methods, depreciation methods, bad debts estimation, business documents, reporting aspects, accounting system aspects, record aspects, report aspects, accounting knowledge, accounting disclosure, recording control, and financial control.Female respondents score higher in recording aspects, suggesting better attention to recording and documenting financial transactions.

Accounting Method, Payment Method, Bad Debts Estimation, Depreciation Method, Business Documents, and Recording Aspects do not show significant differences between communities ($p > 0.05$).Reporting Aspects and Report Aspects show significant differences between communities ($p < 0.05$).Accounting System Aspects initially showed significant differences assuming equal variances, but these differences disappeared when accounting for unequal variances.Most accounting practices do not show significant differences across marital status groups ($p > 0.05$).Record Aspects show a significant difference, indicating that marital status impacts some aspects of recording methods.

Suggestions

Implementing focused solutions that cater to the distinct needs and strengths of both male and female business owners is crucial, as indicated by the findings addressing gender disparities in accounting procedures among small businesses. Given that both sexes generally follow accounting regulations in a similar manner, conventional training programs can continue to be offered to the workforce at large. Male-led businesses, however, may benefit from more advanced or specialized training to further hone these skills and maintain their competitive advantage given the slight advantage that men have in areas like payment methods, depreciation methods, bad debts estimation, business documents, reporting aspects, accounting system aspects, record aspects, report aspects, accounting knowledge, accounting disclosure, recording control, and financial control.

On the other hand, the higher recording aspect scores of female respondents suggest a greater emphasis on careful documentation and record-keeping. This strength can be enhanced by promoting knowledge exchange and peer mentorship initiatives in which female business owners provide seminars or workshops on efficient recording techniques.

It is suggested that community-specific training programs are crucial in order to address the variances in accounting procedures within communities, especially the notable discrepancies in reporting elements and report aspects. Customized seminars and workshops that highlight the particular difficulties and needs of various communities can aid in filling up the gaps found in the study. More investigation into the reasons behind these discrepancies may also yield deeper understandings that improve intervention tactics.

The requirement for individualized training based on marital status is shown by the notable variation in record features for differences in marital status. Programs for business support should take into account the special demands of married, single, and other groups, providing tailored content and flexible training dates.

Finally, age-related variations in accounting procedures point to specific assistance for both younger and older entrepreneurs. Older company owners might gain from more resources on keeping thorough business records, while younger entrepreneurs would want more instruction on payment strategies and bad debt estimation. Age-appropriate training materials and tools should be created by policymakers and business support organizations to guarantee that all age groups receive the necessary assistance with their accounting procedures. This all-encompassing strategy will contribute to creating an atmosphere in which small enterprises can prosper, irrespective of age, gender, marital status, or community.

Conclusion

The findings, taken together, demonstrate the complex dynamics in accounting methods among small businesses that are influenced by age, marital status, gender, and community. Entrepreneurs of both genders follow accounting regulations to a similar degree, with males somewhat better in some areas and women better in recording procedures. Encouraging specialized, gender-specific training programs that address these disparities can improve overall accounting competency. Variations based on community, especially when it comes to reporting, call for customized training programs that address the distinctive requirements of various communities, guaranteeing fair access to accounting information and services. The need of customized training modules that take into account the different life circumstances of business owners is highlighted by the notable influence that marital status has on record-keeping practices. In addition, age-related disparities necessitate age-appropriate resources and assistance; older firm owners gain from better documentation procedures, while younger entrepreneurs need more training on bad debt calculation and payment techniques. Policymakers and business support groups may establish a more encouraging climate that supports the expansion and sustainability of small businesses among a variety of demographic groups by putting these focused measures into practice. The overall goal of these strategic recommendations is to close the gaps that have been found, encourage inclusive and efficient accounting procedures, and ultimately support small enterprises' resilience and success.

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AN EFFECTIVENESS OF GDP IN INDIAN ECONOMIC'S GROWTH, DEVELOPMENT AND SUSTAINABILITY -A REVIEW

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Abstract

In this review, author should focus about the Indian Economy Development through socio-economic impact in in India. The economic development in India followed socialist-inspired politicians for most of its independent history, including state-ownership of many sectors; India's per capita income increased at only around 1% annualized rate in the three decades after its independence. Since the mid-1980s, India has slowly opened up its markets through economic liberalization. After more fundamental reforms since 1991 and their renewal in the 2000s, India has progressed towards a free market economy. The Indian economy is still performing well, with foreign investment and looser regulations driving significant growth in the country. In the late 2000s, India's growth reached 7.5%, which will double the average income in a decade. IMF says that if India pushed more fundamental market reforms, it could sustain the rate and even reach the government's 2011 target of 10%. The economic growth has been driven by the expansion of the services that have been growing consistently faster than other sectors. It is argued that the pattern of Indian development has been a specific one and that the country may be able to skip the intermediate industrialization-led phase in the transformation of its economic structure. Serious concerns have been raised about the jobless nature of the economic growth. Favorable macroeconomic performance has been a necessary but not sufficient condition for the significant improvement in the human development indicators. Although the rate of poverty declined after economic reforms of 1991, the improvement in human development has been less than satisfactory. For instance, child malnutrition has continued to persist (46% in 2005–6). The progress of economic changes in India is followed closely. The World Bank suggests that the most important priorities are public sector reform, infrastructure, agricultural and rural development, removal of labour regulations, reforms in lagging states, and HIV/AIDS. For 2018, India ranked 77th in Ease of Doing Business Index.

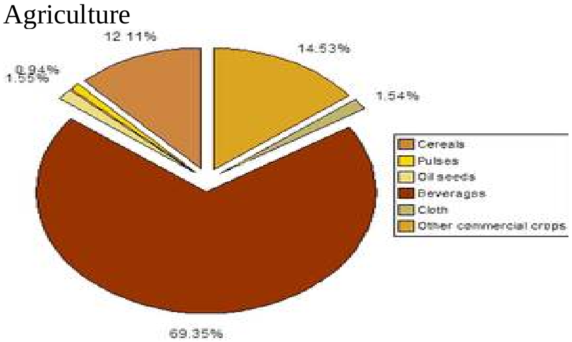
Keywords: World Bank, Economic, Changes, Labour, Regulations, Human, Development.

Introduction

Prior to India's Independence, from the period of 1900 to 1947, per capita income in India had either declined or stagnated. Post-Independence, Jawaharal Nehru demonstrated his willingness to compromise socialism for the perceived benefit of the country to provide financial incentives for the expansion of private enterprise. However, after the crisis of 1957, India turned towards import substitution industrialization and introduced foreign exchange. The Nehru-Mahalanobis approach, often referred to as the Second Five Year Plan, emphasized the development of basic and heavy industries as a means of accelerating economic growth. These included steel, copper, petrochemicals, paper, coal, and oil. Mahalanobis strived for India to reach autonomy, ridding any outstanding debts. Critics disagreed with this approach, stating that World Bank's claim of Indian export prospects being low were falsified and due to India's inward-looking strategy, the growth opportunity of the world economy was missed. Nonetheless, over 1950–1965, India's acceleration of per capita income growth had increased an average of 1.7%, a value not exceeded since.

The discourse on the efficacy of the Nehru-Mahalanobis Strategy is commonly contested by economists. A criticism of the approach emphasizes the lack of resource allocation in the agriculture sector. It is argued that the misbalanced weightage towards the machine-making sector contributed to the increase in food-grain prices and thus, perpetuated poverty and malnutrition. Defenders of the strategy claim that it sought to increase agricultural output by increasing the output-capital ratio. This agreeably would have been accomplished through land-reforms, something the strategy did not address, not indicating a problem with the strategy itself.

Agriculture



Composition of India's total production of food grains and commercial crops, in 2003–04, by weight

India ranks second worldwide in farm output. Agriculture and allied sectors like forestry, logging and fishing accounted for 18.6% of the GDP in 2005, employed 60% of the total workforce and despite a steady decline of its share in the GDP, is still the largest economic sector and plays a significant role in the overall socio-economic development of India. Yields per unit area of all crops have grown since 1950, due to the special emphasis placed on agriculture in the five-year plans and steady improvements in irrigation, technology, application of modern agricultural practices and provision of agricultural credit and subsidies since the green revolution. India is the largest producer in the world of milk, cashew nuts, coconuts, tea, ginger, turmeric and black pepper. It also has the world's largest cattle population (193 million). It is the second largest producer of wheat, rice, sugar, groundnut and inland fish.[16] It is the third largest producer of tobacco.[16] India accounts for 10% of the world fruit production with first rank in the production of banana and sapota, also known as chiku.

The Main Objective of Social Economy

The social economy refers to a form of economic organization focused on social rather than financial goals, operating beyond the realms of public, private, state, and market sectors. It is essentially not-for-profit and is gaining interest from various stakeholders including activists, policymakers, and academics

The required level of investment for the development of marketing, storage and cold storage infrastructure is estimated to be huge. The government has implemented various schemes to raise investment in marketing infrastructure. Amongst these schemes are Construction of Rural Go downs, Market Research and Information Network, and Development / Strengthening of Agricultural Marketing Infrastructure, Grading and Standardization

Main problems in the agricultural sector, as listed by the World Bank, are:

1. India's large agricultural subsidies are hampering productivity-enhancing investment.
2. Overregulation of agriculture has increased costs, price risks and uncertainty.
3. Government interventions in labour, land, and credit markets.
4. Inadequate infrastructure and services.

Research and development

The Indian Agricultural Research Institute (IARI), established in 1905, was responsible for the research leading to the "Indian Green Revolution" of the 1970s. The Indian Council of Agricultural Research (ICAR) is the apex body in kundiure and related allied fields, including research and education.[19] The Union Minister of

Agriculture is the President of the ICAR. The Indian Agricultural Statistics Research Institute develops new techniques for the design of agricultural experiments, analyses data in agriculture, and specialises in statistical techniques for animal and plant breeding. Prof. M. S. Swaminathan is known as "Father of the Green Revolution" and heads the MS Swaminathan Research Foundation.[20] He is known for his advocacy of environmentally sustainable agriculture and sustainable food security.

Industrial output

India is fifth in the world in factory output. Major clusters of manufacturing are mainly concentrated in the states of Maharashtra, Gujarat, Karnataka, Tamil Nadu, Telangana and Andhra Pradesh due to relatively better infrastructure and quality of labor force. Manufacturing sector in addition to mining, quarrying, electricity and gas together account for 27.6% of the GDP and employ 17% of the total workforce. Economic reforms introduced after 1991 brought foreign competition, led to privatisation of certain public sector industries, opened up sectors hitherto reserved for the public sector and led to an expansion in the production of fast-moving consumer goods. India has emerged as the second largest manufacturer of mobile phones in the world with smartphone exports exceeding $10 billion in FY 2022–23. India has also emerged as the fourth largest manufacturer of automobiles behind only China, United States and Japan. India produced approximately 4.4 million cars in 2021.

Post-liberalization, the Indian private sector, which was usually run by oligopolies of old family firms and required political connections to prosper was faced with foreign competition, including the threat of cheaper Chinese imports. It has since handled the change by squeezing costs, revamping management, focusing on designing new products and relying on low labour costs and technology. Under the Modi Government, various initiatives are taking place like Make In India campaign, to boost the Indian industries. This will help the economy to grow as budding entrepreneurs will open industries and local things will get promoted.

Services

India is fifteenth in services output. Service industry employ English-speaking Indian workers on the supply side and on the demand side, has increased demand from foreign consumers interested in India's service exports or those looking to outsource their operations. India's IT industry, despite contributing significantly to its balance of payments, accounts for only about 1% of the total GDP or 1/50th of the total services.

During the Internet bubble that led up to 2000, heavy investments in undersea fiber-optic cables linked Asia with the rest of the world. The fall that followed the economic boom resulted in the auction of cheap fiber optic cables at one-tenth of their original price. This development resulted in widely available low-cost communications infrastructure. All of these investments and events, not to mention a swell of available talent, resulted in India becoming almost overnight the centre for outsourcing of Business process.[23] Within this sector and events, the ITES-BPO sector has become a big employment generator especially amongst young college graduates. The number of professionals employed by IT and ITES sectors is estimated at 1.3 million as of March 2006. Also, Indian IT-ITES is estimated to have helped create an additional 3 million job opportunities through indirect, induced and in helpful manner have created employment.

GDP growth rate

Since the economic liberalization of 1991, India's GDP has been growing at a higher rate. The following table has been collected from public data archives with data from the World Bank:

Year	Growth (real) (%)
2000	3.841

Year	Growth (real) (%)
2001	4.824
2002	3.804
2003	7.86
2004	7.923
2005	7.923
2006	8.061
2007	7.661
2008	3.087
2009	7.862
2010	8.498
2011	5.241
2012	5.456
2013	6.386
2014	7.41
2015	7.996
2016	8.17
2017	7.168
2018	6.982

GDP growth rate is unequal within India. For the year 2015–16, GDP growth rates of Andhra Pradesh (10.99%), Bihar (10.27%) and Madhya Pradesh (10.16%) were higher than Maharashtra (8%), Odisha (6.16%) and Punjab (5.96%).

Companies

47 Indian companies were listed in the Forbes Global 2000 ranking for 2015. The 10 leading companies were:

World Rank	Company	Logo	Industry	Revenue (billion $)	Profits (billion)	Assets (billion)	Market Value (billion)
142	Reliance Industries		Oil & Gas Operations	71.7	3.7	76.6	42.9
152	State Bank of India		Banking	40.8	2.3	400.6	33
183	Oil and Natural Gas Corporation		Oil & Gas Operations	28.7	4.4	59.3	43.7
263	Tata Motors			42.3	2.7	34.7	28.8
283	ICICI Bank		Banking	14.2	1.9	124.8	30
431	NTPC		Utilities	12.9	1.9	35.4	20.2
463	Tata Steel		Materials	32.77	3.08	31.16	2.46
349	Indian Oil Corporation		Oil & Gas Operations	74.3	1.2	44.7	14.6
485	HDFC		Banking	8.4	1.4	84.3	41.6
485	TCS		Information Technology	15.1	3.5	11	80.3

Oil

India consumes the second-largest amount of oil in the Asia-Pacific region behind China. The combination of rising oil consumption and fairly unwavering production levels leaves India highly dependent on imports to meet the consumption needs.

Natural gas

As per the Oil and Gas Journal, India had 38 trillion cubic feet (1.1×10^{12} m^3) of confirmed natural gas reserves in 2004.

India imports small amounts of natural gas. In 2004, India consumed about $1{,}089\times10^{9}$ cu ft (3.08×10^{10} m^3) of natural gas, the first year in which the country showed net natural gas imports. During 2004, India imported 93×10^9 cu ft (2.6×10^9 m^3) of liquefied natural gas (LNG) from Qatar.

As in the oil sector, India's state-owned companies account for the bulk of natural gas production. ONGC and Oil India Ltd. (OIL) are the leading companies with respect to production volume, whilst some foreign companies take part in upstream developments in joint-ventures and production sharing contracts (**PSC**s). Reliance Industries, a privately owned Indian company, will also have a bigger role in the natural gas sector as a result of a large natural gas find in 2002 in the Krishna Godavari basin.

The Gas Authority of India Ltd. (GAIL) holds an effective control on natural gas transmission and allocation activities. In December 2006, the Minister of Petroleum and Natural Gas issued a new policy that allows foreign investors, private domestic companies, and national oil companies to hold up to 100% equity stakes in pipeline projects. Whilst GAIL's domination in natural gas transmission and allocation is not ensured by statute, it will continue to be the leading player in the sector because of its existing natural gas infrastructure.

Issues

Regulation and public sector

India ranked 63 on the Ease of Doing Business Index in 2020, compared with 108 for Pakistan, 31 for People's Republic of China, 131 for Nigeria, 124 for Brazil, and 73 for Indonesia.

Corruption in many forms has been one of the pervasive problems affecting India. For decades, the red tape, bureaucracy and the *Licence Raj* that had strangled private enterprise. The economic reforms of 1991 cut some of the worst regulations that had been used in corruption.

Corruption is still large. A 2005 study by Transparency International (TI) India found that more than half of those surveyed had firsthand experience of paying a bribe or peddling influence to get a job done in a public office. The chief economic consequences of corruption are the loss to the exchequer, an unhealthy climate for investment and an increase in the cost of government-subsidised services. The TI India study estimates the monetary value of petty corruption in 11 basic services provided by the government, like education, healthcare, judiciary, police, etc., to be around ₹211 billion (US$2.5 billion).[32] India still ranks in the bottom quartile of developing nations in terms of the ease of doing business, and compared with China; the average time taken to secure the clearances for a startup or to invoke bankruptcy is much greater

The Right to Information Act (2005) and equivalent acts in the states that require government officials to furnish information requested by citizens or face punitive action, computerisation of services and various central and state government acts that established vigilance commissions have considerably reduced corruption or at least have opened up avenues to redress grievances. The 2006 report by Transparency International puts India at 70th place and states that significant improvements were made by India in reducing corruption.

Employment

India's labour force is growing by 2.5% every year, but employment is growing only at 2.3% a year.[36] Official unemployment exceeds 9%. Regulation and other obstacles have discouraged the emergence of formal businesses and jobs. Almost 30% of workers are casual workers who work only when they are able to get jobs and remain unpaid for the rest of the time. Only 10% of the workforce is in regular employment. India's labour regulations are heavy even by developing country standards and analysts have urged the government to abolish them.

From the overall stock of an estimated 458 million workers, 394 million (86%) operate in the unorganized sector (of which 63% are self-employed) mostly as informal workers. There is a strong relationship between the quality of employment and social and poverty characteristics. The relative growth of informal employment was more rapid within the organized rather than the unorganized sector. This is also related to the flexibiliation of employment in the organized sector that is suggested by the increasing use of contract labour by employers in order to benefit from more flexible labour practices.

Children under 14 constitute 3.6% of the total labour force in the country. Around 85% of them are engaged in traditional agricultural activities. Less than 9% work in manufacturing, services and repairs. Child labour is a complex problem that is basically rooted in poverty. The Indian government is implementing the world's largest child labour elimination program, with primary education targeted for ~250 million. Numerous non-governmental and voluntary organisations are also involved. Special investigation cells have been set up in states to enforce existing laws banning employment of children (under 14) in hazardous industries. The allocation of the Government of India for the eradication of child labour was US$10 million in 1995–96 and US$16 million in 1996–97. The allocation for 2007 is US$21 million.

Environmental degradation

About 1.2 billion people in developing nations lack clean, safe water because most household and industrial wastes are dumped directly into rivers and lakes without treatment. This contributes to the rapid increase in waterborne diseases in humans. Out of India's 3119 towns and cities, just 209 have partial treatment facilities, and only 8 have full wastewater treatment facilities (WHO 1992). 114 cities dump untreated sewage and partially cremated bodies directly into the Ganges River. Downstream, the untreated water is used for drinking, bathing, and washing. This situation is typical of many rivers in India as well as other developing countries. Globally, but especially in developing nations like India where people cook with fuel wood and coal over open fires, about 4 billion humans suffer continuous exposure to smoke. In India, particulate concentrations in houses are reported to range from 8,300 to 15,000 $\mu g/m^3$, greatly exceeding the 75 $\mu g/m^3$ maximum standard for indoor particulate matter in the United States. Changes in ecosystem biological diversity, evolution of parasites, and invasion by exotic species all frequently result in disease outbreaks such as cholera which emerged in 1992 in India. The frequency of AIDS/HIV is increasing. In 1996, about 46,000 Indians out of 2.8 million (1.6% of the population) tested were found to be infected with HIV.

Effect on women

Economic development in India has had a varying effect on women depending on their age, education, and location. Traditionally in India women's role is in the household. As girls they are raised to work for and better their family. Their work, therefore, mostly consists of household duties and is not a part of the formal economy. Because of this India consistently compares poorly to other countries as far as female employment rates. Currently India ranks 11th from the bottom in female labor participation out of the 131 countries with data available. In addition, women who do work experience discrimination; on average they make 62% of what their male counterparts make for the same position.

Since the 1990s there has been significant economic growth and expansion in India,[46] this has had an effect on how women operate in the workforce there. Women's labor force participation has fallen from 37% in 2004–2005 to 27% in 2009–2019. So with the recent economic growth and development in India, the country has not seen an equal overall growth in jobs for women. This can be broken down further, however, because certain demographics of women in India have seen job rates decline while some have seen them rise. Informal work, which is not included in job rate percentages, has risen for poor, rural, uneducated women while their formal job rate has declined; Microcredit and social help groups have helped poor women connect and work together in the informal job sector. Women with higher education who mostly live in urban areas have seen a rise in job rates.

An example of a booming industry for educated women in India is call centers. Many Western countries outsource their call center jobs to India, and these call centers have found that women often have more success at these positions than their male counterparts. These positions give young women in India a chance at independence from their family and the traditional role which women play.[49] There are organizations in India that were created to support women's education and women in the workforce. In 1985 the Ministry of Human Resource Development was founded to improve female literacy rates, and to support women looking to join the work force. Similarly, in 1972 SEWA, the Self Employed Women's Association was formed by self-employed and low wage women workers to support each other and organize to advocate for their rights.

Institute for Social and Economic Change

(ISEC) multi-disciplinary social science research institute established by Prof. V.K.R.V Rao in 1972, funded by the Indian Council of Social Science Research (ICSSR) and the Government of Karnataka. The thrust of the institute is to integrate the social science research skills in initiating, complementing, participating and furthering the social, economic and political changes of the societies with an emphasis on equity and justice. Prof. Rao's vision was to build purposeful interactions within social science disciplines as well as with other life science streams to create a strong interdisciplinary work. ISEC's concern for the social and economic welfare of the poor and disadvantaged groups reflects strongly in the large number of studies it has undertaken to understand the various dimensions of poverty and human development. Analytical and applied research studies particularly in policy-related areas have also been areas of priority at ISEC. Central, state and local level governments have come to rely on the Institute for evaluation of various policies and programmes.

ISEC has also developed some research linkages. In order to promote core-funded activities at ISEC, Prof Rao got the support of the Union Ministry of Agriculture to house one of its three agro-economic research units i.e. the Agricultural Development and Rural Transformation (ADRT) at the Institute (the other two are housed at the Institute of Economic Growth, Delhi, and the Indian Institute of Management, Ahmedabad). The Ministry of Health and Family Welfare has also established the Population Research Centre (PRC) at ISEC.

ISEC is the biggest research Institute amongst ICSSR sponsored interdisciplinary research institutions. The research and academic activities of the institute are structured under eight centers covering the areas ranging from economics, ecological economics, agricultural economics, population research, sociology, health, education, political science, public administration, decentralization and rural development. The research under the centres is collectively discussed and monitored through statutory bodies.

ISEC has a faculty of forty five from different areas of social and life sciences. Some of the collaborations are with: NORDIC Centre, Netherlands, Maastricht University, World Bank, Asian Development Bank, UNFPA, UNDP, USAID, European Commission, the Swedish C-Dot, DANIDA and Ford Foundation. In the honor of Dr.V K R V Rao, ISEC has instituted a visiting chair, presently held by Prof. Ashutosh Varshney, Professor of Political Science at Brown University. ISEC has a programme for training social science students for their PhD. The students are taken for the course from an open advertisement and after a rigorous scrutiny of about 12 out of 300 applicants the students are undergo training for one year. ISEC provides fellowships to the students and up till now about 200 students have obtained their PhD in Social Sciences through ISEC. ISEC has infrastructure that includes a library, data bank, digital sources of information, seminar halls, auditorium, students' hostel, residential accommodation and guest house. It is rightly recognized that policy-making in India requires a great deal of systematizing and active lobbying of scholarship. Aware of practical difficulties in connecting research to policy, ISEC from the very beginning has established itself as a credible and accountable institution to provide policy feedback to the Government of India and the state governments. In addition, ISEC has regularly contributed and assisted central, state and local governments by providing advice on important issues.

Social Economy in India

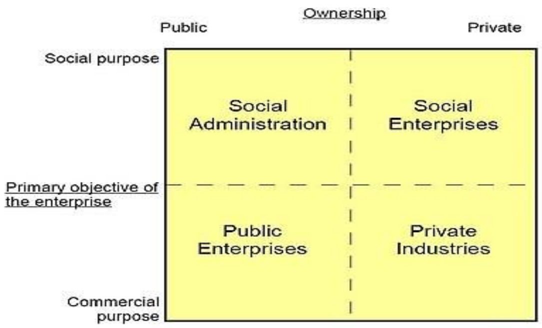
The social economy is formed by a rich diversity of enterprises and organisations, such as cooperatives, mutuals, associations, foundations, social enterprises and paritarian institutions, sharing common values and features:

1. Primacy of the individual and the social objective over capital
2. Voluntary and open membership
3. Democratic governance
4. Combination of interests of members/users and/or the general interest
5. Defence and application of the principles of solidarity and responsibility
6. Autonomous management and independence from public authorities, though cross-sector collaboration is common
7. Reinvestment of at least most of the profits to carry out sustainable development objectives, services of interest to members or of general interest

Social economy enterprises and organisations have different sizes, ranging from SMEs to large companies and groups that are leaders in their markets and operate in all the economic sectors.

Social Enterprise Compass

Organisations may be placed on the social enterprise compass, which measures enterprises and organisations on a continuum between the private and public sectors.



Horizontal axis

On the horizontal axis, each enterprise or organisation is categorized by its ownership. On the left side ownership is by public authorities, and on the right side it is private industry. "Private industry" encompasses all economic activity with the capital of one (or many) private owners, with a view to making a profit for personal benefit. The owners supply financial capital and bear any risk. "Public authorities" encompass all economic activity in which public authorities possess the capital at the national, federal, regional or local level; this includes nationalised and public industries.

Vertical axis

On the vertical axis each enterprise or organisation is categorized by its primary objective, from "social purpose" at the top to "commercial purpose" at the bottom. Social purpose is the primary objective of the enterprise if it meets the following criteria:

- Ethical concept: Core definition
- Mission (key identification): The enterprise's primary objective is to improve the lives of disadvantaged people, provide support, advance social cohesion or improve the environment.
- Social economic creation of value and appropriation of earnings (qualitative key identification): Profits and/or resources are verifiably reinvested for the benefit of disadvantaged people.

If these criteria are met, an organisation is at the top of the vertical axis.

One criterion is a descriptive feature:

Intermediary function: Social economical enterprises and organisations have an intermediary function (between public and private). If none of the above criteria are met, or the primary object of the enterprise is commercial, it is located at the bottom of the vertical axis.

Conclusion

Social Sector is one of the most important sectors of any economy. It includes components which play an important role in the contribution of human resource development. Education, health and medical care, training, water supply and sanitation, housing conditions, etc. Karl Marx created and promoted his own brand of socialism, which he named scientific socialism. In a socialist society, a large portion of production means are owned by the society or the government, in contrast to capitalism. Marxian socialism ends in a communist society, which is stateless and classless. Socialism is, broadly speaking, a political and economic system in which property and the means of production are owned in common, typically controlled by the state or government. Socialism is based on the idea that common or public ownership of resources and means of production leads to a more equal society.

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A STUDY ON CUSTOMER AWARENESS ON SOCIAL TRANSFORMATION ACTIVITIES OF COMMERCIAL BANKS WITH RESPECT TO PMSBY IN TIRUCHIRAPPALLI DISTRICT OF TAMIL NADU

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Abstract

Social transformation is possible only with the help of rich economic independence and financial empowerment which enable the people to avail all kind of benefits from the government. There are numerous risks in everyday life of human beings. The chances of occurrences of the events causing losses are rather uncertain because the risk may or may not take place. Insurance is assurance against these instabilities of life. Many of the rural population do not have any kind of security/ insurance scheme. In order to provide the accidental insurance coverage to all people especially to rural and unorganized workers, the Government of India launched insurance scheme namely Pradhan Mantri Suraksha Bima Yojana (PMSBY). The motto of the scheme is covering the uncovered, serving the unserved and blessing the unblessed segment of the society and ensure that no Indian citizen will ever worry about accidents or disabilities. Nearly 18.22 crore Indians were benefited by this scheme during the financial year 2019-2020. By implementing PMSBY scheme the Government is heading towards the vision of "New India-Swasthse Samriddhi". This article highlights the awareness of PMSBY with respect to social transformation.

Keywords: Financial inclusion, Social transformation, financial Services, PMSBY, Social Security, Unorganized Workers.

Introduction

Financial inclusion or inclusive financing is an attempt to provide access to affordable and useful financial products and services to the deprived section of society. The purpose of financial inclusion is to provide access to financial products, timely and affordable cost where needed by unfortunate, vulnerable and deprived sections of society. It also describes the equality & availability of opportunities to get financial services (Nanda & Kaur, 2006). The main objective of financial inclusion is to remove the obstacles which keep away users from participating in the financial system and provide financial services to fulfil their specific needs without any discrimination.

The Government of India has many social security schemes that will ensure every citizen of India not to worry about the accident, illness in old age. In this phase, Indian Government has started three social security schemes on 09 May 2015 i.e. PMSBY (for accidental death and disability), PMJJBY (for life insurance) and APY (for pension) with the motto ***"Jan Dhan se Jan Suraksha"***. At that time, 80% of India's population did not have any kind of insurance. The main objective to start PMSBY and PMJJBY was to enhance the enrolment of the insured population. Besides these social security schemes, the Indian Government has also started APY focused on the unorganized sector of the country. When this scheme was started 89% of India's population did not have any kind of old-age pension scheme and the main objective to start this scheme was to enhance the pension enrolment number.

Review of Literature

Azad et al. reveled that, Pradhan Mantri Suraksha Bima Yojana and Pradhan Mantri Jeevan Jyoti Bima Yojana have made an extraordinary performance in bringing the poor, marginalized and underprivileged sections into the mainstream. But still a considerable segment of the society is not fully equipped about the scheme.

Badar and Shaista (2016) disclosed that the progress and development of the economy have been strongly associated with financial inclusion.

Bhuvana and S. Vasantha (2016) explained that in rural areas effectiveness of financial inclusion has been decreased by certain demand & supply factors.

Deb and Sarma suggested that, since both PMSBY, PMJJBY policies can only be taken by savings bank account holders, the schemes would work as a proxy for financial inclusion and encourage the unbanked population to join the formal banking system which, in turn, would not only add the number of accountsfor banks but would also boost their bottom lines.

Gomathy and Jyoti (2016) has investigated that GOI and RBI have been making efforts to financial inclusion with the fundamental objective to providing financial services to the financial excluded Indian population

Inoue (2019) described that financial inclusion has a positive impact on poverty reduction. To analyse the fact, it was found that public sector banks have larger estimated values of financial inclusion than private sector banks.

Princy (2017) concluded that financial inclusion supports microfinance & microfinance accelerate it. Microfinance is one of the important weapons for eradicating and eliminatingpoverty through financial inclusion.

Shanti & Murty (2019) highlighted that educational age, income level is positively associated with financial literacy whereas educational level is not associated with financial literacy. Employed women have higher levels of financial literacy as compared to self-employed.

Thirumavalavan pointed out that the Government has decided to work towards creating a Universal Social Security System to the entire society, especially to the poor and the under-privileged, to address longevity risks among workers in the unorganized sector and to encourage workers in the unorganized sector to voluntarily save for their retirement.

Statement of the Problem

India is one of the young and fast developing economies in the having declared social and economic justice to all in the constitution and also being a welfare state. Most of the people in India do not have access formal sources of banking, insurance and financial services. In India, a large proportion of population is without insurance of any kind, that is, health, accidental or life. Therefore, promoting inclusive growth in financial inclusion is one of the biggest challenges in India. The honorable Prime Minister of India, Mr. Narendra Modi, after gaining valuable inputs from the pros and cons of previous schemes, has taken a forward step on Financial Inclusion, which isone of the top most priority projects of the government. In this regard, several public welfare schemes for inclusive finance through insurance have been introduced since 2014. Among these, Pradhan Mantri Suraksha Bima Yojana (PMSBY) launched on 9th May, 2015 is an important milestone in the Indian Social Security system. Its main aim is to create a universal social insurance system, targeted especially for the poor and the under-privileged. This scheme is expected to provide the purpose of financial inclusion by achieving penetration of insurance down to the weaker sections of the society, ensuring their or their family's financial security, which otherwise gets pulled to the ground in case of any unexpected and unfortunate accident. This system will provide insurance coverage against accident risk especially to the high risk category such as mechanics, laborers, and truck drivers, who involve in a lot of travelling. In this aspect, it is imperative to study about the PMSBY scheme details and its progress.

Objective of the Study

To explore customer awareness on social transformation activities of commercial banks with respect to PMSBY in Tiruchirappalli District of Tamil Nadu

Research Methodology

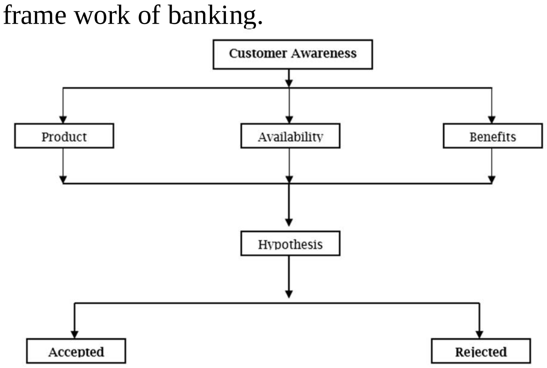
The present study is descriptive in nature by using both primary and secondary data. Primary data were collected with the help of interview Schedule which were distributed to the sample respondents. Secondary data were collected from various sources such as published and unpublished reports, records, documents and periodicals. Stratified random sampling method was adopted to identify the sample respondents.

Sampling Design

Sampling is one of the major parts of the research study which help to justify its scientific implications and scholarliness.720 Sample respondents were selected through stratified random sampling method study area.

Data Collection

The Present Study required both Primary and secondary data. Primary data were used for the Social transformation through futuristic banking with respect to public sector banks in Tiruchirappalli District. Secondary data were used to performance and progress of Pradhan Mantri Suraksha Bima Yojana in India. Tamil Nadu and Tiruchirappalli District. Some of the Secondary data were found that conceptual frame work of banking.



Tools and Techniques Used

Primary data were collected with the help of a structured interview schedule and secondary data was collected from various sources such as reports, records, documents and other published and unpublished sources.

Data Analysis

The Collected data were analysed with the help of adequate statistical tools such as T-Test, One way ANOVA, Chi Square Test.

Customer Awareness towards PMSBY Scheme

Profile	Variables	Frequency	Percentage
Product	Low	239	33.2
	Moderate	251	34.9
	High	230	31.9
	Total	720	100.0
Availability	Low	286	39.7
	Moderate	78	10.8
	High	356	49.4
	Total	**720**	**100.0**
Benefits	Low	133	18.5
	Moderate	251	34.9
	High	336	46.7
	Total	**720**	**100.0**

The Table 1 represents the Customer awareness towards PMJDY Scheme and the percentage of Profile of the respondents by product, awareness and benefits.

With regard to product profile, (239) or 33.2 percent respondents have the low level of awareness, (251) or 34.9 percent respondents belong to moderate level of awareness and 230 (or) 31.9percent of respondents have the high level of awareness.

It is clear from this the maximum number of respondents (251) belong to the moderate awareness and the minimum respondents (230) belong to the low awareness about the product (scheme) of PMSBY.

As regards availability, (286) or 39.7 percent of respondents have the low level of awareness, (78) or 10.8 percent respondents have moderate level of awareness and (356) or 49.4 percent of respondents have the high level of awareness.

It represents that the maximum number of respondents (356) have the low level of awareness and the minimum number or respondents (78) have the moderate awareness about the availability of the product scheme.

As far as benefits is concerned,(133) or 18.5 percent of respondents have the low level of awareness, (251) or 34.9 percent of respondents have the moderate level of awareness and (336) or 46.7 percent of respondents have the high level of awareness.

It is clear from this that the maximum number of respondents (336) belong to the high level of awareness and the minimum number of respondents (133) belong to the low level of awareness about the benefits of the product scheme.

T – Test

Group Statistics - Customer Awareness PMSBY

Factors	Gender	N	Mean	Std. Deviation	Std. Error Mean
Product	Male	485	14.28	2.433	.110
	Female	235	14.48	2.339	.153
Availability	Male	485	13.81	2.650	.120
	Female	235	14.03	2.668	.174
Benefits	Male	485	14.14	2.876	.131
	Female	235	14.16	3.091	.202

The above table indicates that the group statistics for analysing the gender of male and female with respect to customer awareness of select public sector banks. The mean values of the variables range from 13.81 to 14.48 with consistent standard deviation. The standard error means are also found to be consistent for all the variables.

Independent Sample test

Hypothesis: there is no significant difference between genders with respect to Customer awareness of PMSBY public sector banks.

Factors	Assumption about Variance	Levene's Test for Equality of Varience		t- test for equality of Means			
		F	Sig	t	df	Sig.(2-tailed)	Mean Difference
product	Equal Variances assumed	1.399	.237	-1.038	718	.030	-198
	Equal Variances not assumed			-1.052	479.858	.029	-198
Availability	Equal Variances assumed	.001	.973	-1.000	718	.018	-211
	Equal Variances not assumed			-998	460.331	.019	-211
Benefits	Equal Variances assumed	.578	.447	-083	718	.034	-019
	Equal Variances not assumed			-081	434.503	.036	-019

Significance at 5% level

Levence's test on problems like Products (F.1.399, P>0.05) has a probability greater than 0.05, it can be assumed that variance are relatively equal. Therefore, we can use the t – test and two – tail significance for the equal variance estimates to determine Product faced by respect to customer awareness of public sector banks of two group of gender male and female. It indicates p< 0.5Significant (t=-198, P<0.05).It shows that there exists a no significant difference among respect to Product.

Availability (F=.001, P>0.05), has a probability greater than 0.05, it can be assumed that variance are relatively equal. Therefore, we can use the t – test and two – tail significancefor the equal variance estimates to determine Availability faced by respect to customer awareness of public sector banks of two group of gender, Male and female. It indicates p<0.5 Significant(t=-211, P<0.05).It shows that there exists a no significant difference among respect to availability.

Benefits (F=.578, P>0.05), has a probability greater than 0.05, it can be assumed that variance are relatively equal. Therefore, we can use the t – test and two – tail significance for the equal variance estimates to determine benefits faced by respect to customer awareness of public sector banks of two group of gender, Male and female. It indicates p<0.5 Significant (t=-019, P<0.05).It shows that there exists a no significant difference among respect to Benefits.

T – Test

Group Statistics - Customer Awareness PMSBY

Factors	Marital Status	N	Mean	Std. Deviation	Std. Error Mean
product	Married	551	14.42	2.350	.100
	Un – Married	169	14.09	2.562	.197
Availability	Married	551	13.79	2.667	.114
	Un – Married	169	14.20	2.603	.200
Benefits	Married	551	14.18	2.886	.123
	Un – Married	169	14.04	3.139	.241

The table indicates that the group statistics for analysing the marital Status of married and unmarried with respect to customer awareness of select public sector banks. The mean values of the variables range from 13.79 to 14.42 with consistent standard deviation. The standard error means are also found to be consistent for all the variables.

T – Test

Group Statistics - Customer Awareness PMSBY

Hypothesis: There is no significant difference between marital statuses with respect to customer awareness of PMSBY public sector banks.

Factors	Assumption about Variance	Levene's Test for Equality of Variance		t- test for equality of Means			
		F	Sig	T	Df	Sig.(2-tailed)	Mean Difference
Product	Equal Variances Assumed	.335	.563	1.537	718	.025	.325
	Equal Variances not assumed			1.468	260.576	.043	.325
Availability	Equal Variances assumed	1.013	.315	-1.748	718	.031	-408
	Equal Variances not assumed			-1.770	284.566	.038	-408
Benefits	Equal Variances Assumed	.832	.362	-570	718	.019	-148
	Equal Variances not assumed			-545	261.011	.016	-148

Significance at 5% level

Levence's test on problems like Products (F.1.355, P>0.05), has a probability greater than 0.05, it can be assumed that variance are relatively equal. Therefore, we can use the t – test and two – tail significance for the equal variance estimates to determine Product faced by respect to customer awareness of public sector banks of two group of marital status , Viz, Married and un-married . It indicates p< 0.5Significant (t=.325 P<0.05).It shows that there exists a no significant difference among respect to Product.

Availability (F=1.013, P>0.05), has a probability greater than 0.05, it can be assumed that variance are relatively equal. Therefore, we can use the t – test and two – tail significance for the equal variance estimates to determine availability faced by respect to customer awareness of public sector banks of two group of marital status, Viz, Married and unmarried. It indicates p<0.5 Significant (t=-408, P<0.05).It shows that there exists a no significant difference among respect to availability.

Benefits (F=.832, P>0.05), has a probability greater than 0.05, it can be assumed that variance are relatively equal. Therefore, we can use the t – test and two – tail significance for the equal variance estimates to determine benefits faced by respect to customer awareness banking of public sector banks of two group of Marital status , Viz, Married and un-married. It indicates p<0.5 Significant (t=-148, P<0.05).It shows that there exists a no significant difference among respect to benefits.

One way ANOVA

Hypothesis: There is no significant difference between Communities with respect to customer awareness of Public Sector banks.

Factors	Source	Sum of Squares	Df	Mean Square	F	Sig
Product	Between Groups	22.488	2	11.244	1.952	.103
	Within Groups	4129.778	717	5.760		
	Total	4152.265	719			
Availability	Between Groups	31.996	2	15.998	2.276	.010
	Within Groups	5040.204	717	7.030		
	Total	5072.200	719			
Benefits	Between Groups	52.382	2	26.191	3.035	.049
	Within Groups	6186.716	717	8.629		
	Total	6239.099	719			

Significance at 5% level, **.Significance at 1% level

One-way ANOVA was applied to find the significant mean difference between the customer awareness of select public sector banks and the result showed that there is a no significant difference between Usage product (F-value =1.952, p<0.05), Availability (F-value = 2.276, p<0.05), Benefits (F-value = 3.035, p<0.05).

One way ANOVA

Hypothesis: There is no significant difference between annual incomes with respect to customer awareness of Public Sector banks.

Factors	Source	Sum of Squares	Df	Mean Square	F	Sig
Product	Between Groups	9.334	3	3.111	.538	.027
	Within Groups	4142.931	716	5.786		
	Total	4152.265	719			
Availability	Between Groups	36.555	3	12.185	1.733	.039
	Within Groups	5035.645	716	7.033		
	Total	5072.200	719			
Benefits	Between Groups	27.595	3	9.198	1.060	.015
	Within Groups	6211.504	716	8.675		
	Total	6239.099	719			

Significance at 5% level, **.Significance at 1% level

One-way ANOVA was applied to find the significant mean difference between the customer awareness of select public sector banks and the result showed that there is a no significant difference between Usage product (F-value =.538, p<0.05), Availability (F-value =1.733, p<0.05), Benefits (F-value = 1.060, p<0.05).

One Way ANOVA

Hypothesis: There is no significant difference between Educational Qualification with respectto customer awareness of Public Sector banks.

Factors	Source	Sum of Squares	Df	Mean Square	F	Sig
Product	Between Groups	22.488	2	11.244	1.952	.043
	Within Groups	4129.778	717	5.760		
	Total	4152.265	719			
Availability	Between Groups	31.996	2	15.998	2.276	.043
	Within Groups	5040.204	717	7.030		
	Total	5072.200	719			

Benefits	Between Groups	52.382	2	26.191	3.035	.049
	Within Groups	6186.716	717	8.629		
	Total	6239.099	719			

Significance at 5% level, **.Significance at 1% level

One-way ANOVA was applied to find the significant mean difference between the customer awareness of select public sector banks and the result showed that there is a no significant difference between Usage product (F-value =1.952, $p<0.05$), Availability (F-value =2.276, $p<0.05$), Benefits (F-value = 3.035, $p<0.05$).

One way ANOVA

Hypothesis: There is no significant difference between purposes of Bank visit with respectto customer Awareness of Public Sector banks.

Factors	Source	Sum of Squares	Df	Mean Square	F	Sig
Product	Between Groups	35.955	2	17.978	3.131	.044
	Within Groups	4116.310	717	5.741		
	Total	4152.265	719			
Availability	Between Groups	80.420	2	40.210	5.776	.003
	Within Groups	4991.780	717	6.962		
	Total	5072.200	719			
Benefits	Between Groups	168.068	2	84.029	9.924	.000
	Within Groups	6071.041	717	8.467		
	Total	6239.033	719			

Significance at 5% level, **.Significance at 1% level

One-way ANOVA was applied to find the significant mean difference between the customer awareness of select public sector banks and the result showed that there is a no significant difference between Usage product (F-value =3.131, $p<0.05$), Availability (F-value =5.776, $p<0.05$), Benefits (F-value =9.924, $p<0.05$)

Chi –Square Tests

Hypothesis: There is no significant association between Age group and customer Awareness.

	Value	Df	Asymptotic Significance (2 – Sided)
Pearson Chi – square	13.588[a]	6	.035*
Likelihood Ratio	13.849	6	.031
Linear – by-Linear Association	2.396	1	.122
N of Valid Cases	720		

Chi – Square test was applied to test the association between age group and product of Customer awareness of public sector banks in Tiruchirappalli District. The test indicates that the calculated chi-square value is 13.588[a]. p-Value is .035 at 5 percent level of significance. Since the p-value is less than 0.05 (x^2 13.588[a], $P<0.05$) the null hypothesis is rejected. Hence, there is a no significant association between age group and product of customer awareness of select public sector banks. It is clear that age group is one of the major parameters to measurethe product of customer awareness of public sector banks.

Chi-Square Tests

Hypothesis: There is no significant association between Age group and Availability of product.

	Value	Df	Asymptotic Significance (2 – Sided)
Pearson Chi – Square	18.009[a]	6	.006*
Likelihood Ratio	17.141	6	.009
Linear – by-Linear Association	9.043	1	.003
N of Valid Cases	720		

0 cells (0.0%) have expected Count less than 5. The minimum expected Count is 6.07

Chi – Square test was applied to test the association between age group and Availability of Customer Awareness public sector banks in Tiruchirappalli District. The test indicates that the calculated chi-square value is 18.009[a]. p-Value is .06 at 5 percent level of significance. Since the p-value is less than 0.05 (x^2 18.009[a], P<0.05) the null hypothesis is rejected. Hence, there is a no significant association between age group and Availability of Customer Awareness public sector banks. It is clear that age group is one of the major parameters to measure the Availability of Customer Awareness of public sector banks.

Chi-Square Tests

Hypothesis: There is no significant association between Age group and Benefits of Product.

	Value	Df	Asymptotic Significance (2 – Sided)
Pearson Chi – Squre	.938[a]	6	.048*
Likelihood Ratio	.942	6	.988
Linear – by- Linear Association	.136	1	.712
N of Valid Cases	720		

a.0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.34

Chi – Square test was applied to test the association between age group of Benefits of Customer Awareness of public sector banks in Tiruchirappalli District. The test indicates that the calculated chi-square value is .938[a]. p-Value is .048 at 5 percent level of significance. Since the p-value is less than 0.05 (x^2 938[a], P<0.05) the null hypothesis is rejected. Hence, there is a no significant association between age group and Benefits of Customer Awareness public sector banks. It is clear that age group is one of the major parameters to measure the Benefits of Customer Awareness of public sector banks.

Overall Hypothesis PMSBY

Hypothesis	Test	Value	Sig.	Result
There is no significant difference between genders with respect to perceptual factors of Customer Awareness of public sector banks	T – Test	-198	0.05	Rejected
There is no significant difference between Marital Status with respect to perceptual factors of Customer Awareness of public sector banks	T – Test	.325	0.05	Rejected
There is no significant difference between Community with respect to perceptual factors of Customer Awareness of public sector banks	One way - Anova	1.952	0.05	Rejected
There is no significant difference between Annual Income with respect to perceptual factors of Customer Awareness of public sector banks	One way - Anova	.588	0.05	Rejected
There is no significant difference between Educational qualification with respect to perceptual factors of Customer Awareness of public sector banks	One way - Anova	1.952	0.05	Rejected
There is no significant difference between purpose of bank visit with respect to perceptual factors of Customer Awareness of public sector banks	One way - Anova	3.131	0.05	Rejected
There is no significant difference between Age Group with respect to perceptual factors of Customer Awareness of public sector banks	Chi Square	.938	0.05	Rejected

As per the above table of hypothesis, all null hypotheses were rejected. Therefore, it is concluded that, there is a significant relationship between demographic profile and factors of customer awareness of select public sector banks in Tiruchirappalli District.

Major Findings

Levence's t-test shows that there is a no significance related to the variables in gender like male and female with product, Availability, Benefits select public sector banks. T-test shows that there is a no significance related to the variables in marital status like married and unmarried with usage aspects of customer awareness of select public sector banks. T-test shows that there is a no significant related the variables of customer awareness of social transformation activities select public sector banks.

The ANOVA result shows that the demographic profile of Community, occupation, Annual Income, Educational qualification, purpose of bank visit significant difference as ($p<0.05$), ($p<0.01$) with respect to the perceptual, factors of Customer Awareness of select public sector banks at 5 percent level of significance.

Chi-square test shows that there is a no significant association between age group and Products, Availability and Benefits of Customer Awareness of Social transformation Activities of select public sector banks.

Suggestions

The main motto of the scheme is to provide insurance coverage to all the citizen of India especially rural and backward people. In order to create awareness about this scheme, aggressive financial literacy campaign should be organized by the Government and bank .Bank should organize proper training and plan a coordinated campaign in partnership with NGOs to educate customers about the various schemes of financial inclusion. Attractive advertisements should be prepared using multimedia techniques in local languages. Moreover, the potential of the advertisement to directly reach the population that is eligible to be insured under the scheme, and to comprehensively explain the features and vital details of the scheme has to be ensured. Maximum entry age and minimum renewal age can bereconsidered. The Government may insist Post-Offices and NGO's to come forward to cover the rural and semi-urban areas of the country to provide this scheme. This scheme may be implemented through salary/wages deduction process, and, subsequently, borne by the employer under an employee welfare programme.

Conclusion

Financial inclusion is one of the Innovative approaches which helps to promote the unreached People in the economic independence Status, Whereas Financial inclusion is possible serious strategies of the government. In this regards, government has successfully implemented Financial inclusion through PMJDY which attracts 50 Crore of bank accounts with 1.8 lakhs of Crore as deposits. PMSBY scheme fulfils the motto of financial inclusion by increasing the insurance penetration by offering life insurance coverage at a low cost premium that is affordable to all Indians. All the eligible citizens could register in the scheme so that their respective family members or nominees would be benefited in case of the occurrence of fatal or disabling accidents to the insured person. The Government effort to market this scheme by joining hands with public insurance companies, private insurance companies and post offices/banks to cover the poor and under-privileged sections of the society at a very economical and effective structure is really appreciable.

Still there is a need of creating awareness on PMSBY which is one of the basic Schemes of the rural and poor People in the Country. It is the responsibility of all the stakeholder to empower the people in insurance as early as possible.

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INFLUENCE OF SERVICES FAIRNESS ON SERVICE QUALITY ON POLICY HOLDER'S SATISFACTION IN THE INSURANCE SECTOR IN CHENNAI CITY: AN EMPIRICAL STUDY

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Abstract

This research examined the influence of service fairness on service quality and the satisfaction of life insurance policyholders in Chennai's insurance sector. The research employed both primary and secondary sources to achieve its objectives. The data was collected from policyholders of multiple life insurance companies in Chennai. The study utilized a convenience sampling method. Direct communication was initiated with the life insurance policyholders on their visits to the insurers. A total of 400 questionnaires were issued. After excluding incomplete or inappropriate 39 questionnaires, the remaining 361 were considered complete and valid for analysis. The research indicated that the variables of service fairness—specifically Information fairness, Distributive fairness, Procedural fairness, and Interpersonal fairness—substantially affect the service quality of life insurance firms. The research demonstrated that the elements of service fairness favorably affect customer satisfaction.

Keywords: Life Insurers; service fairness, service quality, and customer satisfaction

INTRODUCTION

In the Indian insurance business, intense competition and rising customer expectations compel insurers to retain, recruit, and satisfy consumers consistently. The insurers acknowledge that customer retention is a sustainable competitive advantage for firms, a technique that rivals may find challenging to replicate (**Larsson, A., & Brostrom, E 2020**). Insurers respond to inquiries stemming from the evolving competitive environment by, among other tactics, increasing investments in IT-enabled services, prioritizing customer experience, and ensuring seamless service delivery. Insurance administrators must prioritize client convenience and service excellence while guaranteeing equitable and impartial services. Service encounters facilitate the exchange of value between customers and service providers, requiring clients to assess the fairness of these interactions (**Abdel**

Fattah et al., 2021). Their fairness evaluation significantly influences customers' perception of service providers and overall satisfaction. Insurance services require significant customer engagement, making it crucial to assess consumer perceptions of fairness, with most studies focusing on service quality. (**Sreedharan V, R., & Saha, R. 2021**). Marketing field scales have been devised and validated to assess service quality in the services sector (e.g., SERVQUAL) (**Parasuraman et al. 1985, 1988**) and SERVPERF (**Cronin & Taylor, 1992**). Consumers evaluate service impartiality and excellence, but service impartiality and quality are distinct concepts. Subpar service does not necessarily evoke feelings of injustice, while unjust service is likely deficient. (**Seiders & Berry 1998**). This study explores service equity in life insurance firms, focusing on service fairness, a customer's assessment of the fairness of a service firm's actions. (**Seiders & Berry, 1998**). A review of contemporary research on service fairness indicated that scholars have identified multiple elements of service fairness and have interpreted them in diverse ways. **Carr (2007**) The FAIRSERV scale, a four-dimensional instrument for assessing service fairness, was developed and expanded to various service contexts in the insurance sector.

REVIEW OF LITERATURE

Service fairness refers to how a client considers the conduct of a service firm to be equitable **(De Ruyter, K., & Wetzels, M. 2000)**. Customers evaluate service encounters based on justice and impartiality, with partial and biased conduct leading to unfavorable perceptions. Following equity theory, understanding service fairness is crucial from the customer's perspective. (**Adams 1963, 1965**). Clients value equity in service interactions, seeking consistent, comparable treatment to other customers. They assess their experiences through this lens (**Carr, 2007**). Service fairness is a multidimensional service marketing concept encompassing informational, distributive, procedural, and interpersonal dimensions. FAIRSERV, a device by Carr, assesses fairness based on cognitive, affective, and behavioral responses. (**Cohen-Charash and Spector 2001**). Procedural fairness ensures uniform, impartial service provider rules, while interpersonal equity reflects care, esteem, and politeness in interactions. Fairness in information dissemination addresses customer concerns (**Greenberg, 1993**). On the contrary, prior research has documented various aspects of service fairness and posited that the dimensionality may vary substantially based on the service environment and culture. Additionally, research on insurance services has identified various dimensional structures of service impartiality **(Kwong et al., 2023; Giovanis et al., 2015).** Therefore, the multidimensional structure of service impartiality requires additional validation and research (**Chen et al., 2012**). Moreover, **Giovanis et al. (2015) and Carr (2007**) conducted additional research on the multifaceted aspect of service impartiality in various service sectors and countries with diverse cultures. Additionally, service impartiality in the Indian context has not yet been investigated. Therefore, this paper aims to investigate service impartiality concerning insurance services.

Service fairness and service quality

Service quality significantly influences consumer evaluations of service delivery, reflecting how well the service meets expectations. Although interconnected, service quality and impartiality are distinct concepts, with inadequate service often considered unjust.

Research shows a significant correlation between service impartiality and quality and concludes that positive service equity perceptions influence favorable service quality perceptions. Customers who perceive that a service provider treats them somewhat are more likely to positively evaluate the service quality, which refers to the overall level of excellence exhibited by the service.

Service fairness and customer satisfaction

A client's level of satisfaction is determined by the outcome of one or more interactions with customer service (**Yi, 1990**). Scholars have identified fairness as a crucial precursor to consumer satisfaction **(Dwidienawati, 2018; Ebrahimi et al., 2016; Zhu & Chen, 2012**). **Oliver and Swan (1989**) suggested that perceived justice plays a crucial responsibility in assessing customer satisfaction and, when combined with the expectancy disconfirmation paradigm of service quality measurement, can improve the ability to predict customer satisfaction. However, only two studies (**Ebrahimi et al., 2016; Narteh, 2016**) have studied the impact of service fairness on customer satisfaction in the insurance context.

PROBLEM OF THE STUDY

Policyholder satisfaction is crucial for business success and customer retention in the insurance sector. However, providers face challenges due to service fairness and quality concerns. Policyholders often experience dissatisfaction due to unfair treatment, delayed claim settlements, hidden charges, and lack of transparency, negatively impacting satisfaction and loyalty. Furthermore, service quality, which includes reliability, responsiveness, assurance, and empathy, significantly influences how policyholders perceive their overall experience with insurers. Poor service quality often results in policy lapses, reduced customer retention, and negative word-of-mouth, further challenging the sustainability of insurance companies. In Chennai City, where the insurance sector is witnessing rapid growth and increased competition, understanding the interplay between service fairness, service quality, and customer satisfaction becomes essential for insurance companies to differentiate themselves. However, empirical evidence examining the direct impact of service fairness on service quality and how these factors collectively shape policyholder satisfaction remains limited. This study aims to bridge this gap by empirically assessing the influence of service fairness on service quality and its subsequent impact on policyholders' satisfaction in Chennai City's insurance sector. By analyzing policyholders' perceptions, the study provides insights to help insurance providers enhance their service strategies, improve customer relationships, and foster long-term customer loyalty.

OBJECTIVES OF THE STUDY

1. To examine the influence of service fairness on the service quality of life insurers in the study region
2. To assess the impact of service fairness on customer satisfaction in the life insurance sector in the study area
3. To evaluate the relationship between service quality and customer satisfaction among life insurance policyholders in the study region

HYPOTHESIS OF THE STUDY

1. Service fairness positively influences the service quality of life insurers in the study region.
2. Service fairness positively influences customer satisfaction in the study area.

3. Service Quality positively influences customer satisfaction in the study area.

RESEARCH METHODOLOGY

The research evaluated the impact of service fairness on policyholder satisfaction in the insurance sector. The study also proposed attempts to test the proposed relationship between service fairness, service quality, and customer satisfaction. To accomplish this, a structured questionnaire integrating the measures for the aforementioned constructs was devised. **Carr (2007) and Chen et al. (2012**) implemented the service parity scale. Fifteen statements about four distinct dimensions were incorporated: information fairness, distributive fairness, procedural fairness, and interpersonal fairness. To determine the perception of customers toward overall service quality, a 3-item measure of service quality was adopted by **Roy et al. (2016**). Customer satisfaction was calculated using a 4-item scale adopted by **Gumussoy and Koseoglu (2016**). Each statement was evaluated using a five-point Likert scale ranging from "SA=5" to "SDA=1." The information was gathered from policyholders of various life insurers in Chennai. The study used a convenience sampling method involving life insurance policyholders. After distributing four hundred questionnaires, 361 were considered valid, resulting in a 96.6% response rate, confirming primary constructs. Additionally, demographic information of respondents was collected. A sample profile is shown in Table 1.

ANALYSIS AND INTERPRETATION

Table 1

Demographic Profile of Policyholders ***(n=361)***

Category	Description	Frequency	Percent
Gender	Male	221	61.2
	Female	140	38.8
Age	Up to 30 years	118	32.7
	31-40 years	108	29.9
	41-50 years	88	24.4
	>50 years	47	13.0
Marital status	Married	251	69.5
	Unmarried	110	30.5
Educational Qualification	Up to HSC	32	8.9
	UG	122	33.8
	PG	86	23.8
	Professional	121	33.5
Annual Income	Up to Rs.5.0 Lakhs	70	19.4
	5.1 - 7.50 Lakhs	103	28.5
	7.51 - 10.0 Lakhs	86	23.8
	>10.0 Lakhs	102	28.3
Occupation	Salaried	120	33.2
	Business	94	26.0
	Professional	101	28.0
	Self-Employed	46	12.7

The study reveals that most life insurance policyholders are male (61.2%), with younger age groups being more proactive in securing insurance. Marital status is 69.5%, with married individuals more likely to invest in life insurance to ensure future security. Educational qualifications are significant, with 33.8% holding an undergraduate or postgraduate qualification and 33.5% possessing a professional qualification. Income levels are evenly distributed, with middle-to-upper-income individuals making up a significant portion of life insurance policyholders. The occupational distribution is dominated by salaried employees (33.2%), followed by professionals (28.0%), business owners (26.0%), and self-employed individuals (12.7%). These demographic insights can help life insurance providers tailor their marketing strategies and policy offerings to cater to consumer segments.

Structural Equation Modelling

The paper proposes to assess the influence of service fairness on service quality on policyholder satisfaction in the insurance sector in Chennai city: An empirical study. The research employed Smart PLS software version 4.0 for model evaluation.

Table – 2: Model fit measures

Parameters	Saturated model	Estimated model
SRMR	0.081	0.088
d_ULS	2.301	2.723
d_G	0.824	0.872
Chi-square	2242.37	2299.226
NFI	0.676	0.668

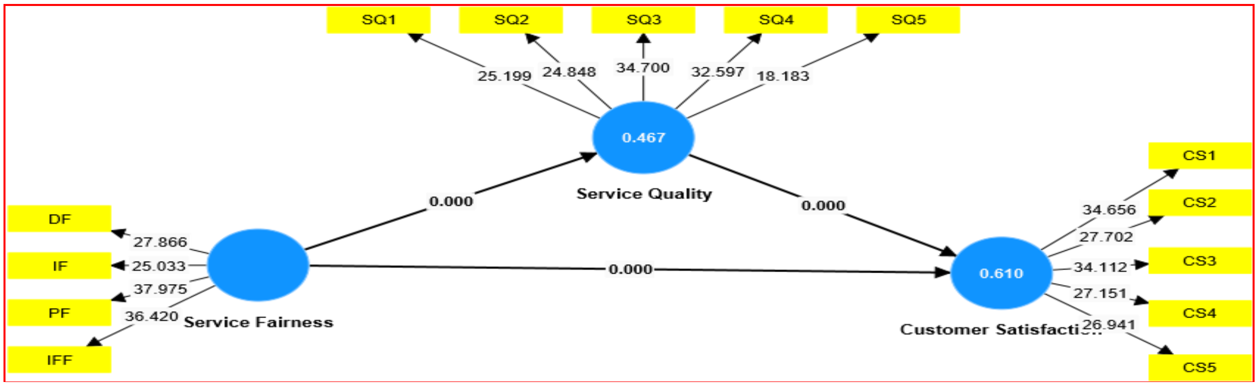
Structural Equation Modeling

For SEM estimation and hypothesis testing, the PLS was utilized. Figure 3 exhibits the graphical representation of the structural model evaluation. The bootstrapping method was utilized to examine the study's effect and hypotheses. Findings of SEM presented in Table 5 show that the results indicated that service fairness has a significant and positive impact on CS (t = 2.860 & p-value= <0.001); hence, H1 is accepted. Furthermore, findings revealed that service fairness has a significant and positive relationship with service quality (t = 20.599 & p-value=<0.001), and H2 is accepted. SQ is also significantly and positively related to customer satisfaction, and H3 is accepted.

Table-3
Hypothesis Results

Hypotheses	Original sample (O)	Sample mean (M)	SD	t- value	p-value	Inference
Service Fairness -> Customer Satisfaction	0.388	0.388	0.05	7.724	<0.001**	H1: Supported
Service Fairness -> Service Quality	0.683	0.685	0.033	20.599	<0.001**	H2: Supported
Service quality -> Customer Satisfaction	0.462	0.463	0.045	10.178	<0.001**	H3: Supported

Figure2
Structural Model Assessment



DISCUSSION AND IMPLICATIONS

The paper examines the impact of service fairness on policy holder's satisfaction in the insurance sector. This paper makes a scholarly contribution to service fairness by verifying the service fairness framework. This constitutes a significant theoretical contribution made in the paper. The hypothesized associations in the theoretical model were tested using structural equation modeling. The results indicated that service fairness significantly and strongly influences service quality and customer satisfaction. Previous studies have reported that service fairness strongly influences service quality (Carr, 2007; Zhu & Chen, 2012; Giovanis et al., 2015; Su et al., 2016) and customer satisfaction (Zhu & Chen, 2012; Fu, 2013; Hassan et al., 2013). These relationships are confirmed within the context of insurance services by the findings of this article. Moreover, this discovery validates the service fairness scale's nomological soundness. The paper additionally investigates the effect of the individual fairness dimension on service quality and client satisfaction, which is an important theoretical contribution. Distributional and interpersonal equity emerged as significant determinants of service quality among the four dimensions. Further, all four service fairness dimensions significantly impacted customer satisfaction. This is consistent with the findings of Wei and Lian (2015).

MANAGERIAL IMPLICATIONS

This paper highlights that insurers who provide equitable service are perceived as superior quality providers, highlighting the influence of fair customer treatment on service quality assessments. (**Giovanis et al., 2015**). The perceived fairness of service provider-consumer interactions positively impacts customer happiness. Insurers should use objective and equitable service delivery methods to create a positive perception of service quality and satisfaction. Staff interactions with clients are crucial for service marketers. Distributional and interpersonal equity are critical factors influencing service quality. Human interaction is vital for insurance services, and staff demeanor and communication can enhance consumer views of impartiality. Service fairness significantly influences consumer satisfaction, with interpersonal fairness being the most influential factor. Positive feelings arise when insurance business staff demonstrate attention, respect, and honesty. (**Ebrahimi et al., 2016**).

Customer satisfaction is influenced by distributive equity, procedural fairness, and the accuracy of service delivery. Dissatisfaction arises when services are biased or unfairly administered. Proper information about costs, insurance policies, and operational procedures increases satisfaction. Maintaining consistency and fairness across various jobs prevents dissatisfaction and irritation.

CONCLUSION

The present paper proposes to assess the influence of service fairness on service quality on policyholder's satisfaction in the insurance sector in Chennai city: An empirical study. The findings of this study provide empirical evidence supporting the significant influence of service fairness on service quality and customer satisfaction in the insurance sector of Chennai City. The results indicate that service fairness positively impacts customer satisfaction, as demonstrated by a strong path coefficient and a high significance. This suggests that when policyholders perceive fairness in service delivery, including transparency in policy terms, equitable treatment, and claim settlements, they are more likely to exhibit higher satisfaction levels. Additionally, the study confirms that service fairness has a strong and positive impact on service quality, with the highest path coefficient and significance. This finding highlights that those fair practices, such as ethical dealings, unbiased customer interactions, and consistency in service execution, enhance the perceived quality of services among policyholders. When insurers maintain fairness in their operations, customers experience improved reliability, responsiveness, and overall service efficiency. Moreover, the relationship between service quality and customer satisfaction is positive and significant, reinforcing that higher service quality leads to greater satisfaction among policyholders. This implies that service elements such as responsiveness, assurance, empathy, and reliability are crucial in shaping policyholders' satisfaction levels. Insurers who focus on delivering superior service experiences can foster positive customer perceptions and long-term loyalty. Overall, the study underscores the importance of service fairness and quality as key drivers of customer satisfaction in the insurance sector. The findings suggest that insurers should prioritize fairness in their service strategies to enhance service quality and, in turn, improve customer satisfaction. Insurance providers can strengthen customer trust, satisfaction, and retention by implementing transparent policies, streamlining claim processes, and ensuring consistent service delivery.

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THE ROLE OF WATER, SANITATION, AND HYGIENE (WASH) IN THE LIVELIHOOD SUSTAINABILITY OF WIDOW FISHERY WOMEN IN COASTAL COMMUNITIES

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Abstract

Water, Sanitation, and Hygiene (WASH) play a crucial role in ensuring the well-being and economic sustainability of communities, particularly in coastal fishing regions. Widowed fisherwomen, who already face socio-economic challenges, are further burdened by inadequate WASH facilities, which adversely affect their health, productivity, and financial stability. This qualitative study examines the intersection of WASH and livelihood sustainability for widowed fisherwomen in coastal communities, with a specific focus on Nagapattinam District, Tamil Nadu. By reviewing secondary sources, including government reports, NGO publications, and peer-reviewed studies, this report highlights the pressing need for improved WASH infrastructure and policy interventions to enhance the resilience of this vulnerable group.

1. Introduction

1.1 Background of the Study

Coastal fisheries contribute significantly to the economy and food security of many nations, particularly in developing countries like India. Women play an essential role in post-harvest activities, including fish processing, drying, and vending. However, widowed fisherwomen in these communities experience severe socio-economic marginalization. Their struggles are further intensified by poor access to clean water, sanitation, and hygiene, which directly impacts their ability to sustain their livelihoods.

1.2 Significance of WASH in Livelihood Sustainability

WASH facilities are critical for maintaining health, productivity, and economic resilience. Poor sanitation and lack of clean water lead to frequent illnesses, reduced work efficiency, and limited participation in economic activities. Widowed fisherwomen, who often lack financial security and social support, are disproportionately affected by inadequate WASH services.

2. Objectives of the Study

1. To assess the impact of inadequate WASH facilities on the livelihood sustainability of widowed fisherwomen in coastal communities.
2. To explore socio-economic challenges exacerbated by poor WASH infrastructure.
3. To recommend policy interventions for improving WASH conditions

and enhancing livelihood sustainability.

3. Review of Literature

3.1 Livelihood Challenges of Women in Fisheries

According to the Food and Agriculture Organization (FAO, 2021), women in fisheries face significant barriers, including gender discrimination, financial insecurity, and lack of access to resources. Widowed fisherwomen are particularly vulnerable, as they often depend solely on fisheries-related activities for survival but lack the necessary infrastructure to sustain their work.

3.2 WASH and Its Importance in Livelihood Sustainability

Water, Sanitation, and Hygiene (WASH) are fundamental components of public health and play a crucial role in ensuring sustainable livelihoods. The World Health Organization (WHO) and UNICEF (2020) emphasize the importance of adequate WASH facilities in maintaining health and productivity. The lack of access to clean water, proper sanitation, and hygiene infrastructure can significantly impact the ability of individuals, especially women, to sustain their livelihoods effectively.

One of the primary ways poor WASH conditions affect livelihoods is through the prevalence of waterborne diseases. Contaminated water sources and inadequate sanitation contribute to illnesses such as diarrhea, cholera, and dysentery, which disproportionately affect vulnerable populations. Frequent illness reduces productivity by increasing absenteeism from work, limiting income opportunities, and imposing financial burdens on families due to medical expenses. When workers, particularly in labor-intensive sectors such as agriculture and fish processing, suffer from health issues, their ability to sustain a stable income is compromised.

Women, in particular, face significant challenges due to inadequate WASH infrastructure. Many women are engaged in informal sectors such as small-scale fish vending and processing, where the availability of clean water and sanitation facilities is critical. Poor hygiene in these workspaces not only endangers their health but also affects the safety and quality of their products. Without proper sanitation facilities near fish vending and processing areas, the risk of contamination increases, leading to reduced consumer trust and economic losses. Furthermore, women often bear the responsibility of managing household water needs, which can be time-consuming and physically demanding when clean water sources are not readily available. This additional burden reduces the time they can dedicate to income-generating activities, thereby affecting their economic independence and overall family well-being.

Another crucial aspect of WASH in livelihood sustainability is its impact on education and long-term economic stability. In communities where schools lack proper sanitation facilities, children, particularly girls, are more likely to miss classes due to hygiene-related issues such as the absence of menstrual hygiene management facilities. Education is a key factor in breaking the cycle of poverty, and inadequate WASH infrastructure limits the ability of young individuals to acquire skills and knowledge necessary for future employment.

3.3 The Gendered Impact of Poor WASH Infrastructure

Research by Choudhury & Haque (2022) shows that women in coastal communities disproportionately suffer from inadequate sanitation facilities. Limited access to toilets and safe drinking water increases their vulnerability to health issues, social exclusion, and economic deprivation. Widowed fisherwomen, in particular, experience greater hardship due to limited mobility and lack of support networks.

3.4 Case Studies on WASH and Women's Livelihood

Studies in Bangladesh and Sri Lanka have demonstrated the positive impact of improved WASH infrastructure on women's workforce participation. According to Hossain (2019), investments in WASH facilities significantly enhance economic stability by enabling women to maintain hygiene standards, reducing health-related absences, and increasing productivity.

3.5 Impact of Climate Change on WASH and Livelihoods in Coastal Communities

The Intergovernmental Panel on Climate Change (IPCC, 2021) reports that climate change has led to water scarcity, rising sea levels, and increased salinity in drinking water sources. Das & Hossain (2022) further highlight that these changes negatively impact WASH infrastructure, exacerbating the struggles of coastal communities. Widowed fisherwomen are particularly affected as they depend on stable WASH conditions for their daily activities and economic survival.

3.6 Policy Interventions and WASH Improvements in Coastal Livelihoods

Government programs, such as the Swachh Bharat Mission (SBM) and the National Fisheries Policy, aim to improve WASH conditions in fishing villages. Studies by Sharma & Patel (2020) indicate that access to proper sanitation and hygiene facilities increases women's participation in fisheries-related work. However, implementation challenges, such as inadequate funding, poor maintenance, and lack of gender-sensitive approaches, have hindered these efforts (Kumar et al., 2021).

4. Research Methodology

This study is based entirely on secondary sources, including government reports, academic research papers, and publications from international organizations. A qualitative analysis of existing literature is used to examine the relationship between WASH conditions and livelihood sustainability among widowed fisherwomen.

5. Findings and Discussion

Based on the literature review, the following key findings emerge:

Poor WASH Conditions Lead to Health-Related Work Absences

One of the primary ways poor WASH conditions affect livelihoods is through the prevalence of waterborne diseases. Contaminated water sources and inadequate sanitation contribute to illnesses such as diarrhea, cholera, and dysentery, which disproportionately affect vulnerable populations. Frequent illness reduces productivity by increasing absenteeism from work, limiting income opportunities, and imposing financial burdens on families due to medical expenses. Widowed fisherwomen, who rely on daily fish vending and processing for sustenance, are particularly vulnerable, as poor health restricts their ability to work consistently. Without reliable participation in their livelihood activities, they face economic instability and greater dependence on external assistance.

Lack of Sanitation Facilities Limits Economic Opportunities

Women, in particular, face significant challenges due to inadequate WASH infrastructure. Many women are engaged in informal sectors such as small-scale fish vending and processing, where the availability of clean water and sanitation facilities is critical. Poor hygiene in these workspaces not only endangers their health but also affects the safety and quality of their products. The absence of accessible and gender-sensitive sanitation facilities further limits women's ability to engage in fisheries work, forcing them to travel long distances in search of suitable restrooms or avoid work altogether. This not only reduces their income-generating potential but also reinforces gender disparities in economic participation. Moreover, the lack of proper sanitation facilities near fish vending and processing areas increases the risk of contamination, leading to reduced consumer trust and economic losses.

Climate Change Exacerbates WASH Challenges

Another crucial aspect of WASH in livelihood sustainability is its intersection with climate change. Rising sea levels and saline intrusion negatively impact drinking water quality, further aggravating WASH-related issues for coastal communities. As freshwater sources become increasingly salinized, access to safe drinking water diminishes, forcing communities to rely on expensive or unsafe alternatives. This problem is particularly severe for fisherfolk who live in low-lying coastal areas and depend on marine resources for their livelihood. Additionally, extreme weather events such as storms and floods damage existing WASH infrastructure, leading to further health hazards and economic disruptions. Without urgent interventions, climate-induced WASH challenges will continue to threaten the sustainability of coastal livelihoods.

Policy Interventions Have Had Limited Impact Due to Poor Implementation

Improving WASH infrastructure has significant benefits for economic growth and social well-being. Access to clean water, improved sanitation, and hygiene education reduces the burden of disease, increases workforce productivity, and enhances the overall quality of life. However, despite national policies recognizing the need for improved WASH services, practical implementation remains hindered by funding constraints and lack of community participation. In many cases, allocated budgets for WASH projects are insufficient or mismanaged, leading to incomplete or poorly maintained facilities. Additionally, a top-down approach to policy implementation often overlooks the specific needs of affected communities, resulting in ineffective solutions. Governments, non-governmental organizations (NGOs), and private sector stakeholders must collaborate to invest in sustainable WASH solutions, particularly in rural and marginalized communities. This includes developing policies that prioritize water security, constructing sanitation facilities in high-risk work environments, and conducting awareness programs to promote hygiene practices.

Conclusion and Recommendations

Improving WASH facilities in coastal fishing communities is crucial for enhancing the livelihood sustainability of widowed fisherwomen. Based on the findings, the following recommendations are proposed:

1. **Expansion of Safe Water and Sanitation Infrastructure:** Governments and NGOs should invest in providing clean water and sanitation facilities in fish markets, processing centres, and residential areas.
2. **Development of Gender-Sensitive WASH Policies:** Policies should focus on ensuring that WASH infrastructure meets the specific needs of widowed fisherwomen, including the provision of safe sanitation spaces.
3. **Integration of WASH with Livelihood Programs:** WASH improvements should be linked with economic empowerment programs to enhance the sustainability of fisheries-related activities.
4. **Community Participation in WASH Initiatives:** Encouraging local participation in decision-making processes will ensure that interventions are contextually relevant and sustainable.

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