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## **BRIDGING BARRIERS: A STUDY ON THE ROLE OF TECHNOLOGY IN ADVANCING WOMEN OWNED BUSINESSES OF DIBRUGARH, ASSAM**

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### **ABSTRACT**

With the rapid advancement in technology, the small businesses operating at the grassroots level in India are sophisticatedly improving. The technology driven growth trajectory bolstered India's traditional small businesses into brands globally recognised. Assam being the sentinel of north-east India, of late the footprints of women led businesses are increasing which has been actively contributing towards its economic development. Technology integration in their businesses may open up opportunities yet to be tapped. This paper is an attempt to study the positive impacts of technology integration in the women owned businesses of Dibrugarh district, the challenges they are facing and also the measures that can be suggested keeping in mind the loopholes which are coming in the way.

**KEYWORDS:** Women Empowerment, Technology, Women Entrepreneurship, Digital Literacy

### **1. INTRODUCTION**

The advent of technological wonders in almost every facet of our lives has revolutionised the way people think and transact. The digital tools and devices have become indispensable. The broader impact of technology is quite evident if we delve deeper into the lives of historically oppressed section of the society particularly women. They are now quite sophisticatedly adapting to the new normal and thus actively working towards becoming self-reliant. The broader perspective explains how technology has been a breakthrough in achieving women empowerment, encouraging women involvement in business, governance, online presence and what not.

Despite of the technological advancements which have conquered the world over the years, it can be observed that many people are still lagging behind in becoming a part of the digital era and as such they miss out the opportunities it has in store for them. This has given rise to a digital divide between those who can access the opportunities and those who are lagging behind.



According to a report by the Center for Strategic and International Studies, “the gap between those who can access the dividends and opportunities of the digital economy, and those who cannot”—is particularly pronounced for women. The challenges women face in accessing the digital ecosystem include obtaining formal identification (ID), owning mobile phones, and possessing digital skills, among others. The gender digital divide has serious repercussions at the household level and in broader society.

### **1.1. Understanding the role of technology: Business purview**

The development of technology has made human life far better and sophisticated than what was 50 years ago. According to Soegoto, information technology makes businesses more responsive, fast, easy, cheap, efficient, effective, transparent, and flexible in modern business systems to improve performance, competitive advantage, and company profitability. With the advancement of technology, there has been noteworthy changes in almost every facet of human life. The banking and financial transaction sector is not an exception to that. Technology has quite sophisticatedly imprinted its footprints in the financial sphere as well. The FinTech sector evolved as a catalyst in order to cater the various needs of the customers during the Covid 19 pandemic. The day to day banking and financial operations of the people came to a halt as a result of the hard hit of the pandemic. In due course of the time and with the proper measures taken by the Government, the economy gradually revived from the aftermath of Covid 19. One of the technological innovations which gave a sigh of relief to the people was the adoption of Digital wallets. Digital wallets such as PhonePe, Google Pay, Paytm etc are some of the online wallets operating in India which had served a significant purpose whilst the irregularities that have been encountered by the people because of the pandemic. The economy which gradually shifted towards cashless transactions, Digital payments system turned out to be one of the best alternatives. However, it has been seen that there are a few classes of people in the society who still prefer transacting using cash be it online purchase or in a physical store.

India being a developing country, the financial transaction mechanism in the country was traditionally reliant on cash i.e. paper currency. People in the country mostly preferred transacting using tangible currency due to a number of reasons and the most prominent was because of fear of frauds and lack of technical knowledge. India embarked on a revolution of technology adoption in the financial sector with the demonetization of 500 and 1000 notes by the Narendra Modi led Government in 2016. As a result of which, the digital payments in the country intensified. Almost every person who had a smartphone in hand opted for digital transactions. Adding fuel to the digital movement, the Covid 19 pandemic further paved way for the integration of digital payments system in almost every aspect of financial transactions of individuals as well as businesses.

## **1.2. Women empowerment and women owned businesses**

Women Empowerment plays a pivotal role in the economic development of a country. A woman is said to be empowered when she can think independently, when she has financial and economic freedom, when she is given equal opportunity in taking major decisions of the household as well as in the workplace and when she can freely put forth her point of view. Therefore, it is very much important that the women of a country must be well-equipped in all the aspects for their overall growth and development. Women entrepreneurs play an important role in the local economies and a large number of micro enterprises in developing economies are undertaken by them. But despite the fact that women have great entrepreneurial skills and have the capability to run an efficient enterprise but still due to certain social and economic constraints in the male dominated society and due to lack of feasible infrastructure they are lagging behind to a great extent.

## **2. RESEARCH PROBLEM**

In the age of 5G and Artificial Intelligence where modern day businesses are improving their accessibility and operations with the help of technology, it has become imperative to align with the changing trends in order to survive in the long run. Being the emerging economic and commercial hub of Upper Assam, Dibrugarh has great potential when it comes to achieving entrepreneurial growth. It can be noticed that technology has been a catalyst in growing various women led businesses in the district. However, it has been observed that, the women who are engaged in small businesses at the grass root level sometimes find it difficult to adapt to the new technological changes that are happening around them which sometime stands as a barrier in their operations.

The paper mainly aims to study the pattern and impact of technology adoption by the women owned businesses of Dibrugarh and the limitations they are facing in due course.

## **3. OBJECTIVES**

- To study the role of technology in women owned businesses of Dibrugarh district.
- To find out the barriers faced by the women owned businesses in the district in adopting digital tools and devices.
- To suggest measures for policy makers to promote women empowerment in the district.

## **4. SIGNIFICANCE OF THE STUDY**

Technology has been a driving force in uplifting women empowerment. With the growing popularity of social media platforms among the masses, people are now becoming tech-aware. They know what is happening in their surroundings and how to confront any challenge. With a smartphone in hand, women today are well-versed with the intricacies of digital tools and devices. They know how to optimize them in their businesses to get maximum benefits.

Dibrugarh has become a major commercial hub for the small vendors and businesses coming from the nearby areas such as Dhemaji, Lakhimpur, Sadiya etc. These places were now well connected to Dibrugarh through the Bogibeel Bridge and Dhola-Sadiya Bridge over the mighty Brahmaputra. As such many people from the remotest parts of these districts comes to Dibrugarh for selling their goods. The weekly markets in Dibrugarh are mostly populated by the women vendors from the remote villages of Sadiya and nearby areas. They get a major market in Dibrugarh due to the presence of diverse population. Some of these women vendors are using a smartphone or a QR code for accepting payments but majority of them do not possess a smart device or they are hesitant in accepting online payments.

Also, the small businesses in the district owned by women are also growing substantially with the limited resources they have accessed. Some of these businesses are well equipped with a Database Management System, they are also making their presence in various social media platforms, they are transacting through digital devices etc.

The study is mainly focussed to know about the role of technology in making their business operations and error free also it will investigate into the possible reasons why the business women are not adapting to the new normal.

## **5. REVIEW OF LITERATURE**

Malik S. Dr. (2024) highlighted that in the present day digital era, technology emerged to be transformative force empowering women by offering them the suitable tools and platforms which enable them to overcome the age old traditional challenges preventing them in accelerating their businesses and thus fostering equality. Technology integration in their day to day operations has positively impacted the women's lives amplifying their political and social participation, enhancing economic independence and access to education thus contributing significantly to their families and the community.

Javeed I. (2024) in his paper studied the challenges women face in accessing formal financial services and also analyses the effectiveness of the existing financial inclusion programmes. He concluded that various cultural and social factors, lack of financial literacy, limited access to financial institutions, Lack of collateral are some of the major factors which hinder the participation of women in the formal financial sector of Jammu district.

Baruah J. (2019) in his paper "Impact of ICT on empowerment of women in rural areas of Assam" studied a sample of 40 women of Sonitpur district of Assam. The target population was housewives, girl students, service women, and wage earners. The study concluded that ICT play a significant role

in empowering rural women. The study also highlighted while most of the ICT tools and initiatives were useful in disseminating knowledge and information among the rural women but it was found that many of them are lagging behind in using them due to lack of access to complementary sources of support and services. As such a comprehensive policy for formulation of ICT among the rural women is the need of the hour.

Chakravarty S. (2014) examined the role of ICT in enhancing efficiency of SHGs of India. The study was conducted taking two blocks of Ranchi district. The study highlighted that the SHGs should diversify their roles and divert their focus towards empowering women through counselling, mentoring, educating them about the various ICT tools so that they can realise their full potential and get benefitted in their day to day operations.

Putri S.M. et al. (2020) the implications of digital wallets on small businesses in their paper entitled “The Effect of Using a Digital Wallet for Small Business”. Digital transactions are increasingly popular among the small businesses. It provides convenience, efficiency in their operations, increases sales and reduction in counterfeit money frauds. Digital wallets are increasingly becoming popular among the small traders and merchants which helps in seamless functioning of their day to day operations.

## **6. METHODOLOGY**

The target population is all the women owned businesses of Dibrugarh district. The samples will be drawn randomly. A sample of 200 respondents were selected from both urban and rural areas of the district for the purpose of data collection.

The research is based on both primary and secondary data. The researcher has visited various women owned shops, boutiques, beauty parlours, restaurants, cloud kitchens and bakeries etc for collection of primary data. Questionnaires were distributed for gathering the required data.

Women groups from rural areas who were engaged in some type of small businesses were also inquired in order to find out their awareness about various digital devices and platforms and whether they are adopting those technologies within their existing business structure. Structured interviews were conducted for navigating information from the rural ladies as some of the ladies may not have formal education.

Also, secondary data has been collected from various sources such as magazines, newspapers, journals, reports and websites.

## 7. FINDINGS

The findings were collected from a sample of 200 respondents from both urban and rural areas of Dibrugarh district.

**Table 1: Socio-economic profile**

Variable	Details	Count	Percentage
Age of the business (in years)	0-5	65	32.5
	5-15	104	52
	15-25	25	12.5
	25 and above	06	3
Place of business	Urban	89	44.5
	Rural	56	28
Educational qualification of the owner	Below matric	20	10
	Class 10	46	23
	Intermediate	78	39
	Graduate	56	28
Type of business	Retail shop (Physical)	67	33.5
	Online shop	35	17.5
	Small street vendor	78	39
	Service provider (beauty parlours etc)	20	10
Annual income	Below 50000	38	19
	50000-350000	56	28
	350000-700000	91	45.5
	Above 700000	15	7.5

(Source: Primary data)

**Table 2: Respondent's perception about technology integration in their business**

Variable	Detail	Count	Percentage
Do you own a smartphone?	Yes	126	63
	No	74	37
Are you aware about various online payment methods?	Yes	134	67
	No	66	33
Have you used anyone of them in your business for accepting payments from customers?	Yes	113	56.5
	No	87	43.5
If yes, which one of them you have used so far?	QR payment	69	61.1
	POS payment (card swipe)	38	33.61
	Digital wallet payment (Amazon pay, Paytm etc)	06	5.3
Have you faced any problem while using them?	Yes	64	56.6
	No	49	43.4
Do you prefer them to use in the future?	Maybe	20	10
	Not sure	34	17
	Yes of course,	146	73

(Source: Primary data)

**Table 3: Responses of questions from Q1 to Q5**

Level of Extent	Questions									
	Q1		Q2		Q3		Q4		Q5	
	N	%	N	%	N	%	N	%	N	%
To a great extent	111	55.5	105	52.5	87	43.5	74	37	117	58.5
Somewhat	56	28	67	33.5	73	36.5	89	44.5	45	22.5
Very little	21	10.5	28	14	34	17	25	12.5	22	11
Not at all	12	6	0	-	6	3	12	6	16	8
Mean	2.21		1.57		1.62		1.68		1.75	
SD	1.18		0.57		0.65		0.67		0.78	

(Source: Primary data)

### 7.1.Key Findings

From the above data, it has been quite clear that urban women business owners are comparatively more aware about the various digital tools and devices. It is quite obvious as the rural women have limitations in terms of access to education, financial well-being, transport and communication etc. Further it has been noticed that as the businesses mature, they are more likely to adopt new technology as compared to the new ones it may be due to lack of financial resources. The women owners who are leading the business mostly had formal education except few. The average annual income of sample size falls under 350000 to 700000.

However, it has been observed that out of the 200 respondents including both rural and urban only 126 respondents possess a smartphone. Others do not have due to a number of factors the most common reason include financial limitation and fear of technology. Further, it was recorded that out of 200 respondents only 134 were aware about the various digital payment methods and out of that only 113 respondents have integrated these tools within their existing business premises. The most popular being the QR payment method. It was also recorded that the respondents have faced certain difficulties while using technology some of them include failed transactions, customer dissatisfaction, network error etc. However, majority of them (73%) were quite positive for continued use of technology in their business.

#### **Q1. To what extent technology has helped making your business operations hassle free?**

55.5% (n=111) of the participants reported that technology was useful in making their business operations hassle free and convenient to a great extent, 28% (n=56) agreed that technology has somewhat made their business operations hassle free, 10.5% (n=21) participants responded very little

impact of technology and only 6% (n=12) responded that technology was not at all helpful in making their business operations hassle free. The mean score of the responses is 2.21 (SD=1.18) which indicates that participants found technology helpful in making their business operations hassle free to a great extent.

**Q2. To what extent technology integration has helped to increase your market reach?**

52.5% (n=105) of the participants reported that technology helped their businesses to reach the masses to a great extent, 33.5% (n=67) agreed that technology has somewhat improved their market reach, 14% (n=28) participants responded that technology had very little contribution in improving their market reach and it was quite satisfactory to see that no one responded negatively towards contribution of technology in reaching the greater market. The mean score of the responses is 1.57 (SD=0.57) which indicates that participants found technology helpful in making their business popular to a great extent.

**Q3. Has technology integration in your business enhanced your income?**

43.5% (n=87) of the participants reported that technology was useful in enhancing their income to a great extent, 36.5% (n=73) agreed that technology somewhat contributed towards improving their income, 17% (n=34) participants responded very little impact of technology in increasing their income and only 3% (n=6) responded that technology was not at all helpful in improving their income. The mean score of the responses is 1.62 (SD=0.65) which indicates that participants found technology to be helpful in enhancing their income to a great extent.

**Q4. Has technology integration in your business improved knowledge and awareness about your products/services among the people?**

44.5% (n=87) of the participants reported that technology was somewhat useful in making their products/ services popular among the people, 36.5% (n=73) agreed that technology has integration has helped to great extent in making the people aware about their products/ services, 17% (n=34) participants responded very little impact of technology in making products/ services popular among the people and only 3% (n=6) responded that technology was not at all helpful in making their products/ services popular among the masses. The mean score of the responses is 1.68 (SD=0.67) which indicates that participants somewhat found technology helpful in making their products/ services popular among the people.

**Q5. Has technology integration helped in office administration such as book keeping, maintaining records etc?**

58.5% (n=117) of the participants reported that technology was useful in maintaining their books and accounts and also keeping records to great extent, 22.5% (n=45) agreed that technology was somewhat

helpful in office administration, 11% (n=22) participants responded that technology was very little helpful in office related works of their business and only 8% (n=16) responded that technology was not at all helpful in office administration of their business. The mean score of the responses is 1.75 (SD=0.78) which indicates that participants found technology helpful in office administration to a great extent.

We also found that the rural women find it difficult for using a smartphone due to a number of reasons. Also, due to lack of financial resources they do not view the modern day technological tools and devices helpful in keeping their records as installing a database management system will be a costly affair. Also, the street vendors who are just earning for living and whose annual income is less than or equal to 50000, these women views technology as only accepting payments through QR code or through their smartphone if they have one. Otherwise, integration of technology in their business operations is a far reality for them.

## **7.2. Limitations**

Due to lack of time and resources, the study was limited to only Dibrugarh district. Also, the sample size was relatively small considering the importance of the study. Establishing a conclusion at this point with this limited study will not be fair by considering a small sample of Dibrugarh district which will not be an appropriate generalisation of the whole community. Further, challenges were encountered while recording responses from the women of the rural areas as few of them do not of formal education also some of them were hesitant in disclosing the true facts.

The study will pave the way for more in depth research in other parts of Assam as well as North East India where majority of the businesses were led by women.

## **8. CONCLUSION AND RECOMMENDATIONS**

Technology has emerged as a driving force in accelerating any business. However, the gap that exists between the urban and rural women due a number of socio-economic factors is standing as a barrier preventing all round women empowerment. Assam has ample natural resources. Pre-dominantly the rural population of Assam are more inclined and associated with handicrafts and others transforming these resources into something worth buying. The world renowned Muga silk (Golden silk) is produced only in Assam. The rural women weavers are actively engaged in making traditional Assamese dresses (Mekhela Chador) from this Muga silk. However, they are not getting the desired platform for showcasing their talents and skills due to certain limitations. These many issues should be addressed properly in order to make the women business owners self-sufficient and empowered.

These recommendations aim to address the challenges faced by the women in prospering their small

businesses:

- More financial literacy programmes should be organised by the banks, financial institutions, NGOs and SHGs so as to educate each and every woman of the community.
- Apart from financial literacy programmes, computer literacy programmes should be organised so that the women of every community can atleast have the basic computer and digital knowledge.
- The rural ICT infrastructure should be improved only then we can expect technology adaptation in those areas.
- FinTech awareness programmes should be organised where especially the business women and women entrepreneurs should be invited so that they remain updated with the new trends and technologies.
- The after sales services of every digital financial product should be closely monitored by the service provider so that no negative perspective arises in the minds of the business owner especially women business owners.
- The traditional handicrafts and other traditional wonders of Assam such as bell metal utensils, bamboo crafts should be digitally showcased worldwide. These will give a push to the rural women in fostering their businesses.
- The SHGs should be closely monitored in ascertaining whether or not they are actively working towards improving women led businesses. Whether or not the financial assistances received from the Government for doing businesses are utilised properly or not.

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