IMPACT OF SOCIO-ECONOMIC DEVELOPMENT SCHEMES OF SCHEDULED TRIBES IN INDIA

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WELFARE SCHEMES FOR THE DEVELOPMENT OF SCHEDULED TRIBES IN INDIA

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ABSTRACT

The Government of India as well as state governments have introduced and implemented various schemes and extended financial support under these schemes for the benefit of ST people for their development as well as upliftment, who are really struggle for their livelihood. Financial Corporations at national and state levels are established for the welfare of this community. Housing, farm land, live stock, free and forced child education etc, are in force at various stages for the benefit of this segment. Employment is providing under reservation in government and public sector by and large to improve the socio economic status of these communities. The public sector banks which are predominant in Indian banking are providing financial support to these sectors under different schemes in a large scale to develop them in all aspects.

The "**Stand Up India Scheme**" to promote entrepreneurship among SC/ST and Women entrepreneurs is approved by the Union Cabinet recently. This Scheme provides for - refinance window through Small Industries Development Bank of India (SIDBI) with an initial amount of Rs. 10,000 crore, creation of a credit guarantee mechanism through the National Credit Guarantee Trustee Company (NCGTC). The overall intent of the approval is to leverage the institutional credit structure to reach out to these under-served sectors of the population by facilitating bank loans repayable up to 7 years and between Rs. 10 lakh to Rs. 1 crore for green field enterprises in the non farm sector set up by such SC, ST and Women borrowers.

The **SC/ST Sub Plan** has been to channelize the flow of outlays and benefits from the general sectors in the Plan of States for the development of Scheduled Castes and Tribes, at least in proportion to their population, both in physical and financial terms. These plans should be an integral part of Annual Plans as well as Five Year Plans, making provisions therein non-divertible and non-lapsable, with the objective of substantial reduction in poverty and unemployment among SC/STs and for bridging the gaps in their socio-economic development.

1. Introduction

The Government of India as well as state governments have implemented various schemes and extended financial support under these schemes for the benefit of Schedule Tribe people for their development as well as upliftment, who are really struggle for their livelihood. Financial Corporations at national and state levels are established for the welfare of this community. Housing, farm land, live stock, free and forced child education etc, are in force at various stages for the benefit of this segment. Employment is providing under reservation in government and public sector by and large to improve the socio economic status of these communities. The public sector banks which are predominant in Indian banking are providing financial support to these sectors under different schemes in a large scale to develop them in all aspects.

Government is pursuing an integrated approach to ameliorate the situation of unemployment among ST population across the country. Ministry of Tribal Affairs under its Special Area Programmes provides funds as an additive to the State Plan for carrying out skill

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development and employment-cum-income generation activities. During the financial years 2014-15 and 2015-16, the Ministry has impressed upon the State Governments for promotion of need based integrated livelihood initiatives and skill up-gradation of tribals to get them respectable jobs such as: diversified crops, horticulture, dairy development with State cooperative, backyard poultry, fisheries, apiculture, sericulture, etc. with proper market linkages.

2. Government schemes for ST development

The "Stand Up India Scheme" to promote entrepreneurship among SC/ST and Women entrepreneurs is approved by the Union Cabinet recently. This Scheme provides for - refinance window through Small Industries Development Bank of India (SIDBI) with an initial amount of Rs. 10,000 crore, creation of a credit guarantee mechanism through the National Credit Guarantee Trustee Company (NCGTC). The overall intent of the approval is to leverage the institutional credit structure to reach out to these under-served sectors of the population by facilitating bank loans repayable up to 7 years and between Rs. 10 lakh to Rs. 1 crore for green field enterprises in the non farm sector set up by such SC, ST and Women borrowers.

The **SC/ST Sub Plan** has been to channelize the flow of outlays and benefits from the general sectors in the Plan of States for the development of Scheduled Castes and Tribes, at least in proportion to their population, both in physical and financial terms. These plans should be an integral part of Annual Plans as well as Five Year Plans, making provisions therein non-divertible and non-lapsable, with the objective of substantial reduction in poverty and unemployment among SC/STs and for bridging the gaps in their socio-economic development.

Marketable skills like - Office Management, Solar Technician / Electrician , Beautician , Handicraft, Skills required for day to day construction works (such as Plumbing, Mason, electrician, fitter, welder, carpenter) , Refrigeration and A/C repairing , Mobile repairing , Horticulture / Floriculture / Apiculture , Nutrition & Cardiopulmonary resuscitation (CPR) , Ayurvedic & tribal medicines, IT , Data Entry , Fabrication, Home Nurse Training, Automobile Driving and Mechanics, Electric & Motor Winding, Security Guard, Housekeeping & Management, Retail Management ,Hospitality and Eco-tourism.

With a view to ensure that funds through various sources under the Tribal Sub-Plan (TSP) are utilized in the most efficient manner towards achieving the holistic development of tribal people, the Government of India has launched a Central Sector Scheme "Vanbandhu Kalyan Yojana (VKY)". The VKY is broadly a process, which aims at achieving overall development of tribal people through convergence of available resources, with an outcome-based approach, monitored by an independent agency.

As per the poverty ratios estimated by the erstwhile Planning Commission, the population of Scheduled Tribes (ST) below poverty line has come down from 47.4% in 2014-15 to 45.3% in 2015-16 in rural areas. In urban areas also, it has declined from 30.4% in 2014-15 to 24.1% in 2015-16. Also, data pertaining to Census 2011 shows that the situation of non-workers among total ST population (i.e. 42.0%) is not dismal as compared to SC (i.e. 52.2%) and all social groups (53.3%). The percentage of ST non- workers has also declined from 50.9% in 2001 (Census 2001) to 42.0% in 2011 (Census 2011) at all India level.

The Ministry of Rural Development is implementing various rural development programmes namely, Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), National Rural Livelihoods Mission (NRLM), Pradhan Mantri Gram Sadak

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Yojana (PMGSY), Indira Awaas Yojana (IAY) and National Social Assistance Programme (NSAP) in rural areas of the country through State Government/UT Administrations to bring about overall improvement in the quality of life of the people in rural areas through employment generation, development of rural infrastructure and provision of other basic amenities. That Ministry has made specific provisions in the guidelines of the programmes to ensure adequate flow of resources to the Scheduled Tribes. Earmarking of Plan Outlay under TSP is being made at 24.71% under IAY and 20.59% for NRLM/ Aajeevika. Though no specific earmarking of fund is being made for STs under other major Rural Development Programmes like MGNREGA, PMGSY and NSAP but specific provisions have been made in the guidelines of these programmes for the benefit Scheduled Tribes.

3. Role of the Ministry of Tribal Affairs

In the Ministry of Tribal Affairs, a Reservation Roster is maintained as per rules and appointments are made according to the points reserved for various categories. STs are not suffering in so far as their promotion and incentives are concerned. As informed by Department of Public Enterprises (DPE), no centralized information is maintained in DPE in respect of STs discrimination at work. Central Public Sector Enterprises (CPSEs) are under the administrative control of different administrative Ministries/ Departments and any issue related to discrimination at work is forwarded to concerned administrative Ministry/ Department related to a CPSE for appropriate action, if any.

It is the nodal Ministry for the overall policy, planning and coordination of programmes for the development of the Scheduled Tribes (STs). The programmes and schemes of the Ministry are intended to support and supplement, through financial assistance, the efforts of other Central Ministries, the State Governments and voluntary organizations, and to fill critical gaps taking into account the needs of ST.

4. Recent tribal welfare schemes

Van Bandhu Kalyan Yojana (VKY):

- Introduced by the Central government in 2014 as a Central Sector Scheme with an allocation of Rs. 100 crore.
- The Central Government proposes to replicate the intervention with special focus on the qualitative and sustainable employment for tribal families; bridging infrastructure gaps with focus on quality; improving the quality of education and health and improving the quality of life in tribal areas.
- The scheme been launched on pilot basis in one block each of the (10 Schedule V) States of AP, MP, HP, Telangana, Orissa, Jharkhand, Chattisgarh, Rajasthan, Maharashtra and Gujarat.
- Under the scheme centre will provide Rs. 10 crore for each block (total Rs. 100 crores for 10 blocks) for the development of various facilities for the Tribals. These blocks have been selected on the recommendations of the concerned States and have very low literacy rate

Model Blocks:

- There are about 350 Blocks in the Schedule V areas where population to STs compared to total population of the Block is 50% or above. Despite several interventions in the

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past, these Blocks are still reeling under various facets of deprivation in so far as Human Development Indices are concerned. Through VKY, it is envisaged to develop these Blocks as model Blocks over the period of next five years with qualitative and visible infrastructural facilities.

- The selection of block will be made in consultation with the respective State Governments while taking into account the human development indices.

Approach of VKY:

The proposed intervention is aimed at adopting a holistic approach to create an enabling environment while ensuring

- qualitative and sustainable employment;
- emphasis on quality education & higher education;
- accelerated economic development of tribal areas;
- health for all;
- housing for all;
- safe drinking water for all at doorsteps;
- irrigation facilities suited to the terrain;
- all weather roads with connectivity to the nearby town/cities;
- universal availability of electricity;
- urban development;
- robust institutional mechanism to roll the vehicle of development with sustainability;
- Promotion and conservation of tribal cultural heritage and promotion of Sports in tribal areas.

Scheme as a Mission Mode:

- The scheme is being implemented through robust institutional mechanism in a mission mode
- The scheme equips these institutions with proper infrastructure and well capacitated manpower to gear up the process of monitoring and implementation of activities translating into tangible outcomes.
- For the purpose, a Project Implementation Cell manned with 26 professionals will be set up at the Tribal Welfare Department of each State

MFPNET Portal of TRIFED:

- The new MFPNET portal of Tribal Co-operative Marketing Development Federation of India (TRIFED) is designed to act as an adjunct and a catalyst for implementing the scheme of Minimum Support Price (MSP) for Minor Forest Produce (MFP).
- It is a one stop destination for all information needs on MFPs and facilitates stakeholders in MFP trade and users to take decisions backed by requisite information. It is a platform to collect and disseminate MFP trade related information and latest developments in this field. The information shall be available commodity wise and state wise for different markets.
- The main objective is to ensure fair price to MFP gatherers who are mainly tribals, enhance their income level and ensure sustainable harvesting of MFPs.
- It is initially implemented for 10 main identified MFPs in 102 districts of 8 States.

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- It is expected to increase quantum of MFP procurement substantially thereby benefitting tribal people.
- The Scheme also envisages training of 1,00,000 MFP gatherers of tribal origin on sustainable harvesting and value addition activities.
- This portal provides information about TRIFED, MFP trade in India, marketing prospects for MFPs, MSP for MFP, its current status, MFP development training beside its retail marketing activities.
- Moreover, the portal is a network of stakeholders in the trade of MFP which includes individuals, agencies and institutions. Emails & SMSes about daily market prices shall be sent to all those interested in knowing the market prices and registered with the MFPnet.
- In addition, MFPnet also has the provision to upload information on buying and selling. Buyers and sellers can upload the trade leads about the MFP stock they want to sell or buy directly and the same shall be visible to all other visitors on the site. The buyer/seller interested to pursue these trade leads can get in touch with each other directly.

Eklavya Model Residential Schools

- To facilitate infrastructure and conducive environment for provision of quality education to the tribals, the Government has sanctioned 184 Eklavya Model Residential Schools.
- Holding of this consultation is part of the process of sensitizing the State Government towards the bigger goal of tribal development at par with mainstream fellow population of the country.

Tribal Map of India

The Central government has issued orders to prepare detailed Tribal Map of India utilizing the technology of Geographical Information System (GIS) which will help the government while implementing different programmes and introducing new schemes and projects for tribal people.

Scheduled Tribes Girls and Student Welfare gets Rs. 473 Lakh

- The welfare of tribal girls and student welfare is one of the focus areas of the Government.
- An outlay of Rs 473 lakh has been proposed for 2014-15 for various tribal welfare programmes which include for assistance of ST girls to reduce the burden of marriage expenses and Financial Assistance to Traditional Tribal Healers.
- Educational assistance to scheduled tribe children has also been given high priority. It includes assistance for study tour to school & college going students, supply of study material to all students studying in high school, higher secondary school & colleges and assistance to provide laptop to ST students studying professional courses in approved University/institutes.

Other initiatives

- The government has given in-principle approval for recognizing the Vishva Bharati, Shanti Niketan as the other centre of excellence in the field of Tribal language and literature.

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- A proposal to establish a National Research Centre in the Tribal Research Institute, Bhubansehwar to promote research activities on subjects/issues for socio-economic development and culture of States has also been approved by the Government.

Conclusion

Special Central Assistance to Tribal Sub Plans (SCA to TSP) is provided to 22 TSP States including West Bengal. Funds under this programme are released for employment-cum-income generation activities and the infrastructure incidental thereto, for tribals below the poverty line, thereby raising their economic and social status, including that of the Particularly Vulnerable Tribal Groups. Funds are also released as an extension of SCA to TSP for the development of 2413 forest villages in 12 States including 170 such villages in the State of West Bengal, in order to provide its inhabitants with basic facilities and services including inter-alia health care, primary education, irrigation, rain water harvesting, safe drinking water, and sanitation and approach roads.

The tribals constitute a sizeable proportion (8.8%) of the total population of India. The tribals are also the citizens of India and hence promotion of their welfare is of equal importance. Not only the Central and the State Governments have undertaken various steps in this regard, but also various voluntary organisations have evinced interest in this task. Orgainsations such as the Bharatiya Adim Jati Sevak Sangh, the Bhil Seva Mandal, The Kasturba Gandhi National Memorial Trust, the Indian Red Cross Society, the Vishwa Hindu Parishad, The Ramakrishna Mission, The Rashtreeya Swayml Sevak Sangh, etc., carry on welfare activities among the tribals. The Government through its Department of Tribal Welfare and through its Five-Year Plans has been trying to elevate the tribals from the state of ignorance, illiteracy and poverty.

DEMONETISATION

Impact and Prospects

Editor
Dr.Chilumuri Srinivasa Rao

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DEMONETISATION IMPACT AND PROSPECTS

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IMPACT OF DEMONETISATION AND RE-MONETIZATIION: AN EMPIRICAL ANALYSIS OF THE EXPERIENCES OF INDIA

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ABSTRACT

The demonetization exercise initiated by the Government of India on November 8, 2016 was called as a "surgical strike" towards corruption and a push towards digitalization and people have adopted electronic mode of transactions for their economic activities. The Government of India has withdrawn high value currency and then introduced Rs.500 and Rs.2000 notes in to the economy.

Keeping these efforts of the Government the present paper primary aims at an analysis of the Impact of demonetization on the use of electronic channels and modes of payments in India. It is an academic exercise to assess the impact of demonetization with specific reference to three periods: 1) pre-demonetization period, 2) Demonetization Period and 3) Re-monetization Period. Exclusively based on secondary data collected from different research reports, particularly the publications of RBI, BCG, KPMG on different aspects of Demonetization and migration of people towards the electronic payment channels in India. The paper observes that the pace of electronic modes of payment was not so significant in terms of volume of transactions and in value terms majority of the channels have shown significant growth in transactions. After identifying the nature and volume and value of electronic payments in India, the present paper deals with the barriers to the movement towards digitalization and suggests some the measures to be implemented for sustainable use of electronic channels in India.

Key Words: *Demonetization, Electronic Payment Systems, Currency in Circulation*

INTRODUCTION

On the 8th of November, 2016 when the sun had descended below the horizon and the light of day had completely faded, when people were returning back home from a long day at work, a misty light of a new economy was brewing over the country. All Rs.500 and Rs.1000 banknotes of the Mahatma Gandhi Series ceased to be legal tender in India from 9 November 2016. The government claimed that the demonetization was an effort to stop counterfeiting of the current banknotes allegedly used for funding terrorism, as well as a crackdown on black money in the country. The move was described as an effort to reduce corruption, the use of drugs, and smuggling.

The theory of demonetization is apparently not new and not even Modi's brainchild. The theory was suggested a long time back by a chartered accountant 'Anil Bokil', who is part of a Pune-based group called ***'ArthaKranti Sansthan'***. The ArthaKranti theory, which was widely circulated on social media platforms such as WhatsApp and Reddit way back in 2014, lists a five-point action that guarantees "solution of Black Money Generation, Price rise and Inflation, Corruption, Fiscal Deficit, Unemployment, Ransom, GDP and industrial growth, terrorism and good governance". "Arthakranti Proposal" has been given by a Pune (Maharashtra) based "Arthakranti Sansthan" which is an Economic Advisory body constituted by a group of Chartered Accountants and Engineers.

India is amongst the most cash-intensive economies in the world with a cash-GDP ratio of 12%. The same ratio in its peer economies such as Brazil and South Korea is one-third of India; Cash in circulation to private consumption ratio in India is 20%, and Card transactions account for 4% of the personal consumption expenditure. In such a cash-dependent economy, all of a sudden around 86% of the cash supply has been rendered useless. This has effectively imposed a tight constraint on real economic activity. This constraint was initially felt most acutely in the cash-intensive sectors such as agriculture, construction, gems and jewellery, textile, trade, transportation and real estate as well as in the activities in the vast informal sector of the country. Beyond the initial impact, the shock from demonetization, as observed, was setting off a domino effect that has impinged on activities far removed from the cash-intensive sectors. This impact has resulted in a protracted economic slowdown going beyond the current financial year. The firms and households haveattempted to get around the

cash constraint. Formal financial services provide support to those who have access to them. Firms in the retail business that utilize the formal financial services will face a rise in demand as consumers shift from the cash economy to the digital economy. These innovations dampen the effects of the shock to some extent, however, they cannot act as much of a cushion in an economy which was so overwhelmingly dependent on cash. So, even if the share of digital transactions doubles, it would still represent only a small portion of the transactions in the economy.

In India, notes in circulation as of November 4, 2016 was Rs. 17,742 bn (13% of GDP) and the value of Rs.500/Rs.1000 notes in circulation (86.5% of notes in circulation) was Rs. 15,347 bn (11% of GDP). India has carried out demonetization exercises twice before, in 1946 and 1978. In Jan 1978 episode, currency worth INR 1.46 bn (1.7% of total notes in circulation was demonetized. Of this INR 1.0 bn (or 68%) was tendered back. In 1978 the value of demonetization was very small (only 0.1% of GDP). However, the 2016 demonetization efforts cover 86% of the total currency in circulation (11% of GDP). Demonetization was an attempt made by Government of India towards exploring the possibility of moving towards a "cashless economy" . In India, notes in circulation as of November 4, 2016 was Rs. 17,742 bn (13% of GDP) and the value of Rs.500/Rs.1000 notes in circulation (86.5% of notes in circulation) was Rs. 15,347 bn (11% of GDP). It is widely believed that the movement from cash to cashless economy has significant benefits. Moody's Analytics (2013), studying the impact of card usage on gross domestic product (GDP) of 51 countries, found that electronic card usage added USD 1.1 trillion in real dollars to private consumption and GDP from 2003 to 2008. The study found that a 1% increase in card transaction volume would increase consumption each year by 0.039% and GDP growth by 0.024%. Similar benefits are expected for India as well. As well, the Government of India has also thought of getting the same benefits and boost to the growth of GDP.

Multiplier Effect of Cashless Payments: Recent studies highlight the multiplier effect of cashless payments on GDP growth. Zandi et al. (2013), studying 56 countries over 2008–2012, calculate that USD 983 billion were added to their cumulative real GDP because of increased card usage. This amounts to 0.3% of their GDP per year. They estimate that a future 1% increase in card usage across these countries would produce an annual consumption increase of 0.056% and a GDP increase of 0.032%. Among the major emerging economies, a 1% increase in card usage will increase consumption by 4.89% in China, 1.070% in Russia, 1.147% in Brazil, with India at a lower level of 0.047%. In another related study, Hasan et al. (2013) analyze retail payments data from all 27 European Union member states over the period 1995–2009. This study also demonstrates the positive relation between migrations from paper to electronic retail payments to the real economy. They estimate that if the card penetration ratio increases by 1.2% in the EU, then GDP would increase by 0.07% or about 6 million Euros.

The question is how the growth in cashless payments fuel the economy does. The literature suggests two prominent direct benefits of cashless payments on GDP growth: lower costs of storing and processing physical currency and increased tax collection. Bolt et al. (2008), using payment and banking data between Netherlands and Norway (1990–2004), estimate that using cashless payment instruments may save 0.7 billion Euro in bank costs for Norway (0.35% of GDP in 2004) and 2.9 billion Euro for the Netherlands (0.61% of GDP). This means that, on a discounted basis over time, shifting from 90% paper-based instruments and cash to 90% electronic and card instruments could save about 2300 Euro per person in each country. Kruger and Seitz (2014) estimate the cost by simply multiplying a representative hourly wage rate and the total number of ATM withdrawals per year. They indicate a significant saving if an economy graduates to cashless payments.

Digital Payments in India: Digital payment is a way of payment which is made through digital modes. In digital payments, payer and payee both use digital modes to send and receive money. It is also called as electronic payments. No hard cash is involved in the digital payments. All the transactions in digital payments are completed online. It is an instant and convenient way to make payments. If we talk about cash payments, you have to first withdraw cash from your account. Then you use this cash to pay at shops. Shopkeeper goes to the bank to deposit the cash which he got from you. This process is time-consuming for you and also for the shopkeeper. But in digital payments, the money transfers from your account to the shopkeeper's account immediately. This process is automatic and neither you nor the shopkeeper is required to visit the bank. Digital payments save you

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from long queues of ATMs and banks, because, if you pay digitally you won't need to withdraw cash from your account. It also saves lots of time and a little bit money as well.

Experts on "Economics of Digital Payments" argue that the following are the four mega trends which have been acting as drivers of digital payments in India.

- India going digital
- "Favorable" regulatory environment
- Emergence of NextGen payment service providers
- Enhanced customer experience.

Being driven by these forces, India is rapidly evolving into a digital behemoth. Rising Smartphone penetration and internet access have ensured that Indian consumers stay constantly connected as India currently ranks 2nd in the world, with over 1 billion mobile subscriptions and 240 million subscribers use smart phones with increased 3G and 4G penetration, even in the remotest parts of our country the internet network is rapidly expanding. The impact of digitization with banks, the digital transactions in the banks have shown a growth of 50.0 per cent y-o-y. The branch-based transactions have reduced by almost 7.0 per cent during the financial year2015. Besides, the "favorable" regulatory environment has been nurtured by the Government of India according to the guidelines of RBI. The regulatory steps like KYC relaxation for small transactions, exemption from Two-factor Authentication, Aadhaar making KYC easier and UPI launched by NPCI have fundamentally changed the way customers manage payments.

METHODOLOGY

Keeping all these revolutionary changes in the payments system in India. This paper deals with a comparative analysis of economies of digital payments with special reference to demonetization in India. Exclusively depending upon secondary data on non-cash payments, the paper presents the analysis for three periods of digital payments: 1. Pre-demonetization period (2014-15 and 2015-16); 2. Demonetization period (November, 2016) and 3. Re-monetization Period (January, March and June, 2017). The sources of secondary data like RBI Annual Reports, Electronic Payment Systems, Representative Data (updated), and Concept Papers on Payment and Settlement Systems, The Fletcher School Working Papers, BCG Reports on Digital Payments, Reports of NPCI, Publications of "India Demonetization Monitor, VivekKushal's Diary, and research papers on demonetization were consulted to supplement and strengthen the main theme of the paper.

Discussion and Results

Since November 8, every Indian has only one thing on mind: the dilemma of choosing a safe, secure, convenient and cashless payment option. From commonly used cards to newly launched UPI, digital payments of many types of payment are available in India and some modes meant for tech-savvies and some for less-technical persons. Currently available cashless payment systems include credit/debit cards, e-wallets such as Paytm, Unified Payment Interface (UPI), IMPS, USSD, RTGS, CTS,NACH,USSD, Credit and Debit Cards (Plastic Money)PPI,NEFT, India QR and Mobile Banking etc., Soon after the Government's move towards demonetization, people have started adopting to modern ways of cashless payment options. There are many cashless payment options available in India, as mentioned above and to promote cashless economy, many cashless transaction providers have started giving out 100% cash back on cashless transactions.

Electronic Payments during Pre-Demonetization Period

The RBI has been continuously putting efforts towards building secure payment and settlement system for achieving less-cash society. At end-March 2016, the National Electronic Funds Transfer (NEFT) facility was available through 130,013 branches of 172 banks. These efforts for migration to electronic payments are reflected in increased volumes of transactions as shown in Table. 1

Table-1: Payments System Indicators during Pre-Demonetization Period

S. No.	Payment Channels	Volume (million)		Value (Rs. billion)	
		2014-15	2015-16	2014-15	2015-16
1	Real Time Gross Settlement (RTGS)	92.8	98.3	754,032	824,578
2	National Electronic Funds Transfer (NEFT)	927.6	1252.9	59,804	83,273

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3	Cheque Transaction System (CTS)	964.9	958.4	66,770	69,889
4	Immediate Payment System (IMPS)	78.4	220.8	582	1,622
5	National Automated Clearing House (NACH)	340.2	1,404.1	1,221	3,802
6	Plastic Money:				
	a)Credit Cards	615.1	785.7	1,899	2,407
	b)Debit Cards	808.1	1,173.5	1,213	1,589
7	Prepaid Payments Instruments (PPI)	314.5	748.0	212	488
Total Electronic Transactions (%)		74.6	84.4	94.6	95.2

Source: RBI, Annual Reports-2014-15 and 2015-16

The data presented in Table.1 shows that the share of electronic transactions moved up to 84.4 in 2015-16 from 74.6 per cent in 2014-15. In value terms, their share moved up to 95.2 per cent from 94.6 per cent. Particularly it is seen that the volume of RTGS, NEFT, IMPS, NACH, Debit Cards, PPI have registered robust growth during 2014-2016. During 2015-16,786 million transactions valued at around. 2.4 trillion Were carried out through credit cards and it was only615.1 million transactions valued at Rs.1.9 trillion during previous year. Similarly NACH recorded a robust growth of 1,404.1 million transactions valued at Rs.3.8 trillion during 2015-16, which was only 340.2 million transactions in 2014-15valued at Rs.1.221 trillion, registering a 3 fold increase in the value of transactions. The Prepaid Payment instruments have also shown significant increase both in terms of volume and value of transactions. These instruments could carry out 314.5 million transactions during 2014-15, which have increased to 748 million transactions and the value of transactions was only Rs.212 billion and has increased to 488 billion during 2015-16. To sum up, almost all the payment systems have registered a significant increase during these two reference years.

Electronic Payments during Demonetization Period

To carry out the analysis only one month of period, during which the demonetization was initiated was taken as reference period - November, 2016. Both volume and value of transactions according to payment systems is presented in Table. 2.

Table-2: Volume and Value of Electronic Payment Systems during November, 2016

S. No.	Payment Channels	Volume of Electronic Payment Systems (in millions)	Value of Electronic Payment Systems (Rs.billion)
1	Real Time Gross Settlement (RTGS)	7.9	78479.2
2	National Electronic Funds Transfer (NEFT)	123.0	8807.8
3	Cheque Transaction System (CTS)	87.1	5419.2
4	Immediate Payment System (IMPS)	36.2	324.8
5	National Automated Clearing House (NACH)	152.5	606.6
6	Unified Payment Interface (UPI)***	0.3	0.9
7	Debit and Credit cards at POS	205.5	352.4
8	Prepaid Payment Instruments (PPI)	59.0	13.2
9	Mobile Banking	72.3	1244.9
10	Unstructured Supplementary Service Data (USSD)	7.0	7302.6
Total		671.5	94004.2

Source: RBI (2017) Electronic Payment Systems- Representative Data
(Updated as on July 11, 2017)

The data presented in Table. 2 reveals that electronic payments have tremendously increased during the month of November, 2016, compared to the financial years 2014-15 and 2015-16. As shown in Table. 1, volume of payments through NEFT recorded 77.3 million and 104.4 million transactions per month during 2014-15 and 2015-16 and it has increased to 123.0 million in the month of November, 2016.The value of average transactions per month during 2014-15 and 2015-16 was

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101.75 billion and 316.8 billion respectively. This value of total transactions for the month of November was recorded at Rs. 606.6 billion, which is a significant increase during the period of demonetization. However, the payments through CTS and PPI have shown a marginal decrease in the value of transactions in the month of November, 2016, compared to the average value of transactions per month during 2014-2015 and 2015-16.

Electronic Payments during Re-monetization Period

After the announcement of demonetization, digital activity levels were low, as shown in Table.1 and 2, in the initial weeks as people were busy depositing/exchanging "special bank notes". However, in December 2016, digital payment activity increased alongside progressive re-monetization. It was observed that the usage of major modes of electronic payments was good in October, 2016, mainly on account of festive season. As shown in Table.2, the growth of electronic payments continued with a further pick up in some components of from November, 2016, along with the printing of Rs.500 and Rs.2000 notes and putting hard restrictions on withdrawals of money from banks as well as from ATMs.

A comparative analysis is carried out to assess the significance and increasing importance of electronic payment systems during the re-monetization period (From December, 2016 onwards). The months of December, 2016 and January, March and June, 2017 were considered as representative months for this comparison. The details of Volume of digital payments are presented for discussion in Table. 3.

Table-3: Volume of Digital Payments during the Re-monetization Period (in millions)

S. No.	Payment Channels	December 2016	January 2017	March 2017	May 2017	June 2017	Increase/Decrease (June,2017/ December,2016)
1	RTGS	8.8	9.3	12.5	10.4	9.8	↑
2	NEFT	166.3	164.2	186.7	155.8	152.3	↓
3	CTS	130.0	118.5	119.2	97.1	91.9	↓
4	IMPS	52.8	62.4	67.4	66.7	65.8	↑
5	NACH	198.7	158.7	182.1	194.4	157.3	↓
6	UPI	2.0	4.2	6.2	9.2	10.2	↑
7	USSD	102.2	314.3	211.2	192.6	198.9	↑
8	Debit and Credit Cards at POS	311.0	265.5	229.7	233.4	232.4	↓
9	PPI	87.8	87.3	90.0	91.3	84.7	↓
10	Mobile Banking	70.2	64.9	60.8	64.9	77.1	↑
Total		957.5	870.4	893.9	858.5	844.7	(12.0 %) ↓

Source: RBI (2017) Electronic Payment Systems: Representative data (updated as on July, 11, 2017)

It is evident from the data presented in Table. 3 that the digital payment activity has picked up from the month of December, 2016. The total volume of payments in the month of December, 2016was estimated at 957.5 million and this volume has decreased to 844.7 million in the month of June, 2017, indicating a decline of 12.0 per cent. However, if we look at the component-wise growth of payments, the results are mixed one as the data shows, the volume of transactions through RTGS, IMPS, UPI, USSD, and Mobile Banking have increased in the month of June, 2017, as compared to the month of December, 2016. The other modes of payments like NEFT, CTS, NACH, Debit and Credit cards and PPI have shown declining trend during the same period. The declining trend of transactions can be noticed particularly through the modes of CTS, NACH and Debit and Credit cards.

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Value of Transactions

An attempt is made to study the trends in the payments in terms of value of transactions during the re-monetization period in the month of June, 2017 compared to the month of December, 2016, the succeeding month of demonetization. Table. 4 present these details.

Table. 4. Value of Digital Payments during the Re-monetization Period (in Rs. billion)

S. No	Payment Channels	December 2016	January 2017	March 2017	May 2017	June 2017	Increase/Decrease (June,2017/ December, 2016)
1	RTGS	84096.5	77486.1	123375.8	90170.5	92812.6	↑
2	NEFT	11537.6	11355.1	16294.5	12410.8	12694.2	↑
3	CTS	6811.9	6618.4	8062.8	6745.9	6409.9	(6.0 %) ↓
4	IMPS	431.9	491.2	564.7	585.6	596.5	↑
5	NACH	626.8	541.4	829.4	682.4	708.6	↑
6	UPI	7.0	16.6	23.9	27.7	30.7	↑
7	USSD	103718.4	381790.2	337962.4	316723.7	313277.0	↑
8	Debit and Credit Cards at POS	522.2	481.2	416.2	450.8	468.2	(10.3 %) ↓
9	PPI	21.3	21.0	21.5	25.3	24.1	↑
10	Mobile Banking	1365.9	1206.7	1499.9	1940.7	1584.7	↑
Total		104055.3	97011.4	149589.1	111109.3	113745.2	↑ (9.3%)

Source: RBI (2017) Electronic Payment Systems: Representative data (updated as on July, 11, 2017)

It is evident from the Table. 4 that in the month of December,2016 the value of transactions through electronic payments accounted for Rs. 104055.3 billion, which has increased to Rs. 113745.2 billion in the month of June, 2017 indicating an overall growth of 9.3 per cent over the month of December,2016. It was due to the significant growth of transactions of RTGS, NEFT, IMPS, NACH, UPI, USSD, PPI and Mobile Banking. Though the volumes of transactions through NEFT, NACH and PPI have decreased during this reference period, the values of transactions through these modes have significantly increased, particularly during the month of March, 2017. The value of electronic payments during March, 2017 was estimated as Rs.149589.1billion, which indicates a robust growth of 43.8 per cent over the month of December, 2016. This significant increase in value of transactions was due to the increase in currency in circulation, as it was estimated that the currency in circulation as on March 3,2017 was at Rs. 11,98.412 crore and this component has increased to Rs. 12,45,819 crore as on March,10,2017, indicating a jump of Rs. 47,707 crore (an increase of 4.0 per cent).

The data also shows that the value of electronic payments has decreased particularly through the modes of CTS and Debit and Credit Cards, indicating a decline of 6.0 per cent and 10.3 per cent respectively between December, 2016 and June, 2017.

The KPMG survey (2017) revealed that though 88.0 per cent of the survey respondents have preferred to adopt digital payment channels, the respondents reported that cyber security and awareness are the two major causes that act as barriers for adoption of digital payment channels.

CONCLUSION

No doubt, the catalytic push from demonetization hastened migration towards digital payments in India during November 2016 and June 2017, the ease in availability of cash by progressive re-monetization impacted the growth of digitalization in June, 2017. Though the high denomination notes which have accounted for 86.5 per cent of the notes in circulation as of November 4,2016 , were withdrawn, the currency in circulation was estimated at Rs. 17,74,200 crore, which has declined to Rs.9,13,780 crore as of December, 30,2017. The efforts of the Government to remonetize the economy have brought high denomination notes and the currency in circulation rose to Rs. 14320.4 billion as on April28, 2017 and it has further increased to Rs. 14,499.4 billion as of June, 23, 2017. Economists have felt that the Government might not need to bring the same amount of

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currency in circulation going forward. Perhaps this was one of the ideas of demonetization. That was why though the Government's current focus was on less-cash economy, currency in circulation might not reach100.0 per cent of pre-demonetization levels.

This monetary surgical strike was criticized by the public, court of law, economists, political leaders and journalists. The Indian Supreme Court observed that it is "not a surgical strike. The famous economist and Nobel Laureate Amartya Sen severely criticized the demonetization move calling it a "major mistake". PronabSen, Member of Planning Commission called it a "hollow move" and noted economists and journalist T.N. Ninan wrote in Business Standard that demonetization "looks like a bad idea, badly executed on the basis of some half-baked notions".

Keeping these criticisms and opinions, further efforts are essential to enhance the use of digital payments such as:

1. Continued efforts to incentivize digitalization
2. Removing roadblocks in penetration of payment technology
3. Handholding of new users to bring behavioral shift and
4. Providing an environment for development of a robust and easily scalable payment ecosystem that benefit from the advancements in technology.

If these necessary steps are taken care of, the digital payments are facilitated on a sustained basis and help in substantial savings for the country in terms of reduction in cost of cash in the system.

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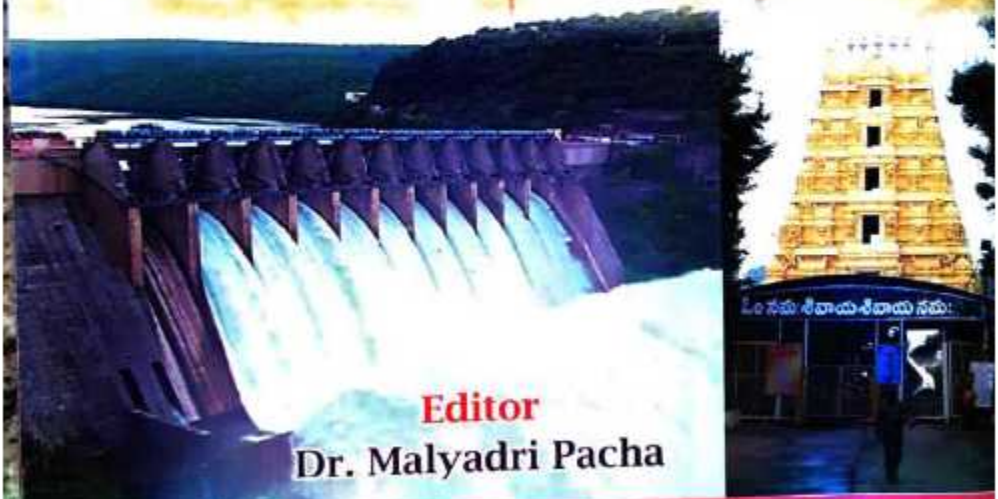
Challenges and Opportunities of Indian Tourism



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Tourism Development in India - Marketing Strategies and Challenges

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Abstract

Technology and the Internet have created a revolution in tourism marketing. The Internet not only inspires and provides consumers with information on potential travel destinations, but enables them to take immediate action by booking online. With global international tourist arrivals reaching one billion each year, and growth only expected to increase, opportunities in the tourism industry are endless. Today's traveller can virtually tour destinations at the touch of a finger, communicate with distant islands on their way to the office and plan customized adventures through simple online platforms. Without the correct combination of tourism marketing strategies, tools, and technology, travel business will not able to find potential clients.

The basis of any successful marketing strategy is an inspiring brand that speaks to the specific key drivers of the target market. With all of the diversity of niche and source markets, knowing and understanding who to target and how to target them is vital to success. Tourism brands, whether related to a single business or entire destinations, communicate an important message to potential visitors. Tourism branding process uses market and competitive analysis, image audits and the development of key messaging to create a powerful sense of place. With today's consumers researching and planning more and more of their travel online, having an engaging, well-designed website is crucial for any travel company's survival. To succeed online, a website must implement the necessary strategies to be found by potential clients. Marketing of tourism is facing stiff competition and many e-commerce portals offer different discount rates and concessions to attract travellers.

Keywords: Marketing, e-commerce, branding, website, Potential clients.

Introduction

Tourism is an emerging industry which attracts millions of people every year and everywhere. In fact, many countries economic position is depending upon tourism at international level. Governments as well as corporates are investing huge amounts to develop tourism attractions and facilitate transport, resorts, amusement parks, recreation etc., at tourist locations to promote this industry ever green. Marketing of tourism is a challenging one and competition is also very high in

this field. Many travel agents and tour operators are frequently announcing different packages with concessions and facilities through websites and internet. Technology and the Internet have created a revolution in tourism marketing. The Internet not only inspires and provides consumers with information on potential travel destinations, but enables them to take immediate action by booking online. With global international tourist arrivals reaching one billion each year, and growth only expected to increase, opportunities in the tourism industry are endless. Today's traveller can virtually tour destinations at the touch of a finger, communicate with distant islands on their way to the office and plan customized adventures through simple online platforms. Without the correct combination of tourism marketing strategies, tools and technology, travel business will not able to find potential clients.

Marketing is a major part of the problem, but it is also an integral part of the solution. A successful tourism business requires a brand that speaks to its 'get markets, content that successfully generates potential clients and a level of service that listens t. customers' demands, all within ever diminishing budget constraints. In the present technological world feedback and reviews plays a pivotal role in marketing tourism. Similarly, people prefer branded travel agencies due to safety and comfortable in case of cancellations and claiming of refunds etc., The basis of any successful marketing strategy is an inspiring brand that speaks to the specific key drivers of the target market. With all of the diversity of niche and source markets, knowing and understanding who to target and how to target them is vital to success. Tourism brands, whether related to a single business or entire destinations, communicate an important message to potential visitors. Tourism branding process uses market and competitive analysis, image audits and the development of key messaging to create a powerful sense of place. With today's consumers researching and planning more and more of their travel online, having an engaging, well-designed website is crucial for any travel company's survival. To succeed online, a website must implement the necessary strategies to be found by potential clients. Marketing of tourism is facing stiff competition and many e-commerce portals offer different discount rates and concessions to attract travellers.

Objectives

- To identify the different marketing strategies of tourism in general and India in particular
- To analyse the factors that influence the marketing of tourism
- To analyse the challenges in marketing of tourism in India

Marketing of Tourism and promotion initiatives in India

Several initiatives are undertaken by Government of India to promote different tourism products. Indian tourism offers most diverse products globally. The country's rich history, cultural heritage, beauty, diversity of religion and medicine fascinate budget and luxury travellers. Tourism in India has registered significant growth over the years. This has been led by growth in both leisure and business tourism. Indian Ministry of Tourism promoted several events to attract tourists and to develop the nation economically strong.

Atithi Devo Bhavah

This is another initiative of the Ministry of Tourism to harness the potential of the tourism industry in India. It aims to create awareness about the effects of tourism and sensitise people about our country's rich heritage and culture, cleanliness and warm hospitality.

Visit India 2009

In an attempt to boost the inflow of visitors and tourists after the terror attacks in Mumbai in 2008 and to weather the impact of the global economic slowdown, the Ministry of Tourism and the World Travel & Tourism Council jointly announced the "Visit India 2009" scheme.

Challenges for Indian Tourism

Various challenges faced by the travel and tourism industry in India are

- **Lack of proper infrastructure**

Infrastructure needs for the travel and tourism industry range from physical infrastructure such as ports of entry to modes of transport to urban infrastructure such as access roads, electricity, water supply, sewerage and telecommunication. The sectors related to the travel and tourism industry include airlines, surface transport, accommodation (hotels), and infrastructure and facilitation systems, among others.

- **Access and connectivity**

To harness India's tourism potential, several efforts are being taken for opening new destinations and exploring niche segments. However, infrastructure facilities such as air, rail, road connectivity, and hospitality services at these destinations and the connecting cities are inadequate. There is a greater need for strengthened road and rail network, development of more expressways, and tourist-specific routes to improve connectivity to various locations across different regions. Expansion and development of airports at major gateway cities is underway to cater to the increasing passenger traffic.

- **Amenities**

Amenities available at various tourist locations and enroute need to be improved. These include basic amenities such as drinking water, well maintained and clean waiting rooms and toilets, first aid and wayside amenities (to meet the requirement of the tourists travelling to tourist destinations) such as lounge, cafeteria, and parking facilities, among others. India scores poorly in terms of availability of these infrastructure facilities . Hence, for the industry to register healthy growth, issues concerning all the related sectors need to be addressed.

- **Service level**

The government has taken initiatives to promote responsible tourism by sensitising key stakeholders of the tourism industry through training and orientation, to develop a sense of responsibility towards tourists and inspire confidence of foreign tourists in India as a preferred destination.

Taxation

Travel and tourism in India is a high-taxed industry, which makes India expensive as a tourist destination. This is affecting the growth of the industry in India and India is losing out to other low-cost destinations. Inbound tourism is the one most affected. Various taxes are levied across the entire industry right from tour operators, transporters, airline industry to hotels and these include service tax, luxury tax, tax on transportation, tax on aviation turbine fuel (airline industry), and various taxes on transportation. In addition, these tax rates tend to vary across different states in the country.

Security

Security has been a major problem as well for p- .vth of tourism for a number of years. Terrorist attacks or political unrest in different parts of untry have adversely affected sentiments of foreign tourists. Terror attacks at Mumbai .n Nc .oer 2008 dealt a strong blow to tourism in the country. The terror attacks raised concerns of safety. In addition, insurgency in different parts of the country also mars India's image as a safe destination. Following the terror attacks in Mumbai, security at tourist spots, airports and hotels has been beefed up to regain confidence of tourists. However, the government needs to take a proactive approach in addressing these issues and in averting the potential impact on the industry. The threats from ISIS terrorist groups have a great impact on Indian tourism.

Opportunities for growth in Indian Tourism

India's size and massive natural, geographic, cultural and artistic diversity offers enormous opportunities for the travel and tourism industry. The industry would also benefit from introduction of new forms of tourism and development of niche segments. Eco-tourism is increasing in popularity, evident in the development of eco-friendly hotels and tour packages. With increasing environment awareness and consciousness among tourists and given efforts undertaken by the government and private players, the ecotourism segment is expected to record handsome growth in the coming years.

Conclusion

In spite of many limitations and traditions, India too open doors for international tourism in the process of liberalisation .The Government of India as well as state governments are taking initiation to protect our culture and heritage to attract tourists elsewhere. Government with the support of corporate sector has focused on development of infrastructure and other amenities in Indian historical as well as attractive tourist locations. In the coming years Indian tourism will certainly gain its importance while becoming a good source of income to the government.

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About The Editor

Dr.P.Malyadri obtained Doctorate in Commerce in 1991 from Sri Venkateswara University.He got 32 years of experience of Teaching, Research, Administration, Training and consultancy. A prolific writer; Dr. Malyadri has authored 5 Books and 95 Research papers on Banking, Rural and economic development issues in various National and International journals of repute. He has presented several research papers in around 100 National and International seminars and conferences. He is on the International Editorial advisory boards as a Member in 235 International Peer reviewed journals published from Canada, USA, U K, Taiwan, Czech Republic, Italy, Turkey, Dubai, Philippines, Australia, Bangladesh, Romania, Pakistan, Kenya, Iran, Africa, Nigeria, Berlin, Tunisian Republic, Indonesia, Singapore, Thailand, Iceland, Malaysia, Republic of Lithuania, West Africa, Brasil, Poland, Nepal, VietNam and many others including INDIA.

Dr.Malyadri reviewed more than 1000 articles for the International peer reviewed journals. He carried out two Major Research Projects sponsored by the UGC, New Delhi. He is a recognized Research supervisor to guide M.Phil. and Ph.D. students in the Departments of Commerce and Business Management, Osmania University and was awarded 6 Ph.D.'s and 4 M.Phil.'s under his guidance. He is an Adjudicator for Doctoral thesis in Commerce and Management in several Indian Universities. He delivered keynote address at 3rd International Conference on Contemporary Issues of Management and IT held at Kuala Lumpur, Malaysia during 9-10th March 2016. He has acted as a Chair person at the Fifth International Conference on Contemporary Issues in Agriculture, Engineering, Management, IT & Life sciences organized by Nehru college of Management and University of Peradeniya at Sri Lanka held during 11-15 May 2017

He served as Program officer of the National Service Scheme for 5 years and conducted several programs and received outstanding awards. He brought Rs. 55 Lakhs under CSR from GAIL towards construction of college building at Govt. Degree College, Tandur, and also brought Rs. 3.70 crores under CSR from Aurabindo Pharma Company Ltd, towards construction of college building at Govt. Degree College, Patancheru.. He received several outstanding awards for his academic achievements. Dr. Malyadri is State level Best Teacher awardees in the year 2008, honored by Government of Andhra Pradesh. His current research interests include CRM, Bank Marketing, and Micro Finance, Rural Development, Human Resource Management, Entrepreneurial development and Strategic Management.

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"Role of Women Self Help Group on Proverty Alleviation and Empowerment of Women in the Globalised Era"

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Contents

Women Empowerment Through Shgs - A Case Study

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1. INTRODUCTION

Women empowerment through self help group constitutes an emergingand fast growing trend towards social and economic development of the nation.Self Help Groups (SHGs) are one of the innovative and much needed schemesto accelerate the women entrepreneurship, women's self employment andwomen empowerment. This concept was successfully implemented inBangladesh and now in India. It has become the wise tool to improve the socialand economic development. Government also provides various financial andnon-financial assistance to promote the Self Help Groups for womenempowerment. Banks and financial institutions have also realized the impact ofthe Self Help Groups. Hence they are channelising their funds for women andrural development through Self Help Groups.

Women Self Help Groups were formed based on the motives like social and economic welfare, awareness of women's rights and duties, building leadership qualities, skill development, etc. Andhra Pradesh Women Empowerment and Poverty Reduction Project was launched to reduce poverty and empower the women. Apart from regular savings, Self Help Groups are engaged in business activities to uplift themselves financially and economically. Self Help Groups in the state are engaged in giving training for sewing, manufacturing of soaps, manufacturing of toys and wires, bringingup of mushrooms etc. Many workshops were conducted for the welfare and awareness of self help group members and people community. Watershed development, Agricultural extension, Health and Sanitation programmes, AIDS awareness programmes, Family welfare programmes etc., are some of the vital activities in this context. Public distribution scheme outlets are also run by Self Help Groups in Andhra Pradesh.

2. FORMATION OF SELF HELP GROUPS

India is one of the developing countries in the world. Even now nearly 25 per cent of the Indians belong to below poverty line. So their standard of living can be improved through the Self Help Group's Activities. Hence as ontoday, the role of Self Help Groups in thecontext of improving women empowerment has become a vital one. Women empowerment could be studiedin terms of their influence over economic resources of the family, participation in the household decision making in money matters and on the decisions pertaining to general welfare of the householders. Women empowerment alsodepends on self development which could be realized through the growth of personality in terms of ability of rural women to influence and participate in thedecision making, freedom to start new micro enterprises, income generation capacity, to join in adult education programme if they are illiterate or to pursue their higher education through distance mode when they are literates.

Self Help Group women's ability to influence the behaviour of others and ability to have influential power, improvement in the technical and managerial skill of Self Help Group members, attendance in training programme and Self Help Group meeting, leadership rotation practice and intensity of involvement in Self Help Group activities, etc, are the other aspects of analyzing rural women empowerment which are seen in self help group women.

Self Help Groups (SHGs) are considered as one of the most significant tools to adopt participatory approach for the economic empowerment of women. It is an important institution for improving the standard of life of women on various social components. Self Help Group is a homogenous group of poor, women etc. This group is voluntary one, formed on areas of common interest so that they can think, organize and operate for their development.

SHGs can be formed with minimum 5 people and the maximum is 20 members. The groups can avail themselves of financial facilities offered by the financial institutions and the Government. However, there are certain norms and prescribed procedures for obtaining credit. Frequently, the group should convene meetings of its members and discuss all the issues relating to the groups on a common plat form. This provides an opportunity to members to express freely their views, expectations and suggestions for improving the functioning of the group. Regularly Government agencies and VDOs organize training programmes, for educating and developing skills among members. These programmes enable the members to learn, co-operate and work in a group environment. SHGs are required to maintain records as directed by the monitoring agencies.

3. OBJECTIVES OF THE STUDY

The following objectives are formulated to study the empowerment of women through SHGsin

KarvetinagaramMandal of Chittoor district, Andhra Pradesh :

- To study the economic empowerment of women after joining in the SHG
- To study the asset procurement of SHGs.
- To examine the income level of the members of select SHGs.
- To analyse the findings of the study.

4. METHODOLOGY

There are 983 Self Help Groups functioning in KarvetinagaramMandal of chittoor district of Andhra Pradesh whereas 189 SHGs are actively functioning in Karvetinagarampanchayath of Chittoor district. Among these, 5 SHGs were randomly selected for the micro level study from Suddagunta, Karvetinagaram and Padmasarassu villages. A structured schedule is prepared to record the opinions of the SHGs on income and asset procurement and appraise the performance of SHG on alleviating rural poverty. The information collected from Indira KranthiPatham (IKP) Karvetinagaram refers to a period of four months from July 2016 to October 2016.

5. STUDY RESULTS

The role of SHGs in development of women in rural areas, a micro level field study in KarvetinagaramMandal of Chittoor district was conducted by a personal visits of the researcher and assessing the impact of SHGs on the status of women. Suddagunta, Karvetinagaram and Padmasarassu villages of KarvetinagaramPanchayath were selected for the field study. Women members in these villages have participated in the group activities and run the SHGs by improving saving habit among the individual members of the group. The following study results reveal that how best the SHGs of KarvetinagaramPanchayath are functioning.

Table - 1

MEMBERSHIP OF SELF HELP GROUPS

Sl. No.	Name of the SHGs	Name of the Village	Number of Members
1	Kanaka Mahalakshmi Group	Suddagunta	11
2	NB Tarakam Group	Suddagunta	15
3	Rukmini Group	Karvetinagaram	10
4	Srilakshmi Group	Karvetinagaram	10
5	V Vinayaka Group	Padmasarassu	10
		Total	56

Source: Field study

From the above table, it is observed that the minimum number of members is 10 and maximum number of members is 15 in the selected groups. These groups are mobilising bank finance and receiving timely matching and revolving funds to generate income activities to earn their livelihood. NB Tarakam group of Suddagunta village with a maximum number of 15 members are regularly participated in group activities and lead other groups in that village.

Table - 2

BANK FINANCE FOR SELF HELP GROUPS

Name of the SHGs	Bank Finance (in Rs.)	Average loan per member (Rs.)
KanakaMahalakshmi Group	5,00,000	45455
NB Tarakam Group	5,00,000	33333
Rukmini Group	5,00,000	50000
Srilakshmi Group	5,00,000	50000
V Vinayaka Group	5,00,000	50000
Total	25,00,000	

Source: Field study

In the field work it is noticed that the members of the group took loans from Indian Bank, Karvetinagaram for different purposes. The Table reveals that the total amount of loan provided to select SHGs is Rs.25, 00,000. The minimum average loan per member is Rs.33333 and maximum is Rs.50,000. The study reveals that all most all the members involved in SHGs are financially assisted by government, banks, NGOs etc.

Table - 3

ASSET PROCUREMENT OF SHGs

SL. NO	Activity	No. of Members	Percentage %
1	Tailoring	01	1.79
2	Cows	24	42.85
3	Shamiyana shop	01	1.79
4	Saree Printing	10	17.86
5	Flower Business	01	1.79
6	Agriculture	12	21.43
7	Education	05	8.92
8	Health	02	3.57
Total		56	100%

Source: Field study

The selected villages of Suddagunta, Karvetinagaram and Padmasarassu are backward areas and most of the villagers are coolies and daily wage labourers. They belong to scheduled castes and other backward communities. The members of the SHGs utilised the loan amount for different productive purposes. Majority respondents i.e. 42.85 per cent

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procured milchy animals (Cows) and they regularly supply their production of milk to Tirumala and Dodla Dairy and received the payments promptly. 21.43 per cent of the respondents invested the money on Agricultural activities such as growing commercial crops (Vegetables, curry leaves, etc), 17.86 per cent of the sample group involved in Saree Printing and Dyeing, 8.92 per cent of the respondents utilized the loan amount for the purpose of their children education, 3.57 per cent of respondents used the bank finance towards hospitals expenses and the remaining respondents invested on Tailoring, Shamiyana supply and Flower Business. Illiterate members utilised the amount to purchase cows and agricultural tools and most of the members actively participated in income generating activities. It is noticed that income generated provides employment to households.

Table - 4

REPAYMENT OF LOAN

Name of the Group	Repayment per month Rs.	Overdue Rs.	Average repayment per month Rs.
Kanaka Mahalakshmi Group	18000	0	1636
NB Tarakam Group	18000	0	1200
Rukmini Group	20000	0	2000
Srilakshmi Group	20000	0	2000
V Vinayaka Group	10000	50000	1000

Source :Field study (IKP office, Karvetinagaram)

SHGs generated income and employment and developed a habit of saving in banks. As per the stipulated intervals they repay the loan amount and enjoy the revolving fund and matching grants released by the Government of A. P. The table clearly indicates that almost all the Groups except v vinayaka group repaid the loan amount without fail. It is observed that the repayment is more in some Groups and low in some cases.

6. FINDINGS OF THE STUDY

- It is found that finance provided to SHGs is utilised for productive purposes and had a favourable effect on employment and income generation.
- It is observed that the credit extended to women groups utilised the income generated either for investing or improving the existing assets.
- The social outlook of the women is improved with a beneficial change.
- The rate of illiteracy is reduced.
- Self confidence is developed among Group members and they can lead the Group individually.
- It is a self-employment as well as poverty eradication programme.
- Non-members of women in the village are highly motivated by observing the members of the SHGs and they also come forward to join in Groups.

It is observed that the SHG concept develops the empowerment of women and improve their standard of living.

7. SUGGESTIONS

- Village administration (VAO, Sarpanch, Ward member) should properly guide the SHG members and create awareness among women about Government development programmes.
- Banks should sanction loans liberally. But follow-up action is necessary to avoid misuse of funds and overdue.
- The government has to provide marketing facilities in time to the products of SHGs.

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CHAPTERS

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IMPACT OF TECHNOLOGY ON HUMAN WORK FORCE- AN ANALYSIS

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Abstract

This period of rapid technological acceleration brings opportunities as well as challenges. Unlike prior technological shifts, which primarily affected low-skilled workers, today's pace of change is impacting the entire global workforce. However, across all the countries, workers with a lower level of education are arguably at the highest risk of displacement. Populations that are vulnerable or marginalized today could face a 'double disadvantage' in the future, due to a lack of awareness, opportunity or means to adapt to these changes. Digital technologies such as Artificial Intelligence (AI) and robotics are transforming the nature of work and the skills needed to thrive. Humans and machines will increasingly work together to drive productivity. In the digital economy, work will no longer be restricted to one employer, job or team. People will need to constantly learn new skills to remain relevant in the workforce of the future, and a growth mindset will be critical to success. **Key Words:** low skilled workers, Artificial Intelligence, Robotics, Vulnerable

1. Introduction

Increased global connectivity, exponential advances in processing power, the flow and accumulation of data, and rapidly dropping price points are fuelling technological innovation at a speed and scale we have not seen before. In the past, economies have benefited from technology change. But these shifts occurred over decades. Today, the cumulative effect of technology is accelerating progress exponentially. Internet penetration, mobile phones and data availability have skyrocketed, facilitated by the rapidly dropping cost of hardware.

This period of rapid technological acceleration brings opportunities as well as challenges. Unlike prior technological shifts, which primarily affected low-skilled workers, today's pace of change is impacting the entire global workforce. However, across all the countries, workers with a lower level of education are arguably at the highest risk of displacement. It is clear that automation may disproportionately affect individuals who are already facing hardship. Populations that are vulnerable or marginalized today could face a 'double disadvantage' in the future, due to lack of awareness, opportunity or means to adapt to these changes. Without a large-scale re-skilling effort, these individuals are at greater risk of technological displacement and unemployment.

The digital economy is the new productivity platform that some experts regard as the third industrial revolution. Digital revolution, also known as 'The Internet Economy' or Internet of Everything (IoE), is expected to generate new market growth opportunities, jobs and become the biggest business opportunity of mankind in the next 30 to 40 years. Goldman Sachs predicts that India - comprising 15 per cent of the world population, with a growth rate of 7 to 8 per cent, could be the second largest economy by 2030.

2. Digital Technology and Human Tendency

Digital technologies such as Artificial Intelligence (AI) and robotics are transforming the nature of work and the skills needed to thrive. Humans and machines will increasingly work together to drive productivity. A recent global survey of more than 1,000 companies identified three new types of employment that require collaboration between humans and machines: ***Explainers:*** Interpret the output of AI systems, ***Sustainers:*** Optimize the effectiveness of AI systems, ***Trainers:*** Feed AI systems' capacity for judgement.

One job for one employer for life no longer exists. The imminent reality is multiple jobs for multiple employers – all at the same time. As work becomes increasingly digital, Learn to Earn skills will assume even more importance. For individuals to remain relevant and keep pace with

new technologies, digital literacy should be taught from an early age and reinforced throughout adulthood. In the digital economy, work will no longer be restricted to one employer, job or team. Machines are already conducting data mining for lawyers and writing basic press releases and news stories. To be as productive as it could be, this new automation age will also require a range of human skills in the workplace, from technological expertise to essential social and emotional capabilities.

3. Digital Technology – A process of continuous Learning

For young people today, it's clear that they are going to need to continue to learn throughout their lifetime. The idea that you get an education when you're young and then you stop and you go and work for 40 or 50 years with that educational training and that's it—that's over. All of us are going to have to continue to adapt, get new skills, and possibly go back for different types of training and credentials. It's very clear that what our kids need to do is learn how to learn and become very flexible and adaptable.

Digital technologies should make it possible to produce more goods and services with less labour, which will expose some workers to the risk of unemployment or lower wages. However, higher productivity also translates into lower prices and new products, and higher final demand and higher employment, and possibly higher wages, thus compensating for the initial disruption. What makes this process challenging for policies and workers is its timing: the labour-saving effects of digital technologies hit employment quickly but new job opportunities emerge slowly. New markets have to be created, assets transferred across sectors, business know-how built up and new skills developed.

4. Digital Technology – Employment Opportunities

In short, digital technologies is reshaping business models and firms' organisation, and making "soft skills", such as information-processing, self-direction, problem-solving and communication, become more important. Those who have the skills get ahead faster, which could cause higher inequality. In particular, some argue that digital technologies have raised the demand for high and low skills and reduced the demand for medium skills, though the extent to which this polarisation of jobs and wages is due to digital technologies remains a matter of debate.

Policies have to be ready to face the challenges inherent to the digital economy and the growing public angst that accompanies them. Fostering investment in ICTs and complementary changes will help sustain innovation, productivity and employment growth. Promoting competition in markets, creating favourable conditions for entrepreneurship and supporting the development of new goods and services enabled by ICTs, while promoting skills and preparedness, will sustain growth of new markets and bolster public confidence too. Supporting workers in their transition to new jobs will facilitate adjustment and reduce the social costs. Active labour market policies, income support, lifelong learning and more responsive educational systems are more critical than ever in the digital economy.

5. Technological development initiatives by Government of A.P.

- Several steps have been taken to improve the employability of the graduates. Industry inputs are being taken in skill development programs. A research study by Harvard Business School and Stanford University has been commissioned to assess the impact of soft skills and social media training on employability. Another project has been commissioned with British Council to improve English skills for employability.
- Jawahar Knowledge Centres have launched a number of new training modules (such as financial literacy, digital literacy, communication skills, leadership etc) in addition to regular modules. A parallel degree program in employability skills has been launched in association with TISS wherein the three year course will include a certificate in soft skills and communication skills in addition to domain-specific courses.

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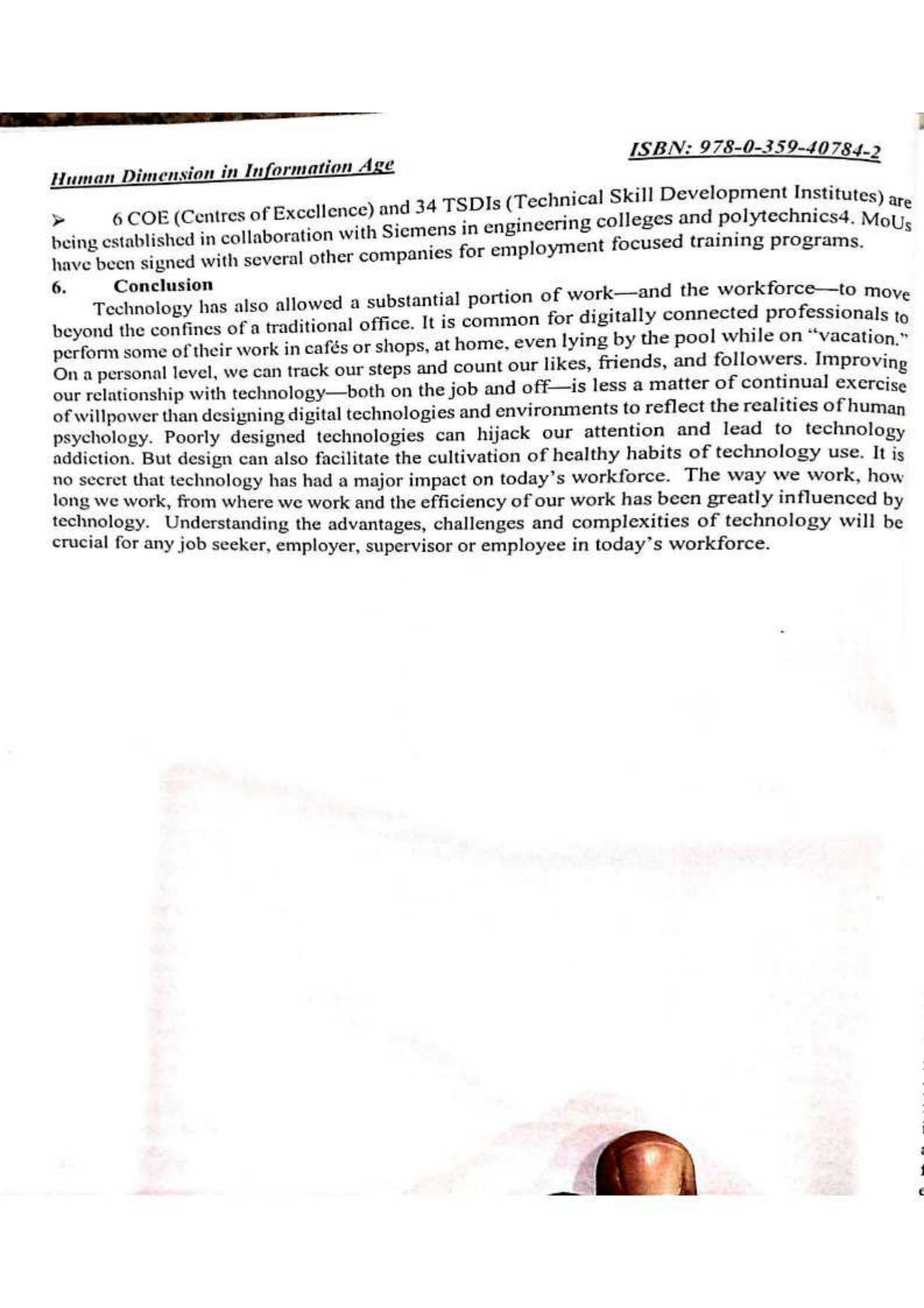
➢ 6 COE (Centres of Excellence) and 34 TSDIs (Technical Skill Development Institutes) are being established in collaboration with Siemens in engineering colleges and polytechnics4. MoUs have been signed with several other companies for employment focused training programs.

6. Conclusion

Technology has also allowed a substantial portion of work—and the workforce—to move beyond the confines of a traditional office. It is common for digitally connected professionals to perform some of their work in cafés or shops, at home, even lying by the pool while on "vacation." On a personal level, we can track our steps and count our likes, friends, and followers. Improving our relationship with technology—both on the job and off—is less a matter of continual exercise of willpower than designing digital technologies and environments to reflect the realities of human psychology. Poorly designed technologies can hijack our attention and lead to technology addiction. But design can also facilitate the cultivation of healthy habits of technology use. It is no secret that technology has had a major impact on today's workforce. The way we work, how long we work, from where we work and the efficiency of our work has been greatly influenced by technology. Understanding the advantages, challenges and complexities of technology will be crucial for any job seeker, employer, supervisor or employee in today's workforce.



EMPLOYMENT GENERATION AND POVERTY ALLEVIATION

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Employment Generation and Poverty Alleviation

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POVERTY ALLEVIATION PROGRAMS IN INDIA – AN OVERVIEW

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ABSTRACT

The poverty alleviation programs in India can be categorized into – Wage employment programs; Self-employment programs; Food security programs; Social security programs and Urban poverty alleviation programs. Most of the programs are designed to target rural poverty as prevalence of poverty is high in rural areas. In India several programs for poverty alleviation have been implemented in rural and urban areas. Among these programs some are directly related to poor households and some are related to poverty alleviation through rural development. Agricultural growth has been recognized as an important factor that contributes to marked reduction in poverty. Another important measure to generate employment opportunities for the poor and to raise their productivity is the speedy development of infrastructure. A properly functioning public distribution system which is targeted to the poor households is an important element of the strategy for poverty reduction.

The IRDP and allied programs were merged into a single program known as Swarnajayanti Gram Swarozgar Yojana (SGSY) aimed at providing assistance to the rural poor in the form of subsidy and bank credit for productive employment opportunities through successive plan periods. The Indira Awas Yojana (IAY) program aims at providing free housing to Below Poverty Line (BPL) families in rural areas and main targets would be the households of SC/STs. The MGNREGA provides 100 days assured employment every year to every rural household. Besides the above schemes, some measures like land redistribution, elimination of industrial monopolies, plugging of national drainage, efficient and democratic management of public sector enterprises, also help in reducing poverty in our country. **Key Words:** *IRDP, SGSY, BPL, MGNREGA, Self Employment.*

INTRODUCTION

Poverty as lack of access to basic needs/goods is essentially economic or consumption-oriented. Thus, the poor are conceived as those individuals or households in a particular society, incapable of purchasing a specified basket of basic goods and services. Basic goods as used here include; food, shelter, water, healthcare, access to productive resources including education, working skill and tools, political and civil rights to participate in decisions concerning socio-economic conditions. It is generally agreed that in conceptualizing poverty, low income or low consumption is its symptom. The poverty alleviation programs in India can be categorized based on whether it is targeted for rural areas or urban areas. Most of the programs are designed to target rural poverty as prevalence of poverty is high in rural areas. Also targeting poverty is challenging in rural areas due to various geographic and infrastructure limitations. The programs can be mainly grouped into – Wage employment programs; Self-employment programs; Food security programs; Social security programs and urban poverty alleviation programs. The five year plans immediately after independence tried to focus on poverty alleviation through sector wise programs.

OBJECTIVES

1. To generate employment opportunities in rural as well as urban areas.
2. To study the self employment schemes.
3. To remove the povertyin India.

IMPORTANT MEASURES TO REDUCE POVERTY IN INDIA

Accelerating Economic Growth: In the fifties and sixties it was generally thought that poverty in India can be significantly reduced by accelerating

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economic growth. According to this view, benefits of economic growth will trickle down to the poor in the form of more employment opportunities, greater productivity and higher wages. With this it was expected that the poor will be raised above the poverty line.

Agricultural Growth and Poverty Alleviation: Agricultural growth has been recognized as an important factor that contributes to marked reduction in poverty. A study made by Montek Ahuluwalia, former member of Planning Commission, brought clearly that agricultural growth and poverty are inversely related; the higher agricultural growth leads to lower poverty ratio.

Speedy Development of Infrastructure: An important measure to generate employment opportunities for the poor and to raise their productivity is the speedy development of infrastructure. Since private sector is not attracted to make adequate investment in infrastructure, public investment needs to be stepped up for its development. Infrastructure development consists of building of roads, highways, ports, telecommunication, power and irrigation. They involve mainly construction work which is highly labour intensive.

Accelerating Human Resource Development: Besides physical infrastructure development, poverty can also be reduced through human resource development. Human resource development requires greater investment in educational facilities such as schools to promote literacy, technical training institutes and vocational colleges to import skills to the people. Further, human resource development requires health care by public investment in Primary Health Centers, dispensaries and hospitals. This human resource development not only generates a good deal of employment opportunities but also raises productivity and income of the poor. Further, people equipped with skills, education and good health can easily get wage employment or self-employment with higher productivity.

Growth of Non-Farm Employment: For reduction of poverty growth of non-farm employment in the rural areas is of special importance. Non-farm employment is created in marketing (i.e., petty trade), transportation, handicrafts, dairying and forestry, processing of food and other agricultural products, repair workshops.

Access to Assets: Rapid growth of population after independence has led to greater sub-division and fragmentation of agricultural holdings and lack of employment opportunities in industries and other non-farm sectors has worsened the conditions of agricultural labour and self-employed small farmers. With no land or little land they cannot engage themselves in self-employment activities for earning adequate income to meet their basic needs. Redistribution of land through effective redistribution, implementation of tenancy reforms so as to ensure security of tenure and fixation of fair rent would be an important measure of reducing rural poverty. Except in case of West Bengal and Kerala land reforms have not been implemented to reduce rural poverty.

Access to Credit: Availability of credit to the poor on easy terms can create the conditions for small farmers gaining access to productive resources such as HYV seeds fertilizers, construction of minor irrigation such as wells and tube wells. This will enable the small farmers to adopt high- yielding technology to raise their productivity. The new technology is size-neutral, that is, it can be adopted equally well by small farmers. But the adoption of new technology requires financial resources which are lacking with the small farmers. Besides, the non-farmer poor need credit for marketing, food processing, dairying, forestry, development of handicrafts which can provide them gainful employment.

Public Distribution System (PDS): Poor households spend nearly 80 per cent of their income on food. Therefore, an effective way of raising rural incomes and ensuring food security to the poor households is an assured supply of adequate quantity of food-grains and other essential commodities at subsidized prices, that is, at prices which are lower than the market prices. A properly functioning public distribution system which is targeted to the poor households is an important element of the strategy for poverty reduction. The Central Government Organization 'Food Corporation of India' procures the food-grains from the farmers at the minimum support prices (MSP) and store them in their warehouses located throughout the country.

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Direct Attack on Poverty: Special Employment Schemes for the PoorIt was realized in the early seventies that it would take a very long time for economic growth to generate enough employment opportunities to provide productive employment to all the unemployed and poor in the country. The special employment scheme of rural public works which was launched by the Government in 5th Five Year Plan constitutes a direct attack on poverty as it does not depend on the trickledown effect of economic growth on the poor. There are mainly two types of such special anti-poverty schemes launched by the Government from time to time. First, there are several special schemes of providing wage employment to the poor. These include Jawahar Rozgar Yojana (JRY), now named as Jawahar Gram Samridhi Yojana after restructuring it. It is centrally sponsored scheme implemented by Gram Panchayats to generate wage employment for the rural poor.

EMPLOYMENT GENERATING PROGRAMS IN INDIA

Integrated Rural Development Program (IRDP), which was introduced in 1978-79 and universalized from 2nd October, 1980, aimed at providing assistance to the rural poor in the form of subsidy and bank credit for productive employment opportunities through successive plan periods. On 1st April 1999, the IRDP and allied programs were merged into a single program known as Swarnajayanti Gram Swarozgar Yojana(SGSY). The SGSY emphasizes on organizing the rural poor into self-help groups, capacity-building, planning of activity clusters, infrastructure support, technology, credit and marketing linkages.

Jawahar Rozgar Yojana/Jawahar Gram Samriddhi Yojana: Under the Wage Employment Programs, the National Rural Employment Program (NREP) and Rural Landless Employment Guarantee Program (RLEGP) were started in Sixth and Seventh Plans. The NREP and RLEGP were merged in April 1989 under Jawahar Rozgar Yojana (JRY). The JRY was meant to generate meaningful employment opportunities for the unemployed and underemployed in rural areas through the creation of economic infrastructure and community and social assets. The JRY was revamped from 1st April 1999, as Jawahar Gram Samriddhi Yojana (JGSY). It now became a program for the creation of rural economic infrastructure with employment generation as the secondary objective.

Rural Housing – Indira Awas Yojana: The Indira Awas Yojana (IAY) program aims at providing free housing to Below Poverty Line (BPL) families in rural areas and main targets would be the households of SC/STs. It was first merged with the Jawahar Rozgar Yojana (JRY) in 1989 and 1996 it broke away from JRY into a separate housing scheme for the rural poor.

Food for Work Program: The Food for Work Program was started in 2000-01 and it was first launched in eight drought-affect states of Chattisgarh, Gujarat, Himachal Pradesh, Madhya Pradesh, Orissa, Rajasthan, Maharashtra and Uttaranchal. It aims at enhancing food security through wage employment. Food grains are supplied to states free of cost, however, the supply of food grains from the Food Corporation of India (FCI) warehouses has been slow.

Sampoorna Gramin Rozgar Yojana (SGRY): The JGSY, EAS and Food for Work Program were revamped and merged under the new Sampoorna Gramin Rozgar Yojana (SGRY) Scheme from 1st September 2001. The main objective of the scheme continues to be generation of wage employment, creation of durable economic infrastructure in rural areas and provision of food and nutrition security for the poor.

Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) 2005: It was launched on February 2, 2005. The Act provides 100 days assured employment every year to every rural household. One –third of the proposed jobs would be reserved for women. The central government will also establish National Employment Guarantee Funds. Similarly, state government will establish State Employment Guarantee Funds for implementation of the scheme. Under the program, if an applicant is not provided employment within 15 days she/he will be entitled to a daily unemployment allowance. Salient features of MGNREGA are: right based framework; time bound guarantee of employment; labour intensive work; women empowerment; transparency and accountability and adequate funding by central government.

National Food for Work Program: It was launched on November 14, 2004 in 150 most backward districts of the country. The objective of

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the program was to provide additional resources available under Sampoorna Gramin Rozgar Yojana. This was 100% centrally funded program. Now this program has been subsumed in the MGNREGA from Feb 2, 2006.

National Rural Livelihood Mission: Ajeevika (2011): It is the skill and placement initiative of Ministry of Rural Development. It is a part of National Rural Livelihood Mission (NRLM) – the mission for poverty reduction is called Ajeevika (2011). It evolves out the need to diversify the needs of the rural poor and provide them jobs with regular income on monthly basis. Self Help groups are formed at the village level to help the needy.

Pradhan Manthri Kaushal Vikas Yojana: The cabinet on March 21, 2015 cleared the scheme to provide skill training to 1.4 million youth with an overall outlay of Rs. 1120 crore. This plan is implemented with the help of Ministry of Skill Development and Entrepreneurship through the National Skill Development Corporation. It will focus on fresh entrant to lthe labour market, especially labour market and class X and XII dropouts.

National Heritage Development and Augmentation Yojna (HRIDAY): HRIDAY scheme was launched (21 Jan. 2015) to preserve and rejuvenate the rich cultural heritage of the country. This Rs. 500 crore program was launched by Urban Development Ministry in New Delhi. Initially it is launched in 12 cities; Amritsar, Varanasi, Gaya, Puri, Ajmer, Mathura, Dwarka, Badami, Velankanni, Kanchipuram, Warangal and Amravati. These programs played/are playing a very crucial role in the development of the all sections of the society so that the concept of holistic development can be ensured in the real sense.

National Maternity Benefit Scheme: It is for the family below the poverty line. Implemented by states and union territories. It provides a sum of Rs. 500 to a pregnant woman for the first two live births. It was later changed into Janani Suraksha Yojana with Rs. 1440 for every institutional birth.

National Old Age Pension Scheme (NOAPS): To provide pension to old people, above the age of 65

Came into effect on 15 August, 1995. Initially, 200 rupees per month was given but later it changed to 1000 rupees.

National Family Benefit Scheme (NFBS): Started in August 1955.Sponsored by the state government.Later it was transferred to the state sector scheme from 2002-03. It is under the community and rural development.It provides a sum of Rs. 20,000 to a person of family who becomes the head of the family after the death of its primary breadwinner.

Other Measures which contribute to poverty alleviation: Time-bound result oriented action plan for rapid industrialization. Participation in the emerging global markets. Change in budgetary outlays to reduce irrelevant government expenditure. Encouraging term-lending institutions.Providing seed money to voluntary organizations through people –sponsored programs.

Development the mass rapid transit system in bid cities with the help of the Asian Development Bank.

Establishing subsidized training centres for training youth in computers, electronic trade, and small-scale industries. Helping women to be self-reliant through a carefully planned program.Constituting dedicated teams of committed bureaucrats and technocrats in every state for formulating, implementing and moderating job-oriented programs.Arranging full participation and involvement of people in development programs. The help of non-government organizations may be taken in the administrative arrangements for the implementation of rural and urban development programs.

Besides the above measures, some measures like land redistribution, elimination of industrial monopolies, plugging of national drainage, efficient and democratic management of public sector enterprises, also help in reducing poverty in our country.

DRDA Administration:

The District Rural Development Agencies (DRDAs) have traditionally been the principal organ at the district level to oversee the implementation of different anti-poverty programs. Since its inception in 1980, the administrative costs of the DRDAs were met by way of setting apart a share of the allocation for each program. However, over the years, while new poverty alleviation programs were introduced, there was no uniformity amongst the programs

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with reference to administrative costs and it was found that the previous available for DRDAs were not sufficient even to meet the minimum costs. Under the program, the DRDAs have been conceived to emerge as a specialized agency for managing the anti- poverty programs of the Ministry of Rural Development aiming towards poverty eradication in the district. While the actual execution of the various programs lies outside the purview of the DRDAs, its role is to facilitate the implementation of the programs, to supervise/oversee and monitor the progress, receive and send progress reports and account for the funds. The DRDAs are also entrusted the task of developing the capacity to build synergies among different agencies involved to bring about effective results.

It has been envisaged that each district should have its own DRDA and in States where DRDAs do not have a separate identity, a separate cell would be created in the Zilla Parishads for maintaining accounts. However, it has been stipulated that the Zilla Parishad would be the chairman of the Governing Body of the DRDA.

CONCLUSION

The community has to assume responsibility not only towards the poor, the old, the infirm and the absolute destitute having no means of support but it has to assist the able-bodied poor and the unemployed or underemployed by helping them become an integral part of a self-supporting population. The rich may grumble about taxes and welfare schemes, the conservatives may keep on talking about "too much government spends but the anti-poverty programs are indispensable. The humanitarian concern for the poor is greater now than ever before. So long as we have a double mind about what path of developmental style to adopt, we will fail economically in our goals. It is not lack of resources or technical skills which are hindrances in our development; it is lack of the political policies. Planning is to be based on the fact that poverty is not a cause but a result. Elimination of poverty is not merely a question of economic upliftment but is a social and a political issue related to the level of the politico-social awareness of people.

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"An Impact of Developmental Programmes for Social Transformation of Scheduled Castes & Scheduled Tribes"

Book No-3

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NATIONAL SC-ST HUB: A SCHEME FOR ACHIEVING FASTER INCLUSIVE GROWTH OF SC/ST ENTREPRENEURS IN INDIA

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ABSTRACT:

The present paper primarily deals with entrepreneurship among "Pasmanda Communities" with special reference to India. The term "Pasmanda" refers to "those who have fallen behind or broken or oppressed. A review of comparative analysis of entrepreneurship among SCs and STs and non-SCs and STs reveal that there is a vast gulf and this area needs to be probed to have a right insight into the determinants, causes and nature of this backwardness. This paper aims at the role of "National Scheduled Caste and Schedule Tribe Hub" - a scheme of Government of India, as a handholding programme for the improvement of entrepreneurial skills and also economic progress among SCs and STs in our country. Based on secondary sources of information this paper analyses the pattern of ownership of non-agricultural enterprises, considering as a measuring scale between different Economic Census. Briefly discussing the role of MSMEs in our State Andhra Pradesh and in India and proportion of enterprises owned by SCs and STs from 1990 to 2013, the paper observes that still the discrimination of "Caste" persists between SCs and STs and Non-SCs and STs in India. A brief review of the structure, objectives and functions of National SC/ST hub, with all its four sub-schmes, the paper presents the contribution of SCs and STs owned enterprise to the economy as well as to the Public Procurement System in India. The paper concludes with an observation that for achieving a significant economic progress the contribution and active participation of all social groups without any barriers of caste, gender and economic status is necessary to label our country as a developed economy

Introduction:

It is well documented that generally the process of economic growth passes through agriculture, industrial and services sectors as and when the structural changes of the economy transforms and with the maturity of stages of economic progress. Many economists have formulated a variety of formulae for enhancement of wages to labour force, who shift from less productive economic sectors to more productive sectors particularly from agriculture to industrial and then to services sectors.

However, the recent economic growth scenario of Andhra Pradesh witnessed a paradoxical situation of dominance of services sector, particularly during the post-bifurcation period. The advanced estimations of sector-wise contributions (GVA at constant prices) revealed that the contribution of services sector accounted for 44.1 per cent followed by agricultural sector (29.9 per cent) and industrial sector (26.0 per cent). These sectoral contributions reveal that the movement of the economy from less matured stage to more matured stage is not taking place as the process of economic growth jumped from agriculture sector to services sector, leaving the industrial sector to the third place. Hence, it is primarily essential to develop industrial sector and be put at first place to transform the economy of our state Andhra Pradesh and our country, India.

It is a known fact that industrial sector comprises three important segments – Large, Mega and Micro , Small and Medium enterprises (MSMEs). It was estimated that in Andhra Pradesh, 54 large and mega industrial projects were established during 2016-17, with an investment of Rs. 4881.13 crore, providing the employment to 22,696 persons (Govt. of Andhra Pradesh, 2018). It means that to provide employment to one person, an investment of Rs.21.5 lakhs are necessary, which explains the 'Capital-intensive' nature of these industries. Under these conditions and also keeping in view the scare economic resources available with the Government of Andhra Pradesh , which is prone to high revenue deficits, it is necessary to establish industries with less investment and generation of employment to higher no. of persons is highly essential to transform the economy from an agrarian one to industrialized economy.

Sectoral Contributions:

Our national economic scenario for the financial year 2016-17 shows the dominance of services sector with a contribution of 53.66 per cent, followed by industrial sector with a contribution of 29.02 and agriculture was placed at the third place with a contribution of 17.32 per cent. Specifically the MSME sector occupies a key place in the industrial sector in our country with 634 lakh enterprises, contributing 28.9 per cent to the national GDP and 31.8 per cent of Gross Value Added during 2016-17 and also providing employment to 1109.8 lakh persons. In our State Andhra Pradesh also 8052 MSMEs with an investment of Rs.26,488crore, were found providing employment to 8.24 lakh persons. These statistics show that with Rs. 1 crore of investment MSMEs in Andhra Pradesh were found generating employment to 31 persons.

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By going through these statistics, it can be inferred that in an economy burdened with capital scarcity and unemployment, a strategy which provides impetus for the development of MSMEs is necessary for exerting a favorable impact for economic progress.

Methodology:

The present paper is an attempt to present the handholding strategy of our Government to promote the MSME culture for increased contribution and to strengthen the industrial sector in our country, particularly among SCs and STs. Government of India has been implementing the scheme "National Scheduled Caste and Scheduled Tribes Hub" to improve the entrepreneurial abilities of SCs and STs in our country. Relying exclusively on secondary sources of information collected from All India Economic Census, Annual Reports of Ministry of MSMEs, Working papers, Research papers and other published information and websites, this paper analyses the performance of NSS Hub in India with its four sub-schemes. This paper establishes the state of entrepreneurial culture in SCs and STs and the need for improving the innovative capacities of these disadvantaged social groups.

Development Strategy: SCs and STs and MSMEs:

Not only our country, but our State Andhra Pradesh has been adopting an economic development strategy, which aims at faster inclusive growth, with a simultaneous focus on benefiting disadvantaged sections of the society, by providing employment and income. In our State, more than 70.0 per cent of our population are residing in rural areas and the population of SCs and STs constitute 22.61 per cent of the total population of our State. Particularly SPS Nellore (32.14%), Prakasam (27.64%), Guntur (24.65%) and West Godavari ( ) districts have highest proportion of SCs and STs population in our State. Nationally, SCs constitute 22.2 per cent and STs population constitute 9.0 per cent of our population.

Distribution of MSMEs:

Among the state of our country, Uttar Pradesh (14.0%), West Bengal (14.0%), Tamilnadu (8.0%) and Maharashtra (8.0%) are the top 4 states that contain 43.5% of the total MSMEs (633.9 lakh units) according to NSSO 73rd round (2015-16).

The Annual Report 2018-19 (GOI) show that 16.55% of the total MSMEs were owned by SCs and STs in country as shown in Table. 1

Table. 1:

Social Group-wise Distribution of MSME Owners

(in Percentages)

Sector	Social Groups					All Groups
	SCs	STs	OBCs	Others	Not Known	
Rural	15.3	6.7	51.5	25.6	0.72	100.0
1	7	0	9	2		0
Urban	9.45	1.43	47.80	40.46	0.86	100.00
Total	12.45	4.10	49.72	32.95	0.79	100.00

Source: GOI (2019) Annual Report-2018-19, Ministry of MSMEs.p.30.

It is evident from Table.1 that SCs (12.45%) and STs (4.10%) owned 16.55% of the total 633.9 lakh MSMEs in our country. Among SCs and STs, a higher proportion of SCs(15.37%) was found residing in rural areas, compared to STs. In urban areas 9.45 per cent of the enterprises were owned by SCs, residing in urban areas, where as this proportion was negligible at 1.43 per cent for STs.

Category-wise Distribution of MSMEs:

We know well that MSMEs are divided into three categories – Micro, Small and Medium enterprises, based on amount of investment. An attempt is made to present the ownership of SCs and STs according to these categories as presented in Table. 2.

Table. 2:

Category-wise Distribution of MSMEs in India

(in %)

Category of Enterprises	Social Group					All Groups
	SCs	STs	OBCs	Others	Not Known	
Micro	12.48	4.11	49.83	32.79	0.79	100.0
Small	5.50	1.65	29.64	62.82	0.39	100.0
Medium	0.00	1.09	23.85	70.80	4.27	100.0
All Categories	12.45	4.10	49.72	32.95	0.79	100.0

Source: GOI (2019) Annual Report-2018-19, Ministry of MSMEs. P.31

The distribution of MSMEs according to categories and social groups, as presented in Table. 2 reveals that majority of the SCs (12.45%) and STs (4.10%) were the owners of micro enterprises together constituting 16.55%/ It is also evident that SCs (5.50%) and STs (1.65%) have owned 7.15% of the total small enterprises in our country and their proportion was very negligible in the case of medium enterprises (1.09%).

MSMEs in Andhra Pradesh:

Our State Andhra Pradesh occupies 5th place with 33.87 lakh MSMEs according to NSSO 73rdround (2015-16) and with 25.96 lakh MSMEs, Andhra Pradesh occupied 7th place according to 4thAll India Census of MSMEs (2006-07).

However, the statistics on establishment of MSMEs in Andhra Pradesh was estimated as 80252 units as on December, 2017 according to the

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Department of Industries. An amount of Rs.26,489crore were invested in these units, which are providing employment to 8.24 lakh persons. These statistics makes us to infer that with an investment of Rs. 33 lakhs, on an average, one MSME can be established and each unit provides employment to around 10 members, on an average. It is evident that with an investment of Rs. 3lakhs in MSMEs, we can provide employment to 1 person , on an average, and it is the potential of employment generating capacity of MSMEs in Andhra Pradesh.

Dalit Capitalism, Entrepreneurship and SCs and STs:

In our society even in these days of digitalization, social stratification of population occupies an important place with both positive and negative effects on economic, social and political activities. Caste has a symbiotic relationship with access to education, finance, opportunities to carry out business, competing challenges in the complex business environment and to avail/generate employment opportunities. The disadvantaged sections of the society opts self-employment as way of life. Discrimination based on caste also exists in labour market towards marginalized groups and consequently they turn towards self-employment, specifically towards entrepreneurship.(Clark, K., and Drinkwater, S. (2000), Cotton, J. (1988), Coate, S. and Tennyson, S. (1992), Fairlie, R. (2006). They strongly believedthat ownership of small business is the important way-out for this discrimination and mobility towards economic progress. The marginalized groups set up their own business and transform themselves into job-givers, instead of job-seekers, for their own group and treat this process as a measure to reduce vulnerability to the discrimination in the labour market. These attempts were labeled as *"Black Capitalism"* in USA (Bates 1973; Villemez and Beggs 1984). In our country these group-dynamics aiming at enhancing the representation of marginalized groups and accumulation of wealth is called as *"Dalit Capitalism"*. (for more details click on www.dicci.org). Consequent to the discrimination in labour and credit markets, majority of dalit business activities are established as small-scale business, characterized by low productivity,which are opted as survivalist activities. In all business characteristics, MSME sector exhibits very clear differences of caste dominance in business ownership and also gender differences. We can measure and presentthe caste, gender and ownership discrimination by analyzing the data sourced from different Economic Census. Caste differences in non-agricultural enterprise ownership and performance can be traced out from the documented evidenced produced by Aiyar et.al (2011); Thorat et.al. (2010);Vissa(2011). If a comparison is made of the results of Economic Census, it can be inferred that SCs and STs are found under-represented relative to their share in population and the enterprises owned by SCs and STs are similar in terms of no. of workers, hire mostly family labour, rely less on external sources of finance and operate mostly in the informal sector without any registration, as compared to the enterprises owned by non-SCs and STs. The data collected from the previous Economic Census from 1990 to 2014 (6th Economic Census), as presented in Table. 3, reveal the trends in enterprise ownership of SCs and STs in India.

Table. 3: Trends in Ownership of Non-agricultural Enterprise of SCs and STs and Others (in %)

S. No.	Details of Share in Population, Enterprises and Employment	Economic Census			
		1990	1998	2005	2013
I.	Share in Total Population				
	Non SC/ST	75.8	75.8	75.9	68.8
	SCs	16.6	16.5	16.4	22.2
	STs	7.6	7.7	7.7	9.0
II	Share in Ownership of Enterprises				
	Non SC/ST	87.5	87.3	86.4	84.5
	SCs	9.9	8.5	9.8	11.2
	STs	2.6	4.2	3.7	4.3
III	Share of Employment				
	Non SC/ST	90.6	89.4	88.5	86.6
	SCs	7.4	6.9	8.1	9.5
	STs	2.0	3.8	3.4	3.9

Source: GOI , Economic Census for the respective years.

The data presented in Table.3 show that over a period of more than 20 years, the caste, in the form of social stratification, has been most influential in creating differences not only in ownership of business but also in the employment generation through small business. The following inferences can be drawn from the data presented in Table- 3.

- Upto the period 1990 to 2005, the share of SCs and STs population almost remained as stagnant at 16.5 per cent., with a marginal increase to 22.2% and 9.0% in 2013.
- The population of non-SCs and STs constituted around 76.0% during 1990 to 2005 and declined marginally to 68.8% in 2013.
- The ownership of SCs and STs was estimated at around more than 8.5% and less than 9.9 per cent during 1990 and 2005 and increased marginally to 11.2% in 2013.

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- The share of employment of SCs and STs worked out to 7.0% to 8.0 per cent and registered an increase by 1.5 % in 2013 and on the contrary the non-SCs and STs was able to generate 87.0 per cent of the total employment generation through small business enterprises.

National Scheduled Caste and Tribe Hub(NSSH):

It is a proved fact that entrepreneurship fuels and accelerates the process of economic development, which is an active participation of all social groups in an economy. Specifically disadvantaged SC/ST community holds a place of significance as their contribution is very significant and important to achieve inclusive growth. The Government of India has recognized that the development of MSMEs can be made an important sector of industries to empower SCs and STs in India.

Keeping in view the need for inclusive growth in a faster way, the Ministry of MSMEs has been designing and implementing a variety of schemes for the promotion and development of MSMEs, embracing particularly the socially disadvantaged groups – SCs and STs. As a hand-holding measure, the scheme of "National Scheduled Caste and Scheduled Tribe Hub" was set up to provide professional support to SC and ST entrepreneurs to fulfill the obligations under the central Government Public Procurement policy for MSMEs order 2012. This schemes also aims at adoption of applicable business practices and make the best use of the "Start Up India initiatives.

Key Objectives of the Scheme:

The National SC/ST Hub aims at the following objectives:

1) Encouraging SC/ST units to achieve the share of at least 4% of the total procurement policy made by central state Governments, CPSEs and other government agencies.
2) Strategies intervention through industry associations to sensitize, encourage and facilitate the units owned by the SC/ST cadre to participate in Public Procurement Process.
3) Collecting, Collating and disseminating information of SC/ST enterprises and entrepreneurs.
4) Facilitating SC/ST entrepreneurs to partake in vendor development programmes and mentoring support.
5) Facilitating the participation of SC/ST entrepreneurs in public procurement through e-platform of DGS&D and monitoring their progress.

Sub-schemes of National SC/ST Hub:

There are 12 national schedules caste and tribe Hub offices carrying out the above mentioned objectives. In the financial year 2018-19, 25 state conclaves were organized in different locations of our country to handhold the activities of SC/ST owned MSMEs under the following 4 sub-schemes:

Operations Assigned:

The SC/ST Hub carryout's its objectives under the above mentioned sub-schemes out of the National Small Industries Corporation. Entrepreneurs young and old of the SC/ST community would be registered for getting benefits. Marketing support is provided SC/ST MSMEs for enhancement of competitiveness and marketability of their products by way of facilitating their participation in domestic and international exhibitions/ Trades, vendors development programme awareness campaigns etc., SC/ST entrepreneurs are allowed to participate under SMAS. A subsidy of 90% is provided on rating fee for fresh rating under the scheme of SPCRS, and this scheme is not in operation and discontinued. Similarly 25% capital subsidy is given to SC/ST owned MSMEs for technology up gradation under the scheme of special credit linked capital subsidy.

Performance of National SC/ST Hub:

An estimated budget of Rs 490 crore for the period of 2016-17 to 2019-20 was allocated for SC/ST Hub. The Hub has conducted 37 special vendor development programmes, in which 1447 SC/St MSMEs have participated under special Marketing Scheme. The Hub has facilitated 416 SC/St MSMEs to participate in 42 exhibitions , 32 MSMEs in 8 international exhibitions.

PSEs and Procurement from SC/ST MSMEs:

The public procurement policy for MSMEs has mandated that every Central Ministry/ Department/PSU shall set an annual goal of minimum 20% of the total annual purchases from the products produced by MSMEs. The Government recently revised the order making it compulsory for all CPSEs to procure 25% from MSMEs instead of 20% of their total purchases. Out of the total annual procurement from MSMES, 3% from within the target was earmarked for procurement from MSMEs owned by women. A sub-target of 4% out of annual procurement was earmarked for procurement from MSMEs owned by SC/St entrepreneurs. The details of annual procurement of goods and services from MSMEs by CPSE during the years 2014-15 to 2018-19 and the share of procurement from MSMEs owned by SC/St entrepreneurs are presented in Table- 3

Table :3 Procurement from MSMEs owned by SC/ST Entrepreneurs (in RsCrore)

Year	Number of CPES	Total procurement (Rs in Crores)	Procurement from MSMEs 9Rs in Crores)	Procurement from MSMEs owned by SC/St Entreprene

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				urs (Rs in Crores)
201 4-15	133	131767	15301	59.4
201 5-16	132	279167	12566	50.1
201 6-17	142	245785	25329	40.0
201 7-18	169	280786	24227	443.0
201 8-19	NA	NA	27000	520.0

Source: *GOI (2019) Press Information Bureau, dated 7-1-2019, M/O MSMEs, Delhi*

It is dated from table 3 that the procurement from MSMEs owned by SC/ST enterprises has increased from Rs.59.4 crore in 2014-15 to Rs 520.0 crore during the year 2018-19.

The Minister of state for MSMEs Sri Giriraj Singh told the press that the target of 25% was crossed and in future it would reach 50% and it would be made possible by employing more number of SC/ST entrepreneurs and women entrepreneurs. The secretary Dept of public enterprises, Ms SeemaBahuguna shared her views that private sector too would have to contribute its might to source products and services from SC/ST entrepreneurs. SR Arun Kumar Panda, Secretary, Mi9nistry of MSMEs, suggested in a conference for the formation of a committee to examine the conditions of tender documents of CPSEs that were preventing SC/ST entrepreneurs from participation in public procurement. The significant increase in the procurement of goods and services from MSMEs, owned by SC/ST entrepreneur was made possible through the implementation of measures such as increasing the limit for provision of collaterals free loans from Rs 1 crore to Rs 2 crore, technology up gradation, cluster development, vendor development and schemes aimed at extending financial benefits to SC/St entrepreneurs.

Conclusion:

The strategy of economic development in India aims at" faster inclusive growth" which calls for an active participation of all communities particularly "putting the last first". MSMEs in India are the industrial activities which generate more number of employment opportunities with comparatively lower amount of investments. This "Capital –Light nature of MSMEs is very much suitable for socially disadvantaged groups. Of late GOI has announced the contribution of MSMEs to GDP should be significantly increased by including SC/St entrepreneurs to establish MSMEs through a variety of financial and administrative supporting schemes. Consequent to these encouraging and promotional measures implemented and creating a conducive environment for opening and growth of MSMEs registered a significant leap. The data on EM-II filing revealed that a total of 22 lakh filings were taken place between 2007 and 2015. The information on UdyogAadhar Memorandum (UAM) show that till end of May 2019, 68.25 lakh MSMEs have registered and their distribution according to social categories indicate that 4.61 lakh units registered were found belonging to SCs (23.32%) and 1.454 lakh belonged to STs : together constituting 30.4% of the total UAMs as on December, 2017.

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LIBRARIES BEYOND BORDERS:
INNOVATIVE TRENDS, ISSUES AND CHALLENGES IN KNOWLEDGE DISSEMINATION

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DIGITAL LITERACY SKILLS OF THE PG STUDENTS OF VIKRAMA SIMHAPURI UNIVERSITY, NELLORE

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Introduction

ALA Digital Literacy Taskforce 2011 defines Digital Literacy is the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills. A Digitally Literate Person: Possesses the variety of skills – technical and cognitive – Required to find, understand, evaluate, create, and communicate digital information in a wide variety of formats; Is able to use diverse technologies appropriately and effectively to retrieve information, interpret results, and judge the quality of that information; Understands the relationship between technology, life-long learning, personal privacy, and stewardship of information; Uses these skills and the appropriate technology to communicate and collaborate with peers, colleagues, family, and on occasion, the general public; and Uses these skills to actively participate in civic society and contribute to a vibrant, informed, and engaged community.

Need of the Study

Digital Literacy is an indispensible in the 21st century because the nature of knowledge is changing in this situation our basic literacy need expanding. In the information age we have many digital devices. To get fully acquainted in using the tools and using the information effectively students in the higher education courses should possess digital literacy skills. In this context the present study is undertaken to explore how the PG students of Vikrama Simhapuri University are possessing of digital skills.

Objectives

The present study has been carried out with the following objectives:

To determine the frequency of using the computer by the PG students

To know the owning digital tools of the respondents

To identify the knowledge of using digital tools

To examine the confidence level of using digital tools

To find out the digital competence of students.

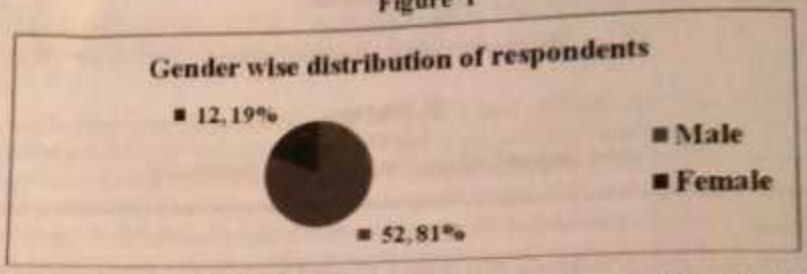
Research Methodology

In order to better understand the student's level of competence on digital literacy a survey was conducted using a questionnaire. A sample of 100 students is taken purposively among the students of MBA, M.CA M. Sc (Organic Chemistry, Applied Mathematics, Bio Technology and Statistics) courses. The investigator personally distributed the questionnaires to the respondents, and only 64 students were

returned the filled questionnaires and these are only used for the study. The data which were collected through the questionnaire were tabulated and analyzed by simple statistical techniques

Analysis

Figure 1



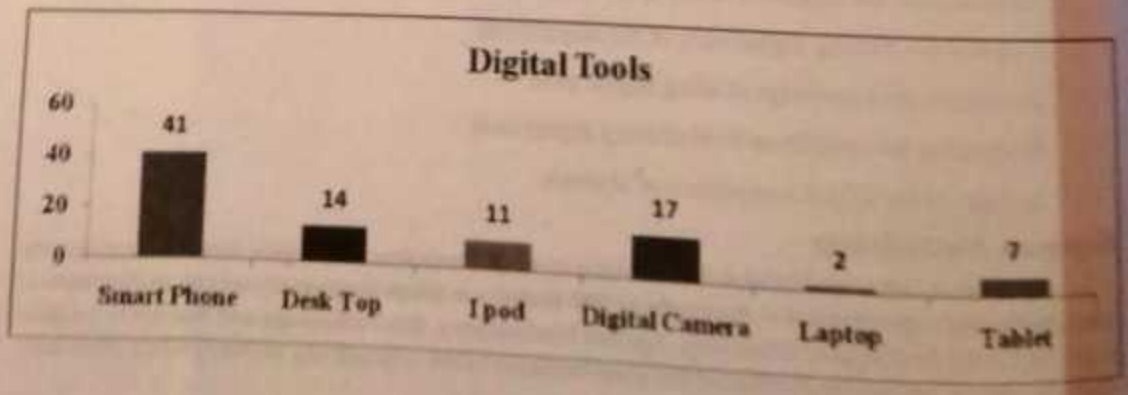
The figure-1 shows the gender wise distribution of respondents in this study. It shows that majority of the respondents are Male 52 (81%), and female respondents were 12 (19%).

Frequency of Computer usage

Frequency	Total	Percentage
Daily	31	48.43
Weekly	18	28.15
Monthly	3	4.62
Rarely	12	18.75
I have no Knowledge	0	0
Total	64	100.00

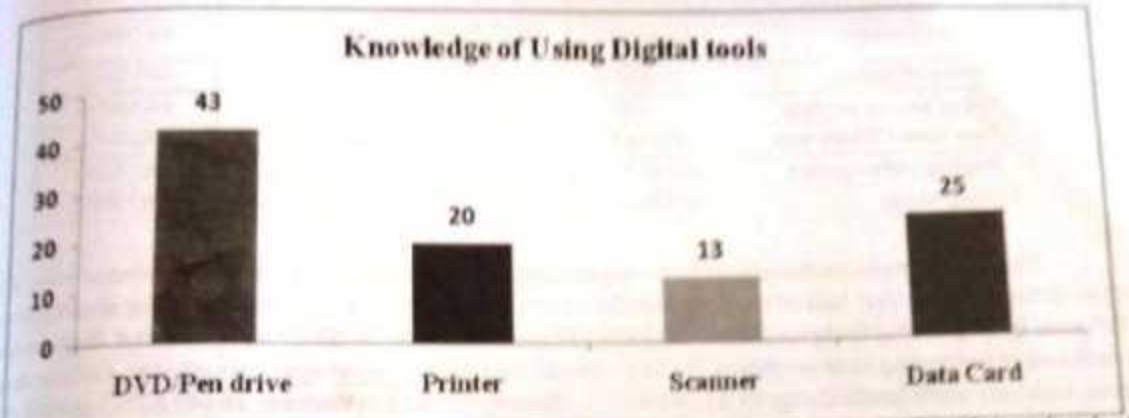
The above table-1 depicts the frequency of computer usage by the PG students of Vikarama Simhapuri University students. It is clear that majority of the respondents 31 (48.43%) are using on daily basis, followed by 18 (28.15%) on weekly, 12 (18.75%) responded that they use computer rarely. Only 3 (4.62%) opined that they use monthly. No respondent replied that they have no knowledge of computer usage. Therefore it can conclude that all the respondents have computer knowledge, and they well verse to use the computer.

Figure 2 Owning Digital Tools



The investigator posed a question to identify which digital items the respondents are own. The data related to the question are shown in fig-2. It is evident from the data that majority of the respondents 41 (64.06%) having smart phone, followed by 17 (26.56%) digital camera, 14 (21.87%) desk top and 11 (17.18%). Only 7 (10.93%) own a tablet and 2 (3.12%) laptop. It can be conclude that majority of the respondents having smart phone.

Figure 3 Knowledge possessing in use of digital tools



Digital literacy comprises using of various digital / electronic tools with sufficient level of competence.Fig-3 explains the data relating to the respondents knowledge of using various digital tools. The data shows that majority of the respondents 43(67.18%) are able to use pen drive or DVD , followed by 25 (39.06%) data card, printer is able to use by 20 (31.25%) of the respondents. Scanner is used by less number of the respondents i.e. 13 (20.31%).

Table 2 Frequency of doing Digital activities

Activities	Hourly	Daily	3-4 times in a week	Occasionally	Very Rarely	Total
Reading Online News papers/ Books/Journals	7(10.93%)	28(43.75%)	20(31.25%)	2(3.12%)	7(10.93%)	64(100%)
Checking e-mails	3(4.68%)	30(46.87%)	20(31.25%)	5(7.81%)	6(9.37%)	64(100%)
Watching online news	12(18.75%)	24(37.5%)	14(21.87%)	7(10.93%)	7(10.93%)	64(100%)
Downloading movies/ songs	8(12.5%)	13(20.31%)	15(23.43%)	14(21.87%)	14(21.87%)	64(100%)
Chatting through whatsapp/Face book	9(14.06%)	35(54.68%)	8(12.5%)	4(6.25%)	8(12.5%)	64(100%)
Searching jobs	11(17.18%)	27(42.18%)	10(15.62%)	7(10.93%)	9(14.06%)	64(100%)

Table-2 explains the digital activates performed by the PG Students of VSU, Nellore. It is very clear majority of the respondents 28 (43.75%) are reading online news papers, books in daily. 46.87% of the ondents opined that they check mails daily basis. Majority of the respondents 24 (34.5%) watching ne news daily. In respect of down loading movies and songs it is replied by majority of the respon- s weekly or occasionally and rarely. More than half of the respondents 35 (54.68%) opined that they g whatsapp / facebook daily. 42.18% of the respondents searching jobs on daily basis. It is very clear the data that most of the students are aware of digital information and they using it on daily basis.

Table 3 Confidence level of using Digital applications

Applications	Very Confident	Fairly Confident	No Confidence	Total
Smart phone usage	33(51.56%)	24(37.5%)	7(10.93%)	64(100%)
Uploading videos/photos	38(59.37%)	17(26.56%)	9(14.06%)	64(100%)
Filling online applications	33(51.56%)	24(37.5%)	7(10.93%)	64(100%)
Online banking	31(48.43%)	21(32.81%)	12(18.75%)	64(100%)
Online shopping	31(48.43%)	21(32.81%)	12(18.75%)	64(100%)
Use of search engines	25(39.06%)	24(37.5%)	15(23.43%)	64(100%)
Face book/ Whats app	26(40.62%)	21(32.81%)	9(14.06%)	64(100%)
Playing online games	29(45.31%)	23(35.93%)	12(18.75%)	64(100%)
Using Skype	25(39.06%)	13(20.31%)	26(40.62%)	64(100%)

The table-3 explains the respondent's digital applications usage competency confidence level. It is clear from the table that half of the respondents 33 (51.56%) are very confident in using smart phone, followed by 24 (37.5%) fairly confident. Majority of the respondents 38 (59.37%) opined that they are very confident in uploading videos/ photos, 51.56% opined that filling online applications also. Online shopping was very confidently doing by 31 (48.43%). Majority of the respondents 26 (40.62%) opined that they have no confidence in using Skype.

Conclusion

From the findings of this study it is evident that post graduate students of Vikrama simhapuri University, Nellore are good at using e-mails, chatting with friends through face book and whatsapp. Still majority of the students are not fully skilled in using Skype and search engines. Less percentage of people are possessing the digital skills in using scanners and printers. This shows that their knowledge and competence is not up to the level. It is to suggest that the University authorities take an initiate to develop infrastructure and to provide training to the students by way of organizing workshops, hands on training in using the various digital tools and applications. Improving the digital literacy skills will benefit to the students in the process of learning.

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Library Practices in Digital Era

(Festschrift in Honour of Prof. V Vishwa Mohan)

Edited by:

Dr. M R Murali Prasad
Dr. Aehala Munigal
Dr. Rupsing Naik
Dr. M. Madhusudhan
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SOCIAL MEDIA AS INFORMATION SOURCE: A STUDY

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Abstract - *Social media are popular among the youth and college students and it is being used for various information searching, seeking, gathering, sharing and using activities. This present study explores the engineering student's usage of social media as information source. For this purpose survey method was adopted and a questionnaire was administered among the engineering students of Sri Venkateswara University college of Engineering, Tirupathi. The results revealed that most of the respondents came to know to use the social media through their friends. Good number of respondents in this study using social media as a source of information to their academic and education needs rather than entertainment Lack of specificity of information is the major problem faced by the respondents.*

Keywords: Social Media, Engineering students; Information usage

Introduction

The advanced technological developments and growth of smart phone usage an increasing popularity and usage of mobile Internet among the College students is a common phenomenon. This boosted for social media to emerge as one of the most important medium of communication among the adolescents.

What is Social Media?

Merriam Dictionary defines social media as "forms of electronic communication (as websites for social networking and micro blogging) through which users create online communities to share information, ideas, personal messages, and other content (as videos) " According to Ahlqvist, Bäck, Halonen, & Heinonen, *social media* (SM) is an umbrella term describing the means of interactions among people in which they create, share, and exchange information and ideas in virtual communities and networks. From the definitions we understand

that social media is two word 'social' and 'Media. The "**social**" part refers to interacting with other people by sharing information with them and receiving information from them. The "**media**" part refers to an instrument of communication, like the internet.

Social media comprise technologies such as social networking sites like face book, web forums, such as blogs, wikis, podcasting and video casting, virtual worlds, and social book marking. Other social media categories are places for sharing photo, music, and video such as Flicker and YouTube, social bookmarking such as Delicious and micro blogging such as Twitter. Social media have become an important part of student's lives. Nowadays, no one can imagine his or her usual day without visiting his or her personal page in Face book or Twitter. It is becoming one of the main tools used to spread information among the students. It's known and obvious that in today's world where the information and internet take a significant role in peoples' lives, the social media phenomenon will be an interesting topic to research. Even though a number of studies have been conducted focusing on the use of social media, there is a dearth of research on social media use as information sources. In this context the study is undertaken to explore the engineering student's usage of social media as an information source.

Review of Literature

Westerman,D et al (2014) examines the source credibility of the information in social media. The study concluded that social media emerged as highly used information source even for things as critical as risks and crises.Kim & Sim (2015) studied how under graduate students use social media for information seeking purpose. The data was collected using a web survey questionnaire. The results show that significant sex effects were found in the use of wikis, blogs and internet forums. Significant effects of problem-solving style were found in the use of social networking sites, user reviews, blogs and micro blogs. Male respondents used wikis and internet forums. Social networking sites and blogs are used by female respondents frequently. The study concludes that there is a significant effect of sex when problem solving taking in to account.Asogwa , C et al (2015) study assessed the use of Social Networking Sites and Academic Performance among Students of Tertiary Institutions in Kogi State. The study found that majority (94.1%) of the respondents search for academic information on SNS. The study concludes that the use of social networking sites is, and will continue to remain popular with the digital and virtual generations, SNSs can be a useful instrument in improving academic performance of students of tertiary institutions in Kogi state. Sei-ching Joanna,Kyung-Sun(2013) analyzed International students everyday life information needs, their usage of Social networking sites. The findings of the study indicate that majority (97 percent) of the respondents frequently used SNS.Greg H. Ezeah et al (2015) examined why the students in universities within South-East Nigeria make use of the social media. Survey design adopted for the study and questionnaire used to collect the data from the undergraduate students . The study found that Nigerian students use the social media to watch movies, expose themselves to pornography, and chat. In a nut shell they use the social media for entertainment, education and information purposes.

Aim and Research Questions

The overall aim of the study is the Social media usage as information source by the engineering students and it focused particularly to get the students perceptions on use Wikipedia, Twitter, YouTube, Face book and Linked In. The objective is to get the answers for the following research questions..

1. How the students came to know the Social media?
2. What are the devices they are using to connect social media?
3. How much time they spent in accessing social media content?
4. For what purpose they used the information in social media
5. What are the benefits they get and problems encounter in using the social media?

The above research questions are addressed using a survey research method administering a questionnaire for collecting the required data from the respondents.

Research Methodology

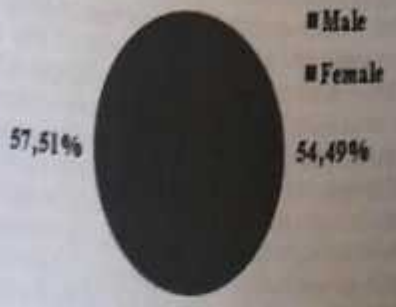
Survey research was used to get the required primary data for this exploratory study. For this purpose a questionnaire was used.

Population& Sample

Subjects of the study were Final year Under Graduate Engineering students of SVU College of Engineering, Tirupathi. The investigator distributed a sample of 150 questionnaires to all the students, and received responses from 111 only. The response rate is 74%. Descriptive analysis, frequency tables and charts were used for data analysis and presentation.

Data Analysis

Gender wise distribution of Respondents



The figure-1 shows the gender wise distribution of respondents. It is cleared that majority of the respondents 57(51%) are female, and 54(49%) are male respondents participated in this study.

Social Media awareness

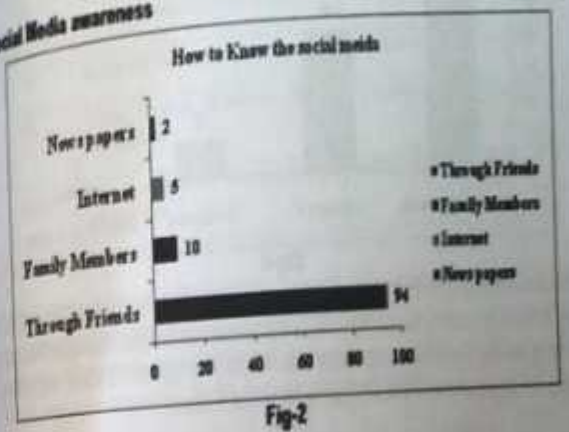


Fig-2

The figure-2 explains the data relating to the awareness of engineering students about the social media. It is very clearly understand that majority of the respondents 94 (84.69%) opined that through the friends they aware of social media, followed by family members 10 (9%), through internet 5(4.5%) and newspapers 2 (1.8%). Friends are the most influenced persons for using the social media.

Devices used to connect Social Media

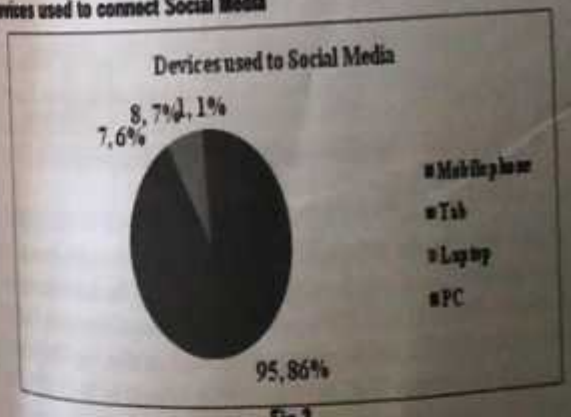


Fig-3

Social media can be accessed by using various electronic devices. The investigator try to know which devices are popularly used by the respondents for accessing social media. The results indicate that majority of the respondents 95 (86%) using mobile phones, followed by laptop 8 (7.20%) ,Tablets 7(6.30%) and personal computer only 1 (0.90%).

Frequency of Social Media use in a Day

Fig-4

The above data depicts that the time spent by the respondents in using social media in a day. It is very interesting that 53 (47.75%) of the sample admitted that they spent less than an hour per day checking social media sites, 43 (38.74%)spent 1-2 hours, 12 (10.8% spent 3-4 hours and only 3 (2.7%) spent more than 5 hours.

Social Media Used as a Source of Information

Table-1

S.No.	Source	For getting back ground info.	For day to day info.	For Academic info.	For Entertainment
01	Wikipedia	40(36.03%)	20(18.01%)	58(52.25%)	13(11.7%)
02	You Tube	06(5.40%)	08(7.20%)	75(67.56%)	24(21.62%)
03	Yahoo answers	14(12.61%)	25(22.52%)	53(47.74%)	09(8.10%)
04	Twitter	02(1.80%)	39(35.13%)	09(8.10%)	52(46.82%)
05	Face book/ Linkedin	16(14.41%)	39(35.13%)	79(71.17%)	16(14.41%)

The Table-1 display the data relating to the social media used as information source. For this the investigator confined to the five popular social media tools. The data indicates that majority of the respondents 58(52.25%) used Wikipedia as source of information for their academic needs and 40(36.03%) for getting back ground information. You Tube is used for academic information by 75 (67.56%) respondents, followed by 24 (21.62%) for entertainment. Yahoo answers is used by 53(47.74%) of the respondents for academic information, followed by 25 (22.52%) for day to day information. Majority of the respondents 55(49.54%) using Twitter for their day to day information needs. social networks sites like Face book/ Linked In are used by 79(71.17%) respondents for academic information followed by 39 (35.13%) for day to day information.

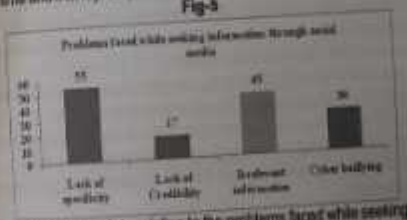
Benefits of Using Social media Information

Table-2

S.No	Benefits	Agree	Disagree
03	Effective communication/Connectivity	99(89.18%)	12(10.81%)
07	Enhanced information discovery	94(84.68%)	17(15.31%)
02	Saving time & money in getting information	74(66.66%)	37(33.33%)
04	Easy to share/exchange information	100(90.09%)	11(9.90%)

Table-2 reports that the benefits of using social media as information source. Majority of the respondents 100 (90.09%) agrees information through social media is easy to share / exchange. 96 (86.48%) agrees that it is effective communication tool. 94 (84.68%) opined that it saves time and money. 37 (33.33%) disagree that opinion.

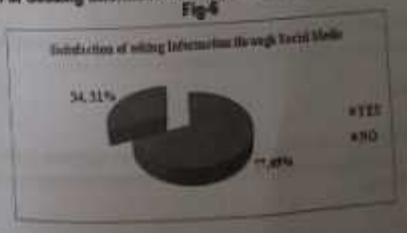
Fig-5



The above fig-5 depicts the data relating to the problems faced while seeking information through social media. Majority of the respondents 55 (49.54%) are opined that lack of specificity, followed by irrelevant information 45 (40.54%). Cyber bullying is also reported by 39 (27.02%) respondents. 17 (15.31%) opined that lack of credibility.

Satisfaction of Seeking Information through Social media

Fig-6



The fig-6 demonstrates the perceptions of the respondents on seeking information from social media. It is clear that majority 77 (69%) are opined that the satisfied with the information whereas 34 (31%) doesn't satisfied with the information in social media.

Findings

The main contribution of present study is to provide an initial insight on how engineering students using social media as information source. The important findings of the present study are:

1. Mostly friends create awareness to the respondents of this study in using the social media. It is not surprising aspect as many studies reports that social media is popular among the youth.
2. Smart phone is the favored device among the respondents for accessing social media because of its compact, easy to carry and light weight compare to other gadgets like Tabs, Laptops, PCs.
3. The finding relating to the time spent by the respondents in using Social media is also very interesting that almost half of the sample admitted that they spent less than one hour per day to check social media sites. This is differing of the general public notion of college student's addiction with Social media.
4. Good number of respondents in this study using social media as a source of information to their academic and education needs rather than entertainment.
5. Majority of the respondents agrees that information in social media is easy to share or exchange, they benefit a lot of time and money saving using this tool.
6. Almost half of the respondents opined that lack of specificity is the major problem in using social media.

Suggestions

The findings of this study suggest that even though social media is a useful source to the college students. But they should learn to evaluate sources reliability based on whether they're named, independent and well-informed or authoritative.

If any student discover a suitable or reliable resource through social media that should be share to his groups, or friends for their academic or career development.

Conclusion

Social media emerged as a great wealth of information; if we able to use it meticulously it is suggestible that educators or college students don't hesitate using social media to learn from and with others.

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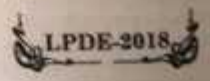

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CONTENTS

Copyright awareness among Women PG Students of Vikrama Simhapuri University, Nellore

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[2]*Librarian, Govt. Degree College, Naidupet , SPSR Nellore district*

Abstract

The present study is to explore theawareness of copyright among the women post graduate students of various courses in Vikramasimhapuri University, Nellore. The study adopted survey design and data were collected using a structured questionnaire. The data revealed that majority of the respondents are aware of copyright and also majority of the respondents not violated copyright.Non availability of required book is the major reason to violation of copyright. It was also revealed that students depend on library staff for awareness of copyright.

Keywords: Post graduate students; Copy right Law; User study; Nellore

Introduction

Fishman (2008), reports that Copyright "is a legal device that provides the creator of a work of art or literature, or a work that conveys information or ideas, the right to controlhow the work is used." It is also intended to promote creativity and originality amongauthors by ensuring that writers do not reproduce others' works without permission. It is therefore illegal to reproduce an original work without the authors' permission.

*OxfordDictionaries.com*defines copyright as "The exclusive and assignable legal right, given to the originator for a fixed number of years, to print, publish, perform, film, or record literary, artistic, or musical material."

Review of Literature

Many studies are conducted previously to know the awareness of copyright among the students. Rose B. Okey (2005) investigated photo copying practices in tertiary institutions in Nigeria. The study found that major reason for photocopying are the cheapness of photocopies compared with cost of purchasing books and journals as well as the scarcity of books. More than 50% of the respondents photocopied whole books and journals, while over 65% of them are aware of the copyright law. HuanChueh Wu and others (2010) conducted a study to explore common copyright-related problems that arise when librarians promote the use of digital library resources and to investigate college students' misconceptions of copyright laws. The results indicate that students had misunderstanding about copyright laws when using digital library resources.

Purpose of the study: The purpose of the study is to determine the Vikramasimhapuri university women post graduate students aware of copy right laws. These are very important for better creativity, protection of intellectual content of the works of the authors. This study will, hopefully, form the basis for awareness creation on the copyright law among the PG students.

Objectives of the study: The main aim of the study is to investigate the women post graduate students awareness of copyright law in VS. University, Nellore. To achieve the aim the following objectives are being pursued.

- To know the women PG students awareness of copyright law.
- To find out the reasons for violation of copy right
- To know the students awareness of fair use and digital copyright
- To identify the various methods used by the students for self awareness of copyright.

Scope of the study: The study is confined to women post graduate students awareness of copyright law in VS. University, Nellore

Methodology

The survey was conducted among thewomen post graduate students in VS. University, Nellore. Simple random sampling method was used to select the respondents for this study. The data was collected using a questionnaire .The investigator personally distributed the questionnaires and receives the response from the students.

Analysis and Discussion

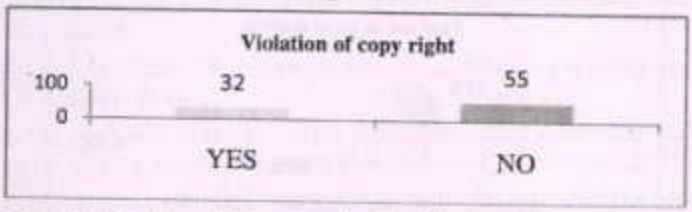
Data collected from the field was analyzed using descriptive statistics comprising of simple percentage and frequency count.

Table-1

S.No	Response	Frequency	percentage
1	YES	87	83.65
2	NO	17	16.34
Total		104	100

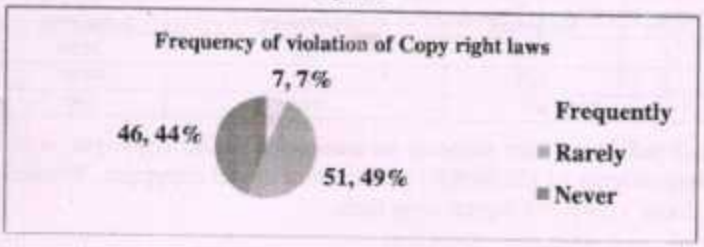
The table-1 explained the awareness of copy right act among the PG students. It is cleared from the above data that majority of the respondents 87 (83.65%) are aware of copy right. 17 (16.34%) of the respondents doesn't aware of the copyright act. This shows that majority of the respondents are aware of copy right act.

Figure-1



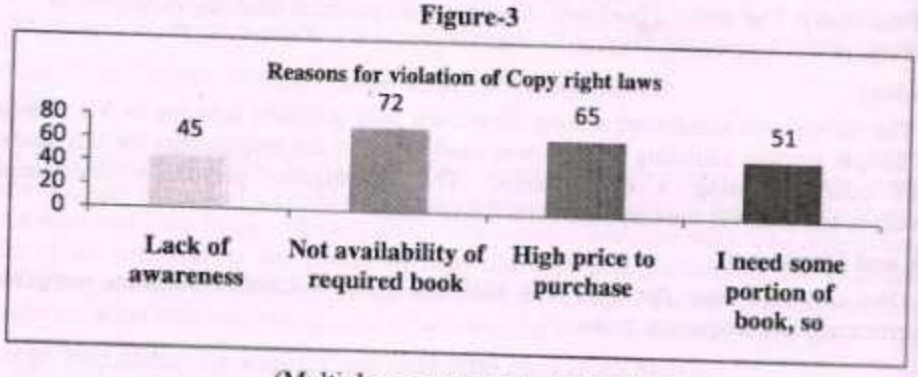
The above figure reports the data relating tostudent's violation of copy right act. It is very clear from figure that majority of the respondents 32 (36.78%) doesn't violated the copy right act. 55 (63.21%) of them are opined that they violated copyright.

Figure-2



The above figure explains the frequency of violation of copy right law. It is cleared from the figure that majority of the respondents 51(49%) opined that they violated the copyright rarely followed by 46 (44%) express that they never violated the copy right act. Only seven respondents (7%) opined they violated the copy right frequently.

Figure-3



(Multiple responses are permitted)

The above figure-3 explains the various reasons for violation of copy right. It is cleared from the figure that 72(69.23%) because of the non availability of required book is the major reason to violation of copyright, followed by 65 (62.5%)of the respondents opined that high prices of books , 51 (49.03%) students need some part of the book, so that they doesn't interest to buy or consult that book, in such situations they violate the copyright. Only 45 (43.26%) of the respondents violates the copy right because of the lack of awareness.

Figure-4

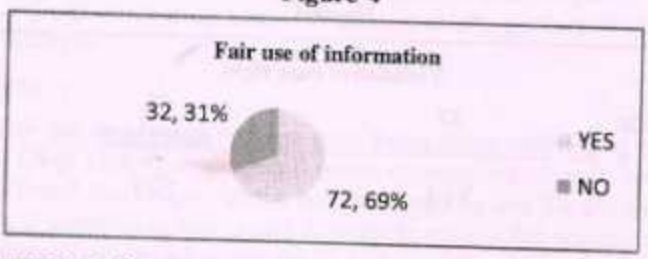


Figure -4 represents the awareness of fair use of information among the students, it is cleared that majority of the respondents 72 (69%)are aware of fair use of information. Only 32(31%) opined that they doesn't know about fair use of information.

Table-2

S.No	Response	Frequency	percentage
1	YES	53	50.96
2	NO	51	49.03
Total		104	100

The above table-2 indicates the students awareness of digital copyright, it is cleared that the majority of the respondents 53 (50.96%%) are aware of digital copyright. Whereas 51 (49.03%) of the respondents doesn't aware of digital copy right.

Table-3

S.No	Response	Frequency	percentage
1	YES	95	91.34
2	NO	9	8.65
Total		104	100

The above table represents the self awareness among the students on copy right. It depicts that 95 (91.34%)of the respondents opined that they try to self aware of copyright, rest of the 9 (8.65%) doesn't try to self aware of copy right.

Discussion of Findings

The aim of the study is to know the women PG students awareness of copyright law. Other parameters investigated include reasons for violation of copy right laws, methods followed to get awareness of copyright laws and fair use of information.. Results also indicated that the non availability of required books is the major factor that leads to the violation of copyright, followed by high prices of books. This finding corroborates

Conclusion

This study has examined Post graduate women students knowledge about copy right awareness at the VS University, Nellore. So far, the results also demonstrated that most of the women PG students are aware of copy right law. It is recommended that VS University library should be well equipped with enough and relevant printed resources that will be readily available and accessible to the students when needed.

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LIBRARY IN THE LIFE OF THE USER

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Editors
Keshava
Rupesh Kumar A
M N N Prasad

Library in the Life of the User

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Use of Social Media among LIS Students of Bangalore University: A Study

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Abstract
The present study aim to study student's perception on usage of social media. The study adopted a survey design and data were collected from the respondents using a questionnaire. The populations of the study are MLISc students of Bangalore University. The results revealed that most of the respondents came to know to use the social media through self-interest. Majority of the respondents are using social media for communication. 47.82% opined that using social media wasting their valuable time.

Keywords: Academic Usage, Social Media, PG students, User survey.

Introduction

According to Mark Zuckerberg, Facebook founder and CEO**. "Our community and business continue to grow quickly, and now more than 2 billion people use at least one of our services every day,". The emphasis how social networking is popular and widely used in the world among the people. As social networking is growing, there are enormous opportunities to get the wide range of information, which contributed by the end users. Social media tools like Wikipedia, blogs, SNS, YouTube and Twitter contain various features to attract the users. These features not only for entertainment, communication, and socializing but also benefit for the academic community. There are number of studies are focus on how the social media is useful to the students to support their course related information needs. It will be important to know how the students use the non-library information sources to their academic assignments. The current study is also to explore how the MLISc students of Bangalore University using the social media tools for their academic purpose.

Review of Literature

Asogwa, C et al (2015) study assessed the use of Social Networking Sites and Academic Performance among Students of Tertiary Institutions in Kogi State. The study found that majority (94.1%) of the respondents search for academic information on SNS. The study concludes that the use of social networking sites is, and will continue to remain popular with the digital and virtual generations, SNSs can be a useful instrument in improving academic performance of students of tertiary institutions in Kogi state. Kim & Sim (2015) studied how under graduate students use social media for information seeking purpose. The data was collected using a web survey questionnaire. Social networking sites and blogs are used by female respondents frequently. The study concludes that there is a significant effect of sex when problem solving taking in to account.

Anilkumar & Rajendra kumar(2013) presents the results of their study at Maharshi dayanand University ,Rohtak. The results of the study indicate that 73.33% of the respondents using mobile phones to connect the SNS, and 50% of the respondents satisfies using SNS.

Sei-chngJoanna,Kyung-Sun(2013) analyzed International students everyday life information needs, their usage of Social networking sites. The findings of the study indicate that majority (97 percent) of the respondents frequently used SNS. Colkar (2012) examined the education on face book environment in Selcuk university. The investigator approached through case study and qualitative research. For collection of data semi- structured interview method was adopted. Analysis of data is done by using content analysis. The study found that educational use of face book provides various

advantages like interaction, ease of access to information, time gain etc. Majority of the respondents opined that teacher supervision must be increased for better usage of face book in the academic purpose. Mazman&Usluel (2010) conducted a survey to test a structural educational model explaining how users could utilize face book for educational purpose. For collection of data the study employed an online survey of the face book users. The participants of the study were university students who were between the ages of 18-23. The study found that the education use of face book has a significant positive relationship with its use for communication, collaboration and material sharing. Zakaria, Watson, & Edwards(2010) studied the use of social media by Malaysian students. They found that students have been using the Internet applications specifically social media for both formal and informal types of learning.

Objectives of the Study

- To know the devices used by the students to use social media.
- To obtain their views on how they join the Social network sites
- To examine the time spent in using the social media
- To get the opinion on the use of social media for academic purpose.
- To identify the problems facing by the students in using the social media.

Methodology

The study used survey research and questionnaire as a tool for the collection of data. The population of the present study is the Post Graduates, who are pursuing Master of Library and Information science course in the Bangalore University, Bangalore. Since the population is small and manageable the investigator chooses census method. A structured closed ended questionnaire was designed in simple English language. The investigator personally distributed the questionnaires to the students who are attended the classes, and received responses from 46 only. The response rate is 94%. The questionnaires responses are entered in SPSS for analysis of data. Frequency tables and charts were used for presentation.

Data Analysis

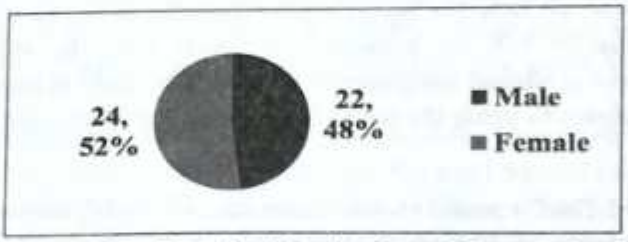

Figure 1: Gender wise distribution of Respondents

The figure 1 shows the gender wise distribution of respondents. It is cleared that majority of the respondents 24(52%) are female, and 22(48%) are male respondents participated in this study.

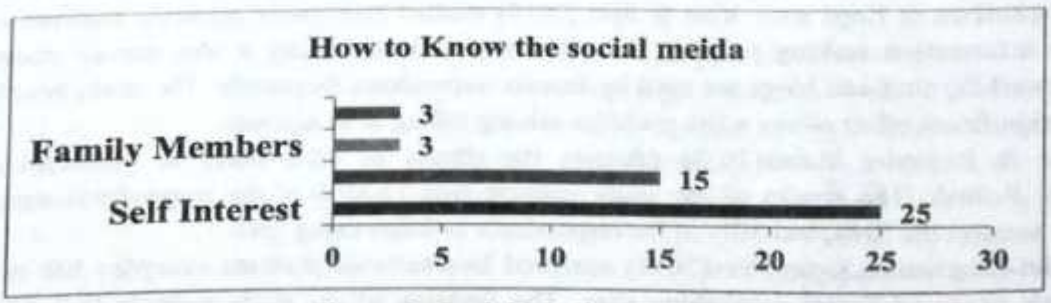

Figure 2: Social Media awareness

The figure 2 explains the data relating to the student awareness of the social media. It is very clearly understand that majority of the respondents 25 (54.3%) opined that their self-interest to aware of social media, followed by friends 15 (32.6%), through family members 3(6.5%) and internet 6 (6.5%). Self-interest is the most dominant reason for using the social media.

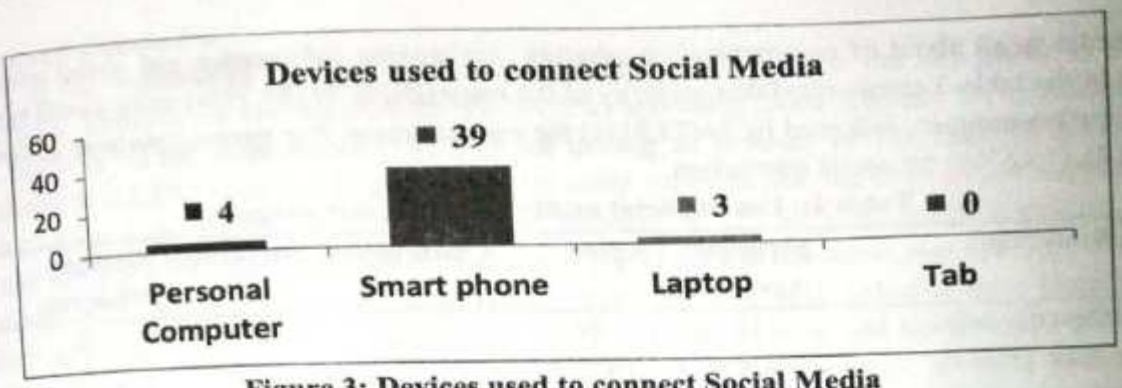

Figure 3: Devices used to connect Social Media

Social media can be accessed by using various electronic devices. The investigator try to know which devices are popularly used by the respondents for accessing social media. The results indicate that majority of the respondents 39 (84.8%) using Smart phones, followed by personal computer 4 (8.7%), laptop 3 (6.5%), no respondent uses Tablets to connect social media.

Table 1: Registered users of social media sites

Social Media	No Respondents	Percentage
Face book	30	65.21
Twitter	5	10.86
YouTube	34	73.91
LinkedIn	0	0
Instagram	15	32.6
Google+	30	65.21

The above table depicts that majority of the respondents (73.91%) are having register or account in you tube followed by face book & Google+ (65.21%).32.6% are having account in Instagram, only 10.86% are in Twitter. It can be concluded that majority of the respondents are having account in YouTube.

Table 2: Frequency of Social Media use in a Day

Gender	Time Spent in using Social media				Total
	less than 1 hour	1-2 hours	2-3 hours	more than 3 hours	
Male	3(13.6%0	14(63.6%)	3(13.6%)	2(9.1%)	22(100%)
Female	5(20.8%)	6(25.0%)	6(25.0%)	7(29.2%)	24(100%)
Total	8(17.4%)	20(43.5%)	9(19.6%)	9(19.6%)	46(100%)

The above data in table 2 reveals that the time spent by the respondents in using social media in a day. The results explains that 20 (43.5%) of the sample admitted that they spent 1-2 hours per day checking social media sites, followed by 9(19.6%)spent more than 2-3 hours and more than three hours each. Only 8(17.4%) opined that they spent less than an hour in using the social media sites in a day.

Table 3: Purpose of Using Social media

Purpose of using Social Media	No Respondents	Percentage
Communication	39	84.79
Entertainment	34	73.91
Learning	32	69.56
Social Iteration	21	45.65

Social media is all about of communication, sharing, exchanging information and social interaction. The data in the table-3 emphasized that majority of the respondents 39 (84.79%) using social media for communication purpose, followed by 34(73.91%) for entertainment. For learning purpose 32 (69.56%) and only 21 (45.65%) for social interaction.

Table 4: Use of Social media for Academic purpose

Statement	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	Total
use of Wikipedia helps a lot in getting back ground information on a topic.	17 (37%)	29 (63%)	0	0	0	46 100%
Information gotten from social networks like Lislinks ,blogs like Lisquiz, , to complement what you have been taught in class.	5 (10.9%)	20 (43.5%)	18 (39.1%)	1 (2.2%)	2 (4.3%)	46 100%
Using face book with lecturers is help full in the outside class hours.	2 (4.3%)	12 (26.1%)	8 (17.4%)	13 (28.3%)	11 (23.9%)	46 100%
Lisforum (NCSI e-mail) postings improve. professional awareness on various aspects.	8 (17.4%)	26 (56.5%)	12 (26.1%)	0	0	46 100%
A profile in LinkedIn helpful to build a professional network.	8 (17.4%)	30 (65.2%)	4 (8.7%)	3 (6.5%)	1 (2.2%)	46 100%
Total	40 (17.39%)	117 (50.86%)	42 (18.26%)	17 (7.39%)	14 (6.06%)	230 100%

The above table shows that 40 (17.39%) of the respondents strongly agree and 117 (50.86%) agree that social media are useful for the academic purpose. 18.26 % of the respondents are undecided the usefulness of social media for their learning. Only a small percentage 7.39% and 6.06% are disagree the usefulness of social media for academic purpose. From the data we found any interesting opinion of the students. Majority of the respondents 28.3% disagree and 23.9% strongly disagree in using face book to connect lecturers to clarify the doubts in the outside class room. We can conclude that students are accepting and using social media for academic purpose.

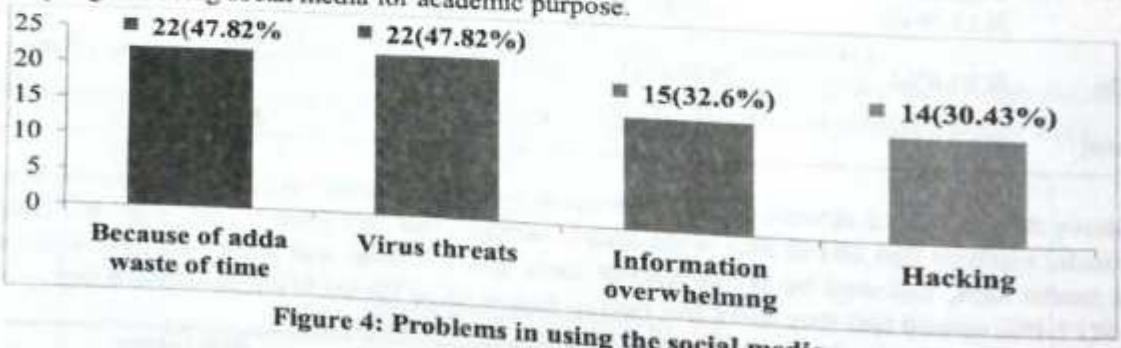

Figure 4: Problems in using the social media

The above fig-4reports that the problems facing by the respondents in using social media. Majority of the respondents 22(47.82%) opined that by using social media they wasting their valuable time because of un necessary advertisements, followed by 22 (47.82%) virus threats, 15 (32.6%) opined that social media is information overwhelming, and 14 (30.43%) is fear of hacking.

Findings and Conclusion

Majority of the respondents 25 (54.3%) opined that their self-interest is the key factor to aware of social media. Majority of the respondents 39 (84.8%) are using Smart phones for accessing social media. Majority of the respondents (73.91%) are having an account in YouTube. Majority of the respondents 20 (43.5%) spent 1-2 hours per day for using social media. Majority of the respondents 39 (84.79%) using social media for communication purpose. 40 (17.39%) of the respondents strongly agree and 117 (50.86%) agree that social media are useful for the academic purpose. Majority of the respondents 22(47.82%) opined that using social media wasting their valuable time because of un necessary advertisements. After examining the results of the study it can be conclude that MLISc students of Bangalore University using the social media tools for academic purpose. Based on the findings of the study it is to suggest that students should manage their time and prevent distractions provided in social media. The information professionals, librarians and teaching faculty collectively organize information literacy programs and create awareness among the students on the value of information sources in social media and how to evaluate information in such sources.

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Social Media as a Source of Information to Engineering Students

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Abstract

This paper presents the results of a study conducted on the engineering student's usage of social media as an information source. For this purpose,the survey method was adopted and a questionnaire was administered among the engineering students. The results revealed that most of the respondents came to know to use social media through their friends.A good number of respondents in this study using various social media tools like Facebook, LinkedIn, YouTube, Wikipedia, as a source of information.

Keywords: *Social Media, Engineering students; Information usage.*

Introduction

Definition of Social Media

Andreas M. Kaplan & Michael Haenlein (2010) defined "Social Media is a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content" Carr, C.T. & Hayes, R.A giving an elaborate definition "Social media are Internet-based channels that allow users to opportunistically interact and selectively self-present, either in real-time or asynchronously, with both broad and narrow audiences who derive value from user-generated content and the perception of interaction with others"

Review of Literature

Murad Ali & others (2017) conducted a study among the engineering background students using the interview method as a data collection tool. The study aimed to identify the factors that motivate academic usage of social media. Results show that the majority of the students (37%) used the social media sites for learning followed by 33.33% for socializing purposes. 62% agreed with social media usage, enhanced their academic performance.

Sultan M. Al- Daihani (2016) survey focused on the factors that affect the adoption of Twitter as a source of information. The researcher finally suggested to the educators and academic librarians to focus on creating awareness among the students on the usefulness of social media tools especially twitter.

Kanelechi C. K. Nwangwa (2014) studied the influence of social media on the research skills of undergraduate students of Education Management colleges in Nigeria. The study used the purposive sampling method, and a questionnaire to collect the data from the respondents. It is observed from the findings of the study that the majority of the students, 46.67% using Wikipedia as a reliable source of information.

Jasmine Knight- Mc Cord & other (2016) survey of undergraduate students in the university colleges in the southeastern U.S. Both online and offline survey is conducted using an online survey monkey as well as questionnaires. The results show that Instagram was the most preferred social networking site among the students irrespective of gender and students least likely to use SNS to develop a professional network.

KarineAillerie& Sarah Mc Nicol (2014) investigated the teenager's motivations for using SNSs as information sources for everyday life and for academic purpose. The study used Google forms as a survey tool. The findings depict that SNSs are used to finding information for a task at the direction of their teacher and also to the search vocational guidance.

Abdullah PhD Almobarraz (2017) posted the online survey results on students' perception towards using YouTube to support their learning at College of Computer and Information Science in Imam University in Saudi Arabia. The study indicates that the majority of the students (48.3%) searching YouTube clips related to the education content of their course followed by 29.2% for entertainment.

Kim & Sin (2015) explored undergraduate students and academic librarians' usage of social media. The results revealed that wikis, media sharing services, blogs and internet forums are most frequently used platforms for the students. The purpose of students using social media is to follow popular trends, find solutions and obtain other opinions. Sin & Kim (2014) examined the graduate and undergraduate students, and the survey used an online questionnaire to collect the data from the respondents. The results explained that frequent social media users are not facing the difficulty and they feel higher satisfaction.

Objectives of the Study

The aim of the present study is to examine the social media as a source of information to engineering students.

The other objectives of the study are

- To obtain their views on how they come to know to join in the Social network sites
- To know the experience in using social media
- To know the awareness of privacy settings in using social media

Research Methodology

The population of the present study is the final year Electronic and communication engineering branch students in a reputed private engineering college in Nellore, Andhra Pradesh. The investigator adopted a non- random sampling technique for the selection of the sample for this study. The convenience sampling method was employed with a structuredclosed-ended questionnaire was distributed to the 30 students and received

responses from 22 only. The response rate is 73%. The questionnaires responses are entered in SPSS for analysis of data. Frequency tables and charts were used for presentation.

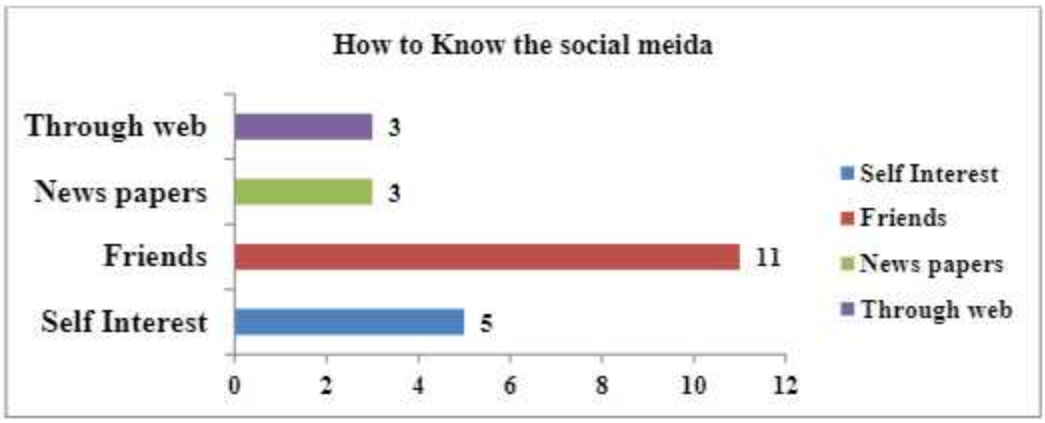
Data Analysis

Gender wise distribution of Respondents

Majority of the respondents 12(55%) are male, and 10(45%) are female respondents participated in this study.

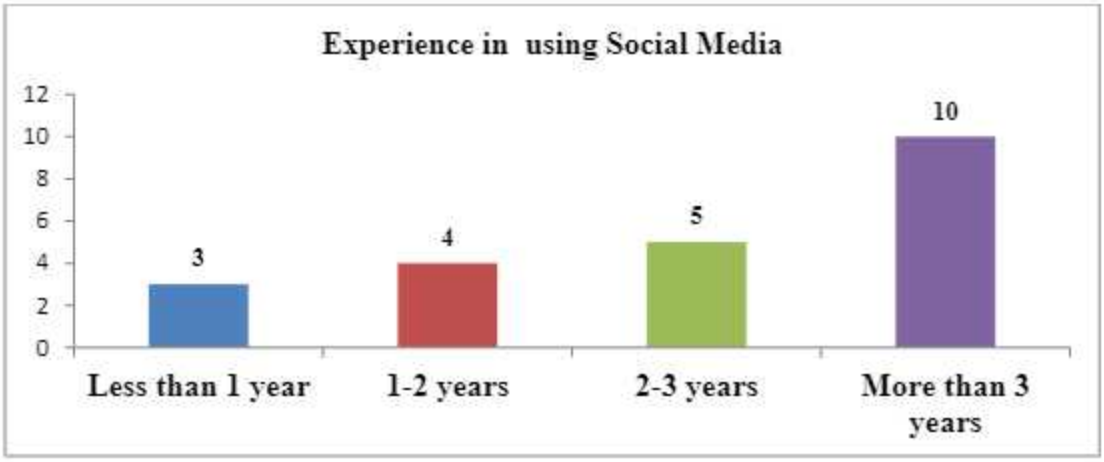
Social Media awareness

Fig-1



The figure-1 explains the data relating to the awareness of engineering students about social media. It is very clearly understanding that majority of the respondents 11 (50%) opined that through the friends they aware of social media, followed by self-interest 5 (22.72%), through the browsing of web and Newspapers3 (13.63%) and the data clearly explain that friends role is more than the other aspects in the awareness and usage of social media among the students.

Fig-2



The above data depicts the experience of using social media by the students. It is very clear that majority of the respondents 10 (45.45%) of the sample admitted that they use from more than three years, followed by 5 (22.72%) 2 to 3 years, 4 (18.18%) 1-2 years. It is very certain that from the data the majority of the respondents having good awareness and experience of using social media tools.

Accounts in Social Networks

Table-1

Sl.No	Social network	Response	Percentage
01	Facebook	10	45.5
02	Twitter	6	27.3
03	YouTube	18	81.8
04	Linked In	14	63.6
05	Instagram	10	45.5

The Table-1 displays the data relating to the respondents register accounts in various social networking sites. For this, the investigator confined to the five popular social media networks. The data indicate that the majority of the respondents 18(81.8%) using youtube, followedby 14 (63.6%) in LinkedIn, Facebook and Instagram shared equal number 10 (45.5%). It can be concluded that majority of the respondents have used and registered in youtube.

Facebook as a Source of Information

Table-2

Sl.No	Using Facebook as a Source of Information	YES	%	NO	%
1	Collecting Academic information through facebook friends	10	44.5	12	55.5
2	Creating a study group to share academic information	18	81.8	4	18.2
3	Study group useful as a source of information	20	90.90	2	9.10
4	Facebook wall as a useful source of information	14	63.6	8	36.4

The table-2 explains the data about using Facebook as a source of information. It is clear that majority of the respondents 20 (90.90%) opined that study group helpful as a source of information, followed by 18 (81.8%) opined that they created aFacebookstudy group and sharing information through that group. A good percentage of the respondents opined that Facebook wall is useful as an information source. It is interesting from the data that least percentage (44) of the respondents collecting academic information through their Facebook friends.

LinkedIn as a source of Information

Table-3

Sl.No	Information source	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total
1	Internships	3(21.42%)	8(57.14%)	3(21.42%)	-	-	14(100%)
2	Placements	4(28.57%)	6(42.85%)	4(28.57%)	-	-	14(100%)
3	Project work	3(21.42%)	8(57.14%)	3(21.42%)	-	-	14(100%)
4	Teacheshowto write a good CV	2(14.28%)	5(35.71%)	7(50%)	-	-	14(100%)
5	To get up-to-date	8(57.14%)	3(21.14%)	3(21.42%)	-	-	14(100%)
	Total	20(28.57%)	30(42.85%)	20(28.57%)			70(100%)

The above table shows that 20 (28.57%) of the respondents strongly agree and 30 (42.85%) agree that LinkedIn isuseful as a source of information. Only 20(28.57%) of the respondents are undecided that LinkedIn usefulness as an information source. No respondent disagree with the usefulness of LinkedIn. From the data, we found that majority of the respondents 57.14% strongly agree on LinkedIn as a source of information to get up to date in their career, and 57.14% agree onLinkedIn usefulness for internships and preparing project works. It can be concluding that students are agreeing LinkedIn is useful as an information source.

Use of Wikipedia

Table-4

Sl.No	Wikipedia usage	Male	Female	Total
1	**YES**	11(91.66%)	7(70%)	18(81.81%)
2	**NO**	1(8.33%)	3(30%)	4(18.18%)
	Total	12	10	22(100%)

The above table depicts the data relating to the use of Wikipedia as a source of information. It is clear that the majority of male respondents11 (91.66%) using Wikipedia, whereas female respondents 7 (70%).

Reasons for using Wikipedia

Table-5

S.no	**Reasons**	**Frequency**	**Percentage**
1	Easy to use	10	55.55 %
2	Reasonably accurate information	06	33.33%
3	Easy to understand	12	66.66%
4	Up to date information	11	61.11%

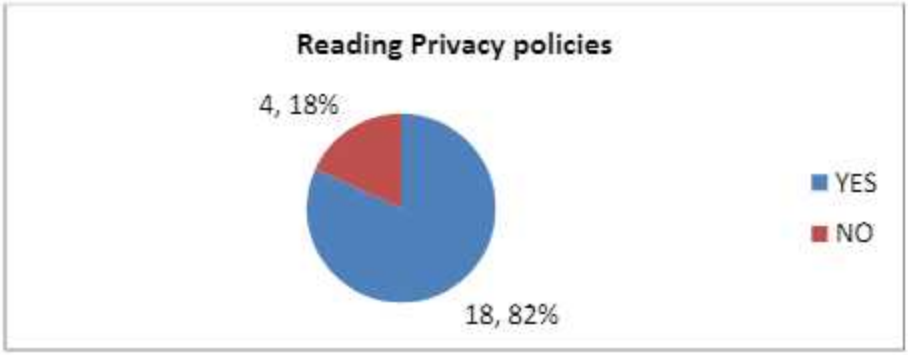
The above table clearly demonstrates that reasons for using Wikipedia among the engineering students. It is clear from the data that majority of the respondents 66,66% opined that they feel easy to understand the Wikipedia, followed by 61,11% opined it is up to date, very less number 33.33% opined that they feel reasonable accurate information available inWikipedia.

Reliability of Wikipedia information

The data relating the reliability of information in Wikipedia explains that the majority of the respondents 11 (%) opined positively, followed by 7(%) responded negatively, that shows they are not reliable the information in Wikipedia.

Awareness of Privacy policies

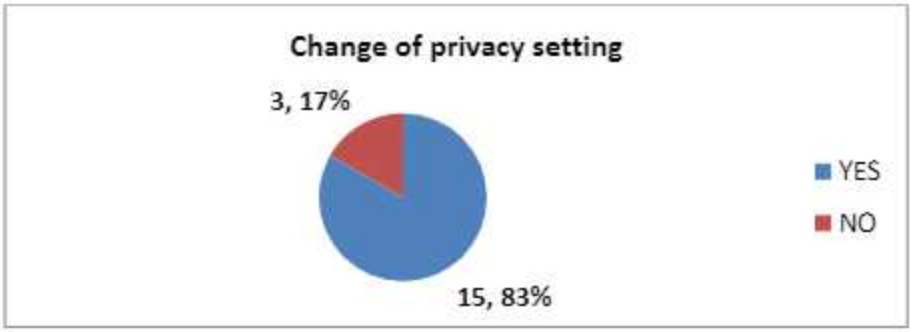
Fig-3



The above fig-3 explains that majority 82% of the respondents are reading privacy policies of social media tools. Only 18 % responded that they did not read the privacy policies offered by social media tools

Change of Privacy setting

Fig-4



From the above figure-4, it is clear that majority of the respondents 83% who aware of social media privacy policies are change their settings. Only 17 % responded negatively.

Findings

The important findings of the present study are:

- Friend's role is more in the awareness and usage of social media among the respondents
- Majority of the respondents having more than three years of experience in using social media.
- Majority of the respondents doesn't collect academic information through Facebook friends.
- Majority of the respondents consider LinkedIn as a source of information
- Majority of the respondents consider Wikipedia as a source of information
- Easy to understand is the major reason to use Wikipedia by the respondents.
- Majority of the respondents reading theprivacy policies offered in social media tools

Conclusion

The findings of this study suggest that social media is a useful source forengineering students. The use of social media platforms by students is a relatively new research topic; social media have positive contributions that have potential to enhance students' engagement and collaboration in academic learning.

Knowledge Management in Higher Education Institutions

Volume - I

Editors:
Dr. K.S. Shivraj
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Digital Literacy Skills among PG Students of Vikarama Simhapuri University, Nellore: A Study

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Abstract - *This study explores the Digital literacy skills among the post graduate students of Vikarama Simhapuri University, Nellore. The primary data for this study was collected using survey research method and a questionnaire was designed by using a Google form, and it was shared among the PG student Whatsapp groups. A sample of 107 respondents is responded for the study. The study found that lack of skills is a major barrier in using the digital technologies.*
Keywords: *Digital Literacy, Post graduate students, University.*

Introduction

Digital Literacy: According to Paul Glister (1997), Digital literacy is "the ability tounderstand and use information in multiple formats from a wide range of sources when presented viacomputers". Martin (2005) defined digital literacy as "the ability to succeed in the encounters with the electronic infrastructures and tools that make possible the world of the 21st century.

American Library Association (2013) defined digital literacy as the ability to use information and communication technologies to find, understand, evaluate, create and communicate digital information.

Review of Literature

Parvathamma and Pattar (2013) study at Davenagari district, Karnataka found that web portals are most widely used information source. The study sample populations are management institutions.

Krishnamurthy and Latha (2019) analysed the digital information literacy among the female post graduate students in Karnatak University, Dharvad. The study adopted survey method and data were colleted using a questionnaire. The study limited to female post graduate students in social sciences departments in Karnatak University, Dharvad. The results revealed that lack of awareness among the respondents in use of search strategies while accessing information.

Parmar and Pateria (2020) studied the digital information literacy competencies among the PG students of Haryana Agricultural University, Hisar. The findings of the study reveals that a fair number of PG students were not familiar with different types of potential online/digital resources in the field of agricultural sciences. Divya and Haneefa (2018) study found that a good number of the students have medium level of digital reading competency.

Objectives of the Study

The study is based on the following objectives

1. To know the experience of using smart phone and computers by the P.G Students.
2. To determine how the P.G students finding digital technologies.
3. To examine their skills in using various digital applications.
4. To identify the factors affecting the use of digital technologies.

Methodology

The study used survey method and data were collected using a questionnaire in Google form. The study is limited to the P.G students in the Vikrama Simhapuri University, Nellore. The investigator adopted non random convenience sampling to collect the required data. It was collected only from the M.Sc. students who visited the Library 28th March 2022. The data were analyzed using Microsoft excel.

Analysis

The primary data collected from the respondents was analyzed using M.S Excel.

TABLE I GENDER

Gender	Frequency	Percentage
Male	54	50.5
Female	53	49.5
Total	107	100

Table I presents the gender wise distribution of respondents. It is clear that almost both male and female are equal number.

TABLE II EXPERIENCE OF USING MOBILE PHONE

Experience	Frequency	Percentage
Less than one year	13	12.1
1-2 years	25	23.4
2-4 years	36	33.6
More than four years	33	30.8
Total	107	100

Above table II indicate the respondents' experience of using mobile phone. It is clear that majority of the respondents 36(33.6%) are using 2- 4 years, followed by 33(30.8 %) more than four years. About 25(23.4%) are opined that they are using 1-2 years, and 13(12.1%) are less than one year. It can be concluded that majority of the respondents are using mobile phone from 2- 4 years.

TABLE III EXPERIENCE OF USING COMPUTER

Experience	Frequency	Percentage
Less than one year	42	40.8
1-2 years	24	23.3
2-4 years	18	17.5
More than four years	19	18.4
Total	107	100

Table III shows that respondents experience of using computer. It is clear that majority of the respondents 42 (40.8%) are having less than one year of using computer, followed by 24(23.3%) 1-2 years. Only 19(18.4%) are having experience of more than four years. This indicates respondents are not prominent of using computers.

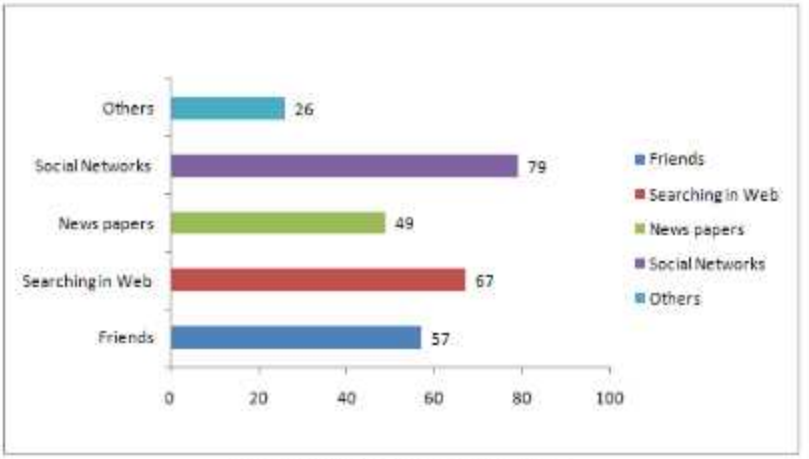

Fig. 1 Finding new Digital technologies

Above fig. 1 explains the data relating to the respondents opinion on finding digital technologies. It is very prominent that 79(73.8%) are depending on social networks, followed by 67 (62.6%), friends 57 (53.35%) and news papers 49 (45.8%) and other methods 26(24.3%).

TABLE IV RATING OF COMPUTER LITERACY

Sl. No.	Rating	Frequency	Percent
1	Very poor	4	3.7
2	Poor	12	11.2
3	Average	24	22.4
4	Good	27	25.2
5	Very good	40	37.4
Total		107	100.0

Respondents are asked to rate their computer literacy skills. Table IV reveals that majority of the respondents 40(37.4%) are opine that they are very good, 27(25.2%) good, followed by 24(22.4%) average, 12 (11.2%) poor and 4(3.7%) very poor.

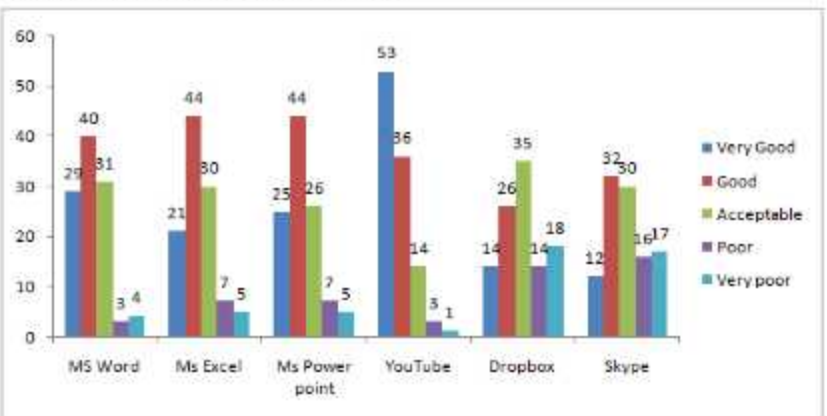

Fig. 2 Proficiency level of the respondents in using Computers applications

Fig. 2 explains the data relating to respondents proficiency in using various computers applications. It is clear that majority of the respondents 40(37.38%) are Good and 29 (27.1%) are very good in using MS Word. Further majority of the respondents 44(41.12%) opined Good and followed by 30 (28.03%) are acceptable in Ms Excel. Regarding to the Power point, majority are 44(41.12%) Good, followed by 26(24.29%) are acceptable. It is very interesting that almost half of the respondents 53(49.53%) are very good at YouTube, followed by Good 36(33.64%). Majority of the respondents 35 (32.71%) are acceptable level of using Drop box. One third of the respondents are lacking skills of using video calling application Skype. It is clear from the data that respondents opined very poor by 17 (15.88%) and Poor 16 (14.95%).

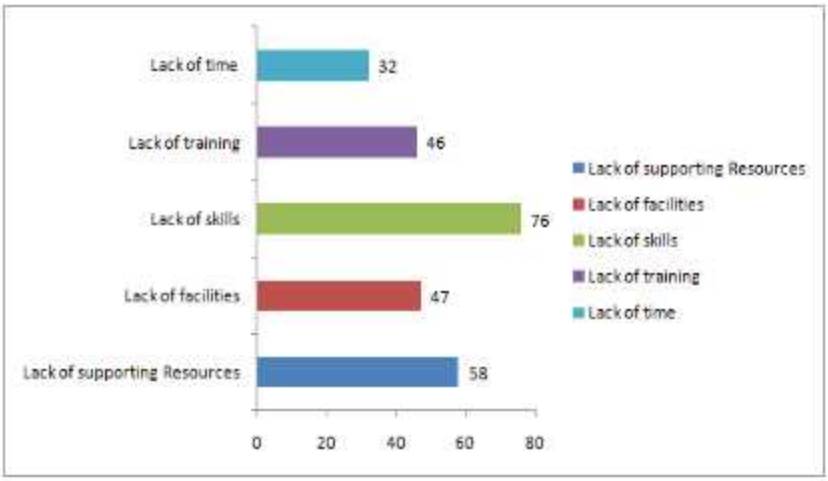

Fig. 3 Factors affecting the use of Digital technologies

Fig. 3 indicates the factors affecting the use of digital technologies, it is very clear that three quarters of the respondents 76(71%) opined that they have lack of skills, 58(54.2%) lack of supporting resources. About 47(43.9%) opined that lack of facilities, 46(43%) lack of training, lack of time 32 (29.9%).

Conclusion and Recommendations

The rapid development of ICT makes the digital literacy is an essential skill to every individual in a changing society. Digital literacy becoming an important part of the students learning process. Govt. of India also started the Digital Saksharta Abhiyan (DISHA) or National Digital Literacy Mission (NDLM) to improve the skills of the people. Although students are capable to use some applications in good or acceptable level, still the study findings reveal that three third of the respondents opined that, lack of skills is the major barrier on using digital technologies. Therefore the university authorities and information professionals have to take initiative to develop the students' digital information literacy skills by organizing workshops with hands on training.

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Digital Transformation and
Moving Towards Developing Smart Libraries

Transforming Library as Educational/Institutional Repositories

Editors

Prof. Keshava
Mr. Salek Chand
Prof. B.T. Sampath Kumar
Mr. Anand A. Jha (Ph.D.)

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Prof. Keshava obtained Ph.D. from Karnatak University, Dharwad. He started his carrier as lecturer at Karnatak University, Dharwad and presently he is working as Professor at Tumkur University. Professor Keshava is the Dean, Faculty of Science and Technology and Chairman, Dept of Library and Information Science, Tumkur University. He has 22 years of rich experience in teaching and research. So for he published more than 100 research papers in national and international peer-reviewed journals and conference proceedings. 09 doctoral studies were awarded under his guidance and at present 08 students are pursuing their research under his guidance. He organised two national conference and one International Conference at Tumkur University. He is the member of BoE, BoS and BOA of several universities and national institutes across the country. He took part in many national and international conferences and chaired many technical sessions. He is a life member of ILA, IATLIS and KALA. He visited abroad on academic assignment and his areas of research interest are Scientometrics and Information Processing and Retrieval.

Mr. Salek Chandis working as Sr. Documentation Officer and Head, National Documentation Centre of National Institute of Health and Family Welfare, New Delhi. He also worked as Library & Information Officer and Head, Library & Resource Centre of the Election Commission of India, New Delhi on deputation. Prior to this, served as a Librarian in Ministry of Water Resources Delhi and as Documentation Officer in Central Road Research Institute, Delhi. He has 30 years' experience in various capacities. He has contributed more than 36 papers and published at national and international level. He has a credit of publishing two book reviews, edited five books and also serving as a reviewer of many Journals. During his academic carrier, he conducted various training courses, seminars and projects. He is recipient of many national and international awards from various reputed institutions of globe. He is very actively associated with various professional bodies such as Indian Library Association; Medical Library Association of India; Ranganathan Research Circle, SALIS, LPA, SLP, CSSD, MANLIBNET, SLA Asian Chapter, etc. Also worked honorary Director, Special Library Association (SLA) Asian Chapter. Presently, he is working honorary Secretary, Library Professional Association (LPA), New Delhi; President, Compact Society for Social Welfare (CSSW), Delhi and Treasurer, Science & Technology Division, SLA, USA. He has visited abroad with different assignments in Philippines, Malaysia, Singapore, China, Australia, Greece, Thailand, Japan, South Korea, USA, UK, Germany, Italy and Switzerland.

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Mr. Anand A. Jha (Ph.D.) comes with two decades of working experience. He is doctorate in Library & Information Science and graduated in sociology, he has more than 20 years of experience in academic and development sector. He has also worked as library in-charge in various reputed institutions. He has considerable experience in the areas of campaign & communication through films, creating awareness, publication, editing, concept of designing and development, women empowerment, urban rural development functions. His areas of expertise include project planning and management, public relation, capacity building and behaviour change communication. He has credit to organise five competitive and six traveling CMS VATAVARAN- Environment and Wildlife international film festival and forum in different states of India and seven years worked as Co-coordinator of CMS ENVIS, a project of Ministry of Environment, Forests & Climate Change (MoEF & CC) Government of India. Besides these, he organises many national and international conference in the field of Library & Information Science, mainly ICDL and I-KOAL are prime one. He is well known as an efficient organiser of seminars, conferences and workshops on professional skills development. Apart from that heis founder member of many reputed organisations like Library Professionals Association (LPA), Society for Information Research & Studies (SIRs), Lakshya Foundation, All Day Foundation and Gramin Samridhi Foundation.

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Contents

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Awareness and Use of Swayam Courses Among LIS Professionals in Karnataka: A Study

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Abstract

The present study examined the awareness of SWAYAM portal by Library & Information Science professionals working in various institutions in Karnataka. For this purpose, an online survey method was adopted and a questionnaire was sent using a Google form among the professionals. The results revealed that majority of the respondents are aware of Swayam courses offered in Library & Information Science discipline. Most of the respondents who register these courses are not completed with e- certification.

Keywords: Awareness, Swayam, User studies, Library & Information Science.

Introduction

SWAYM (Study Webs of Active Learning for Young Aspiring Minds) is a MOOCS (Massive Open Online Course) programme initiated by Govt. of India with the co ordination

of Ministry of Human Resources and Development, and NPTEL. The main goal of the programme is to take best teaching and learning resources to all. The courses available in SWAYAM from class ninth to post graduate level. These can be accessed by everyone at any time anywhere by using the web.

Review of Literature

Rahul. S. Mohile (2021), conducted a Study on E-Learning using SWAYAM (MOOCs) Awareness among Under Graduate and Post Graduate Students. The success of all this apps depends upon the awareness among the students regarding such applications. The above study reveals that majority of the students are not aware of Swayam or MOOCs but they are interested to learn the online platform. According to Subaveerapandiyan et al. (2020), to take the best teaching and learning resources to all with no costs. In this study most of the respondents knows about Swayam through their teachers. Half of the respondents are opinioned as its help to gain knowledge and supports lifelong learning. According to Jayanta Kr. Nayek (2018), conducted a survey report on awareness among LIS professionals/students about Swayam, it's a government of India initiative on e-learning platform. This study shows most of the LIS students and professionals are interested even they registered for the courses, this study concluded by suggesting to add more LIS courses in Swayam and to conduct awareness programs. According to Neil Smith, et al. (2017), comparison of two ways of developing and delivering Massive Open Online Courses (MOOCs). The study found MOOCs on existing large platforms can reach thousands of people, but constrain pedagogical choice. Self-made MOOCs have smaller audiences but can target them more effectively. It is found that nobody is undertaken to study the Library and Information Science students awareness and Usage of SWAYAM courses. According to Kaveri et al. (2016), "The

strength of SWAYAM lies in its qualitative evaluation systems as well as recognition of credits, equity of access and affordability. Traditional HEIs have a clear edge over global MOOCs and SWAYAM in terms of long term impact on citizen and society building and shaping individual opinions". According to Kanjlal (2016), "Main streaming the SWAYAM initiative with the formal education system will go a long way in realizing the dream of the nation in universal access of education. With appropriate planning and implementation, SWAYAM can play a pivotal role in Digital India and Skill India missions of the government of India". According to Bharti (2014), "SWAYAM is a platform for new India where quality education is affordable and self-learning is fruitful not only for enrolled but also for professionals and dropouts. With quality content, best online lectures, great discussions, knowledgeable assessment quizzes, SWAYAM will provide great opportunity to Indian students to learn without fearing from failure."

Objectives of the Study

The aim of the present study is to explore the awareness and use of Swayam courses among LIS professionals working in various colleges across the Karnataka state.

- The other objectives of the study are
- To know the awareness of Swayam platform and its courses in Library & Information science discipline
- To elicit how many Swayam users of LIS completing the courses with e- certificates
- To obtain their views on these courses among the LIS professionals
- To know the reasons for enrolling in Swayam Courses
- To know the reasons for not completing the course
- To identify the barriers faced in the Swayam platform

The figure-2 explains the data relating to the qualification acquired by LIS professionals. It is very clearly understand that majority of the respondents 30 (56.60%) completed MLISc only in LIS, followed by 8 (15.09%) with M.Phil. Both M.Phil and PhD Only 7 (13.20%) are completed doctoral degree in LIS. The data clearly explain that majority of the respondents in this study completed the MLISc in LIS.

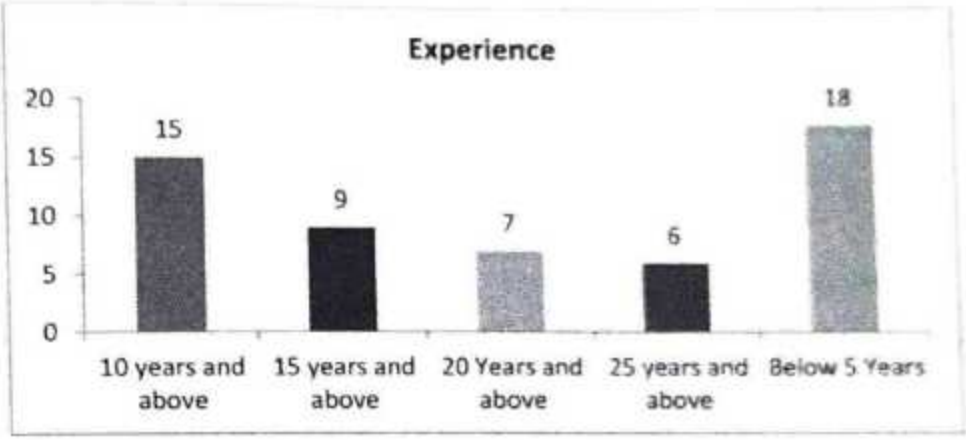

Fig. 3: Work Experience

The above figure-3 depicts that majority of the respondents 18(28.30 %) are completed more below 5 years and 15(33.96%) 10 years and above. Whereas 9 (16.98%) of the respondents 15 years and above completed their service.

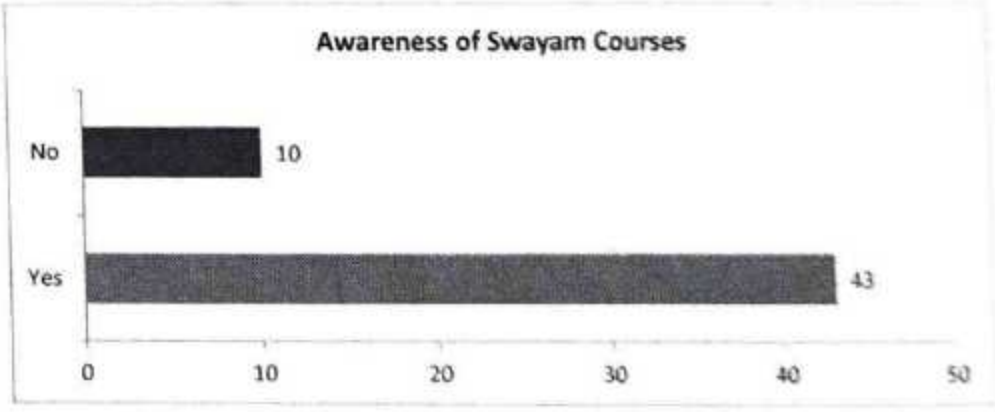

Fig. 4: Awareness of Swayam Courses

Research Methodology

The population of the present study is the LIS professionals working in schools, colleges, universities in Karnataka state. The investigator adopted a non- random sampling technique for the selection of the sample for this study. The convenience sampling method was employed with a structured closed-ended online questionnaire was designed by using a Google form and sent to the 80 professionals through whatsapp and mail, and received responses from 53 only. The questionnaires responses are analysed manually. Frequency tables and charts were used for presentation.

Data Analysis

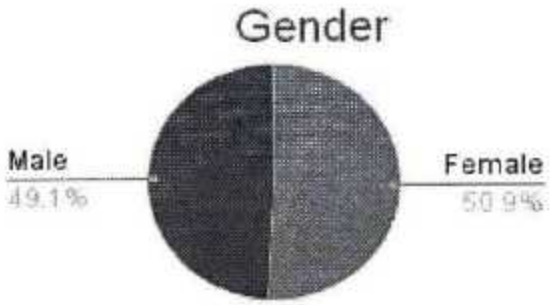

Fig. 1: Gender wise distribution of Respondents

The figure-1 Majority of the respondents 27(50.9%) are male, and 26(49.1%) are female respondents participated in this study.

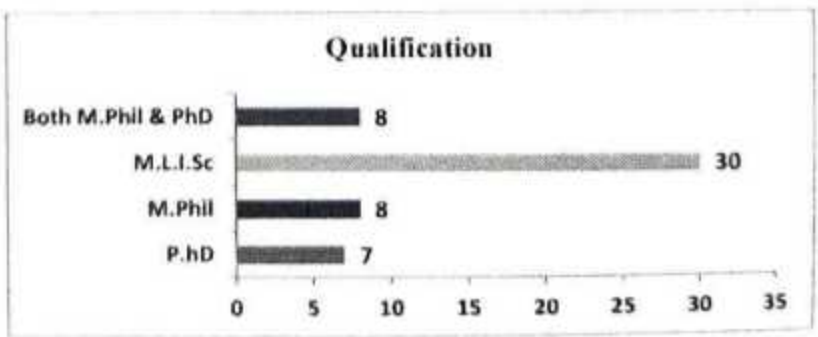

Fig. 2: Qualification

The above figure -4 demonstrates the awareness of Swayam courses among LIS professionals. It is clear that majority of the 43(81.93%) of the respondents are aware of Swayam Portal and the courses offered in LIS discipline.

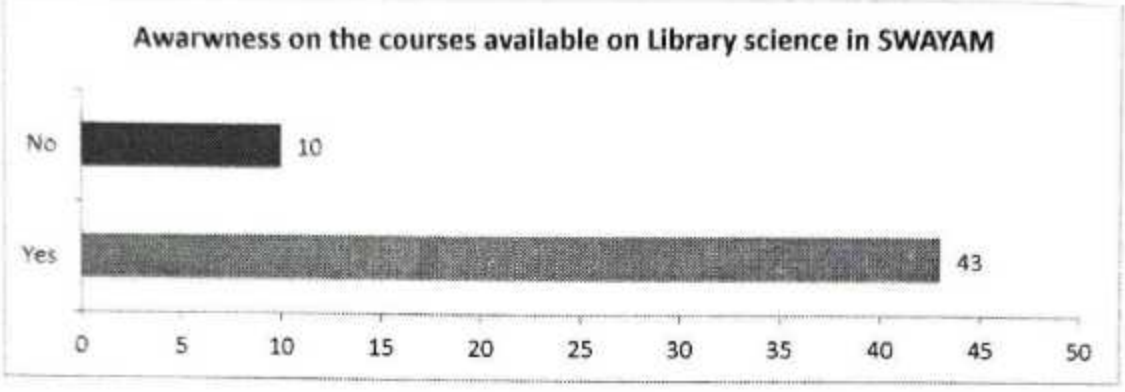

Fig. 5: the courses available on Library science in SWAYAM

The above figure-5 depicts that majority of the respondents 43(81.13%) are aware of the courses available on Library science in SWAYAM remaining 10(9.87%) are not aware of LIS courses in Swayam.

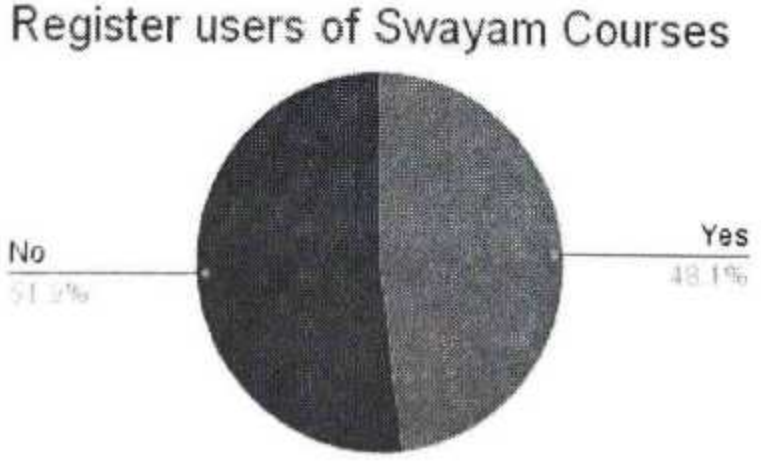

Fig. 6: Register users of Swayam Courses

Figure -6 explains the data relating to registration of swayam courses among the LIS professionals, it is cleared that majority of the respondents 51.9% register in the swayam courses only 48.1% not are registered . It can be conclude that majority of the respondents register in the swayam courses.

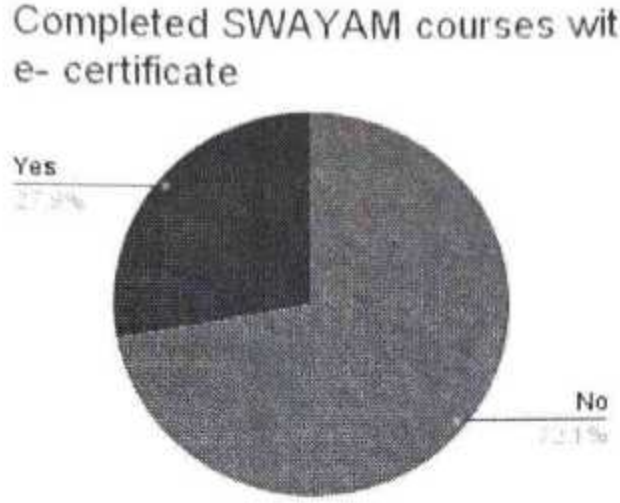

Fig. 7: Course completion with e-certificate

The above figure-7 gives the data relating to the completion of Swayam courses by LIS professionals. It is cleared that majority of the respondents 72.1 % are not finished the online exam with e- certificate by using the swayam portal. Only 27. 9% are finished the courses with e- certificate.

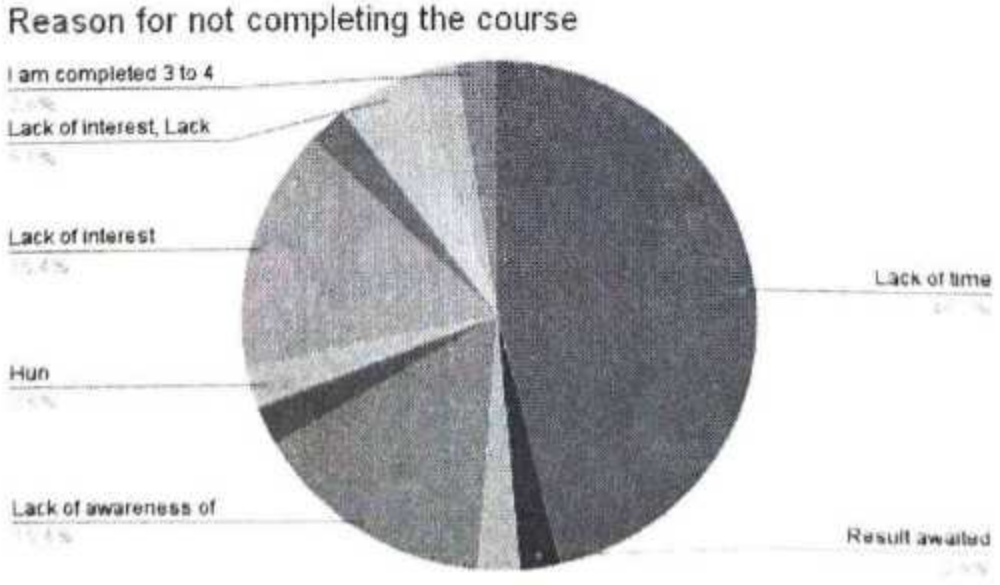

Fig. 8: Reasons for not completing the course

The above figure-8 gives the data relating to the completion of Swayam courses by LIS professionals. It is cleared that majority of the respondents 46.2 % are lack of time following by 15.4% Lack of awareness of online exams and 5.1% are Lack of interest.

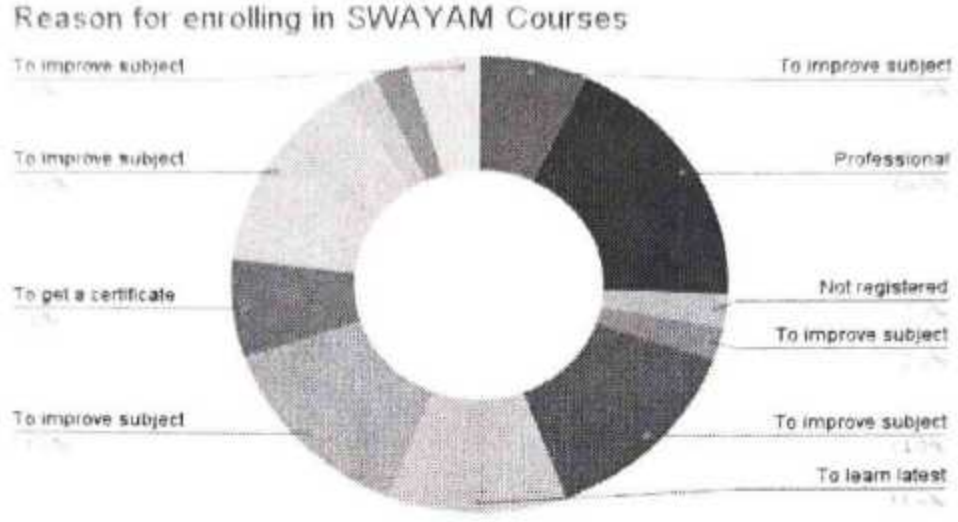

Fig. 9: Reasons for enrolling in Swayam Courses

The figure-9 explains the data relating to the reasons for enrolling in swayam courses. Majority of the 8(18.6) Professional development, 6(14%) to improve subject knowledge, 5(11.6%) to learn latest concepts in LIS. The data clearly explain that majority of the respondents 8(18.6) to develop professionally they enrol in Swayam.

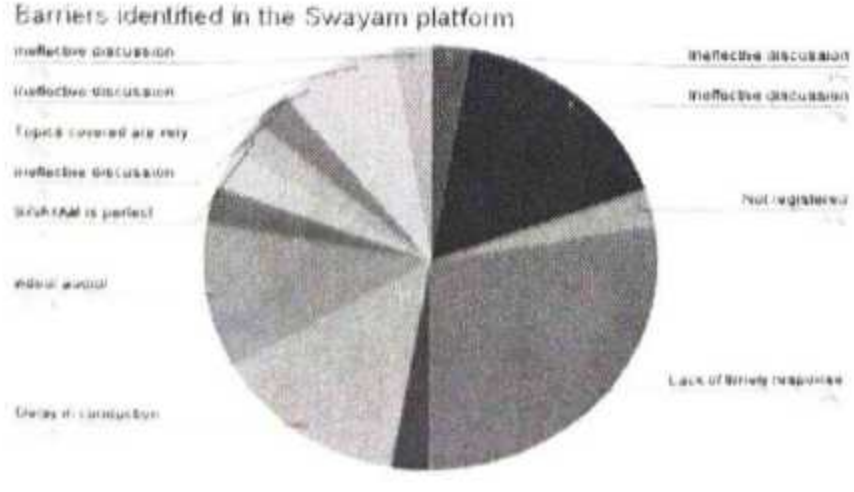

Fig. 10: Barriers identified in the Swayam platform

The above figure-10 gives the data relating to the completion of Swayam courses by LIS professionals. It is cleared that majority of the respondents 27.8 % are lack of timely response followed by 16.7% Ineffective discussion forums, Lack of timely response, 13.9% delay in conduction exams and announcing results, 11.1% video/ audio/ pronunciation etc. issues. Majority of the respondents 27.8% needs of timely response.

Findings

- Majority of the respondents are aware of swayam portal and courses offered in Library & Information Science discipline.
- Majority of the respondents are not finished swayam courses with e- certificate.
- Majority of the respondents feels lack of time reason they are not completing the course.
- Majority of the respondents 27.8% needs of timely response.

Conclusion

Swayam is a MOOCS portal initiated by the Govt. of India to enrich the digital learning among the teachers and learners. Teaching faculty and Library professionals who are working in various university and other prominent institutions are designed these courses in LIS discipline. These are beneficial to enrich the subject knowledge and aware of latest developments in the subject to the working professionals, students and research scholars. The findings revealed that the LIS professionals are not fully aware of the courses. Even they register; they could not complete these courses. Course coordinators need to focus on timely response, better communication and providing necessary information to the participants.

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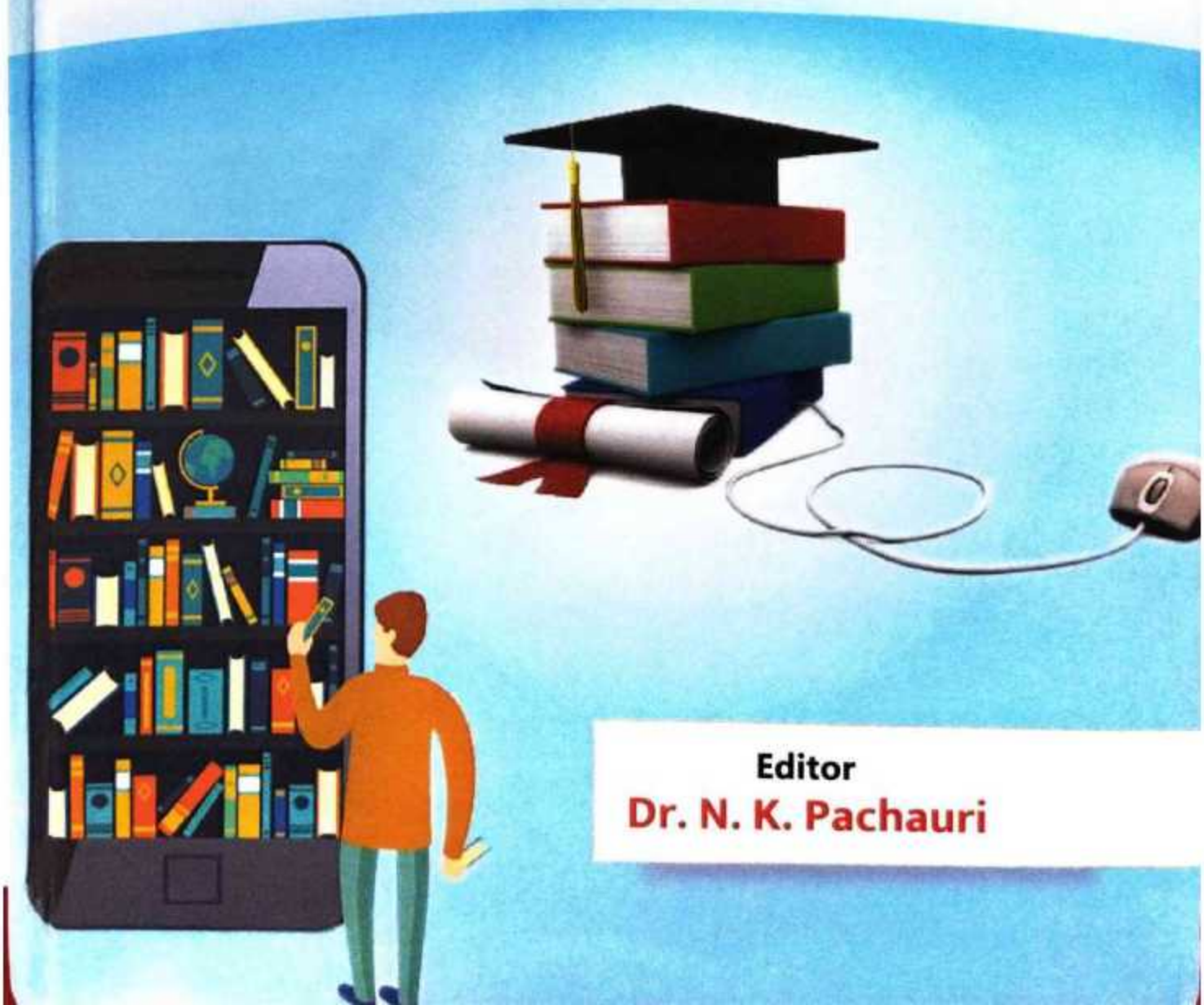

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ICT ANALYSIS AND MOBILE APPLICATIONS IN EDUCATION AND LIBRARY TECHNOLOGY

Dr. N K Pachauri

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Chapter- 26

Librarian's Perception on Library Services during Covid-19 situation in Karnataka: A study

- Roja M* & K.Nagaraju**

Abstract

The present study is an investigation of library services during the Covid-19 situation in Karnataka. The main objective is to ascertain the views of the library personnel and to know their experiences to face the Covid 19 situation. The study used a survey method and required data was collected using an online Google form sent through whatsapp / mail. After collecting the data, it was analyzed using Micro-soft excel. The study found that most libraries are provided work-from-home options to their staff. Librarians also offered some useful services to their clients.

Keywords: Library services, Covid-19, Karnataka, Librarians, e-resources.

Introduction

The novel corona virus (covid-19) pandemic forced the people in the whole world to sit in their houses. All the countries are imposed

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lockdown to prevent the spread of the virus. In such a situation the educational institutions all over India are closed. Most of the colleges offered teaching through online classes. In such situation Library services are severely affected. The normal services are closed, only through the online limited services are offered to the users. Educational institutions those who having good online infrastructure facilities are offered services by providing scanned materials, e-books, e-journals, e-magazines and useful online data bases to their users. During such typical conditions the library personnel faced lot of challenges. This study is an overview of how the librarians in Karnataka state faced the situation during the pandemic.

Review of the Literature

There is scarcity of literatures pertaining to library services during Covid-19. Some of the researchers provided important information regarding the difficulties faced by the libraries and library professionals during the pandemic. Mohan Tej et al. (2021) study found that the majority of libraries have seen significant decline in the use of physical resources and an increased in the use of digital resources. Further, the study reveals that most of the respondents have agreed that online assistant has been provided to their end users. During the pandemic library had been limited the users into the physical library. Nageswari and Thanuskodi (2021) reveals that During the Pandemic Long Beach Public Lirary (LBPL) library provided contactless pick-up facilities of library resources. The study also found that 50% of respondents prefer exterior outdoor drop box services at all the locations of the library. However, 94.44% respondents are satisfied with the services provided by the LBPL library during the COVID-19. Jana and Rout (2021)carried out a studyto measure the preparedness of academic libraries during the pandemic situation. This study used NIRF ranking framework to know the preparedness index of the libraries and found that 64% of the libraries have failed to score of 50% on predefined criteria. Finally the study has been concluded that academic libraries need to Improve and up to date their web-based services. Sawant (2021)studied the services provided by the Indian Libraries during Covid-19. The researcher had found that many libraries developed digital library guides and e-contents to

reach the end users. Similarly, libraries provided and responded to online queries from the users. Chakraborty et al. (2020)took a study to find out the role of LIS Professionals during the pandemic. In this study researcher found that LIS Professionals played a vital role in providing authentic and important information to the end user during the pandemic situation.

Objectives

The objectives of the present study are

- To explore the Library and Librarian role during Covid-19
- To determine the services providing by the Library Covid-19
- To know which kind of digital library and e-resources link provided to the users.
- To identify the difficulties faced by the librarians while providing the information.

Scope

The scope of the study is limited to the librarians working in various educational institutions of Karnataka. This research mainly concentrates on Library services during the COVID-19 situation in Karnataka. Further, the information collected was based on a small number (n=69). Hence the result cannot apply to the entire population of the librarians of Karnataka.

Methodology

The present study was carried out among the librarians of Karnataka state. The online survey method was used to conducted the study and simple structured questionnaire was used as a data collection tool for fulfilling the data objectives of the study. 69 librarians were responded for the questionnaires. The filled-up questionnaires were collected from the respondents for data analysis and interpretations. The data has been analysis, the percentage technique has adopted.

Data Analysis

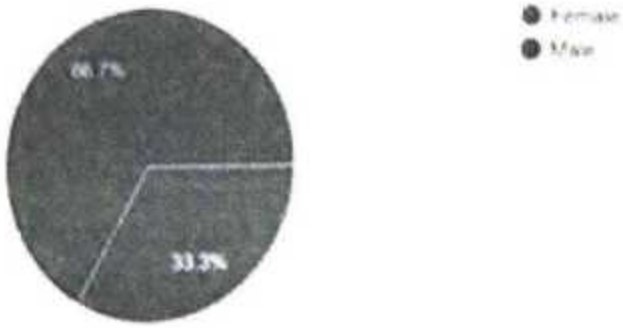

Figure: 1- Gender wise distribution of respondents

The figure-1 shows the gender-wise distribution of respondents. It is cleared that the majority of the respondents 46(66.7%) are male, and 23(33.3%) are female respondents participated in this study. It may be concluded that more number of male reespondents are repondend for the study.

Table: 1- Designations of the Respondents

S No	Designation	Frequency	Percent
1	Librarian	40	58
2	Chief Librarian	3	2.30
3	Deputy Librarian	0	0.
4	Assistant Librarian	19	27.5
5	Library Assistant	7	10.1
	Total	69	100

The Table-1 explains the data relating to the designation of the working librarians in Karnataka. It is very clearly understood that majority of the respondents 40(58%) are working as librarians, followed by chief librarian 3(2.30%) Assistant librarians 19 (27.5%) and library assistant 7(10.1).

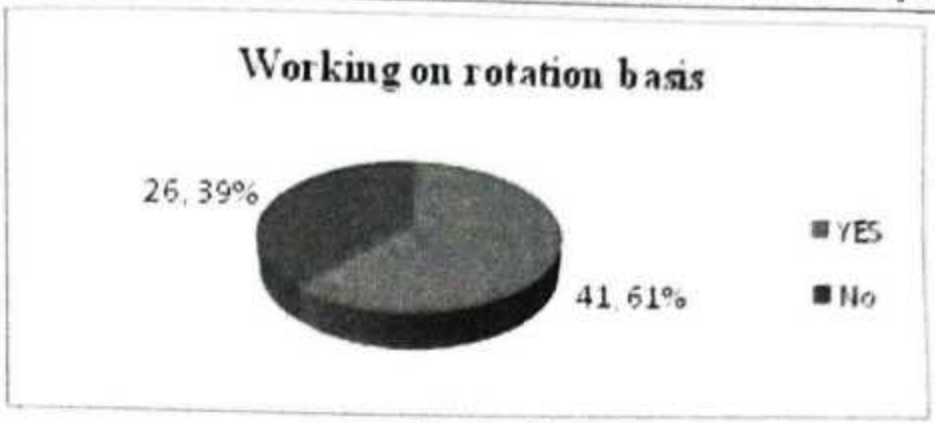

Figure-2

One question was posed to the respondents that whether their management allowed for working rotation basis during covid-19. The figure-2 explains the data relating to the respondents working during Covid-19. It is eveident that majority of the respondents opined that 41(61.2%) they worked in rotation basis , however 26(38.8%) responded that they doesn't have such facility.

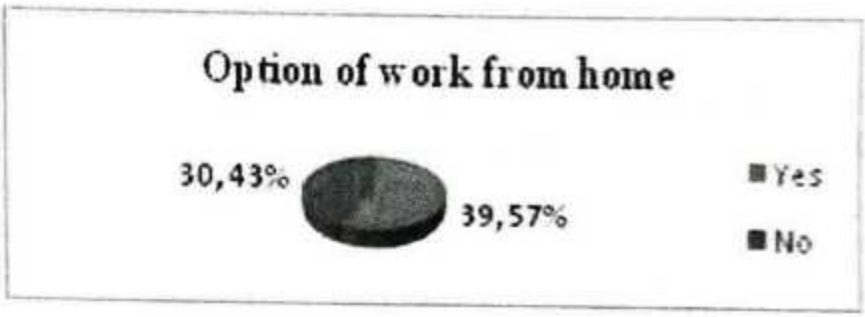

Figure-3

During covid-19 the educational institutions are allowed their staff to work from home basis. It is evident from the figure-3 that 39 (56.5%) responded as yes they was having work from home option and 30(43.5%) responded as they are not having work from home option.

Figure: 4- Working place

Figure-5 gives an overview of the working place. Majority of the respondents 28 (40.6%) indicated that they are working in private college, while 11 (15.94%) respondent university and 7(7.14%) of the respondents are equally opinioned as there are working in school and other sectors.

Library services during the Covid 19 period

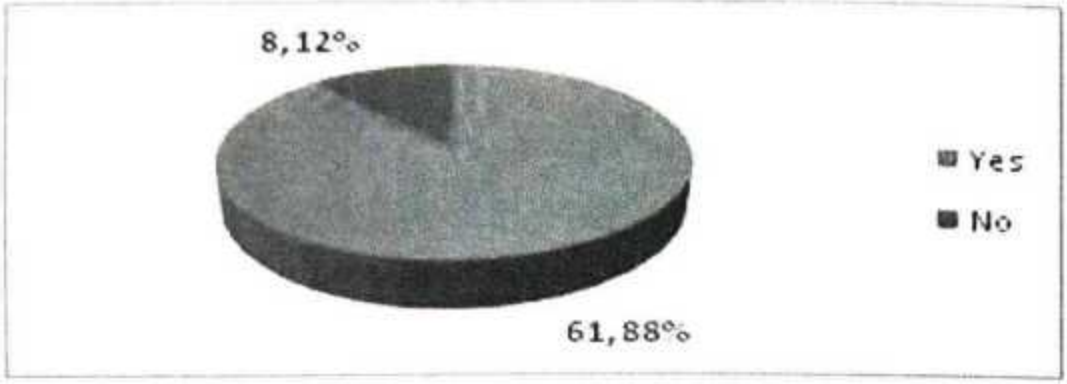

Figure-5

The Figure-5 explains the data relating to the library services provided to the students and staff during the Covid 19 period. Majority of the respondents 61(88.4%) opined that they provided services. However a small percentage 8(11.6%) are responded that they doesn't provide any library services.

Type of Library services during Covid-19

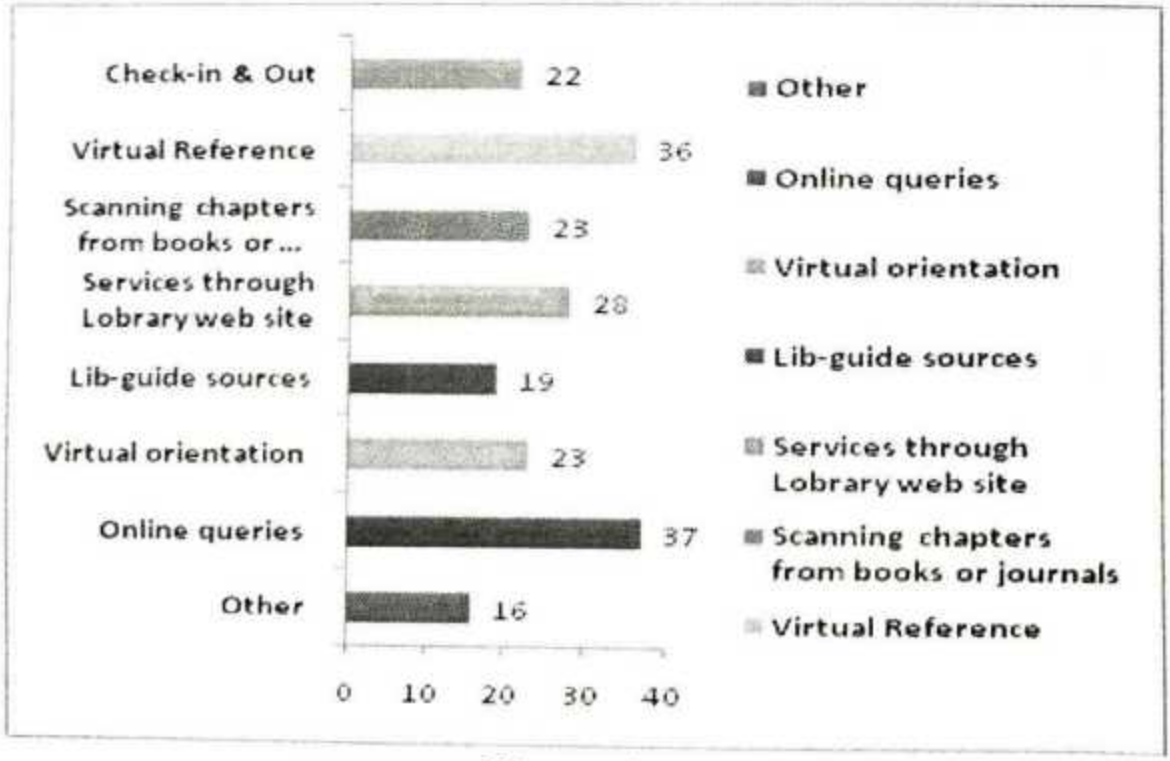

Figure-6

The Figure- 6 explains the data relating to the various library services provided to the staff and students during the Covid 19 period. It shows that majority of the 37(56.1%) libraries are had given online quires dealing service, followed by 36(54.5%) virtual reference service, 28(42.4%) had updating library websites. 23(34.8%) scanning chapters from books, journals and article and virtual orientation programs. 22(33.3%) check in and checkout service, 19(28.8%) library guide list of resources, 16(24.2%) are given other services.

Online services during covid-19

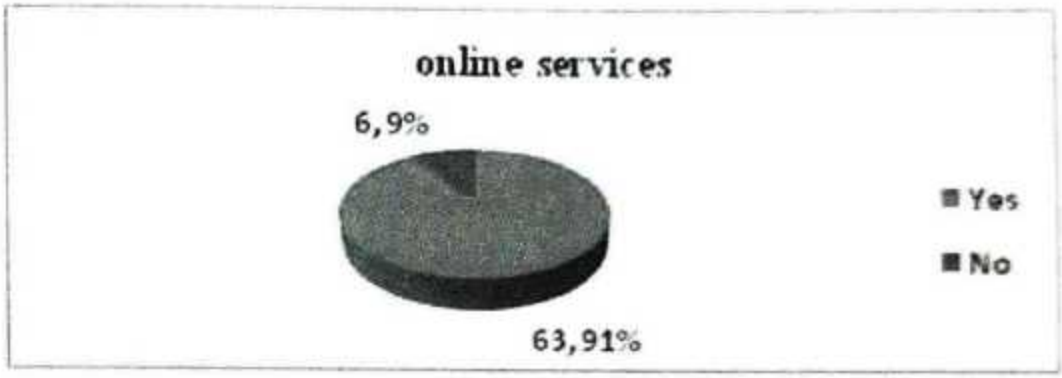

Figure-6

The Figure-6 explains the online services offered during covid-19. It is evident from the data that most of the respondents 63(91.3%) are provided useful links for digital library and e-resource service to their staff and students followed by 6(8.7%) respondents are not provided such service.

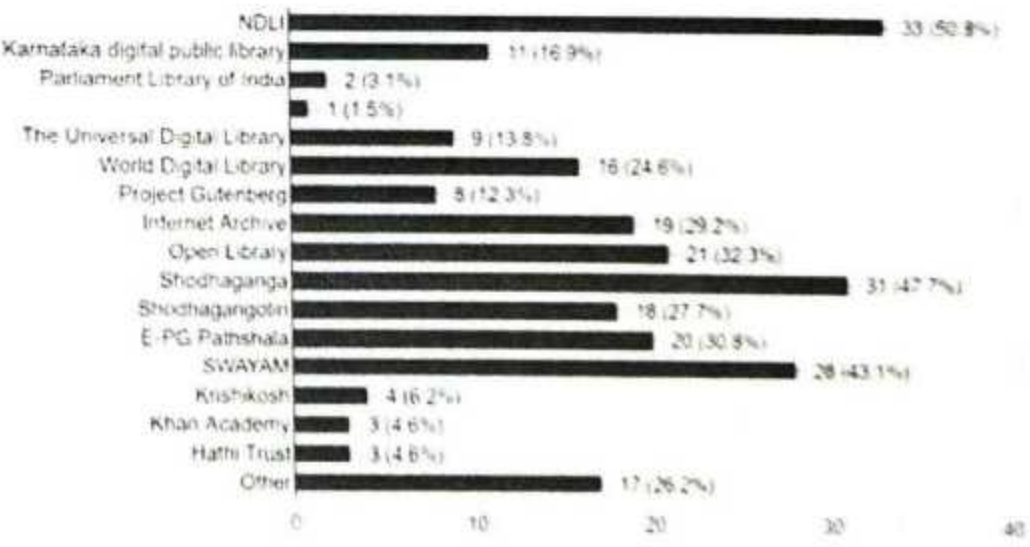

Figure-7

Figure-7 provided the data relating to the online resources / services provided to their library users during covid-19. It is clear that majority of the library professionals offered the National digital Library 33(50%), followed by Shodhaganga 31(47.7%), Swayam 28(43.1%), Open library 21(32.3%), e-PG patashala 20(30.8%), Internet Archive 19(29.2%), Shodhagagotri 18(27.7%) and other Karnataka legislature e-library 11(16.9%).

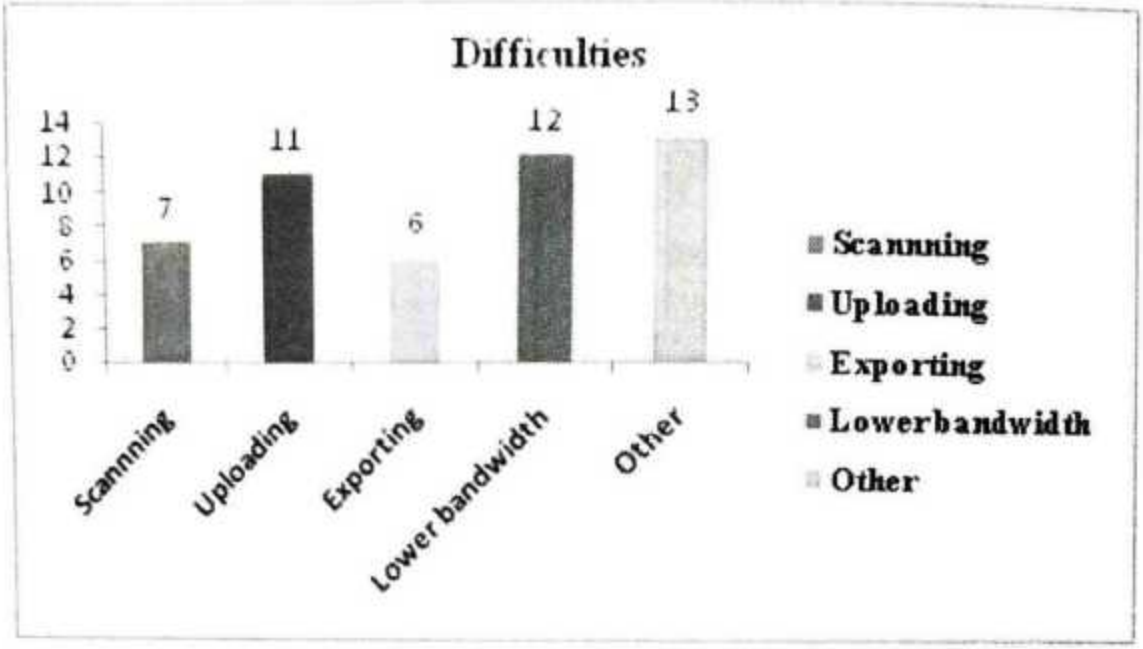

Figure-8

Figure-8 explains the data relating the difficulties faced while providing information. Majority of the respondents opined that they facing other 13(39.3%) difficulties not mentioned in the options. About 12(36.4%) low bandwidth problems, uploading 11(33.3%), Scanning 7(21.2%), and exporting 6(18.2%). It is clear that the other problems might be major hurdles while providing services during covid-19.

Conclusion

Academic libraries are facing lot of challenges to meet the needs of the users. Unexpected lock down and strict social distancing creating lot of pressure among the library professionals. The librarian role is very crucial in such rare conditions. Adoption of ICT based services can only way to combat the challenges. From this study it can be found that librarians could act in a smart way to counter the pandemic challenges.

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Chapter 15

On Mathematical and Statistical Aspects of Linear Models

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Abstract—This research article presentssome mathematical and statistical aspects of linear models and their characteristic properties. In Statistics, the term linear model is used in different ways according to the context. The most common occurrence is in connection with regression models and the term is often taken as synonymous with linear regression model. However, the term is also used in time series analysis with a different meaning. In each case, the designation "linear" is used to identify a subclass of models for which substantial reduction in the complexity of the related statistical theory is possible. In this research article an attempt is made to presentsome specific forms of simple and multiple linear regression models. Here mathematical aspects of linear models are depicted in a lucid manner. A large number of mathematical models are discussed here and the methods of fitting transformed models are presented. Moreover specific form of linear statistical model is proposed and the crucial assumptions of general linear model are extensively discussed. Finally the method of ordinary least squares estimation of parameters of a linear model has been proposed

Keywords—Linear Regression Model, Response variable, Predictor, Discrete and continuous models, Biasedness, Non-Stochastic data matrix

1. INTRODUCTION

In statistics, linear regression is a linear approach to modeling the relationship between a scalar response and one or more explanatory variables (also known as dependent and independent variables). The case of one explanatory variable is called simple linear regression; for more than one, the process is called multiple linear regression. This term is distinct from multivariate linear regression, where multiple correlated dependent variables are predicted, rather than a single scalar variable.

In linear regression, the relationships are modeled using linear predictor functions whose unknown model parameters are estimated from the data. Such models are called linear models. Most commonly, the conditional mean of the response given the values of the explanatory variables (or predictors) is assumed to be an affine function of those values; less commonly, the conditional median or some other quantile is used. Like all forms of regression analysis, linear regression focuses on the conditional probability distribution of the response given the values of the predictors, rather than on the joint probability distribution of all of these variables, which is the domain of multivariate analysis.

Linear regression was the first type of regression analysis to be studied rigorously, and to be used extensively in practical applications. This is because models which depend

linearly on their unknown parameters are easier to fit than models which are non-linearly related to their parameters and because the statistical properties of the resulting estimators are easier to determine.

Linear regression has many practical uses. Most applications fall into one of the following two broad categories:

- If the goal is prediction, forecasting, or error reduction, [linear regression can be used to fit a predictive model to an observed data set of values of the response and explanatory variables. After developing such a model, if additional values of the explanatory variables are collected without an accompanying response value, the fitted model can be used to make a prediction of the response.
- If the goal is to explain variation in the response variable that can be attributed to variation in the explanatory variables, linear regression analysis can be applied to quantify the strength of the relationship between the response and the explanatory variables, and in particular to determine whether some explanatory variables may have no linear relationship with the response at all, or to identify which subsets of explanatory variables may contain redundant information about the response.

Linear regression models are often fitted using the least squares approach, but they may also be fitted in other ways, such as by minimizing the "lack of fit" in some other norm (as with least absolute deviations regression), or by minimizing a penalized version of the least squares cost function as in ridge regression (L2-norm penalty) and lasso (L1-norm penalty). Conversely, the least squares approach can be used to fit models that are not linear models. Thus, although the terms "least squares" and "linear model" are closely linked, they are not synonymous.

Model refers to a set of functional or structural relationships between two or more characteristics. These characteristics may be either measuremental or non measuremental in nature. The measuremental characteristics which assume different values in a specified range are known as variables. Generally, a set of functional relationships between two or more variables may be expressed in terms of mathematical equations, which is called a mathematical model. This model may be either in the form of a set of linear equations (linear model) or in the form of a set of nonlinear equations (nonlinear model). By introducing a random error variable or a random disturbance term, the mathematical model becomes a statistical model or a regression model. Hence one may have either linear regression model or nonlinear regression model.

Regression analysis is a statistical method to establish the relationship between variables. Regression analysis has a wide number of applications in almost all fields of science, including Engineering, Physical and Chemical Sciences; Economics, Management, Social, Life and Biological Sciences. In fact, regression analysis may be the most frequently used statistical technique in practice.

Suppose that there exists a linear relationship between a dependent variable Y and an independent variable X. In the scatter diagram, if the points cluster around a straight line then the mathematical form of the linear model may be specified as

$$Y_i = \beta_0 + \beta_1 X_i, \quad i = 1, 2, ...n. \qquad \text{.....(1)}$$

where β_0 is the intercept and β_1 is the slope.

Generally the data points in the scatter diagram do not fall exactly on a straight line, so equation (2.1.1) should be modified to account for this. Let the difference between the observed value of Y and the straight line $(\beta_0 + \beta_1 X)$ be an error ε. It is convenient to think of ε as a statistical error; that is, it is a random variable that accounts for the failure of the model to fit the data exactly. The error may be made up of the effects of other variables, measurement errors and so forth. Thus, a more plausible model may be specified as

$$Y_i = \beta_0 + \beta_1 X_i + \varepsilon_i, i = 1, 2, ..., n. \qquad \text{.....(2)}$$

Equation (2) is called a Linear Regression Model or Linear Statistical Model. Customarily X is called the independent variable and Y is called the dependent variable. However, this often causes confusion with the concept of statistical independence, so we refer to X as the Predictor or Regressor variable and Y as the Response variable. Since the equation (1) involves only one Regressor variable, it is called a 'Simple Linear Regression Model' or a 'Two-Variable Linear Regression Model'.

A Three – variable Linear Regression Model may be written as

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \varepsilon_i, i = 1, 2, ..., n \qquad \text{.....(3)}$$

This linear regression model contains two regressor variables. The term linear is used because eq. (2.1.3) is a linear function of the unknown parameters β_0, β_1 and β_2.

In general, the response variable Y may be related to k regressor or predictor variables. The model

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + ... + \beta_k X_{ki} + \varepsilon_i, i = 1, 2, ...n \qquad \text{.....(4)}$$

is called a 'Multiple Linear Regression Model' with k independent variables. The parameters β_j, $j = 0,1,2...,k$ are

known as regression coefficients. This model describes a hyperplane in the k – dimensional space of the independent variables X_j's. The parameter β_j represents the expected change in the dependent variable Y per unit change in X_j, when all of the remaining predicted variables X_q's ($q \neq j$) are held constant. Thus, the parameters β_j, $j = 1,2,\ldots,k$ are often known as 'Partial Regression Coefficients.

Multiple linear regression models are often used as empirical models or approximating functions. That is, the exact relationship between Y and X_1, X_2, …, X_k is unknown but over certain ranges of the independent variables, the linear regression model is an adequate approximation to the true unknown function.

In practice, certain nonlinear regression models such as cubic polynomial models and response surface models may often still be analyzed by multiple linear regression techniques. For instance, consider the cubic polynomial model

$$Y_i = \beta_0 + \beta_1 X_i + \beta_2 X_i^2 + \beta_3 X_i^3 + \varepsilon_i, i = 1,2,\ldots,n \quad \ldots\ldots\ldots\ldots(5)$$

Let $X_1 = X$, $X_2 = X^2$ and $X_3 = X^3$ then eq. (5) can be rewritten as

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \varepsilon_i, i = 1,2,\ldots,n \quad \ldots\ldots\ldots(6)$$

which is a multiple linear regression model with three independent variables

Consider a model containing interaction effects as

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_{12} X_{1i} X_{2i} + \varepsilon_i, i = 1,2,\ldots,n \quad \ldots\ldots\ldots(7)$$

Let $X_3 = X_1 X_2$ and $\beta_3 = \beta_{12}$ then eq (7) can be rewritten as

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \varepsilon_i, i = 1,2,\ldots,n \quad \ldots\ldots\ldots(8)$$

which is a multiple linear regression model with three regressors. Consider the second – order response surface model with interaction,

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_{11} X_{1i}^2 + \beta_{22} X_{2i}^2 + \beta_{12} X_{1i} X_{2i} + \varepsilon_i,$$
$$i = 1, 2, \ldots, n \quad \ldots\ldots\ldots(9)$$

Let $X_3 = X_1^2, X_4 = X_2^2, X_5 = X_1 X_2, \beta_3 = \beta_{11}, \beta_4 = \beta_{22}$ and $\beta_5 = \beta_{12}$ then eq. (2.1.9) can be rewritten as a multiple linear regression model as follows:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \varepsilon_i,$$
$$i = 1, 2, \ldots, n$$

2. MATHEMATICAL ASPECTS OF LINEAR MODEL

The main purpose of mathematical modelling is to solve real practical problems. The success of mathematical modelling depends on getting things right from the start, and as in most other scientific endeavours, one is more likely to succeed if one adopts a methodical approach. In practice, it is found to complete the following steps.

(i) Clarify the problem;
(ii) List the factors;
(iii) List the assumptions; and
(iv) Formulate a precise problem statement

An essential part of the mathematical modelling technique is to translate verbal statements about variables along with assumptions into precise mathematical relationships between the variables represented by symbols. Thus, the mathematical statements become amenable to manipulation by mathematical techniques.

For instance, the simplest model is obtained by assuming that Y is proportional to X. The corresponding mathematical statement is then $Y \propto X$ or as a mathematical equation $Y = \beta_0 X$, where β_0 is the constant of proportionality. Now, the graph of Y against X shows a straight line through the origin.

Another simplest model is the linear form $Y = \beta_0 + \beta_1 X$ in which Y increases by β_1 units for every unit increase in X and that $Y = \beta_0$ when X = 0. This also includes the situation where Y decreases as X increases. In that situation the parameter β_1 is negative.

Consider the situation where 'Y decreases as X increases' by inverse proportion

$$Y \propto \frac{1}{X} \text{ or } Y = \frac{\beta_0}{X} \quad \ldots\ldots\ldots\ldots(10)$$

It reveals that Y decreases more steeply with X that is the situation in the linear model. One may test the validity of this assumption by examining whether XY remains nearly constant. Another way is that if the plot of Ln Y against Ln X is a straight line of slope "-1".

Thus, under mathematical modelling technique, first represent the variables by the mathematical symbols and then make the assumptions about the relationships among the variables. Further, translate the assumptions into mathematical equations or inequalities.

One of the main uses of mathematical modelling is to predict the future development of the system. Such model relies on assuming that the rate of change of a variable Y is linked to or caused by some or all of the present value of Y, previous values of Y, values of other variables, the rate of change of other variables and time 't'. Here, the mathematical model describes how Y itself varies with time 't'. There are mainly two types of such mathematical models namely,

(i) Discrete Models and (ii) Continuous Models

DISCRETE MODELS:

For discrete models, one may write the form

(ii) $Y_{n+1} = f(Y_n, Y_{n-1}, ..., t)$

It is usually known as a difference equation. The simplest type of difference equation is the first order linear constant coefficient equation which is given by

$$Y_{n+1} = \beta_0 + \beta_1 Y_n$$

A difference equation containing relationship between Y_{n+1} and Y_n and no other Y values is known as a 'First order difference equation. If the difference equation also involves Y_{n-1} or Y_{n+2}, then it is said to be second order difference equation.

Sometimes, a linear difference equation may be in the form

$$Y_{n+1} = \beta_1 Y_n + \beta_2 Y_{n-1} + n^2 + \beta_0 \quad \text{.....(11)}$$

Linear difference equations involving more than one variable can be compactly expressed by using vectors and matrices.

Simultaneous linear difference equations can be expressed in the form

$$\bar{Y}_{n+1} = \bar{M}\bar{Y}_n \quad \text{.....(12)}$$

where $\bar{M}$ is the co-efficient matrix; $\bar{Y}_{n+1}$ and $\bar{Y}_n$ are the vectors.

The solution can be written as

$$\bar{Y}_n = \bar{M}^n \bar{X}_0 \quad \text{.....(13)}$$

CONTINUOUS MODELS

A variable, which is allowed to take any value within a range, is known as a continuous variable. One advantage of using continuous variables is that one may use powerful mathematical tools such as Calculus.

The linear models are the simplest continuous models. The simplest linear model relating two variables is characterized by mathematical equation of the form

$Y = \beta_0 + \beta_1 X$, by having a straight line graph.

Under linear interpolation, if x_1 and x_2 are consecutive values of X and x is some value between them, then the graph of $f(x)$ may be approximating from $X = x_1$ to $X = x_2$ by a linear model.

3. TYPES OF LINEAR MATHEMATICAL MODEL

Linear Models with Several Independent Variables:

If the value of a dependent variable Y depends on the values of other variables $X_1, X_2, ..., X_k$ then a way of expressing the dependence through a linear model is of the form

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + ... + \beta_k X_{ki} \quad \text{.....(14)}$$

Here Y changes by equal amounts for equal changes in any one of the independent variables. This model can be considered the generalization of the simple two- variable linear model

Simultaneous Linear Models:

Sometimes there may be two or more dependent variables, all of which are modelled as linear functions of independent variables. Here, some dependent variables can be considered independent variables in some linear functions (or equations) of the simultaneous linear equations system. This system of simultaneous linear models can be solved by using matrix methods such as Cramer's Rule, Inverse Matrix method etc.

Piecewise Linear Models:

It is a model that does not have to be represented by the same single formula for all values of the independent variable X. Here, two different linear expressions agree at some value of X, so there is no sudden jump (discontinuity) at the changeover point, usually X may be a discrete variable in this model, sometimes, one may model a non-linear function approximately by a piecewise linear function.

Transformed Linear Models:

When a dependent variable Y does not change by equal amounts for equal changes in the independent variable then a linear model may not be suitable for this situation. For instance, the quadratic function or a second degree parabola is a simple nonlinear model.

$$Y_i = \beta_0 + \beta_1 X_i + \beta_2 X_i^2, \; i = 1, 2, ..., n$$

Three separate pieces of information are needed to determine the three parameters β_0, β_1 and β_2. The value of β_2 determines whether the curve is concave upwards $(\beta_2 > 0)$ or concave downwards, There is a vertical axis of

symmetry at $X = \frac{-\beta_1}{2\beta_2}$ which is also the X value at which the graph has global maximum or minimum value. The value of the parameter affects the vertical position of the curve relative to the coordinate axes.

A more general higher degree polynomial model can be written as

$$Y_i = \beta_0 + \beta_1 X_i + \beta_2 X_i^2 + \beta_3 X_i^3 + ... + \beta_k X_i^k,$$
$$i = 1, 2, ..., n \quad .....(15)$$

This model can be transformed into a general linear model as

$$Y_i = \beta_0 + \beta_1 Z_{1i} + \beta_2 Z_{2i} + \beta_3 Z_{3i} + ... + \beta_k Z_{ki} \quad .....(16)$$

where, $Z_1 = X, Z_2 = X^2, Z_3 = X^3, ...Z_k = X^k$

Likewise, some nonlinear models such as power function model ($Y = \beta_0 X^{\beta_1}$), Exponential Model ($Y = \beta_0 e^{\beta_1 X}$ or $Y =$ or $Y = \beta_0 \beta_1^X$) etc, can be transformed into logarithmic linear models $\text{Ln } Y = \text{Ln } \beta_0 + \beta_1 \text{Ln } X$; and

$\text{Ln } Y = \text{Ln } \beta_0 + \beta_1 X$ or $\text{Ln } Y = \text{Ln } \beta_0 + (\text{Ln}\beta_1)X$

etc., respectively.

When the rate of change of Y is assumed to be proportional to the difference between the present value of Y and some fixed value c, one may write the linear first order differential equation model as

$Y' = k(c - Y)$, which has the solution

$$Y(t) = c + (Y_0 - c)e^{-kt} \quad .....(17)$$

with $Y \to c$ as $t \to \infty$.

4. FITTING OF TRANSFORMED LINEAR MODELS

In fitting of time series models or Growth curves to the time series data, the following points may be useful to specify the type of the model:

(i) When the time series Ytis formed to be increasing or decreasing by equal absolute amounts, the straight line times series model is used.

$$Y_t = \beta_0 + \beta_1 t \quad .....(18)$$

(ii) When the time series Y_t is increasing or decreasing by a constant percentage rather than a constant absolute amount, the logarithmic straight line time series model is used.

$$Y_t = \beta_0 \beta_1^t \quad .....(19)$$

$$\text{or } \text{Ln } Y_t = \text{Ln}\beta_0 + (\text{Ln}\beta_1)t \quad .....(20)$$

In this case, the data plotted on a semi-logarithmic scale graph gives a straight line graph.

The approximations about the type of the curve to be fitted can be made by using the following theorem based on finite differences

"The nth differences $\Delta^n Y_t, \Delta^n(\text{Ln } Y_t), \Delta^n\left(\frac{1}{Y_t}\right)$ of any general polynomial Y_t of n^{th} degree in t is constant and $(n+1)^{th}$ differences are equal to zero".

i.e., If Δ is the difference operator given by

$\Delta Y_t = [Y_{t+h} - Y_t]$, h being the interval of differencing and $\Delta^k Y_t$ is the kthdifference of Y_t then for a polynomial Y_t of nth degree in t, the theorem states that

$$\Delta^k Y_t = \text{constant}, k = n$$
$$= 0, k > n$$

The following tests based on the calculus of finite differences may be applied in choosing approximations about the type of curve to be fitted:

(i) If ΔY_t = constant, then linear model $Y_t = \beta_0 + \beta_1 t$ may be used;

(ii) If $\Delta^2 Y_t$ = constant, then a second degree polynomial function model $Y_t = \beta_0 + \beta_1 t + \beta_2 t^2$ may be used;

(iii) If $\Delta[\text{Log } Y_t] =$ constant, then an exponential or logarithmic linear model $Y_t = \beta_0 e^{\beta_1 t}$ or $Y_t = \beta_0 \beta_1^t$ or $\text{Ln } Y_t = \text{Ln } \beta_0 + \beta_1 t$ or $\text{Ln } Y_t = \text{Ln } \beta_0 + (\text{Ln}\beta_1)t$ may be used;

(iv) If $\Delta^2[\text{Log } Y_t] =$ constant, then second degree curve fitted to logarithms model $Y_t = \beta_0 \beta_1^t \beta_2^{t^2}$ or $\text{Ln } Y_t = \text{Ln } \beta_0 + [\text{Ln } \beta_1]t + [\text{Ln } \beta_1]t^2$ may be used;

(v) If $\frac{\Delta Y_t}{\Delta Y_{t-1}} =$ constant, then a modified exponential function model $Y_t = \beta_0 + \beta_1 \beta_2^t$ may be used;

(vi) If $\left[\frac{\Delta \text{ Log } Y_t}{\Delta \text{ Log } Y_{t-1}}\right]$ = constant, then Gompertz model $Y_t = \beta_0 \beta_1^{\beta_2^t}$ or a logarithmic modified exponential function model $\text{Ln } Y_t = \text{Ln}\beta_0 + [\text{Ln}\beta_1]\beta_2^t$ may be used;

(vii) If $\left[\frac{\Delta\left(1/Y_t\right)}{\Delta\left(1/Y_{t-1}\right)}\right]$ = constant, then logistic function model

$$Y_t = \left[\frac{k}{1+e^{\beta_0+\beta_1 t}}\right],\ \beta_1 < 0 \text{ or}$$

or $\frac{1}{Y_t} = \left[\frac{1}{k}\right]\left[1+e^{\beta_0+\beta_1 t}\right]$ or a modified exponential function model $\left[1/Y_t\right] = \gamma_0 + \gamma_1\gamma_2^t$ may be used.

where $\gamma_0 = \frac{1}{k}, \gamma_1 = \frac{1}{k}e^{\beta_0}, \gamma_2 = e^{\beta_1}$ are constants

(viii) If ΔY_t tends to decrease by a constant percentage then a modified exponential function model may be used;

(ix) If ΔY_t shows a skewed frequency curve, then a Gompertz model or a logarithmic modified exponential function model may be used.

5. LINEAR STATISTICAL MODEL

Suppose there exists a linear relationship between a dependent variable Y and (k-1) independent variables $X_2, X_3, \ldots\ldots, X_k$ and a random error term or disturbance term ε. For a sample of n observations on Y and X's, one may specify linear regression model as

$$Y_i = \beta_1 + \beta_2 X_{2i} + \beta_3 X_{3i} + \ldots + \beta_k X_{ki} + \varepsilon_i,$$
$$i = 1, 2, \ldots, n \quad \ldots\ldots\ldots\ldots(21)$$

where β's are known as regression co-efficients or unknown parameters of the linear regression model

The set of above 'n' linear equations can be expressed in the matrix notation as

$$Y_{nx1} = X_{nxk}\,\beta_{kx1} + \varepsilon_{nx1} \quad \ldots\ldots\ldots\ldots(22)$$

where $Y = \begin{bmatrix} Y_1 \\ Y_2 \\ . \\ . \\ . \\ Y_n \end{bmatrix}_{nx1}$, $X = \begin{bmatrix} 1 & X_{21} & X_{31} & \ldots & X_{k1} \\ 1 & X_{22} & X_{32} & \ldots & X_{k2} \\ . & . & . & \ldots & . \\ . & . & . & \ldots & . \\ . & . & . & \ldots & . \\ 1 & X_{2n} & X_{3n} & \ldots & X_{kn} \end{bmatrix}_{nxk}$

$$\beta = \begin{bmatrix} \beta_1 \\ \beta_2 \\ . \\ . \\ . \\ \beta_k \end{bmatrix}_{kx1} \quad and\ \varepsilon = \begin{bmatrix} \varepsilon_1 \\ \varepsilon_2 \\ . \\ . \\ . \\ \varepsilon_n \end{bmatrix}_{nx1}$$

Here, **Y:** ($nx1$) vector of observations on a random dependent random variable (observation vector)

X: (nxk) matrix of known observations on a set of independent variables (Data Matrix)

β: ($kx1$) vector of unknown parameters including intercept parameter (parametric vector)

and ε: ($nx1$) vector of observations on an error random variable. (Error vector or Disturbance vector)

This model is known as a k-variable linear model or a general linear model (or linear statistical model)

6. CRUCIAL ASSUMPTIONS OF GENERAL LINEAR MODEL

(i) Linearity Assumption:

The basic assumption of the linear model is that the dependent variable vector or observation vector Y may be expressed as a linear function of the sample of observations on independent variables X's and error vector ε i.e.,

$$Y = X\beta + \varepsilon \quad \ldots\ldots\ldots\ldots(23)$$

(ii) Unbiasedness Assumption

$$E(\varepsilon) = O_{nx1} \text{ or } E(Y) = X\beta \quad \ldots\ldots\ldots\ldots(24)$$

where O_{nx1} is ($nx1$) vector of zeros

$$\Rightarrow E(\varepsilon_i) = 0 \quad \forall i = 1, 2, \ldots, n$$

ε_i are having zero means

(iii) Assumption of Homoscedastic and Uncorrelated Errors

$$E(\varepsilon\varepsilon') = \sigma^2 I_n \quad \ldots\ldots(25)$$
$$\Rightarrow \text{cov}(\varepsilon_i\varepsilon_j) = \sigma^2, \forall i = j = 1, 2, \ldots n$$
$$= 0, \forall i \neq j$$

Thus, each ε_i distribution has the same unknown variance; the errors ε_i and ε_j, $\forall i \neq j$ are pairwise uncorrelated.

Here, σ^2 is unknown error variance,

In is an Identity matrix of order n, i.e., ε has covariance matrix $\sigma^2 I_n$

(iv) Assumption of Linear Independence of Explanatory Variables X's:

Rank of X is k, where $k < n$

Thus, there is no linear dependence among the Explanatory variables.

(v) Assumption of Non-Stochastic Data Matrix:

The Data matrix X is a non-stochastic matrix.

In other words, X is a fixed known coefficients matrix.

(vi) Assumption of Non-Measuremental Errors:

There are no errors involved in the explanatory variables. In other words, all the independent variables X's are measured without error. Further, X is uncorrelated with ε

(vii) Normality Assumption:

The error vector ε follows a multivariate normal distribution with null vector O_{nx1} as mean vector and σ^2 In as the variance covariance matrix. Here, I_n is a unit matrix of order *n*.

The Linear Statistical Model along with the above crucial assumptions is known as

'Standard Linear Statistical Model'

or 'Classical Linear Statistical Model'

or 'Gauss-Markoff Linear Statistical Model'

or 'Standard General Linear Model'.

7. ORDINARY LEAST SQUARES ESTIMATION OF PARAMETERS OF LINEAR MODEL

Consider the Classical Linear Regression model

$$Y_{nx1} = X_{nxk}\beta_{kx} + \varepsilon_{kx} \quad \text{.....(26)}$$

with usual assumptions such as

$$E(\varepsilon) = 0,\ E(\varepsilon\varepsilon') = \sigma^2 I_n \quad \text{.....(27)}$$

Write the residual sum of squares as

$$e'e = \left(Y - X\hat{\beta}\right)'\left(Y - X\hat{\beta}\right) \quad \text{.....(28)}$$

$$= Y'Y - \hat{\beta}'X'Y - Y'X\hat{\beta} + \hat{\beta}'X'X\hat{\beta}$$

$$\Rightarrow e'e = Y'Y - 2\hat{\beta}'X'Y + \hat{\beta}'X'X\hat{\beta} \qquad \left[\because Y'X\hat{\beta} = \hat{\beta}'X'Y\right]$$

where $\hat{\beta}$ is the least squares estimator of β

By the least squares estimation method, $\hat{\beta}$ minimizes the residual sum of squares $e'e$.

First order condition:

$$\frac{\partial}{\partial\hat{\beta}}(e'e) = O \Rightarrow -2X'Y + 2X'X\hat{\beta} = O$$

$$\Rightarrow X'X\hat{\beta} = X'Y \quad \text{.....(29)}$$

The system (2.7.4) contains 'n' simultaneous linear equations, which is called the 'System of Normal Equations'. Since, the system of normal equations is always consistent, these exists atleast a non zero solution of $\hat{\beta}$, which gives the ordinary least squares (OLS) estimator of β.

i.e., $\hat{\beta} = (X'X)^{-1}X'Y$ .....(30)

Further, consider the OLS residual vector

$$e = Y - X\hat{\beta} \quad \text{.....(31)}$$

$$= X\beta + \varepsilon - X(X'X)^{-1}X'(X\beta + \varepsilon)$$

$$= \varepsilon - X(X'X)^{-1}X'\varepsilon$$

$$= \left(I_n - X(X'X)^{-1}X'\right)\varepsilon \text{ [In is a unit matrix of order } n]$$

$$\Rightarrow e = M\varepsilon \quad \text{.....(32)}$$

where $M = \left(I_n - X(X'X)^{-1}X'\right)$ is a symmetric idempotent matrix such that M'M=M,

M' = M and MX = O.

Now, consider the OLS residual sum of squares

$$e'e = (M\varepsilon)'(M\varepsilon) = \varepsilon'M\varepsilon$$

$$\Rightarrow E(e'e) = E(\varepsilon'M\varepsilon)$$

$$= E(\text{trace}\,\varepsilon'M\varepsilon) \quad [\because \varepsilon'M\varepsilon \text{ is a scalar}]$$

$$= E(\text{trace}\,M\varepsilon\varepsilon')$$

$$= (\text{trace}\,M)E(\varepsilon\varepsilon')$$

$$= \sigma^2\,\text{trace}\,M \qquad \left[\because E(\varepsilon\varepsilon') = \sigma^2 I_n\right]$$

$$= \sigma^2\,\text{trace}\left(I_n - X(X'X)^{-1}X'\right)$$

$$= \sigma^2\left[\text{trace}\,I_n - \text{trace}(X'X)^{-1}(X'X)\right]$$

$$= \sigma^2\left[n - \text{trace}\,I_k\right]$$

$$\Rightarrow E(e'e) = \sigma^2(n-k)$$

$$or\ E\left(\frac{e'e}{n-k}\right) = \sigma^2$$

$$E(S^2) = \sigma^2$$

$S^2 = \dfrac{e'e}{n-k}$ is an unbiased estimator of σ^2.

8. CONCLUSION AND FUTURE RESEARCH

In the aboveconversation mathematical aspects of linear models have been extensively depicted. Different types of

mathematical models are discussed here and the methods of fitting transformed models are proposed in elegant approach. Besides specific form of linear statistical model is presented and the crucial assumptions of general linear model are extensively discussed. At the final stage of this article the method of ordinary least squares estimation of parameters of a linear model has been proposed. In the context of future research one may discuss Gauss-Markoff theorem for linear estimation andmean vector and covariance matrix of blue

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