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Contents

Editorial

Orissa Commerce Association is working consistently with a pious mission to serve the research community of India by publishing *'Orissa Journal of Commerce'*, a quarterly peer-reviewed research journal for over four decades. The current Issue of the Journal contains eleven research papers and articles from diverse fields of commerce, management and public policy.

Insurance is an essential aspect of modern life and plays a critical role in providing financial securities during uncertainties. The *first paper* is an attempt to check the role of perceived trustworthiness in the acceptance of online insurance. It is found that factors like performance expectancy, perceived credibility, social influence, effort expectancy have significant influence on Behavior Intention. Further the*second paper* aims to analyze the impact of MFI-specific internal factors on scaling strategies selection decision by these institutions. The result shows that number of branches, number of staffs, gross loan portfolio, impact scaling wide strategy and provision for non-financial services influence scaling deep strategy.

The *third paper* is a bibliometric analysis on women digital entrepreneurs. This study reveals that the number of articles on successful female entrepreneurs on the Internet has increased dramatically over the previous decade. The study also shows how digital tools can help women succeed as business owners online. The objective of the *next article* is to explore the factors attracting the consumers to visit FFRs. The study concludes that the demographic factors like age, education, present position and household income have influenced to prefer fast-food in the twin cities of Odisha. The *fifth paper* studies problems faced by farmers in the food processing sector of Kerala. The empirical findings suggest the government should provide more credit at lower interest rates, as well as credit subsidies and quality seeds, standard fertilizers and pesticides at reasonable prices to farmers.

The *sixth paper* studies performance expectancy and effort expectancy factors have affected petty vendors while using UPI, but social influence did not affect them much. UPI services are used more by educated people, and most respondents are younger. The *next article* aims at examining attitude towards digital commercials, advertisement skepticism and purchase probability of higher education students of Odisha. The research reveals a negative correlation between attitude and skepticism as well as between skepticism and purchase probability. However gender, family income and ad.skepticism are significant predictors of purchase probability. The objective of *eighth paper* is to explore the prevalence of the gender inequality of MSME (Micro, Small and Medium Enterprises) entrepreneurship and, more particularly, the growth of women entrepreneurs under Prime Minister Employment Generation Programme (PMEGP) in India.

The *ninth paper* examines the positive and negative effects of GST on small, medium and medium auto parts manufacturing companies. It concludes that the GST tax policy has positive and negative

impact and was an important tax system. The *next paper* throws light into different policies supporting PSE in the country. It concludes with a state-wise analysis of the functioning of PSE component of ICDS in the context of India. The *last paper* aims to analyse the union budget allocation to the health sector in India and decompose the underlying trends and priorities. It reveals that the current budget allocations and announcements contradict the objectives outlined in the National Health Policy 2017, which emphasises the government's commitment to achieving holistic wellness through integrated approaches.

The readers will find this Issue with superior quality and high intellectual diversity.

Hope the readers will enjoy reading this Issue and encourage us to stride forward.

Dr. Malay Kumar Mohanty

(Managing Editor)

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Role of Perceived Credibility in the Acceptance of Online Insurance Services

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UTAUT2, Insurance, Technology, Internet insurance, Behavior intention

JEL Classification

C12, I13, M31, G22

Abstract: The number of studies have been conducted on the acceptance of internet banking but very few studies are available that aims the acceptance of internet technology in insurance. The chief aim of the research study is to explain the factors of UTAUT2 model that determine the intention of user's to use internet insurance for availing insurance services online. A model was developed and the data was collected through structured questionnaire from those respondents who have health insurance and are using internet insurance services. The collected data was then analyzed through structured equation modeling using IBM AMOS 22.0 .The results showed that UTAUT2 model when integrated with perceived credibility found significant in explaining the online insurance service use behavior. Specifically Performance Expectancy, Perceived Credibility, Social Influence, Effort Expectancy has significant influence on Behavior Intention. Further Facilitating Conditions and Behavior Intention were also found to have statistically significant relationship with Use Behavior.

1. Introduction

Insurance companies across the world stepping forward to shift quickly their services to be delivered using electronic means (Ettis and Haddad, 2019). The digital market space has altered the way customer –business communication and their interactions takes place. The electronic process models can be enhanced by understanding clientele requirements. (Khare *et al.*, 2012)Insurance companies are progressively using electronic as a means for communication, interacting and delivering services to their customers. (Gebert-persson *et al.*, 2019).Customers have progressed drastically and want the most translucent and flawless experience. Customers gain practically from the ease, website flexibility, and wide range of products offered in online stores(Abdul and Soundararajan, 2022). The market indicates that the majority of service-oriented companies are increasingly focusing on the customer

experience, which has emerged as one of the finest tools for competitive rivalry(Kumar and Tharimala, 2022). Traditional transactions and lengthy forms are now outdated, and customers now depends on mobile phones for getting the requisite information/feedback, thus insurance companies should embrace the digital evolution (Roy, 2019).

Insurance companies are embracing the changed technology for upgrading their services, which may result in bringing more revenues for them. Because online services rely on websites, marketers now have new challenges to overcome, including the technical aspects of website design, improved screen resolution, and hardware-related concerns (Mohanty and Das, 2022). The major transformation has been witnessed in the Indian insurance sector in the last decade that puts pressure on insurance companies to level up to meet customers' needs (Khare and Singh 2010). In the digital era, social networks are becoming imperative and hence these have become a significant means for electronic communication tools for insurance companies (Prymostka, 2018).

Relevance of the study: This study contributes the use of perceived credibility in UTAUT2 model in online insurance services. Increasing number of studies are being conducted in the context of electronic banking but very few studies focuses on the technology acceptance in online insurance services. The integration of perceived credibility is another contribution in the study as individuals give utmost significance to security and privacy in using the internet technology for availing online insurance services.

2. Literature Review and Hypothesis Development

Several technology models have been used to elucidate the acceptance of internet technology. The UTAUT model was developed by integrating previous eight technology model. These models have their root constructs in social psychology theories and these models are widely used in social science research to explicate user's actions towards acceptance of electronic platform. The unified theory of acceptance and use of technology model was developed by (venkatesh *et. al.* 2003). The UTAUT model was developed in organizational context and Venkatesh *et al.*, (2012) developed UTAUT2 model customized for consumer settings. Thus UTAUT2 model used as theoretical basis for the study.

The technology acceptance model in online financial services has been validated by various research studies.

Following are the research constructs and their respective hypothesis

Performance Expectancy: Performance Expectancy is defined as the amount of gain in terms of money, time which an individual's believes that technology use would provide. The root constructs of performance expectancy are "Perceived usefulness Davis 1989; Davis *et al.* 1989), Extrinsic motivation (Davis *et al.* 1992), Job fit (Thompson *et al.* 1991), Relative advantage (Moore and Benbasat 1991), Outcome expectation (Compeau and Higgins 1995b; Compeau *et.al* 1999)". Performance expectancy has been validated as strong predictor of behavior intention various studies (Oliveira *et al.*, 2014; Sánchez-Torres *et al.*, 2018). It is believed that user prefer technology if they find gains in using it such as time and effort saving. In other research study, it was found that PE was a significant predictor of behavior intention(Rahi and Ngah, 2018).Moreover some recent studies also discussed that PE has significant role in explaining the behavior intention (Dwivedi *et al.*, 2019). In a new study Perceived

usefulness found to have statistical significant relationship with intention to use online insurance services (Ettis, 2021). Further a study on mobile health education website explained that performance expectancy found to have significant determinant of behavior intention(Essel, 2022; Pobee, 2022; Yu *et al.*, 2021)

H1: Performance Expectancy (PE) will have a positive impact on behavior intention (BI) to use electronic insurance services.

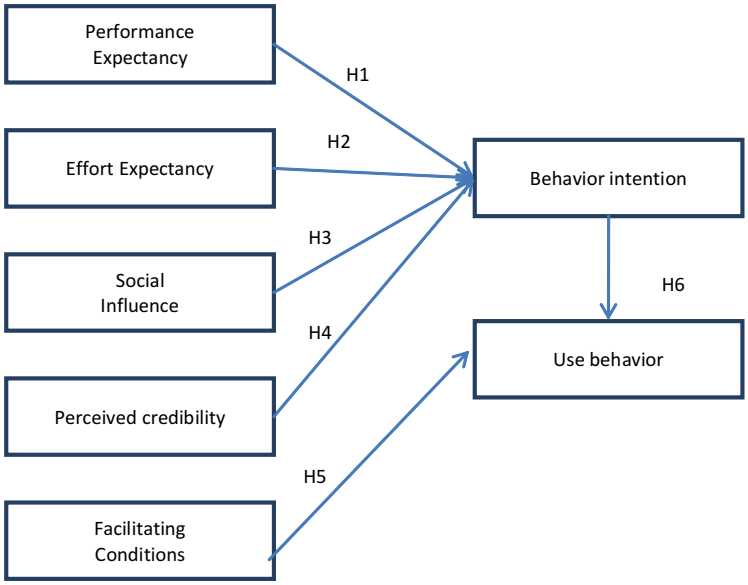

Figure 1: Proposed Theoretical Model

Source: Authors' Own Compilation

Effort Expectancy: Effort expectancy is defined" as the degree of ease associated with the use of system"(Venkatesh *et al.*, 2003). The root constructs of effort expectancy from previous models are "perceived ease of use (Davis 1989; Davis *et al.* 1989), complexity (Thompson *et al.* 1991) ease of use (Moore and Benbasat 1991)". With regard to effort expectancy, users want to experience ease of using certain technology. Generally E transactions are preferred over traditional way of transacting only if individuals believe that technology is easy to use. The same has been validated in research studies (Foon and Fah, 2011; Oliveira *et al.*, 2014). Further few studies are there that contradict the belief of effort expectancy being a significant predictor of behavior intention (Essel, 2022; Imm *et al.*, 2019; Pobee, 2022; Sánchez-Torres *et al.*, 2018; Tarhini *et al.*, 2016).

H2: Effort Expectancy (EE) will have a significant positive impact on the intention to use internet insurance services.

Social influence: Social Influence is defined "as the degree to which an individual perceives that it is important others believes he or she should use the new system" (Venkatesh *et al.*, 2003). The synonyms constructs that are already used in other theories are "subjective norm (Ajzen 1991; Davis *et al.* 1989;

Fishbein and Ajzen 1975; Mathieson 1991; Taylor and Todd 1995a, 1995b), social factors (Thompson *et al.* 1991), Image (Moore & Benbasat 1991)" (Venkatesh *et al.*, 2003). It is believed that individual generally get influenced by their peers and friends around them. This construct is backed by research studies where it has been found that social influence has statistical significant positive influence on behavior intention (Dissanayake *et al.*, 2022; Dwivedi *et al.*, 2019; Imm *et al.*, 2019; Pobee, 2022; Tarhini *et al.*, 2016).

H3: Social Influence (SI) will have positive association with the behavior intention to use internet insurance services.

Perceived Credibility: Individual always found themselves in a dilemma regarding privacy and security while transacting online. Some users are risk averter and hence do not opt digital mode for security and privacy reasons. It is believed that PC is very significant construct in explaining the behavior intention to make use of electronic mode of transaction. Further user resists to use technology because some personal information is asked from while using technology (Tarhini *et al.*, 2016).Thus perceived credibility is significant driving determinant of behavior intention. This has been proved by various research studies(Aderonke &Charles, 2010; Chuchuen, 2016; Jalal *et al.*, 2011; Tarhini *et al.*, 2016; Yu *et al.*, 2021).

H4: Perceived credibility will have positive impact on behavior intention to use internet insurance services.

Facilitating Conditions: Facilitating conditions are defined "as the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system"(Venkatesh *et al.*, 2003) . The synonym constructs of facilitating conditions is "Perceived Behavioral Control (Ajzen 1991, Taylor and Todd 1995a, 1995b)" (Venkatesh *et al.*, 2003).

Further facilitating conditions have been associated with the facilities such as desk support, training program etc (Dwivedi *et al.*, 2019). Moreover good numbers of studies have found that facilitating conditions have significant relationship with behavior intention (Dwivedi *et al.*, 2019; Oliveira *et al.*, 2014)

H5: Facilitating conditions will have positive influence on actual use behavior.

Behavior Intention: Behavior Intention(BI) significantly impact the actual use of technology (Tarhini *et al.*, 2016; Venkatesh *et al.*, 2003). The same can be tested by the below hypothesis:

H6: Behavior intention will have a positive relationship with use behavior.

3. Research Methodology

This study used structured questionnaire that consists of 33 items to collect the data from users of internet insurance. This study mainly focused on those respondents who are having either health insurance or life insurance and are using online / portal insurance services. The data was collected from offline mode through purposive sampling method .The five point Likert scale was integrated to understand behavior intention towards using technology. The total of 700 questionnaire was distributed out of which 437 complete questionnaire was found fit for further analysis. The demographic data splits into various categories such as gender i.e. male and female, education containing categories such as graduation, diploma, post graduation and PhDs. Further experience of using computer system and internet technology has been ingrained with grouping into four categories as discussed below (Table 1).

Table 1: Demographic Profile

Category	*Percentage*
Gender	
male	60.4
female	39.6
Experience of using computer system:	
Less than 2 years	2.1
2-5 years	32.7
5-10 years	42.8
More than 10 years	22.4
Experience of using Internet system:	
Less than 2 years	4.6
2-5 years	52.6
5-10 years	31.1
More than 10 years	11.7

Source: Authors' Own Compilation

4. Data Analysis and Interpretation

This research employs structural equation modeling to examine the impact of performance expectancy, social influence, effort expectancy, credibility on behavior intention to use internet insurance services. The structural equation modeling is two stage process i.e. measurement model and second stage is structural model testing (Anderson & Gerbing, 1988).

Measurement model validity measure: In measurement model, convergent validity through composite reliability and average variance extracted is examined (Table 2). Average variance extracted

Table 2: Composite Reliability, Cronbach Alpha, Average Variance Extracted (Fornell & Larcker, 1981)

Constructs	*Cronbach alpha*	*Composite Reliability*	*Average Variance Extracted*
Performance Expectancy(PE)	.909	0.910	0.670
Effort Expectancy(EE)	.886	0.846	0.580
Social Influence(SI)	.908	0.909	0.666
Facilitating Conditions(FC)	.874	0.874	0.636
Perceived Credibility(PC)	.914	0.916	0.645
Behavior Intention(BI)	.896	0.897	0.637
Use behavior(UB)	.925	0.910	0.718

Source: Authors' Own Compilation

and composite reliability should be greater than .5 and 0.7 respectively (Fornell & Larcker, 1981). Both of these measures are above their threshold limit that signifies the validation of convergent validity. The cronbach alpha is measured to examine the internal consistency of the scale. And it should be higher than (0.7) and the same has been validated in the results (Table 2).

Also the Discriminant validity is assessed by weighing the average variance extracted with correlation of each variable of every squared , thus ensures that constructs more relates to their own statements rather than items of other constructs (Fornell & Larcker, 1981) (Table 3).

Table 3: Discriminant Validity (Fornell & Larcker, 1981)

	P.E.	*E.E.*	*S.I.*	*F.C.*	*P.C.*	*B.I.*	*U.B.*
P.E.	0.818						
E.E.	0.367***	0.761					
S.I.	0.400***	0.431***	0.816				
F.C.	0.331***	0.340***	0.390***	0.797			
P.C.	0.369***	0.465***	0.492***	0.380***	0.803		
B.I.	0.471***	0.505***	0.600***	0.478***	0.674***	0.798	
U.B.	0.448***	0.320***	0.542***	0.437***	0.595***	0.687***	0.847

Source: Authors' Own Compilation

In addition to this model fit is also assessed though goodness of fit indices. Measurement model and Structural model's fit indicators shows satisfactory values as recommended (Table 4).

Table 4: Threshold Limits for Indices: (Hu & Bentler, 1999) and Hair *et al.* (2010)

Model fit indices	*Recommended value*	*Measurement Model indices*	*Structural Model indices*
GFI	>0.90	.925	.918
AGFI	>0.80	.911	.904
CFI	>0.90	.984	.980
NFI	>0.90	.937	.933
RMSR	<0.10	.026	.034
RMSEA	<0.08	.027	.030
Chi square	P<0.05	621.017	668.600
Df	-	474	479

Source: Authors' Own Compilation

Structural Model

In the second stage, structural relationship between constructs is examined by forming structural paths. The hypothesis formulated above are tested in the structural model and are as follows:

Table 5: Hypotheses

Hypothesis	*Path*	*Path coefficients*	*Results*
H1	PE → BI	.138	Supported
H2	EE → BI	.117	Supported
H3	SI → BI	.246	Supported
H4	PC → BI	.408	Supported
H5	FC → UB	.737	Supported
H6	BI → UB	.172	Supported

Source: Authors' Own Compilation

H1 ($\alpha = 0.138, p<0.05$) Performance Expectancy was significant in explaining Behavior Intention. H2 ($\alpha = .117, p<0.05$) Effort Expectancy was found to have significant positive association showing that user's perceives effort expectancy as a significant contributor of Behavior Intention. H3 ($\alpha=0.246, p<0.05$) Social Influence was also statistically significant showing it has positive impact on Behavior Intention. H4 ($\alpha=0.408, p<0.05$) shows that there was significant relation between Credibility and Behavior Intention H5 ($\alpha=0.737\ p<0.05$) is also significant that shows Facilitating Condition have significant impact on Actual Use Behavior. H6 ($\alpha=0.172, p<0.05$), Behavior intention has significant positive relationship with actual Use Behavior. Hence all the hypotheses are supported (Table 5).

5. Discussion

This research Endeavour to elucidate the predictors that impact the behavior intention to use internet insurance services. In this UTAUT2 model is integrated with external variable such as perceived credibility. Performance Expectancy was found to have statistical significant impact on behavior intention. The result is in confirmation with the other studies (Foon and Fah, 2011; Oliveira *et al.*, 2014; Rahi and Ngah, 2018; Sánchez-Torres *et al.*, 2018; Tarhini *et al.*, 2016) and signifies that usefulness of technology have positive influence on behavior intention and hence it is significant predictor of behavior intention .The rationale behind is that users' would certainly prefer technology use if it saves their time, money etc and also give additional benefits such as improve their productivity to perform the task. Further Effort Expectancy was also found to have statistically significant relationship with behavior intention because users' perceives that hassle free and effortless technology use make effort expectancy a significant driver of behavior intention to use online insurance services. this hypothesis was also supported by prior research studies (Dwivedi *et al.*, 2019; Foon and Fah, 2011; Oliveira *et al.*, 2014). On the contrary few studies were of the view that effort expectancy was not significant predictor of behavior intention to use internet technology (Imm *et al.*, 2019; Sánchez-Torres *et al.*, 2018; Tarhini *et al.*, 2016). Social Influence was also found as significant driver of behavior intention. Thus it showed that users get influenced by opinion and behavior of their peers and friends and users tend to follow all the trends followed by their friends and family. The results were backed by the former studies (Bashir and Madhavaiah, 2014; Rahi and Ngah, 2018; Tarhini *et al.*, 2016; Yu *et al.*, 2021). The association between perceived credibility and behavior intention was found to be significant and thus supported

the hypothesis our research study. The same finding was witnessed in our previous research (Aderonke and Charles, 2010; Jalal *et al.*, 2011; Tarhini *et al.*, 2016). User's of technology believes that privacy and security is utmost significant factor while doing any financial transactions as huge amount of funds is involved in this. Facilitating conditions and behavior intention both have significant influence on actual use behavior. This relationship was also confirmed by previous studies (Dwivedi *et al.*, 2019; Oliveira *et al.*, 2014; Tarhini *et al.*, 2016). It is believed that a good infrastructure facility helps the users to use new technology and positive behavior intention leads to actual use behavior.

6. Implications, Limitations and Direction for Future Research

This study focused on UTAUT2 that integrated external variable such as perceived credibility to examine technology acceptance in internet insurance. Perceived credibility was found to be significant determinants while deciding to use technology**.** The user perceives that security and privacy is extremely vital as systems ask for personal credentials from them while signing up for an electronic service. Also as huge amount of money is involved, individuals tends to refrain themselves from using technology for the risk of losing money. This study explains that technology usefulness, ease of use, peer influence, infrastructure facilities, security and privacy influence users' decision to use technology.

These kind of studies have already been conducted in other financial services sectors such as electronic banking but this study is one of first such study in Punjab that examines technology acceptance in internet insurance.

The limitation of this study is that constructs used in study could be accompanied by some other important constructs such as trust, self efficacy that also have significant impact on behavior intention to use internet insurance. Further it is suggested that this model can be used in other geographical areas to observe the difference to enhance the online financial services(Sanchez-Torres *et al.*, 2018).

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Appendix

A. Measurement of items

Performance Expectancy: (Venkatesh *et al.*, 2003; Zhou *et al.*, 2010)

PE1: I save time while using online insurance.
PE2: Online insurance optimize my financial operations.
PE3: Online insurance allows me to make payment quicker.
PE4: Online insurance decreases my productivity.
PE5: Using online insurance enable me to accomplish task more quickly.

Effort Expectancy : (Venkatesh *et al.*, 2003)

EE1: Using online services is easy for me.
EE2: My interaction with online insurance services is understandable.
EE3: My interaction with online insurance services is clear.
EE4: I find that using online insurance is difficult.
EE5: I am skillful in using online insurance services.

Social Influence: (Venkatesh *et al.*, 2003; Yeoh *et al.*, 2011)

SI1: Those people that influence my behavior think that I should use digital insurance.
SI2: Those people that are important to me think I should use online/digital insurance.
SI3: Friends use digital insurance service.
SI4: My working/studying environment support online/digital insurance service.
SI5: Using online digital insurance services indicate me to have a higher status than those who don't.

Facilitating conditions: (Venkatesh *et al.*, 2003; Yeoh *et al.*, 2011)

FC1: I have the resources necessary to use the service.
FC2: I have the knowledge necessary to use the service.
FC3: All the contents of internet insurance service are easy to read and easy to understand.
FC4: Internet insurance is compatible with other technologies I use.

Use behavior: (Goodhue & Thompson, 1995; Zhou *et al.*, 2010)

UB1: I use online insurance services.
UB2: I use online insurance services to manage my insurance policy.
UB3: I use online insurance services to make insurance payment

Behavior intention: (Hanafizadeh *et al.,* 2014; Kim *et al.,* 2009; Lee & Lee, 2012)

BI1: I intend to use online insurance services in the future as well.
BI2: I use online insurance services for different kind of insurance services.
BI3: I believe that adopting online insurance services is worthy for me.
BI4: I have intention of making my mobile payments by using online insurance services.
BI5: I have the intention of making claim by online mode.

Perceived credibility : (Nasri & Charfeddine, 2012).

PC1: I trust in the technology an online insurance company is using.
PC2: I trust in the ability of an online insurance to protect my privacy.
PC3: I trust in an online insurance and insurance company.
PC4: I am not worried about the security of an online insurance.
PC5: Matters of security have no influence on using an online insurance.
PC6: Using an online insurance is financially insecure.

B. Items and Items Loadings

Constructs	*Items*	*Items Loading*
Performance Expectancy	PE1	0.762
	PE2	0.773
	PE3	0.839
	PE4	0.821
	PE5	0.85
Effort Expectancy	EE1	0.785
	EE2	0.747
	EE3	0.809
	EE4	0.818
	EE5	0.742
Social Influence	SI1	0.763
	SI2	0.772
	SI3	0.769
	SI4	..815
	SI5	0.785
Facilitating Conditions	FC1	0.77
	FC2	0.838
	FC3	0.82
	FC4	0.801
Perceived Credibility	PC1	0.719
	PC2	0.749
	PC3	0.763
	PC4	0.791
	PC5	0.818
	PC6	0.773
Behavior Intention	BI1	0.752
	BI2	0.758
	BI3	0.792
	BI4	0.812
	BI5	0.772
Use Behavior	UB1	0.735
	UB2	0.715
	UB3	0.645

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Factors Influencing Scaling Strategies of Indian Microfinance Institutions

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Microfinance institutions, Scaling strategy, Social performance, Scaling wide, Scaling deep, Social enterprise

JEL Classification

G20, G21, G23, G29

Abstract: Efficient selection of scaling strategies can help microfinance institutions (MFIs) to scale up their social impact. There can be various factors affecting the decision of these institutes regarding the selection of either scaling wide or scaling deep strategy. This paper aims at analyzing the effect of institution-specific factors on the selection of scaling strategy of MFIs. Ordinary regression model is used for analysis, as the study considers cross-sectional data of 204 Indian MFIs for the year 2020.The results show that number of branches, number of staffs, gross loan portfolio, impact scaling wide strategy and provision for non-financial services influence scaling deep strategy. India is a developing nation and microfinance institutions play a crucial role in the process of social and economical development of the country. Research on Indian MFIs which can suggest for the consideration of various internal factors in designing scaling strategies will be helpful in deriving maximum benefits from the activities of MFIs.

1. Introduction

There are certain social phenomena, which affect not only social growth but also the economic development of any nation. Some of such phenomena are poverty, unemployment, gender inequality. There have been a lot of efforts put by different enterprises to eradicate these issues, especially the efforts of social enterprises. These social organizations work hard to create a significant social impact. In the process, many organizational strategies are developed and adopted by these enterprises. Strategies adopted by social enterprises for enhancing social impact are called scaling strategies. Social enterprises as hybrid institutes pursue social missions while operating through commercial business models (Santos *et al.,* 2015). So, this is very important for these enterprises to maintain a proper balance between social mission and economic sustainability (Doherty *et al.,* 2014). As hybrid organizations, they need to combine

different intuitional logic in such a manner that would help them in achieving their dual objectives (Battilana and Dorado, 2010). Bédécarrats *et al.* (2012) stated that achieving dual objectives is not impossible if well-planned strategies can be implemented. Institutional logics are the values driving organizational functioning and assumptions defining organizational goals. Combining these logics, social enterprises try to enhance social impact. Scaling up social impact means different techniques used by social enterprises to enhance their impact on resolving social problems or meeting social needs.

Microfinance institutions are one of the important categories of social enterprises, providing varieties of financial services to low-income populations to help them in raising their income levels and resolving the poverty problem. Microfinance, one of the popular terms in the area of financial inclusion, is considered as a developmental tool to improve the standard of living of the poor through a sustainable business model (Mishra and Baral, 2020). It includes provision for savings, deposits, small loans, and insurance products to low-income households. Nobel laureate Muhammad Yunus first initiated the concept of microcredit and microfinance by establishing Grameen Bank, Bangladesh in 1976. After the lunch of the microcredit summit in 1997, which highlighted the relevance of microfinance as an intermediary for social and economical development, these institutions are growing rapidly all over the world.

There are multiple ways through which impact can be increased. Some organizations may choose to focus on the enhancement of coverage area, expansion of size, enlarging target customers group with the concept that social impact can be enhanced by serving a wide range of people. Some other institutions aim at offering different products and services in a niche market, focusing on a small customer group with the assumption that social problems can be resolved through complete root out of these problems even if it is for a small group of people. These two are contrasting approaches to create social effects. Social enterprises can develop various business operational techniques to resolve social problems and create long-term sustainable modifications in society. These institutions can join hands with the government for solving different social issues. Various resources available such as-financial and human resources and various institutional factors-geographical locations, affect the extent to which these social organizations can influence government policies (Han, 2017). The biggest challenge faced by social enterprises is to enhance their social impact (Nicholls, 2010; Lyon and Fernandez, 2012; Weber *et al.,* 2012). Existing literature reveals two broad dimensions of scaling i.e. scaling wide (breadth) and scaling deep (depth) (Desa and Koch, 2014). In breadth scaling organizations give more importance to extend their geographical area coverage, client base, functioning budget, etc. (Uvin, 1995). It relies upon the economies of scale concept as the cost gets reduced when same products and services are provided to more and more people. Breadth scaling is related to economies of scaling because under economies of scale focus is on cost-saving through mass production (Kogut, 1985), the similarity of products (Darr *et al.,* 1995), and the use of parent organization's goodwill (Ingram and Rao, 2004). Similarly, under breadth scaling organizations try to reduce cost and enhance social impact by multiple replications of products and services across wide geographical areas. Social motive under breadth scaling is defined in a narrow sense. With proper functional strategies, sustainable MFIs with a wide breadth scaling can reach the poor same as poverty-oriented MFIs with narrow breadth. Example-

sustainable credit unions of Colombia were having more poor clients compared to poverty oriented banks in Costa Rica and Guatemala (Paxton, Cuevas, 1998). This strategy results in upscaling and expanding scale. Financial sustainability and commercial success are given importance under this strategy. Some of the MFIs who have adopted this strategy are Pierre Omidyar, ProCredit Holding, Bancosoland Compartamos (Zhao and Han, 2019).

In contrast, enterprises going for depth scaling expand the number and type of activities to provide varieties of services to limited number of clients. Here the focus is not on reaching more and more people rather serve a small group of people in the best manner. Microfinance services to the poorest clients are considered more valuable compared to others. For example, a small loan to a widow is more valuable than a loan to a richer person. The Supply cost of microfinance increases with depth strategy, so it leads to high social cost. Compared to the rich, the poor generally are more diverse and less capable of indicating their ability to repay loans. This is the reason for which it costs more for a lender to find out the risk of a loan to the poor (Conning, 1999). Depth scaling strategy is also known as deep scaling and it focuses on expanding scope. Social, economic empowerment, inclusive practices, and community participation, social capital building, are given more importance under this strategy (Mayoux, 1995; Sanyal, 2009). MFIs adopting this strategy include Grameen Bank, Brac, Pro Mujer, Jamii Bora, Microcredit enterprises (Zhao and Han, 2019).

There are lots of internal and external factors, which can influence the selection of scaling strategies by MFIs. MFIs need to consider and analyze these factors properly before selecting either breadth or depth scaling strategy. Each scaling strategy has its way of functioning and involves certain challenges. MFIs need to understand various dimensions of scaling strategies for efficient selection of the strategy. This study focuses on one such dimension i.e. factors influencing scaling strategies of MFIs. The analysis aims at finding out the MFI specific factors, which can influence their scaling strategies by considering data of Indian MFIs. The main question which the study aims to address is how do different institution-specific factors (legal structure, number of branches, number of staff, maturity, non-financial services, gross loan portfolio, and operation in number of states) affect the scaling strategies adopted by MFIs? India is one of the developing nations in the world, having huge potentials for contributing to world economic development. The country faces many social challenges hindering full-fledged economic development. Microfinance institutions play a vital role in resolving these social problems. Research in this direction can give more and more inputs for enhancing the social impact of MFIs. This study adds to the present literature by analyzing different scaling strategies adopted by MFIs and by evaluating various MFI specific factors which influence selection decision of scaling strategies.

The rest of the paper is arranged as follows-review of literature, objective and hypothesis, research methodology, empirical results, findings and suggestions, limitations of the study and suggestions for future research and conclusion.

2. Review of Literature

We review the literature on scaling strategies of MFIs. Scaling is the process of enhancing an organization's impact to achieve the social objectives, for which it works (Desa and Koch, 2014). It

indicates the ability of social enterprises to meet social demand (Bradach, 2003). Social enterprises always aim at enhancing their social impact by adopting different strategies. These strategies are called scaling strategies. Scaling strategies play a crucial role in determining the social performance of social enterprises. (Uvin *et al.,* 2000) explained some taxonomies of scaling, such as- increasing activities, expanding coverage and size, enhancing organizational sustainability, broadening indirect social impact. Microfinance institutions, being one of the important categories of social enterprises, also need to focus on selecting a proper scaling strategy to achieve the targeted social performance. This is the key to success for these institutions (Dees *et al.,* 2004).

There are two important scaling strategies i.e.: scaling deep and scaling wide. Scaling up is another type of strategy, which focuses on finding out of opportunities and challenges at organizational level with the aim of modifying the system entirely which created social problems. Organizations can always develop strategies to utilize these opportunities and to overcome the barriers by using the available resources. These strategies can focus on maximizing social impact through the process of networking. Scaling up is to affect laws, regulations, policies and procedures, which govern organizational functioning. Scaling deep focuses on creating more in-depth social impact by increasing the number and providing better quality products and services. In this case, MFIs operate in a niche market but with the objective of creating deep social impact, such as- employment generation, poverty alleviation, women empowerment. This strategy is based on the concept of economies of learning (Dieleman and Sachs, 2008). In economies of learning, organizations try to improve profitability by specializing in a particular product or service. In the same manner, under depth scaling strategy, MFIs focus on a particular customer group and try to serve them in the best manner. It is believed that a strong social influence can be created through deep root out of social problems even if it is for a small number of people. In contrast, scaling wide strategy gives more importance to widening geographical outreach. Here the objective of MFIs is not to create a deep social impact as it is in the case of deep strategy, but to help a large number of clients in increasing their income level, educational level, etc. MFIs following this strategy try to enlarge their customer base (Scheuerle and Schmitz, 2016). The main logic is providing services to a large number of people can eradicate social problems. This strategy is based on the concept of economies of scale. Under economies of scaling, organizations try to reduce costs and improve profitability by producing a large volume of products. In the same manner under scaling wide strategy, organizations try to create social impact by replicating the same products and services to more customers. Here the entire system is replicated and not just specific capabilities. Replication of the entire system means enlarging coverage and size, enhancing sustainability, increasing the number of activities.

Two important institutional logics determining depth and breadth scaling strategies are organizational goals and functioning principles (Zhao and Han, 2019). Institutional logics are the rationalities with which organizations operate. These are the logics that determine the behaviour of social enterprises and which are the foundation of success (Thornton and Ocasio, 1999). An Organizational goal can be defined as the basic purpose for which an enterprise operates. Social core and social spillover can be two separate dimensions for setting organizational goals. In social core, the main focus lies at resolving a deep social problem e.g. women empowerment, enhancing the standard of living of the poor. This dimension focuses on MFIs' intervention in addition to providing products

and services to create social impact (Santos *et al.,* 2015). Social impact is given more importance compared to economic efficiency. Under social spillover, enterprises run with the assumption that the economic sustainability of the organization can enhance social impact in the future. So, their goals lie at a surface level e.g. making women self-employable, helping poor people for earning more income. Social spillover focuses on rapid growth to cover as many people as possible to enhance social impact(Zhao and Han, 2019). Products and services are provided to clients without much intervention by MFIs. Both social core and social spillover dimensions capture the entire concept of organizational goal by comparing social and economic objectives of MFIs. These describe the concept of social impact and the importance of social and economic goals in strengthening the social impact. In social core, more focus is on social impact rather than the economic benefits of products and services. But in social spillover more importance is given to the economic outcome of products and services and comprehensive social impact is considered as a by-product. MFIs following social core design products and services to build up social capital among clients, whereas the economic outcome of products and services are given more attention by MFIs following social spillover. The approach of measuring successful social performance differs depending upon the scaling strategy selected. For example, MFIs following a wide strategy count the number of borrowers and the amount of loans to measure social performance, whereas, meaningful utilization of loans provided (female entrepreneurs' income growth or clients' children going to school) is analyzed by MFIs following a deep strategy.

Functioning principles can focus on building social capital or strong enterprise-client relationship. The functioning principle of client-client reciprocity gives more importance to the build-up of socio-emotional relationships between clients. The reason behind this is clear in the sense; development of socio-emotional bonding among clients would encourage them to work together for solving each other's social problems. Whereas under enterprise-client reciprocity, microfinance institutions focus on building a good enterprise-client relationship, so that, clients would stay obliged for repaying the loan taken. The functioning principle of Client-client reciprocity or enterprise-client reciprocity followed by the microfinance institutions would decide different activities such as allocation of time, staff and money, training of staffs, performed to achieve their social mission. Those organizations which encourage the development of social capital, believe that social impact can be enhanced if people build up the social relationship among themselves. Those enterprises which try to develop the enterprise-client relationship, value this as more effective in creating social impact. Organizations following a deep scaling strategy would encourage client-client reciprocity (building social capital) and follow the social core dimension for achieving the dual objectives of social enterprises. A wide scaling strategy would combine two approaches i.e. enterprise -client relationship and social spillover.

Literature describes these institutions as blending hybrids (Santos *et al.,* 2015; Pache and Santos, 2013; Dees and Anderson, 2003a) because their social impact is contingent (they have to intervene to create social impact, giving financial services alone is not enough) and most of the clients are beneficiaries. Suppose a microfinance institution provides educational loans to clients, but providing loans alone is not enough to achieve the goal of making society educated. It has to put extra effort by giving training or counseling services to clients to make them understand the importance of education. Most of the clients of MFIs are direct beneficiaries. This means MFIs provide products and services to those who

are expected to get direct benefits from these. It is necessary for MFIs to properly organize their activities to create more and more influence on clients. A proper balance is required to be maintained between their social and commercial goals (Meyskens *et al.* 2010; Mair *et al.,* 2012; Maak and Stoetter, 2012). Microfinance institutions need to choose their scaling strategy carefully to scale up social impact because it would involve a lot of challenges and risks.

There are lots of factors (both internal and external), which help MFIs in deciding about their scaling strategy. The ecosystem model explained by (Han and Shah, 2019) states that different internal factors, such as- financing source, governance structure, information and communication technology, ability of the organization to tie up with different internal and external stakeholders, affect the capacity of these institutions to create social impact. It is important to find out the MFI specific factors, which can influence their selection of scaling strategy. The fundamental understanding of institutional factors can help MFIs to better analyze their scaling strategies. This also can guide policymakers to design suitable policies regarding MFIs to enhance their social impact. Existing literature doesn't have evidence in this dimension. So, this paper focuses on analyzing the MFI specific factors which can affect their scaling decision by considering Indian MFIs. India is an emerging economy, facing many social and economical constraints. MFIs do have an important role in the economic development process of the country. So, it is important to understand what factors can influence the scaling strategy of Indian MFIs.

3. Objective and Hypotheses

The present study aims to analyze the impact of MFI-specific internal factors on scaling strategies selection decision by these institutions. For this purpose, the study aims to test the following two hypotheses:

1. H0: MFI specific internal factors do not influence scaling wide strategy decision adopted by MFIs.

   H1: MFI specific internal factors influence scaling wide strategy decision adopted by MFIs.

2. H0: MFI specific internal factors do not influence scaling deep strategy decision adopted by MFIs.

   H1: MFI specific internal factors influence scaling deep strategy decision adopted by MFIs.

As adoption of a proper scaling strategy is important for achieving desired social performance objective, this is vital to find out different factors which can influence the scaling techniques. Proper knowledge about these factors will help MFIs to design appropriate scaling strategies. The microfinance industry in India is at a rapid growth phase and is expected to contribute a lot towards the economic development of the nation. The analysis on scaling strategies of Indian MFIs would be helpful for these institutions to meet the expectation.

4. Research Methodology

4.1. Sample

The study is based on secondary data of204 Indian MFIs for the year 2020. As per the latest Sa-Dhan report (directory of Microfinance Institutions in India, 2020), there are total of 234 MFIs in India. But

considering the availability of data on both dependent and independent variables, only 204 MFIs could be taken up for the analysis. Data was collected from secondary source (report on directory of Microfinance Institutions in India, 2020) published by Sa-Dhan, a self-regulatory organization to assist Indian MFIs to better serve the poor. Microsoft Excel program was used for manual collection of data and Stata software was used for running the regression models. Data cleaning was based on the criteria of availability of data of both dependent and independent variables. Finally, 204 Indian MFIs data is used for analysis.

4.2. Variable Definition

The study considers one indicator representing scaling wide strategy (client outreach) and another for scaling deep (number of products and services offered) as two dependent variables. Client outreach is considered as a measure of scaling wide strategy because MFIs which believe that social impact can be created by serving more and more people do adopt scaling wide strategy. MFIs believing in niche market service, try to offer more products and services to a small group of people to fulfill all their requirements and create a deep social impact among these people. For this reason, the total number of products and services offered by Indian MFIs is considered as a variable denoting scaling deep strategy. Total of seven independent variables (legal structure, number of branches, number of staff, maturity, non-financial services, gross loan portfolio, and operation in number of states) are considered for analysis. All these variables are MFI specific variables as the study targets to find out the impact of institution-specific internal factors on scaling strategies adopted by MFIs. Legal structure determines whether a particular MFI is a for-profit or not-for-profit MFI. Not-for-profit MFIs tend to have better social performance compared to their for-profit counterparts (Cull *et al.,* 2009). Similarly, the scaling strategies adopted by them would differ to achieve the targeted social performance goal. Total number of branches and staff MFIs have affect their functioning strategies. The study considers these two variables to find out their influence on scaling strategies adopted. Maturity or age is an important internal factor that can influence the social performance of MFIs (Rashid and Twaha, 2013). With growing age as the old MFIs continue gaining more experience, they tend to adopt different strategies and techniques compared to new MFIs. Provision for non-financial services is an important dimension of the social contribution of MFIs. Health and sanitation facilities, financial literacy programs, capacity building programs, skill enhancement training etc. are some of the non-financial services provided by MFIs. The study aims to analyze the impact of this factor on scaling strategies adopted. The gross loan portfolio is the total principal amount of all outstanding client loans. The more the loans offered by MFIs, the more they can attract customers. But in this case, they might be offering a lesser number of other products and services to minimize the cost. With this expected impact, this study sight to find out the impact of gross loan portfolio on client outreach and number of products and services offered. Operation in number of states is considered as an independent variable for analysis. When MFIs operate in more number of states, they get more exposure in terms of types of customers and operational environment. This can result in the adoption of different scaling strategies to improve social performance. Details about dependent and independent variables are given in table 1 below.

Table 1: Definition and Sources of Variables

Dependent Variables		*Definition*	*Source*
No. of products and services		Total number of products and services offered	Sa- Dhan report
Client outreach		Number of clients served	Sa-Dhan report
Independent Variables	*short form*	*Definition*	*Source*
Legal Structure	ls	Dummy variable 1= if not-for-profit (society, trust, cooperative) 0=if for-profit (NBFC-MFI, section 8 company, NBFC)	Sa-Dhan report
Branch	Branch	Number of branches	Sa-Dhan report
Staff	Staff	Number of staffs	Sa-Dhan report
Maturity	Maturity	Age of MFIs	Sa-Dhan report
Non-financial services	nfs	Dummy variable 1= if MFIs provide non-financial services 0= otherwise	Sa-Dhan report
GLP	glp	Gross Loan Portfolio	Sa-Dhan report
No. of states	states	No. of states in which MFIs operate	Sa-Dhan report

Source: Authors' Own Calculation

4.3. Conceptual Model

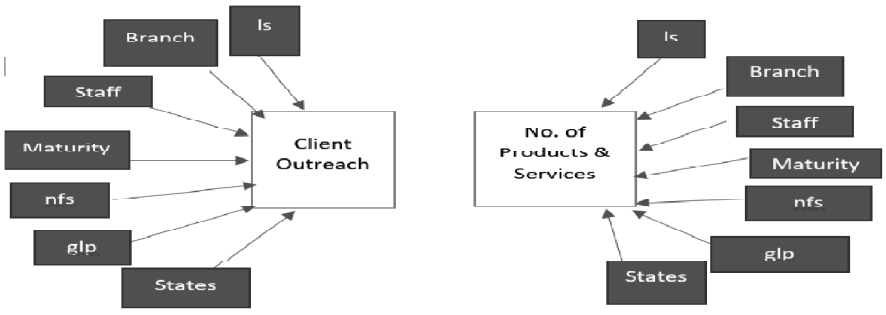

Figure 1: Conceptual Model of the Study

Source: Authors' Compilation

4.4. Model Specification

To investigate the factors influencing scaling strategies of Indian MFIs, ordinary Least Square (OLS) is applied for cross-sectional data analysis. The following models are used to find out the factors influencing scaling deep and scaling wide strategies.

$$Clientoutreach = \alpha + \beta_1\, ls + \beta_2\, branch + \beta_3\, staff + \beta_4\, maturity + \beta_5\, nfs + \beta_6\, glp + \beta_7\, states$$

$$No.\ of\ productsandservices = \alpha + \beta_1\, ls + \beta_2\, branch + \beta_3\, staff + \beta_4\, maturity + \beta_5\, nfs + \beta_6\, glp + \beta_7\, states$$

5. Empirical Results

Table 2 gives the descriptive statistics for all the variables. The average client outreach of MFIs is 2.83 lakhs. The standard deviation is 7.38 lakhs. This high std. deviation shows that there is a high difference in the scaling wide strategy of Indian MFIs. Some are able to widen their client base, whereas some others have limited outreach. Average number of branches is 94. There is a huge difference between MFIs regarding the number of staff with whom they operate as the standard deviation is 1511. However, the average staff number is 685. Most of the MFIs in India have been established in near years to each other as the standard deviation of maturity is 8, less than the average of 13. The number of products and services offered by Indian MFIs is around 3 and there is not much difference between MFIs regarding this as standard deviation is 2. Average gross loan portfolio is 293.74 crores and standard deviation is very high compared to the average GLP i.e. 815 crores. This indicates a wide difference between MFIs regarding their loan portfolio. Most of the MFIs are operating in around 3 states.

Table 2: Descriptive Statistics

Variables	*Mean*	*Median*	*Std. Dev.*	*Min.*	*Max.*
Client Outreach	2.83	0.15	7.38	0.0002	36
Branch	94	12	230	1	832
Staff	685	69	1511	2	7653
Maturity	13	9	8	3	22
Products, services	3	2	2	1	7
GLP	293.74	17.7	815	0.03	8428
No. of states	3	1	4	1	19

Source: Compiled using Stata result

Table 3 indicates VIF to check if there is multicollinearity problem in the model. The result indicates that there does not exist multicollinearity among independent variables as VIF are less than 5 for all independent variables.

Table 3: Multicollinearity Test Result

Variables	*VIF*
Legal structure	1.199
Branch	3.026
Staff	4.755
Maturity	1.038
Non-financial services	1.066
GLP	3.545
No. of states	3.328

Source: Compiled using Gretlresult

Table 4 indicates the result of Breusch-Pagan test. Breusch-Pagan test is a test for checking heteroskedasticity in a regression model. It tests whether estimated variance of the residuals from a regression are based on the values of the independent variables of the model. The result of the test indicates that there are no heteroskedasticity at 5% significance level.

Table 4: Breusch-Pagan Test for Heteroskedasticity

OLS, using observations 1-204 (n = 204)
Dependent variable: scaled uhat^2
Explained sum of squares = 15.584

	Coeffcient	*std. error*	*t-ratio*	*p-value dd*
Const	–0.155357	0.705787	–0.2201	0.8260
Legal structure	–0.222356	0.657997	–0.3379	0.7358
Branch	0.00630355	0.00630893	0.9991	0.3190
Staff	0.000347301	0.00118763	0.2924	0.7703
Maturity	9.95250e-05	0.00120501	0.08259	0.9343
Non-financial services	0.711767	0.753682	0.9444	0.3461
GLP	0.000143455	0.00102567	0.1399	0.8889
No. of states	0.251286	0.149369	1.682	0.1941

Test statistic: LM = 7.792192,
with p-value = P(Chi-square(8)>7.792192)=0.0855612
Source: Compiled using Gretlresult

Table 5 and Table 6 indicate the results of ANOVA. The results indicate that the two models are significant predictors of dependent variables.

Table 5: ANOVA for 1st Regression Model

	Sum of squares	*df*	*Mean square*
Regression	3223.59	8	402.948
Residual	38.0763	194	0.19627
Total	3261.66	202	16.1468

R^2 = 3223.59 / 3261.66 = 0.988326

F(8, 194) = 402.948 / 0.19627 = 2053.03 [p-value 5.17e-183]

Source: Compiled using Gretlresult

Table 6: ANOVA for 2nd Regression Model

	Sum of squares	*df*	*Mean square*
Regression	164.318	7	23.474
Residual	186.638	195	0.957116
Total	350.956	202	1.7374

R^2 = 164.318 / 350.956 = 0.468202

F(7, 195) = 23.474 / 0.957116 = 24.5258 [p-value 8.3e-024]

Source: Compiled using Gretlresult

The results of the first regression model (Table 7)indicate that number of branches has a significant positive impact on client outreach. If the number of branches increases by 1, the client number increases by 0.0067lkhs. The establishment of more branches by MFIs helps them in reaching more clients. The results indicate that Indian MFIs establishing more branches go for scaling wide strategy. As per this strategy, MFIs try for fast expansion of business to cover as many people as possible to create social impact (Zhao and Han, 2019). Branching is a direct strategy for creating social impact(Dahles et al., 2019). This means branching motivates MFIs to reach more and more clients. The number of staff has a significant negative impact on client outreach. If the number of staff increases by 1, client outreach decreases by 0.0006lkhs. Though the impact is minimum, it influences the scaling strategy of MFIs. Setting responsibility with individual staff becomes difficult with more staff in a single branch. This negatively influences staffs' efficiency to reach clients. The results indicate that appropriate staffing is important for scaling. This is supported by findings of (Bloom & Chatterji, 2009). Gross loan portfolio has a positive significant impact on client outreach. When GLP increases by 1 rupee, client outreach increases by 0.0046lkhs. Gross loan portfolio is the total outstanding principal balance of loans. When MFIs provide more loans to clients and they are liberal regarding repayment conditions, GLP increases. This helps MFIs to attract more and more clients.

The findings of the second regression model (Table 7) indicate that the non-financial services dummy variable has a positive significant impact on the number of products and services. This means

MFIs providing non-financial services provide more products and services compared to those who do not provide non-financial services. Non-financial service providers provide around 2 extra products and services compared to those who do not provide non-financial services. Non-financial services providing Indian MFIs go for scaling deep strategy by increasing the number of products and services offered. They focus more on serving limited customers with different types of products and services. The legal structure has a negative impact on client outreach, though the impact is not significant. This means when the MFI is operating as a non-profit making organization, client outreach decreases by 0.0139lkhs. Non-profit making MFIs, such as-society, trust focus more on enhancing living standard of poor even at the cost of their profit. Instead of reaching more people, they try to provide better quality services to a small group of people. So, the impact of this variable is positive on number of products and services offered. Number of branch has a positive impact on the number of products, services offered. Non-financial services dummy variable has positive impact on client outreach, though the impact is insignificant. When MFIs offer non-financial services, more clients get attracted. Age is another factor, which influences the social performance of MFIs (Narwal & Yadav, 2014; Twaha,

Table 7: Regression Estimate

Dependent Variable	*Client outreach*	*No. of products & services*
Model	*OLS*	*OLS*
Independent Variables	*Coefficient*	*Coefficient*
Legal structure	-0.0139	0.0229
	(0.844)	(0.883)
Branch	0.0067***	0.0006
	(0.000)	(0.696)
Staff	-0.0006***	-0.00004
	(0.000)	(0.894)
Maturity	-0.00001	0.00002
	(0.884)	(0.934)
Non-financial services	0.0827	2.1979***
	(0.308)	(0.000)
GLP	0.0046***	0.0003
	(0.000)	(0.267)
No. of states	-0.0203	-0.0399
	(0.210)	(0.265)
Observations	204	204
Adjusted R-squared	0.9879	0.4488

Source: Compiled using Stata result

P values in parentheses

significance at 1% , 5% and 10% levels are indicated by ***, ** and * respectively

2013). As per the findings of this study, age has a negative impact on client outreach and a positive impact on the number of products, services offered. More mature MFIs focus more on providing quality services to limited clients. Gross loan portfolio has a positive impact on the number of products, services offered. Interest money collected on loan amounts is used for providing better services to clients.

6. Findings and Suggestions

The analysis concludes that different MFI specific internal factors have significant impact on client outreach and number of products, services offered. The null hypothesis (different independent variables do not have significant impact on dependent variables) for the study get rejected as the p values are 0.000, showing significant impact of branches, staff and GLP on client outreach. MFIs following scaling wide strategy would focus on creating a large customer base. Enhancing operation through more branches will help MFIs to attract clients, as branching is a direct strategy for reaching more beneficiaries (Dees *et al.,* 2004). Giving small amounts of loans to more clients will also help MFIs for widening their outreach. It is also true that when amount of loan given is small, there is less chance of default in repayment. MFIs can focus on building interpersonal relationship among clients, so that they motivate each other for timely repayment of loan taken. MFIs should try to function with the optimum number of staff to set personal responsibility on individual staff. Staffing is an important organisational capability driving social impact (Smith, 2010). Instead of just recruiting staff, they should focus on giving quality training to staff at regular intervals of time to enhance their skill for managing business activities efficiently. Internal staff position exchange can be helpful for monitoring staff performance. Newly established MFIs can focus more on enhancing their client base because they have to achieve a proper balance between financial sustainability and social performance during the initial years of operation to sustain in future.

As per the results of the study, the non-financial services variable significantly affects number of products, services offered. If the MFIs offer non-financial services, such as- training, consultancy service, financial literacy programs, they tend to design varieties of new products and provide various financial services for the benefit of clients (Nayak and Pradhan, 2020). These MFIs follow scaling deep strategy and offer various products, services to serve a limited number of clients in the best possible manner. Through various training programs, MFIs make their clients educated regarding the use of various financial products, such as- micro credit, micro insurance, micro saving, education loan, vehicle loan, housing loan etc. This ensures that clients become knowledgeable about the uses of these products. Through different training programs MFIs get connected with their clients and can follow how they make use of different financial products and services taken by them. For this reason, the non-financial services dummy variable has a significant positive impact on number of products, services offered. The results also confirm that if the MFIs are not-for-profit MFIs, they follow scaling deep strategy and offer more products and services to their clients. Not-for-profit MFIs mainly work for the benefit of their clients. Their main focus is on serving the clients in better manner rather than earning huge profit. So, these institutions try to design innovative products and services for the benefit of their clients. As the total number of branches has positive impact on number of products, services

offered, these institutions should try to establish more branches for making it easy to distribute various financial products and services among their clients. Establishment of branches in rural areas where people do not have much access to formal financial system, can be helpful in serving the society in better manner. Older MFIs should focus on providing more products, services to their clients for strengthening their social performance scores. The cost of operation becomes high when MFIs operate in more states. It gets difficult for these institutions to design and offer various products to their clients. So, MFIs intending to follow scaling deep strategy can limit their operation to fewer states for creating better social impact. MFIs can follow different strategies for reducing their operational costs. They can tie-up with other financial institutions for providing various financial services to their clients.

The study finds out that certain MFI specific internal variables have significant impact on scaling strategy decisions adopted by these institutions. Considering the results of the analysis several policies can be designed by MFIs to make proper selection of scaling strategy. Policy makers can make suitable policies which will be favourable for functioning of MFIs. MFIs can establish more number of branches especially in rural areas with proper recruitment strategies to operate those branches. Staffs can be trained at regular interval of times to make them update about changes in financial system and economy. By adopting proper recollection strategies, MFIs can grant more amount of loans to clients. Clients should be motivated to repay loan amount on time through group lending system, lending without collateral, provision of additional loan for those who repay on time.

7. Limitations of the Study and Suggestions for future Research

The study is based on secondary data available from published Sa-Dhan report. The results are analysed for Indian MFIs only. Due to focus on Indian MFIs' scaling strategy, the study considers only MFIs operating in India. For more in-depth analysis of scaling strategies, future studies can consider MFIs from other country context. Depending upon availability of data, the present study considers only seven MFI-specific internal factors. Future studies can consider taking other variables that can affect scaling strategy decision of MFIs.

8. Conclusion

Microfinance institutions play a crucial role in the social and economic development process of India. These institutions support the activities of the government in resolving various social problems. While the main objective of MFIs is to work for the betterment of the society, these institutions need to scale up their social impact by selecting various strategies. Scaling strategy selection decision is very crucial for these institutions as they need to maintain a balance between social performance and financial sustainability. Scaling strategy adoption decision gets influenced by various internal and external factors. More and more research need to be conducted for understanding the influence of these factors. This study is in this direction. After statistical analysis of Indian MFIs' data, the study finds that no. of branches, no. of staffs, and gross loan portfolio influence scaling wide strategy significantly. MFIs which operate with more number of branches and staff and give more amounts of loans to customers tend to widen their business operations to wide geographical areas. Non-financial services provision affect scaling deep strategy of MFIs. MFIs which provide various non-financial services, such as-

education services, training, programs to empower women, adopt scaling deep strategy to root out a typical social problem of the targeted customer group. These different factors and their impact should be analyzed properly by MFIs before selecting a scaling strategy. Proper understanding of the influence of individual factors can help these institutions to design suitable strategies for strengthening their social performance standard. This study adds to the existing literature by focusing on different MFI specific internal factors which can affect scaling strategy decision of MFIs. The study will be beneficial to MFIs in knowing the factors to be considered while selecting a scaling strategy to enhance social impact. Policymakers can consider the factors for designing suitable policies to ensure maximum benefits from the activities of these social enterprises.

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Evolution and Future Trends in Global Research on Women Digital Entrepreneurs: A Bibliometric Analysis

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Digital entrepreneurs, Women, Bibliometric review, Female digital entrepreneurs

JEL Classification

B54, L26, L81, L86, M15

Abstract: The study of women in digital entrepreneurship is a vibrant, expanding, and rapidly developing academic subfield with deep roots in the field's history of thought. This paper provides a bibliometric evaluation of the research articles published on female digital entrepreneurs between 2007 and 2023. Publication output, co-occurrence networks, and co-authorship networks were just some of the bibliometric markers employed in the study to reveal recurring topics and directions in the field. According to the research, the number of articles on successful female entrepreneurs on the Internet has increased dramatically over the previous decade. The study also shows how digital tools can help women succeed as business owners online. This research adds to the existing literature on women business owners in the digital sphere and highlights the prospects of entrepreneurship to promote social and economic progress. The essential contribution is a timeline of the topic's development that future scholars can use in developing theoretical frameworks and conducting empirical studies.

1. Introduction

The digital arena has become an increasingly vital sector for entrepreneurship since it offers prospects for new businesses, innovation, and expansion. Entrepreneurs, especially those underrepresented in traditional sectors, have access to novel and exclusive opportunities in the digital world. Mainly women entrepreneurs have been able to use digital platforms to overcome formal entry restrictions and establish profitable firms. Notwithstanding the benefits provided by the digital realm, women entrepreneurs continue to confront substantial obstacles, such as gender bias and discrimination, unequal access to resources and capital, and a lack of exposure and recognition. These difficulties are well-documented in the literature, and a growing corpus of study strives to comprehend and overcome them. An increasing interest in the aspects that contribute to the success of women digital entrepreneurs has emerged in

recent years. Bibliometric analysis, which involves studying the patterns and trends in the literature on a specific subject, can provide significant insights into the present level of research on this topic. This work conducts a bibliometric analysis of the literature on female entrepreneurs in the digital space. This paper aims to identify the most critical research themes, trends, and gaps in the literature and provide a complete assessment of the state of research in this field. We study a large dataset of academic articles, conference papers, and other scholarly publications using various bibliometric methods and methodologies. Our study assesses the existing studies on female entrepreneurs in the digital arena and identifies numerous crucial areas for future investigation.

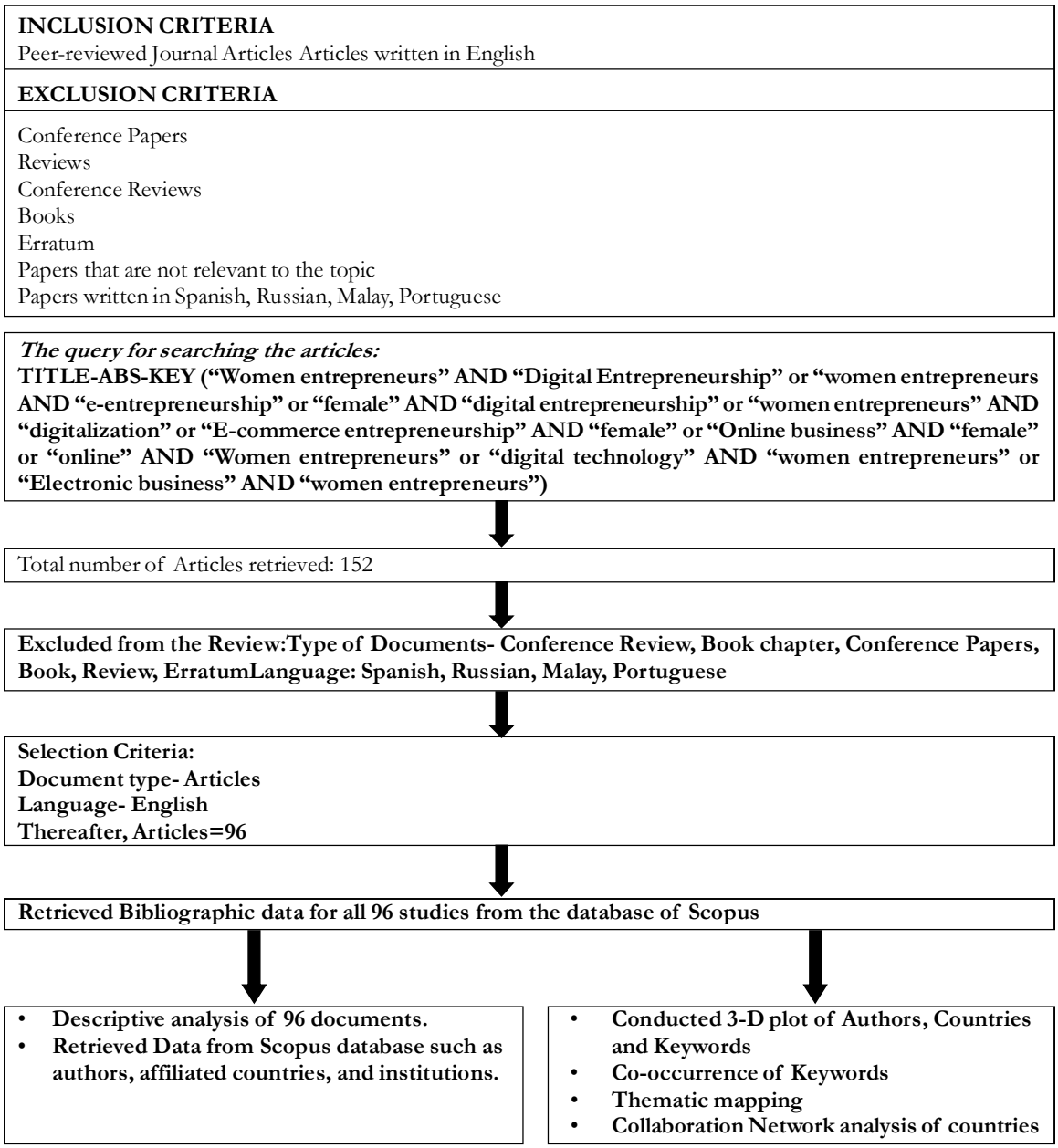
2. Research Methodology

The present study employs bibliometric analysis to examine the literature on female entrepreneurs in the digital environment. Bibliometric analysis is a quantitative research approach that employs statistical and computational methods to analyze and visualize patterns and trends in the scientific literature. It involves collecting, organizing, and analyzing bibliographic data from many publications in a specific field, including authors, journals, keywords, and collaborations. To acquire data for this study, we searched the Scopus database for relevant publications on female entrepreneurs in the digital space- "Women entrepreneurs" AND "Digital Entrepreneurship" OR "women entrepreneurs AND "e-entrepreneurship" OR "female" AND "digital entrepreneurship" OR "women entrepreneurs" AND "digitalization" OR "E-commerce entrepreneurship" AND "female" OR "Online business" AND "female" OR "online" AND "Women entrepreneurs" OR "digital technology" AND "women entrepreneurs" OR "Electronic business" AND "women entrepreneurs". The search scope was restricted to publications published between 2007 and 2023. We applied the following inclusion criteria to select articles for analysis: the paper had to be peer-reviewed, concentrate on women entrepreneurs in the digital space, and be published in English. We extracted bibliographic information from each selected article, including author names, affiliations, publication dates, journal titles, keywords, abstracts, and collaboration information. Each piece of information was entered into a Microsoft Excel spreadsheet for analysis. Biblioshiny and Microsoft Excel were used to analyze the collected data (Saini and Sharma, 2022). We used biblioshiny to generate network maps of co-authorship, country collaboration, and keyword co-occurrence, illustrating the relationships and patterns between authors, articles, and keywords in the scientific literature. In addition, Microsoft Excel was utilized to calculate the frequency, percentage, and ranking of authors, journals, keywords, and institutions in the literature. This investigation was conducted according to ethical principles and guidelines for research involving human subjects. No personally identifiable information was collected or disclosed, and all data utilized in this investigation were accessible to the public. The study did not require ethical approval because it did not entail any intervention or interaction with human participants.

2.1. Study's scope

Using the Scopus database, the current research thoroughly analyzed empirical research papers published in academic journals from 2007 to 2023. Only empirical publications in English and peer-reviewed journals were considered for inclusion in this review. Articles published as conference reviews, conference papers, or book chapters were not considered. The figure compiled below summarises the selection criteria used by the researcher to choose the most pertinent documents. The researcher stored the

retrieved data with due care. The extracted data were imported as comma-separated values (.csv) and BibTeX files and kept in the Mendley library for further study. In addition, we preserved a copy of selected articles in the Scopus saved list folder for future bibliometric study. The next part presents and analyzes bibliographic data from the database of Scopus utilizing a freely available R-package.



3. Result of the Bibliometric Analysis

3.1. Primary Information

There are 96 papers authored by 263 writers and published in 70 reputable peer-reviewed journals (Table 1). These publications cover various disciplines, including Business and management, engineering, energy, computer science, psychology, environment, arts and humanities, etc. 251 writers have co-authored the research publications, indicating increased authorship collaboration. There are 12 single-authored articles out of a total of 96. The number of authors per document is 13, and the value of co-authors is 2.94.

Table 1: Main Information

Main Information	*Results*
Timespan	2007-2023
Number of Sources	70
Number of Articles	96
Annual growth rate %	9.05
Document Average Age	3.36
Document-wise Average citations	11.48
Number of References	1
Contents used in documents	
Indexed Keywords	221
Keywords provided by authors	346
Information about Authors	
Total number of Authors	263
Number of Authors in single-authored documents	12
Collaboration by Authors	
Documents with Single-author	13
Number of Co-authors per document	2.94
Co-authorship % at the International level	27.08%
Type of Documents included	
Papers	96

Source: Authors' Own Compilation

3.2. Chronological Evaluation of the Articles Published

Figure 1 depicts the number of annual publications about female digital entrepreneurs. In 2007, the earliest research on this topic was conducted. Before 2013, research on women entrepreneurs in the digital space remained stagnant. Since 2014, it appears to have aroused the interest of practical

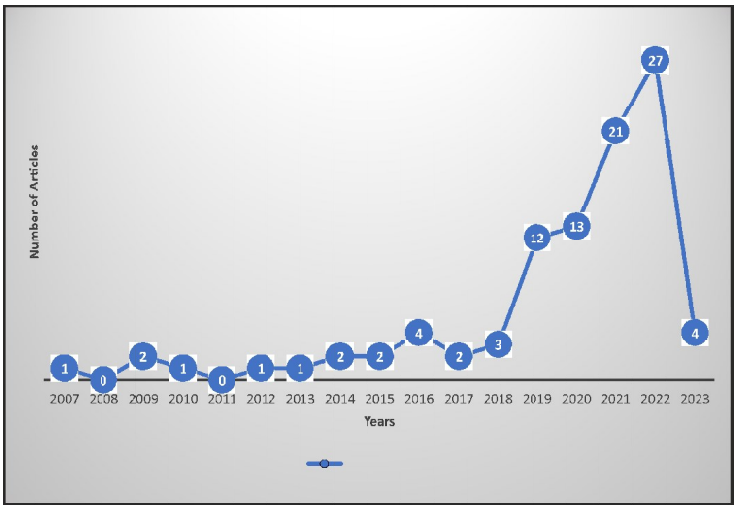


Figure 1: Annual Publication trend

Source: Authors' Own Compilation

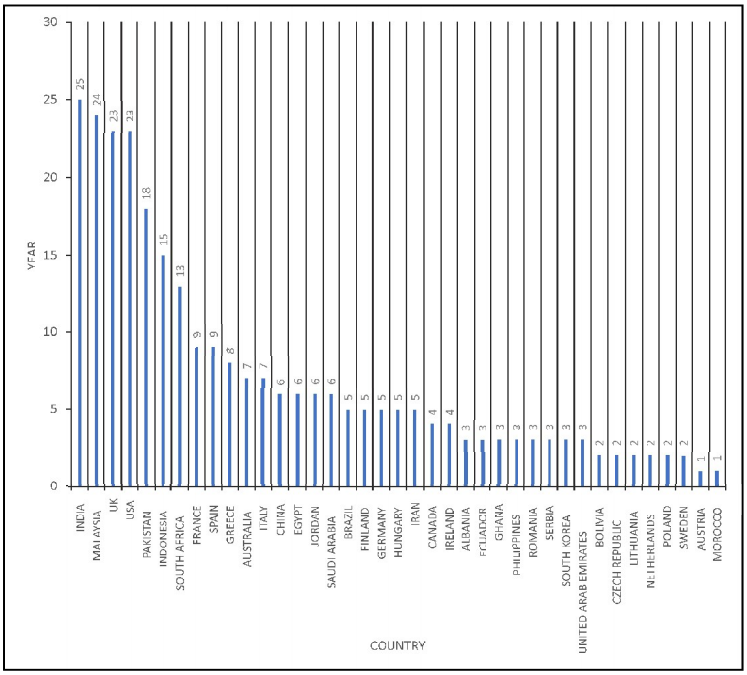


Figure 2: Country-wise Publication Trend

Source: Authors' Own Compilation

scholars since the number of research publications published has surged considerably. The number of annual publications grew in 2018, and this trend continues. The yearly growth rate of scientific production is approximately 9.05%, reflecting a sustainable growth rate. In Figure 2, the review of country-wise publishing trends revealed that most research is conducted in nations such as India, Malaysia, the United States, and the United Kingdom. India emerged with the most research articles among the 39 best-performing countries, with the number of articles (n) = 25, followed by Malaysia (n = 24), the United States (n = 23), and the United Kingdom (n = 23).

3.3. Source Analysis

Female digital entrepreneurs have been featured in many journals. Over time, this topic has advanced. The 20 most influential periodicals are listed in Table 2. "International Journal of Gender and Entrepreneurship Journal" Journal Women's Entrepreneurship and Education" were the most productive. "The International Journal of Gender and Entrepreneurship" has the highest H-index, g-index, and m-index. Table 2, which synthesizes the total citations for the dataset's articles, confirms this. The journals with the most citations are the "International Journal of Gender and Entrepreneurship and Computers in Human Behavior".

Table 2: Top 20 Journals on Women Digital Entrepreneurs

Names of the Journals	*h_index*	*g_index*	*m_index*	*Total Citations*	*Number of Papers*
International Journal Of Gender and Entrepreneurship	7	11	0.5	144	11
Journal Women's Entrepreneurship and Education	2	4	0.5	24	4
Gender in Management	3	3	0.2	47	3
Sustainability (Switzerland)	3	3	0.6	19	3
Small Business Economics	2	3	0.5	72	3
Asia Pacific Journal of Marketing And Logistics	2	2	0.5	21	2
Computers In Human Behavior	2	2	0.4	129	2
Mediterranean Journal of Social Sciences	2	2	0.2	43	2
Frontiers in Psychology	1	2	0.333	5	2
Journal of Enterprising Communities	1	2	0.333	6	2
Technovation	1	1	0.5	3	2
Asian EFL Journal	1	1	0.2	2	1
Asian Journal of Management Cases	1	1	0.125	2	1
Cadernos De SaudePublica	1	1	0.333	1	1
Cities	1	1	0.333	5	1
Emerald Emerging Markets Case Studies	1	1	0.091	2	1
Entrepreneurship: Theory And Practice	1	1	0.5	1	1
Frontiers In Sociology	1	1	0.5	1	1
Gender, Technology and Development	1	1	0.143	14	1
Global Business and Organizational Excellence	1	1	0.333	6	1

Source: Authors' Own Compilation

3.4. Countries and Authors Analysis

Table 3 shows that biblioshiny retrieved 358 citations for digital women entrepreneurs in the U.K. From 2007 to 2023, the U.S. and Finland supplied 150+ citations with 18.5 and 73 average article citations. Finland had the most average article citations, followed by Netherlands and U.K. While assessing an author's significance within a particular discipline; it is crucial to consider both productivity and impact. In Table 4, both of these metrics are evaluated to provide an overview of the top twenty most prolific authors. An author's productivity was measured by the number of articles they published within a specified time frame. In contrast, the impact was evaluated by considering the annual quantity of citations. Mcadam M. is the most prolific author, while S. Marlow and L. Martin received the most citations yearly. However, productivity does not indicate the overall quality of researchers' output. Scholars have typically used metrics besides the total number of citations received and the number of articles published to evaluate the significance of a researcher's work to the scientific community. Therefore, the g-index, h-index, and m-index are presented in Table 4 for the local dataset and the 20 most prolific authors.

Table 3: Top countries in the Research Field of Women Digital Entrepreneurs

Countries	*Total Citations*	*Average Article Citations*
United Kingdom	358	44.80
USA	111	18.50
Finland	73	73.00
Netherlands	49	49.00
Australia	44	14.70
Ireland	40	20.00
Austria	39	39.00
Greece	32	16.00
Pakistan	30	10.00
Canada	23	11.50

Source: Authors' Own Compilation

3.5. Three-Field Plot

Figure 3 comprehensively lists authors, countries, and keywords for digital women entrepreneurs. The picture contains a three-field plot of the digital women entrepreneurs' articles contributed by writers, nations, and the frequency of keyword occurrences. The left column displays the countries with the most author affiliations. The central column indicates the authors contributing from those countries, and the right column shows the most frequently used terms in the Women/Gender in the digital business Sector. Greater attention is placed on the height of the box and the thickness of the connecting line; the more work in the field is created, the taller the box and the thicker the lines. Figure 3 demonstrates

Table 4: Top 20 Influential Authors in the Field of Women Digital Entrepreneurs

Authors	*h_index*	*g_index*	*m_index*	*Citations*	*Total Articles*
Mcadam M	2	4	0.40	90	4
Crowley C	2	2	0.40	88	2
Harrison Rt	2	2	0.40	88	2
Marlow S	2	2	0.29	228	2
Martin L	2	2	0.29	228	2
Slabbert Ad	2	2	0.20	43	2
Ukpere Cl	2	2	0.20	43	2
Ukpere Wi	2	2	0.20	43	2
BiswalSk	1	1	0.50	1	2
Chakraborty U	1	1	0.50	1	2
Fakhreldin H	1	2	0.50	5	2
Maalaoui A	1	2	0.33	4	2
Miniesy R	1	2	0.50	5	2
Zani B	1	1	0.33	1	2
Abuhussein T	1	1	0.50	1	1
Abulaila H	1	1	0.50	4	1
Afshan G	1	1	0.33	39	1
Ahmdon Mas	1	1	0.25	2	1
Ahmed Z	1	1	0.50	10	1
Al-Dajani H	1	1	0.50	3	1

Source: Authors' Own Compilation

that the United Kingdom has the highest author affiliation rate, followed by South Africa and India. By observing the thickness of the connecting line between nation and author, we can determine that Marlow and Martin are Canada's two most prolific contributors. Slabbert and Ukpere remain the most prolific authors in South Africa. Similarly, Biswal and Chakraborty are India's primary contributors.

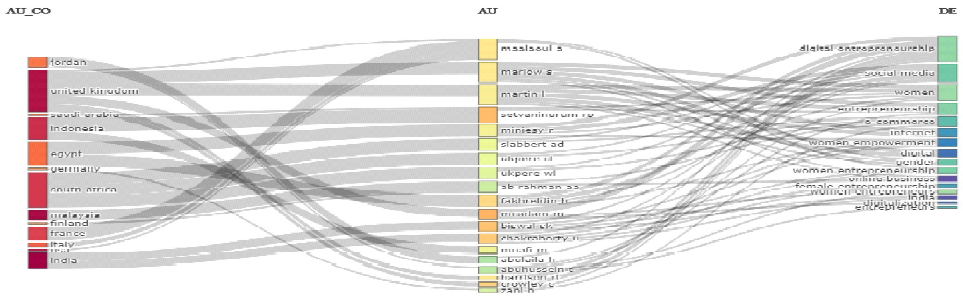


Figure 3: Three-Field Plot

Source: Authors' Own Compilation

3.6. Source dynamics

The frequency with which the word "digital women entrepreneurs" appears in print publications each year is detailed by source dynamics. As shown in Table 5, "the International Journal of Gender and Entrepreneurship" was the most prolific publication frequency between 2010 and 2023. "The Journal of Gender in Management" contributed 24 titles to the research on digital women entrepreneurs, followed by "The Journal of Women's Entrepreneurship and Education", which contributed 11 articles. Table 5 demonstrates that the Journal of Small Business in Economics and Sustainability (Switzerland) contributed the same number of articles (ten). Bradford's law characterizes the frequency of specific journal titles appearing in the study. According to Singh *et al.* 2016, the law is founded on centric productivity zones, which show a diminishing return after a certain threshold of publications has been written. The law divides publications into zones according to their article count. Law defines three zones, with Zone 1 having nine journals, Zone 2 having thirty, and Zone 3 having thirty-one, as shown in Table 6. Journal output is expected to rise as one moves from one zone to the next, as predicted by Bradford's law of scattering (Bradford, 1985; Swain, 2013).

Bradford anticipated three zones corresponding to the following breakdown of papers and journals: Zone I has nine journals and thirty-two articles, Zone 2 has thirty-zero journals and thirty-three articles, and Zone 3 has thirty-one journals and thirty-one articles.

Table 5: Source Dynamics

Year	*International Journal of Gender and Entrepreneurship*	*Journal Women's Entrepreneurship and Education*	*Gender in Management*	*Small Business in Economics*	*Sustainability (Switzerland)*
2007	0	0	0	0	0
2008	0	0	0	0	0
2009	0	0	1	0	0
2010	1	0	1	0	0
2011	1	0	1	0	0
2012	1	0	1	0	0
2013	1	0	1	0	0
2014	1	0	1	0	0
2015	2	0	1	0	0
2016	4	0	1	0	0
2017	4	0	1	0	0
2018	4	0	1	0	0
2019	6	0	2	0	1
2020	6	1	3	2	1
2021	9	2	3	2	2
2022	11	4	3	3	3
2023	11	4	3	3	3

Source: Authors' Own Compilation

Table 6: Bradford's law Zones

Journals	*Rank*	*Frequency*	*Cumulative Frequency*	*Zone*
"International Journal Of Gender And Entrepreneurship"	1	11	11	Zone 1
"Journal Women's Entrepreneurship And Education"	2	4	15	Zone 1
"Gender In Management"	3	3	18	Zone 1
"Small Business Economics"	4	3	21	Zone 1
"Sustainability (Switzerland)"	5	3	24	Zone 1
"Asia Pacific Journal Of Marketing And Logistics"	6	2	26	Zone 1
"Computers In Human Behavior"	7	2	28	Zone 1
"Frontiers In Psychology"	8	2	30	Zone 1
"International Journal Of Innovation, Creativity And Change"	9	2	32	Zone 1
"Journal Of Enterprising Communities"	10	2	34	Zone 2
"Mediterranean Journal Of Social Sciences"	11	2	36	Zone 2
"Technovation'	12	2	38	Zone 2
"Asian EFL Journal"	13	1	39	Zone 2
"Asian Journal Of Management Cases"	14	1	40	Zone 2
"Cadernos De SaudePublica"	15	1	41	Zone 2
"Case Journal"	16	1	42	Zone 2
"Cities"	17	1	43	Zone 2
"Emerald Emerging Markets Case Studies"	18	1	44	Zone 2
"Entrepreneurship: Theory And Practice"	19	1	45	Zone 2
"Eurasian Studies In Business And Economics"	20	1	46	Zone 2
"Frontiers In Sociology"	21	1	47	Zone 2
"Gender, Technology And Development"	22	1	48	Zone 2
"Global Business And Organizational Excellence"	23	1	49	Zone 2
"Global Media And China"	24	1	50	Zone 2
"Globalization"	25	1	51	Zone 2
"Human Relations"	26	1	52	Zone 2
"Information Development"	27	1	53	Zone 2
"Information Technology And People"	28	1	54	Zone 2
"International Entrepreneurship And Management Journal"	29	1	55	Zone 2
"International Journal Of Data And Network Science'	30	1	56	Zone 2
'International Journal Of Economics And Financial Issues"	31	1	57	Zone 2
'International Journal Of Emerging Markets"	32	1	58	Zone 2
"International Journal Of Entrepreneurial Behaviour And Research"	33	1	59	Zone 2
"International Journal Of Entrepreneurship"	34	1	60	Zone 2
"International Journal Of Entrepreneurship And Innovation"	35	1	61	Zone 2

contd. table 6

Journals	*Rank*	*Frequency*	*Cumulative Frequency*	*Zone*
"International Journal Of Environmental Research And Public Health"	36	1	62	Zone 2
"International Journal Of Innovation And Technology Management"	37	1	63	Zone 2
"International Journal Of Manpower"	38	1	64	Zone 2
"International Journal Of Media And Information Literacy"	39	1	65	Zone 2
"International Journal Of Scientific And Technology Research"	40	1	66	Zone 3
"International Journal Of Supply Chain Management"	41	1	67	Zone 3
"International Journal Of Technology Management"	42	1	68	Zone 3
"International Social Science Journal"	43	1	69	Zone 3
"Journal Of Asian Finance, Economics And Business"	44	1	70	Zone 3
"Journal Of Chinese Overseas"	45	1	71	Zone 3
"Journal Of Educators Online"	46	1	72	Zone 3
"Journal Of Islamic Marketing"	47	1	73	Zone 3
"Journal Of Knowledge Management"	48	1	74	Zone 3
"Journal Of Open Innovation: Technology, Market, And Complexity"	49	1	75	Zone 3
"Journal Of Research In Marketing And Entrepreneurship"	50	1	76	Zone 3
"Journal Of Small Business And Enterprise Development"	51	1	77	Zone 3
"Journal Of Sustainable Tourism"	52	1	78	Zone 3
"Journal Of The Canadian Chiropractic Association"	53	1	79	Zone 3
"Library Philosophy And Practice"	54	1	80	Zone 3
"Malaysian Journal Of Consumer And Family Economics"	55	1	81	Zone 3
"Management Research Review"	56	1	82	Zone 3
"Management Science Letters"	57	1	83	Zone 3
"Organization"	58	1	84	Zone 3
"Plos One"	59	1	85	Zone 3
"Quality - Access To Success"	60	1	86	Zone 3
"Sa Journal Of Human Resource Management"	61	1	87	Zone 3
"Scientific Programming"	62	1	88	Zone 3
"Serbian Journal Of Management"	63	1	89	Zone 3
"Service Business"	64	1	90	Zone 3
"South African Journal Of Business Management"	65	1	91	Zone 3
"Technological Forecasting And Social Change"	66	1	92	Zone 3
"Transformations In Business And Economics"	67	1	93	Zone 3
"World Applied Sciences Journal"	68	1	94	Zone 3
"World Journal Of Entrepreneurship, Management And Sustainable Development"	69	1	95	Zone 3
"Wseas Transactions On Business And Economics"	70	1	96	Zone 3

Source: Authors' Own Compilation

3.7. Analysis of Keywords

The word cloud in Figure 4 depicts the most frequently used terms in publications about female digital entrepreneurs. "Women entrepreneurs," "Digital entrepreneurship," and "women entrepreneurship" were the terms most commonly used, followed by "entrepreneurship," "social media," and "gender." The word cloud displays words in various proportions based on their frequency of appearance. The arrangement of the words is irregular, but essential words are placed in the centre to draw attention to them due to their disproportionate size.

Figure 4: Word Cloud

Source: Authors' Own Compilation

3.8. Co-occurrence of Keywords

Research content, central issues, and methodology/technology used in a discipline are typically identified by keywords (Huang et al., 2020). We used co-occurrence networks to identify and analyze the distribution of keywords in digital women entrepreneurs' research. The term "co-occurrence" refers to the statistical connection between two or more keywords that exist in the same document. As a result, a keyword co-occurrence network presents the relationship among these keywords as a network diagram. Multiple parameters, such as field, network architecture, normalization, and clustering algorithm, inform the co-occurrence network. Automatic layout selects the optimal format for graph legibility (Holten& Van Wijk, 2009). Normalizing co-occurrence with similarity measures such as Jaccard's index, Salton's Cosine, equivalence index, and association strength is possible (van Eck & Waltman, 2009). In bibliometric studies, numerous clustering algorithms are utilized, including edge betweenness, info map, leading eigenvalues, Louvain, Spinglass, and Walktrap. However, Louvain and Walktrap are the finest (Lancichinetti& Fortunato, 2012). The results of the co-occurrence network reveal several keywords, including women entrepreneurs, women, digital entrepreneurship, social media, gender, and e-commerce; however, the magnitude of the vertex indicates that women entrepreneurs are at the centre of the network. Each network vertex represents an item or keyword, and vertex size is proportional to item frequency. The size of the edge indicates the degree of association among the keywords. The breadth

of the line between two keywords represents their citation relationship. The thickness of the lines between nodes demonstrates the frequency with which two authors' keywords appear together (Yu et al., 2020). As shown in Figure 5, the thickness of the margin indicates that women entrepreneurs have been extensively studied in conjunction with digital entrepreneurship, social media, and empowerment.

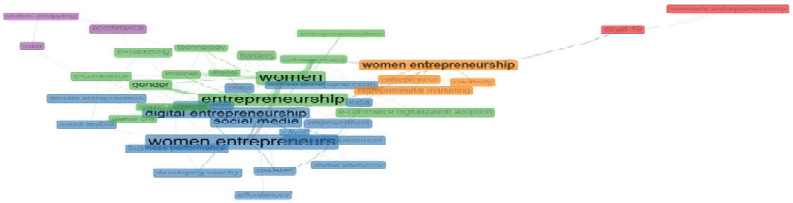


Figure 5: Co-occurrence of Keywords

Source: Authors' Own Compilation

The study employs closeness centrality and betweenness centrality as metrics of the co-occurrence of keywords in this research paper.Relationships between nodes in a scientific collaboration network

Figure 6: Treemap of Keywords

Source: Authors' Own Compilation

are used to determine centrality indices. The most betweenness-central keywords are social media, female entrepreneurs, and women. This means that these keywords are the ones that are the closest to each other. Table 7 demonstrates that in Cluster 1, digital entrepreneurship has the highest betweenness centrality. E-marketing, m-commerce, online social networking, and online strategy have the same and highest closeness centrality within Cluster 4, followed by social media within Cluster 2 and women within Cluster 3. These keywords have the highest degree of network proximity to other keywords, indicating that they are examined extensively with one another.

Table 7: Keywords ranking based on the measure of centrality

Keywords	*Cluster*	*Betweenness*	*Closeness*	*Page Rank*
digital entrepreneurship	1	56	0.02	0.064
women entrepreneurship	1	20	0.015	0.034
covid-19	1	0	0.011	0.020
Saudi Arabia	1	0	0.014	0.017
Egypt	1	0	0.019	0.036
Mses	1	0	0.019	0.036
women entrepreneurs	2	90.28	0.024	0.101
social media	2	105.19	0.027	0.072
Pakistan	2	2.27	0.017	0.027
women empowerment	2	3.2	0.018	0.027
Digitalization	2	0	0.016	0.016
business performance	2	0	0.016	0.016
developing country	2	0	0.016	0.016
gender bias	2	0	0.016	0.016
Women	3	77.34	0.023	0.107
Entrepreneurship	3	39.72	0.021	0.087
Gender	3	0	0.018	0.029
Entrepreneurs	3	0	0.018	0.033
Internet	3	0	0.018	0.034
Digital	3	0	0.018	0.030
Technology	3	0	0.015	0.014
Entrepreneurialism	3	0	0.016	0.014
e-marketing	4	0	0.33	0.038
m-commerce	4	0	0.33	0.038
online social networking	4	0	0.33	0.038
online strategy	4	0	0.33	0.038

Source: Authors' Own Compilation

3.9. Thematic Mapping

Thematic keyword mapping is a method used to analyze research topics and their relationships. This method uses a word-frequency network to draw out commonalities and trends within a subject area. The resulting thematic map, as shown in Figure 7, categorizes the literature on a specific topic into four distinct theme types. The issues in the top-right region are the most important and dense to the discipline. These topics represent the developed and significant research arenas within a specific research field. The topics in the top left region are typically referred to as niche themes due to their high centrality and low density. The topics in the lower left quadrant are featured by low centrality and low density and are regarded as emerging or diminishing. The topics in the lower right region are featured by low density and high centrality and are deemed fundamental. The themes "women entrepreneurship," "trust," "online shopping," "social media," "resilience," and "digital entrepreneurship" are fundamental, with low density but high centrality in the lower right quadrant. However, the themes located in the upper right quadrant, such as "women," "female entrepreneurs," "internet," "creativity," "entrepreneurial marketing," and "technology," have a high centrality and high density, indicating that these issues are highly developed and essential to the field of women digital entrepreneurs. The "Covid-19" and "developing country" represent a declining or emerging theme with low density and low centrality, indicating that the topic is underdeveloped but emerging in other disciplines. Figure 7 reveals that the remaining four specialized topics in the upper left quadrant are "e-marketing," "information technology," "online social networking," and "digital platforms", based on the magnitude of each node.

3.10. Collaboration Network

This section examines international collaboration in the field of digital women entrepreneurs. A collaboration network illustrates how nations collaborate in a particular discipline. Based on closeness

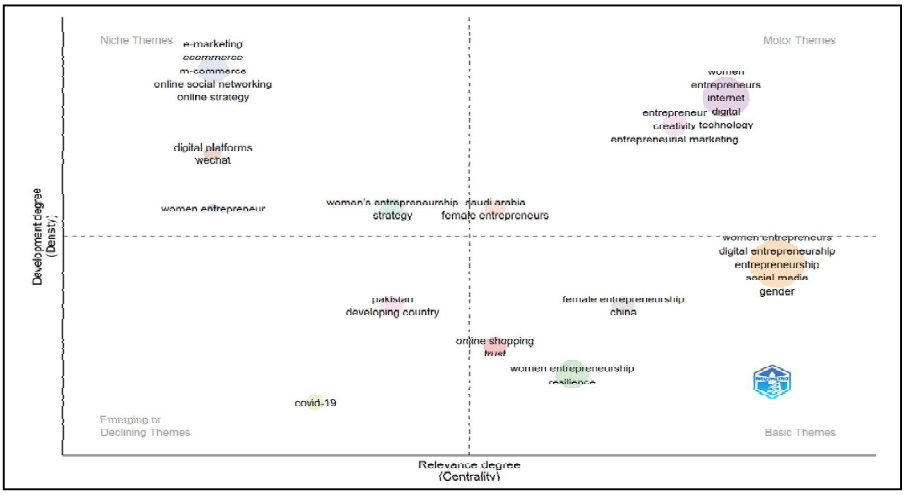


Figure 7: Thematic Map

Source: Authors' Own Compilation

and betweenness centrality, countries' international cooperation is examined. Closeness and Betweenness centrality are widely utilized network gauges of collaboration. When analyzing a network, one measure of importance is how close a given actor is to every other node in the network. A network node's betweenness indicates the number of times it serves as a connection point for other network nodes. The United States is a hub for the international cooperation network because of its central location, as shown in Table 8.

Regarding the collaboration network, Ecuador, Bolivia, Hungary, and Iran have the highest proximity centrality, meaning they have the shortest paths to other nodes. Figure 8 depicts the international collaboration network. Based on their collaboration network, associated nations are divided into eight groups. A distinct colour denotes each cluster to distinguish the aggregation of the collaborative nation networks.

Table 8: Collaboration Network

Node	*Cluster*	*Betweenness*	*Closeness*
India	1	42.00	0.015
Hong Kong	1	22.00	0.012
Korea	1	0.00	0.009
Malaysia	2	22.00	0.009
China	2	42.00	0.012
Finland	2	0.00	0.008
Indonesia	3	0.00	0.013
Saudi Arabia	3	42.00	0.013
Poland	3	76.00	0.016
Morocco	3	0.00	0.015
Pakistan	4	60.00	0.015
France	4	107.00	0.019
Jordan	4	0.00	0.013
Austria	4	0.00	0.014
United Kingdom	5	52.77	0.018
USA	5	151.98	0.021
Spain	5	0.00	0.015
Italy	5	19.25	0.018
Brazil	5	0.00	0.013
Germany	5	0.00	0.015
Ireland	5	0.00	0.013
Netherlands	5	0.00	0.013
Australia	6	22.00	0.010
Romania	6	0.00	0.008
Ecuador	7	0.00	1.000
Bolivia	7	0.00	1.000
Hungary	8	0.00	1.000
Iran	8	0.00	1.000

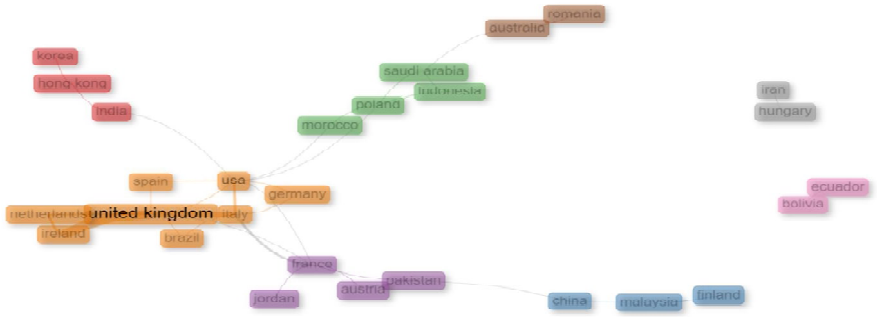


Figure 8: Collaboration Network

Source: Authors' Own Compilation

4. Discussion

The present research utilized bibliometric analysis to investigate the literature on female entrepreneurs in the digital space. The study uncovered several intriguing patterns and tendencies that illuminate the current knowledge in this field and highlight the areas needing additional research and intervention (Sharma & Parida, 2022). The first significant finding is the increasing interest in women entrepreneurs in the digital space over the past decade. Since 2012, the number of publications on this subject has increased consistently, indicating a growing recognition of the significance of women entrepreneurs in the digital age. This trend is consistent with global efforts to enhance women's empowerment and gender equality in technology and entrepreneurship. The second finding emphasizes the contribution of digital technologies in strengthening female entrepreneurship in the digital environment. The literature emphasizes the potential of digital tools, like social media, e-commerce platforms, mobile apps, and cloud computing, in enabling women entrepreneurs to launch and expand their businesses, access new markets, and overcome traditional barriers to entrepreneurship. The literature also acknowledges the digital divide and the need for digital literacy and skills among women entrepreneurs, especially in developing nations. The persistence of gender biases and stereotypes in the literature on women entrepreneurs in the digital space is the third finding. Despite the growing recognition of the significance of gender diversity and inclusiveness in entrepreneurship and technology, the literature reveals the persistence of gender biases and stereotypes that hinder women entrepreneurs' access to funding, networks, and markets and their leadership styles and decision-making processes. This indicates that additional research on the underlying factors that perpetuate gender inequality in entrepreneurship and technology, as well as interventions promoting gender equity and social justice, are still required. The fourth finding is emerging topics and themes in the literature on women entrepreneurs in the digital space. The analysis revealed several emerging issues and themes that reflect the shifting entrepreneurial landscape of women in the digital age. These topics and themes provide new avenues for research and intervention that address the dynamic and complex challenges women entrepreneurs face in the digital space.

5. Conclusion

The findings have significant repercussions for policymakers, practitioners, and researchers. The research study calls for more inclusive and diverse contexts and perspectives in the research agenda on female entrepreneurs within cyberspace and intervening technologies that promote gender equity and social justice. In addition, the study highlights the potential of digital technologies to facilitate females' entrepreneurship in the digital world and the pervasive gender biases and stereotypes that limit women entrepreneurs' access to funding, networks, and markets. This study offers a practical bibliometric analysis of the literature on women entrepreneurs in the digital space. The analysis reveals several patterns and trends that cast light on the current knowledge in this field and highlight the areas needing additional research and intervention. The study highlights the significance of promoting gender parity and empowering women in entrepreneurship and technology. It provides insights into the emerging topics and themes that reflect the shifting landscape of female entrepreneurs in the digital age. This study provides a roadmap for future research and intervention that acknowledges the shifting landscape of female entrepreneurs in the digital era and harnesses the potential of digital technologies for women's empowerment and sustainable development.

Further research is required to collect and analyze empirical data on female entrepreneurs in the digital environment and to develop interventions to address the dynamic and complex challenges female entrepreneurs face in the digital era. This research contributes to our understanding of digital women entrepreneurs and brings to light the potential contribution of entrepreneurship to economic and social progress. Despite this study's valuable insights, it is necessary to acknowledge several limitations. First, the study only considers publications indexed in the Scopus database, which may not represent the entire literature on women entrepreneurs in the digital space. Other databases, such as Google Scholar and Web of Science, may offer broader coverage of the literature. Second, the study relies on quantitative bibliometric analysis, which may not capture the richness and complexity of women's entrepreneurship literature in the digital domain. In the digital age, qualitative research may provide a more comprehensive knowledge of the experiences and viewpoints of women entrepreneurs. Thirdly, the study concentrates on a review of the existing literature and provides no new empirical data on female digital entrepreneurs. Collecting and analyzing empirical data on the experiences and difficulties of female entrepreneurs in the digital age requires additional research.

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Techno-globalization and the Emerging Trends of Fast-Food Restaurants: A Study in the Twin Cities of Odisha

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Abstract: Remarkable changes have taken place in the food culture of India from pre-liberalized to post- liberalized era. Fast food industries are now becoming very popular in the market compared to other food stalls in most of the cities of India and in Odisha. The present study is focused on the emerging trends of Fast Food Restaurants (FFRs) in the twin cities of Odisha (Bhubaneswar & Cuttack). Currently most of the FFRs are located inside the malls to attract a huge number of consumers. This study has been conducted in selected 10 FFRs inside 10 shopping malls at Bhubaneswar & Cuttack– two of the major cities of Odisha. There is an attempt to examine the demographic details of the consumers and the impacts of these variables for preferring FFRs. Subsequently the study aims to analyze the factors attracting consumers towards FFRs in the global era which is driven by technology.

1. Introduction

Techno-globalization is a concept that aims to explain globalization by using the intervention of science and technology. In other words the notion of techno-globalization refers to increasing use of internet, science and technology to accelerate the speed of globalization. On the other hand, technical development aids in advancing globalization to the point where it is required. A major force behind the wide spread of globalization has been technology. The development of computer hardware and software systems has enabled global economic growth and linked the domestic economy to the world economy (Scriven, 2017). Consequently, a plethora of changes are noticed during the period of globalization in the food culture of India as well as in Odisha. Globalization is a multi-dimensional process; it has been impacting each and every domain of individual's social life and food culture is not an exception. Mainly,

globalization refers to connecting the domestic economy with the international economy in a series of aspects. The leading logic behind both the process of liberalization and globalization is to bring competition and competence in the economy of any country. It is marked that July 1991 was the beginning of new trend of globalization in India as well as a critical turning point in the economic history of the country when it was decided to open up its economy (Vepa, 2004). The socio-cultural aspect of food emphasizes the meaning of food, its transformation over the generation, pressure on food choices, technological connections in food production and the agents involved in this transformation process (Sobreira et al. 2018). Food culture and dietary adaptation have been changing in the country from pre-liberalized era to post-liberalized period. Food culture has a great transformation from high wastage; low processing and low global contribution to more streamlined and integrated in the global trade (Madhvapathy and Dasgupta, 2015). Multiplicities of fast food brands are now available in the country as a consequence of globalization and liberalization. However, access to these food varieties is not universal in recent period; it is always associated with income, more specifically with the low and high-income groups (Kennedy *et al.* 2004). However, the higher price may not ensure high quality and healthy food. Most of the expected impacts on the dietary patterns among the higher income groups are likely to be represented into various grounds like-(i) the consumption patterns shift away from normal cereal to more expensive foods, (ii) there is a projected impact on a move towards more processed foods, (iii) the popular fast food is largely promoted through advertising media by transnational corporations in the market. It is becoming very important to note here that in urban India, the consumption of processed food or ready to eat food has gone up together with income as a result of globalization. Consumption of *fizzy drinks, pizzas and potato crisps* are increasingly present in the diets of urban dwellers. Undoubtedly, globalization facilitates the entry of foreign brand food products and outlets in the market viz*., Pizza Hut, KFC and McDonald's* etc., specifically for the affluent consumers. Following market liberalization, the fast-food sector has adapted the Indian culinary requirements and expanded more quickly. Particularly, it is gaining immense popularity among younger generations in India and gradually become a part of their life (Goyal and Singh, 2014). Nowadays, majority of Indians have moved away from home-made food, people have the interest to buy the packaged, take away food from the supermarkets and restaurants. The fast food outlets viz., *KFC, McDonald's, Pizza Hut, Domino's Pizza, Wow Momo, Subway* and many more restaurant chains are mushrooming across the country (Mathkumar, 2015). As per the study result of Prabhavathi et al. (2014), the young, unmarried, working and educated professionals having modern lifestyle are the target consumers in fast food restaurants. Young consumers are spending substantial amount of their income for eating outside due to convenient lifestyle. Consumers prefer to have major fast-food varieties such as *pizzas, sandwiches and burgers* with spicy flavors. Fast food restaurants are providing satisfaction to the young consumers in the form of toning their taste needs and relaxation with friends and peers. Food plays a symbolic role to determine social power and status relationships in modern society (Shah, 2018).

For this study FFRs are situating at every corner in the twin cities of Odisha. People adopted the western food pattern in the twin cities of Odisha, as a result of urbanization, globalization and technological interventions; consequently many FFRs established their businesses in every part of the

city. The popular FFRs such as *KFC, Burger King, Subway, Pizza Hut, WOW Momo!, Domino's* etc. have now opened up their stores at the shopping malls in the twin cities of Odisha to attract more and more number of consumers.

2. Review of Literature

This section covers the transformation of food consumption patterns in India followed by the notion of fast food. Subsequently, the discussion is made on the key drivers of fast-food industries in India.

2.1. Transformation of Food Consumption Patterns in India

Economic growth directly relates with the expansion in food supply of any country. Food production, processing, distribution and marketing strategies are profoundly related to the economic growth of any country. Globalization also plays an important role to transform the food consumption patterns in the Indian households.

Food consumption is a very important and most required daily activity for all individuals in every society. People prefer to eat and drink for their physical requirements. Food consumption habits are not uniform, that vary from culture to culture and society to society. Food becomes a crucial identity marker for the individuals to define their social class, personality, lifestyle and social relationship with others. On the other hand, food also helps to explore people's interest for new tastes and new recipes (Boutaud et al., 2016). Food culture of India is based on a blend of several food varieties, which varies from state to state. We can separate the food into two categories primarily in India i.e the North Indian foods and the South Indian foods in a broad way. North Indian foods are like *Chatpatti, Dal, Nan, Puri, Paneer gravey, Aloo subji* etc. The famous cuisines of south Indian foods include- *chicken varuval, Dosa, Idli, Sambar etc.* (Mathkumar, 2015). Eastern part of India including Odisha has a specific style of cooking for which mustard seeds and mustard oil is used often for both vegetarian and non-vegetarian dishes. The Indians generally prefer to have home-cooked meals. However, over the period of time due to increasing awareness and influence of western culture, there has been a shift in food consumption patterns among the families of urban India. Many new foreign fast-food players have entered into the Indian market owing to liberalization in the country at the early 1990s. It sets some significant changes in lifestyles and food tastes of the people. The digital and technological interference in food production and consumption behavior stimulate the culture of glocalization of tastes, lifestyles among the urban dwelling middle class youth (Ritzer, 2003). Nowadays, majority of Indians have moved away from home-made foods, people have the interest to buy the packaged, take away foods from the supermarkets and restaurants.

The fast food restaurants viz., *KFC, McDonald's, Pizza Hut, Domino's Pizza, Wow Momo, Subway* and many more restaurant chains are mushrooming across the country.

2.2. The Notion of Fast Food

The term fast food signifies a kind of food that can be prepared and served very quickly. Any meal with low preparation time can be considered as fast food. The term fast food refers to the food which is sold in a restaurant or stored with low quality preparation and served to the customer in a packaged

form for take away (Priyadarshini, 2016). Fast food restaurant is a domain for entertainment and relaxation. People enjoy the soft packaged and finger foods at the fast-food restaurants with multiple flavors. In this context famous social scientist Ritzer opines:

Furthermore, fast-food restaurants serve the kinds of finger foods bought at the stands in an amusement park. In what may be termed the 'cotton candy principle', people will buy, and even pay comparatively high prices for, a few pennies worth of food as long as it has a strong, pleasant, and familiar flavor (Ritzer, 2001).

Some of the general categories of fast-food businesses include the self-service restaurants with a fast-food palate like *Domino's Pizza, McDonalds, Berger king, Pizza Hut* etc. The other category is the take-out (or take-away) businesses that sell ready to eat foods and beverages on the street corners (Warsi, 2005).

2.3. Key Drivers of Fast-Food Industries in India

The transformations which pictured in Indian food culture and consumers preference towards fast food restaurants are the consequences of various socio-economic changes taking place in the country. Emergence of fast-food culture in India relates to the socio-economic background of the consumers. As per the review some momentous factors are primarily responsible for the spread of fast-food culture in the country. These key factors are described below (Figure 1).

Figure 1: Key Drivers of Fast-Food Industries in India

Source: Developed by the Authors

2.3.1. Favorable Demographics

Population growth has stimulated the increasing number of earning population (age group between 15-64) in India. Undoubtedly, this category includes the higher number of employed as well as the active populace in India. Increasing trend of this segment enhances the consumption rate in the country. The population in the age group of 15-64 years has increased from 64.11% in 2010 to 67.27% in 2020(statista.com). This age group has the massive earning as well as spending potential. In most of the cities in India, they are attracted towards fast food consumption than homemade food items.

2.3.2. Rising Income Levels and Increasing Per Capita Expenditure

India's per capita GDP has moved up from Rs 98,405 in 2015 to Rs.143.048 in the financial year 2019, it fuels consumption boom in the country. Growth of country's per capita income along with the disposable income of the populace are escalating the consumption rate. Rising income in urban India after the policy of liberalization led the changes in people's lifestyles. The rise of per-capita income helps to enhance consumption ability of the consumers. Especially in urban areas many of them have enough income to purchase ready to eat food and their preference for home made food is comparatively less.

2.3.3. Relaxation of Rules and Regulations

The economic liberalization in India during 1991 has supported a dramatic shift in the structure of the country. Most of the tariff barriers from the Indian boundaries are either removed or minimized; it has opened the entry of foreign and private fast-food players in the country (Warsi, 2005). Many foreign fast-food industries have started their businesses in the Indian market by adopting innovative marketing strategies.

2.3.4. Increasing Rate of Migration

The movement of people from one place to another also helps to adopt new culture and the food patterns of any location where they visit. Migration also relates to the culture and lifestyle, when people move from one place to another, they lose certain old cultural patterns and adopt new ones. The migration and the experiences while moving from one place to another is promoting the preferences for the fast foods and the restaurant culture at large (Maerschand & Willaert, 2018).

2.3.5. Transformation of Gender Roles

Gender role is the set of behavior patterns, which reflects the idea about what should a woman do and what should a man do in a particular society. As per the existing notion of patriarchy in India, cooking is considered to be the responsibility of women. However, the traditional notion of gender role attached with women has been changing due to the process of westernization, modernization and globalization at large. A large number of women have started working outside and they do not have time for household work and cooking (Bhat et al. 2018). Now they are able to opt for jobs and prefer to have fast food because of convenience, timely availability and with ready to eat option (Anitharaj, 2018).

2.3.6. Rising Female Working Populace

The improvement noticed in female literacy rate has helped to increase the women workforce in the country. The participation of female workforce has increased considerably due to the growing trend of Indian economy during the past few years. The work participation rate of females has gone up from 22.27% in 1991 to 25.63% in 2001 and 25.5% in 2011 (Statistical Profile on Women Labour 2012-2013).The proportion of female work participation has gradually gone up in India. The higher purchasing power in the hands of employed women has enhanced the ability to spend more (Kansara and Mishra, 2019).

2.3.7. New Dietary Adaptation

The adaptations of diet which comprise more processed, refined and branded foods bring out many dramatic changes in the lifestyle of people in the Indian cities. New dietary adaptation is driven by increased coverage of advertising, demands on time, accessibility of new food and new food retail outlets in the urban areas etc., which gradually transformed the lifestyle of urban dwellers.

2.3.8. Technology & Changing Lifestyle

The changing lifestyle of Indian consumers along with the marked paradigm shift in consumers food buying habits are the consequences of multiple factors. Techno-driven growing young population, rising income levels, increasing use of technology in consumer space, urbanization, increased social media activity, hectic life style etc. are the key factors in opting for FFRs. The busier lifestyle of the consumer has prompted him/her to choose ready-to-eat food. The growing range of web tools and mobile applications has added to the convenience of processed foods where freshly prepared ready-to-eat food can be delivered at the consumers' preferred location by a single touch.

2.3.9. Consumers Style and Confidence

Consumerism in 21st century has become a style phenomenon, many people especially from younger generation, do not prefer to prepare food and waste their time and energy in household work. Consumers are oriented to have ready to eat and easy to serve food at the restaurants. All the fast-food brands have infused a false assurance in consumers' mind that the food served at FFRs is healthy and more hygienic. Consumers' confidence on fast food led to the opening of more and more outlets in India and increased the consumption level in the country.

2.3.10. Scarcity of Time

The consumers in the cities of India presently do not have time to cook food at their homes. The increasing number of working women in the public sphere promotes the fast-food culture rapidly. They now prefer quick and easy availability of food items owing to lack of time. Working class consumers can avail quick foods with entertainment at the restaurants very well.

The above factors are primarily responsible for the growth of global fast-food culture in India. Besides, role of advertisement is very important for the products or food items availability in the supermarket shelves or at the restaurant menu. Social networking such as WhatsApp, Facebook etc.

and e-commerce services are gaining popularity in India for trade and business in post-liberalized era (Mangla & Singh, 2021). At the promotional side labeling and packaging are two aspects of advertising that should be paid special attention because they will visually attract the consumers before they even know nothing about the product (Keller, 2012).Fast food culture now gets acceptance especially among the city dwellers including the inhabitants of twin cities of Odisha.

3. Objectives and Hypothesis of the Study

3.1. Objectives

- To find out demographic factors those affect the customers' preference towards FFRs in the twin cities of Odisha.
- To explore the factors attracting the consumers' to visit FFRs.
- To examine the transformation in food consumption pattern in India

First two objectives are analyzed empirically and the 3rd objective is analyzed and discussed based on review of related studies.

3.2. Hypotheses of the Study

H_{01}: There is no significant relation between age and preference for FFRs.

H_{02}: There is no significant relation between educational qualification and preference for FFRs.

H_{03}: There is no significant relation between present position and preference for FFRs.

H_{04}: There is no significant relation between household income and preference for FFRs.

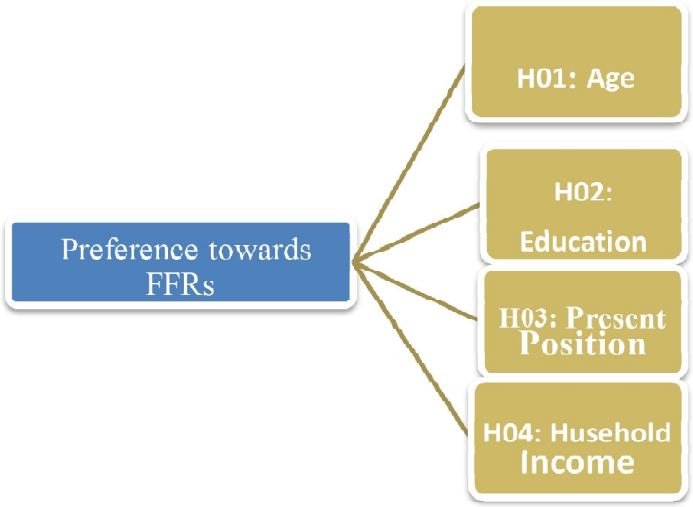

Figure 2: Conceptual Model for Null Hypothesis

Source: Developed by the Authors

4. Research Methodology

Methodology refers the broad theoretical and philosophical frame of any research problem. On the other hand it includes the wide range of methods and techniques, their theoretical logic and manner in which these are used. This section has covered the sampling details and tools and techniques of data collection used for this study.

4.1. Sampling and Tools of Data Collection

Systematic random sampling technique was used by the researchers to select the respondents in 10 FFRs. Systematic random sampling is a probability sampling technique where the researchers select members of the target population at a regular interval systematically (Kothari & Garg, 2014). Every 3rd customer at the billing counter was identified as a respondent by the researchers to get information for the study. The target population for the present study is the consumers in selected 10 FFRs in the twin cities of Odisha viz. *Domino's in D.N Regalia mall, KFC* in *Pal Heights, Burger King* in *Esplanade and Pizza Hut* in *Utkal Kanika Galleria, Wow Momo* in *BMC Bhawani, Delhi Darbar* in *BMC Keshari, Pizza Hut* in *Forum Mart, Wheelies* in *Symphony, Domino's* in *NSCB-Arcade, Bhook* in *SGBL Squar mall*. Interview Schedule was used to collect data from the consumers at the FFRs. The sample table (Table-1) is given below to present the units of study from each FFR in the twin cities of Odisha.

Table 1: Sample Table

S.LNo	*Name of the FFR in shopping mall*	*Male*	*Female*	*Total Respondents*
1	KFC in Pal Heights	15	25	40
2	Burger King in Esplanade	13	27	40
3	Wow Momo in BMC Bhawani	22	18	40
4	Pizza Hut in Utkal Kanika Galleria	15	25	40
5	Pizza Hut in Forum Mart	18	22	40
6	Domino's in DN Regalia	20	20	40
7	Wheelies in Symphony	18	22	40
8	Delhi Darbar in BMC Keshari	20	20	40
9	Domino's in NSCB-A	22	18	40
10	Bhook in SGBL Squar	20	20	40
	Total	**183**	**217**	**(N)=400**

Source: Primary Data

The sampled respondents were the consumers in selected 10 FFRs in the twin cities of Odisha. From each FFR, 40 respondents were selected by the researcher by using systematic random sampling technique at the bill counters. Fast food restaurants are more oriented to open their stores in shopping malls with an intention to attract more and more consumers. All the selected 10 FFRs are placed inside the 10 malls.

5. Data Analysis and Discussion

The tabulation and interpretation of the collected responses from the FFRs are systematically analyzed in this section. At the beginning, demographic profile of the respondents is depicted, followed by the hypothesis test on demographic factors and preference towards FFRs is examined. Eventually, the factors influencing the customers towards the FFRs is also discussed (Table-7).

5.1. Demographic Profile of the Respondents and Preference towards FFRs

Table 2 indicates the demographic profile of the consumers in selected 10 FFRs in the twin cities of Odisha. For the study, 400 responses were used.

Table 2: Demographic Profile of the Respondents

Variables	*Frequency*	*Percentage (%)*
Age		
18-25	160	40.0%
26-35	110	27.5%
36-60	91	22.8%
61 above	39	9.8%
Total	400	100.0%
Gender		
Male	183	45.8%
Female	217	54.2%
Total	400	100.0%
Education		
Matriculation	9	2.2%
Intermediate	54	13.5%
Graduate	204	51.0%
Post Graduate	105	26.2%
Other	28	7.0%
Total	400	100.0%
Present Position		
Govt job	58	14.5%
Private job	79	19.8%
Business	23	5.8%
Student	154	38.5%
Homemaker	64	16.0%
Retired	22	5.5%
Total	400	100.0%

contd. table 2

Variables	*Frequency*	*Percentage (%)*
Household Income		
<20,000	7	1.8%
20,001-40,000	26	6.5%
40,001-60,000	57	14.2%
60,001-80, 000	137	34.2%
80,001-1,00000	173	43.2%
Total	400	100.0%

Source: Primary Data

With respect to age of the respondents, the very young and teenagers under 18-25 age groups percentage (40.0%) is higher followed by 26-35 age group (27.5%), 36-60 age group (22.8%), whereas a very few respondents (9.8%)were aged under 61 above age group. The review section has also reflected that young, educated and professional classes are the target consumers for the FFRs (Goyal & Singh, 2014). As far as the gender is concerned females are more in numbers than male respondents (54.2%) and (45.8%) respectably. With respect to education, the majority of respondents (51.0%) have bachelor degrees followed by post graduate (26.2%), intermediate (13.5%) and other technical fields (7.0%), however a very few numbers of respondents (2.2%) have matriculation as they belong to the older generation.

Education is required at the FFRs to know about the price of food, menu chat selection, food ordering and making payment very well because everything is systematized and technically well fitted. As far as the present position of the respondents is concerned, the young students (38.5%) number is higher, followed by the private job holders (19.8%) and government job holders (14.5%) having better education and well salaried person. Homemakers (16.0%) come with their family members to entertain their children at the new socializing platform. Household income is the pertinent aspect to avail and afford the price of fast foods at the FFRs in the twin cities of Odisha, because the food cost is much higher compared to the street foods. As far as the household income is concerned, majority of the respondents (43.2%) have 80,001-1,00000 monthly household income followed by 60,001-80,000 (34.2%), 40,001-60,000 (14.2%), 20,001-40,000 (6.5%) and a very few numbers of students (1.8%) are having <20,000 monthly household income. The students come with their friends to enjoy the new domain of food outlets.

5.2. Hypothesis Test on Demographic Factors and Preference towards FFRs

In this section four demographic factors like age, education, present position and household income of the respondents on preference towards FFRs are analyzed by using one way ANOVA.

Detailed analysis reveals that H_{01} (Table 3) i.e. age has significant impact on preference towards FFRs because $p<0.05$ (.000). Hence H_{01} is rejected as its p value is less than 0.05. Age has an impact on preference towards FFRs. P- value with less than 0.05 is statistically significant. It shows strong evidence

against the null hypothesis. Therefore, we reject the null hypothesis and accept the alternative hypothesis. So, there is a significant relation between age and preference for FFRs.

Table 3: ANOVA Result of Preference towards FFRs and Age

	Sum of Squares	*df*	*Mean Square*	*F*	*Sig.*
Between Groups	314.797	3	104.932	161.565	.000
Within Groups	257.193	396	.649		
Total	571.990	399			

Source: Analyzed from the Primary Data

Table 4: ANOVA Result on Preference towards FFRs and Education

	Sum of Squares	*Df*	*Mean Square*	*F*	*Sig.*
Between Groups	21.063	4	5.266	3.775	.005
Within Groups	550.927	395	1.395		
Total	571.990	399			

Source: Analyzed from the Primary Data

The detailed analysis reveals that H_{02} (Table 4) i.e., education has significant impact on preference towards FFRs because $p<0.05$ (.005). Hence H_{02} is rejected as its p value is less than 0.05. So, education has impact on preference towards FFRs. The alternative hypothesis is accepted. So, there is a significant relation between educational qualification and preference for FFRs.

Table 5: ANOVA Result on Preference towards FFRs and Present Position

	Sum of Squares	*Df*	*Mean Square*	*F*	*Sig.*
Between Groups	354.985	5	70.997	128.904	.000
Within Groups	217.005	394	.551		
Total	571.990	399			

Source: Analyzed from the Primary Data

The detailed analysis reveals that H_{03} (Table 5) i.e. present position has significant impact on preference towards FFRs because $p<0.05$ (.000). Hence H_{03} is rejected as its p value is less than 0.05. So, present position has impact on preference towards FFRs. The alternative hypothesis is accepted. So, there is a significant relation between present position and preference for FFRs.

The detailed analysis reveals that H_{04} (Table 6) i.e., household income has significant impact on preference towards FFRs because $p<0.05$ (.000). Hence H_{04} is rejected as its p value is less than 0.05.

Table 6: ANOVA Result on Preference towards FFRs and Income

	Sum of Squares	*df*	*Mean Square*	*F*	*Sig.*
Between Groups	28.579	4	7.145	6.308	.000
Within Groups	447.359	395	1.133		
Total	**475.938**	**399**			

Source: Analyzed from the Primary Data

Therefore, household income has impact on preference towards FFRs. The alternative hypothesis is accepted. So, there is a significant relation between household income and preference for FFRs.

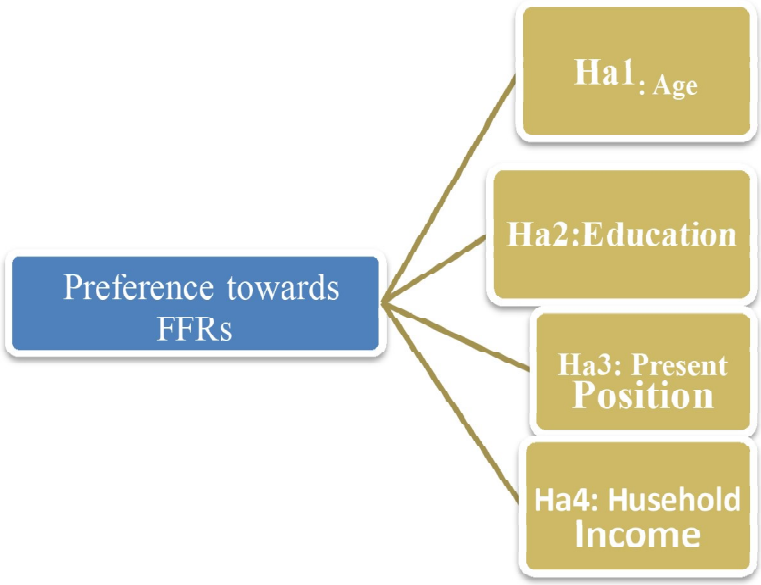

Figure 3: Conceptual Model for the Acceptance of Alternative Hypothesis

Source: Developed by the Authors

The figure 3 reveals that the alternative hypothesis on the demographic variables like age, education, present position and household income have a significant influence on preference towards FFRs

5.3. Factors Attracting the Consumers to Visit FFRs

In the present study major factors like saving of time, easy availability, entertainment, status enhancement and fresh food with quality are found to be the major factors which influence the consumers towards the FFRs.

Table 7: Factors Attracting the Consumers towards FFRs

S.L. No	*Statement*	*Age Group*	*1*	*2*	*3*	*4*	*5*	*Total (N)*
1	**Time Saving**	18-25	6 (1.5%)	0 (0.0%)	0 (0.0%)	6 (1.5%)	148 (37.0%)	160(40.0%)
		26-35	87(21.8%)	14(3.5%)	6(1.5%)	0(0.0%)	3(0.8%)	110(27.5%)
		36-60	84(21.0%)	7(1.8%)	0(0.0%)	0(0.0%)	0(0.0%)	91(22.8%)
		61&above	20(5.0%)	19(4.8%)	0(0.0%)	0(0.0%)	0(0.0%)	39(9.8%)
								400(100.0%)
2	**Easy Availability**	18-25	0 (0.0%)	6(1.5%)	32(8.0%)	116(29.0%)	6(1.5%)	160(40.0%)
		26-35	18(4.5%)	79(19.8%)	3(0.8%)	7(1.8%)	3(0.8%)	110(27.5%)
		36-60	7(1.8%)	69(17.2%)	14(3.5%)	0(0.0%)	1(0.2%)	91(22.8%)
		61 &above	19(4.8%)	16(4.0%)	4(1.0%)	0(0.0%)	0(0.0%)	39(9.8%)
								400(100.0%)
3	**Entertainment**	18-25	129(32.2%)	25(6.2%)	0(0.0%)	6(1.5%)	0(0.0%)	160(40.0%)
		26-35	0(0.0%)	4(1.0%)	11(2.8%)	73(18.2%)	22(5.5%)	110(27.5%)
		36-60	0(0.0%)	4(1.0%)	14(3.5%)	67(16.8%)	6(1.5%)	91(22.8%)
		61&above	0(0.0%)	0(0.0%)	0(0.0%)	35(8.8%)	4(1.0%)	39(9.8%)
								400(100.0%)
4	**Status Enhancement**	18-25	13(3.2%)	99(24.8%)	46(11.5%)	2(0.5%)	0(0.0%)	160(40.0%)
		26-35	0(0.0%)	13(3.2%)	89(22.2%)	8(2.0%)	0(0.0%)	110(27.5%)
		36-60	0(0.0%)	12(3.0%)	63(15.8%)	16(4.0%)	0(0.0%)	91(22.8%)
		61 &above	0(0.0%)	4(1.0%)	33(8.2%)	0(0.0%)	2(0.5%)	39(9.8%)
								400(100.0%)
5	**Fresh Food with quality**	18-25	12(3.0%)	30(7.5%)	82(20.5%)	30(7.5%)	6(1.5%)	160(40.0%)
		26-35	5(1.2%)	1(0.2%)	0(0.0%)	22(5.5%)	82(20.5%)	110(27.5%)
		36-60	0(0.0%)	2(0.5%)	0(0.0%)	7(1.8%)	82(20.5%)	91(22.8%)
		61&above	0(0.0%)	0(0.0%)	2(0.5%)	4(1.0%)	33(8.2%)	39(9.8%)
								400(100.0%)

Source: Analyzed from the Primary Data

Note: Age group wise ranking of the statements from 1 to 5 is done; where 1 is the first preference& 5 is the least preference.

Table 7 reveals the age group wise ranking of the statements of the respondents which have influenced them towards FFRs than other food stalls in the market. Consumers were ranked as per the statements from 1-5 where 1 is the first preference and 5 is the least preference. As far as the statement **time saving** is concerned, the majority of young age group under 18-25 (37.0%)ranked 5 because they do not visit towards the FFRs for the sake of time rather for entertainment as well as presumption of social status. The service holders as well as homemakers under 26-35 (21.8%) and 36-60(21.0) had ranked 1 to the statement because they are more oriented towards FFRs for the sake of time. With reference to the statement **easy availability of food** and influence towards FFRs, the service holders as well as the homemakers under 26-35 (19.8%) and 36-60(17.2%)age groups are ranked four (04) because they look for easy availability of food to save their time from busy work schedule. As far as the statement **entertainment** is concerned, the youngsters under 18-25 age group are ranked 1 because they visit the FFRs for entertainment with their friends at the heaven like glittered place. Nowadays due to modernization and globalization food consumption becomes a domain of status symbol for the young mass. Most of the youngsters under 18-25 age group (3.2%) had ranked 1and (24.8%) ranked 2 to the statement **status enhancement** because they preferred the FFRs to show their status and class position than others. As far as the last statement **fresh food with quality** and attraction towards FFRs is concerned the middle age people under 26-35(20.5%) as well as 36-60(20.5%) age group ranked 5 to the statement because they do not prefer to visit the FFRs for fresh food with quality rather to save time and to socialize their children.

6. Summary of Findings

The study is mainly focused on the emerging trends of FFRs in the twin cities of Odisha in post-liberalized era, which is steadily becoming the demanding food sector in the market. Consumers in both the cities are interested to visit FFRs in comparison to the traditional food restaurants. As per the study of Ghai & Jha, (2020) due to the influence of western culture the frequency of visit towards fast food outlets has increased over the years. The factors like globalization and busy life schedules are the key promoters of fast food industry. Henrike Donner (2011), an urban anthropologist, in his writing 'food culture in Bengal', explained that restaurant culture is becoming a crucial determining factor for middle-class people as a status symbol in the urban India. Advertisement through media has influenced the high-status consumption culture among the educated and employed middle-class. The younger generations have eager to visit the fast-food restaurants and traditional dishes are not preferred by them. However, the peer influence and the pressure from the younger generation are compelling them to adjust with the restaurant culture.

The older people sometimes visited the FFRs with their family members for food and family function. The older people are not acquainted with the digitalized food display systems in some FFRs *viz, KFC and Domino's* etc. they are only familiar with the menu cards, whereas the youngsters are well accounted with the new management systems. The majority of consumers in the FFRs are the youngsters under 18-25 age group followed by 26-35 age groups. Eating foods in the FFRs is now becoming the status symbol for the young and educated professional class. The ANOVA result revealed that demographic factors like age, education, present position and household income have made significant impacts on preference for FFRs in the twin cities of Odisha.

7. Critical Reflections and Limitations of the Study

Traditional notion of food consumption pattern in India has been transformed into new forms after the policy of liberalization. Fast food gets enormous acceptance by the Indian consumers by the entry of western food cuisines in the Indian market as well as due to the advancement in technology. However, food consumption is a domain of class distinction and status expression in the modern globalized society. This study reveals that FFRs are now becoming the dominant trend in the market of twin cities of Odisha. The affluent consumers are able to avail the food in FFRs. The young educated and professional people are the regular customers in FFRs than the poor and deprived section. So, taking foods in the FFRs can be considered as a class phenomenon not a mass phenomenon.

Some limitations can be identified in the present study. Due to time and resource constraints, this study was only carried out at the FFRs in the twin cities of Odisha not at other public areas. Other mega cities are not covered. From the 10 shopping malls the researchers have selected only one FFR each. Further research is needed to address the health issues associated with the fast foods. The responses of young adults and older consumers were addressed in the present study, whereas the responses of children need to be taken into consideration.

8. Conclusion

Globalization along with the technological intervention is the precondition for the enormous promotion of fast-food culture in India. The FFRs in the twin cities of Odisha are located in shopping malls to cater more number of consumers. The present study found that the demographic factors like age, education, present position and household income have influenced to prefer fast-food in the twin cities of Odisha. Youngsters prefer fast food more than the older generation. FFRs are now trying to best meet the needs of consumers in urban locations than other food stalls by providing quick food, glittered heaven like decoration, clean environment, food with multi flavors with brands and lucrative offers etc. The young, educated and professionals are well acquainted with the food consumption system at the FFRs than the older persons. Factors like easy availability of food and limited time etc. have attracted the professionals, working class people and even the homemakers towards the FFRs. However, entertainments with tasty food and status expression are some of the key issues for the youngsters between 18-25 age groups to get attracted towards the FFRs. The influencing factors viz. taste, convenience and alternative to home food were noticed to be major grounds for opting for fast food by the consumers. Customers preference towards FFRs varies across demographic variables like age, education, present position and household income in Odisha.

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Evaluation of Problems Faced by Farmers in the Food Processing Sector of Kerala

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Abstract: The food processing sector encourages the demand for agricultural crops and raw materials used for value addition, raising the income of the farmers and, in turn, promote economic growth and the development of the nation. Kerala is one of the major states in the food processing sector of India. In this processing process, the farmers are providing necessary raw materials to producers for timely production. This research attempts to identify the problems faced by farmers regarding their inability to provide necessary raw materials for the food processing sector of Kerala by studying 240 farmers. Factor analysis is used to identify the factors affecting farmers'inability to provide raw materials for production, and structured equation modelling is used to measure the effectiveness of the model used for this research. The empirical findings suggest the government should provide more credit at lower interest rates, as well as credit subsidies and quality seeds, standard fertilizers and pesticides at reasonable prices to farmers.

1. Introduction

The country has already taken steps to develop the food processing industry, with such as 100 percent FDI through the automatic route, Mega Food Parks, and the Make in India scheme. Still, India has got several unexplored chances and opportunities that it is only able to tackle after recognising and eliminating the barriers that hinder the growth and development of the food processing industry. The Indian Food Processing Industry is one of the major employment-oriented industries ranked fifth position in respect to economic activities which involve production, distribution, and consumption wherein Kerala is the major producer of coconut, bananas, mango, jackfruit, papaya, tapioca, cardamom, ginger, pepper, spices, etc. The demand for processed food items increases day-by-day due to the changing attitudes, tastes, and preferences of consumers and an increase in their standard of living. Hence, the food processing sector is a fast-growing sector that has several new opportunities to conquer.

The raw materials, which are inputs, are first produced by the farmers. The crops thus produced are collected through various means and stored in respective warehouses to ensure the availability of the materials when they are required for processing. The stored inputs are then processed, with the first being primary processing, in which agricultural produce, milk, fish, and meat are converted into commodities or products fit for human consumption, followed by secondary processing of raw materials and passing through other value-added processes that provide them with increased shelf life and ready for consumption (Shukla *et al.,* 2020). Therefore, the farmers are playing a major role in the collection of raw materials in the production process, and after that, the processed food products are ready to be sold at the shops and markets. The present study focused on the problems faced by the farmers regarding their inability to provide necessary raw materials for the food processing sector of Kerala and also suggests the relevant measures to mitigate the obstacles faced by farmers related to the food processing sector of the state.

2. Review of Literature

Singh *et al.* (2021) have investigated the barriers to growth in the Indian food processing sector and pointed out fifteen growth barriers at the farmer's level. The exploratory factor analysis and confirmatory factor analysis were used to carry on the research work, and finally four dimensions, i.e., heavy rain, cost, infrastructure, and credit facility, were identified by the researchers.

2.1. Heavy Rain

Zike (2019) examined the effect of rainfall, which reduces the yield of crops or substantially reduces the growth of food crops. Heavy rain or rain-dependent farming has a significant impact on crop yield and harvest. Similarly, Krishna *et al.* (2004) suggest that agriculture is highly dependent on the temporal dispensation of rainfall during the monsoon. Prasanna (2014) focused upon the monsoon rainfall impact on India's gross food grain yield. He has also suggested that an increase or decrease in rainfall is connected with an increase or decrease in the yield of food grain. Moreover, Torres *et al.* (2019) discussed the impact of rainfall fluctuations on agriculture production and generation. Mauldin (2013) investigated the negative effects of excessive or heavy rainfall on farm cultivation. It creates several problems for the growth and harvesting of the crops because of partially losing the roots of the crops, which results in a low yield for the farmers.

2.2. Cost

Bishaw *et al.* (2007) focused on the importance of quality seeds in agriculture, as well as the issues of high seed and fertiliser costs, as well as a lack of a variety of seeds for crop cultivation. The high cost of these necessities makes them unaffordable to farmers. This would in turn affect the existence of the farmers as well as the growth of the food processing industry. On the other hand, Arthur and Cord (2017) emphasise the importance of modern seeds, fertilizers, and water in increasing agricultural crop yield. Narayanamoorthy (2013) discussed the profitability of crop cultivation in India, where there is tremendous growth in the production of crops. Similarly, Raghavan (2008) studied the changing path in the use of inputs as well as the cost of agricultural cultivation. Show (2018) examined the cultivation

costs and profit from agriculture, which suggested that vegetables are more profitable than other crops and cereals. Pathak *et al.* (2022) explained the importance of grading of the crops and grains whereby a higher price can be charged, which could increase the income generation of agriculture. Boss and Pradhan (2020) determined the management of crops after harvest so as to reduce the losses after the harvest of the crops. It was also pointed out that the task is a complex one too.

2.3. Infrastructure

Llanta *et al.* (2012) studied the impact of facilities like infrastructure on the productivity of agriculture and concluded that there is a positive impact on infrastructure facilities where they face the inadequacy of the same for the farmers. Fleming (2019) proposed the importance of proper cold chain facilities so as to eliminate the losses of the food crops and also to better use the crops whenever required. Radhakrishnan (2019) suggested that farming has got several challenges where there are different solutions required to solve them. Goyal *et al.* (2016) pointed out that agriculture and farmers are facing mainly two problems, which include a deficit of knowledge and a deficit of infrastructure, which lead to low productivity in farming.

2.4. Credit Facilities

Haque and Goyal (2021) explained the importance of credit provided by institutions to farmers. While Amanullah and Channa (2020) investigated the constraints of credit as well as its impact on the agriculture economy, they suggested three means to get relief from the constraints raised due to the lack of credit support for farmers. In addition, Ullah*et al.* (2020) discovered the key factors that would affect the accessibility of farmers to getting credit to carry on agriculture as well as the adoption of more sophisticated technologies and techniques for cultivation and other related activities. Ekwero and Edem (2014)assessed the role of credit facilities in agricultural production where the deficiency of funds is a vital issue faced by farmers. Their study also revealed that there is a positive effect on production when farmers have more access to credit facilities. Where there is more access to advances and loans, the farmers could carry on their agricultural activities without any sort of delay during the process of agri-farming. Hence, they suggested increasing the availability of loans to farmers. Ogundeji *et al.* (2018) discussed farmers' access to credit as well as its impact on farmers' income. The study pointed out that due to the increased demand for food, there is a need for a proper supply chain for food so as to meet those demands. They have also suggested the need for more capital investment by means of adequate credit access for farmers. Souza (2020) scrutinised improving the availability of credit for farmers and also reducing the threat of loan access for carrying on agricultural activities.Das *et al.* (2009) explain the agriculture credit impact or effect on the productivity of agriculture. The study also examined the role of both direct and indirect credit for agriculture by considering the disparities in various regions. Joshi and Dinesh (2020) studied the awareness of farmers as well as the acts of maintaining the cold chain after the harvest of the crops. The researcher mainly pointed out that there is a deficiency of funds among the farmers that drives them to disregard the use of cold chai facilities.

Sakina (2019) has found out that even though there is a strong raw material base, there is high wastage of perishables due to the low processing level of agricultural commodities. She has highlighted

the importance of food processing for the nation because it connects or links between the two pillars of the economy, which are the industrial sector as well as the agricultural sector. Deeja (2017) suggested that processing and value addition would reduce the wastage of raw materials. The various primitive methods that have been used for food processing, as well as the earlier process of the development of food science, were quoted in the study. Kumar and Joshi (2018) suggested a policy to enhance agricultural production and also use public-private participation in the plantation methods. The government has announced several opportunities for farmers and various schemes for the development of farmers as well as the food processing industry. Aggarwal (2021) discussed the importance of technology in agriculture to solve various problems that may arise and affect the growth and income of farming.Singh and Singh (2021) examined the availability of mobile power sources as well as increasing the participation of women in enhancing food products. Female farmers' participation is very low; this problem should be addressed by encouraging women to work in all stages of agricultural production. While Chand (1986) has suggested that there is an increase in the usage of inputs that would make the agriculture sector grow.

The land of Kerala is rich with fertility and has got a variety of crops, some of which are in plenty and some are limited. Those raw materials which are available in plenty, especially perishables, are to be focused on to get value addition so as to eliminate the wastage of raw materials. In this context, farmers are playing a leading role in collecting raw materials for the food processing sector. Unfortunately, they are facing certain problems in the collection of raw materials in different seasons even as prices have gone up. Therefore, it is essential to identify the problems caused by farmers' inability to provide necessary raw materials for the food processing sector of Kerala.

3. Objectives of the Study

The main objectives of this study are:

- To determine the factors affecting the farmers' inability to provide necessary raw materials for the food processing sectors in Kerala.
- To validate the major factors that makes raw materials unavailable for the production process.

4. Research Methodology

The area of research is confined to Kerala. Therefore, the total food processing units of each district in Kerala were used to frame the population for the study. Table 1 depicts the district-wise distribution of food processing units in Kerala.

The samples are collected by using the Multi-Stage Sampling technique (Benny 2021). In the first stage, the processing units in 14 districts vary according to their size. Therefore, three sample districts like Thrissur, Ernakulam, and Kozhikode are selected through the Lahri method under probability proportionate size sampling techniques (Skinner 2016).

In the second stage, the researcher found out the top ten food processing companies in Kerala along with the number of products offered by them through recognised sources. Table 2 depicts the top ten food processing companies in Kerala along with their products.

Table 1: District wise Distribution of Food Processing Units in Kerala

No.	*Districts*	*Number of Food Processing Units*
1.	Kasargode	3
2.	Kannur	8
3.	Wayanad	4
4.	Kozhikode	27
5.	Malappuram	15
6.	Palakkad	25
7.	Thrissur	19
8.	Ernakulam	88
9.	Idukki	6
10.	Kottayam	5
11.	Alappuzha	28
12.	Pathanamthitta	15
13.	Kollam	7
14.	Thiruvananthapuram	18

Sources: *https://www.mofpi.gov.in/*
https://foodcompaniesdirectory.com/

Table 2: Top Ten Food Processing Companies in Kerala

No.	*Name of the Food Processing Company*	*Number of Products*
1	Double Horse	120
2	Kaula	151
3	Vincos	30
4	Saras	42
5	Pavizham	60
6	Nirapara	140
7	Elite	105
8	Sparco	24
9	Melam	57
10	Eastern	253

Sources: *https://www.mofpi.gov.in/*
https://foodcompaniesdirectory.com/

Here, each company is offering a different number of products. Thus, the researcher again used the Lahiri method and three sample firms, like Double Horse, Nirapara, and Eastern, were selected through probability proportionate size sampling techniques.

In the third stage, the researcher used an equal allocation stratified sampling technique for the selection of farmers from each district. The total sample size for this study is 240; therefore, 80 farmers from three districts have been selected for the evaluation.

In the fourth stage, the researcher used a proportional allocation stratified sampling technique for firm-wise selection of farmers. The proportion has been decided with the help of the number of products offered by the firms (as per table 2, Double Horse – 120 Products, Nirapara – 140 Products, and Eastern – 253 Products). Therefore, the final proportion is 120: 140: 253.

In the final stage, 240 farmers (19 farmers from Double Horse, 22 farmers from Nirapara, and 39 farmers from Eastern from three districts) have been selected through proportional allocation of stratified sampling(Benny 2022). The researchers collected the data for this study from February 2022 to June 2022.

The minimum sample size needed for conducting EFA and CFA should be N = 150, with the Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) methods of analysis (Mundfrom et al., 2005). The responses were graded on a 5-point scale (5–Strongly Agree, 1–Strongly Disagree). Techniques of EFA and CFA were run to unravel and confirm the dimensions regarding the barriers of farmers' inability to provide raw materials for the food processing sector. EFA (performed through SPSS Software) was run for the purpose of data reduction and component summarization, and CFA (performed through SPSS Amos Software) was done to test and confirm construct validity for dimensions.

5. Data Analysis and Interpretation

5.1. Demographic Profile

Table 3: Demographic Analysis

Gender	*Frequency*	*Percent*
Male	135	56.25
Female	105	43.75
Total	240	100
Age	*Frequency*	*Percent*
Below 30	45	18.75
30-45	55	22.92
45-60	83	34.58
Above 60	57	23.75
Total	240	100
Education	*Frequency*	*Percent*
High School	47	19.58
SSLC	95	39.58
Plus Two	60	25.00
UG	38	15.84
Total	240	100

Source: Author's Own Compilation

Table 3 shows the demographic profile of farmers. Out of 240, 135 were males (56.25%) and 105 were females (43.75%). As per the age level, 45 respondents (18.75%) were aged below 30 years, followed by 30 – 45 years (22.92%), 45 – 60 years (34.58%), and there were 57 respondents above 60 (23.75%). In terms of education level, 47 respondents were high school level (19.58%), 95 respondents were SSLC level (39.58%), 60 respondents were plus two level (25.00%), and 38 respondents were graduation level (15.84%).

5.2. Exploratory Factor Analysis

Factor analysis has been used to identify the factors affecting farmers' inability to provide necessary raw materials for the food processing sector of Kerala. The key factors were framed based on the existing literature reviews related to this study.

Table 4: Descriptive Statistics of Factors affecting the Inability of Raw materials

Factors	*Mean*	*Std. Deviation*	*Analysis N*
Rain destroy crop	4.6545	.47696	240
Slow plant growth	4.3788	.57687	240
Low yield	4.4424	.49819	240
Quality declines	4.3576	.50548	240
Proper Cold chain storage	3.3030	.97170	240
Easy Grading and Sorting	3.2364	.90318	240
Sufficient water supply	4.1394	.94931	240
Proper logistics	3.2909	.39332	240
Cheaper quality seed	3.5636	.72583	240
Fertilizers at reasonable price	4.3636	.56408	240
Modernization affordable	3.0727	.90772	240
Great government support	3.5030	.64546	240
Credit facilities	3.0424	.10625	240
Reduced rate loans	3.7939	.24203	240
Credit subsidy	4.5333	.19212	240

Source: Author's Own Compilation

Table 4 shows the mean and standard deviation of the factors affecting farmers regarding the inability of raw materials for the food processing sector. The descriptive statistics specify that average weights are given by most of the respondents to these factors.

Table 5: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.778	
Bartlett's Test of Sphericity	Approx. Chi-Square	3107.584
	df	105
	Sig.	.000

Source: Author's Own Compilation

The outcome of Table 5 was seized from 240 farmers, and the result has been comprehensively analysed in this part. The KMO value is 0.778, which is greater than 0.7 and Bartlett's Test is significant at a 5% level of significance. It suggests that the 15 variables associated with the factors are appropriate for factor analysis.

Table 6: Communalities

Variables	*Extraction*
Rain destroy crop	.555
Slow plant growth	.718
Low yield	.722
Quality declines	.858
Proper Cold chain storage	.776
Easy Grading and Sorting	.890
Sufficient water supply	.745
Proper logistics	.787
Cheaper quality seed	.719
Fertilizers at reasonable price	.921
Modernization affordable	.709
Great government support	.660
Credit facilities	.833
Reduced rate loans	.851
Credit subsidy	.747

Note: *Extraction Method: Principal Component Analysis*
Source: Author's Own Compilation

The extraction communalities portray the correlation between the variable and other variables before rotation, which is shown in Table 6. Here, all the extraction communalities are above 0.50. This reveals that there is a good or ideal relationship between each variable.

Table 7: Total Variance Explained

Factors	*Initial Eigenvalues*			*Extraction Sums of Squared Loadings*			*Rotation Sums of Squared Loadings*		
	Total	*% of Variance*	*Cumulative %*	*Total*	*% of Variance*	*Cumulative %*	*Total*	*% of Variance*	*Cumulative %*
1	5.411	36.076	36.076	5.411	36.076	36.076	3.955	26.364	26.364
2	3.252	21.682	57.758	3.252	21.682	57.758	3.556	23.704	50.067
3	1.727	11.514	69.272	1.727	11.514	69.272	2.847	18.982	69.049

contd. table 7

Factors	*Initial Eigenvalues*			*Extraction Sums of Squared Loadings*			*Rotation Sums of Squared Loadings*		
	Total	*% of Variance*	*Cumulative %*	*Total*	*% of Variance*	*Cumulative %*	*Total*	*% of Variance*	*Cumulative %*
4	1.100	7.334	76.606	1.100	7.334	76.606	1.133	7.556	76.606
5	.834	5.559	82.164						
6	.740	4.936	87.100						
7	.523	3.487	90.588						
8	.381	2.542	93.130						
9	.312	2.080	95.210						
10	.205	1.364	96.574						
11	.190	1.264	97.838						
12	.127	.847	98.686						
13	.081	.537	99.223						
14	.072	.483	99.706						
15	.044	.294	100.000						

Note: *Extraction Method: Principal Component Analysis*

Source: Author's Own Compilation

Table 7 reveals that four factors have eigenvalues greater than 1, which is the usual criterion for factor identification. Here, the first factor explains 36.076 percent, the second factor explains 21.682 percent, the third factor explains 11.514 percent, and the fourth factor explains 7.334 percent. Therefore, these four factors need to be considered by the researcher for rotation.

The first four eigenvalues (5.411, 3.252, 1.727, and 1.100) of the rotation matrix of 15 variables are considered. A factor solution with four factors is given in Table 8. The principal component factor analysis method was used to estimate the factor loadings. In the first factor, the 5th, 6th, 7th, and 8th variables have high loading with an eigenvalue of 5.411, which has 36.076 percent of variation. This factor is termed infrastructure. The second factor, in which the 12th, 13th, 14th, and 15th variables have heavy loading with an eigenvalue of 3.252, which has 21.682 per cent of variation, is called credit facility. The third factor, in which the 1st, 2nd, 3rd, and 4th variables have massive loading, has an eigenvalue of 1.727 with 11.514 percent of variation. This factor is known as heavy rain. In the case of the fourth factor, where the 9th, 10th and 11th variables have heavy loading with an eigenvalue of 1.100, which has 7.334 percent of variation. This factor is labelled as cost. These four variables account for 76.606 percent of the total variance.

6. Results and Discussion

6.1. Confirmatory Factor Analysis

CFA is advocated and administered to affirm "construct validity" for dimensions related to factors affecting the farmers' inability to provide necessary raw materials for the food processing sector of

Table 8: Rotated Component Matrix

Variables	*Statements*	*Component*			
		1	*2*	*3*	*4*
Variable 1	Rain destroy crop (Heavy Rain 1)	.203	-.302	**.602**	.244
Variable 2	Slow plant growth (Heavy Rain 2)	.176	.081	**.819**	-.094
Variable 3	Low yield (Heavy Rain 3)	.156	.002	**.824**	-.133
Variable 4	Quality declines (Heavy Rain 4)	.205	.092	**.899**	.017
Variable 5	Proper Cold chain storage (Infrastructure 1)	**.850**	.195	.090	.081
Variable 6	Easy Grading and Sorting (Infrastructure 2)	**.875**	.296	.137	-.136
Variable 7	Sufficient water supply (Infrastructure 3)	**.818**	-.134	.212	-.118
Variable 8	Proper logistics (Infrastructure 4)	**.816**	.187	.283	.082
Variable 9	Cheaper quality seed (Cost 1)	-.078	.032	.303	**.787**
Variable 10	Fertilizers at reasonable price (Cost 2)	-.065	-.042	-.047	**.956**
Variable 11	Modernization affordable (Cost 3)	.170	.583	-.174	**.556**
Variable 12	Great government support (Credit Facility 1)	.149	**.797**	-.046	.028
Variable 13	Credit facilities (Credit Facility 2)	-.004	**.901**	-.118	.084
Variable 14	Reduced rate loans (Credit Facility 3)	.091	**.906**	.125	-.084
Variable 15	Credit subsidy (Credit Facility 4)	.175	**.812**	.134	-.196
Eigenvalues		**5.411**	**3.252**	**1.727**	**1.100**
Percentage of variation		**36.076**	**21.682**	**11.514**	**7.334**

Notes: Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Source: Author's Own Compilation

Kerala, which will lay the ground for examining the relationship between construct dimensions and their items (Figure 1). The values establish the model fitness for the data specified in Table 9.

Table 9: Model Fit Measures

Model Fit Indices	*Citation*	*Threshold Limit*	*Estimated Value*	*Interpretation*
Normed Chi-Square	Jackson, J A. (1998)	< 3	225.776/ 87 CMIN/DF – 2.595	Excellent
CFI (Comparative Fit Index)	Shi, D., Lee, T. &Maydeu-Olivares, A. (2018), Ximénez, C., Maydeu-Olivares, A., Shi, D., & Revuelta, J. (2022), and Xia, Y., & Yang, Y. (2018)	> 0.90	0.965	Acceptable

contd. table 9

Model Fit Indices	*Citation*	*Threshold Limit*	*Estimated Value*	*Interpretation*
GFI (Goodness of Fit Index)	Shi, D., Lee, T. & Maydeu-Olivares, A. (2018), Ximénez, C., Maydeu-Olivares, A., Shi, D., & Revuelta, J. (2022), and Xia, Y., & Yang, Y. (2018)	>.90	0.930	Good
IFI (Incremental Fit Index)	Shi, D., Lee, T. & Maydeu-Olivares, A. (2018), Ximénez, C., Maydeu-Olivares, A., Shi, D., & Revuelta, J. (2022), and Xia, Y., & Yang, Y. (2018)	>.90	0.921	Good
NFI (Normed Fit Index)	Shi, D., Lee, T. & Maydeu-Olivares, A. (2018), Ximénez, C., Maydeu-Olivares, A., Shi, D., & Revuelta, J. (2022), and Xia, Y., & Yang, Y. (2018)	>.90	0.911	Good
RMSEA (Root Mean Squared Residual)	Hooper, D., Coughlan, J. & Mullen, R M. (2008), Kyriazos, T A. (2018).	< 0.08	0.071	Acceptable
SRMR (Standardized Root Mean Squared Residual)	Pavlov, G., Maydeu-Olivares, A. & Shi, D. (2020).	< 0.06	0.041	Excellent

Source: Author's Own Compilation

Table 9 reveals the indices of the relevant model. As per the model fit criteria, the ratio of goodness of fit to degrees of freedom should not exceed 3 and RMSEA < 0.08, along with GFI, IFI, NFI, and CFI values being > 0.9. The smaller SRMR indicates a better model fit. The value of RMSEA is < 0.08 and CMIN/DF is < 3 which indicates a good model.

Table 10: Standardized and Unstandardized Regression Weights of the Model

			Unstandardized Regression Weights				
Indicator Variable	<—-	*Latent Variables*	*Estimate*	*S.E.*	*Critical Ratio*	*P-value*	*Standardized Regression Weights*
Infrastructure4	<—-	Infrastructure	1				0.791
Infrastructure3	<—-	Infrastructure	2.140	0.186	11.505	***	0.832
Infrastructure2	<—-	Infrastructure	1.489	0.195	7.626	***	0.774
Infrastructure1	<—-	Infrastructure	1.743	0.216	8.075	***	0.842

contd. table 10

Credit.Facility4	<—-	Credit Facility	1.000				0.834
Credit.Facility3	<—-	Credit Facility	1.241	0.077	16.201	***	0.991
Credit.Facility2	<—-	Credit Facility	0.909	0.071	12.774	***	0.809
Credit.Facility1	<—-	Credit Facility	0.705	0.073	9.648	***	0.841
Heavy.Rain4	<—-	Heavy Rain	1.000				0.969
Heavy.Rain3	<—-	Heavy Rain	0.732	0.064	11.375	***	0.724
Heavy.Rain2	<—-	Heavy Rain	0.969	0.069	14.125	***	0.829
Heavy.Rain1	<—-	Heavy Rain	0.940	0.071	13.239	***	0.751
Cost3	<—-	Cost	1.000				0.738
Cost2	<—-	Cost	1.220	0.098	12.411	***	0.948
Cost1	<—-	Cost	1.149	0.106	10.851	***	0.827

Source: Author's Framework and Calculation

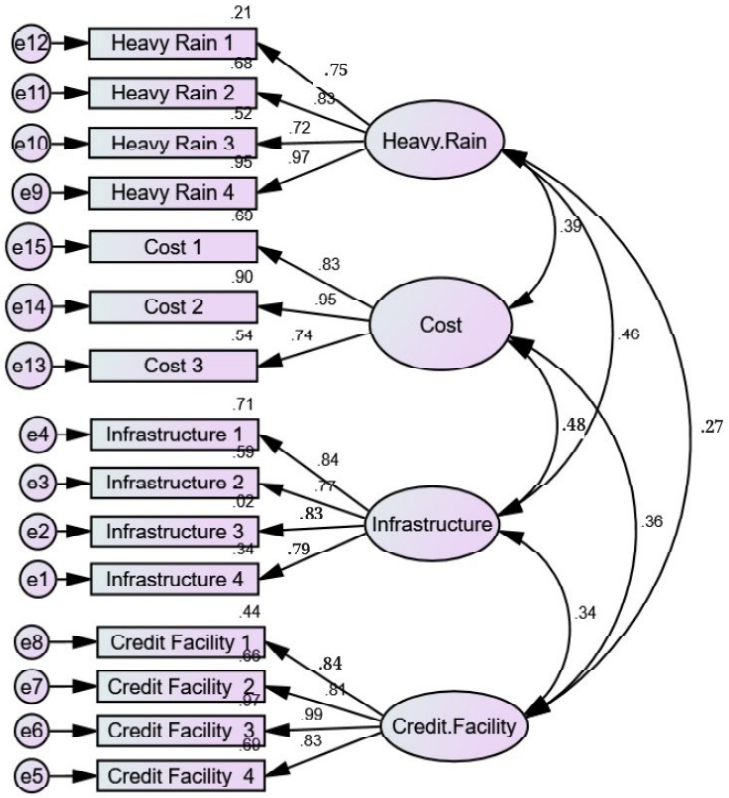

Figure 1: Confirmatory Model of Farmers

Source: Author's Framework and Calculation

Table 10 shows the standardised and unstandardized regression weights of the model based on latent and indicator variables. The standardised regression weights of all the latent variables based on indicator variables are greater than 0.5 and p-values are less than 0.01. It indicates that all the indicator variables used to predict the latent variable are statistically significant.

Table 11: Composite Reliability of the Model

Latent Variables	*CR*	*AVE*	*MSV*	*MaxR(H)*
Heavy Rain	0.893	0.679	0.214	0.952
Infrastructure	0.857	0.656	0.234	0.861
Credit Facility	0.926	0.760	0.127	0.984
Cost	0.879	0.709	0.234	0.924

Source: Author's Framework and Calculation

The composite reliability of the model is expressed in Table 11. The composite reliability (CR) of Heavy Rain is 0.893, Infrastructure is 0.857, Credit Facility is 0.926, and Cost is 0.879. If CR > 0.70, AVE < CR, and AVE > MSV, which indicates that the model achieved composite reliability.

Table 12: Convergent Validity of the Model

Indicator Variable	<—-	*Latent Variable*	*Standardized Loading*	*Square of Standardized Loading*	*Sum of Square of Standardized Loading*	*Number of Indicators*	*AVE*
Infrastructure 4	<—-	Infrastructure	0.791	0.626	2.626	4	0.656
Infrastructure 3	<—-	Infrastructure	0.832	0.692			
Infrastructure 2	<—-	Infrastructure	0.774	0.599			
Infrastructure 1	<—-	Infrastructure	0.842	0.709			
Credit.Facility 4	<—-	Credit Facility	0.834	0.696	3.039	4	0.760
Credit.Facility 3	<—-	Credit Facility	0.991	0.982			
Credit.Facility 2	<—-	Credit Facility	0.809	0.654			
Credit.Facility 1	<—-	Credit Facility	0.841	0.707			
Heavy.Rain 4	<—-	Heavy Rain	0.969	0.939	2.714	4	0.679
Heavy.Rain 3	<—-	Heavy Rain	0.724	0.524			
Heavy.Rain 2	<—-	Heavy Rain	0.829	0.687			
Heavy.Rain 1	<—-	Heavy Rain	0.751	0.564			
Cost 3	<—-	Cost	0.738	0.545	2.127	3	0.709
Cost 2	<—-	Cost	0.948	0.899			
Cost 1	<—-	Cost	0.827	0.684			

Source: Author's Framework and Calculation

Table 12 reveals the convergent validity of the model. In order to achieve convergent validity, the AVE (Average Variance Extracted) must be 0.5 or more than 0.5, and standard factor loadings are greater than 0.50. As per this model, the AVE of infrastructure is 0.656, credit facility is 0.760, heavy rain is 0.679 and cost is 0.709. The factor loadings of all the latent variables based on indicator variables are greater than 0.5. It indicates that the model achieved convergent validity.

Table 13: Discriminant Validity of the Model

Latent Variables	*Heavy Rain*	*Infrastructure*	*Credit Facility*	*Cost*
Heavy Rain	**0.824**			
Infrastructure	0.463	**0.810**		
Credit Facility	0.267	0.341	**0.872**	
Cost	0.389	0.484	0.357	**0.842**

Source: Author's Framework and Calculation

The Discriminant Validity of the model expressed in Table 13. In order to achieve discriminant validity, the square root of AVE must be greater than latent variable correlations, i.e., inter-construct correlations. As per this model, the square root AVE of Heavy Rain is 0.824, Infrastructure is 0.810, Credit Facility is 0.872, and Cost is 0.842, which are greater than inter-constructed correlations. Therefore, this model satisfies the requirements for discriminant validity.

7. Conclusion

Kerala is blessed with fertile soil, which helps in the cultivation of several crops. But there are lots of difficulties in grabbing the yield. This would directly affect the food processing industry in Kerala. Farmers are intimately involved in the collection of raw materials and provide high-quality materials to producers. Unfortunately, they have faced certain problems in the availability of raw materials for production.This research has tried to investigate the major factors that cause inability to provide necessary raw materials for the food processing sector of Kerala, which were satisfied by analysing the responses from the farmers. As per this investigation, the researcher has found that four factors, such as heavy rain, cost, infrastructure, and credit facility, are the causes of the farmers' inability to provide the raw materials for food processing sectors in Kerala.

Heavy rain is one of the important factors in the destruction of agricultural crops. It reduces the yield and quality of the crops produced. Along with that, farmers face the problem of high costs for quality seeds, standard fertilisers, and pesticides. Many times, it becomes unaffordable for them. Another critical factor that affects farmers is the lack of infrastructural facilities. They do not have proper cold chain facilities near the farm or proper logistics and handling facilities. While there is a lack of credit facilities for the farmers, so they are able to afford the quality crops, tools, equipment, and facilities, therefore, government support is also crucial for the farmer's development and progress.

This research also suggests making more value-added for all the food crops and exploring the untapped opportunities where wastage can be reduced. There should be enough facilities and means

for the farmers to cultivate those crops which are more imported from other states, so as to reduce the import cost. Meanwhile, protect the crops by providing raised beds for more drainage of water during heavy rain as well as preparing the soil for cultivation with natural cloth to assist with drainage. A rain garden can be made so as to drain out the rain water. All these revolve around the matter of the financial status of the farmers, where the government should provide greater credit facilities at reduced interest rates, as well as credit subsidies and quality seeds, standard fertilisers and pesticides at reasonable prices for the farmers.

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Study of the Factors Influencing Petty Vendors' Adoption of the Unified Payment Interface

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UPI, Digital payments, Petty vendors, Performance expectancy, Efforts expectancy, Social influence.

JEL Classification

E21, E22, E26, O31, O33.

Abstract: In today's world of digitalization, Unified Payment Interface (UPI) has paved the way for transforming India into a cashless economy. This research paper focuses on petty vendors transacting through UPI applications to understand and examine the hurdles they face while doing online transactions. The sample data was collected by formulating a structured close-ended questionnaire driven on 100 petty vendors as a sample population from the Delhi NCR region. The research was accomplished in June-August 2022. The hypothesis was formulated by taking variables such as performance expectancy, effort expectancy, and social influence, which were then tested through paired sample t-tests. SPSS and Ms-Excel software was used for data analysis. It was found that performance expectancy and effort expectancy factors have affected petty vendors while using UPI, but social influence did not affect them much. UPI services are used more by educated people, and most respondents are younger. The findings have strategic implications for managers of banks and financial institutions.

1. Introduction

The advancement of technology and digitization is flourishing quickly in India. Smartphones and the internet have become an indispensable aspect of modern life. Because the future is full of technology-driven payment systems, the mobile payment system is the next big thing in this arena (Kumar and Mathur, 2021). It has made significant contributions to the empowerment of the Indian economy by improving network infrastructure and mobile connections.As petty vendors contribute a considerable

part to shaping our country's economy, it is crucial to know their opinions and factors such as demographic, technological, financial, personal, and external aspects that impact them regarding adopting UPI transactions. With this, various digital payment system, such as PhonePe, BHIM, Paytm, etc., has reached great extension and popularity among users (Maindola *et al.*, 2018). UPI was designed to build a worldwide affordable digital payment system that would allow instant real-time payment and facilitate interbank transactions that request and send money on the mobile platform without charges (Gochhwal, 2017). Since all UPI apps deploy the same payment interface, users can connect effortlessly with the concerned one. For instance, BHIM users can transmit cash from his/her bank account to the shop owner's bank account that accepts Google Pay. As a result, UPI apps are accepted by most stores in India (Kumar *et al.*, 2020). It may simplify transactions by lessening the obstruction while dealing with cash and enhancethe management of verifiable business records to help ease cooperation with the financial sector. Strengthening financial transparency will bring large-scale benefits like boosting tax adherence. As it mentions possible advantages in some aspects, countries like East Africa have become mainstream for digital transactions (Ligon *et al.*, 2019). The adoption of online payment that emerged after the demonetization, announced on 8th November 2016, has switched people's lives and significantly profited the country by creating a cashless economy. It has positively impacted the economy in maintaining its liquidity and helped raise the value of digital payments. Talking about the digital wallet, Paytm users before demonetization were 125 million, which increased to 185 million just after the three months of demonetization, and hiked to 280 million customers in November 2017. The daily online transactions through e-wallets lifted from 17 lakhs to 63 lakhs. In different metro cities, it was noticed that unexpectedly small traders at their stores began placing Point of Sales (POS) machines for accepting digital payments (Pandey, 2022).UPI has revolutionized the digital payments landscape in India and has become an integral part of the country's financial ecosystem, with exponential growth in transaction volume and value over the past few years.Informal traders, such as petty vendors whorequire little investment and reasonable skill to run their businesses, play a crucial role in the country's economic development(Sharma & Pradhan, 2017). As petty vendors have also begun accepting payments through UPI (Iyer, 2018), it is crucial to know their opinions regarding the usage of the UPI payment system and the factors that affect UPI usage, considering demographic aspects, technological aspects, financial aspects, external aspects, and personal aspects. This paper examines petty vendors' problems and hindrances while making UPI transactions, such as network issues, cybercrime, and literacy issues.

UPI in India

Increasing competitiveness and customer awareness pose a significant influence to all banking sector firms in India (Kompalli and Tharimala, 2022).After the demonetization of major currency notes in 2016 and the widespread adoption of payment applications, the Indian government strongly encourages its residents to use digitized forms of payment. The UPI, which provides easy and immediate cash transactions through various users' bank accounts, was launched by the National Payments Corporation of India (NPCI) in collaboration with Indian banks to encourage small digitized payments at large volumes (Kumar *et al.*, 2020).UPI was launched in India with only 21 banks onboard. By March 2017, the number of banks using UPI had increased to over 44.

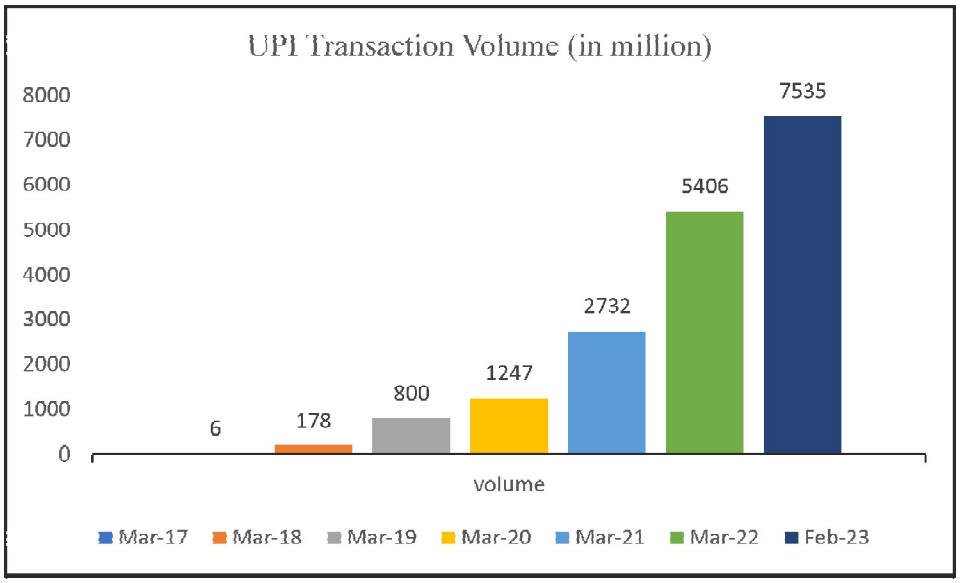

Figure 1: UPI transaction volume from Mar. 2017 to Feb. 2023.

Source: Authors' compilation based on NPCI report

UPI witnessed a significant increase in the number of transactions during this period, from just 0.09 million in August 2016 to over 6.37 million by March 2017. UPI's growth accelerated, with transactions increasing to over 178 million by March 2018. In March 2019, UPI's growth rate accelerated even further, with the number of transactions increasing to over 800 million. In March 2020, it went to around 1247 million. The COVID-19 pandemic drove the adoption of digital payments at an even more incredible pace by increasing to around 2732 million by March 2021 and over 5406 million by March 2022. Moreover, the number of transactions in 2023 by February is 7535 million.

2. Literature Review

Pandey (2022) discovered that because digitized payment options offer better convenience, users will likely lessen their cybercrime incidence. Depending on the purpose of the transaction, different types of fraud have different effects on digital payment choices. Moreover, demographic factors influence the broader acceptance of digital transactions.

Rastogi *et al.* (2021) explored the relationship between financial literacy, financial inclusion, and economic development. According to their study, the adoption of UPI significantly impacts financial literacy, leading to greater financial inclusion and ultimately contributing to economic development. The findings suggest that UPI adoption positively impacts individuals in multiple ways beyond just facilitating financial transactions. Overall, the study highlights the importance of financial literacy and inclusion in promoting economic growth and UPI's role in facilitating this process.

Khanra *et al.* (2020) examined the factors contributing to consumer resistance to using UPI for digital payments. The researchers used the innovation resistance theory to identify critical behavioral factors such as transparency and privacy and moderators such as security and word of mouth. The findings suggested that addressing usage constraints and privacy issues is necessary to reduce user resistance and promote UPI adoption.

Patel and Datta (2020) explored factors influencing customers in UPI usage in India and found that hacking and phishing threats restrict UPI usage. Rural people lack awareness of UPI usage and thus do not use it for their financial transactions. The demand for safety standards on digital payment by customers must be administered.

Sivasubramanian and Rajendran (2020) studied the economic conditions of small-scale vendors in Bangalore and the impact of digital payments on their businesses. Their findings indicate that petty traders have adopted the UPI platform,significantly improving their business growth compared to their previous capacity. Overall, the study suggests that UPI has positively impacted the economic conditions of small-scale vendors in Bangalore.

Tripathi (2020) studied the factors influencing consumer adoption of online payment applications. The study revealed that older individuals are generally less inclined to use online payment services. Additionally, the research found that users often face obstacles related to technical complexities, concerns around transparency, and trust issues. The research suggests that several factors, including age and technical difficulties, are significant determinants of consumer adoption of online payment applications.

Philip (2019) analyzed customer perceptions towards UPI and its impact on UPI services. The study's findings suggest that customers view the Unified Payment Interface services positively. Furthermore, the study found that education significantly influences the adoption of digital payment services. At the same time, smartphone usage also plays a critical role in accepting UPI services in a given area. Eventually, the research says that UPI services have gained widespread acceptance among customers, and factors such as education and smartphone usage are critical drivers of this trend.

Iyer (2018) explored that there is strong resistance among vendors to employ UPI payment services because of factors like inadequate education, which should be raised through technical training concerning electronic payments, mobile wallet transactions, etc., as well as software solutions that are simple enough for ordinary people like petty vendors for using. E-wallet applications that are user-friendly and secure and offer financial perks would alleviate the trust concerns among petty vendors, lessen their reluctance, and push them to switch to a cashless society with proper operations.

Chatterjee and Thomas (2017) reviewed their study on UPI, which acts as an impulsive tool for promoting digitalization, and discussed its issues and opportunities. Although it has problems like the risk of money transfer failure, positive facets such as cost-effectiveness, increment in sales of smartphones, and decreased data cannot be disregarded. To ensure consumer involvement and acceptance, banks should optimize user trust and promote UPI for secure and smooth customer payment.

Mohapatra (2017) analyzed that interoperability has become an enormous asset for the expansion of UPI and is continuously increasing because of varied aspects such as a hike in smartphone sales, cheap cost of data, ease of money transfer, and accessibility of mobile banking facilities.

Singh and Rana (2017) studied customers' attitudes toward online payments. Their research revealed that demographic factors, except education, do not significantly affect the adoption of digital payment systems. Individuals proficient in internet use and who have completed at least a secondary education are more likely to prefer online payment systems. The study also found that urban areas with higher education tend to be more receptive to online payment systems. The research suggests that education and internet proficiency are crucial in accepting digital payment systems, while demographic factors have a negligible impact.

Mukhopadhyay (2016) surveyed by using a theoretical model that showed the decisions of customers and traders about the adoption of digital payments. The result showed that users make more payments digitally, which are directly credited to accounts. Remarkably, there has been an increase in cashless payments. Awareness, e-payment cost removal, and incentive schemes will have enormously more significant gains.

3. Research Gap

After reviewing the existing literature on the adoption of the Unified Payment Interface by customers, it was found that numerous studies have been conducted on the various factors influencing their acceptance of the platform. However, there is limited research on petty vendors' perception of UPI and their challenges in adopting the platform. This study addresses this gap by examining the factors that impact petty vendors' approach toward using UPI.

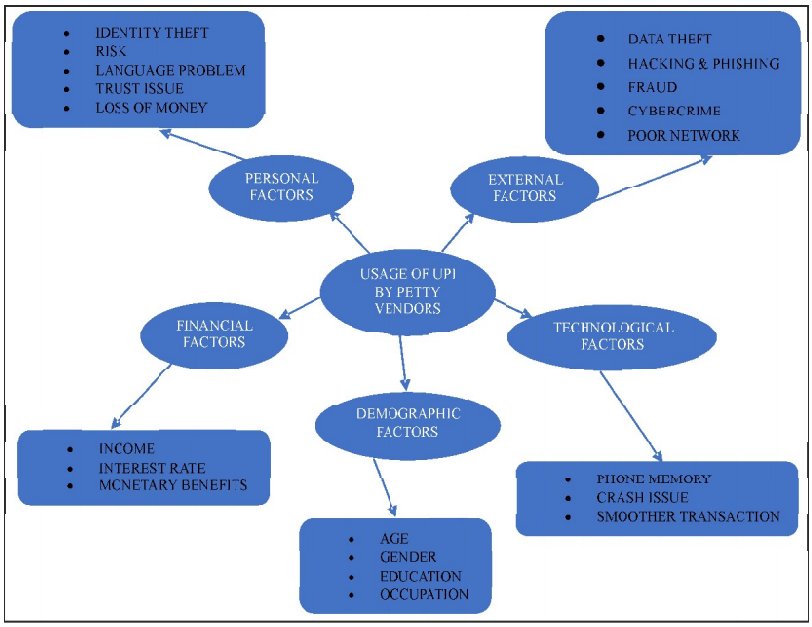

Figure 2: Conceptual Model of Factors Impacting Petty Vendors' Decision to Adopt UPI

Source: Authors' compilation

The above conceptual model is derived after reviewing research based on the factors influencing users' acceptance of UPI. The five major factors are personal, external, financial, demographic, and technological. This research considers these aspects to analyze the data and form a conclusion.

4. Objectives and Hypotheses of Study

4.1. Objectives of the Study

1. To investigate issues that petty vendors face while adopting UPI, and
2. To know the significant factors which are influencing UPI usage.

4.2. Hypotheses of the Study

In this section, the researcher has undertaken the following hypothesis for expecting the right outcome related to the research.

H1: Performance expectancy has a significant impact on UPI usage

H2: Efforts expectancy has a significant impact on UPI usage

H3: Social influence has a significant impact on UPI usage

5. Research Methodology

This study used mixed-method research design that includes both primary and secondary data sources to investigate the factors affecting the approach of petty vendors toward adopting the Unified Payments Interface (UPI). The data was collected in the Delhi NCR region, which has one of India's highest petty vendors. The research approach adopted is quantitative. A convenience sampling method was used to select a sample population of 100 petty vendors based onaccessibility which is considered valid for data analysis (Kennedy, 2022). The research was conducted between June and August 2022, and a structured close-ended questionnaire was employed to collect responses from UPI users. The demographic profile of the respondents was analyzed using descriptive statistics to gain insight into their age, gender, occupation, and other relevant characteristics. A paired sample t-test was used to test the hypothesis. The data collected from the respondents were analyzed using SPSS and MS Excel software to identify significant trends and patterns. In addition, this study seeks to explore the challenges faced by petty vendors in adopting UPI as a payment platform and identify the factors influencing their approach toward its adoption. This study aims to provide a comprehensive understanding of the factors that drive or hinder the adoption of UPI among petty vendors.

6. Data Analyses and Interpretation

Table 1 showcases the respondents' key demographics, including their gender, age, occupation, education, and annual income. The data reveals that most respondents were male, constituting 75% of the sample. Furthermore, 34% of the respondents were aged between 18 to 25 years, and 28% had completed their graduation. The research also discovered that 58% of the respondents were self-employed, while 44% earned an annual income of 1-5 lakhs.

Table 1: Demographic Profile of the Respondents

Factors	*Options*	*Frequency*
Gender	Male	75
	Female	25
	Total	100
Age	18-25	34
	25-35	32
	35-45	23
	45-60	11
	Total	100
Education	Up to 5	1
	6 to 10	12
	Secondary	18
	Higher Secondary	25
	Graduate	28
	Postgraduate and above	13
	No formal education	3
	Total	100
Occupation	Salaried Employee	25
	Daily worker/ Daily wage earner	16
	Self-employed/Business owner/Professional	58
	Other	1
	Total	100
Annual Income	Up to 1 lakh	40
	1-5 lakh	44
	Above 5 lakh	16
	Total	100

Source: Authors' Own Compilation

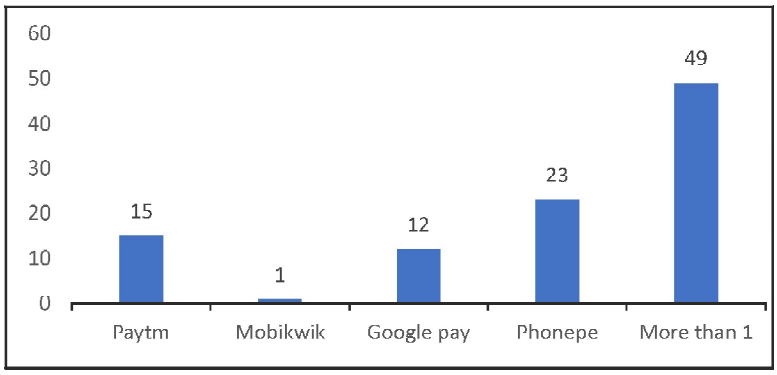

Figure 3: Responses of the Mobile Application for UPI

Source: Authors' Own Compilation

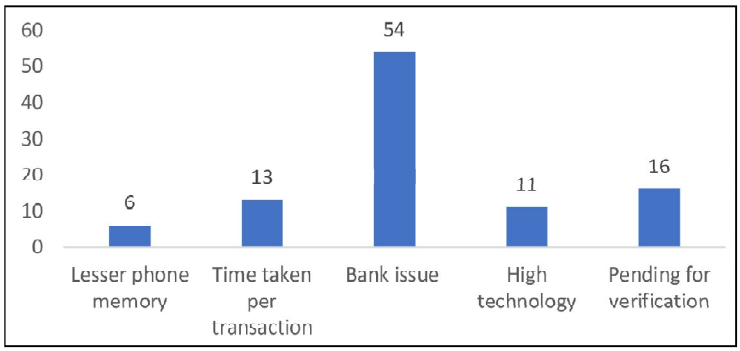

Figure 4: Technical Factors Influencing while using UPI

Source: Authors' Own Compilation

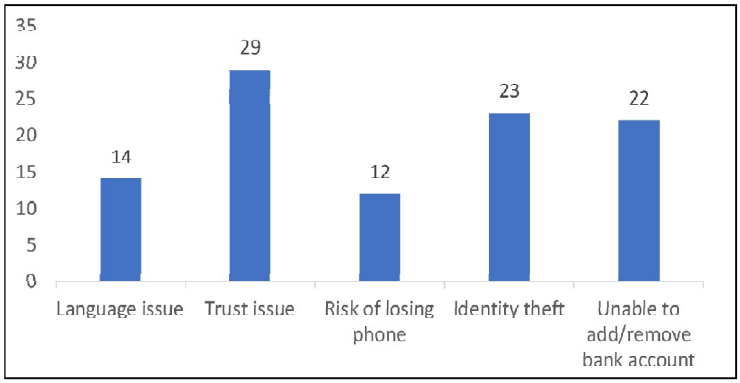

Figure 5: Personal Factors Influencing while using of UPI

Source: Authors' Own Compilation

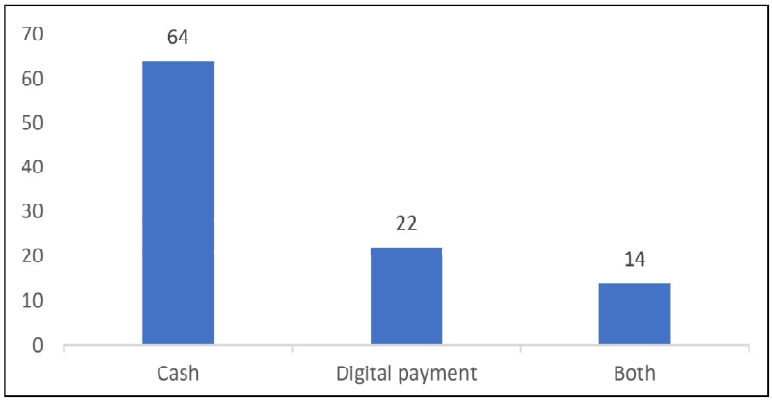

Figure 6: Money Received Modes from Customers

Source: Authors' Own Compilation

Figure 3 depicts that out of the 100 respondents, 49 use more than one application for UPI payments, with PhonePe being the most commonly used by 23 respondents. On the other hand, MobiKwik is less popular among the respondents. Figure 4 shows that the majority of respondents, 54%, face technical issues related to bank server errors while using UPI applications. On the other hand, only a small fraction of the respondents, 11%, experience issues related to lesser internal memory. Figure 5 depicts that many respondents have trust issues for security and privacy reasons. Taking an overall frequency, the other aspects such as language issues, risk of losing a phone, identity theft, and inability to operate a bank account are hindrances that respondents face and cannot be ignored. Figure 6 represents the vendors (64% of respondents) that receive their payment mostly through cash, 22 respondents receiving money digitally, and 14 received money by cash and digital payment.

Table 2: Paired Sample T-Test

	Variable	*Std. Error Mean*	*T value*	*Sig. (2-tailed)*
Pair 1	PE - A	0.139	5.990	0.000
Pair 2	EE - A	0.174	4.534	0.0000
Pair 3	SI - A	0.135	0.074	0.941

Source: Authors' Own Compilation

PE- Performance Expectancy, EE-Efforts Expectancy, SI- Social Influence, A- Age

H1: Performance expectancy has a significant impact with the Age while using UPI: T value = 5.990 & P value <= 0.05

H2: Effort expectancy has a significant impact with the Age while using UPI, T value = 4.534 & P value <= 0.05

H3: Social Influence has no positive impact with the Age while using UPI, T value = 0.074 & P value >= 0.05

Table 3: Paired Sample T-Test

		Std. Error Mean	*T value*	*Sig. (2-tailed)*
Pair 1	PE - O	0.154	3.820	0.000
Pair 2	EE - O	0.155	3.542	0.001
Pair 3	SI - O	0.142	-1.619	0.109

Source: Authors' Own Compilation

PE- Performance Expectancy, EE-Efforts Expectancy, SI- Social Influence, O- Occupation.

H1: Performance expectancy has a significant impact on the Occupation while using UPI: T value = 3.820 & P value <= 0.05

H2: Effort expectancy has a significant impact on the Occupation while using UPI, T value = 3.542 & P value <= 0.05

H3: Social Influence has no positive impact on the Occupation while using UPI, T value = -1.619 & P value >= 0.05

7. Conclusion

The study has adopted a theoretical model for knowing the impact of factors, namely performance expectancy, efforts expectancy, and social expectancy with occupation and age, to better understand the perception and adaptability of UPI by petty vendors in the Delhi NCR region. We have found that performance expectancy and effort expectancy factors have affected petty vendors while using UPI, but social influence did not much affect petty vendors. UPI allows petty vendors to make quick payments. In addition, Petty vendors don't face any major problems while using UPI. This study shows that petty vendors positively respond to a Unified payment interface, and there is a relationship between occupation and age. Educated people use UPI services, and most of the respondents are younger. UPI is a trendy and most preferred payment service among vendors in the Delhi NCR region. It makes payment easy to transfer, quick, and hassle-free. Therefore, it is concluded that the petty vendors of Delhi NCR are immensely benefited from the transactions or payments received from the customers. The study's implications suggest that service providers should focus on enhancing the performance and effort expectancy factors to encourage more petty vendors to use UPI services. Furthermore, the study shows that education and age play a vital role in adopting UPI by petty vendors. Hence, policymakers and service providers should focus on increasing awareness and educating people about the benefits of UPI, particularly among the older and less-educated population.

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Attitude Towards Digital Commercials, Advertisement Skepticism and Purchase Probability of Higher Education Students in Odisha

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Keywords

Attitude, Advertisement scepticism, Digital commercials, Digital marketing, Purchase intention

JEL Classification

C12, D12, I23, M37, P46

Abstract: Digital advertising is a marketing strategy adopted for digital platforms. With the plethora of digital advertisements, it becomes essential to know about people's reactions to them. Higher education students use the internet enormously for different purposes and often search internet to make purchase decision. This study aims at examining attitude towards digital commercials, advertisement skepticism and purchase probability of higher education students of Odisha. A quantitative approach was taken throughout. Data were collected and analysed on SPSS with appropriate statistics. We found significant differences in the variables assessed with respect to gender, age and family income. There exists a negative correlation between attitude and skepticism as well as between skepticism and purchase probability. Gender, family income and ad.skepticism are significant predictors of purchase probability. This research provides insight into the relationships among attitude, skepticism and purchase intent. Future research may direct toward attitude towards specific ads and its consequences.

1. Introduction

In recent years, Odisha is growing both economically and academically. Odisha presents new opportunities to the business economy. The use of the Internet amongst higher education students in Odisha is extensive. Internet exposure inevitably brings exposure to digital endorsements. It is an important part of the market economy and it is high time to know its impact on higher education students in Odisha who use digital platforms to a huge extent and are the prospective consumers of products and services.

Digital advertising is a marketing strategy adopted by companies that communicate with consumers on online platforms such as companies' own websites, other marketing websites, social media platforms,

mobile apps, e-mails, etc., to promote their products, brands, and/or services. It may use images, texts, audio, or video, containing promotional materials to catch the attention and create an impact on prospective consumers.In today's high-tech world, buyers often maketheir purchase decisions based on online reviews,videos, star ratings, and feedback.Then theyshare their opinions on various social media platforms and thereby influence the purchase decision of other prospective buyers (Mohanty *et al*., 2022).

As predicted by several researchers, companies will spend a lot more on online advertising than TV advertising in the coming years (Kim *et al*., 2012). Proliferated use of the internet and a surge in the revenue earned from internet advertisements (ads) in recent years make digital marketing a very fast-growing industry worldwide. One of the most important advantages of digital advertising is that its impact is objectively measurable with respect to various criteria.

With this enormous growth and plethora of ads on digital platforms, it becomes essential to know about people's reactions to it and how their purchase probability is governed by their reactions. In the US, consumers showed more positive reactions to the economic effect of advertising and less favourable reactions towards the social effects of advertisements (Bauer and Greyser, 1968; Lantos, 1987). In many research, advertising is accused of social ill. According to a survey conducted by Blockthrough in March 2021, in the US, on an average, 40% of internet users use ad blockers on their devices. Q2 2020 Audience Project survey found that 47% of US internet users had a negative attitude towards ads on websites, while just 10% felt positive towards online ads (Insider Intelligence, 2022).

There is a direct relationship between attitude and behaviour of consumers (Tsang *et al*.,2004). People in Romania, havea more positive attitude towards online advertising and also clicked more on online advertisements compared to Chinese people who are more prone to buy products online than Romanians (Wang and Sun, 2010a).

The tendency to mistrust ads is also evident in many consumers. Advertisement Skepticism may be defined as mistrust in the ad content, particularly in the information provided by the ads. Obermiller and Spangenberg (1998) defined Ad.skepticism as "a tendency to disbelief the advertising claims". Doubts on advertisement claims are found to affect purchase intention negatively (Chen and Leu, 2011;Zarouali, 2017).

Purchase intention is the subjective probability of the consumer or the intention of the consumer to purchase a product in the future (Hsu and Tsou, 2011; Saxena, 2011). Purchase probability is important as it is expected to be related to the actual purchase behaviour of the consumers. Abdul and Soundararajan (2022) supported the previous findings that purchase intention is strongly associated with the actual consumer's tendency to buy a product. There are several researches attempting to find out the predictors of purchase intention using various kinds of online platforms such as social network sites (Mir and Zaheer, 2012) and websites (Lee, 2009; Park *et al*., 2007). Narang and Sharma (2021) empirically tested the relationship between demographic factors and purchase intention and found that purchase intention to buy organic beauty products is significantly related to personal income and educational level, in particular, higher-secondary and graduation level.

However, researches on digital advertising concentrate mostly on online purchasing only. But many people buy products offline i.e. from physical stores after seeing the ad online. We find that there

are only few foreign studies concerning ad.skepticism in consumers, in relation to purchasing intent. India severely lacks such research.The studies are also limited in number while coming to attitude towards the economic and social effects of digital advertising and its relation to ad.skepticism and purchase probability.

The rationale for considering higher education students in this study is multi-fold. Studies usually lack them as the sample, even though this group is one of the most exposed groups to digital platforms. Their academics, entertainments, hobbies, socialization, and shopping, all revolve around the Internet.Unlike children and adolescents, they are adults and therefore more empowered to make a purchase decision. Unlike old people, young students are popping up with their emerging needs and desires and are therefore more prone to shop for products of different kinds. They are highly tech-savvy and often, if not always, search online for making purchase decisions. It is expected that they will be more analytical, more mature, and more critical about advertising than children, adolescents and persons with lower educational levels and thereby they will be hard to persuade. Thus, this group needs special attention for making the promotions effective. Moreover, almost all of them have email ids, especially after the pandemic and being regular internet users, higher education students are more accessible through online.

2. Review of Literature

Aydin (2016) opined that there is a lack of academic studies in the field of digital ads in developing countries. Natarajan *et al.* (2014) pointed out that Indian consumers' perception of social media advertisements is an unexplored area of research and therefore needs further investigation. Our review suggests that attitude towards economic and social effects of digital ads. and its relation to both ad.skepticism and purchase intention is a relatively unexplored area, particularly in Odisha, India, and therefore needs research attention.

2.1. Consumers' Attitude Towards Digital Ads.

Tanyel *et al.* (2013) reported that Millenials' (first generation to use internet media) attitude towards internet advertising is more negative in comparison to traditional media. Consumers in China and US have similar attitudes towards digital advertising in spite of their cultural differences. They possess a less favourable attitude in this regard (Gao *et al.*, 2014). Natarajan *et al.* (2014) incorporated seven belief factors namely, hedonic/pleasure, product information, good for the economy, materialism, falsity, social role, and image and value corruption, to study media users' beliefs about ads. in four social media websites: Facebook, Twitter, LinkedIn, and YouTube. Except for materialism and value corruption, the remaining five belief factors differed significantly across the four websites. Researchers found the highest significant mean difference between YouTube and LinkedIn, in the belief 'falsity'. Cheng *et al.* (2015) investigated attitudes towards four types of digital advertising: e-advertising, e-mail advertising, SMS advertising, and MMS advertising among Taiwanese consumers. They extracted three attitudinal forms namely 'irritating', 'informative' and 'entertaining'. The result showed that consumers' attitudes towards e-advertising and MMS-type advertising are positive while their attitudes towards e-mail advertising and SMS-type advertising are less positive and more irritating. Aydin (2016) conducted a study to compare consumers' attitudes towards two different forms of digital ads.: social media ads.

and mobile ads. Ducoffe's (1995) Ad. Value model that well-explains attitude formation toward advertising in terms of cognitive, affective, social-integrative, and relaxation needs, is the theoretical foundation of this study. The findings conclude that consumers' attitudes toward both Facebook ads. and mobile ads. are unfavourable.

On the other hand, Ünal *et al.* (2011) in their study in Turkey, found positive attitudes towards digital advertisements among consumers. Barutçu (2007) also provided similar results.

2.2. Ad. Skepticism

Calfee and Ringold (1994) opined that 70% of general consumers in the US were ad.skeptics. The majority of consumers believe that advertising aims at making consumers buy products that they do not want actually. Busch *et al.* (1994) showed skepticism towards TV ads increases in adolescents but decreases in elder adults with their age. Obermiller *et al.* (2005) reported that the more a consumer is skeptical of ads, the less he likes the ads, the less he relies on the ad. information and the less he pays attention to ads. Tutaj and Reijmersdal (2012) in their experiment with banner ads and sponsored content found that ad.skepticism is higher for banner ads and has a strong relation with perceived ad. value. Amyx and Lumpkin (2016) conducted an experiment and concluded that those who were highly skeptical of advertising had more positive attitudes towards the ads when a puffed or exaggerated ad was shown to them. On the other hand, low ad.skeptics had greater purchase intention when a non-exaggerated ad was shown to them.According to Garg (2019), Ad. skepticism is comprised of different factors such as a negative attitude towards corporate social responsibility, fairness of the retailer, flexibility towards negative information that does not let the consumer get affected by negative information about the company, and oral propaganda. Demographic variables, particularly gender and age are the influencing factors. Yang *et al.* (2021) investigated in China that ad.skepticism had a negative impact on perceived ad effectiveness.

2.3. Attitude and Purchase Intention

Consumers' attitudes towards advertisements and their purchase intention are positively correlated. Those who have positive attitudes towards an advertisement have a stronger intention to purchase the product. (Haley and Baldinger, 2000: Mackenzie and Lutz, 1989). Hispanic Americans' attitudes towards digital advertising and their buying intentions using online platforms are significantly related to their ethnic identification (Becerra and Korgaonkar, 2010). Wang and Sun (2010b) in their cross-cultural study in China, Romania and US, concluded that Romanians showed a more positive attitude towards online advertising while Americans purchased products online most. But, according to Sallam and Algammash (2016), attitude towards advertisements is positively related to an individual's purchase intention. Whereas, Sharma *et al.* (2022) found that ad.values have a stronger impact on buying intention than the attitude towards advertising. Irritation generated through the flooding of digital advertising is a strong negative mediator which reduces the ad's effectiveness.

2.4. Skepticism and Purchase Intention

The initial trust in online advertising and participants' acquaintances with online purchasing positively affected their purchase intentions (Chen and Barnes, 2007). Consumers who are skeptical of online

advertising, have a higher intention to purchase products online than from a physical store. When they view sales promotions, they disseminate it and perceive it as advertising which may lead to greater purchase intention using an online platform (Majid and Laroche, 2019).On the contrary, Patel *et al.* (2017) concluded that skepticism is not relevant to the attitude and purchase intention of participants in Gujarat.

The review of related literature reveals that attitude towards advertising is studied by several researchers from different perspectives and US is the hub of such studies. However, most of these studies tried to find out the differences in attitudes towards online advertisements across different online platforms.

From the above review, it seems that there is a scarcity of research, specifically in India, more particularly in Odisha, related to attitude towards the economic and social effects of advertisements and how it is related to ad.skepticism and purchase intention of higher education students.Hence, the present study aims at investigating the attitudes towards economic and social effects of digital advertising, ad.skepticism and purchase probability of higher education students in Odisha.

3. Objectives and Hypotheses of the Study

As we choose to see the impact of digital advertising on higher education students, our sample is relatively homogeneous in nature in terms of their education and therefore we do not expect them to differ in attitude, ad.skepticism, and purchase probability with respect to their educational level.

The main objectives are:

1. To find out gender differences in attitude towards digital advertising, ad. skepticism and purchase probability.
2. To investigate the differences in attitude towards digital advertisements, ad. skepticism and purchase probability with respect to age.
3. To explore the differences in attitude towards digital ads, ad.skepticism and purchase probability with respect to family income.
4. To assess the relationships among attitude towards digital advertising, ad. skepticism and purchase probability.
5. To assess the relationships among attitude towards digital advertising, ad. skepticism and purchase probability with respect to socio-demographic variables.
6. To find out the predictors related to attitude, ad.skepticism and purchase probability.

On the basis of the objectives, the following hypotheses were formulated.

H_1: There will be a significant gender difference in:

- **a.** attitude towards digital advertising.
- **b.** ad. skepticism
- **c.** purchase probability

H_2: Age groups will differ in:

- a. attitude towards digital advertising
- b. ad. skepticism.
- c. purchase probability

H_3: Income groups will significantly differ in:

a. attitude towards digital advertising
b. ad. skepticism
c. purchase Probability

H_4: There exists a positive correlation betweenattitude towards digital advertisements and purchase probability.

H_5: There exists a negative correlation between:

a. attitude towards digital advertising and ad. Skepticism.
b. ad. skepticism and purchase probability

H_6: The predictors of purchase probability will be

a. gender
b. age
c. family income
d. attitude towards digital ads.
e. ad. skepticism

4. Research Methodology

4.1. Sample and Sampling

The study took a quantitative approach.Primary data were collected from 144 higher education students in Odisha through snowball sampling using google forms in October 2022. A sample size of 144 is sufficient enough as Roscoe (1975) said that sample size ranging from 30 to 200 is acceptable and our sample size is at the higher end of the range. 5 variables namely attitude towards economic effects of digital advertising, attitude towards social effects of digital advertising, overall attitude towards digital advertising, ad.skepticism and purchase probability were assessed.

4.2. Tools and Procedure

After getting consent from each participant, socio-demographic information was obtained on the researchers' prepared form. The 8-item, Likert-type questionnaire developed and used by Ferle & Lee (2018) was used here to measure overall attitudes towards advertising and attitudes towards the economic and social effects of advertising in particular.They developedthis questionnaire on the basis of previous questionnaires which were originally developed by Bauer and Greyser (1968) and advanced by Polley and Mittal (1993). Items were coded in such a way that higher score indicates more positive attitudes. SKEP scale, a 9-item Likert-type scale, ranging from strongly agree(5) to strongly disagree(1), developed by Obermiller & Spangenberg (1998) was used to measure skepticism toward advertisements. The higher the score, the greater the skepticism.Consumers' purchase probability was measured by using an 11-point purchase probability scale ranging from 0 to 10, developed by Juster (1966). In the present study, these questionnaires were specifically used with reference to digital advertisements.

5. Data analysis, Results, and Discussion

5.1. Demographic Description

The sample size is 144 with a mean age of 21.85 yrs. (SD=2.72). Majority of the respondents are female (60.4%). There are 50% students in each of the two age groups. Majority belongs to higher educational level (PG and above, 56.2%) and lower income slab (41.6%). (Table 1).

Table 1: Demographics of the Sample (N = 144, Mean age = 21.85, SD = 2.72)

Demographic variables	*categories*	*N*	*%*
Gender	male	57	39.6
	female	87	60.4
Age (in years)	18-21	72	50.0
	>21-29	72	50.0
Educational level	UG	63	43.8
	PG and above	81	56.2
Family Income	1000-15000	60	41.6
	>15000-30000	42	29.2
	>30000	42	29.2

Source: Authors' Own Compilation

5.2. Prevalence

Most of the students (95.84%) in higher education havea positive attitude towards the economic effect of digital advertising, followed by a positive attitude towards social effect of digital advertising (83.34%). However, it lowers to 58.3% when coming to overall attitude towards digital ads. 29.17% are highly skeptical of digital ads. But, interestingly enough, 50%of students areless probable to purchase a product after seeing a digital ad. and only 39.5 % show higher purchase probability. (Table 2)

Table 2: Prevalence of Attitude towards Economic and Social Effect, Overall Attitude, Ad. Skepticism and Purchase Probability

Variables	*Attitude toward economic effect*		*Attitude toward Social effect*		*Overall attitude*		*Ad. Skepticism*		*Purchase Probability*	
Prevalence	n	%	n	%	n	%	n	%	n	%
Positive/higher	138	95.84	120	83.34	84	58.34	42	29.17	57	39.58
Negative/lower	3	2.08	12	8.33	48	33.33	93	64.58	72	50.00
Neutral	3	2.08	12	8.33	12	8.33	9	6.25	15	10.42

Source: Authors' Own Compilation

5.3. Group Differences

To test $H_1$and H_2 we computed t-statistic and to test H_3 we computed One-way ANOVA**.** We found no gender difference in attitude and ad.skepticism. In line with the previous findings, and also in line with the common beliefs that females shop more, we have also found that female students have a significantly higher purchase probability than males (Table 3b). It is revealed that older students have a significantly more positive attitude towards economic effect of digital advertising than younger students (Table 3a) and they are also more skeptical of digital ads than the younger ones (Table 3b). This is because, with maturity, they tend to understand that digital advertising is an essential part of the nation's economy to flourish now but they also know that this does not guarantee the credibility of information provided by the digital ads.Personal dispositions of consumers across genders may be important factors here and must be given weightage in future studies.

Table 3a: Independent Samples t-test for Comparison of Means of Attitude towards Economic and Social Effect of Digital ads. w.r.t Socio-demographic Variables

Socio-demographic variable	*Attitude towards Economic Effect M(SD)*	*Test Statistic (p-value)*	*Attitude towards Social Effect M(SD)*	*Test Statistic (p-value)*	*Overall Attitude M(SD)*	*Test Statistic (p-value)*
			Gender			
Male	13.26(1.49)	-0.85	11.21(2.79)	-0.72	24.47(3.28)	-1.06
Female	13.52(1.92)	(0.20)	11.59(3.21)	(0.23)	25.10(3.81)	(0.15)
			Age			
18-21 years	13.08(1.88)	2.31**	11.75(2.90)	-1.23	24.83(3.47)	0.07
>21 years	13.75(1.57)	(0.01)	11.13(3.17)	(0.11)	2488(3.77)	(0.47)
			Educational level			
Undergraduate	13.38(1.80)	0.21	11.57(2.74)	-0.46	24.95(3.07)	-0.29
Postgraduate	13.44(1.74)	(0.41)	11.33(3.27)	(0.32)	24.78(4.00)	(0.38)

*Difference in means is significant at the 0.05 level (1-tailed).
**Difference in means is significant at the 0.01 level (1-tailed).
Source: Authors' Own Compilation

From the one-way analysis of variance,it is evident that there is a significant difference in attitude towards the social effect of digital advertising, overall attitude and purchase intention with respect to family income (Table 3c). The highest income slab showed most positive attitude toward the social effect of digital advertising. They believe that digital advertising is essential and it promotes economic growth and does not cause much harm to society. Interestingly enough, the middle-income group is the most critical of digital advertising and believes that it causes social ill. Middle-class values associated with it may be the determining factor in this case.

Table 3b: Independent Samples t-test for Comparison of Means of Ad. Skepticism and Purchase Probability w.r.t Socio-demographic Variables

Socio-demographic variable	*Ad. Skepticism M(SD)*	*Test Statistic (p value)*	*Purchase Probability M(SD)*	*Test Statistic (p value)*
Gender				
Male	24.63(4.17)	0.32	3.32(2.27)	-4.75**
Female	24.38(4.94)	(0.37)	5.28(2.52)	(<0.01)
Age				
18-21 years	23.75(4.74)	1.90*	4.58(2.98)	-0.38
>21 years	25.21(4.44)	(0.03)	4.42(2.17)	(0.35)
Educational level				
Undergraduate	25.10(4.54)	-1.41	4.44(2.23)	-0.28
Postgraduate	24.00(4.68)	(0.08)	4.57(3.02)	(0.39)

*Difference in means is significant at the 0.05 level (1-tailed).

** Difference in means is significant at the 0.01 level (1-tailed).

Source: Authors' Own Compilation

Table 3c: One-way ANOVA for Comparison of Means of Attitude, Ad. Skepticism and Purchase Probability w.r.t Family Income

Socio-demographic variable (Income Level)	*Dependent Variable*	*Mean (SD)*	*One-way ANOVA measure*				
			Source of variation	*Sum of Squares*	*Df*	*Mean Square*	*F Statistic (p value)*
≤ Rs. 15000/-	Attitude towards Economic Effect	13.35 (2.10)	Between groups	5.707	2	2.854	.920(0.40)
>Rs.15000/- and ≤ Rs.30000/-		13.21 (1.72)	Within groups	437.293	141	3.101	
>Rs.30000/-		13.71 (1.17)	Total	443.000	143		
≤ Rs.15000/-	Attitude towards Social Effect	11.45 (3.43)	Between groups	84.016	2	42.008	4.771** (0.01)
>Rs. 15000/- and ≤ Rs. 30000/-		10.43 (2.50)	Within groups	1241.421	141	8.804	
>Rs. 30000/-		12.43 (2.67)	Total	1325.437	143		
≤ Rs. 15000/-	Overall Attitude	24.80 (4.04)	Between groups	131.552	2	65.776	5.347** (0.006)
>Rs. 15000/- and ≤ Rs. 30000/-		23.64 (2.95)	Within groups	1734.386	141	12.301	

table contd.

Socio-demographic variable (Income Level)	*Dependent Variable*	*Mean (SD)*	*One-way ANOVA measure*				
			Source of variation	*Sum of Squares*	*Df*	*Mean Square*	*F Statistic (p value)*
>Rs. 30000/-		26.14 (3.17)	Total	1865.938	143		
≤ Rs. 15000/-	Ad. Skepticism	23.55 (3.94)	Between groups	109.802	2	54.901	2.613 (0.08)
>Rs. 15000/- and ≤ Rs. 30000/-		25.64 (5.62)	Within groups	2962.136	141	21.008	
>Rs. 30000/-		24.64 (4.29)	Total	3071.937	143		
≤ Rs. 15000/-	Purchase Probability	4.65 (2.80)	Between groups	58.993	2	29.496	4.585* (0.01)
>Rs. 15000/- and ≤ Rs. 30000/-		5.21 (2.10)	Within groups	907.007	141	6.433	
>Rs. 30000/-		3.57(2.53)	Total	966.000	143		

*. Difference in mean is significant at the 0.05 level (2-tailed).

**. Difference in mean is significant at the 0.01 level (2-tailed).

Source: Authors' Own Compilation

5.4. Relationships among Variables

To test H_4 and H_5 we computed Pearson's r for continuous variables and Spearman's rho for categorical variables respectively. To test the sixth hypothesis, ordinal regression is performed. Attitude towards the social effect of advertising and overall attitude towards digital ads.both are found to be negatively correlated with ad.skepticism (Table 4a). The more one has disbelief in the ad, the less positive attitude he is having toward the ad. Purchase probability is also negatively correlated with ad.skepticism(Table 4a) which implies that the more one disbelieves the ad information, the lesser he is likely to purchase the products shown in the ad. This is a clear-cut new finding as previous studies showed that initial

Table 4a: Correlation among Attitude towards Economic Effect, Social Effect, Overall Attitude, Ad.Skepticism, and Purchase Probability

	Economic Effect	*Social Effect*	*Overall Attitude*	*Ad. Skepticism*
Ad. Skepticism	-0.05	-0.25**	-0.24**	
Purchase Probability	-0.07	0.01	-0.03	-0.23*

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Source: Authors' Own Compilation

trust in online advertising positively affected purchase intention (Chen & Barnes, 2007) but not showed how initial mistrust affected purchase probability. Our study strongly opposes the findings of the Gujarat Study (Patel *et al.*, 2017) in which the investigators found that ad.skepticism was not relevant to attitude and purchase intention.

Gender is found to be significantly correlated with purchase probability. It indicates that females have a higher purchase intention. Income level is negatively correlated with purchase probability (Table 4b). This may be due to the fact that students with lower family income wish more of purchasing products that they do not have; probablythey have a greater tendency to spend and a lesser tendency to save money. Unlike this, the students of higher income groups may already possess most of the commodities and have a greater propensity towards savings. However, this part of the study needs further detailed investigation.

Table 4b: Correlation of Gender, Age, Educational Level & Family Income with 5 Measures

	Economic Effect	*Social Effect*	*Overall Attitude*	*Ad. Skepticism*	*Purchase Probability*
Gender	-0.07	-0.06	-0.09	0.03	-0.37**
Age	0.03	0.06	0.06	0.01	-0.02
Educational Level	0.04	-0.05	-0.05	-0.11	0.02
Income	0.07	0.01	0.05	0.10	-0.26**

* Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

Source: Authors' Own Compilation

The results of ordinal logistic regression are shown in Table 5.The goodness of fit for all models except model 1 produced satisfactory results. The pseudo R square value for almost all the models (except model1) is always > 0.10 and therefore acceptable. Model 1 of Ordinal regression reveals that none of the variables taken into account can predict the attitude towards the economic effect of digital ads. Model 2 shows that educational level and ad.skepticism are significant predictors of attitude toward social effects of advertising. This is probably because the more one is educated the more aware he becomes of the negative social effects of ads. and therefore, the less he is positive towards it. Model 3 describes that educational level, family income, and ad. skepticism are the predictors of overall attitude. Higher educational levels and higher ad. skepticism lead to a less positive attitude.When family income shifts from a lower level to a higher level then overall attitude turns to be more positive. Model 4 reflects a positive attitude towards the social effects of digital ads leads to low ad. skepticism. Model 5 shows that gender, family income, and ad.skepticism are the significant predictors of purchase probability with females, lower income groups, and less ad.skeptics having more purchase probability.

Table 5: Ordinal Logistic Regression Model of Attitude toward Economic Effect, Attitude toward Social Effect, Overall Attitude Score, Attitude toward Skepticism, & Purchase Probability

	Logistic coefficient	*Std. Error*	*Wald Chi-square statistic*	*p-value*	*95% CI*
Model 1: Explanatory variables of attitude toward economic effects (Model fit: Chi-square=6.43 (p value=0.27); Goodness of fit: Pearson Chi-square: 1024.56 (p value=0.01), Deviance Chi-square: 461.86 (p value=0.01); Test for parallel lines: Chi-square=220.27 (p value=0.01); Pseudo R-Square: Cox and Snell: 0.04, Nagelkerke: 0.04.					
Age	-0.039	0.077	0.260	0.610	-0.19-0.11
Gender	-0.537	0.322	2.778	0.096	-1.17-0.10
Educational level	0.291	0.418	0.482	0.487	-0.53-1.11
Family Income	-0.028	0.195	0.020	0.887	-0.41-.35
Ad. Skepticism	-0.052	0.034	2.425	0.119	-.012-0.01
Model 2: Explanatory variables of attitude toward social effects (Model fit: Chi-square=16.104 (p value=0.007); Goodness of fit: Pearson Chi-square: 1777.710 (p value <0.001), Deviance Chi-square: 669.778 (p value=0.015); Test for parallel lines: Chi-square=316.634 (p value <0.001); Pseudo R-Square: Cox and Snell: 0.11, Nagelkerke:0.11.					
Age	0.122	0.076	2.621	0.105	-.026-0.27
Gender	-0.128	0.311	0.170	0.680	-0.074-0.48
Educational level	-0.864	0.408	4.485	0.034*	-1.66-0.06
Family Income	0.267	0.190	1.980	0.159	-0.10-0.64
Ad. Skepticism	-0.103	0.033	9.749	0.002**	-0.02—0.04
Model 3: Explanatory variables of overall attitude (Model fit: Chi-square=16.258 (p value=0.006); Goodness of fit: Pearson Chi-square: 2017.465 (p value <0.001), Deviance Chi-square: 712.139 (p value=0.023); Test for parallel lines: Chi-square=374.487(p value <0.001); Pseudo R-Square: Cox and Snell: 0.11, Nagelkerke:0.11.					
Age	0.089	0.075	1.420	0.233	-0.06-0.24
Gender	0-.097	0.310	0.098	0.755	-0.70-05
Educational level	-0.832	0.406	4.196	0.041*	-1.63—0.40
Family Income	0.388	0.190	4.155	0.042*	0.01-0.76
Ad. Skepticism	-0.104	0.033	9.920	0.0002**	-0.17-0.04
Model 4: Explanatory variables of ad. skepticism (Model fit: Chi-square=16.767 (p value=0.01); Goodness of fit: Pearson Chi-square: 2508.455 (p value <0.001), Deviance Chi-square: 781.070 (p value=0.93); Test for parallel lines: Chi-square=781.070 (p value <0.001); Pseudo R-Square: Cox and Snell: 0.11, Nagelkerke: 0.11.					
Age	0.093	0.075	1.554	0.213	-0.05-0.24
Gender	0.275	0.310	0.786	0.375	-0.33-0.88
Educational level	-0.785	0.402	3.808	0.051	-1.57-0.00

contd. table

Family Income	0.313	0.189	2.743	0.098	-.006-0.68
Attitude toward Economic Effect	0.032	0.083	0.152	0.697	-0.13-0.20
Attitude toward Social Effect	-0.153	0.050	9.499	0.002**	-0.25-0.06

Model 5: Explanatory variables of purchase probability

(Model fit: Chi-square=43.247 (p value <0.001); Goodness of fit: Pearson Chi-square: 1042.452 (p value <0.001), Deviance Chi-square: 561.873 (p value <0.001); Test for parallel lines: Chi-square=248.229 (p value <0.001); Pseudo R-Square: Cox and Snell: 0.26, Nagelkerke:0.26.

Age	.128	0.077	2.784	.095	-.022-0.28
Gender	-1.661	0.337	24.306	<.001**	-2.32—1.00
Educational level	-0.439	0.411	1.145	0.285	-1.24-0.37
Family Income	-0.631	0.197	10.217	0.001**	-1.02-0.25
Ad. skepticism	-0.105	0.035	9.128	0.003*	-.017—0.04
Attitude toward Economic Effect	-0.140	0.086	2.670	0.102	-0.31-0.03
Attitude toward Social Effect	-0.075	0.051	2.138	0.144	-.018-0.03

*Predictor is significant at the 0.05 level

** Predictor is significant at the 0.01 level

From the above results we conclude the following:

Hypotheses	*Statements*	*Results*
H_{1a}	There is a gender difference in attitude towards digital ads.	Rejected
H_{1b}	There is a gender difference in ad.skepticism.	Rejected
H_{1c}	There is a gender difference in purchase probability.	Accepted
H_{2a}	There is age difference in attitude towards digital ads.	Partially Accepted
H_{2b}	There is age difference in ad.skepticism.	Accepted
H_{2c}	There is age difference in purchase probability.	Rejected
H_{3a}	Income groups will differ in attitudes towards digital ads.	Partially accepted
H_{3b}	Income groups will differ in ad.skepticism.	Rejected
H_{3c}	Income groups will differ in purchase probability	Accepted
H_{4}	There exists a positive correlation between attitude and purchase probability.	Rejected
H_{5a}	There exists a negative correlation between attitude and ad.skepticism.	Accepted
H_{5b}	There exists a negative correlation between ad.skepticism and purchase probability.	Accepted
H_{6a}	The predictor of purchase probability is gender.	Accepted
H_{6c}	Family income will predict purchase probability.	Accepted
H_{6e}	Ad skepticism will predict purchase probability.	Accepted

Source: Authors' Own Compilation

6. Conclusions

In this cross-sectional study of higher education students in Odisha, it is observed that the majority of the students have apositive attitude towards the economic effects of digital ads, followed by the social effects of digital ads. Their overall attitude is positive towards digital commercials. The higher age group holds a more positive attitude towards economic effects and are more ad.skeptics. Females intend to shop more than males. Gender, family income, and ad.skepticism are significant predictors of purchase probability.

7. Limitations

The online data collection procedure and snowball sampling technique used in the study are its limitations. Students having email ids and internet access were only included in the present research. Thus, generalisations of these findings must be made cautiously.

8. Implications and Future Directions

This study provides useful information to Industries and business organizations concerning marketing policies and creating digital ads. to promote their products to a particular target group: higher education students. As females tend to shop more marketers may promote products particularly related to women. They may also improve or change the content of ads and marketing strategies to attract and convince educated male consumers.

Future research may consider assessing the personal dispositions of the consumers in this regard. The research may be directed towards assessing attitude towards specific digital ads and the consequences of it.

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Women Entrepreneurs in MSME Sector in India

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Abstract: Entrepreneurship is a crucial tool for economic growth, particularly women entrepreneurship in the case of emerging economies like India. Moreover Women Entrepreneurship is considered as a potent toolfor empowering women and that their combined forces can solve a wide range of socio-economic issues in developing nations. Although women account for around 50 percent of the world's population, there is a significant discrepancy between male and female entrepreneurship. The present study explores the prevalence of the gender inequality of MSME (Micro, Small and Medium Enterprises) entrepreneurship and, more particularly, the growth of women entrepreneurs under Prime Minister Employment Generation Programme (PMEGP) in India. The study employed statistical tools like two tailed independent large sample and unpaired t-Test, coefficient of variation (CV) and annual growth rate (AGR). The results of data analysis indicate that there aresignificant differences between the male and female entrepreneurship in MSMEs,with women behind men in this area.

1. Introduction

Entrepreneurship is the act of beginning a new business or renovating an existing one in order to benefit from new prospects. Entrepreneurship is the process through which an entrepreneur begins a new business while taking risks in order to make profits and survive in the marketplace (Panda and Acharya, 2022). The strong positive link between entrepreneurship, economic growth, and employment necessitates promotion of entrepreneurial activity in all countries around the world. (Meyer and Meyer, 2017).India's society is highly diverse in terms of religions, classes, castes, dialects, beliefs and natural environment, posing several problems for and variances in entrepreneurial operations.The most notable variation is found strict division of gender roles which stand as astrong barrier in development of women entrepreneurship resulting in concentration of male owned enterprises in India (Sharma, 2020).

A female entrepreneur is a woman who innovates, imitates, or adopts a commercial activity (Schumpeter, 1982).In a study presented to the World Bank, Frumen (2016) reported that a lower percentage of women than men are active in trade or own registered enterprises; however, they are also more involved in low productivity or informal work. In India, women participation in economic activities is low, however, women employment is concentrated in unorganised sector and in low skilled occupation (Babu, 2021).

With the passage of time, women have become conscious and confident that they are not lagging behind males in every sector of activity anymore. (Singh and Raghuvanshi, 2012).Previously, women were involved in activities relating to Kitchen, Kids, and Knitting (3 Ks), followed by Powder, Papad, and Pickles (3 Ps), and now they promptly prove their potentialities in four Es- Electricity, Electronics, Energy, and Engineering.As women entrepreneurship is an integral part of human resource development, transformation of the society can be possible when women participation increases in the economic activities of a country.

Women Entrepreneurship in MSME Sector of India

Women entrepreneurship is a relatively new notion in India, having first evolved and gained public attention in the late 1970s (Sharma, P. 2020). With the increased participation of women in the field of business and academics have endeavoured to construct a comprehensive definition of a woman entrepreneur.Moreover, women entrepreneurship is defined as the creative activity of starting and running a firm that leads to economic empowerment and social advancement for women.Women entrepreneurs have immense social and economic contributions. (Munshi *et al.,* 2011). In India there are 4,84,50,722 male entrepreneurs as compared to 1,23,90,523female counter part setting a gender gap of 3,60,60,199 in MSME sector. Though the transition from housewife to skilled businesswoman is not an easy task for women, they are increasingly becoming entrepreneurs in modern India, particularly in micro, small, and medium-sized businesses (Singh and Manisha, 2013).The major concern is that women continue to fall behind men in every profession, particularly in the MSME sector.

This article contributes to four areas of academic literature. First, our work connects to prior studies of the women entrepreneurship and more particularly in MSME sectors. Second, it draws attention towards the existence of gender biasness in MSME entrepreneurship in favour of male entrepreneurs.Third, it assesses the number of women who have benefited from the Prime Minister Employment Generation Programme (PMEGP) of the Government of India.In addition, this paper discusses the problems faced by women to be an entrepreneur in India. Fourth, we put suggestions which may be helpful for policy makers as well as government to encourage the women entrepreneurship in the country.

2. Review of Literature

Research works already under taken earlier have corroborated the fact that MSMEs do play a very important role in creation of employment, generation of revenue through a larger contribution to the export sector. As compared to the development of the MSME sector to that of the larger industrial sector, MSME sector has played a considerable role in Indian economy (Subramanyam and Reddy,

2012). In India, (Lerner *et al.,* 1997) it is also viewed that the size of a firm, profitability, gross revenue, and income of a woman entrepreneur are all reliant on aspects which work together to improve her business behaviour. Through globalisation MSME sector comprised a significant portion of our economy (Kumar and Gugloth, 2012). By encouraging the women entrepreneurs to come forward and take up business activities the sector has led to women empowerment in large scale. But women entrepreneurs in Goa feel frustrated at times because they need to spare their time and energy both towards their business as well as domestic affairs. Because women make up a bigger share of the unemployed population in India, it is important to identify the entrepreneurial obstacles they confront (Reddi, 1991). (Rathore and Chabra, 1991). It also observed that working women are frequently trapped between home and work, causing mental issues since they fail to give justice to family and work. As a result, it becomes difficult, if not impossible, for women to pursue a profession. But in modern India more and more women are becoming entrepreneurs. Indian women had carved out a place for themselves in a world dominated by men. It has also shown that Indian women can effectively handle both domestic and professional deadlines (Singh and Raina, 2013). In Coimbatore the characteristics that encourage women to become successful entrepreneurs are achievement motivation and human relationships (Jayan, 2013). In hill and valley districts of Manipur after the MSME Act, 2006 there is large proportion of women entrepreneurs engaged in manufacturing sectorsand the number of women-owned enterprises is more in comparison to male-owned ones (Chanu and Chanu, 2014). After beginning on an entrepreneurial path in northeast India to acquire economic independence and higher standards of living, women are socially and economically empowered, and the standing of female entrepreneurs in northeast India is identical (Sharma and Parida, 2022).On the other hand financial independence is a major strength for female entrepreneurs in Tanzania's Dares Salaam city but lack of education and burden of child care in the family is the main threat for women entrepreneurs (Benard and Victor, 2013). There are various obstacles for female entrepreneurs, including the unfavourable attitudes of society and authorities towards women and there is no framework or model provided by society or the government for Indian women to advance in the entrepreneurial field (Tripathi and Singh, 2018).

3. Objectives

The study has the following objectives;

- To examine the gender inequality of MSME entrepreneurship in India.
- To study the women entrepreneurship in MSMEs under Prime Minister Employment Generation Programme (PMEGP).

4. Hypotheses

H01: There is no significant difference in averages of male and female MSME entrepreneurs in India
Ha1: There is significant difference in averages of male and female MSME entrepreneurs in India

5. Data Sources and Methodology

The presentstudy is based on secondary data collected from Annual reports (2021-22) of Ministry of MSMEs, Government of India and report of 4th all India census of MSME. In order to examine the

significant difference between the male and female MSME entrepreneurs, we have usedtwo tailed independent large sample and unpaired t-Test (Ruxton, 2006).

$$= \frac{\mu_1 - \mu_2}{SE_D}$$

Where μ_1 = Average number of male entrepreneurs

μ_2 = Average number of female entrepreneurs

$$SE_D = \sqrt{\sigma_1^2 / n_1 + \sigma_2^2 / n_2}$$

σ_1 = Standard deviation of male data set

σ_2 = Standard deviation of female data set

n_1 = Size of male data set

n_2 = Size of female data set

The null hypothesis (H_0) of t-Test is $\mu_1 = \mu_2$ which and alternative is $\mu_1 \neq \mu_2$. If t-calculated value is less than t-critical value, we fail to reject the null hypothesis. So the difference between two averages is not statistically significant. While t-calculated value is more than t-critical value, alternative hypothesis is accepted which proves the significant difference between averages of two groups.

In order to examine the variability of entrepreneurship in male and female group concerning to different states and union territories (UTs) in India, we used the coefficient of variation (CV). The estimation technique of CV is put forth in following equation.

$$CV = \frac{Standard\ Deviation\ of\ Variable(\sigma)}{A.\ Mean\ (AM)\ of\ Variable\ (\mu)} \times 100$$

$$\text{Standard Deviation } (SD) = \sigma = \sqrt{\frac{\Sigma(x_i - \mu)^2}{N}}$$

SD(σ) = Population standard deviation, '*N*' = Size of the population and x_i = Values of variables from the population

Similarly to examine growth of women beneficiaries under PMEGP, annual growth rate (AGR) is calculated. The percentage of annual growth rate (AGR) of variable women beneficiaries (X) between two time periods is calculated by the following equation.

Here 't' implies time period.

$$Annual\ Growth\ rate(AGR) = \frac{X_{(t)} - X_{(t-1)}}{X_{(t-1)}} \times 100$$

6. Result and Discussion

Inter-state Gender Disparity in MSMEs

Table 1 depicts the distribution of MSME units owned by male and female in different states and UTs in India expressed both in absolute value as well as in percentage. West Bengal occupies first position in ownership of MSMEs both by male (5583138) and female (2901324) among all states and UTs in India. Among UTs, Delhi has highest ownership of MSMEs by both male and female. On the other hand, the state Arunachal Pradesh has least number of male entrepreneurship (16153) in MSMEs and Sikkim is placed at lowest ladder in terms of female owners of MSMEs among all states. Whereas least number of male as well as female MSMEs entrepreneurs are in Lakshadweep in comparison to other UTs. The gender gap between male and female ownership of MSMEs (2997142) is more in Maharashtra whereas female entrepreneurs outnumber their male counterpart (-221)in Manipur.

However, more variability with a CV of 164.62 is observed for female entrepreneurship than male entrepreneurship with CV equals to 131.0414 among states and UTs. On the other average of female owned MSMEs is 344181.2 which is less than one third average of male owned enterprises i.e.1345853 in India.

Table 1: State Wise and Gender Wise Distribution of MSME Entrepreneurs in India

State & UTs	*Male Owner*	*Female Owner*	*Gender Gap*	*All*	*Male (%)*	*Female (%)*	*GAP (%)*
WB	5583138	2901324	2681814	8484462	11.52	23.42	-11.9
TN	3441489	1285263	2156226	4726752	7.1	10.37	-3.27
TG	1459622	972424	487198	2432046	3.01	7.85	-4.84
KA	2684469	936905	1747564	3621374	5.54	7.56	-2.02
UP	8010932	862796	7148136	8873728	16.53	6.96	9.57
AP	2160318	838033	1322285	2998351	4.46	6.76	-2.3
GJ	2375858	826640	1549218	3202499	4.9	6.67	-1.77
MH	3798339	801197	2997142	4599536	7.84	6.47	1.37
KL	1647853	495962	1151891	2143816	3.4	4	-0.6
RJ	2261127	380007	1881120	2641134	4.67	3.07	1.6
MP	2275251	370427	1904824	2645678	4.7	2.99	1.71
JH	1250953	310388	940565	1561341	2.58	2.51	0.07
OD	1567395	295460	1271935	1862856	3.24	2.38	0.86
PB	1183871	224185	959686	1408056	2.44	1.81	0.63
BR	3239698	168347	3071351	3408044	6.69	1.36	5.33
HR	831645	98309	733336	929953	1.72	0.79	0.93

contd. table 1

State & UTs	*Male Owner*	*Female Owner*	*Gender Gap*	*All*	*Male (%)*	*Female (%)*	*GAP (%)*
MN	86383	86604	-221	172987	0.18	0.7	-0.52
JK	624056	74785	549271	698841	1.29	0.6	0.69
CG	727203	71201	656002	798403	1.5	0.57	0.93
AS	1128411	66665	1061746	1195076	2.33	0.54	1.79
HP	329595	50368	279227	379963	0.68	0.41	0.27
ML	72191	39462	32729	111653	0.15	0.32	-0.17
TR	179169	28042	151127	207212	0.37	0.23	0.14
PY	65350	27072	38278	92422	0.13	0.22	-0.09
UK	380000	20964	359036	400964	0.78	0.17	0.61
NL	65778	20865	44913	86643	0.14	0.17	-0.03
MZ	20439	13698	6741	34137	0.04	0.11	-0.07
GA	57133	10815	46318	67948	0.12	0.09	0.03
AR	16153	6274	9879	22427	0.03	0.05	-0.02
SK	20880	5036	15844	25916	0.04	0.04	0
DL	827234	86742	740492	913977	1.71	0.7	1.01
CH	44321	5560	38761	49881	0.09	0.04	0.05
AN	14302	4026	10276	18328	0.03	0.03	0
DH	12900	2629	10271	15529	0.03	0.02	0.01
DD	5880	1560	4320	7441	0.01	0.01	0
LD	1384	488	896	1872	0	0	0
Total	48450722	12390523	36060199	60841245	100	100	
Average	1345853	344181.2	1001672	1690035			
SD	1763625	566616.8	1391546	2219562			
CV	131.0414	164.6275	138.9223	131.3323			

Source: Annual Report 2021-22, Ministry of MSME, Government of India (As per NSS 73rd Round Report, 2015-16)

Note 1: Male (%) refers to the percentage tototal male MSMEs entrepreneurs in India, while female (%) is the percentage to total female MSME entrepreneurs of India.

Note 2: West Bengal (WB), Tamil Nadu (TN), Telangana (TG), Karnataka (KA), Uttar Pradesh (UP), Andhra Pradesh (AP), Gujarat (GJ), Maharashtra (MH), Kerala (KL), Rajasthan (RJ), Madhya Pradesh (MP), Jharkhand (JH), Odisha (OD), Punjab (PB), Bihar (BR), Haryana (HR), Delhi (DL), Manipur (MN), Jammu & Kashmir (JK), Chhattisgarh (CG), Assam (AS), Himachal Pradesh (HP), Meghalaya (ML), Tripura (TR), Puducherry (PY), Uttarakhand (UK), Nagaland (NL), Mizoram (MZ), Goa (GA), Arunachal Pradesh (AR), Chandigarh (CH), Sikkim (SK), A & N Island (AN), Dadra & Nagar Haveli (DH), Daman & Diu (DD), Lakshadweep (LD) (*https://ddvat.gov.in/docs/List%20of%20State%20Code.pdf*).

It is inferred from table 2 that t-Critical value (two-tail) 2.01808 is less than t-stat. value 3.2444 and P (two-tail) 0.0023 is also lower than critical value 0.05. So we fail to accept the null hypothesis of equality between average number of male and female entrepreneurs in India. However alternative hypothesis of significant difference between the male and female entrepreneurship is accepted. The average number of male entrepreneurs is 1345853.333 while that of female is 344181.1944 in India including all states and union territories.

Table 2: Results of t-Test between Male and Female Entrepreneurs

t-Test: Two-Sample Assuming equal Variances		
	Male	*Female*
Mean	1345853.33	344181.19
Variance	3.11	3.21
Observations	36	36
Hypothesized Mean Difference	0	
df	72	
t Stat	3.24	
P(T<=t) one-tail	0.001	
t Critical one-tail	1.681	
P(T<=t) two-tail	0.0023	
t Critical two-tail	2.018	

Source: Authors' estimation as per table 1.

Rural-urban and Gender Disparity in MSMEs

Gender inequality prevails in MSME entrepreneurship in favor of male in both rural as well as in urban area (table 2) in India. In rural India, 22.24 per cent MSMEs are owned by female and 77.76 per cent by male. Moreover, in urban region male and female owned MSMEs are 81.58 per cent and 18.42 per cent respectively. In both rural as well as urban region, MSME entrepreneurship is characterised by male domination. However high range of gender disparity against female ownership is found in urban regions of India.

Table 3: Rural and Urbanas well as Gender Wise Distribution of MSMEs in India

Sector	*Male*	*Female*	*All*
Rural	77.76	22.24	100
Urban	81.58	18.42	100
All	79.63	20.37	100

Source: Annual Report 2021-22, Ministry of MSME, Government of India (As per NSS 73rd Round Report, 2015-16)

Category-wise and Gender-wise Disparity in MSMEs

It is observed from table 4 that gender disparity also prevails in every categories of MSMEs. The heist range of inequality in entrepreneurship between male and female is experienced in medium sector enterprises followed by small and micro categories. However, 79.63 per cent MSMEs is owned by male and 20.37 per cent by female in India which indicates the extent of large gender gap in entrepreneurship.

Table 4: Category wise and Gender wise Distribution of MSMEs in India

Category	*Male*	*Female*	*All*
Micro	79.56	20.44	100
Small	94.74	5.26	100
Medium	97.33	2.67	100
All	79.63	20.37	100

Source: Annual Report 2021-22, Ministry of MSME, Government of India (As per NSS 73rd Round Report, 2015-16)

Comparison of Fourth all India census and NSS 73rd Round Report

Table 5 shows extent of gender wise MSME entrepreneurship in 2006-07 (Fourth all India census of MSME) and 2015-16 (NSS 73rd Round Report 2015-16) in India. As per fourth all India census, 86.28 per cent enterprises are owned by male and 13.72 per cent by female indicating 72.56 per cent male-female gender disparity. On the other, this gender gap has been reduced to 59.28 percent as per NSS 73rd Round Report 2015-16. Though it implies a reduction in gender gap in MSME entrepreneurship still the gap is too large.

Table 5: Gender-wise Distribution of Total MSMEs in India

Fourth all India census of MSME- 2006-07			
	Male	*Female*	*Total*
Percentage	86.28	13.72	100
NSS 73rd Round Report 2015-16			
	Male	*Female*	*Total*
Percentage	79.64	20.36	100

Source: Fourth all India census of MSME- 2006-07, Annual Report of MSMEs 2011-12and NSS 73rd Round , Annual Report of MSME 2017-18, Govt. of India.

Status of WomenBeneficiaries under PMEGP

Prime Minister Employment Generation Programme (PMEGP) is a credit-linked subsidy scheme declared on 15th August, 2008 by the Government of India in which beneficiaries get a government

subsidy of 15-35 percent of the project cost. One of the main goals of the PMEGP is to give continuous and sustainable employment to a substantial part of the country's traditional and potential craftsmen, rural and urban jobless youth through the establishment of micro businesses by providing credit facilities at a subsidize rate.

Table 6 depicts the number of women entrepreneur beneficiaries and their annual growth rate from 2008-09 to 2021-22 (up to 31.12.2021). It is observed that annual growth rate of women beneficiaries was 119.98 per cent in year 2009-10. Surprisingly this growth rate has been declined for rest of the years.

Table 6: Micro Enterprise / Projects Owned by Women Entrepreneurs under PMEGP (in numbers)

Year	*Women Entrepreneurs (Beneficiaries) in numbers*	*AGR of Women Entrepreneurs*
2008-09	4930	-
2009-10	10845	119.98
2010-11	12072	11.31
2011-12	14299	18.45
2012-13	13612	-4.80
2013-14	13448	-1.20
2014-15	13394	-0.40
2015-16	11356	-15.22
2016-17	14768	30.05
2017-18	15669	6.10
2018-19	25434	62.32
2019-20	24720	-2.81
2020-21	27285	10.38
2021-22 (up to 31.12.2021)	20598	-24.51
Total Since Inception (Up to 31.12.2021)	222457	

Source: Annual Report 2021-22, Ministry of MSME, Government of India

7. Conclusion

It is construed from the above discussion that there is a significant gender gap in MSME entrepreneurship in India. In both rural as well as urban region, MSME entrepreneurship is characterised by male domination. However, more variability is observed for female than male entrepreneurship among states and UTs in India. The highest range of inequality in entrepreneurship between male and female is experienced in medium sector enterprises followed by small and micro categories.So far as PMEGP is concerned the women entrepreneurship experiences a declining trend over the time. The women

entrepreneurs in general face a lot of challenges likefinancial difficulties, problems of occupational mobility, and complications in obtaining government assistance, marketing difficulties, family responsibility, low level of freedom and mobility, low literacy.

The Government should make necessary arrangements to facilitate door step provision of required facilities for women entrepreneurship. Rural infrastructure should be built so that there is no discernible difference between rural and urban areas in order to support women's entrepreneurship, especially in MSMEs. Though at present governments both at centre andstate levels are taking initiative to encourage MSMEs sector in general and women entrepreneur in particular, efficient implementation of the schemes is highly imperative to achieve the goal.

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A Study on the Impact of GST on Automobile Ancillary Sectors with Special Reference to Tamil Nadu

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Keywords

GST, Positive impact, Negative impact, Level of repercussions, MSME

JEL Classification
L21, L25, L52, L62, Q28

Abstract: The automobile industry plays a major role in India's economic growth. It plays a major role in the economizing growth of other sectors and contributes to the country's GDP and the country's unemployment rate. The study aims to highlight the impact of GST on small, micro and medium enterprises (MSMEs) that manufacture and supply auto parts for manufacturing vehicles and services that support growth. This study examines the positive and negative effects of GST on small, medium and medium auto parts manufacturing companies. The implementation of GST makes companies liable to pay taxes. The main objective is to find out the impact of GST tax policy among automobile accessory entrepreneurs. Hosur taluk of Krishnagiri district was selected for the study and information was collected from 175 small, micro and medium entrepreneurs through interviews. The study found that the GST tax policy has positive and negative impact and was an important tax system.

1. Introduction

1.1. Origin of GST

The term tax is extracted from Latin term 'Tax are' that defines "Estimate a obligatory contribution to state revenue, taxed by the government on employees income and business profits or added to the cost of some goods, services and transactions". Tax is a compulsoryfiscal charge imposed to gather income for public spending to provide services and infrastructures. This tax is charged on an individual or organisation. The Taxation System of India encompass of straight and implicit Taxes. GST is India's majority contributory implicit tax reformation. The notion of GST, is the tax charged on inshore utilization. This tax is fit out to appoint the revenue for government. The consumers pay the GST for

the services they acquire to the government. Out of 123 countries, India is one of the country across the world that is following VAT mode that is introduced in both central and state level. GST is charged to manufacture, sale and consume the goods and services at the National level. GST was first effect in France in 1954.

1.2. The new version of GST

GST is enforcedin nearly 160 countries of the worldwide. Under the GST scheme, the goods and services are taxed equally and appeal the same tax rate.The goods and services are valued equally and captivate the same tax rate under the policy of GST. Government of India is currently planning to generate revenue of eight lakh crore through tax rate of 5 percentage, 12 percentage and 18 percentage.Tax system of 0%, 5%, 12%, 18% and 28%, GST is a powerful tax system with four tier GST, minimum tax rate for items of essential and maximum tax rate for lavishness items is fixed by GST Council. Under GST policy, Indian Government has planned to acquire input tax credit (ITC) either for initiation of services or sale of goods. GST has caught the devotion of the market which has been one of the important things given its implications of incomes of firms. Huge number of goods has been keptbeloweighteen percentage slab of taxation by the government.

1.3. Background of the Study

MSMEs supplement broad factories as auxiliary units, and this makes a significant contribution to the socio-economic development of the nation's rural and tribal areas(Gupta, 2022; Mohapatra, 2016). MSME (Micro, Small and Medium Enterprise) was introduced by the government of India agreement with the MSMED Act of 2006. MSME are the enterprises involved in the processing, production and preservation of goods and commodities. MSME has played a very important role in Indian economic growth. It makes a remarkable contribution to the socio-economic development of nation's rural and tribal areas. They also contribute to manufacturing output and spawning of employment opportunities. MSME played a very crucial role in stimulating stable economizing growth, growing forex revenue and exportations. They have contributed to about eight percent of GDP and thirty three percent of total manufacturing output by creating eighty million employment opportunities by about thirty-six million MSMEs as on 2018.

MSME has also faced many obstacles. MSME were badly distressed by expanding imports from China and this emerged a situation to reduce the cost through improved and quality of the product. All the while, GST had been executed and caused huge destruction for small scale industries. This implementation had also brought many problems for MSME. The implementation of GST has resulted in reconstruction of infrastructure and resource of MSMEs on the basis of information technology systems, value chain and pricing etc.

Automobile sector plays a very crucial role in contributing to the Indian economy. India has a pride of being the biggest vehicle manufacturers in the world in automobiles. India has an assorted automobile industry that has many varieties ranging from two to four wheelers as well as commercial vehicles with a constant progress towards technological advancement and electrification we will deeply scrutinize how GST has overwhelmed the automobile industry.

1.4. Merits of GST on the Sector

The automobile sector is one of the key segments of the economy having extensive forward and backward linkages with other key segments of the economy.

The launch of GST has led to a variety of impacts on the automobile industry. existing taxation policy, the trader could clam the approval of excise duty, CST which were paid prompt, but in the old tax policy, the amount of excise duty paid by the trader cannot be recovered thus resulting in inflation of purchase price of the vehicle. After the arrival of GST, CGST, CSGT and IGST paid became the source of credit to the traders and thus will not contribute to additional supply of vehicles and purchase price of vehicle. Thus, we can firmly state that the commencement of the GST policy has eradicated the effects of taxes and resulted in reducing the price of automobiles.The limitation of the previous policy were solved by the introduction of GST policy. In the previous policy, the manufacturers were charging tax on MRP and this resulted in higher cost on spare parts and other components produced by traders. But this was totally eradicated in the GST policy.

Presently, the tax rates are similar across the country. This is because of the implementation of the GST policy. Before the arrival of GST that is before 1st July 2017, Central Sales Tax was charged only when there were interstate sales, credit could not be claimed for payment of output VAT. This was destroyed by IGST being credit easily available. This resulted in a huge saving of cost by eliminating CGST. This has further helped in claiming of cost incurred on advertisement, promotion etc., and thus assisted in justification of working cost.

A huge encouragement of GST was that it assures for the rejection of subsidy provided by the Central and State Government from transaction value. This emerged the producers of electric vehicles who enjoy huge subsidy from the government to save massive tax cost that would be further passed consumers. Therefore, any electric vehicle that has government subsidy, will be charged GST on transaction value expects the amount of subsidy. The GST has helped in sorting out any interpretation issues.With the help of GST it is easier to start a business as we can do business anywhere in the country without problems. Before the evolution of GST, the manufacturers have to pay the government a service tax on purchases. Under GST, a startup can deduct the tax paid on purchases from the tax it paid on sales.

1.5. Demerits of GST on the Sector

GST has provided many advantages but it also has some disadvantages on the other hand. The consumers are charged GST on vouchers or warranty cards and it should be paid when it is issued or redeemed. Thus, working capital would be blocked.

In Automobile industries, it is common to give discount to the traders in return traders will also offer promotion facilities to consumers. These rebates are seasonality and would not be registered in particular invoices. Under GST, discounts will not be included unless it is registered in invoice. This will arise some problems during taxation.

Taxes are also charged for sale of vehicle, other service under GST policy. This would create a big impact in future by having differential tax treatments for composite supply and mixed supply. The GST policy did not clearly state about the automobile industry and its various sales packages. So, it will lead to litigation in future.

1.6. Automobile Sector

GST has brought many problems for the automobile sectors. The automobile industry faced many consequences because of the idea of a simplified tax regime. The current tax structure on automobile industry is addled with entanglement. Commercial vehicles are the leading segment in the export growth. Presently, automobile exports are based on six. Several types of taxes at numerous rates.Example; Excise duty, infrastructure cess, Octroi, VAT etc. Currently, surcharge on vehicles is split into four slabs that consist of a compact of tax rate that is pertinent to mine cars.

Impact of tax will vanish which result in lessen overall cost of vehicle manufacturing with the output influence of GST. Therefore, gross economic activity is look forward to increase thus by resulting in a letter GDP growth to propel demand for vehicle.

2. Review of Literature

The main objective of the study was to study the practical problems in the introduction of GST, the consequences of its implementation beyond the problems and the vague perception of GST among the general public. At the end of their research, they have revealed the fact that the mantra of "one country and one tax" which was in written form has been transformed into action by the new tax policy called GST and has given various benefits to the producers and consumers and has resulted in revenue and growth of the country (Xavier, 2017; Mohanty *et al.,* 2021). The researchers conducted a study to find out the impact of the implementation of GST on the general public and the small and medium business traders in the industrial sector. This policy has no negative or positive effects. The study also concluded that it is more important to be in a balanced position (Bharathi, 2018). The study indicated how Indian MSMEs were affected by the introduction of GST. The researchers chose interview method to collect data for their study and collected data from Indian MSMEs. The study provided a multi-dimensional understanding of the gaps between the expected and actual outcomes of the GST tax policy based on the data collected (Ali, 2018). The study observed that positive impact of GST on automobile ancillary units. Their aims were to review how businesses are managed after the impact of GST and the problem faced then, the research have been found that positive and negative impact (Verma, 2018). In their research paper evaluated"Impact of GST on MSMEs" in Sivagangai District, Tamil Nadu. Their multiple regression results revealed that there is noteworthy association between "GST impact on MSMEs"and "Demographic factors" (Geeta *et al.,* 2019). The study is enlightened to permeate the observation, taking, effect of GST on small-scale industries. A survey was conducted by a designed questionnaire and the feedback were collected from MSME entrepreneurs and were will analysed with the usage of logical and sampling statistics. The result of the study revealed that the understanding with regard to GST pronouncement among the MSMEs is followed with that type of firm and GST has been broadly acknowledged by MSMEs. Finally, the productive effect of GST has been perceived among the respondents Mittal and Raman (2021). The study concluded with the important implications of the intrapreneurship dimensions in the auto clusters that will pave way for other studies. This study is confined to auto clusters in Delhi/ NCR, however, there is further scope of extending this research to other industries in different geographical areas (Mehrotra, 2021). In their study to examine how MSMEs and start-ups can help development of tribal youth. The study found that MSMEs has a noteworthy role in the start-up ecosystem growth for youngsters of tribal in Rajasthan (Gupta, 2022).

2.1. Research Gap

The pastworksdiscoursesthe conceptualization of GST and theoretically explains its welfare.Experimentally, the pivot on the effect of GST on fiscalprogress, employ exists. The currentresearchtries to fulfil the researchhiatusthrough empirical observation the effect of GST on sectors of the economizing –Automobiles ancillary units.

3. Objectives of the Study

- To examine the influence of GST on Automobile Ancillary Sectors
- To recommend measures for making it handlersociable.

4. Research Design

This study is expressive in nature as it entitles the effect of GST on automobile ancillary sector in Krishnagiri District.The research is based on both primary and secondary data. Secondary data were obtained from government website, research journals, newspaper etc. Primary data have collected using planned questionnaire from automobile ancillary entrepreneurs.

4.1. Research Methodology

The study is based on both secondary and primary data. The secondary data is used as a background material of the study. Primary data is a main theme of the study. Primary data is collected owners of the automobile ancillary units in Krishnagiri District through Interview schedules. The schedule elicits details on impact of GST on automobile ancillary sectors. The secondary data were collected from different sources for published and unpublished sources.

4.2. Area Covered for Primary Data

The research was conducted in the area of Krishnagiridistrict in Tamil Naduknown for micro, small and medium enterprises. It is a manufacturing centre with many units manufacturing and servicing Automobile Ancillary products. It is also the centre of occupation of womenfolk outfits. The respondents were Producers andService providers.

4.3. Importance of the Research

The study purposes at prominence the encouraging and harmful effect of GST on Automobile Ancillary Sectors. The research work would also highlight the impact of GST on MSME Sectors. This would help the policy makers to design measures to ease the work of Automobile Ancillary sectors in implementation process.

5. Analysis and Interpretation

5.1 Demographic Details

The following table shows the demographic distribution of respondents. The respondents have been categorised on the basis of their gender, marital status, age, qualification, experience, enterprise in existence, industry category and enterprise type.

Table 1: Socio-Economic Characteristics

Personal Data of the Respondent		*Frequency*	*%*
Gender	Male	161	92.0
	Female	14	8.0
Marital Status	Married	166	94.9
	Single	9	5.1
Age in years	Below 30	45	25.0
	31 – 40	63	36.0
	41 – 50	36	20.6
	Above 50	31	17.7
Educational Qualification	Up to SSLC	24	13.7
	Graduate	42	24.0
	Engineering	72	41.2
	Others	37	21.1
Work Experience	Less than3 Years	37	21.1
	3 – 9 Years	86	49.2
	10- 15 Years	35	20.0
	Above 15 Years	17	9.7
Enterprise in Existence	Below 5 Years	21	12.0
	5– 8 Years	37	21.1
	9 – 12 Years	53	30.3
	Above 12 Years	64	36.6
Industry Category	Manufacturing	50	28.6
	Services	25	14.3
	Both	100	57.1
Enterprise Type	Micro	147	84.0
	Small	18	10.3
	Medium	10	5.7
Total		175	100.00

Source: Authors' Own Calculation

The table No 1 shows that the profile of answerdents observed over the factors of "Gender, Marital Status, Age, Qualification, Experience, Enterprise in Existence, Industry Category and Enterprise Type".

Regarding the **Sex** wise the distribution shows that 92% of the respondents are in group of male respondents and 8% of the respondents are the female respondents. Thus, it can be interpreted that highest percentage of sex is male.

Regarding the **Marital Status** wise the distribution shows that 94.9% of the respondents are married and remaining 5.1% of the respondents are single. Thus, it can be interpreted that highest percentage of Martial status is married.

Regarding the **Age in years** the distribution shows that 25.7% of the respondents are in the age group of below30 Years, 36% of the respondents are in the age group of 31-40 Years, 20.6% are in the age group of 41-50 Years and 17.7% are in the age group of 41-50 Years. Thus, it can be interpreted that highest percentage of age group is 31-40 years.

Regarding the **Educational Qualification** the distribution shows that 13.7% of the respondents are Up to SSLC, 24.0% are Graduate, 41.2% are Engineering graduate and 21.1% of the respondents are others. Thus, it can be interpreted that highest percentage of Technical Qualification is engineering.

The study discovered that 21.1% those with prior work experience of 3 years, 49.2% those with prior work experience of 3-9 years, 20% those with prior work experience of 10-15 years and 9.7% those with prior work experience of above 15 years. Thus, it can be interpreted that highest percentage of experience is 5-10 years.

Analysis shows that 12% are in the field for less than 5 years, 21.1% of the respondents are in the field for a period between 5-8 years, 30.3% of the respondents are in the field for a period between 9-12 years and 36.6% of the respondents are in the field for above 12 years.

Among enterprises, 28.6% belong to the manufacturing sector, 14.3% of enterprises belong to service, which 77% of enterprises belong to both manufacturing and service enterprises. Thus, it can be interpreted that highest percentage of enterprises is manufacturing and service enterprises.

Regarding the enterprise type the distribution shows that 84% of the respondents belong to micro enterprises, 10.3% of the respondents belong to small enterprises while 5.7% enterprises belong to medium Scale enterprises. Almost, majority of the respondents reside to micro firms with nearly 84%.

5.2. Impact Factors of GST on Automobile Ancillary Units

Table 2: Factor AnalysisKMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.852
Bartlett's Test of Sphericity	Approx. Chi-Square	1.170E3
	df	78
	Sig.	.000

Source: Authors' Own Calculation

All the variables are adequacy or appropriateness of data for factor analysis to indicate. In this study to indicate, the value of 0.852 KMO for overall matrix was found to be excellent and Bartlett's test of Sphericity was highly significant the p value is less than 0.001. above table shows that all the variables are most suitable for continue the research work through Kaiser-Meyer-Olkin rules indicated.

Table 3: Initial Eigen values and the Rotation Sums of Squared loadings

Total Variance Explained for Impact factors of GST

Component	*Initial Eigenvalues*			*Extraction Sums of Squared Loadings*			*Rotation Sums of Squared Loadings*		
	Total	*% of Variance*	*Cumulative %*	*Total*	*% of Variance*	*Cumulative %*	*Total*	*% of Variance*	*Cumulative %*
1	5.077	39.053	39.053	5.077	39.053	39.053	4.244	32.646	32.646
2	2.379	18.304	57.356	2.379	18.304	57.356	3.212	24.710	57.356
3	1.258	9.676	67.032						
4	.882	6.781	73.813						
5	.575	4.426	78.240						
6	.528	4.064	82.304						
7	.513	3.945	86.249						
8	.434	3.339	89.588						
9	.399	3.070	92.658						
10	.353	2.712	95.369						
11	.250	1.926	97.295						
12	.193	1.483	98.778						
13	.159	1.222	100.000						

Extraction Method: Principal Component Analysis.

Source: Authors' Own Calculation

Table 4: Rotated Component Matrix for Impact factors of GST

	Component	
Components	*1*	*2*
Positive Effect of GST		
Start Business to easily	.860	
To Provide facilities for enlargement of Commercial	.845	
Smallerburden of Taxation	.838	
Online Conformance Procedures	.822	
Encourage Manufacturing Sector	.655	
Purchase of capital goods	.629	
Improved MSME market expansion	.625	
Negative Effect of GST		
Lower threshold exemption limit		.779
Selective Tax Levying		.776
Increased compliance cost		.742
Lack of infrastructure facilities		.715
Financial Preparedness		.435
Difficulties in maintaining documents		.371

Source: Authors' Own Calculation

The factor analysis narrates the 13 variables into two important factors namely positive Effect and Negative Effect of GST. All these two factors explain that the impact of GST on automobile ancillary units to the extent of 57.356 percent.

The most important factor is positive effect of GST which consists of six variables wth the eigen value of 5.077 and percentage of variance is 32.648. Second and final factors is Negative effect of GST which consists of six variables with the eigen value of 2.376 and percentage of variance 24.710.

5.3. Multiple Regression Analysis

The regression analysis is concluded the positive and negative effect on the dependent variables. The result is shown in the below table.

Table 5: Regression Analysis

Model	*R*	*R Square*	*Adjusted R Square*	*Std. Error of the Estimate*	*F*	*P-value*
1	.678[a]	.0345	.0275	.51475	2.983E4	0.000

a. Predictors: (Constant), Positive impact, Negative Impact

Source: Authors' Own Calculation

Table 6: Coefficients Coefficients

Coefficients Coefficients[a]						
Model		*Unstandardized Coefficients*		*Standardized Coefficients*		
		B	*Std. Error*	*Beta*	*t*	*Sig.*
1	(Constant)	41.046	.039		1.055E3	.000
	Positive impact	7.311	.039	.766	187.346	.000
	Negative impact	6.117	.039	.641	156.743	.000

a. Dependent Variable: Impact of GST

Source: Authors' Own Calculation

Multiple Regression Model

Impact of GST: Constant+b1(Positive Impact) +b2(Negative Impact)

Impact of GST: 41.046+7.311(P)+ 6.117(N)

Were

DV=Impact of GST in Automobile Ancillary Units

IV= P: Positive Impact

N: Negative Impact

The study found, the outcomes of the coefficient variance analysis for the impact of GST on automobile component units.Dependent variable is GST effect on automobile component unitsand independent variable are positive and negative effects of GST. From the multiple regression tables, it is noted that the value of coefficient of variance R square is 0.034 which means that 3.4 % of the variance on impact of GST is described by the individualisation variables applied in this research. The value of F is 2.983E4, P value less than 0.001. Hence, their research paperresolved that there is noteworthyassociation between "GST impact on automobile component units", "Positive and negative effect of GST".

6. Findings of the Study

92 percent of the respondents are male and 94.5 percent are married. 36 percent of the respondents are in the age group of 31-40 years and 41 percent are engineering holders. 49.2 percent of the respondents have 3 - 9 years of experience and 36.6% of the respondents have been in the field for more than 5 years. Analysis results of multiple regression model for impact of GST on automobile ancillary sectors, dependent variable is GST impact on automobile ancillary sectors and personalization variables are positive and negative impact factors. The research found that "GST Impact on Automobile Ancillary Sectors" has a significant correlation between "positive and negative impact factors".

7. Conclusion and Recommendations

Goods and Services Tax was most important, one of the levy restructurings afterward liberation. It has collaborative different types of implicit taxation beneath one act with a view bring about regularity take shape "One Nation One Tax". Taxation policies perform a crucial role in economizing. tax is a source of proceeds. It has a positive influence. A good tax policy should be implemented considering the problems of income distribution. "This tax should be a source of revenue for the government and improve the standard of living of the general public and support the infrastructure development of entrepreneurs".

The research paper replicates that some of the readiness with regards to GST by MSME businessmen, necessitate extemporizing the GST web and other such related standards are rolling out towards perceiving the real outcome of GST execution. In orderto the effect of census piloted with small and micro firms, it is palpable that the public rate the effect of GST as equilibrium and there is potentiality span for progressions activity. However, "to ensure smooth and successful outcome ensuring that the implementation system is managed addressing the gaps in the process is very vital. If such procedures are taken up by the government in a swift stride, it can be very resourcefulness outcome for fixed economic development".

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Trends and Composition of Pre-School Education of ICDS in India: A State-wise Analysis

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Childhood, Development, ICDS, India, Pre-school education

JEL Classification

I21, I25, I28, J13

Abstract: There is a strong evidence that the care a child enjoys in his/her early years in both qualitative and quantitive terms would have a positive impact on his/her brain development. Considering the significance of early years for the holistic development of children, Pre-School Education (PSE) to children of the age group of 3-6 years has been imparted through Integrated Child Development Services (ICDS) scheme in India. Non-formal PSE is treated as one of the key elements of the package of services envisaged under ICDS scheme as it lays foundation for adequate physical, social and cognitive development of children. It aids children in achieving improved results in both primary education and later learning stages. With this background, the present study makes a modest attempt to understand the genesis and development of PSE in India. Further, it throws light into different policies supporting PSE in the country. It concludes with a state-wise analysis of the functioning of PSE component of ICDS in the context of India.

1. Introduction

Over the past decades, countries have put several efforts on mulitple indicators of development to ensure socio-economic advancements (Paltasingh and Satapathy, 2021). Educational attainment of the people is considered to be one of the key constituents of development (Barro and Lee, 2001). Several theoretical arguments and empirical studies made at international, national and regional level entails the importance of education for economic growth and development (Becker, 1962; Schultz, 1961). However, very few studies are focused on the PSE across the nations despite of its profound signifance. In fact, the strength of a nation lies in having healthy, protected, educated and well-behaved children who are considered as the future assets of the nation. During the early years, brain development of a child occurs in a rapid manner. Hence, proper care should be taken by providing

Early Childhood Care and Education (ECCE) keeping in mind the overall development of a child. Heckman *et al.,* (2010) has noted that, investing in PSE offers the most cost-effective returns compared to investing in later phases of life. That is because the pre-school enrollment improves enrollment in subsequent learning (Hazarika and Vijoya, 2013; DeCicca and Smith, 2013). Therefore, there is a great importance of proper care and education in early years for the holistic development of children. Research studies across different disciplines state that, the period of 3-6 years of a child is more critical for his/her overall development, but a little emphasis has been given to this aspect in our educational system (Kaul *et al.,* 2015). In low income or developing countries like India, it is found that only one in every five children has access to PSE (UNESCO, 2019). Further, PSE is the weakest component in both rural and urban area (Somaioh and Vijayalakshmi, 2007). Lack of skill and expertise among the anganwadi workers (AWWs) fails to motivate mothers to send their children to AWCs. It is evident that, AWWs are overburdened with myriad of responsibilities at micro level which leads to inadequate focus on PSE (Bhatnagar and Bhadra, 2015). Proper PSE as well as appropriate parenting during the early years is highly relevant for the overall development of a child (Allen, 2012). Considering the significance of PSE, the Sustainable Development Goals (SDGs) of the United Nations (UN) aims for all boys and girls to have access to high-quality early childhood development, care, and education within the first three years of life so that they are prepared for primary school (UNESCO, 2019).

The ICDS programme in India has been instituted to provide students with PSE. One of the most crucial elements of the ICDS is thought to be the non-formal PSE, which lays foundation for adequate physical, social and cognitive development of children (Jacinta, 2015). It helps children performing better in both primary education and later learning phases. The ICDS offers early childhood education and care through non-formal PSE to children along with nutritional support as well as growth monitoring (Ghosh and Dey, 2020). The performance of ICDS is commendable for its supplementary nutrition and immunization in the country, but is being criticized for its quality and method (Prochner, 2002; Somaioh and Vijayalakshmi, 2007). So, proper evaluation of the performance of PSE of ICDS in India and addressing the challenges are the need of the hour. In this backdrop, the present paper makes a modest attempt to understand the genesis and development of PSE in India. Further, it throws light into different policies supporting PSE in the country. It concludes with a state-wise analysis of the functioning of PSE component of ICDS in the context of India. The subsequent part of the manuscript is organised as follows; Section-2 presents theoretical insights on PSE and human capital formation. Section-3 provides an idea about the data and methodology used in the present study. Section-4 describes ICDS and provision of PSE with a focus on objectives, significance and policies supporting PSE in India. Section-5 analyses state-wise analysis of the performance of PSE in India. Section-6 offers conclusion. Section-7 and 8 deals with critical appraisal and suggestive measures respectively.

2. Pre-School Education and Human Capital Formation: Theoretical Overview

The Oxford Dictionary defines human capital as, "the skills the labor force possesses and is regarded as a resource or an asset". According to Goldin (2014), "human capital is the stock of productive skills,

talent, health and expertise of the labor force as physical capital is the stock of plants, machine, equipment and tools". Education, training, and health investments in people have the potential to boost their productivity (Chalil, 2021; Goldin, 2014). This study is supported by the human capital theory based upon the work of Schultz (1961) and Becker (1962). According to this theory, individual, society, and government should invest in education for future benefits. Traditionally, economic growth of a nation was attributed to land, labor, and capital but Schultz argued that growth in output could only be explained by human capital investment in terms of formal education, skill development, and improved health facilities. Prior to 1960, education was regarded more as consumption than investment. Later, on the high rate of return on education than the cost of investment made the case of equal opportunities for all to learn. Investment in human in the form of job training, skill promotion, and improving knowledge increases the national output as educated people are more productive and achievement oriented and can easily cope with any type of structural changes. Thus education is one of the forms of human capital and fairness in its provision is very much necessary for the development of a nation. Since PSE is regarded as the foundation of basic education in the academic life of a child, equal access to quality PSE will influence economic growth and poverty reduction. PSE helps more parents to join the workforce and increases their productivity, which fosters economic growth. It has also been discovered that investing in disadvantaged children's early years fosters equality and economic efficiency (MacEwan, 2013). Meier (1999) asserts that the most crucial element influencing economic development and income distribution is education. Government involvement in education is primarily motivated by three factors: the poverty trap, internalising positive externality, and avoiding information asymmetry.

According to Barnett (2008), PSE has some advantages for kids that can be attributed to academic achievement, economic output, and lower government spending. Additionally, it lowers the need for special education, grade repetition, and dropout rates among elementary school students and aids in obtaining high test scores. He claims that, this programme aids in boosting participation in follow-up education while also lowering crime, delinquency, and behavioural issues. PSE has a positive indirect effect on the economy, jobs, earnings, and national welfare (Pandey, 1991; Nores and Barnett, 2013).

3. Data and Methodology

The present research has been carried out through Systematic Review of the Literatures (SLR). A SLR approach is typically used to summarise the body of research that is currently available, find research gaps, and explain the body of knowledge that is currently available (Satapathy and Paltasingh, 2022). The authors focused on the PSE component of ICDS while reviewing a number of articles from national and international journals, as well as reports from various organisations. This section gives emphasis on the variables included in the study and the sources from which relevant data have been collected. All the required informations have been collected from secondary sources. The variables included in the present work are number of centres providing PSE as well as number of children enrolled in PSE under different schemes in India, state-wise number of operational ICDS projects, state-wise number of operational AWCs, number of PSE beneficiaries per AWWs, state-wise change in PSE and Supplementary Nutrition Programme (SNP) beneficiaries from 2014-19, and state-wise

honorarium paid to AWWs in India. Growth rate is calculated for allocation of funds for ICDS and Ministry of Women and Child Development (MWCD) by gathering the relevenat data from various issues of policy briefs of ICDS, Government of India (GoI). Relevant information have been gathered from web portals and reports of Centre for Budget and Policy Studies, various issues of policy briefs on ICDS, Centre for Policy Research, GoI, various status report of ICDS, and ICDS annexures for the year 2017-18, MWCD, GoI. As there is no consistency in the available data, authors could not use any econometrics method to study the impact of these variables on one another. The authors have analysed the available information through table and diagrammatic presentation of data. To accomplish the goals of the present research, every piece of data has undergone a thorough analysis. Further, the current work has adopted descriptive research design. Now it is pertinent to delve into the history of PSE in India for better conceptual understanding.

4. Pre-School Education and its History: The Indian Scenario

PSE includes all types of development, care, educational programmes, and institutional arrangements meant for young children before they enter into primary education (Paul, 2015). The periods (0-2) years, (2-3) years, and (3-6) years; all may be regarded together as the pre-school period. Even though ECCE and PSE are very often used interchangeably, the former is broader in scope in trems of variety of programmes, types of institutional settings, and group of children covered. The institutional settings for PSE vary widely across the world.

Family as an institution always gives significant attention and care to the children since time immemorial. Childhood is regarded as a distinct and enjoyable period of an individual's life for which numerous occasions are observed to mark the importance of this period. These occasions include naming ceremony of a child, the day of first intake of solid food, birthday ceremony, and the first day of formal education of a child. In India informal education was culture based; it was vested under the responsibility of elder family members through dance, song, play, and regular talks in a natural environment. However, due to the growing demand for an industrialised nation, a systematic, structured, and well planned child-rearing programme has been required (Pattnaik, 1996).

Universal PSE is a recent development in Indian history which has its origin during the 19th century. Education was previously only available to male members of upper caste community. The prevalence of mass illiteracy among low caste children, particularly among female children, had a growing impact on the unequal distribution of educational opportunities among the population (Pattnaik, 1996). Gandhian educational philosophy, which was first presented in 1937, emphasised the need for a systematic strategy to educating children from all social groups (Pattnaik, 1996). Further, Maria Montessori's visit to India in 1939 posed a constructive impact on PSE. Later, PSE drawn the attention of different important committees and commissions in India after independence. The committee on PSE was suggested adding pre-primary classes to India's existing primary schools in 1953 after identifying the disadvantages of leaving all responsibility with parents. A complete reorganisation of pre-school educational philosophy and principles was advised by the "Committee on Child Care" (1963-1964) in order to introduce programmes that would meet the requirements of the Indian society. India's "Kothari Commission" proposed the establishment of state-level pre-primary education facilities in 1964. After

ten years, the "National Policy for Children" (NPC) (1974) declared that ECCE to provide all children in India with both care and instruction, particularly those who were first-generation school-goers. ECCE was regarded as a strengthening element for achieving the objectives of compulsory primary education as well as for human resource development in general, according to the "National Policy on Education" (NPE) (1986). With these progressive circumstances, the need for a mechanism was felt increasingly which resulted into the introduction of ICDS in 1975.

4.1. ICDS and Pre-School Education: Objectives, Significance and Policies

PSE is primarily provided in India through three channels i.e. private, state, and Non-Governmental Organisations (NGOs). Government-sponsored programmes are primarily targeted at underprivileged groups, particularly those in rural regions. The largest provider of PSE is ICDS, one of the largest centrally sponsored schemes serving children below 6 years. The services of ICDS are imparted through a network of AWCs with the active support of World Food Programme (WFP), CARE, World Bank, and United Nations International Children's Emergency Fund (UNICEF). This is the only scheme which caters the needs of children belonging to lower socio-economic background as the fee structure is almost zero and it provides incentives through supplementary nutrition to attend AWCs regularly. Besides ICDS, early period care and education is also provided through other schemes like "Sarva Shiksha Abhiyan" (SSA) and "Rajiv Gandhi National Creche Scheme" (RGNCS) for working mothers. However, they have very insignificant coverage in terms of number of children as well as centres (Paul, 2015).

Alternatively, there exists private provision of PSE which is completely unregulated and supported by high tuition fees. The absence formal and of any regulatory framework and guidelines by the government makes the curriculum more academically oriented (Ghosh and Dey, 2020). However, private PSE is gaining popularity among parents and expanding its coverage in rural as well as tribal areas too. Some of these pre-schools serve as "teaching shops" that disregard children's developmental requirements, while in other instances, the quality provided may be detrimental to children's development and even be referred to as "mis-education" (Kaul *et al.,* 2015). In addition to private provision, NGOs are also playing an important role in imparting PSE to children. They mainly focus on underprivileged groups including tribals, migrant laborers, different religious communities as well as rural inhabitants.

Table 1: Coverage of PSE Provision in India

Programmes	*No. of centres in millions*	*No. of children in millions*
Integrated Child Developmnt Services (ICDS) Scheme	1.08	72
Rajiv Gandhi National Creche Scheme (RGNCS) for working mothers	0.03	0.80
Pre-primay sections attched with primay schools	0.04	0.02
Sarva Shiksha Abhiyan (SSA)	0.08	0.50
Non-Government Organizations (NGOs) services for ECCE	NA	NA
Private initiatives	0.22	10

Source: Kaul *et al.,* 2015

Table 1 narrates the coverage of PSE provision in India. Almost all villages in India is having an AWC which caters the early learning needs of 3-6 years children. The second-largest provider of PSE, which is gradually expanding its reach not only in urban but also in rural and tribal areas, is the private sector. All other schemes have very negligible coverage in terms of PSE in India.

The ICDS scheme, one of the largest community-based programmes of GoI covers around 7.5 crores of children within 0-6 years and 1.67 crores of pregnant and lactating mothers through 6722 projects and around 12.6 lakh AWCs all over the nation (GoI, 2011a). The primary goals of this programme are to set the groundwork for children's overall development, improve the nutritional condition of children between the ages of 0 to 6, and reduce the rate of mortality and morbidity. Through this programme, pregnant women, lactating mothers, and adolescent girls also receive sufficient attention and care.

The major objectives of ICDS are (i) to enhance the health condition and nutritional status of children within 0-6 years of age, (ii) to lay the foundation for proper mental, social, psychological, physical, emotional, and cognitive development of children, (iii) to minimize the rate of maternal mortality, infant mortality, morbidity, malnutrition, and school dropouts among young children, (iv) to co-ordinate the activities of policy formulation and execution among different departments, (v) to extend health and nutrition education to mothers so that they may be able to cater the needs of their children, and (vi) to provide nutritious food to the lactating mothers and pregnant women (GoI, 2011b).

Six services, including supplementary nutrition, non-formal PSE, nutrition and health education, immunization, routine health checks, and referral services are used to carry out the goals of ICDS (Centre for Policy Research(CPR), 2019). While the former three components are coming under MWCD, the remaining components comes under Ministry of Health and Family Welfare (MoHFW). In 2016, GoI has reorganized the ICDS into "Umbrella ICDS", which includes the components such as; Anganwadi services (ICDS core), scheme for adolescent girls (known as SABLA), child protection services, National Creche Scheme, National Nutrition Mission and Pradhan Mantri Matru Vandana Yojana (MWCD, 2020). Out of these services, PSE is one of the most important components, comes under ICDS core and is provided to children of 3-6 years with a view to prepare them for later stages of education. The main purpose of PSE is to lay the foundation for overall development as well as life long learning of children and to facilitate for their optimum development. As per the National Council of Educational Research and Training (NCERT), the objectives of PSE are; to develop good healthy habits, evolve sensible socially acceptable attitudes and manners, develop emotional abilities, develop creativity, adequate physical development within children, and develop appropriate curriculm which caters the learning need of pre-school children (Paul, 2015).

4.2. Significance of Investment on Pre-School Education

Education, which moulds a child's conduct, has a much greater impact on how people live (Arora and Sharma, 2021). The educational achievement of people has a direct or indirect impact on a country's ability to grow and develop (Barro, 2001). The need for the government to place more emphasis on PSE in addition to primary, secondary, and higher education is increasing. According to Barnett (2008),

PSE has some advantages for kids that can be attributed to academic achievement, economic output, and lower government spending. Additionally, it aids in lowering drug and smoking habits in kids as well as melancholy. The priority given to early years is an outcome of multidisciplinary research that reflects the benefts of early intervention in the form of appropriate support and care in young children.

From an economic perscective, there is strong evidence regarding significant returns to high quality early childhood programmes. Nobel Laureate James Heckman (2007) has stated that investment during early childhood period, when brain development of a child is rapid, yields maximum returns than any other stages of childhood and education (Figure 1). It is a well-known fact that high quality PSE impacts children's educational development and their socio-emotional wellbeing more carefully than other phases of education (Arora *et al.,* 2007; Whitebread *et al.,* 2015).

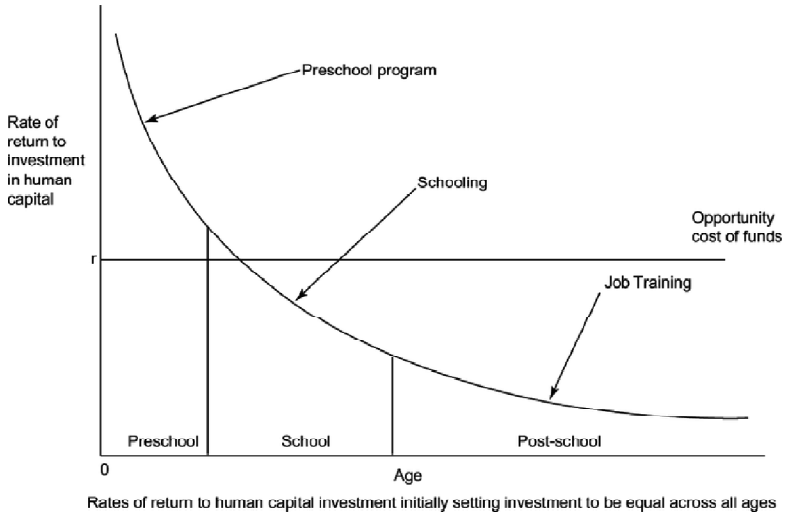

Figure 1: Rates of Return to Investment in Human Capital

Source: Carneiro and Heckman, 2003

It is evident from different studies in number of countries that programmes on PSE benefit children especially from lower socio-economic background (Berlinski *et al.,* 2009; Aboud and Hossain, 2011). Additionally, it has been noted that participation in PSE greatly improves adult outcomes like future education, employment, crime rates, and engagement in healthy behavior (Campbell *et al.,* 2002). The main reasons for investing in PSE are: (i) quality PSE sets a strong base for learning, (ii) universal PSE builds education system more effective and efficient, and (iii) equitable PSE is an effective strategy for advancing economic growth.

The profile of children in India as per Census-2011 shows the child population within 0-6 years is 158 millions. Out of all children, one-third are born with low birth weight, 42% are fully immunised between the ages of 12 and 23 months, and 14% are not immunised at all. In India, 47% of children under the age of two are underweight, and only 19.5 million of these children (who are between the

ages of 3 to 5 years) are receiving PSE through the ICDS. These data reflects the negligence and lack of proper care towards child population in India. Unless appropriate care has been given to them, their future will be at stake. Thus most important task for all the stakeholders here is to give much priority to the early years in a child's life and provide them adequate facilities with child friendly environment so that s/he can develop up to his full potentiality. The developmental needs that a child requires must be given adequate importance.

Table 2: Development Needs of Children from Birth to Eight Years

Sl. No	*Age group*	*Development needs*
1	Pre-natal to birth	Maternal health and nutrition
		Parental and family education
		Safe motherhood
		Maternal support service
2	Birth to six months	Maternal health -postpartum care
		Exclusive breast feeding
		Infant health
		Responsive care
		Early stimulation
		Safety and security
		Support services
3	Six months to three years	Infant health
		Nutritional security, responsive care
		Early stimulation
		Safety and security
4	Three to six years	Safety and security
		Child health and nutrition
		Adequate nutrition
		Day care
		Play based pre-school education
		Responsive care
5	Six to eight years	Child health and nutrition
		Primary education
		Fmily care
		Safety and security

Source: ECCE Report-1, Centre for Budget and Policy Studies, Bangalore.

Table 2 reveals that, from pre-natal to birth, maternal health care along with family support service is necessary for a pregnant lady. Then from birth to six months infant health care along with safety and security of both mother and infant are required for a child to improve in a better manner.

The period from three to six years is the most crucial as 90% brain development of a child occurs during this period (MacEwan, 2013). Thus appropriate care like adequate nutrition, play based PSE, safety, and security need to be given to children during this period for their better future development.

On the basis of equity, the economic case for government involvement in PSE programmes can be established. Children enter into formal learning with different skills and potentialities. Some of them might have completed their PSE while others might not get any chance to participate in any type of early learning programme. Several reasons may be there like unaffordability of user fee, distance from home to school, lack of infrastructural facilities at child care centres, and negligence of parents towards the early childhood period (Muchai, 2014). One more reason may be unawareness of parents about such type of programmes. Thus, government intervention is necessary for promoting PSE and to achieve equity in terms of accessibility of this programme. According to Currie (2001), government should fund this initiative until the marginal benefit of every additional dollar spent is equal for each people irrespective of rich and poor.

The most important justification for government intervention in this programme is market failure. As discussed by Currie (2001), there are mainly three reasons for market failure- (a) liquidity constraint, (b) externality, and (c) lack of information. Liquidity constraint prevents parents to make optimal investment on the human capital of their children. Thus government should intervene in the PSE programme and make an optimal investment. Lack of information or information asymmetry arises when parents are unaware of the quality of PSE provided by different institutions which lead to pay more fees for low quality education. This problem arises as parents are unable to identify between low quality and high quality education. In this case market mechanism fails to achieve an optimum solution. Hence government intervention is required in the form of informing parents by publicizing the information. Likewise, externalities also provide the strongest justification for government intervention in PSE. Private institutions only consider the private benefits and private costs at the time of deciding optimal solution. It does not take into account social benefits and costs. Education, that is provided only for welfare motives, includes social benefits which cannot be expressed in market price. The benefits are far greater than the costs which private institutions disregard. Hence there is necessity of government involvement to address the problems of market failure with regard to provision of PSE programmes. With the passage of time various policies have shaped the practice of PSE in India.

4.3. Policies Supporting Pre-School Education in India

Early learning is included in PSE along with care, nourishment, and playtime in a safe and kid-friendly setting (GoI, 2013). It is regarded as a major global support for children's growth and education and is also eligible for consideration under current laws and policies. However, a number of policies and action plans, starting with the NPE (1986 & 1992), which recognised ECCE as one of the essential components for children's overall development, regulate the provision of PSE (Sahoo and Jena, 2022). It is also seen as the foundational programme that supports elementary education and the first rung on the educational ladder (Sheeranjan and Awathi, 2010). Every child has a right to receive high-quality PSE, according to the 1989 "Convention on the Rights of the Child". Policy of "Education for All", 1990 stated that ECCE is the cornerstone of higher education because learning starts at birth. The

"National Nutrition Policy" (1993) advocated for government involvement in early childhood development, care, and schooling. It is stated that ECCE should be given the highest priority and that the quality element must receive significant attention in both the "Dakar Framework for Action" (2000) and the "Moscow Framework for Action" (2010). All children must receive free and required ECCE from the state up until the age of six, according to the revised article 45 (2002). "The National Plan of Action for Children" (2005), "The National Curriculum Framework" (2005), and "The National Health Policy" (2002) all recognised the beneficial role of ECCE in raising future enrollment, lowering child dropout rates, and raising test scores for higher education. As a result, these three strategies encouraged government involvement in the sound delivery of early education. Children between the ages of 6 and 14 would receive free and compulsory education, according to the "Right of Children to Free and Compulsory Education Act of 2009". To prepare a kid for elementary school, the corresponding state government should offer free early education for the period of 3-6 years, according to the 11th section of the law. Numerous significant policies have been implemented from the first to the tenth five-year plans to improve each of the ICDS components. Funds were distributed in the 11th and 12th five-year plans for the development of early education. A national ECCE strategy that applies to all ECCE programmes and associated services in public, private, and voluntary settings across all regions was introduced by the GoI in 2013. The primary objective of this policy is to make ECCE universally available to all children, primarily through the ICDS programme. The significance of the early years for a child's overall growth has been highlighted in the 2019 "Draft National Education Policy". By 2025, every kid in the age range of 3-6 years must have access to free, high-quality, developmentally appropriate care and education (Ministry of Human Resource Development, 2019). Now it is quite appropriate to move into the state-wise analysis of the functioning of PSE in India

5. State-wise Analysis of the Performance of PSE in India: A Discussion

Since 1975, the GoI has been implementing the ICDS scheme for the development of health, education, and nutrition among the children, but the results are far from satisfactory (Ghosh and Dey, 2020). Even though ICDS is now available to everyone, more than half of children in the pre-school age range do not engage in any pre-primary programmes (CPR, 2019). The performance of PSE components in the context of India is discussed in the present study with a focus on growth rates of allocation of funds for MWCD and ICDS, the state-wise number of operational ICDS projects, state-wise number of operational AWCs, percentage of non-operational AWCs for the period 2008-2017, number of PSE beneficiaries per AWW for the period 2007-2018, state-wise number of PSE beneficiaries per AWW, state-wise percentage change in PSE and SNP beneficiaries from 2014-2019, and state-wise honorarium paid toAWWs in India.

Anganwadi services is the largest scheme of MWCD, GoI. Figure-2 shows continuous decline in the growth rate of allocation of funds for ICDS scheme from 2014-15 to 2016-17. Even though the allocations for MWCD has increased by 16% from 2017-18 to 2018-19, the allocation for ICDS core or anganwadi services has increased by only 7% (CPR, 2019). As per the data presented in the figure-2, the year 2015-16, 2016-17 and 2017-18 have witnessed less allocation of funds for anganwadi services in comparison to the year 2014-15. The trend of growth rate of allocation of funds shows a fluctuating

pattern. Despite the fact that, ICDS funding allocation has grown between 2019-20 to 2020-21, but the share of anganwadi services out of the total budget of MWCD, GoI has declined over the years which reflects the negligence towards anganwadi services.

Figure 3 shows state-wise number of operational ICDS projects in India. The total number of sanctioned as well as operational ICDS project is 7075 all over India. Uttar Pradesh has maximum

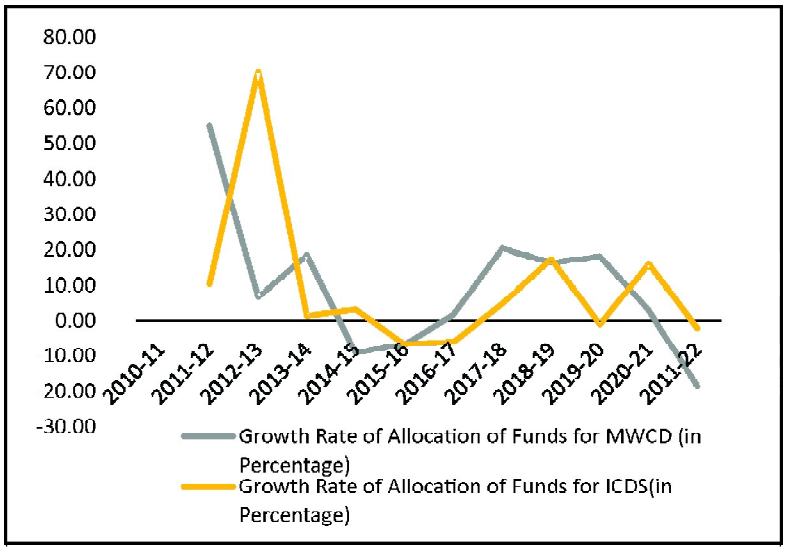

Figure 2: Growth Rates of Allocation of Funds for MWCD and ICDS

Source: Compiled by Authors from Various Isues of Policy Briefs on ICDS, CPR

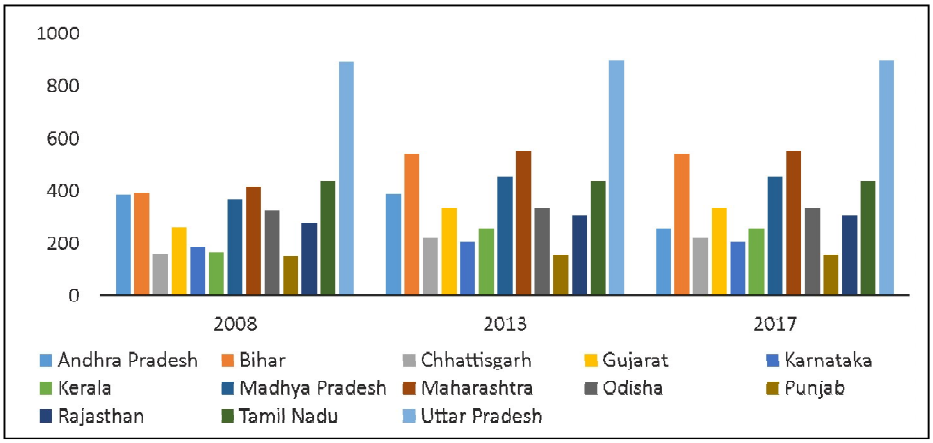

Figure 3: State-wise Number of Operational ICDS Projects in India

Source: Compiled by Authors from Status Reports of ICDS & ICDS Annexures 2017-18, MWCD, GoI

number of ICDS projects followed by West Bengal, Maharashtra, and Bihar. States like Chhattishgarh, Gujarat, Karnatak, Kerala, and Punjab have very less number of ICDS projects. The number of operational ICDS projects have decreased for the period 2008-17 in Andhra Pradesh due to separation of Telangana from it. Although the coverage of ICDS services has been increasing over the period, the operational gaps in terms of delivery of services is not consistent in quality and quantity across the country (Paul, 2015).

AWCs are the focal point of delivery of services for children at the village level. As on 2019, out of the sanctioned AWCs, 98 percent were in operation (CPR, 2019). But there is significant state-wise difference. Table-3 reveals, there is an increasing trend in the number of operational AWCs in almost all the states except Andhra Pradesh over the period from 2008-17. The reason of declining in the number of operational AWCs might be the separation of Telangana from Andhra Pradesh. Further, the table reveals that, Uttar Pradesh has highest number of operational AWCs, followed by Maharashtra, Madhya Pradesh, and Bihar. Many operational AWCs does not have required infrastructural facilities too which discourage parents to send their children to public funded AWCs (CPR, 2021).

Table 3: State-wise Number of Operational AWCs in India

States	*2008*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2017*
Andhra Pradesh	70034	79546	83483	86164	89679	90757	55574	55607
Bihar	39331	80211	80211	80211	80211	91677	91677	91677
Chhattisgarh	28165	36211	39137	47355	49395	49651	49941	49966
Gujarat	41968	47726	49697	50149	50158	51116	52065	53029
Karnataka	53552	62521	63366	63376	64513	64518	64558	64558
Kerala	31800	32232	33026	33082	33107	33112	33115	33318
Madhya Pradesh	67607	81610	90999	90999	90999	91318	91822	94398
Maharashtra	76198	86187	106231	106231	106931	107913	108010	109779
Odisha	40983	56498	69572	69183	69822	71306	71324	72195
Punjab	20169	26648	26656	26656	26656	26656	26656	26836
Rajasthan	50209	50923	57511	58494	60319	60324	60327	61974
Tamil Nadu	50433	54439	54439	54439	54439	54439	54439	54439
Uttar Pradesh	145607	150986	173533	186447	187602	187997	187997	187997

Source: Compiled by Authors from Various Status Reports of ICDS, MWCD, GoI

Figure 4 shows gender-wise number of PSE beneficiaries per AWW in India. The trend line shows declining of PSE beneficiaries per AWW for male, female as well as total beneficiaries. The number of beneficiaries per AWW represents the workload on AWW. Higher the number of beneficiaries, more the burden on her and vice-versa.

Table 4 shows state-wise number of PSE beneficiaries per AWW in India. States like Uttar Pradesh, Bihar, Maharashtra, and Madhya Pradesh have more number of PSE beneficiaries per AWW. In contrast,

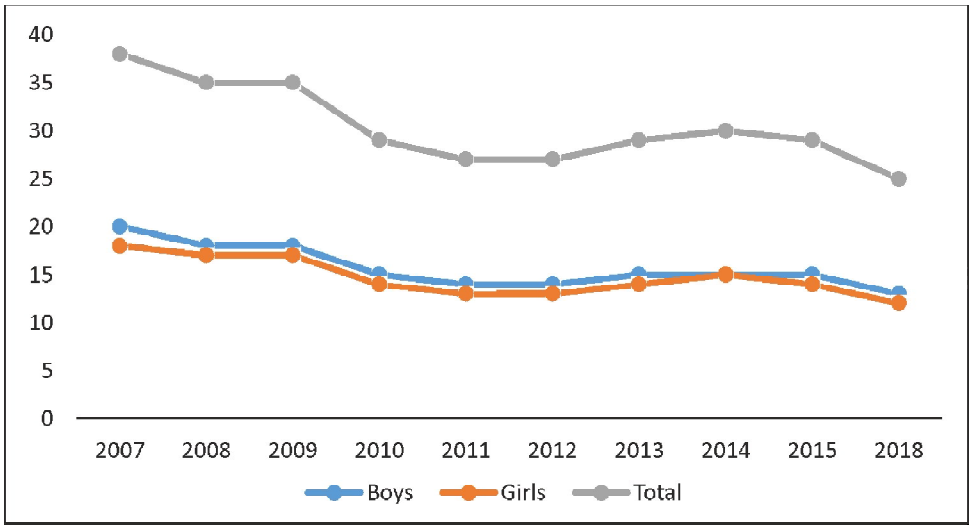

Figure 4: Number of PSE Beneficiaries Per AWW in India

Source: Compiled by Authors from Various Status Reports of ICDS, MWCD, GoI

Table 4: State-wise Number of PSE Beneficiaries Per AWW in India

States	*2008*			*2013*			*2018*		
	Boys	*Girls*	*Total*	*Boys*	*Girls*	*Total*	*Boys*	*Girls*	*Total*
Andhra Pradesh	13	13	26	10	10	20	7	8	15
Bihar	25	24	49	25	24	49	16	14	30
Chhattisgarh	14	15	29	10	11	21	8	8	16
Gujarat	15	14	29	14	14	28	13	14	27
Karnataka	15	14	29	13	14	27	12	12	24
Kerala	9	9	18	7	6	13	6	6	12
Madhya Pradesh	18	18	36	17	16	33	20	18	38
Maharashtra	20	19	39	16	15	31	12	11	23
Odisha	14	14	28	11	11	22	24	25	29
Punjab	14	12	26	9	8	17	7	8	15
Rajasthan	13	13	26	10	9	19	10	10	20
Tamil Nadu	12	12	24	11	10	21	10	9	19
Uttar Pradesh	34	31	65	23	21	46	12	11	33
India	**18**	**17**	**35**	**15**	**14**	**29**	**13**	**12**	**25**

Source: Compiled by Authors from Various Status Reports of ICDS, MWCD, GoI

states like Kerala, Chhattishgarh, Andhra Pradesh, Punjab, and Tamil Nadu have less number of PSE beneficiaries per AWW. The main three components of ICDS are SNP, PSE, and regular health check-up. It has been shown that, the beneficiaries of SNP and PSE has been falling over the years (CPR, 2020). Among states, the number of PSE beneficiaries is highest in Madhya Pradesh and lowest in Kerala.

Figure 5 shows percentage change in PSE beneficiaries during the period 2014-19 across different states. The number of children availing PSE declined to 53% in Uttar Pradesh during the period 2014-19, which was the highest decline. The reason might be the preference of parents towards private provision of PSE which encourages them to shift their children to private PSE centers. The states where highest increase witnessed in PSE beneficiaries was Odisha (34%) and Bihar (12%). The states like Tamilnadu and Telangana shows no change in PSE beneficiaries from 2014-2019.

Table 5 shows state-wise honorarium paid to AWWs per month in India. On an average, AWWs are paid Rs 6,338/- per month as honorarium for their service. States like Tamil Nadu, Karnataka, Kerala, Madhya Pradesh, Mharashtra, and Gujarat pay more than the average honorarium. The monthly honorarium in Tamil Nadu is more than Rs 11,000/-. Contrary to this, states like Bihar, Chhattishgarh, Odisha, and Andhra Pradesh pay less than the average honorarium per month to the AWWs. The AWWs all over India are getting honorarium which is very meagre and far less than their contribution that might act as a barrier in imparting quality PSE. Thus considering the workload and contribution of AWWs, honorarium should be fixed in such a manner that will induce them to work harder and to give proper justice to their duties.

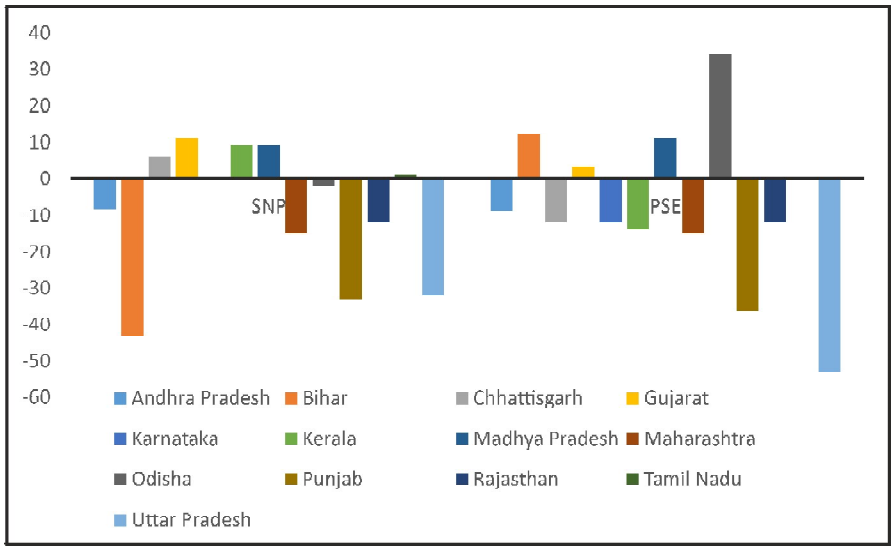

Figure 5: State-wise Percentage Change in SNP and PSE Beneficiaries Between 2014 to 2019 in India

Source: Compiled by Authors from CPR, 2019

Table 5: State-wise Honorarium Paid to AWWs in India (in Rs)

States	*Honorarium for AWWs*
Andhra Pradesh	5,700
Bihar	5,250
Chhattisgarh	5,500
Gujarat	6,250
Karnataka	7,500
Kerala	6,500
Madhya Pradesh	6,500
Maharashtra	6,500
Odisha	5,500
Rajasthan	6,224
Tamil Nadu	11,250
Uttar Pradesh	5,500
National Average	6,338

Source: Compiled by Authors from CPR, 2019

6. Conclusion

Since 1951, the wellbeing of children has been a key consideration in India's developmental planning. The concurrent list places child development and education, implying shared responsibility between the state and the centre in terms ECCE service delivery. Further, the Directive Principles of State Policy, which are a part of the Indian Constitution, contain several provisions for children that support early education programmes in the nation. Despite of the relevance, ECCE is not fully managed by educational department at centre or state level. Notwithstanding the government's commitments to ECCE in the form of the universalization of ICDS and the National ECCE Policy's (2013) recommendations, it has not yet been incorporated into the Indian Constitution as a Fundamental Right. A comparative state-wise analysis reflects there is wide variarion among states in terms of service provision as well as children participation in PSE. Bihar is the state which has around 20% non-operational AWCs and vacant AWW posts. Contrary to which, Kerala and Maharashtra are the good performing states in terms of operational AWC and AWW posts (CPR, 2019). The disproportionate service provision might result into inequality in human capital formation as well as overall development. Thus considering this circumstance, policies should be made to squeeze the gap in performance among states with regard to PSE. Even though the PSE service of ICDS is growing and reaching to larger number of children, the promise for equal access to quality PSE to the marginalized and vulnerable sections of the society remains a dream for them. In reality a very less percentage of children is getting the benefits from early learning programmes for which their school readiness is very low. Thus in addition to expansion of ICDS projects, government should focus more on the quality

aspect of PSE by recruiting qualified AWWs, imparting them regular training, providing nutritious food to children along with proper infrastructure facilities.

7. Critical Apprisal

PSE is now emerging as a significant issue in Indian context. Inspite of the remarkable expansion of service provision of ICDS, the status of children is far from satisfactory. Around half of children within the age group of 3-6 years do not participate in any type of PSE programmes (CPR, 2019). The absence of any regulatory framework for quickly expanding private sector raises questions with regard to equity and quality. A comparative state-wise analysis reflects there is wide variarion among states in terms of service provision as well as children participation in PSE. The disproportionate service provision might result into inequality in human capital formation as well as overall development. Even though there are several policies and provisions confirming developmentally appropriate PSE, the issue of financing, execution, accessibility, and availability of quality PSE remain to be adequately addressed as there is no legislation for compulsory provisioning of PSE.

8. Suggestive Measures

Availability and accessibility of quality PSE promote inclusive education in terms of more enrollment and attendance as well as reducing drop out rates at later stages of education. Thus, following suggestive measures are required to be made in order to improve the qualitative provision of PSE. Firstly, awareness and motivation need to be created among parents of socio-economically disadvantaged sections to send their children to AWCs. Secondly, regular orientations and training programmes for AWWs need to be conducted. Thirdly, provision of adequate infrastructural facilities as well as appropriate teaching learning materials to the AWCs as it is evident that there is direct relationship between the readiness of infrastructure in the AWCs and the quality of service provision (Dhingra and Sharma, 2011). Fourthly, special attention should be given to the low performing states to enhance their performance in terms of improving enrollment and attendance of pre-school children.

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Budgeting for Health: India's Policy Priorities and Investment Trends

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Union budget, Health sector, Budget allocation, Health spending, India

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H6, I10, I15, I18

Abstract: In recent years, India has set ambitious goals to become a 'Vishva Guru' or a global leader in various fields. However, one crucial area that has often faced challenges in receiving adequate attention in the Union Budget is the health sector. Despite several promises, the health sector remains neglected in the union budget, even after the COVID-19 catastrophe. Persistent underfunding in the health sector has severely hampered its capacity to effectively utilize available funds. Despite slight budgetary increases in recent years, the allocated budget is underutilised excluding the COVID-19 period. Additionally, persistent issues such as the neglect of rural healthcare, inadequate funding for capital expenditure, and limited investment in medical R&D in the allocation of the budget persist within the budget allocation. Further, the long focus on population control, family health, and disease-led programs continues, creating deficit and negligence of the general physical health and NCDs. This trend could potentially result in catastrophic health consequences for the masses. Furthermore, the current budget allocations and announcements contradict the objectives outlined in the National Health Policy 2017, which emphasises the government's commitment to achieving holistic wellness through integrated approaches.

1. Introduction

One of the key populist aspirations of the current NDA-led government in India is to make India "Vishwa Guru" or the world's teacher or knowledge-giver and a key message being delivered through G20-submit (One Earth One Life). Many people enjoy debunking this notion. Others, on the other hand, are understandably enthusiastic about making this happen. However, for the rest of the world to

look up to us, we have to solve underlying socio economic issues. According to the Nobel Laureate Amartya Sen, "India is the only country trying to be a world power with its uneducated and unhealthy population" (LSE, 2015) The government bears a disproportionately large share of the responsibility for resolving these issues. India being a welfare state, the government is the only entity to be trusted to lead India to new heights of socioeconomic achievement in order to become a "Vishwa Guru" or "The Next Super Power" through priority-based allocation and policy formulation.

A government's priorities are reflected by its budget. There was much commotion in the political and economic environment of India as the union budget 2023-24 was presented in the parliament on 1 February 2023 by the finance minister as per the yearly tradition. Union Budget 2023-24 was the first budget on India's Amrit Kaal which was announced by the Prime Minister with the start of the 75th year of Independence. The primary objective of this budget was to work toward achieving the "India@100" blueprint. The finance minister spoke about the "Saptarishi," or seven priority sectors in her speech, and envisioned "a prosperous and inclusive India, in which the fruits of development reach all regions and citizens, particularly our youth, women, farmers, Other Backward Classes (OBCs), Scheduled Castes, and Scheduled Tribes" (GoI, 2023). The pledge to inclusive development reflected the government's focus on the social sector. However, despite the devastation caused by COVID-19 and the growing double burden of diseases, health was not part of 7 priorities. While it is true that the health sector received insufficient attention in the budget speech of the finance minister, an examination of the union budget documents reveal several intriguing findings about the trend, patterns, and priorities of the union budget allocation towards the health sector.

2. Review of Literature

The COVID-19 pandemic caused demographic, economic, and overall socioeconomic changes (Suryahadi et al., 2020; Bashir et al., 2020; Béland et al., 2020; Sumneret al., 2020). The outbreak highlighted the interdependence of public health and economic well-being. In India, the potential social and economic impact of this global pandemic will be more severe for the following reasons: (a) an increase in poverty by pushing more and more people below the poverty line; and (b) an increase in socio-economic inequalities by negatively affecting welfare indices such as health (Gopalan and Misra, 2020). Government health spending and policy are crucial for minimising the effects of pandemics and other health emergencies (Jin et al., 2022).

To protect the poor from the pandemic's adversary, the Indian government offered a variety of help and relief packages for the marginalised and disadvantaged segments.The effectiveness of these safety nets will depend on the adequacy of the relief package, how well they reach the neediest groups and efficiencies in the delivery system. (Shadmi et al., 2020). Which in turn depends upon the government resource allocation towards health and wellbeing.

On the one hand, the government's public health spending must be utilised to guarantee that public health policies are implemented effectively. On the other hand, if governments construct a set of methodical and scientific policy implementation plans but are unable to fund the related public health expenditure, policy implementation may have a negative influence on health objectives. When funds are limited, the government's public health spending should be directed towards scientifically

sound, cost-effective measures and allocation should be on a priority basis. However, given the shortage of financial resources, particularly in a low-resource society like India it is often the social sectors such as health which come farthest in the government's resource allocation priority list (Sahoo et al., 2023).

In India, states share the majority of government health finance, which is by the country's constitutional decentralization, according to which health is a state matter. The central government has set a target of raising health spending as a share of GDP; nevertheless, reaching the objective would be impossible without the active engagement of the central government through budget allocations and influencing, monitoring, and assessing state health financing programmes (Rao et al., 2014). The role of the centre is critical to attaining the aim.

The landscape of government health finance is rapidly shifting in India. At the highest levels of government, there is a strong political commitment for raising public health spending from roughly 1% of GDP to 2-3% of GDP (Berman et al., 2010). To achieve this goal, the central government has increased its health spending significantly over the last decade, primarily for the national flagship programs, the National Rural Health Mission (NRHM) and Ayushman Bharat Yojana, which provides increased funding to states for existing programmes as well as funding for several new initiatives. However, the primary questions concerned with the success or failure to reach the health goals are; What is the credibility of the centre's overall commitment towards raising health financing? and does the centre allocate appropriate resources that are sufficient to accomplish the health objectives? It will also be resourceful to investigate the predominance of private out-of-pocket expenses in healthcare despite the government's commitment to raising public health spending (Bhaumik, 2015). These are all intriguing and relevant topics to look into.

3. Objective

The study aims to analyse the union budget allocation to the health sector in India and decompose the underlying trends and priorities.

4. Data and Methods

The present piece of work uses the union budget data for the health sector of the financial year 2023-24 from the Indiabudget.gov.in website, health budget data for the last 10 years from the Openbudgetsindia.org website and health budget allocation as a share of GDP from the RBI website to analyse the union budget allocation to the health sector in India and decompose the underlying trend and priorities. Graphs, tables, and descriptive statistics have been used to substantiate the objective.

5. Results and Discussion

The paper is structured as follows; The first section of the results and discussion gives an overview of budget allocation to the health sector in India for the period 2010-23. Secondly, it analyses the resources spent and the absorption capacity of the Indian health sector. Thirdly, it carries out a sub-sector and component-wise analysis of the union budget 2023-24 estimated allocation to reveal the current government's targeted priorities and health sector preferences. Lastly, the fourth section discusses the

balancing of budget accounts to identify major means of allocation i.e., revenue account or capital account.

5.1. Health Sector Allocation in India: An Overview

Even though central allocation to the health sector has been rising gradually over the years which can be witnessed from Figure 1, it still hovers around 1 per cent of the gross domestic product (GDP). According to the Economic Survey 2022-23, the Central and State Governments' budgeted health sector expenditure reached 2.1 per cent of GDP in FY23 (BE) and 2.2 per cent in FY22 (RE), up from 1.6 per cent in FY21 (Economic Survey, 2022-23). However, in the current budget, health expenditure was budgeted at around 1.98 percent of GDP. This is when the National Health Policy of 2017 proposes a time-bound increase in public health spending to 2.5 percent of GDP by 2025 (Singh, 2023). However, a large part of this increase might not be substantial due to the increasing cost of treatment, diagnostic medicines and vaccines particularly coming from high-end technology used in the treatment. Moreover, the government's contribution to health in India is well below the world average, even some less developed countries spend more than India and the budget of Kerala alone is above the central health budget. In the same vein, it will be negligible in terms of per-capita health expenditure. While public health expenditure remains non-existent (Behera and Dash, 2018; Rout and Choudhury, 2018; Pradhan et al., 2017), the total health expenditure and health expenditure per capita from all sources of financing have been rising in India (Jakovljevic et al., 2022; Jakovljevic and Milovanovic, 2015; Jaklovjevic, 2015; Sridhar and Gomez, 2011; Rahman, 2008). Future projections of health spending also showed a general long-term trend toward expansion in health spending (Jakovljevic

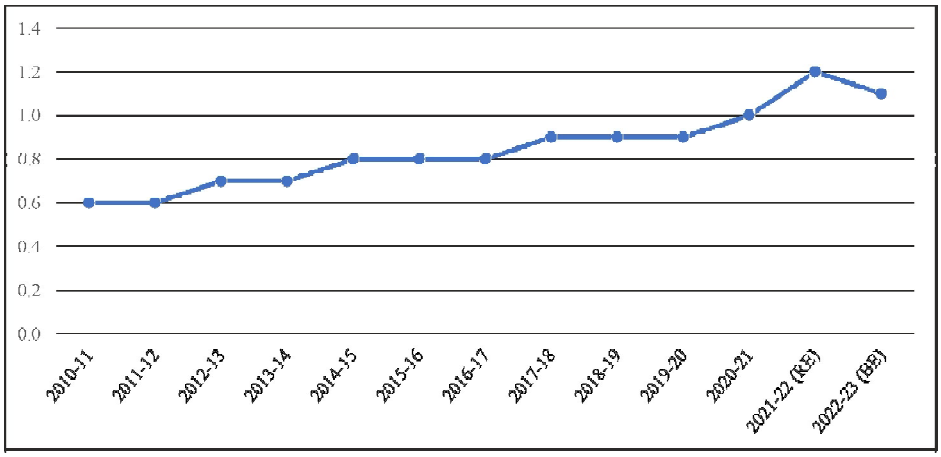

Figure 1: Central Allocation to Health Sector as Share of GDP for 2010-23

Note: Data consist of allocation to Medical, Public Health and Family Welfare; RE: Revised Estimate; BE: Budget Estimate

Source: DBIE (RBI)

et al. 2022). This can only mean the rise is contributed by heavy increases in private expenditures, especially unplanned "out-of-pocket (OOP)" expenditures (Bhaumik, 2015).

Previous research has also found that the lack of access to healthcare in India can be attributed to medical inflation, high OOP expenditure, and low public spending and unregulated health sector. Approximately 70 per cent of the health expenditure in India is paid OOP. High OOP expenses cause people to incur high-interest debt, sell assets, and divert resources away from necessities (Garg and Karan, 2009; Panda and Rout, 2018). The widely discussed "double disease burden," or the increasing burden of non-communicable diseases (NCDs) alongside existing communicable diseases, is also contributing to the regressive nature of health financing in India (Jakovljevic et al., 2022; Panda and Rout, 2020; Jakovljevic and Milovanovic, 2015; Jaklovjevic, 2015). There is also an increasing need for expenditure to address the country's existing problem of poor health outcomes, poor quality of public healthcare and health facilities, and health disparity (Patel et al., 2015).

5.2. Resource Absorption in the Health Sector

Proper resource utilisation is critical for successful health policy outcomes; this issue becomes even more crucial if resource allocation to the given sector is already low. The absorption of resource allocation by the health sector is shown in Figure 2. It depicts a considerable gap between projected and actual central health allocations. If current trends continue, the gap will widen even further. The figure demonstrates that from 2010 to 2015, there was significant and consistent underutilization ranging from 10% to 20% of the allocated resources. Major overutilization of the allocation occurred during the COVID-19 period of 2019-20 to 2021-22, indicating that the overutilization of resources was caused by the crisis period rather than by the enhancement or development of the health sector. While the pandemic has not been completely eradicated and its threat remains in our neighbourhood the government's attention has already shifted away from the health sector. The budget for FY 2022-23 (RE) shows an underutilization of 8% of the estimated allocation. While we are still a long way from

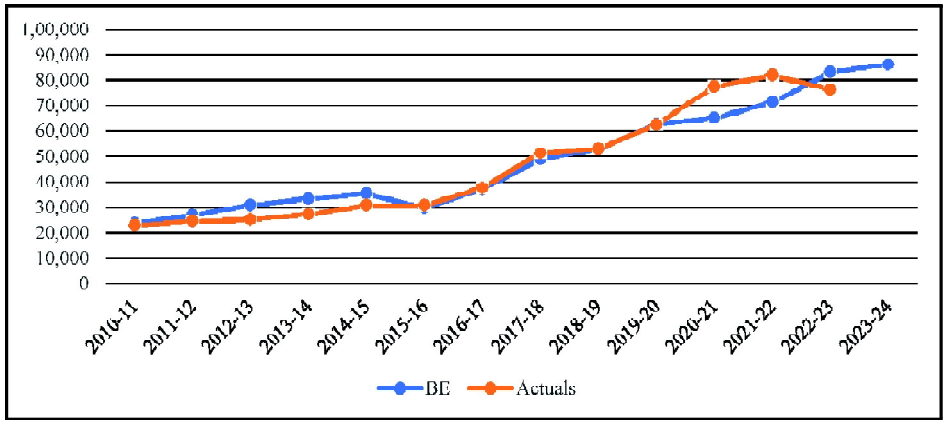

Figure 2: Estimated Vs. Actual Central Allocation to Health and Family Welfare (in Rs. Crore)

Source: Union Budgets 2010-23

adequately resolving the issue of our health sector's lack of resource absorption capability. The issue of underutilised funds has been raised numerous times as a justification for reallocating funds to other sectors where they are being used. But what we don't realise is that decades of under-allocation of 1-2% of GDP (Bhaumik, 2015) have weakened our healthcare systems to the point where they can't even use available funds. Instead of focusing on strengthening systems, funds were reallocated to other sectors, effectively perpetuating the vicious cycle. The poor and even middle class in India continue to suffer due to a lack of access to health services, essential drugs, and diagnostics.

5.3. Major Allocations to Different Health Sub-Sectors

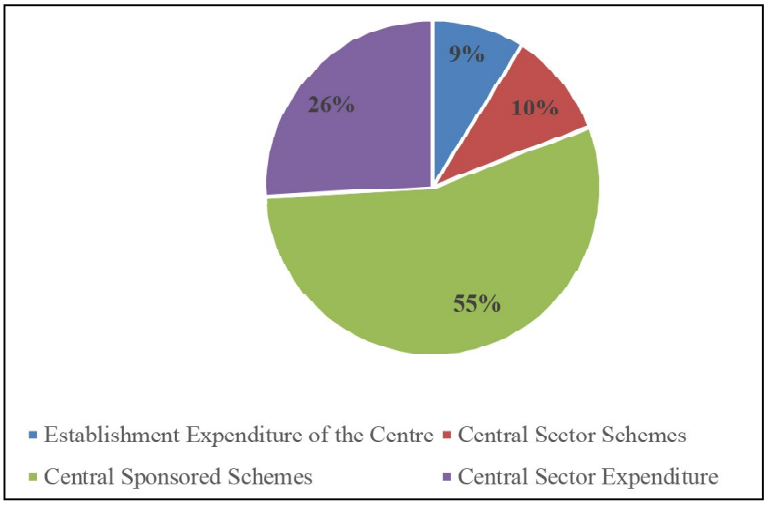

Figure 3: Allocation to Sub-Sectors under the MoHFW as a share of total allocation (in %)

Source: Union Budget 2023-24

The Indian health system is still beset by social, economic, regional, inter-state, and disease-specific disparities in health outcomes. While certain states, such as Kerala, are health role models, some states have dismal health outcomes. While rural areas continue to suffer from a high disease load, a lack of access to healthcare, low healthcare quality, and regressive health finance, the urban health system is dominated by high-end private tertiary healthcare facilities that serve primarily the rich and affluents (Kasthuri, 2018). The NCD burden is increasing in high-income states like Kerala, while the communicable illness burden remains high in states like Bihar. Given the complex structure of India's healthcare challenges, strategic prioritisation of different sub-sectors aids in the careful and effective use of scarce resources while also assisting in the achievement of desired health outcomes.

The Union Budget 2023-24 has allocated a total of Rs. 89,155 crores to the health sector, a 12% increase from revised estimates of Rs. 79,415 crores in FY23. A total of Rs. 86,175 crores have been allocated under the health and family welfare head and Rs. 2,980 crores for health research. Although revised expenditure estimates for FY23 fell by Rs. 5,300 crores from FY22.

Table 1: Allocation to Sub-Sectors and Major Spending Heads under the MoHFW (in Rs crore)

Major Item	*Actual 2021-22*	*BE 2022-23*	*RE 2022-23*	*BE 2023-24*	*% Change from RE 2022-23*
1. Health & Family Welfare	81780	83000	76370	86175	11
1.1 Total Establishment Expenditure of the Centre	5824	6857	6913	7698	10
1.2 Total Central Sector Schemes	15097	15163	11869	8820	-35
1.2.2 COVID-19 Emergency Response and Health System Preparedness Package	646	0	2	2	0
1.4 Total Central Sponsored Schemes	49281	47634	41763	47347	12
1.4.1 NHM	27445	28860	38974	29085	-34
1.4.1.1 NRHM	19871	0	0	0	0
1.4.1.2 NUHM	502	0	0	0	0
1.5 Other Central Sector Expenditure	11578	13346	15827	22310	29
2. Investment in Public Enterprises	524	105	76	52	-46
3. Health Research	2691	3201	2775	2980	7

Note: NHM: National Health Mission; NRHM: National Rural Health Mission; NUHM: National Urban Health Mission

Source: Union Budget 2023-24

Figure 3 and Table 1 show the distribution of the total budget allocation to health and family welfare among different sub-sectors and major heads of expenditure. A significant chunk of the health budget, Rs. 47,347 crores, or 55% of the overall allocation, is devoted to central-sponsored schemes. National Health Mission was allotted Rs. 29,085 crores under various centrally sponsored schemes, accounting for almost 34% of the total allocation and 61% of the total centrally sponsored programme allocation. Despite their large share and high priority, centrally funded schemes saw a slight 12% rise in allocation in FY 2022-23 (RE). Despite holding a significant percentage of total central supported schemes, NHM saw a 34% fall in allocation from FY 2022-23 (RE), totalling Rs. 29,085 crores.Further due to the major focus on the centrally sponsored scheme of which a massive component is maternal and child health care, the general health issues, NCDs, cancer etc. are overlooked causing very serious consequences for older adults and general morbid people (Tripathi, 2014). It's a common belief in India that Indian families are one medical bill away from poverty.

The Fifteenth Finance Commission sought to "involve the third tier in the health sector and extend additional resources to it to strengthen the primary health system at the grass root level" (Narayana, 2021; XV Finance Commission, 2020), taking a cue from the Kerala model in which all major health system functions have been devolved at local government level. They assessed the existing

gaps in the healthcare delivery system in both rural and urban areas, emphasising a rural-focused and third-tier-focused approach to addressing the issue. Particular attention was paid to the modification and equipping of rural health centres established and funded by the NRHM programme, particularly SCs, PHCs, and CHCs, as well as the development of new health and wellness centres (HWCs) in urban areas. NRHM has played a pivotal role in transforming rural healthcare in India. However, under NHM, the allocation to NRHM and NUHM has been declining over time. Berman et al. (2010) also noticed that, while NRHM allocation has been gradually declining, non-NRHM central allocations have expanded faster than expected. Both NRHM and NUHM have received zero allocations in the last two budgets.

The healthcare infrastructure, especially in rural areas, requires immediate attention. Further, public health expenditure has been biased towards urban areas neglecting the rural sector. As a result, the rural population rich or poor is often forced to travel to the nearest or farthest urban areas for a variety of diagnoses and speciality care particularly tertiary or referral (Tripathi, 2014). Given the public sector's limited capacity, reliance on the private sector becomes an obvious choice. Investing in NRHM and emphasising the role of local governments can have a significant impact on overall health outcomes not only in rural areas but also across the country.

After centrally sponsored schemes the next highest share is allocated to other central sector expenditures with Rs. 22,310 crores, which accounts for 26 per cent of the total allocation and witnessed a whopping 29 per cent increase in allocation from FY 2022-23 (RE) which amounted to Rs. 15,827 crores. Allocation to both total establishment expenditure of the government (Rs. 7,698 crores) and total central sector schemes (Rs. 8,820 crores) held 9 per cent and 10 per cent share of the total allocation respectively and saw minor increases with 11 per cent and 10 per cent change respectively. Investment in public enterprises saw a decrease in budget allocation from Rs. 76 crores in FY 2022-23

Table 2: Top Expenditure Heads for the MOHFW as a Share of Total Health Allocation (2023-24) (in %)

Top Expenditure Head	*Allocation (%)*
National Health Mission	33%
Autonomous Bodies	26%
Pradhan Mantri Jan Arogya Yojana (PM-JAY)	8%
Establishment Expenditure of New AIIMS	8%
Human Resources for Health & Medical Education	7%
PMABHIM	5%
National AIDS and STD Control Programme	3%
Others	10%
Total	100%

Note: PM-ABHIM: Pradhan Mantri Ayushman Bharat Health Infrastructure Mission

Source: Union Budget 2023-24

RE to Rs. 52 crores in FY 2023-24 BE. Health research was allocated Rs. 2,980 crores, a 7 per cent increase from Rs. 2,775 crores in FY 2022-23 RE.

The only COVID-19-specific allocation under this budget is a minimal COVID-19 emergency response and health system preparedness (COVID-19 EAP) package. While the pandemic continues to wreak havoc in our neighbouring country China, ignoring this allocation head appears to be a catastrophic decision.

Table 2 displays the different health spending heads that account for the majority of the budget allocation to health and family welfare. After NHM, which accounts for 33% of the market. The autonomous bodies are estimated to receive the second-highest allocation of 26%. Other expenditure heads within the Ministry of Health and Family Welfare account for the third highest share. Both PM-JAY and the building of new AIIMS occupy the fourth largest share of total health allocation, with equal shares of 8% each. According to the finance minister's statement in parliament, the current year's budget focuses on resolving the human resource crisis in the Indian health system. This is evident in the provision of 7% to the establishment of human resources for the health sector and 5% to the PMABHIM programme. Lastly, a 3% allocation was made to the National AIDS and STD Control Programme.

5.4. Major Accounting Heads

Table 3: Accounting Heads of The Budget allocation

Allocation Head	*Revenue*		*Capital*		
	Amount (In Rs. Crore)	*% of Totall*	*Amount*	*% of Totall*	*Total*
Total Allocation to H&FW	80875	94	5300	6	86175
Establishment expenditure of the centres	6829	89	869	11	7698
Total Central Sector Schemes	4868	55	3952	45	8820
Other Central Sector Expenditure	22243	99.9	67	0.1	22310
Autonomous Bodies	17323	100	0	0	17323
Central Sponsored Schemes	46935	99	412	1	47347
National Health Mission	29085	100	0	0	29085
PMJAY	0.01	100	0	0	0.01
Development Heads	80875	94	5300	6	86175
General Services	3849	100	0	0	3849
Social Services	35271	87	5250	13	40522
Others	41755	99.9	50	0.1	41804
Investment in Public Enterprises	0	0	52	100	52
Health Research	2979	99.9	1	0.1	2980

Source: Union Budget 2023-24

Following the accounting, heads of the budget allocation will provide a clear picture of the type of expense that will be incurred. Capital expenditure headings are generally seen as productive since an investment in capital expenditure leads to an increase in asset creation in the country. However, if the majority of the spending is on revenue heads, it shows a lack of asset development and productivity, and hence the absence of a multiplier effect. Table 3 demonstrates that revenue expenditure accounts for 94% of overall allocations to health and family welfare and 99.9% of allocations to promote health research. Only investment in public enterprises received a 100% allocation under the capital head.According to the table, the majority of the health budget is spent on revenue items such as implementation, administration, and salaries, among others. Given that the finance minister named "infrastructure and investment" as one of the budget's goals, the absence of capital spending allocation is surprising. This budget lacks a vision for healthcare investment.

6. Conclusion

"Wealthier nations are healthier nations" has long been known (Pritchett & Summers, 1996). The United Nations (UN) and its member nations approved the SDGs in September 2015, proclaiming the idea of "leaving no one behind." But India still spends less than 2 per cent on health out of its GDP for the second highest population in the world. This disregard is reflected in the union budget allocations year after year. The National Health Policy (NHP) 2017 of India, focused on informing, clarifying, strengthening, and prioritising the role of the government in shaping all of their dimensions such as investments in health, healthcare service organisation, disease prevention and promotion through cross-sectoral actions, technology access, human resources development, fostering medical pluralism, building a knowledge base, establishing better financial protection strategies, and strengthening health regulation and assurance. However, the budget allocations and announcements are divergent from the aims of NHP 2017. Even though it tries to address two major issues namely; human resources and research and development in healthcare by announcing the opening up of 157 new nursing colleges. To encourage collaborative research and innovation, facilities in selected Indian Council of Medical Research popularly termed (ICMR) Laboratories will be provided for research purposes by the public and private medical college faculty members and private sector R&D team members. Despite the rising burden of NCDs in India, allocation towards NCDs control was only Rs. 55 crores which makes up only 0.06 per cent of the total allocation. According to the minister, a Mission to Eliminate Sickle Cell Anaemia by 2047 will be launched, which will include raising awareness, universal screening of 7 crore people aged 0-40 in affected tribal areas, and counselling through collaborative efforts of central ministries and state governments. Other NCDs such as Cancer and heart-related diseases which make up a major proportion of India's NCD burden were neglected in the budget. While the mission is a welcoming move by the government, focusing on a specific disease should not come with negligence of other burgeoning diseases.

The union budget is responsible for charting the nation's position on public spending in the health sector and realising the desired health outcomes. The aim of guiding states toward universal health coverage (UHC) will not only be realised by increasing the amount or changing the composition of the allocation. Targeted allocation through effective means are necessary. When establishing a budget, the government must consider India's performance of the SDGs, Universal Health Coverage (UHC), and the size and demographic diversity of its population.

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2019	Utkal University, Bhubaneswar	Prof. Umesh Charan Patnaik Mr. Tahalu Sahu
2020	KIIT University, Bhubaneswar	Prof. Pradipta Chandra Tripathy Prof. Malay Kumar Mohanty
2021	L. N. College, Jharsuguda	Prof. Sambhu Prasad Mishra Prof. Damodar Biswal
2022	Odisha State Open University (OSOU), Sambalpur	Mr. Ajodhya Prasad Nayak Prof. Jagannath Panda

[#] This award is given on the overall achievements/contribution in the field of business education in Odisha and involvement for the upliftment of the Orissa Commerce Association.

- A senior faculty above 65 years of age is eligible.

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Criteria(s) for consideration of the award on the contribution in the fields of:

1. Academic Excellence in Teaching and Teaching Pedagogy
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13.	1986	Ganjam College, Ganjam	Prof. (Dr) Ramakanta Jena, Dean, Faculty of Commerce, Utkal University, Bhubaneswar	Dr. Girija Prasad Acharya	Dr. Ghanashyam Panda, Berhampur University	One Issue

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17.	1994	Bhadrak College, Bhadrak	Prof. (Dr) Gunanidhi Sahu, Principal, Khalikote College, Berhampur	Dr. Jagannath Panda	Dr. Swaroop Ch. Sahoo	One Issue
18.	1995	S.C.S. College, Puri	Prof. (Dr) Girija Prasad Acharya, Professor of Commerce, Ravenshaw College, Cuttack	Dr. Bidhu Bhusan Panigrahi,	Prof. Pramod Ku. Sahu, Berhampur University	One Issue
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22.	2000	Ispat College, Rourkela	Sri Minaketan Mohapatra Principal, Dehenkanal College	Malay Kumar Mohanty, Ravenshaw College (Auto)	Prof. Pramod Ku. Sahu, Berhampur University	One Issue
23.	2001	Maharshi College of Natural Law, Bhubaneswar	Prof. (Dr) Damodar. Biswal, Professor, Ravenshaw College (Auto), Cuttack	Malay Kumar Mohanty, Ravenshaw College (Auto), Cuttack	Prof. Pramod Ku. Sahu, Berhampur University	One Issue
24.	2004	Kendrapara College, Kendrapara	Prof. (Dr) Jagannath Panda, Professor Berhampur University, Berhampur	Prof. Ranjan Kumar Bal, Utkal University	Prof. Pramod Ku. Sahu, Berhampur University	One Issue
25.	2005	V.N.College, Jajpur Road	Prof. (Dr) Umesh Ch. Pattnaik, Professor Berhampur University, Berhampur	Prof. Ranjan Kumar Bal, Utkal University	Prof. Jagannath Panda, Berhampur University	One Issue
26.	2006	Rayagada College, Raygada	Sri Tahalu Sahu Principal Belpahar College, Belpahar	Prof. Ranjan Kumar Bal, Utkal University	Prof. Jagannath Panda, Berhampur University	One Issue
27.	2007	P.G. Department of Commerce Utkal University, Bhubaneswar	Prof (Dr) Samson Moharana, Professor Utkal University, Bhubaneswar	Prof. Kishore Ch. Rout, Berhampur University	Prof. Jagannath Panda, Berhampur University	One Issue
28.	2008	Fakir Mohan Autonomous College, Balasore	Dr. Arun Kumar Barik, Head, Department of Commerce, Vyasanagar College, Jajpur Road	Prof. Kishore Ch. Rout, Berhampur University	Prof. Ranjan Kumar Bal, Utkal University	One Issue
29.	2009	Govt. Autonomous College, Angul	Maj (Dr.) Abhay Kumar Panda, Principal, Fakir Mohan Autonomous College, Balasore.	Prof. Kishore Ch. Rout, Berhampur University	Prof. Ranjan Kumar Bal, Utkal University	One Issue

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31.	2011	P. G. Department of Commerce, Berhampur University	Prof. Malay Kumar Mohanty, Former Registrar, Ravenshaw University, Professor G. M. College, Dean Sambalpur University	Dr. Kshiti Bhusan Das, Utkal University	Prof. Ranjan Kumar Bal, Utkal University	Two Issues
32.	2012	P. G. Department of Commerce, Utkal University	Prof. P. K. Biswasray, Professor , Berhampur University	Dr. Kshiti Bhusan Das, Utkal University	Prof. Ranjan Kumar Bal, Utkal University	One Issue
33.	2013	Choudwar College, Choudwar	Prof. Prasant Kumar Sahu, Vice- Chancellor, Utkal University	Prof. Kshiti Bhusan Das, Utkal University	Prof. Malay Kumar Mohanty	One Issue
34.	2014	P. N. (Auto) College, Khurda	Prof. Ranjan Kumar Bal, Professor, Utkal University	Prof. Kshiti Bhusan Das, Utkal University	Prof. Malay Kumar Mohanty	Two Issue
35.	2014-15	Kendrapada (Auto) College	Prof. Kshiti Bhusan Das, Professor, Utkal University	Dr. G. K. Panigrahi	Prof. Malay Kumar Mohanty	Two Issues
36.	2016	Belpahar College, Belpahar	Prof. Girish Kumar Patra, Kendrapada (Auto) College	Dr. G. K. Panigrahi	Prof. Malay Kumar Mohanty	Two Issues
37.	2017	F. M. University, Balasore	Prof. Jayanta Kumar Parida, Professor, Utkal University	Dr. G. K. Panigrahi	Prof. Malay Kumar Mohanty	Three Issues
38.	2018	Ravenshaw University, Cuttack	Prof. Bhagaban Das, Professor, F. M. University	Major (Dr) S. A. Taher	Prof. Malay Kumar Mohanty	Four Issues
39.	2019	P. G. Department of Commerce, Utkal University	Prof. Sanjay Kumar Satapathy, Professor, Ravenshaw University	Major (Dr) S. A. Taher	Prof. Malay Kumar Mohanty	Four Issues+One Special Issue
40.	2020	KIIT, Deemed to be University,	Prof. P. K. Hota Head P.G. Dept. of Commerce, Utkal University	Major (Dr) S. A.Taher	Prof. Malay Kumar Mohanty	Four Issues+One Special Issue
41.	2021	L.N.College, Jharsuguda	Prof. Sasmita Samanta, Pro-Vice Chancellor, KIIT University, Bhubaneswar	Major (Dr) S. A.Taher	Prof. Malay Kumar Mohanty	Four Issues
42.	2022	OSOU Sambalpur	Sri Narendra Kumar Panda	Major (Dr) S. A.Taher	Prof. Malay Kumar Mohanty	Four Issues

* **Information not available:** People concerned are requested to provide the above missing information with proper references. If any error has crept in the above incumbency chart inadvertently, persons are requested to intimate the correction with the required documentation.

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