



ISSN : 3048-5320 (Online)

CSIBER International Journal - CIJ

Vol - 3, Issue No - 1, January 2025

**MULTIDISCIPLINARY
JOURNAL**



MAKE IN INDIA



Published by : CSIBER Press, Central Library
Building, CSIBER Campus, University
Road, Kolhapur-416004, Maharashtra, India.

Find the Journal Online at
<https://www.siberindia.edu.in/journals>
E-mail : cij@siberindia.edu.in

FOUNDER PATRON

Late Dr. A. D. Shinde

Chhatrapati Shahu Institute of Business Education and Research Trust was established in 1976 to provide professional education to the youth of rural western Maharashtra and North Karnataka. It was founded by a well-known educationist, the then Dean of Shivaji University, Kolhapur and a renowned Chartered Accountant, Late Dr. A.D. Shinde Sir.

PATRON

Dr. R. A. Shinde

Managing Trustee, CSIBER Trust, Kolhapur, India

C. A. H. R. Shinde

Trustee, CSIBER Trust, Kolhapur, India

CHIEF EDITOR

Dr. Bindu Nandkumar Menon

bindumenon@siberindia.edu.in

Associate Professor, CSIBER, Kolhapur, India

EDITORIAL BOARD MEMBERS

Dr. S. P. Rath

drsprath@siberindia.edu.in

Director, CSIBER, Kolhapur, India

Prof. T. Mangaleswaran

mangales@vau.ac.lk

Professor, Rajarata University of Sri Lanka, Sri Lanka

Dr. Dinesh Kumar Hurreeram

directorgeneral@utm.ac.mu

Director General, University of Technology, Mauritius

Dr. Varsha Rayanade

vnrayanade@siberindia.edu.in

Assistant Professor, CSIBER, Kolhapur, India

Er. D. S. Mali

malids@siberindia.edu.in

Dean School of Environmental Science & Management
CSIBER, Kolhapur, India

CSIBER International Journal – CIJ

A Quarterly Double-Blind Peer Reviewed (Referred/Juried) Open Access International e-Journal – Included in the International Serial Directories

<https://www.siberindia.edu.in/journals/>

Dr. Samir Gopalan

samirgopalan.mgmt@silveroakuni.ac.in
Dean of Colleges,
Silver Oak University, Ahmedabad, Gujarat, India

Prof. Dr. Hemant B. Chitto

hchitto@utm.ac.mu
University of Technology, Mauritius

Dr. Mohamoud Yusuf Muse

president@uoh.edu.so
President, University of Hargeisa, Somaliland, Africa

Dr. Terefe Zeleke

terefe.zeleke@ecsu.edu.et
Deputy C. E. O.,
Ethiopian Management Institute, Addis Ababa, Ethiopia, Africa

SUPERINTENDENT

Dr. Mrudula K. Patkar

Assistant Professor, School of Computer Science & Applications
CSIBER, Kolhapur, India

Contents

Sr. No.	Title of Paper	Page No.
1.	THE ROLE OF THE NATIONAL PENSION SYSTEM (NPS) IN ENHANCING RETIREMENT PLANNING AMONG GOVERNMENT EMPLOYEES WITH SPECIAL REFERENCE TO NPS SWAVLAMBAN Mr. Manoj Patel Research Scholar, Silver Oak University, Ahmedabad Dr. Samir Gopalan Director and Dean, Silver Oak University, Ahmedabad	01-08
2.	REMOTE WORK AND ITS IMPACT ON EMPLOYEE ENGAGEMENT AND PRODUCTIVITY: A SYSTEMATIC REVIEW Md Alijan Arif Department of Commerce and Business Studies, Jamia Millia Islami, New Delhi, India Prof. N.U.K Sherwani: Professor, Department of Commerce and Business Studies, Jamia Millia Islami, New Delhi, India	09-20
3.	THE INFLUENCE OF FINANCIAL SOCIALIZATION ON FINANCIAL PLANNING PROPENSITY: A QUALITATIVE EXPLORATION OF MILLENNIAL EXPERIENCES Fabeena Fasal Research Scholar, Bharata Mata College (Autonomous) Thrikkakara, Kerala, India. Dr. Rafeeka Mol C.A Assistant Professor, MES College, Marampally, Kerala, India	21-30
4.	TIME MANAGEMENT AND ORGANIZATIONAL DEVELOPMENT: SPECIAL REFERENCE TO BANKING ORGANIZATIONS IN JAFFNA DISTRICT Thaneeswaran, S Manager, National Saving Bank, Sri Lanka. Velnamby, T Senior Professor, Faculty of Management Studies and Commerce, University of Jaffna, Sri Lanka	31-35
5.	BRIDGING THE DISABILITY INCLUSION GAP OF ENTREPRENEURS WITH DISABILITIES THROUGH SOCIAL MEDIA MARKETING: EMPIRICAL EVIDENCE FROM KERALA Shameema A P Research Scholar Research and PG Department of Commerce MES Keveeyam College, Valanchery Malappuram, Kerala, India Dr. P.C. Santhosh Babu Assistant Professor and Head, Research and PG Department of Commerce MES Keveeyam College, Valanchery Malappuram, Kerala, India	36-43

Sr. No.	Title of Paper	Page No.
6.	LIFESTYLE CHANGES OF HEALTH DRIVEN WOMEN ENTREPRENEURS IN KERALA Ottina Treasa Mendez, Research Scholar, Bharata Mata College Thrikkakara, Kerala, India Dr. Rafeekamol C.A Assistant Professor, Department of Commerce, MES College, Marampally, Aluva, Kerala, India.	44-49
7.	STUDY OF DIFFERENT SOFT COMPUTING TECHNIQUES USED FOR HANDWRITTEN SIGNATURE RECOGNITION Sunil Tanaji Salunkhe, Research Scholar, Nanded, India. Dr. Satonkar Suhas Surykantrao Research Guide, Assistant Professor & Head of Computer Science Department, Swami Ramanand Teerth Marathwada University Nanded, Maharashtra, India.	50-59
8.	EVALUATING THE FACTORS INFLUENCING CITIZENS' SATISFACTION TOWARDS E-GOVERNANCE SERVICES Shilpa D. Korde, Assistant Professor, Rosary College of Commerce and Arts Navelim Salcete Goa, India. S. V. Sukhtankar Associate Professor, Government College of Arts, Science and Commerce, Khandola, Marcela, Goa, India.	60-66
9.	A BIBLIOMETRIC ANALYSIS ON INTERNATIONAL STUDENT MOBILITY IN HIGHER EDUCATION Lekshmi.S Research Scholar, Department of Economics, Sanatana Dharma College, University of Kerala, India.	67-74
10.	SOCIO-ECONOMIC STATUS OF PLANT NURSERY OWNERS: A STUDY AT KHAMARGACHHI IN HOOGHLY DISTRICT OF WEST BENGAL Kartick Biswas Assistant Professor, P.G. Department of Commerce Hooghly Mohsin College Chinsurah, Hooghly West Bengal 712101, India Dr. Ashoke Mondal Assistant Professor, Department of Management and Marketing West Bengal State University, Barasat, North 24 Parganas, West Bengal. 700126, India	75-83

Sr. No.	Title of Paper	Page No.
11.	THE ROLE OF FINTECH IN ENHANCING MSMES GROWTH AND ECONOMIC EXPANSION IN INDIA Dr. Jasveen Kaur Faculty and Former Chairperson/Head, University Business School (UBS), Guru Nanak Dev University, Punjab, India Sarita Research Fellow, University Business School (UBS), Guru Nanak Dev University, Punjab, India	84-91
12.	EXPLORING CONSUMER TRENDS IN PLUS-SIZE APPAREL IN MEERUT CITY: AN ANALYSIS OF SOCIAL MEDIA ADVERTISING IMPACT. Harshi Garg Research scholar, School of Commerce and Management, IIMT University, Meerut (U.P), India. Priyank Sharma Associate professor, school of commerce and management, IIMT University, Meerut (U.P), India.	92-99
13.	WORKING CONDITION OF EMPLOYEES IN HIGHER EDUCATION DEPARTMENT OF JAMMU AND KASHMIR Aabid Yousuf, Research Scholar, Gulzapore, Awantipora, Pulwama, Jammu and Kashmir, India. Dr. Aasim Mir Assistant Professor, Gulzapore, Awantipora, Pulwama, Jammu and Kashmir, India. Dr. Gaurav Seghal Assistant Professor, Gulzapore, Awantipora, Pulwama, Jammu and Kashmir, India.	100-107
14.	IMPLEMENTATION AND ANALYSIS OF ATTENDANCE MANAGEMENT SYSTEM USING FACIAL BIOMETRICS Mohammed Shameer M C Department of Computer Science, Farook College, Kozhikode, Kerala, India Mubeena V Department of Vocational Studies, Farook College, Kozhikode, Kerala, India Habis Hassan Department of Vocational Studies, Farook College, Kozhikode, Kerala, India	108-115

Sr. No.	Title of Paper	Page No.
15.	THE INFLUENCE OF ACTIVE VS. INACTIVE LIFESTYLES ON HEALTH OUTCOMES IN CONTEMPORARY SOCIETY: A COMPARATIVE ANALYSIS Vishal Vinayakrao Patil, Assistant Professor, Department of Business Administration and Research, Shri Sant Gajanan Maharaj College of Engineering, Shegaon, Maharashtra, India Dr. Satya Mohan Mishra Assistant Professor, Department of Business Administration and Research, Shri Sant Gajanan Maharaj College of Engineering, Shegaon, Maharashtra, India	116-123
16.	EFFECTIVENESS OF MOMENT MARKETING: A STUDY OF PRODUCT & SERVICE BASED ADVERTISEMENTS Pooja Verma Research Scholar, Shri Vaishnav Vidyapeeth Vishwavidyalaya Indore, India. Dr. Pragya Jaroliya Professor, Shri Vaishnav Vidyapeeth Vishwavidyalaya Indore, India. Dr. Deepak Jaroliya Professor, Prestige Institute of Management & Research (PIMR) Indore, India.	124-135

The Role of National Pension System (NPS) In Enhancing Retirement Planning Among Government Employees with Special Reference to NPS Swavlamban

Mr. Manoj Patel

Research Scholar,
Silver Oak University, Ahmedabad,
India

Dr. Samir Gopalan

Director and Dean,
Silver Oak University, Ahmedabad,
India

Abstract

This study examines the impact of the National Pension Scheme (NPS) Swavlamban scheme on retirement planning among government employees in India. Using a mixed-methods approach, the research investigates the perceptions and experience of government employees regarding the effectiveness of NPS Swavlamban in enhancing their retirement preparedness. The main objective of this study is to assess the effectiveness of the National Pension Scheme (NPS) in improving retirement planning for government employees. The study specifically aims to assess how well the NPS contributes to financial stability and retirement readiness for participants. Additionally, the study seeks to explore government employees' perceptions and satisfaction with the NPS, to explore their experiences and perceptions of the programme. A comparative study with traditional pension plans is conducted to highlight the advantages and limitations of NPS in pension planning. It evaluates and compares the performance of four pension schemes: State Bank of India Pension Fund (SBIPF), Life Insurance Corporation Pension Fund (LICPF), Unit Trust of India Retirement Solutions Limited (UTIRSL), and Kotak Pension Fund (KOTAK PF), focusing on annualized returns, standard deviation, and Sharpe ratios. SBIPF demonstrates the highest annualized return and superior risk-adjusted performance, while UTIRSL shows greater volatility and lower returns. The analysis is contextualized within the framework of global and Indian pension reforms. It draws insights from recent literature on pension sustainability and policy impacts. The findings provide valuable insights for investors and policymakers in optimizing retirement planning and improving pension system efficiency.

Keywords: *National Pension System (NPS), Retirement Planning, Social Security, Pension Schemes, Employee Satisfaction, Retirement Readiness*

Introduction

The National Provident Fund (NPS) is a defined contribution plan that is connected to the market and offers pensions to people (Central Government, 2013). It's easy to use, flexible, and optional, and it's governed by the Pension Fund Regulation and Development Authority. (1)

Tax benefits are available to both employers and employees on their NPS payments. These benefits include deductions of up to 10% of pay, up to Rs. 50,000, and 14% of salary if the Central Government makes the contributions. Deductions of up to 20% of gross income, up to Rs. 1.5 lakh, and up to Rs. 50,000 are allowed for self-employed people. While purchases of annuities, retirement at age 60, and superannuation offer tax benefits, partial withdrawals from NPS accounts are not. Sixty percent of the total NPS funds can be withdrawn in one lump amount, tax free. A deduction of up to 10% of the employee's wage from the Profit & Loss Account is one of the corporate/employer tax deductions. (2)

Greater flexibility and development potential are possible since the NPS is handled by experienced fund managers and offers a variety of investment possibilities. According to (PFRDA, 2020), the program promotes systematic savings among employees during their working years, resulting in a consistent accumulation of money that may be accessible following retirement. (3)

The NPS framework is an all-inclusive retirement planning tool that also offers features like tax advantages, mobility, and investment mix selection. (4).

Early retirement planning has several advantages, such as maximizing our money's potential to generate income, obtaining tax advantages, easing financial stress, lessening the load on our family and children, and enabling you to make smarter financial decisions now. We may manage the amount of money that we invest and plan for our goals accordingly by building a diversified financial portfolio and making astute pension plans. Retirement planning is a useful strategy for securing future finances since it provides tax advantages and refunds. Establishing retirement objectives early on might also help with money saving and decision-making. (5)

The main objective of this study is to assess the effectiveness of the National Pension Scheme (NPS) in improving retirement planning for government employees. Specifically, the study aims to assess how well the NPS contributes to financial stability and retirement readiness for participants. Additionally, the study seeks to explore government employees' perceptions and satisfaction with the NPS, to explore their experiences and perceptions

of the programme. A comparative study with traditional pension plans is conducted to highlight the advantages and limitations of NPS in pension planning.

Literature Review

Overview of Pension Systems Globally and in India

Examining 1287 papers on pension systems in industrialized nations published between 1936 and 2021, this article concentrates on pension reform and sustainability. Key publications, authors, nations, and institutions are analyzed in a study using SciMAT, VOSviewer, and Datawrapper tools. With the UK, USA, and Netherlands as the top three countries, mathematics is the primary area of study. Age-related pension reform, pension insurance, and sustainability are among the study trends. (Valls Martínez *et.al*, 2020)

The welfare state takes on social responsibility for all of its residents, yet in developing nations, pensions for the elderly only cover a tiny portion of the population. The unanticipated expansion in coverage over the past 25 years has mostly been attributed to non-contributory pensions. Thanks to this, rather than through social insurance as in Western and Northern Europe, emerging nations are now closer to universal coverage. Important elements of the Northern standard explanatory model are equally relevant in development settings. (Böger, T. *et.al*, 2020)

Unnikrishnan, V., & Imai, K. S. (2020) investigated the effects of the Indira Gandhi National Old Age Pension Scheme (IGNOAPS) on family welfare metrics, including poverty, assets, income, and consumer expenditures. The findings indicate that while family labor supply decreases, IGNOAPS membership raises consumer spending, assets, and expenditure on food and non-food items. However, because program requirements changed in 2007, the poverty-reducing effect worsened in 2011–12.

Miti, J. J. *et.al* (2020) examined the variables impacting low- and middle-income countries' (LMICs') informal workers' willingness to pay (WTP) for pension plans and health insurance. Income and trust were linked to WTP for both health insurance and pension plans, according to the analysis, which comprised 34 research from 17 different nations. Common characteristics for both types of social security were family size, age, education, and residential location. WTP was impacted by health insurance, illness history, doctor presence and attitude, and distance from medical facilities. Enrollment and contributions in pension plans were impacted by low contribution rates, benefit packages, government subsidies, and the caliber of management.

Evolution and Key Features of the NPS

Mehrotra, S. K. (2022) studied that critics point out that India's Social Security Code 2020, which attempts to offer social insurance to the 475 million unemployed workers in the nation, ignores the intricate makeup of the labor force. In accordance with the ILO Conventions, the study suggests a comprehensive and difficult reform plan that seeks to include the whole workforce within 10 years.

In examining how policy paradigms affect institutional advancement, the study emphasizes the value of policy concepts above material interests. The two path creation sequences—an institutional drift path and a layering–tipping–displacement path—are highlighted. The case study by Mukherji, R. *et.al* (2020) explained how India's fast economic growth was caused by the country's 1991 transition from a public sector-driven to a private sector-oriented government. The study also emphasizes the material elements that drive these shifts in terms of causal reasoning.

According to the NSO's Periodic Labour Force Survey, 91% of the labor force is employed in informal work and does not have social insurance, indicating that India's social safety and security coverage has been inadequate since independence. The remaining 9% get varied degrees of social security, and this high level of informality has not altered since 2012. (Mehrotra, Santosh, 2020)

Comparative Analysis with Traditional Pension Schemes

In order to address the aging of the population and improve financial sustainability, all member states of the European Union have changed their pension systems within the last 30 years. These changes, however, may raise the likelihood of poverty in old life and offer little possibilities for correction. Preoccupation with long-term financial viability might conflict with the main goal of pension plans, which is to lessen poverty. (Hinrichs, K, 2021).

Due to decline in fertility and death rates, there are changes in the demographics of the world's population. Further, due to advancements in healthcare and medical technology, people are living longer, which has led to changes in social security and pension plans. Promoting holistic health management and preventing social prejudice are two reasons why active aging is encouraged. Academic professionals advocate for higher women's work and

retirement age extensions. The geographical variety of India makes universal solutions difficult, but a mix of healthcare and pension plans might help with the issues posed by the aging population. (Ganapathy V., 2021)

Previous Research on NPS and Retirement Planning

Kapasi, B., & Mahato, S. (2024) examined that in India, the Central Government established the National Pension Scheme (NPS), a contribution-based pension system governed by the NPST and PFRDA. Tier I and Tier II accounts are the two varieties it provides. Four asset classes—equity, corporate debt, government security, and alternative assets class—are used by eight fund managers to oversee the NPS. Before making an investment, investors want to know about the risk and past performance of Tier I and Tier II.

A research aimed to investigate the impact of many factors, including risk tolerance, financial literacy, retirement goal clarity, future time perspective, attitude toward retirement, and social group support, on women's retirement planning behavior. The results show a favorable correlation between these factors and the habit of saving for retirement, with financial literacy serving as a moderator. Those engaged in financial planning, both professionals and consumers, ought to observe the outcomes. (Tomar, S. *et.al* 2021)

Research Gap

While many research have explored pension systems globally and in India, there's a significant gap in understanding how these systems specifically affect various groups and their long-term viability. Studies like those by Valls Martínez *et al.* (2020) and Böger *et al.* (2020) offer valuable insights into general trends and policies but often miss the nuanced impacts on low-income or informal workers. In India, though work by Mehrotra (2022) and Mukherji *et al.* (2020) sheds light on systemic issues, there is limited exploration of how the National Pension Scheme (NPS) addresses the diverse needs of informal workers and regional variations. Additionally, while global comparisons by Hinrichs (2021) and Ganapathy (2021) provide context, they don't fully connect with local challenges in India. Therefore, more targeted research is needed to understand the specific effects of pension schemes like the NPS on different socio-economic groups in India and to develop solutions that improve coverage and effectiveness.

Methodology

To understand the role of the National Pension System (NPS) in enhancing retirement planning among government employees, this study have used a mixed-methods approach.

Results and Discussion

Data on the National pension scheme has been gathered from <https://www.india.gov.in/spotlight/national-pension-system-retirement-plan-all#nps4>.

The collected information has been presented in the table-1

Particulars	SBI PF	LIC PF	UTI RSL	KOTAK PF
Assets (Rs in crore)	2,321.97	1,679.32	1,645.78	89.81
Scheme Inception Date	16-Sep-10	4-Oct-10	4-Oct-10	30-Jan-12
NAV (28-Jun-24)	36.4885	36.4322	36.2031	31.7138
52 Week High	36.5020	36.4562	36.2187	31.7299
52 Week Low	32.7277	32.7998	32.4978	28.2621
3 Months	2.95%	2.96%	2.96%	3.25%
6 Months	6.42%	6.28%	6.51%	6.62%
1 Year	11.48%	11.16%	11.41%	12.21%
2 Years	11.41%	11.33%	11.34%	11.64%
3 Years	8.05%	8.06%	7.97%	8.32%
5 Years	8.76%	8.88%	8.82%	8.89%
7 Years	8.44%	8.65%	8.48%	8.45%
10 Years	9.59%	9.56%	9.52%	9.46%
Since Inception	9.84%	9.86%	9.81%	9.74%
Top 5 Holdings	7.30% G-Sec 2053;	7.25% G-Sec 2063;	7.30% G-Sec 2053;	G-Sec 7.18% 2037;
	7.25% G-Sec 2063;	7.30% G-Sec 2053;	7.57% G-Sec 2033;	G-Sec 7.30% 2053;
	7.34% GOI 2064;	8.17% G-Sec 2044;	6.68% G-Sec 2031;	G-Sec 8.3% 2042;

	7.69% G-Sec 2043;	9.23% G-Sec 2043;	7.18% G-Sec 2037;	G-Sec 7.25% 2063;
	7.23% GOI 2039;	7.73% G-Sec 2034;	8.17% G-Sec 2044;	G-Sec 7.34% 2064;
Weightage of Top 5 Holdings%	17.75%	17.11%	12.34%	25.03%
Top 3 Sectors	Government Securities;	Government Securities;	Government Securities;	Government Securities;
	State Development Loans;	Banks;	State Development Loans;	Other Credit Granting;
	Monetary Intermediation of Commercial Banks, Saving Banks;	Finance;	Monetary Intermediation of Commercial Banks, Saving Banks;	Monetary Intermediation of Commercial Banks;

Table 1 NPS swavlamban scheme

To compare the 4 schemes we have utilised the financial modelling – *Annualized return computed by the model*

$$\text{Annualized return} = \left(\frac{P_{\text{end}}}{P_{\text{start}}} \right)^{\frac{1}{n}} - 1 \quad \dots\dots\dots [1]$$

Where P_{end} is the end price and P_{start} is the starting price and n is the number of years.

Annualised Standard deviation

This measures the volatility or risk of the fund's returns. A lower standard deviation indicates less variability and, hence, lower risk.

$$\text{Annualized Std Dev} = \sigma \times \sqrt{n} \quad \dots\dots\dots [2]$$

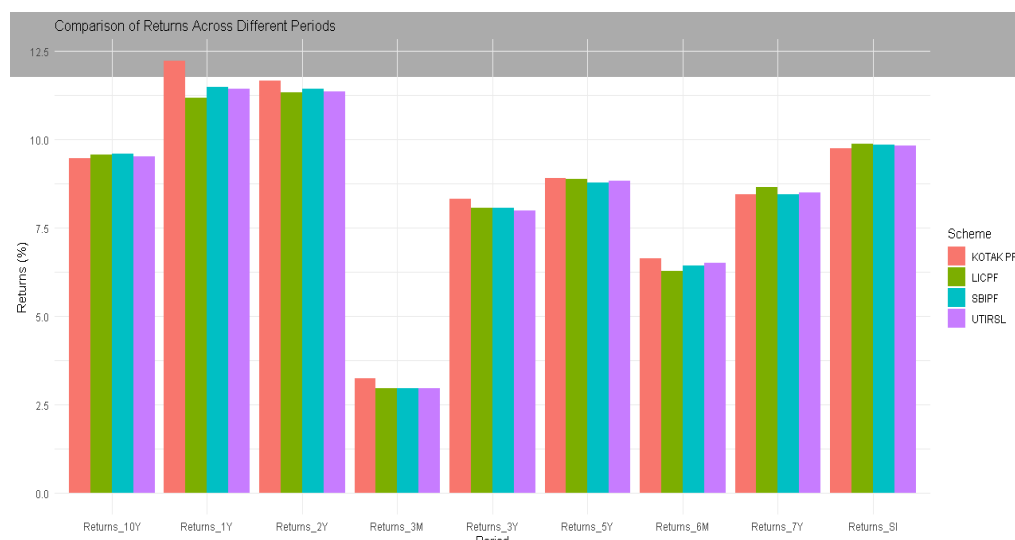
Where σ is the standard deviation of returns and n is the number of periods in a year.

Annualized Sharpe Ratio ($R_f=0\%$):

An investment's risk-adjusted return is measured by the Sharpe ratio. It shows the amount of excess return you get in exchange for the additional volatility you experience when holding a riskier asset.

$$\text{Sharpe Ratio} = \frac{\text{Annualized Return} - R_f}{\text{Annualized standard deviation}}$$

Where R_f is the risk-free rate, which is assumed to be 0% in this model.



Results and Discussion

The **fig.1** shows the comparative plot of the various schemes for the NPS scheme. Four pension funds—SBIPF, LICPF, UTIRSL, and KOTAK PF—have their returns visually compared in this research. Three months, six months, a year, two years, three years, five years, seven years, ten years, and since the beginning are all included in the comparison. Understanding the long-term performance patterns and stability of each fund is made easier with the aid of this thorough assessment.

Four pension funds—SBIPF, LICPF, UTIRSL, and KOTAK PF—are included in this analysis's thorough performance report. The performance of these funds over a given time period is seen and compared in this analysis using time series data. An overview of each fund's returns, risk, and stability is given by the performance summary graph, which assists investors in making wise choices.

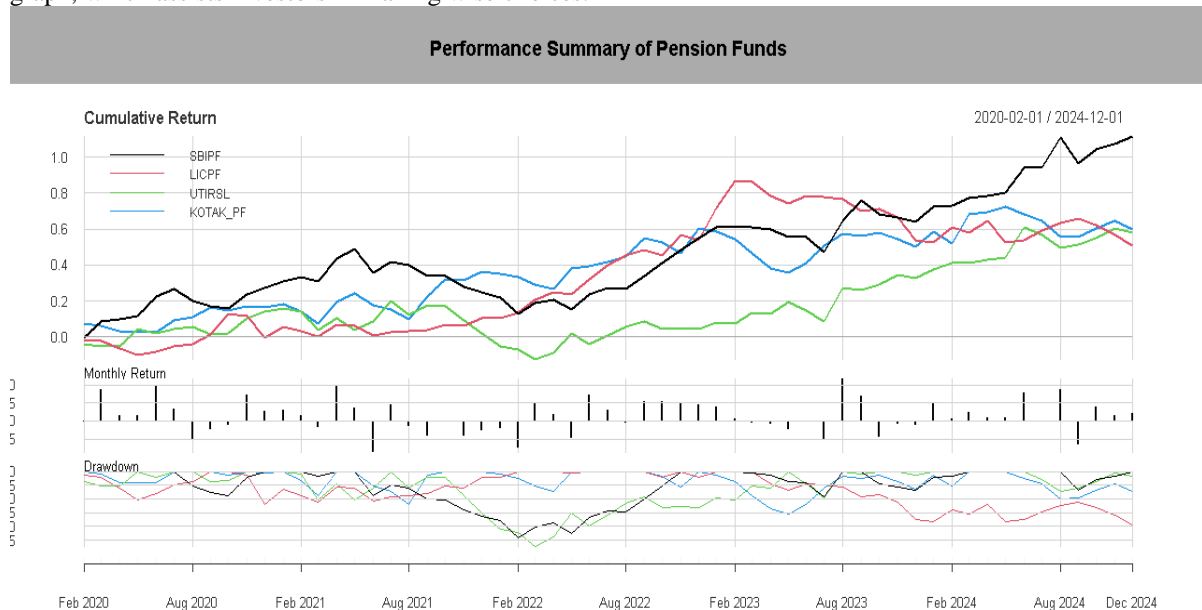


Figure 1 Performance summary of various schemes

Annualized Returns

Annualized returns, standard deviation, and Sharpe ratio are important metrics to assess the performance and risk profile of investment funds in this study, we compare these metrics for four pension funds: SBIPF, LICPF, UTIRSL, 2015; and KOTAK PF. Understanding these metrics helps investors make rational decisions based on risk tolerance and expected returns.

The returns for the each scheme in the NPS swavalamban has been evaluated and the results are shown in the Table-2

Table-2

Metric	SBIPF	LICPF	UTIRSL	KOTAK PF
Annualized Return	0.1649	0.0867	0.0975	0.1003
Annualized Standard Deviation	0.1584	0.1540	0.1843	0.1582
Annualized Sharpe Ratio (Rf=0%)	1.0408	0.5631	0.5292	0.6343

Table 2 Annualized return

The annual return represents the average amount of money that the investor earns over a period of time each year. It provides a clear picture of how the bank performs in terms of growth rates.

SBIPF:

With an annualized return of 16.49%, SBIPF leads the overall performance, which means it delivered the highest annualized returns among the four banks this high return reflects strong growth and improved management of the bank revealed.

Kotak P.F.

Kotak PF shows an annualized return of 10.03%, making it the second best performing stock. These gains reflect strong performance, and provide investors with a balance of growth and comfort.

UTIRSL:

UTIRSL has an annualized yield of 9.75%. While lower than SBIPF and Kotak PF, this still shows respectable performance, producing solid returns over the investment period.

LICPF:

LICPF's annualized return of 8.67% is the lowest among the four banks. Despite this, it still shows positive growth, making it a viable option for more conservative investors who require less flexibility.

Detailed annual standard

The annual standard deviation measures the volatility of a fund's returns. A low standard deviation indicates that there is little variability, and therefore low risk.

SBIPF and Kotak PF:

Both SBIPF and Kotak PF have similar standard deviations (0.1584 and 0.1582, respectively), indicating similar variability is obtained. This medium volatility implies a balanced risk and return profile.

LICPF:

LICPF has a slightly lower standard deviation (0.1540), indicating that it experiences less variation in returns compared to other funds. This low volatility makes it safer for risk-averse investors. UTIRSL shows reasonable but highly volatile returns and low risk-adjusted returns, indicating that potential investors need to consider it carefully.

Overview of Pension Systems Globally and in India

As demonstrated by an analysis of 1,287 publications published between 1936 and 2021, research on pension systems in industrialized nations focuses on pension reform and sustainability. In this study, mathematics is the main field of study, and the leading countries are the UK, the USA, and the Netherlands. Age-related pension reform, pension insurance, and sustainability are among the trends in this body of work (Valls Martínez et al., 2020). Non-contributory pensions, which have increased significantly over the past 25 years, are the result of pension systems in emerging nations. According to Böger et al. (2020), developing nations, including those in Western and Northern Europe, are approaching universal coverage as a result of this trend.

The Indira Gandhi National Old Age Pension Scheme (IGNOAPS) had a positive effect on family welfare statistics in India, reducing poverty and increasing assets and disposable income. However, the program's requirements changed in 2007 and from 2011 to 2012, the impact of poverty reduction was lessened (Unnikrishnan, V., & Imai, K. S., 2011). 2020). On the other hand, several factors such as income, reliability, family size, age, education, and place of residence influence low- and middle-income countries' (LMICs') willingness to pay (WTP) for health insurance and pension plans (Miti, J. J. et al., 2020).

Evolution and Key Features of the NPS

India's social security status has greatly improved thanks to the National Pension Scheme (NPS). Social Security Code 2020 detractors claim that because it ignores intricate workforce regulations, a sizable section of the workforce is underfunded (Mehrotra, S. K., 2022). This emphasizes that, in accordance with International Labor Organization (ILO) rules, a comprehensive reform program is required for the participation of all workers within ten years.

A multitude of policies and material interests have contributed to the institutional development of the Indian pension system. The shift from a public to a private administration, which was the primary driver of the economy's quick expansion after 1991, emphasizes the significant variables influencing this change (Mukherjee, R. et al., 2012).

The large percentage of informal labour 91 per cent of those working in this capacity lack social insurance—confirms that India has not provided appropriate social security since gaining its independence (Mehrotra, Santosh, 2020).

Comparative Analysis with Traditional Pension Schemes

EU member states have reformed their pension systems over the past 30 years to cope with population growth and to boost economic growth. However, these changes may increase the risk of poverty in old age, highlighting

potential conflicts between long-term economic growth and the primary goal of pension planning—reducing poverty (Hinrichs, K). , 2021).

Global demographic change driven by falling birth and death rates has called for reforms in social security and pension systems. Promoting active aging and comprehensive health care, as well as increasing women's employment and extending the retirement age, are key strategies to address these challenges (Ganapathi V., 2021). . India's geographic and demographic diversity makes universal solutions difficult, but integrated health and pension schemes can alleviate issues related to the aging population

Previous Research on NPS and Retirement Planning

Eight fund managers with Tier I and Tier II accounts oversee investments in four asset classes: investments, corporate debt, government securities, and other assets. NPS was primarily launched by the Indian government and provides a contribution-based pension scheme administered by the NPST and PFRDA (Kapasi, B., & Mahato, S., 2024). A favorable correlation has been shown between financial literacy, risk tolerance, retirement goal clarity, future time perspective, and social group support in studies on the variables influencing retirement planning behavior among Indian women (Tomar, S., et al., 2021). These results emphasize the necessity of focused monetary policy initiatives as well as the role that financial literacy plays as a facilitator.

Finding

SBIPF, LICPF, UTIRSL, and KOTAK PF pension fund surveys offer a strong framework for evaluating their performance using important financial indicators like Sharpe ratios, yearly returns, and standard deviations. According to the data, SBIPF has the best risk-adjusted performance when compared to other funds and the highest annual returns as determined by the Sharpe ratio. Conversely, UTIRSL has increased volatility, which suggests reduced risk-adjusted returns.

Conclusion

Our results are consistent with more general trends in pension reforms and sustainability in the context of the Indian and global pension systems. According to research, India's social security system needs extensive reform in order to serve the country's whole workforce and deal with the country's high level of informality. Pension reforms should take into account both immediate poverty alleviation and long-term viability, as evidenced by comparisons with traditional pension schemes in Europe and other countries that demonstrate a balance between financial sustainability and poverty reduction.

References

- Martínez, M.d.C., Santos-Jaén, J.M., Amin, F.-u., & Martín-Cervantes, P.A. (2021)** 'Pensions, Ageing and Social Security Research: Literature Review and Global Trends', *Mathematics*, 9(3258). Available at: <https://doi.org/10.3390/math9243258>.
- Böger, T. & Leisering, L. (2020)** 'A new pathway to universalism? Explaining the spread of 'social' pensions in the global South, 1967–2011', *Journal of International Relations and Development*, 23, pp. 308–338. Available at: <https://doi.org/10.1057/s41268-018-0152-2>.
- Unnikrishnan, V. & Imai, K.S. (2020)** 'Does the old-age pension scheme improve household welfare? Evidence from India', *World Development*, 134, p. 105017. Available at: <https://doi.org/10.1016/j.worlddev.2020.105017>.
- Mehrotra, S.K. (2022)** Can India universalize social insurance before its demographic dividend ends? The principles and architecture for universalizing social security by 2030. Available at: <https://www.econstor.eu/handle/10419/263279>. (Accessed: 12 September 2024).
- Mukherji, R. & Zarhani, S.H. (2021)** 'Policy paradigms and path dependence: The endogenous roots of institutional displacement and drift in India', *Global Public Policy and Governance*, 1, pp. 78–97. Available at: <https://doi.org/10.1007/s43508-021-00007-w>.
- Mehrotra, S. (2020)** Building a social security architecture for informal workers in India, finally! Available at: <https://publications.azimpremjiversity.edu.in/2372/>. (Accessed: 12 September 2024).
- Hinrichs, K. (2021)** 'Recent pension reforms in Europe: More challenges, new directions. An overview', *Social Policy and Administration*, 55(3), pp. 409–422. Available at: <https://doi.org/10.1111/spol.12712>.

Ganapathy, V. (2021) 'Is Pension an Effective and Adequate Solution to the Challenges of Ageing?', Bimaquest. Available at: <https://www.bimaquest.niapune.org.in/index.php/bimaquest/article/view/90>. (Accessed: 12 September 2024).

Kapasi, B. & Mahato, S. (2024) 'Performance Analysis of Funds under Scheme E(Equity) in National Pension System', in Routledge eBooks, pp. 104–115. Available at: <https://doi.org/10.4324/9781003470229-12>.

BIBLIOGRAPHY

National Pension System Trust. (n.d.). About NPS. Retrieved from <https://npstrust.org.in/about-nps>

ClearTax.. National Pension Scheme. Retrieved from <https://cleartax.in/s/nps-national-pension-scheme>

Government of India. (2004). National Pension System (NPS). Retrieved from <https://npstrust.org.in/about-nps>

Pension Fund Regulatory and Development Authority (PFRDA). (2020). National Pension System. Retrieved from <https://www.pfrda.org.in/>

Deloitte. (2019). Evaluating the National Pension System: A comprehensive study. Retrieved from <https://www2.deloitte.com/in/en/pages/tax/articles/policy-paper1.html> Valls 5.

Remote Work and Its Impact on Employee Engagement and Productivity: A Systematic Review

Md Alijan Arif
Research Scholar

Department of Commerce and
Business Studies, Jamia Millia Islami,
New Delhi, India

Prof. N.U.K Sherwani
Professor

Department of Commerce and
Business Studies, Jamia Millia Islami,
New Delhi, India

Abstract

To mitigate the spread of the virus, governments worldwide mandated that individuals work from home unless they were essential workers. As a result of this shift, societies, organizations, and workplaces globally explored "the new normal"—encompassing the "future of work" and the "role of the office"—where WFH becomes standard practice. Hence, during the COVID-19 pandemic, working from home (WFH) emerged as a pivotal strategy to sustain employment, maintain societal functions, and protect public health. The year 2020, therefore witnessed significant increase in the number of people working from home (WFH). Despite its widespread adoption, the effects of WFH on employee engagement and productivity remain inadequately understood, with existing studies being fragmented and contextually varied. This study aims to conduct a systematic literature review (SLR) to comprehensively explore and synthesize existing research on the impact of remote working on employee engagement and productivity. A comprehensive literature search identified 156 potential studies from Scopus and the Web of Science databases (2020-2024), from which 21 studies were selected based on PRISMA guidelines. The review finds that the impact of WFH on employee engagement and productivity is influenced by factors such as job nature, employer and industry characteristics, work flexibility, communication, organizational support, and the physical work environment. While the majority of studies report a positive impact, some indicate no change or a negative effect. The study recommends enhancing technology and IT training to improve WFH outcomes and support its adoption beyond the pandemic.

Keywords: Remote Work, Telecommuting, Work from Home, Employee Engagement, Employee Productivity, COVID-19,

Introduction

Remote work or telework, has become a prominent subject in recent studies, likely due to the COVID-19 pandemic. Consequently, contemporary research is increasingly focused on understanding the nuances of remote work or teleworking (TL) during this period. The significant increase in the number of people working from home (WFH) during 2020 was one of the consequences of the COVID-19 pandemic. To mitigate the spread of the virus, governments worldwide mandated that individuals work from home unless they were essential workers. As a result of this shift, societies, organizations, and workplaces globally are now exploring "the new normal"—encompassing the "future of work" and the "role of the office"—where WFH becomes standard practice, with teleworking continuing in either pure or hybrid forms post-COVID-19 (Ipsen et al.,2021). WFH is a specific form of telework where employees are required to work from home due to social distancing measures during the pandemic. Unlike telework, which encompasses various remote work environments, such as working while traveling or on vacation, WFH strictly involves working from home (Singh & Dev, 2023). Understanding how people experience working from home has become more crucial than ever (Ipsen et al.,2021). Experts in the field anticipate that teleworking will emerge as a preferred work model in the future. Over the past year, it has played a critical role in ensuring business and economic continuity and is now recognized as a new approach to work where employees prioritize asynchronous communication and results-based monitoring over the physical location of their work (Dimian et al, 2023).

The unexpected lockdowns acted as a trial for companies across different industries to explore the potential benefits of telework, such as enhanced productivity, better work-life balance, reduced health risks, and lower commuting emissions. The rapid pace of this transformation has made it challenging for researchers, businesses, and policymakers to fully assess the impact of this emerging industrial revolution on corporate productivity (Becchetti et al, 2023). Remote work offers several advantages, such as increased work efficiency, greater control over tasks, and improved work-life balance. However, it also presents challenges, including reduced social interaction, decreased work incentives, longer working hours, and home distractions, which can lead to lower productivity (Nowrouzi-Kia et al, 2024).

This study aims to conduct a systematic literature review (SLR) to comprehensively explore and synthesize existing research on the impact of remote working on employee engagement and productivity. Employee engagement, which reflects the emotional and psychological investment of employees in their work (Kahn, 1990), and productivity, the efficiency with which employee's complete tasks (Borman & Motowidlo, 1993), are critical factors for organizational success.

The rapid evolution of the modern workforce, driven by increased interest in Flexible Work Arrangements (FWAs), underscores the need for a comprehensive review of their impact on employee productivity and performance.

Objective

- To synthesize the impact of working from home on employee engagement and productivity.
- To identify the factors influencing employee engagement in remote work settings.
- To analyse the factors affecting employee productivity in remote work environments.

Methodology

This study employs a systematic literature review (SLR) methodology to explore the impact of remote working on employee engagement and productivity. The SLR approach ensures a comprehensive, transparent, and replicable process for identifying, evaluating, and synthesizing existing research on this topic. The methodology follows the guidelines outlined by PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) to maintain rigor and transparency. The search was carried out using two primary databases: Scopus and Web of Science. These databases were selected due to their extensive coverage of high-quality, peer-reviewed journals, which are essential for ensuring the rigor and reliability of the literature included in this review.

Search Strategy

The literature search was confined to articles published between 2020 and 2024, ensuring that the review reflects the most current research on the topic. The search was restricted to articles written in English to maintain consistency in the analysis and to focus on studies accessible to a broader academic audience.

To identify relevant literature, a series of Boolean operators were employed, enhancing the precision of the search. The keywords used in the search strategy included combinations such as "remote working" AND "employee engagement", "remote work" AND "employee productivity", "telecommuting" AND "workplace engagement", and "virtual work environment" AND "employee performance". The use of Boolean operators allowed for the inclusion of studies that addressed different aspects of remote working while ensuring that only those directly related to employee engagement and productivity were considered.

Prior to performing full-text reviews, the researchers first evaluated the titles and abstracts of the search results to assess their relevance. To be considered for inclusion, studies needed to examine the impact of working from home on employee engagement and productivity.

Inclusion and Exclusion Criteria

The search results were subjected to a set of predefined inclusion and exclusion criteria. Only peer-reviewed journal articles were included to ensure the credibility and academic rigor of the studies. Articles focusing on industries unrelated to knowledge work or those discussing remote working in a non-corporate context were excluded. Additionally, studies that did not provide empirical data on employee engagement or productivity were filtered out. The exclusion criteria encompassed papers not published in English, those unrelated to the study's focus, as well as news articles, reports, and dissertations. Additionally, publications that did not address the key research questions of this study were also excluded. This process ensured that the final selection of articles directly addressed the research questions and contributed to a focused and relevant analysis.

Data Extraction and Analysis

The selected articles were thoroughly reviewed, and key data were extracted, including the authors, publication year, research methods, sample characteristics, and key findings related to employee engagement and productivity in a remote working context. This data was then synthesized to identify common themes, trends, and gaps in the literature. The analysis aimed to provide a comprehensive overview of how remote working influences employee engagement and productivity, highlighting both positive and negative outcomes, as well as identifying areas for future research.

Finding

A total of 21 studies were included in this systematic review, with no restriction on the geographical location of the studies. Initially, 156 potential papers were identified. From these, 6 duplicates were removed, and 14 titles and abstracts were excluded due to their lack of scientific relevance. Out of the remaining 136 papers, 65 were not fully accessible. The final 62 papers were then evaluated against the eligibility criteria, with the researchers reviewing the full texts to identify relevant material related to the topics of interest. After a thorough evaluation based on these criteria, 26 papers were retained for inclusion. The PRISMA flow diagram in Figure 1 illustrates this process in detail.

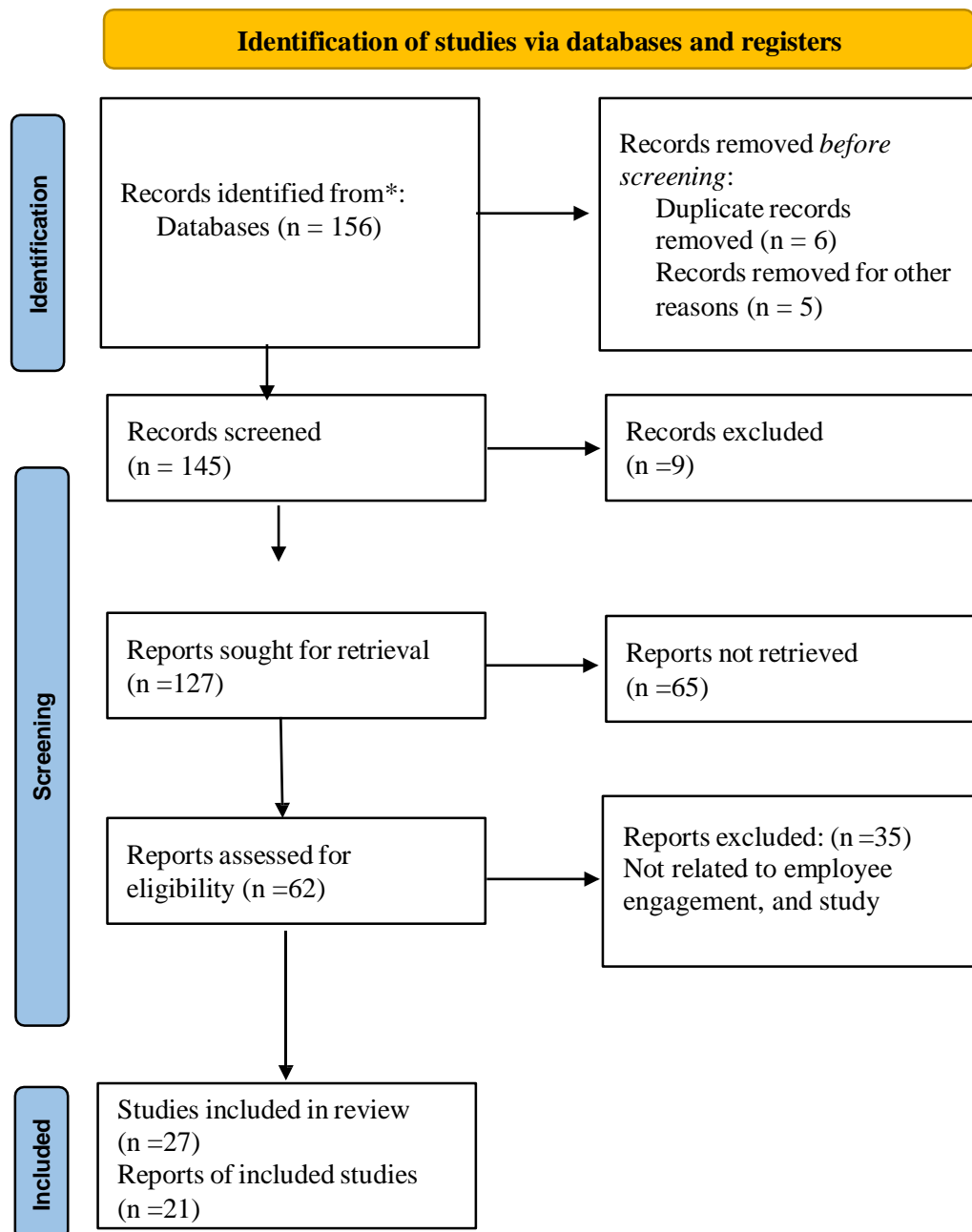


Figure 1: PRISMA flow diagram of study search and selection.

Research on the impact of working from home (WFH) on employee productivity and engagement encompasses a diverse range of locations and countries, each with distinct societal norms and individual characteristics. This includes studies conducted in countries such as Saudi Arabia, India, Indonesia, Romania, Europe, Morocco, Italy,

South Africa, USA, and Slovenia. The existing research comprises a variety of study types. These include qualitative studies (Dimian et al, 2023), which explore in-depth perspectives and experiences; quantitative studies (Rozman et al, 2021), which utilize statistical analysis to measure and analyse data; and mixed methods studies, which combine both qualitative and quantitative approaches. Table 1 describe the Characteristics of included studies.

Table 1. Characteristics of included studies

AUTHOR	COUNTRY	STUDY DESIGN	OBJECTIVE	SAMPLE	KEY FINDING
Dimian, G. C., et al.(2023)	Romania	Quantitative	This study aims to examine Romanian employees' perceptions regarding the multifaceted aspects of telework, including the ease or difficulty of adopting new ICT tools and technologies, its impact on work efficiency, work-life balance, and the effects on employees' physical and mental health.	212 Employees	The study revealed that the impact of working from home (WFH) during the COVID-19 pandemic on employee work efficiency was mixed. On the positive side, WFH offered flexibility, enabling employees to better manage both work and family duties, which helped enhance their work efficiency. However, the study also identified several challenges that negatively impacted efficiency. These included increased workloads, higher stress levels, longer working hours, and greater management oversight, with women being particularly affected. These issues made it difficult for employees to balance their work and personal responsibilities, resulting in fatigue and mental stress.
Boutros, P., et al. (2023)	Morocco	Quantitative	This study aims to assess the causal impact of RW policy on firms' productivity measured by the change in their sales.	1105	The results indicate a positive and significant influence of remote work (RW) on firm performance within the service sector. This suggests that RW can substantially enhance the efficiency and productivity of service-oriented firms, including those in consulting, finance, and IT services.
Jayanandana, N., et al. (2023)	Sri Lanka	Quantitative	This study examined how the physical work environment, work-life balance, work flexibility, and effective communication impact the job performance of IT professionals in Sri Lanka's IT industry who are working from home (WFH).	293	Work flexibility had a negative effect on job performance,
Rožman, M., et al. (2021)	Slovenia	Quantitative	The paper aims to explore gender differences in work satisfaction, engagement, and efficiency among employees working from home during the COVID-19 pandemic. It also seeks to identify the key aspects of these factors from a gender perspective.	785 employees	The results revealed that during the COVID-19 pandemic, female employees working from home exhibited lower work engagement compared to their male counterparts.

Zürcher, A., et al. (2021)	Switzerland	Quantitative	The aim of this study was to assess how WFH corresponds with indicators of job performance and occupational wellbeing.	266 vocational counsellors	The findings of this study indicate that vocational counselling psychologists who worked remotely experienced reduced levels of distraction, along with enhanced productivity and job satisfaction, in comparison to their on-site counterparts.
Mohammed, Z., et al. (2022)	India	Quantitative	This study examines the impact of the lockdown and the abrupt transition in work practices on employee job satisfaction in India.	211	The results demonstrate a positive relationship between job satisfaction and perceived work autonomy among the work-from-home respondents.
Donati, S., et al. (2021)	Italy	Quantitative	This study investigates whether various employee groups, distinguished by their work, organizational, and personal characteristics, hold differing views on remote work, the acceptance of the technology required for working from home, and their overall well-being.	163 workers	Remote workers from large companies who had prior experience working remotely several days a week, particularly before the national lockdowns, and who worked in teams, exhibited more positive attitudes toward remote work, greater acceptance of technology, and more effective coping strategies compared to other worker groups.
Patanjali, S., et al. (2022)	India	Quantitative	The article analyses the impact of working from home during the lockdown on the productivity of IT employees, with a specific focus on organizational factors.	526 IT professionals	The findings suggest that organizational factors like autonomy, empowerment, employee independence, and a supportive environment were crucial for maintaining employee productivity during remote work. However, it was also observed that prolonged remote work over several months led to a sense of fatigue.
Haque, A., et al. (2024)		Qualitative & Quantitative	The growing popularity of web-based social media platforms enhances the potential for utilizing sentiment analysis and opinion-mining techniques to track and monitor employees' preferences for working from home through platforms like Twitter.	755,882,104 tweets	It suggests that remote work has the potential to be a positive and supportive HRM strategy, enhancing workplace effectiveness, increasing staff engagement, and promoting organizational sustainability.
Ipsen, C., et al. (2021)	Europe	Quantitative	The purpose of this study was to gain insights into the experiences of WFH among knowledge workers during the early weeks of the lockdowns and to determine the advantages and disadvantages of these experiences.	5748 knowledge workers	The results showed that the majority of respondents experienced working from home predominantly in a positive light, while fewer respondents viewed it primarily as a negative experience.
Brault, M. E., et al. (2022)	USA	Quantitative	Understand the impact of WFH on job satisfaction and stress among female healthcare employees.	220	More than 60% of our participants strongly agreed that working from home during COVID-19 enhanced their work satisfaction, increased their sense of safety, and reduced overall stress levels. Additionally, female respondents reported greater improvements in feeling safe and reduced stress compared to male respondents, and noted that remote work did not negatively impact their work efficiency.

Mihalca, L., et al. (2021)	Romani a	Quantitative	The purpose of this study was to investigate effects of work from home on important employee outcomes such as work productivity, job performance, and satisfaction	482 employees	The findings highlight that both home/family factors and individual self-management strategies are essential for adapting to telework during COVID-19, with home/family factors accounting for the greatest amount of variance. A well-equipped home workspace and access to necessary tools were critical for perceived productivity, job performance, and overall satisfaction with telework. In contrast, work-family conflict did not influence these outcomes. Workload emerged as a significant factor affecting productivity and satisfaction with telework, but did not impact job performance.
Bergefurt, L., et al. (2024)	Netherlands	Quantitative & Qualitative	This study aims to gain insights into relationships between satisfaction with physical workplace features, perceived activity support, and productivity support in a hybrid working context.	N = 57,286)	The findings suggest that employees' location decisions are influenced by their experience and the support provided by their work environment (whether at home or in the office) for performing specific tasks. Perceived support for both focused and collaborative activities, whether at home or in the office, is associated with higher perceived productivity.
Singh, S., & Sant, S. (2023)	India	Quantitative & Qualitative	The Purpose of study is to explore the link between employee engagement and turnover intention in hybrid and remote workplaces	371 IT professionals	The findings show that Employee Turnover Intention is negatively correlated with Employee Engagement.
Awada, M., et al. (2021)	USA	Quantitative	This study aims to investigate how factors related to the worker, workspace, and work itself influenced productivity and the amount of time spent at a workstation on a typical work-from-home day during the pandemic.	988 Employee	The overall perception of productivity among workers remained consistent with their in-office productivity levels before the pandemic. However, increased productivity was more likely to be reported by female, older, and high-income workers. Productivity was positively associated with better mental and physical health, having a teenager at home, enhanced communication with coworkers, and having a dedicated workspace.
Kowalski, K. B., et al. (2022)	India	Quantitative & Qualitative	The current study examined the relationship between work-from-home productivity (WFHP) and job satisfaction.	1158 respondents	The results showed a positive association between work-from-home productivity (WFHP) and job satisfaction. When employees maintain high productivity while working from home, they experience less pressure from employers, allowing them more time to engage in family activities. Conversely, when productivity is low, increased pressure from employers can prevent employees from dedicating time and energy to non-work activities.

Galanti, T., et al. (2021)	Italy	Quantitative	This study examines the impact of family-work conflict, social isolation, a distracting environment, job autonomy, and self-leadership on employees' productivity, work engagement, and the stress experienced while working from home during the pandemic	209 employees	Employees' family-work conflict and social isolation were negatively associated with work-from-home (WFH) productivity and engagement, while self-leadership and autonomy were positively associated with these outcomes. Additionally, family-work conflict and social isolation were linked to increased WFH stress, whereas autonomy and self-leadership did not have an impact on stress levels.
Abdulrahman, H., & Yousif, G. (2023)	Saudi	Quantitative & Qualitative	The aim of this study is to evaluate how remote work effect workers' productivity in the Saudi financial sector.	1270 Employee	Result show that a positive association between workers' productivity and remote work.
Farooq, R., & Sultana, A. (2022)	India	Quantitative	This study aimed to explore the relationship between employee productivity and work-from-home (WFH) practices during the COVID-19 pandemic. Additionally, it investigated the moderating role of gender in the connection between WFH and worker productivity.	250 respondents	The results suggest that there is a negative relationship between working from home (WFH) and employee productivity. Additionally, the study found that gender plays a significant moderating role in this association.
Hafshah, R. N., et al. (2022)	Indonesia	Quantitative	This research examined the impact of remote working on the performance of millennial employees during the COVID-19 pandemic.	367 respondents from the banking sector	The study's results indicated that remote working led to improvements in productivity, employee engagement, and motivation.
Ravhudzuloa, H. R., & Eresia-Eke, C. (2024)	South Africa	Quantitative	To examine how telecommuting moderates the relationship between employee engagement—encompassing its physical, cognitive, and emotional dimensions—and employee performance within the South African Information and Communication Technology (ICT) sector.	478 employees	The results show that telecommuting moderates the relationship between cognitive engagement and employee performance, as well as the relationship between emotional engagement and employee performance. However, telecommuting does not moderate the relationship between physical engagement and performance, nor the overall relationship between employee engagement and performance.

Discussion

The impact of working from home (WFH) on employee engagement and productivity has been widely studied across various countries and industries, revealing both positive and negative outcomes. This discussion synthesizes findings from the reviewed studies to provide a comprehensive understanding of how WFH affects these critical aspects of workforce management.

Positive Impact on Productivity and Engagement

Several studies highlight the positive effects of WFH on employee productivity. For instance, Boutros et al. (2023) found a significant positive influence of remote work on firm performance in Morocco's service sector, indicating that WFH can enhance efficiency and productivity, especially in consulting, finance, and IT services. Similarly, Patanjali and Bhatta (2022) reported that organizational factors such as autonomy, empowerment, and a supportive environment were crucial in maintaining productivity among IT professionals in India during the pandemic.

Furthermore, Hafshah et al. (2022) demonstrated that remote working led to improvements in productivity, employee engagement, and motivation among millennial employees in Indonesia's banking sector.

WFH also positively influenced job satisfaction and engagement in certain contexts. Ipsen et al. (2021) reported that knowledge workers across Europe generally experienced WFH in a positive light during the early weeks of lockdowns, with many respondents indicating enhanced job satisfaction. In the United States, MeganE.Brault et al. (2021) found that over 60% of female healthcare employees agreed that WFH during COVID-19 increased their job satisfaction, safety, and reduced stress levels.

Negative Impact and Challenges

Despite these positive outcomes, several studies identified challenges associated with WFH that negatively impacted productivity and engagement. For example, Farooq and Sultana (2022) found a negative relationship between WFH and employee productivity in India, with gender significantly moderating this association. Dimian et al. (2023) revealed mixed impacts of WFH on work efficiency among Romanian employees, noting that while flexibility improved work-life balance, increased workloads, stress, and longer working hours posed significant challenges, particularly for women.

Furthermore, Rožman et al. (2021) observed that during the COVID-19 pandemic, female employees in Slovenia working from home exhibited lower work engagement compared to their male counterparts, highlighting the gender disparities in remote work experiences. Galanti et al. (2021) also found that family-work conflict and social isolation were negatively associated with WFH productivity and engagement, stressing the importance of managing these factors to prevent declines in work performance.

The work environment and support systems play a critical role in determining the success of WFH arrangements. Mihalca et al. (2021) emphasized that a well-equipped home workspace and access to necessary tools were essential for perceived productivity and job performance among Romanian employees during the pandemic. Similarly, Bergefurt et al. (2024) highlighted that employees' satisfaction with physical workplace features and the support provided by their work environment, whether at home or in the office, was strongly associated with perceived productivity in hybrid working contexts.

Factors Affecting Engagement and Productivity

Several factors have been identified as critical in influencing the effectiveness of WFH on employee engagement and productivity. These include work flexibility, communication, organizational support, and the physical work environment.

Flexibility in work arrangements has been shown to have both positive and negative effects. While flexibility can enhance work-life balance and autonomy, as noted by Dimian et al. (2023), it can also negatively impact job performance, as seen in the study by Jayanandana and Jayathilaka (2023), which found that work flexibility in Sri Lanka's IT industry had an adverse effect on job performance.

Effective communication has emerged as a crucial factor in maintaining engagement and productivity during remote work. Jayanandana and Jayathilaka (2023) also emphasized the importance of effective communication in supporting job performance in a remote work setting. The absence of face-to-face interactions can lead to feelings of isolation and disconnection, which in turn can affect engagement levels.

The role of organizational support in facilitating successful remote work has been highlighted by several studies. Patanjali and Bhatta (2022) underscored the importance of a supportive work environment in maintaining productivity, while Galanti et al. (2021) identified job autonomy and self-leadership as positive contributors to WFH productivity and engagement. These findings suggest that organizations must actively provide the necessary resources, including technology, communication channels, and managerial support, to sustain high levels of engagement and productivity among remote workers.

The physical work environment, including the availability of a dedicated workspace and necessary tools, plays a significant role in influencing productivity and satisfaction with remote work. Mihalca et al. (2021) found that a well-equipped home workspace was critical for perceived productivity and job performance, while factors such as workload and home/family conflicts also significantly affected these outcomes.

Conclusion

This study offers a comprehensive systematic review of the impact of working from home (WFH) on employee engagement and productivity, conducted in accordance with PRISMA guidelines.

The impact of WFH on employee engagement and productivity is multifaceted, with both positive and negative outcomes depending on various factors such as organizational support, gender, work environment, and individual characteristics. While WFH offers flexibility and can enhance productivity in certain contexts, challenges such as increased stress, work-life imbalance, and gender disparities need to be addressed to optimize remote work practices. To maximize the benefits of WFH, organizations need to adopt a holistic approach that addresses these challenges, provides adequate support, and tailors engagement strategies to the diverse needs of their workforce.

Limitations and Future Research

This study faces several limitations. Firstly, the reliance on specific databases and English-language studies might exclude relevant research, potentially narrowing the scope. The study's focus on productivity and engagement without considering other factors like job satisfaction and mental health may provide an incomplete picture. The examination of data predominantly from the COVID-19 pandemic period may also not reflect long-term effects as remote work practices evolve. Furthermore, the methodological variability among the reviewed studies introduces challenges in drawing consistent conclusions.

Future research should aim to include a broader geographical range to enhance generalizability and address underrepresented regions. Longitudinal studies are needed to assess long-term impacts of remote work. A more comprehensive approach should explore factors beyond productivity and engagement, such as job satisfaction and mental health. Comparative studies across different industries and job roles can reveal specific challenges and best practices. Investigating the impact of emerging technologies on remote work and evaluating the effectiveness of organizational support mechanisms can provide valuable insights for optimizing remote work environments.

References

- Akinsomi, O., Oladiran, O., & Kaseka, Z. (2024). COVID-19 outcomes: Exploring the footprints of the pandemic on the office sector in Johannesburg, South Africa. *Journal of Corporate Real Estate*, 26(3), 219–236. <https://doi.org/10.1108/JCRE-08-2023-0035>
- Al-Dmour, R., Al-Dmour, H., Al-Dmour, A., & Abualigah, L. (2023). The role of academics' socio-demographic characteristics as moderating in WFH productivity: Empirical evidence. *Uncertain Supply Chain Management*, 11(3), 1319–1332. <https://doi.org/10.5267/j.uscm.2023.3.016>
- Aljumah, A. (2023). The impact of extrinsic and intrinsic motivation on job satisfaction: The mediating role of transactional leadership. *Cogent Business and Management*, 10(3). <https://doi.org/10.1080/23311975.2023.2270813>
- Asfahani, A., Dahlan, D., & Alnajem, M. (2024). Unraveling Endogeneity: A Systematic Review of Methodologies in Digital Leadership and Remote Work Research. *Electronic Journal of Business Research Methods*, 22(2). <https://doi.org/10.34190/ejbrm.22.2.3279>
- Awada, M., Lucas, G., Becerik-Gerber, B., & Roll, S. (2021). Working from home during the COVID-19 pandemic: Impact on office worker productivity and work experience. *Work*, 69(4), 1171–1189. <https://doi.org/10.3233/WOR-210301>
- Becchetti, L., Salustri, F., & Solferino, N. (2024). The new industrial revolution: The optimal choice for flexible work companies. *Journal of Economic Interaction and Coordination*. <https://doi.org/10.1007/s11403-024-00418-y>
- Belostecinic, G., Mogoş, R. I., Popescu, M. L., Burlacu, S., Rădulescu, C. V., Bodislav, D. A., Bran, F., & Oancea-Negescu, M. D. (2022a). Teleworking—An economic and social impact during covid-19 pandemic: A data mining analysis. *International Journal of Environmental Research and Public Health*, 19(1). <https://doi.org/10.3390/ijerph19010298>
- Bergefurt, L., van den Boogert, P. F., Appel-Meulenbroek, R., & Kemperman, A. (2024). The interplay of workplace satisfaction, activity support, and productivity support in the hybrid work context. *Building and Environment*, 261. <https://doi.org/10.1016/j.buildenv.2024.111729>
- Boutros, P., Fakih, A., & Tarraf, M. (2023). Adapting to the new normal: The impact of remote work on firm performance in Jordan and Morocco. *Regional Science Policy and Practice*, 15(8), 1722–1739. <https://doi.org/10.1111/rsp3.12667>
- Brault, M. E., Laudermitth, A., & Kroll-Desrosiers, A. (2023). Telemedicine During COVID-19 Response: A Welcome Shift for Younger Female Healthcare Workers. *Journal of General Internal Medicine*, 38(3), 627–632.

<https://doi.org/10.1007/s11606-022-07785-x>

Camacho, S., & Barrios, A. (2022). Teleworking and technostress: Early consequences of a COVID-19 lockdown. *Cognition, Technology and Work*, 24(3), 441–457. <https://doi.org/10.1007/s10111-022-00693-4>

Capone, V., Schettino, G., Marino, L., Camerlingo, C., Smith, A., & Depolo, M. (2024). The new normal of remote work: Exploring individual and organizational factors affecting work-related outcomes and well-being in academia. *Frontiers in Psychology*, 15. <https://doi.org/10.3389/fpsyg.2024.1340094>

Dimian, G. C., Gheorghe, M., Boldeanu, D. M., & Maftei, M. (2023a). How Digitalization, Work-Family Balance, and Work Efficiency Can Influence Employees' Preferences for Teleworking in the Future. *Engineering Economics*, 34(2), 139–157. <https://doi.org/10.5755/j01.ee.34.2.30090>

Donati, S., Viola, G., Toscano, F., & Zappalà, S. (2021). Not all remote workers are similar: Technology acceptance, remote work beliefs, and wellbeing of remote workers during the second wave of the covid-19 pandemic. *International Journal of Environmental Research and Public Health*, 18(22). <https://doi.org/10.3390/ijerph182212095>

Drašler, V., Bertoneclj, J., Korošec, M., Žontar, T. P., Ulrih, N. P., & Cigić, B. (2021). Difference in the attitude of students and employees of the university of ljubljana towards work from home and online education: Lessons from covid-19 pandemic. *Sustainability (Switzerland)*, 13(9). <https://doi.org/10.3390/su13095118>

Feng, Y., Park, J., & Feng, M. (2023). What is holding back business process virtualization in the post-COVID-19 era? Based on process virtualization theory (PVT). *Frontiers in Psychology*, 14. <https://doi.org/10.3389/fpsyg.2023.1084180>

Gaan, N., Malik, S., & Dagar, V. (2024). Cross-level effect of resonant leadership on remote engagement: A moderated mediation analysis in the unprecedented COVID-19 crisis. *European Management Journal*, 42(3), 316–326. <https://doi.org/10.1016/j.emj.2023.01.004>

Galanti, T., Guidetti, G., Mazzei, E., Zappalà, S., & Toscano, F. (2021). Work from home during the COVID-19 outbreak: The impact on employees' remote work productivity, engagement, and stress. *Journal of Occupational and Environmental Medicine*, 63(7), E426–E432. <https://doi.org/10.1097/JOM.0000000000002236>

Goñi-Legaz, S., Núñez, I., & Ollo-López, A. (2024). Home-based telework and job stress: The mediation effect of work extension. *Personnel Review*, 53(2), 545–561. <https://doi.org/10.1108/PR-02-2022-0111>

Haque, A., Singh, K., Kaphle, S., Panchasara, H., & Tseng, W. C. (2024). Shifting Workplace Paradigms: Twitter Sentiment Insights on Work from Home. *Sustainability (Switzerland)*, 16(2). <https://doi.org/10.3390/su16020871>

Ipsen, C., van Veldhoven, M., Kirchner, K., & Hansen, J. P. (2021). Six key advantages and disadvantages of working from home in europe during covid-19. *International Journal of Environmental Research and Public Health*, 18(4), 1–19. <https://doi.org/10.3390/ijerph18041826>

Jackson, D. J. R., Jones, A., Michaelides, G., & Dewberry, C. (2024). Well-being and empowerment perceptions in a sudden shift to working from home. *Journal of Vocational Behavior*, 151. <https://doi.org/10.1016/j.jvb.2024.104000>

Jamal, M. T., Alalyani, W. R., Thoudam, P., Anwar, I., & Bino, E. (2021). Telecommuting during covid 19: A moderated-mediation approach linking job resources to job satisfaction. *Sustainability (Switzerland)*, 13(20). <https://doi.org/10.3390/su132011449>

Jayanandana, N., & Jayathilaka, R. (2023). Factors affecting job performance of Sri Lankan IT professionals working from home. *PLoS ONE*, 18(12 December). <https://doi.org/10.1371/journal.pone.0295305>

Khushk, A., Zhiying, L., Yi, X., Zengtian, Z., & Hui, Y. (2024). From crisis to opportunity: Career shocks and remote work shifts triggered by COVID-19. *Organizatsionnaya Psikhologiya*, 14(1), 120–133. <https://doi.org/10.17323/2312-5942-2024-14-1-120-133>

Kowalski, K. B., Aruldoss, A., Gurumurthy, B., & Parayitam, S. (2022a). Work-From-Home Productivity and Job Satisfaction: A Double-Layered Moderated Mediation Model. *Sustainability (Switzerland)*, 14(18). <https://doi.org/10.3390/su141811179>

Kowalski, K. B., Aruldoss, A., Gurumurthy, B., & Parayitam, S. (2022b). Work-From-Home Productivity and Job Satisfaction: A Double-Layered Moderated Mediation Model. *Sustainability (Switzerland)*, 14(18).

<https://doi.org/10.3390/su141811179>

Kumar, P., Kumar, N., Aggarwal, P., & Yeap, J. A. L. (n.d.). *Working in lockdown: The relationship between COVID-19 induced work stressors, job performance, distress, and life satisfaction.* <https://doi.org/10.1007/s12144-021-01567-0> Published

Lajčín, D., & Porubčanová, D. (2021). Teamwork during the covid-19 pandemic. *Emerging Science Journal*, 5(Special issue), 1–10. <https://doi.org/10.28991/esj-2021-SPER-01>

Maier, C., Laumer, S., & Weitzel, T. (2022). A Dark Side of Telework: A Social Comparison-Based Study from the Perspective of Office Workers. *Business and Information Systems Engineering*, 64(6), 793–811. <https://doi.org/10.1007/s12599-022-00758-8>

Michinov, E., Ruiller, C., Chedotel, F., Dodeler, V., & Michinov, N. (2022). Work-From-Home During COVID-19 Lockdown: When Employees' Well-Being and Creativity Depend on Their Psychological Profiles. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.862987>

Mihalca, L., Irimias, T., & Brendea, G. (2021). Teleworking During The Covid-19 Pandemic: Determining Factors Of Perceived Work Productivity, Job Performance, And Satisfaction. *Amfiteatru Economic*, 23(58), 620–636. <https://doi.org/10.24818/EA/2021/58/620>

Mohammed, Z., Nandwani, D., Saboo, A., & Padakannaya, P. (2022). Job satisfaction while working from home during the COVID-19 pandemic: Do subjective work autonomy, work-family conflict, and anxiety related to the pandemic matter? *Cogent Psychology*, 9(1). <https://doi.org/10.1080/23311908.2022.2087278>

Nowrouzi-Kia, B., Haritos, A. M., Long, B. Z. S., Atikian, C., Fiorini, L. A., Gohar, B., Howe, A., Li, Y., & Bani-Fatemi, A. (2024). Remote work transition amidst COVID-19: Impacts on presenteeism, absenteeism, and worker well-being—A scoping review. *PLoS ONE*, 19(7 July). <https://doi.org/10.1371/journal.pone.0307087>

Papagiannis, D., Rožman, M., Sheng, Y., Liu, X., & Jing, Y. (2019). *OPEN ACCESS EDITED BY Work from home or ooce during the COVID-pandemic: The diierent chain mediation models of perceived organizational support to the job performance.*

Patanjali, S., & Bhatta, N. M. K. (2022a). Work from Home During the Pandemic: The Impact of Organizational Factors on the Productivity of Employees in the IT Industry. *Vision*. <https://doi.org/10.1177/09722629221074137>

Patanjali, S., & Bhatta, N. M. K. (2022b). Work from Home During the Pandemic: The Impact of Organizational Factors on the Productivity of Employees in the IT Industry. *Vision*. <https://doi.org/10.1177/09722629221074137>

Pokojski, Z., Kister, A., & Lipowski, M. (2022). Remote Work Efficiency from the Employers' Perspective—What's Next? *Sustainability (Switzerland)*, 14(7). <https://doi.org/10.3390/su14074220>

Pradoto, H., Haryono, S., & Wahyuningsih, S. H. (2022). The role of work stress, organizational climate, and improving employee performance in the implementation of work from home. *Work*, 71(2), 345–355. <https://doi.org/10.3233/WOR-210678>

Prodanova, J., & Kocarev, L. (2021). Is job performance conditioned by work-from-home demands and resources? *Technology in Society*, 66. <https://doi.org/10.1016/j.techsoc.2021.101672>

Qadri, N. (2024). Exploring the Impact of Work-Life Balance on Job Satisfaction for Saudi Private Sector C-Level Employees. *International Journal of Business Analytics*, 11(1). <https://doi.org/10.4018/IJBAN.351217>

Raišienė, A. G., Rapuano, V., & Varkulevičiūtė, K. (2021). Sensitive men and hardy women: How do millennials, xennials and gen x manage to work from home? *Journal of Open Innovation: Technology, Market, and Complexity*, 7(2). <https://doi.org/10.3390/joitmc7020106>

Raj, R., Kumar, V., Sharma, N. K., Singh, S., Mahlawat, S., & Verma, P. (2023). The study of remote working outcome and its influence on firm performance. *Social Sciences and Humanities Open*, 8(1). <https://doi.org/10.1016/j.ssaho.2023.100528>

Ralph, P., Baltes, S., Adisaputri, G., Torkar, R., Kovalenko, V., Kalinowski, M., Novielli, N., Yoo, S., Devroey, X., Tan, X., Zhou, M., Turhan, B., Hoda, R., Hata, H., Robles, G., Milani Fard, A., & Alkadhi, R. (2020). Pandemic programming: How COVID-19 affects software developers and how their organizations can help. *Empirical Software Engineering*, 25(6), 4927–4961. <https://doi.org/10.1007/s10664-020-09875-y>

Rodrigues, E. A., Rampasso, I. S., Serafim, M. P., Filho, W. L., & Anholon, R. (2022). Productivity analysis in work from home modality: An exploratory study considering an emerging country scenario in the COVID-19

context. *Work*, 72(1), 39–48. <https://doi.org/10.3233/WOR-211212>

Rožman, M., Zabukovšek, S. S., Bobek, S., & Tominc, P. (2021). Gender differences in work satisfaction, work engagement and work efficiency of employees during the covid-19 pandemic: The case in Slovenia. *Sustainability (Switzerland)*, 13(16). <https://doi.org/10.3390/su13168791>

Sanhokwe, H. (2022). *SA Journal of Human Resource Management Affiliation*. <https://doi.org/10.4102/sajhrm>

Santa-Cruz-Espinoza, H., Chávez-Ventura, G., Domínguez-Vergara, J., & Merino-Soto, C. (2023). Internal Structure of the Work–Family Conflict Questionnaire (WFCQ) in Teacher Teleworking. *International Journal of Environmental Research and Public Health*, 20(2). <https://doi.org/10.3390/ijerph20020970>

Scholtz, S. E. (2022). Remote-Workers and Their Furry Co-Workers: A Multimethod Exploration of New Avenues for Work-Related Exhaustion and Job Satisfaction. *Social Sciences*, 11(11). <https://doi.org/10.3390/socsci11110501>

Singh, H. K., & Dev, V. (n.d.). *ICT-Driven Work Engagement Interventions in Work-From-Home: The Mediating Role of the Need for Relatedness* (Australasian Journal of Information Systems Singh & Dev, Vol. 2023).

Singh, S., & Sant, S. (2023). The Moderating Role of Workplace (Hybrid/ Remote) on Employee Engagement and Employee Turnover Intention. *Employee Responsibilities and Rights Journal*. <https://doi.org/10.1007/s10672-023-09480-3>

Song, Y., & Gao, J. (2020). Does Telework Stress Employees Out? A Study on Working at Home and Subjective Well-Being for Wage/Salary Workers. *Journal of Happiness Studies*, 21(7), 2649–2668. <https://doi.org/10.1007/s10902-019-00196-6>

Terry, P. E. (2022). Well-Being and Evolving Work Autonomy: The Locus of Control Construct Revisited. *American Journal of Health Promotion*, 36(4), 593–596. <https://doi.org/10.1177/08901171221081786>

Tsang, S. S., Liu, Z. L., & Nguyen, T. V. T. (2023). Family–work conflict and work-from-home productivity: Do work engagement and self-efficacy mediate? *Humanities and Social Sciences Communications*, 10(1). <https://doi.org/10.1057/s41599-023-01929-y>

Walker, L., Braithwaite, E. C., Jones, M. V., Suckling, S., & Burns, D. (2023). “Make it the done thing”: An exploration of attitudes towards rest breaks, productivity and wellbeing while working from home. *International Archives of Occupational and Environmental Health*, 96(7), 1015–1027. <https://doi.org/10.1007/s00420-023-01985-6>

Weinert, C., & Weitzel, T. (2023). Teleworking in the Covid-19 Pandemic: The Effects of Life-Work Conflict on Job Outcomes and the Role of the IT Telework Environment. *Business and Information Systems Engineering*, 65(3), 309–328. <https://doi.org/10.1007/s12599-023-00800-3>

Yee, W. M., Al Mamun, A., Xueyun, Z., Hussain, W. M. H. W., & Yang, Q. (2023). Modelling the significance of psychological, social, and situational factors on work efficiency and the preference for working from home in Southeast Asia. *Heliyon*, 9(6). <https://doi.org/10.1016/j.heliyon.2023.e17561>

Zürcher, A., Galliker, S., Jacobshagen, N., Lüscher Mathieu, P., Eller, A., & Elfering, A. (2021). Increased Working From Home in Vocational Counselling Psychologists During COVID-19: Associated Change in Productivity and Job Satisfaction. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.750127>

The Influence of Financial Socialization on Financial Planning Propensity: A Qualitative Exploration of Millennial Experiences

Fabeena Fasal
Research Scholar

Bharata Mata College (Autonomous)
Thrikkakara, Kerala, India

Dr. Rafeeka Mol C.A
Assistant Professor

MES College, Marampally, Kerala,
India.

Abstract

This research paper explores the complex relationship between financial socialisation and financial planning propensity among the most literate Indian population. Despite the fact that the country's literacy rate is rising, there is still a significant gap in the financial planning habits of its citizens. This study makes an in-depth investigation of how people's exposure to financial socialisation—which includes impacts from families, friends, workplace, media, and society—forms their propensity for financial planning. The study attempts to explore whether financial socialisation through agents such as family, peers, and educational institutions plays an important role in s financial planning and management behaviour of millennials in Kerala, and whether it be fostered to produce better financial outcomes. With a view to address this question, the research aims to examine the impact of financial socialisation agents on millennials' financial planning behaviour. It also finds whether promoting financial socialisation can contribute to a better financial life of individuals in the state. Considering previous research, this study offers a conceptual model that clarifies how financial socialisation affects financial planning propensity. Furthermore, it highlights Kerala's distinct cultural and socioeconomic background, which could impact the dynamics of financial socialisation and planning practices. The study's findings are intended to offer insightful information to policymakers, educators, and financial institutions. By fostering and promoting financial socialisation, it would be easy to make changes in financial planning behaviour among individuals, which will ultimately lead to financial well-being and economic resilience

Keywords: *Financial Socialisation, Financial Planning, Financial Attitude, Financial Behaviour. Young Adults*

Introduction

Knowing how to manage money is essential to survive today's fast-changing, uncertain and unpredictable economy. But it is not possible without proper planning. Even though financial planning is an essential aspect of money management, many still find it hard. Whether it is saving up for something big, like buying a house or planning for retirement, having a plan makes a big difference. Financial planning is crucial for individuals and households to fulfil their dreams, ensure their safe future, and attain financial well-being. (Chieffe & Rakes, 1999) Effective money management is of greater importance than the amount of income earned. (Bird et al., 2014)

However, individuals' propensity towards financial planning differs from person to person due to various reasons. Propensity to plan refers to the inclination or tendency of individuals to engage in proactive planning behaviours, particularly concerning their financial future. An individual's intentions to make financial plans are influenced by his environment. The higher the financial planning propensity, the better financial behaviour will be. (Ameriks et al., 2003a) Studies have identified the significant role of financial socialisation in shaping people's financial behaviour. Financial socialisation refers to how individuals acquire financial knowledge, attitudes, and behaviours within their social environment, primarily through interactions with family, peers, educational institutions, and societal institutions. (Ameer & Khan, 2020a; Goyal et al., 2023)

In a state noted for its high literacy rates, unique socio-economic characteristics and high remittance inflows, the role of financial socialisation in moulding financial planning propensity among its people is vital. Kerala's unique blend of traditional values, modernisation, and diverse consumer behaviours creates a rich setting to study how various societal agents and financial experiences influence financial planning behaviour. The primary purpose of the study is to explore the unexplored dynamics of financial socialisation and its impact on the propensity for financial planning among the people of Kerala. By examining the roles of different socialisation agents, the study unveils the attitude of individuals' towards financial planning. The study focuses on individuals of the age group 25 to 40 who are residents of Kerala and are from unique socio-economic backgrounds.

In this context, the study tries to explore whether financial socialisation through agents such as family, peers, and educational institutions plays an important role in s financial planning and management behaviour of millennials in Kerala, and should it be fostered to produce better financial outcomes. To address this question, the research aims to examine the impact of financial socialisation agents on millennials' financial planning

CSIBER International Journal – CIJ

A Quarterly Double-Blind Peer Reviewed (Referred/Juried) Open Access International e-Journal – Included in the International Serial Directories

<https://www.siberindia.edu.in/journals/>

behaviour. It also finds whether promoting financial socialisation can contribute to a better financial life of individuals in the state.

The findings of the study provide insight into how a person's financial life can be affected through the experience with money, and it can provide a strong basis for developing policies and educational programs that cater for the financial knowledge gap of individuals in the state. It may guide towards financial education initiatives within and outside the home. By making young adults familiar with personal financial activities, they will be capable of making informed financial decisions and leading a better quality of life in future.

Literature Review

Financial Planning Propensity:

Financial planning propensity refers to individuals' inclination and readiness to engage in proactive financial planning behaviours, including budgeting, saving, investing, and retirement planning (Noonan et al., 2012). It is influenced by various psychological, sociocultural, and environmental factors, including attitudes towards risk, future orientation, self-efficacy, and perceived financial norms (Grable & Joo, 2006; Shim et al., 2009). Individuals with higher financial planning propensity are more likely to engage in long-term financial planning activities and exhibit greater financial resilience and well-being over time (Hilgert et al., 2003; Ameriks et al., 2002).

Financial planning propensity: an individual's tendency to perform financial planning activities can significantly impact one's financial and overall well-being. Research suggests that those with a higher propensity to plan are more likely to perform positive health and financial management practices. (Ameriks et al., 2003b) The propensity to make a financial plan is influenced by an individual's financial knowledge and the learning he has acquired. In India, people with low financial literacy rates poorly adopt financial practices. (Jayaraman & Jambunathan, 2018) One primary reason for this could be a lack of exposure to financial activities. With limited or no knowledge regarding financial management, it will be difficult to succeed in unknown and uncertain life. (Amonhaemanon & Isaramalai, 2020) Individuals' attitudes, behaviours, and financial decision-making are shaped by their social environment and experiences. Financial socialisation, happening through interactions with family, peers, educational institutions, media, and societal norms, plays a crucial role in forming individuals' financial beliefs, knowledge, and practices (Shim et al., 2010).

Previous research has identified financial planning propensity can create positive financial outcomes. The propensity to plan is associated with retirement savings and net worth accumulation. As the propensity increases, the latter also increases. (Lee & Kim, 2016) The actual behaviour of financial planning occurs when an individual inclines it. It is termed as financial planning propensity. Socioeconomic factors, economic resources, and financial capability influence the financial planning propensity of individuals. (Xiao & O'Neill, 2018). The actual planning behaviour can be studied on a short-term and long-term basis, providing a broader perspective on individuals planning tendencies. (Lynch et al., 2010). Studies have identified the mediating role of financial behaviour in relation to financial propensity and well-being. Parental influence and personality traits have a significant impact on planning intentions. (Brounen et al., 2015). Even though limited previous literature explored financial planning propensity as a predictor of actual financial behaviour, no studies have studied the association between financial planning propensity and financial socialisation. This study thus fills the gap in the literature by exploring the relationship between the two variables that are significant in shaping an individual's finances.

Financial Socialisation:

Socialisation is the process by which an individual learns values and skills to conform to the behaviour and attitude desired by society for his or her current and upcoming roles. (Parke et al., 2008). A person's behaviour can reflect the environment in which the person lives. (Walsh, 1987) Financial socialisation is the socialisation of financial knowledge, skills, attitudes and behaviour. It includes financial learning from family, peers, workplace and society, which can be done deliberately or not. The financial attitude of a person will be based on what he has learned and observed in the course of life. Previous research also confirms that financial socialisation is crucial in building one's financial behaviour. (Ameer & Khan, 2020b; Goyal et al., 2023; Vijaykumar, 2022)

The experiences from financial socialisation can lead to higher financial literacy and improve confidence in financial matters. The outcome of such experiences can positively impact an individual throughout his lifetime. As a result, those who have acquired financial knowledge through various socialising agents can plan their finances better and have better financial well-being. The family is considered the most prominent in shaping financial behaviour through interactions, communication patterns and discussions. (Zhao & Zhang, 2020). Families, schools, media platforms, and societal norms collectively influence an individual's financial upbringing by moulding their financial viewpoints and attitudes. (Goyal et al., 2023)

Methodology

The research adopted a qualitative research design to get more profound understanding of the influence of financial socialisation on personal financial management behaviour of millennial individuals. Semi-structured interviews were conducted to get insights into millennials' experiences of financial socialisation in their lives. Experts in the field of personal finance validated the questions. Using purposive sampling, 14 individuals aged between 25 and 40 were selected from various socio-economic backgrounds.

The interviews were conducted so as to explore the experiences and opinions of participants regarding the financial socialisation they received in their lives. Respondents were asked to freely share their views and experiences on personal finance. The duration of the interviews was 30-45 minutes and were conducted as a friendly conversation so that the participants wouldn't hesitate to express themselves openly. Questions related to their family background, financial status, financial knowledge, involvement in family decision-making, peer experiences, financial education, societal influence, cultural practices, etc. were included in the interview. So as to make sure no data is left unattended the interview was recorded with consent. They were ensured confidentiality and anonymity of their responses. The interview data were transcribed and analysed using thematic analysis using NVivo software. The transcribed data was imported, and codes were created and categorised under various themes. Validity and reliability were ensured by peer debriefing.

Data Analysis

The analysis of the interview transcripts was conducted using thematic analysis with the help of Nvivo software. The data collected through semi-structured interviews revealed insights into how financial socialisation at an early stage could lead to financial planning propensity of people. The recorded interviews were played multiple times so as to include each and every data. After the preparation of interview transcripts, with the help of Nvivo, data were coded,. Initial codes identified related to financial socialisation and financial planning. Related codes were then categorised and grouped to form themes The themes identified are **-Absence of financial socialisation, Lack of interest in financial matters, Self-motivated financial behaviour, Early Financial Socialization, Self-motivated financial behaviour, no concern for money as there is plenty to spend, Outcomes of financial socialisation and financial mismanagement.** Each theme was split into subtheme to develop greater understanding of the topic. Own words of respondents were used to represent the true feelings of the respondents so as to provide a greater understanding of their experiences. The use of original words in thematic description ensure authenticity of the research.

Theme	Subtheme	Dialogue
1. Absence of financial socialisation	Lack of parental financial socialisation	"I don't even remember an instance of discussing financial matters at home. I also believed it is none of my concern"
	Lack of financial education at school	"No one taught me about money in school. It was all academic there. I never knew it was something more important than pure academic subjects to lead a happy life"
	Financial mistakes	"When I started earning myself, I had no idea how to manage my expenses and spending. I made many mistakes"
	Peer pressure or influence	"I had many unwanted spending as I tried to imitate my friends."
	Impact of advertisement	"I always wanted whatever I found attractive on the TV ads. I never ever bothered about the cost. It was not my issue then."
2.Lack of interest in financial matters	Lack of interest in financial affairs	"I never heard my parents whenever they tried to involve me in decision-making. But later on, I realised its value"
	Financial planning not a priority	"It is an important thing, but I am not interested in it. So, I spent on more interesting things"

	Attitude towards financial planning	"I find it a difficult task which is time consuming. I rather like to spent and enjoy life"
3. Self-motivated financial behaviour	Experience is the best teacher	"I had quite well salary and led a life accordingly. But at a point I realised it is not the right way and then everything changed "
	Social media	"During my childhood, I never got any kind of financial education inside or outside of my house. But in this fintech era, I can learn it from the online platforms."
	Unexpected life events	"When I lost my job during COVID, I was left only with some EMI. I had to rely on others for living till I found a job. Then I started saving"
	Building own budgets and plans	"Considering my expenses and income, I made a plan and tried to stick to it. Sometimes some changes occur, even though I can manage"
4. Early Financial Socialization	Parental involvement in financial guidance	"I was lucky enough that my parents taught me financial lessons, which later was a blessing to me."
	Knowledge of budget	"I was always taught to budget my pocket money or to save for my little dreams. We had a family budget at home "
	Cost comparison	"Whenever we go for shopping, I have seen my mom comparing price of product. But it never meant we had low-quality items."
5. No concern of money as there is plenty to spent	Not a necessity	"I don't have to think about spending as I have too much to spend. I have never seen my parents worrying about money"
	Only for people with low income	"I really think financial planning is required for poor or low-income people who are struggling in life."
	Lack of awareness	"I am unaware of any financial planning strategies or I have never received such kind of information."
6. Outcomes of financial socialisation	Understanding of the importance of money management	"My parents taught me the value of money as we had only limited resources to spent even for necessity."
	Financial planning propensity	"As I know to earn money is really hard and to spend is really easy, I always had intention to plan accordingly."
	Financial literacy	"Our discussions about rising cost, cautious spending etc were my first financial lessons"
	Comparative advantage	"I have seen my friends struggling at month end even though they have lesser financial responsibilities than me."
	Impulse control	"Sometimes, I feel like spending out of impulse. However, as I know, my money is hard earned and can be utilised for more productive purposes; I can control myself."
7. Financial mismanagement	Lack of knowledge	"I had no idea how to manage my money. Now only I need to understand it"
	Stress	"It's really difficult for me to live with my income. I am unable to sleep properly. "

	Lack of self-efficacy	"I never had any financial education. I have colleagues who use their salary to generate extra income with trading and investment. But I have no confidence. "
	Overspending	"I know I am spending unnecessarily. I always had what I wished during my childhood. Now I am not able to control myself"

Table 1: Themes and subthemes developed

Source : Compiled by researcher

It is evident that those with no financial socialisation had to face many financial challenges in life. At the same time, some showed no interest in the financial matter, thinking it was not going to affect them. However, later they also realised the importance of those lessons once ignored intentionally. Some individuals learnt from their families how to manage money as they were involved in financial decision-making. Those from wealthy backgrounds are unaware of the fact that financial planning is to be done by everyone, irrespective of their financial status. Those from economically poor backgrounds know the value of each penny as they are used to spend for necessities only. Even when they are early enough, they follow the same principles in life. Overall, the themes represent the varying financial attitudes of people in financial planning that are acquired either through the presence or absence of financial socialisation they had in life. It depicts a direct relationship between financial socialisation and the financial planning propensity of individuals.

After the discussion, it was understood that financial socialisation from various agents has a different yet significant role to play in the financial decision-making ability of individuals. It was identified that family, peer, workplace, media, social networking sites, educational institutions and culture, norms and values can provide financial knowledge to young individuals. The discussions led to the conceptualization of the research model.

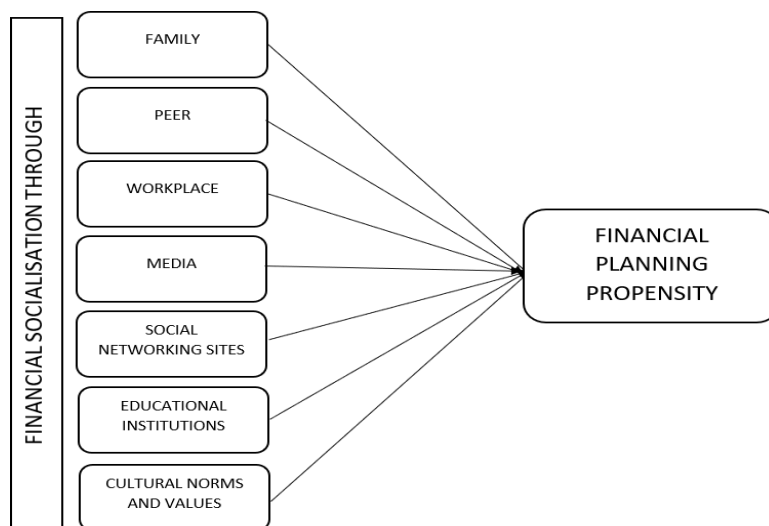


Figure 1 Conceptualization of influence of financial socialisation agents on financial planning propensity
Source: Developed by researcher

Family

Family is the primary source of any information for any individual. Studies have identified the crucial role played by family members in developing financial skills in a person. Young adults receive more financial information from their parents than anyone else. Parental teaching on financial matters can have a long-term impact in their lives as well as help them to be meet the future financial uncertainties.(Tang et al., 2015; Tang & Peter, 2015) The spending behaviour of young adults can be controlled by parental involvement and better build them as responsible individuals. Direct learning and observing how family members manage their finances is an efficient way of imparting positive financial attitudes among individuals.(Ameer & Khan, 2020a; Zhao & Zhang, 2020)

Peer

Peer group influence increase as a person grows. The tendency to follow friends will be more during the adolescent period. Prior researchers have identified that young children may exhibit irresponsible and materialistic buying behaviour following their peers. (Sohn et al., 2012a) Peer pressure can also increase an individual's propensity to plan and adapt to such behaviour so as to conform to group norms. Even though not as prominent as parental influence, peer influence is also crucial. Peers influence the minds of the young in positive and negative ways. (Shim et al., 2015a)

Workplace

One-third of the life of a person is spent at work, and the workplace environment can influence how an individual plans and manages financial affairs. Financial discussions with colleagues and managers and financial education received from the workplace can change a person's financial behaviour. Financial experiences at workplace also act as a strong influencer to make changes in future financial activities. (Ouimet & Tate, 2017; Wagner & Walstad, 2019) Role of workplace is a limited explored area that should be considered as it can greatly impact a person's financial future.

Media

Financial awareness from various media channels like television, newspaper, radio and internet can positively impact financial behaviour. It acts as a channel for conveying financial information and news, which are helpful in the financial decision-making process. (Churchill, Jr. & Moschis, 1979; Sohn et al., 2012b) Media can be effectively utilized to improve individuals' financial literacy rates by providing them with access to financial knowledge. The advertisements and information provided through various channels can significantly impact consumers' financial decision-making. (Godase et al., 2024; Sama, 2019)

Educational institution

Financial education received from schools, colleges or other financial institutions can impact a person's financial behaviour. (Hira, 2012) Lack of financial education leads to poor or irresponsible financial behaviour and attitude. (Bernheim et al., 2001) The importance of financial education is always a topic of discussion. Still, efforts are required to promote financial education in early childhood. (Shim et al., 2015b) As a financial socialisation agent, educational institutions are understudied and hence considered for the present study.

Social networking sites

With increasing internet penetration and smartphone usage, social media has become an integral part of the lives of individuals in Kerala. Online platforms like YouTube, WhatsApp, Facebook, Instagram and LinkedIn keep users updated about the world. Recent studies recognize the relevance of online platforms in improving people's financial literacy. (Jha, 2019) Through these networking sites, individuals get enough opportunities for information sharing, peer interaction, and advice-seeking related to financial knowledge. (Cao et al., 2020) Social networking sites positively impact financial decision-making among Indians. It could improve financial well-being. Financial content on social media positively impacts financial literacy. (Cao & Liu, 2017)

Cultural norms and values

Culture, traditions, and conventions influence human behaviour through social roles and interaction between basic human nature, cultural values and personality. (Matsumoto, 2007) Even financial behaviour is significantly influenced by cultural norms, values, conventions, and practices, which finally affects the financial well-being of an individual. Socio-cultural factors influence people's savings, spending, and investment through the socialization of societal norms and cultural traditions prevalent in their society. The study considers how these factors can change a person's intentions to make financial plans.

Conclusion And Implication

The financial socialisation process and its association with an individual's financial planning propensity is an understudied research area in personal finance. This paper fills the gap by investigating financial socialisation and identifying the significant influencers and their influence on financial planning behaviour. Most studies have stressed the role played by family, parents and peer groups even though they mentioned other socialisation agents. However, in the context of young individuals, their world is not limited to family or peer groups. When the whole world is considered a single village, a global village, the interconnectedness and interdependence of people, cultures, economies, and societies across the globe increases, and there arises a need for more comprehensive studies on various aspects of socialisation. So, this study identifies all the aspects of financial socialisation relevant to the current scenario. This conceptualisation of financial socialisation and its influence on financial planning propensity provides a comprehensive perspective that may help researchers and policymakers assess the unique roles played by financial socialisation agents – family, peers, workplace, media, online networking platforms,

educational institutions and cultural norms and values existing in the society. The influence of each of these agents is significant in shaping the financial behaviour of individuals, which will ultimately lead to their financial and overall well-being. However, no previous studies have developed a comprehensive model considering all these aspects. Even though the importance of financial literacy and financial management is day by day increasing, little efforts are put into actual practice to improve it. Today, with the advancement of technology and economy, where socialisation is much easier and simpler, financial knowledge sharing can be even simpler. In this regard, creating a comprehensive financial socialisation model is necessary for improving the financial planning propensity of Indians. Young adults usually tend to follow what is happening in the world. As there is limited exposure to financial affairs since birth, one may be unable to make responsible financial decisions once one gets into a job. In addition, the proposed conceptualisation can be used to assess the impact of each socialisation agent and its impact on the propensity to plan financially, thereby bringing a positive financial attitude and actual responsible financial behaviour to lead a peaceful life. This concept can also be used to establish and identify the most and the least influential agents of the financial socialisation process. A reranking can be done accordingly, as the prominent role of parental influence, as established in prior literature, may not be prominent among all groups. This study also provides several practical implications for different stakeholders. Financial planning is a crucial thing that every individual has to do. Recently, the need for planning one's finances has been emphasised everywhere. RBI has taken initiatives to improve the financial literacy of Indians. Still, many do not seriously consider the importance of money management. Materialism and impulsive buying behaviour put people into great financial trouble. When a society can transmit positive financial behaviour to growing generations, financial well-being can be easily attained. A positive attitude towards money can be a significant reason for positive financial behaviour. If there is no intention to make financial plans, actual behaviour is even more difficult. So, making the intention is crucial, and it is possible by socialising positive financial acts among the members of society.

In addition, the conceptualisation of the role of financial socialisation agents in improving financial planning propensity in the current paper suggests that young adults can be made financially responsible citizens by improving financial planning behaviour through societal interactions. Therefore, efforts must be taken to foster financial interaction at various levels of intermediaries to promote personal finance practices among individuals. Starting from family, a positive attitude towards money can be developed. Educational institutions can shape financial behaviour by providing financial education, which most schools or colleges do not usually provide. Peer groups can have a strong influence during childhood and adolescence. Job places and colleagues can bring positive changes in the management of finances. Media can provide much financial information to the whole society. The role of social media has changed, and its influence on individuals has grown like never before. This makes online networking platforms an even more potent agent of financial socialisation agent. The society in which a person lives can mould a person into a responsible citizen by promoting good financial habits by inculcating cultural norms and values. Furthermore, to help young adults develop an intention to make financial planning, financial literacy and education can be provided intentionally or not. Such practices may lead to a positive financial culture in the economy, and young adults will be better able to plan and manage money as they start to earn. Thus, the problems due to lack of financial planning financially can be removed to a great extent, and quality of life can be improved.

We have highlighted the importance of family dynamics, peer interactions, educational experiences, media influences, and cultural norms in shaping young adults' financial socialization experiences and their propensity to engage in financial planning. The implications of this study are significant for educators, policymakers and practitioners who are working towards financial empowerment, wellbeing and resilience among individuals. Initiatives can be made to enhance young adults' financial capabilities and skills. Policymakers can develop policies that support financial initiatives in society as a whole. Contribution of funds at a certain percentage of income towards retirement and a secured future should be made compulsory for individuals who cross a certain income level. Educators and curriculum developers should ensure that comprehensive training in financial literacy and planning skills is provided at schools, colleges, and universities. Practical learning, discussions, and real-life applications of financial practices can be incorporated into education to enhance young adults' practical financial skills, knowledge and decision-making abilities. Social media can provide financial advice, practical tips, and knowledge that are beneficial for making effective future financial plans. Digital platforms can empower financial planning skills and help younger people achieve their financial goals. Thus, through financial socialisation, individuals should be compelled to make financial goals, and achieving goals can make them financially independent and responsible. By recognizing the critical role of financial socialization in shaping young adults' financial planning propensity, young adults can be more confident in facing uncertainties and complexities in their future lives.

Limitations and Future Research

The study only provides a comprehensive model depicting the association between financial socialisation agents and financial planning propensity, and further studies in quantitative aspects are required to confirm the relationship. Even though the study identifies a strong influence of financial socialisation, it lacks empirical evidence to prove the same. The study is the first of its kind to go deeper into financial socialisation and their influence on planning behaviour. Future studies can be conducted comprehensively on influence of different financial socialising agent separately. Qualitative, quantitative and even mixed methodologies can be adopted by researchers to make a more comprehensive analysis. Scale development studies can be done by considering the important role of each influencer on financial socialisation.

Another aspect is that this study only considered young adults. More studies concentrating on students, adolescents, professionals, etc, can be conducted. Influence of demographic or psychological factors can be included in further studies. Future research that proposes a more comprehensive research model which examines the impacts of each element of financial socialisation on other aspects can be studied.

Irrespective of the above-mentioned limitations, the study puts light on the relevance of early financial socialisation and the need for financial education to improve financial knowledge, develop a positive attitude towards financial planning and lead a financially healthy life.

Reference

- Ameer, R., & Khan, R. (2020a).** Financial Socialization, Financial Literacy, and Financial Behavior of Adults in New Zealand. *Journal of Financial Counseling and Planning*, 31(2), 313–329. <https://doi.org/10.1891/JFCP-18-00042>
- Ameer, R., & Khan, R. (2020b).** Financial Socialization, Financial Literacy, and Financial Behavior of Adults in New Zealand. *Journal of Financial Counseling and Planning*, 31(2), 313–329. <https://doi.org/10.1891/JFCP-18-00042>
- Ameriks, J., Caplin, A., & Leahy, J. (2003a).** Wealth Accumulation and the Propensity to Plan. *The Quarterly Journal of Economics*, 118(3), 1007–1047. <https://doi.org/10.1162/00335530360698487>
- Ameriks, J., Caplin, A., & Leahy, J. (2003b).** Wealth Accumulation and the Propensity to Plan. *The Quarterly Journal of Economics*, 118(3), 1007–1047. <https://doi.org/10.1162/00335530360698487>
- Ameriks, J., Caplin, A., Leahy, J., & Ameriks Andrew Caplin John Leahy, J. (2002).** *Wealth Accumulation and the Propensity to Plan*. <http://www.tiaa-crefinstitute.orgFax:212-995-3932http://www.econ.nyu.edu/user/caplina/http://econ.bu.edu/leahy/>
- Amonhaemanon, D., & Isaramalai, S. (2020).** Boosting Financial Literacy: The Roles to Enhance Quality of Life. *ABAC Journal*.
- Bernheim, B. D., Garrett, D. M., & Maki, D. M. (2001).** Education and saving: The long-term effects of high school financial curriculum mandates. *Journal of Public Economics*, 80(3), 435–465. [https://doi.org/10.1016/S0047-2727\(00\)00120-1](https://doi.org/10.1016/S0047-2727(00)00120-1)
- Bird, C. L., Şener, A., & Coşkun, S. (2014).** Visualizing financial success: planning is key. *International Journal of Consumer Studies*, 38(6), 684–691. <https://doi.org/10.1111/IJCS.12141>
- Brounen, D., Koedijk, K. G., & Pownall, R. A. J. (2015).** Household Financial Planning and Savings Behavior. *Labor: Demographics & Economics of the Family EJournal*, 69, 95–107. <https://doi.org/10.1016/J.JIMONFIN.2016.06.011>
- Cao, Y., Gong, F., & Zeng, T. (2020).** Antecedents and Consequences of Using Social Media for Personal Finance. *Journal of Financial Counseling and Planning*, 31(1), 162–176. <https://doi.org/10.1891/JFCP-18-00049>
- Cao, Y., & Liu, J. (2017).** Financial Executive Orientation, Information Source, and Financial Satisfaction of Young Adults. *Journal of Financial Counseling and Planning*, 28(1), 5–19. <https://doi.org/10.1891/1052-3073.28.1.5>
- Chieffe, N., & Rakes, G. K. (1999).** An integrated model for financial planning. *Financial Services Review: The Journal of Individual Financial Management*, 8(4), 261–268–261–268. [https://doi.org/10.1016/S1057-0810\(00\)00044-5](https://doi.org/10.1016/S1057-0810(00)00044-5)

- Churchill, Jr., G. A., & Moschis, G. P. (1979).** Television and Interpersonal Influences on Adolescent Consumer Learning. *Journal of Consumer Research*, 6(1), 23. <https://doi.org/10.1086/208745>
- Godase, R., P. J., & Supriya, M. L. (2024).** Financial planning propensity in working adults: exploring the role of media. *Managerial Finance*, 50(2), 313–328. <https://doi.org/10.1108/MF-04-2023-0253>
- Goyal, K., Kumar, S., & Hoffmann, A. (2023).** The direct and indirect effects of financial socialization and psychological characteristics on young professionals' personal financial management behavior. *International Journal of Bank Marketing*, 41(7), 1550–1584. <https://doi.org/10.1108/IJBM-09-2022-0419>
- Hira, T. K. (2012).** Promoting sustainable financial behaviour: implications for education and research. *International Journal of Consumer Studies*, 36(5), 502–507. <https://doi.org/10.1111/J.1470-6431.2012.01115.X>
- Jayaraman, J. D., & Jambunathan, S. (2018).** Financial literacy among high school students: Evidence from India. <https://doi.org/10.1177/2047173418809712>, 17(3), 168–187.
- Jha, B. (2019).** The Role of Social Media Communication: Empirical Study of Online Purchase Intention of Financial Products. *Global Business Review*, 20(6), 1445–1461. <https://doi.org/10.1177/0972150919848912>
- Lee, J. M., & Kim, K. T. (2016).** The Role of Propensity to Plan on Retirement Savings and Asset Accumulation. *Family and Consumer Sciences Research Journal*, 45(1), 34–48. <https://doi.org/10.1111/FCSR.12179>
- Lynch, J. G., Netemeyer, R. G., Spiller, S. A., & Zammit, A. (2010).** A Generalizable Scale of Propensity to Plan: The Long and the Short of Planning for Time and for Money. *Journal of Consumer Research*, 37(1), 108–128. <https://doi.org/10.1086/649907>
- Matsumoto, D. (2007).** Culture, Context, and Behavior. *Journal of Personality*, 75(6), 1285–1320. <https://doi.org/10.1111/J.1467-6494.2007.00476.X>
- Ouimet, P., & Tate, G. (2017).** NBER WORKING PAPER SERIES LEARNING FROM COWORKERS: PEER EFFECTS ON INDIVIDUAL INVESTMENT DECISIONS *Learning from Coworkers: Peer Effects on Individual Investment Decisions*. <http://www.nber.org/papers/w24058>
- Parke, R. D., Leidy, M. S., Schofield, T. J., Miller, M. A., & Morris, K. L. (2008).** Socialization. *Encyclopedia of Infant and Early Childhood Development, Three-Volume Set*, 3, 224–235. <https://doi.org/10.1016/B978-012370877-9.00152-3>
- Sama, R. (2019).** Impact of Media Advertisements on Consumer Behaviour. *Journal of Creative Communications*, 14(1), 54–68. <https://doi.org/10.1177/0973258618822624/FORMAT/EPUB>
- Shim, S., Serido, J., Tang, C., & Card, N. (2015a).** Socialization processes and pathways to healthy financial development for emerging young adults. *Journal of Applied Developmental Psychology*, 38, 29–38. <https://doi.org/10.1016/J.APPDEV.2015.01.002>
- Shim, S., Serido, J., Tang, C., & Card, N. (2015b).** Socialization processes and pathways to healthy financial development for emerging young adults. *Journal of Applied Developmental Psychology*, 38, 29–38. <https://doi.org/10.1016/J.APPDEV.2015.01.002>
- Sohn, S. H., Joo, S. H., Grable, J. E., Lee, S., & Kim, M. (2012a).** Adolescents' financial literacy: The role of financial socialization agents, financial experiences, and money attitudes in shaping financial literacy among South Korean youth. *Journal of Adolescence*, 35(4), 969–980. <https://doi.org/10.1016/J.ADOLESCENCE.2012.02.002>
- Sohn, S. H., Joo, S. H., Grable, J. E., Lee, S., & Kim, M. (2012b).** Adolescents' financial literacy: The role of financial socialization agents, financial experiences, and money attitudes in shaping financial literacy among South Korean youth. *Journal of Adolescence*, 35(4), 969–980. <https://doi.org/10.1016/J.ADOLESCENCE.2012.02.002>
- Tang, N., Baker, A., & Peter, P. C. (2015).** Investigating the Disconnect between Financial Knowledge and Behavior: The Role of Parental Influence and Psychological Characteristics in Responsible Financial Behaviors among Young Adults. *Journal of Consumer Affairs*, 49(2), 376–406. <https://doi.org/10.1111/JOCA.12069>
- Tang, N., & Peter, P. C. (2015).** Financial knowledge acquisition among the young: The role of financial education, financial experience, and parents' financial experience. *Financial Services Review: The Journal of Individual Financial Management*, 24(2), 119–137. <https://doi.org/10.61190/FSR.V24I2.3237>

Vijaykumar, J. H. (2022). The Association of Financial Socialization with Financial Self-Efficacy and Autonomy: A Study of Young Students in India. *Journal of Family and Economic Issues*, 43(2), 397–414. <https://doi.org/10.1007/s10834-021-09797-x>

Wagner, J., & Walstad, W. B. (2019). The Effects of Financial Education on Short-Term and Long-Term Financial Behaviors. *Journal of Consumer Affairs*, 53(1), 234–259. <https://doi.org/10.1111/JOCA.12210>

Walsh, W. B. (1987). Person-environment congruence: A response to the Moos perspective. *Journal of Vocational Behavior*, 31(3), 347–352. [https://doi.org/10.1016/0001-8791\(87\)90050-9](https://doi.org/10.1016/0001-8791(87)90050-9)

Xiao, J. J., & O'Neill, B. (2018). Propensity to plan, financial capability, and financial satisfaction. *International Journal of Consumer Studies*, 42(5), 501–512. <https://doi.org/10.1111/IJCS.12461>

Zhao, H., & Zhang, L. (2020). Talking money at home: the value of family financial socialization. *International Journal of Bank Marketing*, 38(7), 1617–1634. <https://doi.org/10.1108/IJBM-04-2020-0174/FULL/PDF>

Time Management and Organizational Development: Special Reference to Banking Organizations in Jaffna District

Thaneeswaran, S
Manager
National Saving Bank, Sri Lanka.

Velnamby, T
Senior Professor
Faculty of Management Studies and
Commerce, University of Jaffna, Sri Lanka.

Abstract

Time is a critical asset for every firm in the commercial realm (Adebisi, 2013; Forbes, 2016). This is mostly due to the fact that time is integral to every organisational action that contributes to its strategic objectives. Effective management of this vital asset is essential for organisational survival and success. Time always elapses at a constant rate, although individuals frequently perceive a scarcity of it. Inadequate time management and inefficiency denote instances when managers and personnel appear to be engaged in work yet achieve no tangible results, such as the time used in locating papers. Occasionally, time wastage is implicit, as shown in the hours devoted to trivial and inconsequential tasks. The factors contributing to time wastage in an organisation must be accurately identified. The precise identification of these aspects guides managers to execute a stated plan for time management. Time management is a crucial method for enhancing efficiency, and literature on management and organisational behaviour underscores its significance. This management approach mitigates superfluous tasks, enhances organisation, facilitates delegation, and ultimately boosts productivity. Time management is not a discrete aspect of management; rather, its objective is to prevent time wastage and regulate work hours (Hashemizade, 2006). Time wastage is a primary factor contributing to the diminished growth of employees, particularly managers, within the workplace, and it warrants examination within the context of time management. Regarding time wastage, the duration allocated to relaxation or enjoyment is often considered. However, these periods are not squandered; instead, they serve as opportunities for rest and recovery to facilitate preparation for work. The objective of the quantitative research approach is to enhance objectivity, replicability, and generalisability of results, with a primary focus on prediction. Quantitative approaches are sometimes characterised as deductive, as they derive general generalisations about population features from statistical hypothesis testing. Banks use Organizational Development and Time Management to Measure employee time usage, Eliminate unproductive meetings, Free up executives' time for value creation, Time Management refers to managing time effectively so that the right time is allocated to the right activity, Effective time management allows individuals to assign specific time slots to activities as per their importance, Time Management refers to making the best use of time as time is always limited, One becomes more organized as a result of effective Time Management, Effective Time Management boosts an individual's morale and makes him confident, Better Time Management helps in better planning and eventually better forecasting, Time Management enables an individual to prioritize tasks and activities at workplace, Time Management helps an individual to adopt a planned approach in life.

Keywords: *Time Management, Organizational Development, Banking Industry, Jaffna*

Background of the Study

Time is a critical asset for every firm in the commercial realm (Adebisi, 2013; Forbes, 2016). This is mostly due to the fact that time is integral to every organisational action that contributes to its strategic objectives. Effective management of this vital asset is essential for organisational survival and success. Consequently, time management may be seen as a significant competitive asset that enhances organisational growth (Ahmed et al., 2012; Nonis et al., 2011). Effective time management is essential for every company to execute its activities efficiently. Enhanced operational efficiency via time management fosters organisational success. Research has empirically shown the correlation between time management techniques and organisational growth (Claessens et al., 2007; Miqdadi et al., 2014; Njagi and Malel, 2012; Nonis et al., 2011).

Time management methods are, however, shaped by cultural factors (Macan et al., 1990; Nonis and Sager, 2003). Consequently, varying cultural contexts may affect organisational time management strategies, thereby impacting overall organisational growth. The findings on the correlation between time management methods and organisational growth may be context-specific and, hence, not generalisable. The temporal orientation of a culture influences both the valuation and regulation of time (Arman and Adair, 2012; Bouncken, 2004; Kaufman-Scarborough, 2017; Onken, 1999).

The perception and management of time influence task development. Consequently, the varying conceptions of time and its management among cultures can provide significant challenges for a global or multinational organisation operating within diverse cultural contexts. Culturally divergent views towards time management may be detrimental in businesses, since they impact cross-cultural communication. Consequently, comprehending various attitudes or beliefs regarding time management is a crucial element in establishing or sustaining multicultural business partnerships. The research identifies two basic cultural categories regarding time: monochronic and polychronic civilisations (Hall, 1999; Harvey and Kamoche, 2004; Hirschman, 1987). In this categorisation, polychronicity denotes the degree to which individuals within a culture favour simultaneous engagement in several tasks or events, and see this choice as the optimal approach (Bluedorn et al., 1999; Nonis et al., 2011; Onken, 1999). Monochronicity denotes a cultural perspective in which individuals prioritise the completion of a single task over multitasking (Nonis et al., 2005). Monochronic cultures perceive time as linear and discrete, allowing for division into units, hence prioritising the execution of 'one task at a time' (Nonis et al., 2005, p. 412). These cultural biases impact organisational culture. This is especially true considering that national culture impacts organisational culture (Hofstede, 2001; Rosen, 2002). Rosen (2002) contends that national culture influences social interactions and power dynamics, both inside and outside formal institutions. National cultures are typically ingrained in personnel and affect organisational culture. National culture impacts managerial decision-making, leadership approaches, and human resource management techniques (Li et al., 2001; Willmott, 2000).

Research Problem

A comprehensive theoretical framework supporting time management and its implementation in the banking sector was necessary for this research. Macan et al. (2015). Time management has historically been linked to enhanced personal and organisational productivity by discipline and the strategic prioritising of objectives (Drucker, 1967; MacKenzie, 1997; McCay, 1959). Numerous scholars have acknowledged that time is a globally intricate phenomena that exists independently of management (Ates, Garengo, Cocca, & Bititci, 2013; Claessens, Eerde, Rutte, & Roe, 2007; Hellsten, 2012; Schwartz, 2007). Time management, albeit a problematic notion when taken literally, serves as a widely accepted term for many management practices aimed at enhancing overall performance and well-being. Specifically, time management underscores the "efficient utilisation of time" in pursuit of corporate objectives (Claessens et al., 2007).

Growth rates quantify the yearly percentage change in a variable, such as revenues or investments. Growth rates are advantageous for evaluating a company's progress and forecasting future advancement. The compound annual growth rate (CAGR) is the metric commonly utilised to evaluate the growth of an investment or organisation. This study aims to ascertain the influence of time management on the organisational growth of the banking industry in the Jaffna District. The research issue statement is: "How to enhance the time management system within the organisational development of the banking sector in the Jaffna District."

Research Questions

- What are the factors affecting time management and development of banking sector in Jaffna District?
- Does the time management impact on development of banking sector in Jaffna District?
- Does the relationship between time management and development of banking sector in Jaffna District?

Research Objectives

- To identify the factors affecting time management and development of banking sector in Jaffna District
- To find out the impact of time management on development of banking sector in Jaffna District
- To find out the relationship between time management and development of banking sector in Jaffna District

Literature Review

Research has mostly focused on controlled and predictable contexts for data collection, while still defining time management and its implications. Previous research on time management focused mostly on CEOs and senior managers as the main users (Drucker, 1967; McCay, 1959). Recent studies have emphasised the propensity of researchers to derive their conclusions regarding time management from specific demographics, including student populations (Bond & Feather, 1988; Eilam & Aharon, 2003; Hlavac, Peterson, & Piscioneri, 2010; Kelly, 2002), employees of large organisations, governmental bodies, and academic institutions (Green & Skinner, 2005; Macan, 1994, 1996), educators (Peeters & Rutte, 2005), and various sectors within the medical field (Covic, Adamson, Lincoln, Although the generic/populist time-management literature may be relevant to a wide array of the workforce (Allen, 2003; Black, 1988; Covey et al., 1994; Fiore, 1989; MacKenzie, 1997), limited research

has concentrated on the time management practices of SBOMs within the small-business context. It emphasises that the banking business may be rapid, volatile, and often responsive (Chittithaworn et al., 2011; Southerton, 2007). The performance of banking industries largely depends on the role of managers in sustaining or growing the business and addressing the evolving requirements of clients (Beaver, 2007; Beaver & Jennings, 2005; Pansiri & Temtime, 2010). The time-management practices discussed in this research review may significantly influence a business's success or failure, since they can enhance productivity, profitability, and growth (Adebisi, 2013; Arnold & Pulisch, 2004). The primary challenge for time-management research to maintain relevance is to transcend the "mechanics of time management" and adopt a more comprehensive theoretical framework (Burt et al., 2009; Claessens et al., 2009). The Time Scale (Burt et al., 2009) exemplifies a progressive approach to time management research and serves as a contemporary tool that considers the impact of context and working environment on individuals' time-management practices. This research significantly contributes to the literature and practice of time management in workplace environments by analysing the influence of managers, personality traits, and the operational environment on their time-management behaviours, an area that has been largely neglected by prior studies. Furthermore, examining outcomes alongside influences offers a more comprehensive understanding of the advantages and incentives for the adoption of time-management activities related to SBOMs.

Research Methodology

The convenience sampling approach has been employed to pick respondents. This study employed convenience sampling. Convenience sampling denotes a non-probability method employed by a researcher to collect statistical data from a community. This selection method is based on the accessibility of obtaining statistical data. Instead of collecting a more precise dataset from the community, the researcher just obtains data from individuals in proximity (Malhotra, 2007).

Data Analysis

As it is being the questionnaire to evaluate the time management and organizational development, suitable data sample was selected from the employees in Northern part. 411 questionnaires were issued and collected from employees.

On the analysis carried out among the 411 samples, 41.4% of the sample represent the people who have worked banking Assistant I, 12.7% sample represent the employees who have worked banking assistant II. And On the analysis carried out among the 411 samples, 52.8% of the sample represent the people who have experience 5 – 10 years and 22.6% sample represent the employees who have experience 10 – 15 years.

Correlation analysis is a statistical analysis, which statistically measures the extent the nature of the relationship between two variables. Using a sample of 411 respondents, the correlation study shows how different time management techniques relate to Organisational Development metrics. "Delivering your sense of time and Identify your long-term goals" has the strongest correlation, with a significant Pearson correlation of 0.685 ($p < 0.001$). This suggests that achieving long-term goals is closely linked to making effective use of your time. "Manage your meetings" (0.284, $p < 0.001$) and "Manage your health" (0.303, $p < 0.001$) are two more noteworthy correlations that show strong positive associations with organisational growth. Other variables that show positive, if smaller, relationships with organisational success include "Make medium term plans" (0.551, $p = 0.005$), "Plan the day" (0.169, $p = 0.039$), and "Make the best use of your time" (0.200, $p = 0.014$). Although they have smaller correlation values, other factors like "Delegate effectively" (0.150, $p = 0.034$) and "Organise workload" (0.191, $p = 0.019$) highlight the link between time management techniques and organisational effectiveness. All things considered, the results show how important time management abilities are for building organisational growth, with a number of practices showing strong relationships that imply efficient time management helps organisations reach their objectives.

Numerous noteworthy connections are shown by the correlation study between different facets of organisational development and time management techniques. With a Pearson correlation value of 0.911 ($p = 0.041$), the variable "Product and Service Quality / Service Delivery" had the greatest association with time management, indicating a close relationship between better quality and service delivery results and efficient time management. Furthermore, there are strong relationships between "Action Plan" (0.852, $p < 0.001$), "Motivation and the Vision" (0.841, $p < 0.001$), and "Employee Development" (0.836, $p < 0.001$), underscoring the importance of time management in strategic planning and cultivating a driven workforce. "Decision Making" (0.768, $p = 0.036$), "Training and Development" (0.789, $p = 0.038$), and "Teamwork" (0.741, $p = 0.036$) are further significant associations that highlight the role that time management abilities have in improving employee cooperation and decision-making processes. The results further support the notion that efficient time management is essential for promoting overall organisational performance and successfully managing risks by showing positive relationships

with "Effectiveness" (0.741, $p = 0.042$) and "Risk Management" (0.761, $p = 0.037$). All things considered, the study shows that time management techniques have a strong correlation with a number of organisational development aspects, indicating that strengthening these abilities might result in improved organisational success and performance.

Conclusion and Recommendations

To enhance productivity and effectiveness, banks should integrate **Organizational Development** and **Time Management** strategies in the following ways:

- **Measure Employee Time Usage:** Implement systems to track how employees allocate their time across tasks. This data can help identify areas where efficiency can be improved.
- **Eliminate Unproductive Meetings:** Review the frequency and duration of meetings to reduce unnecessary gatherings, allowing employees to focus on high-priority tasks.
- **Free Up Executives' Time for Value Creation:** Delegate routine tasks to junior staff and automate processes where possible, enabling executives to concentrate on strategic planning and value-adding activities.
- **Effective Time Management:** Encourage a culture of effective time management where employees are trained to allocate appropriate time slots to activities based on their importance, ensuring critical tasks are prioritized.
- **Organizational Skills:** Foster organizational skills among staff through workshops and training, as effective time management leads to improved organization and reduced stress levels.

By adopting these comprehensive recommendations, banks can create an environment that not only enhances individual productivity but also fosters a culture of continuous improvement and adaptability. Ultimately, effective integration of organizational development and time management strategies will lead to improved performance, employee satisfaction, and a more resilient organization that can thrive in a competitive landscape.

References

- Achanga, P., Shehab, E., Roy, R., & Nelder, G. (2016). Critical success factors for lean implementation within SMEs. *Journal of Manufacturing Technology Management*, 17(4), 460-471.
- Adams, S., J. M. , & Van Eerde, W. (2019). Time use in Spain: Is polychronicity a cultural phenomenon? *Journal of Managerial Psychology*, 25(7), 764-776
- Bluedorn, A. (2017). Polychronicity, individuals, and organizations. *Workplace Temporalities*, 179-222.
- Blackburn, R. A., Hart, M., & Wainwright, T. (2018). Small business performance: Business, strategy and owner manager characteristics. *Journal of Small Business and Enterprise Development*, 20(1), 8-27.
- Claessens, B., Roe, R. A., & Rutte, C. (2019). Time management: Logic, effectiveness and challenges. In R. A. Roe, M. J. Waller & S. R. Clegg (Eds.), *Time in Organizational Research* (1 ed.). New York: Routledge
- Dodd, P., & Sundheim, D. (2015). *The 25 best time management tools & techniques: How to get more done without driving yourself crazy*. Chelsea: Peak Performance Press, Inc.
- Southerton, D. (2017). Time pressure, technology and gender: The conditioning of temporal experiences in the UK. *Equal Opportunities International*, 26(2), 113-128.
- Tannenbaum R and Davis S (2019). Values, man, and organizations. *Industrial Management Review* 10: 67–83.
- Thrift N (2005) *Knowing Capitalism*. London: SAGE.
- Trist EL, Higgin GW, Murray H and Pollock AB (2015). *Organisational Choice*. London: Tavistock.
- Van Nistelrooij A and Sminia H (2010) Organization development: What's actually happening? *Journal of Change Management* 10(4): 393–405.
- Watson TJ (2017). *Sociology, Work and Industry*, 3rd edn. London: Routledge.
- Weick KE (2000) Emergent change as a universal in organisations. In: Beer M and Nohria N (eds) *Breaking the Code of Change*. Boston, MA: Harvard Business School Press.
- Weick KE and Quinn RE (2015). Organizational change and development. *Annual Review of Psychology* 50: 361–386.
- Weisbord M (1987) *Productive Workplaces*. San Francisco, CA: Jossey-Bass.

- Werkman R (2018).** Reinventing organization development: How a sensemaking perspective can enrich OD theories and interventions. *Journal of Change Management* 10(4): 421–438.
- Wheatley MJ (2015).** *Leadership and the New Science: Learning about Organization from an Orderly Universe.* San Francisco: Berrett-Koehler.
- White L and Rhodeback MJ (2015).** Ethical dilemmas in organization development: A crosscultural analysis. *Journal of Business Ethics* 11: 663–670. Wilson DC (1992) *A Strategy of Change.* London: Routledge.
- Wirtenberg J, Abrams L and Ott C (2019).** Assessing the field of organization development. *Journal of Applied Behavioral Science* 40(4): 465–479.
- Wirtenberg J, Abrams L and Ott C (2014).** Assessing the field of organization development. *Journal of Applied Behavioral Science* 40(4): 465–479.
- Wirtenberg J, Lipsky D, Abrams L, Conway M and Slepian J (2017).** The future of organization development: Enabling sustainable business performance through people. *Organization Development Journal* 25(2): 7–22.
- Woodman R (2019).** Organization change and development: New arenas for inquiry and action. *Journal of Management* 15: 205–228.
- Wooten KC and White LP (2019).** Linking OD's philosophy with justice theory: Postmodern implications. *Journal of Organizational Change Management* 12(1): 7–20.

Bridging the Disability Inclusion Gap of Entrepreneurs with Disabilities through Social Media Marketing: Empirical Evidence from Kerala

Shameema A P

Research Scholar Research and PG
Department of Commerce MES
Keveeyam College, Valanchery
Malappuram, Kerala, India

Dr. P.C. Santhosh Babu

Assistant Professor and Head, Research and
PG Department of Commerce
MES Keveeyam College, Valanchery
Malappuram, Kerala, India

Abstract

Social Media Marketing (SMM) has an inevitable role in the digital transformation of business among entrepreneurs, especially the new bunch of entrepreneurs called entrepreneurs with disabilities (EWDs). They are being excluded and facing barriers mainly because of the inaccessible society. This study attempts to analyse the effectiveness of SMM among EWDs in the central region of Kerala in three dimensions: promotion, sales, and customer relationship management (CRM). It also examines how SMM facilitates bridging the disability inclusion gap in various marketing activities. The course of the present study unveils significant findings and makes relevant contributions to existing literature and academic disciplines. First, it focuses on and investigates a way to ensure disability inclusion, which can improve the quality of life of persons with disabilities. Secondly, unlike the earlier studies, this research paper connected social media usage in marketing activities among EWDs with their disability inclusion. Thirdly, the findings of the study provide recommendations for authorities and policymakers and a basis for future research. In this context, the present study makes use of structured interview schedule, to collect the data from 70 micro and small-level EWDs from central Kerala to try and analyse the effectiveness of SMM and ascertain the extent to which it facilitates bridging the disability inclusion gap. According to the results, SMM is highly effective among such entrepreneurs. The correlation analysis proved that SMM significantly bridges the disability inclusion gap in marketing-related activities. The study also underlined the urgent need for effective action plans to provide awareness and training on SMM methods, as these are crucial for the survival of the EWD business in the digitalised world.

Keywords: *Social Media Marketing, Entrepreneurs with disabilities, Disability inclusion, Disability inclusion gap, Social inclusion, Kerala*

Introduction

The era of digitalisation asks for digital excellence in every business domain for better performance and longer existence. When it comes to marketing, it highly demands changes from traditional marketing methods and keeping in line with the trends. In the last decades, social media platforms have become leading communication pathways and thus adapted them as effective marketing tools (Bashar et al., 2012). Hence, SMM accelerated the digital transformation of business and has an inevitable role in the growth and success of today's business (Eltayib & Bhimani, 2018). SMM can be defined as "the use of social media platforms to promote a product or service" (Felix et al., 2017). It has the potential to make marketing-related activities easier for entrepreneurs, create brand awareness and promotion, better customer relationships, and increase sales to remain competitive (Jones et al., 2015), especially for those who face accessibility problems in society. More specifically, persons with disabilities (PWDs) have to experience physical challenges, and society restricts their participation and puts them through many complications, mainly because of disabling barriers. In such a situation, social media can break down the barriers faced by PWDs (Ellis & Mike, 2017), and it facilitates social inclusion for them (Manzoor & Vimarlund, 2018).

The global prevalence rate of disability is approximately 15% (World Health Organization & World Bank, 2011), and disability is the experience of any condition that makes it harder for a person to engage in specific activities or to have access reasonably within a given society (Francis & Silvers, 2016). Persons with disabilities often face social and physical barriers that make it difficult for them to move around, hear, understand others, speak, or communicate (Stough et al., 2015). They experience inequalities such as discrimination and unfair treatment from society. Additionally, they encounter difficulties in accessing different locations due to the inaccessibility and inability of society to fulfil their biological needs (Baffoe, 2013; Çaynak & Özer, 2021; Harris & Simon, 2010; Temple & Brandon, 2009). In this context, entrepreneurship is an excellent alternative for persons with disabilities because of its greater control, flexibility, freedom, and independence (Cooney, 2008; Pagán, 2009), and it attracts more persons with disabilities into the field of entrepreneurship. Here, EWDs are emerging bunch of entrepreneurs

with physical, visual, hearing, speech, intellectual, or multiple impairments who run businesses to make a profit. The earlier studies noted the problems and barriers EWDs still face today. Rajamohan et al., 2020 listed their health, financial, and marketing-related problems, and Yakiah & Sakriya, (2020) stressed the problem of advertisement of their products or services. Even though they start the business by combatting challenging physical conditions, they face too many constraints to sustain their business. Marketing is one of the challenging business operations and takes more effort (McCarthy & Perreault, 2004), it is challenging for EWDs to cope with the wide variety of activities in this non-disabled friendly society, leading to business failure.

The above points narrate the presence of disability inclusion gaps in society. There is a gap between the inclusion of persons with disabilities and non-disabled people, and they have to put extra effort and assistance into reaching potential customers and delivering their products or services. So, they struggle to market their products efficiently and compete with other entrepreneurs. Fortunately, technological advancements and increased internet penetration have allowed the company to market its products efficiently online. It facilitated them to confront the dominant discourse and made their communication and visibility easier to promote social inclusion (Bonilla-del-Río et al., 2022). Hence, this study highlighted the usage of SMM among EWDs.

The social media platforms like Facebook, Twitter, YouTube, and numerous others have begun to revolutionise the state of marketing and advertising (Hanna et al., 2011), by promoting products or services by sharing content, attracting potential customers, maintaining them through proper and diverse communication options, and prompting them to buy those products or services. The application of technological advancements opens a means to get over the challenges of PWDs (Kitching & Cowling, 2019), and such mobile social networking applications and digital platforms integrate them into society and influence their social connectedness and well-being (Kim & Zhu, 2020). Considering the above points, this research paper tries to answer the research question: What effect does SMM have on bridging the disability inclusion gap of EWDs in marketing-related activities?

So, it is significant to know to what extent it works to eliminate the barriers in various marketing activities like limited reach to customers, geographical areas and time boundaries, massive budget for direct selling, face-to-face communication and travelling problems, over-dependence on relatives or friends, etc. Thus, this study attempts to analyse the effectiveness of SMM among EWDs in the central region of Kerala in three dimensions: promotion, sales, and customer relationship management (CRM). It also examines how SMM facilitates bridging the disability inclusion gap in various marketing activities. The course of the present study unveils significant findings and makes relevant contributions to existing literature and academic disciplines. First, it focuses on and investigates a way to ensure disability inclusion, which can improve the quality of life of persons with disabilities. Secondly, unlike the earlier studies, this research paper connected social media usage in marketing activities among EWDs with their disability inclusion. Thirdly, the findings of the study provide recommendations for authorities and policymakers and a basis for future research.

Review of Literature

Social Media Marketing

Venkatraman (2017) discussed the evolution of social media and marketing platforms and their metrics and effectiveness. Jamil et al. (2022) pointed out the importance and benefits of SMM. SMM is cost-effective, and companies can increase brand loyalty by reducing customer communication gaps. Bhosale (2020) analysed the usage of SMM for small businesses and suggested that small business enterprises should introduce new technologies for marketing activities to survive such enterprises. Another study by Asrath (2018) examined the advantages and disadvantages of SMM. The advantages pointed out by the researchers are cost-related, interactivity, targeted market, customer service, etc. The disadvantages include time-consuming, trademark and copyright issues, trust, privacy and security issues, negative feedback, etc. On the other hand, Kariapper (2020) was attempted to find the answer to how SMM affects the purchasing decision from the customer's viewpoint and a significant influence between the variables was found. The study was conducted in Sri Lanka and advised entrepreneurs to use better marketing techniques to succeed. While coming into the effectiveness of social media as a tool for marketing, Oyza & M. Edwin (2015) in their study proved that it is more effective than traditional marketing. It makes interactions with customers beyond distances easy and creates awareness about the products and services. Shabbir et al. (2016) concludes that social media has completely transformed the way businesses are and has become the most efficient and effective tool for sustaining the success of entrepreneurs. Small business entrepreneurs use SMM to advertise and build publicity for their products and services.

Disability Inclusion and Gap

Grönvik (2007) examines the definitions of disability by various researchers. The study classifies the definitions into five categories: functional, relative, social model of disability, administrative, and subjective. Among these relative definitions, the social model of disability points out that the disability appears when an impairment has the presence of barriers which restrict them from fully and equally getting involved in society.

Oliver (2013) addressed the social model of disability and stated that society's incapacity causes the difficulties faced by an individual with disabilities to rebuild society by his/her conditions. It emphasises that society should include PWDs equally by removing barriers that hinder their full participation. Scheer et al. (2003) examined the access barriers for persons with disabilities, which mainly highlighted environmental and structural barriers. Transportation is a significant environmental barrier that highly affects those who use wheeled mobility devices. Fitzgerald (2018) discusses the barriers disabled people face when participating in sports. In the study, barriers are listed on impairment wise. That is, deaf people, lack adaptations, communication barriers, lack of interpreters, etc. In the case of people with physical disabilities, they lack transportation facilities and limited physical accessibility, and visually impaired people also face barriers to inclusion. Rimmerman (2013) defines disability inclusion as "being accepted and recognised as an individual beyond the disability by having personal relationships with family, friends and acquaintances and having involved in recreation and social activities with appropriate living accommodation, employment and appropriate formal and informal support."

Objectives

- To analyse the effectiveness of social media marketing among EWDs in Kerala.
- To study the extent to which social media marketing facilitates bridging the disability inclusion gap in marketing-related activities of EWDs in Kerala.

Hypothesis

H1: SMM bridges the disability inclusion gap in marketing-related activities of EWDs.

Research Methodology

The present study is a cross-sectional study that tends to examine the relationship between SMM and disability inclusion based on both primary and secondary data. The study was conducted among micro and small-level EWDs in the central districts of Kerala, including Palakkad, Thrissur, and Ernakulam. The secondary data was collected from journals, magazines, reports, and websites, and the primary data was from 70 samples through interviews through online means using a structured interview schedule, which is obtained by snowball sampling. Four statements were included in each dimension of the independent variable SMM, such as promotion, sales, and CRM, to measure the effectiveness of SMM and a self-administered scale including 12 statements was used to understand how much SMM facilitates in bridging the disability inclusion gap (dependent variable) in marketing activities among EWDs by using five-point Likert scale from very little extend to a very large extent. To ensure the reliability of the scales developed, a reliability analysis was made for each item. In the case of the 12 items used to measure the effectiveness of SMM and disability inclusion, the Cronbach's Alpha values were .906 and .942, respectively. So, it is clear that all items used here are reliable and acceptable according to the criteria given by (Lombard et al., 2002), a value of .90 or greater is always acceptable. Finally, the collected data were analysed using IBM SPSS Statistics version 26.

Results and Discussions

Table 1: Socio-Demographic Characteristics of Respondents

Socio-demographic		Frequency	Percent
Gender	Male	33	47.1
	Female	37	52.9
	Total	70	100
Age	Below 25	8	11.4
	26-35	24	34.3
	36-45	29	41.4
	Above 45	9	12.9
	Total	70	100
Educational Qualification	Up to Primary/ equivalent	11	15.7
	Upper Primary/ equivalent	9	12.9
	10th level/ equivalent	16	22.9
	Higher Secondary/ equivalent	16	22.9
	Under Graduate	13	18.6
	Post Graduate& above	5	7.1
	Total	70	100

Type of Disability	Physical	48	68.6
	Visual	10	14.3
	Hearing and Speech	12	17.1
	Total	70	100

Percentage of Disability	Up to 40	2	2.9
	41-60	16	22.9
	61-80	29	41.4
	Above 80	23	32.9
	Total	70	100

Source: Table created by Authors

The table presents the socio-demographic characteristics of entrepreneurs with disabilities (EWDs) among the respondents. Notably, a majority of the participants were female (52.9%), with the largest age groups being 36-45 years (41.4%) and 26-35 years (34.3%). In terms of educational qualifications, most respondents had completed 10th level or equivalent and higher secondary education, each accounting for 22.9%, while those holding postgraduate degrees were relatively fewer, comprising only 7.1% of the sample. The predominant type of disability among the respondents was physical (68.6%), followed by hearing and speech impairments (17.1%) and visual impairments (14.3%). Additionally, a significant portion of the respondents reported a severe disability level, with 60% or more classified as having a percentage of disability above 60. This demographic profile highlights the diverse backgrounds and challenges faced by EWDs in their entrepreneurial endeavours.

Table 2: Profile of Business and SMM

		Percent
Period of running the business	Less than one year	28.6
	1-3 years	38.6
	Above 3 years	32.8
	Total	100
Nature of business activity	Manufacturing	57.1
	Service	21.4
	Trading	21.5
	Total	100
Business operations	Home-based	77.1
	Enterprise-based	22.9
	Total	100
Form of business ownership	Sole proprietorship	85.7
	Partnership	14.3
	Total	100
Monthly turnover from business	Less than Rs 20000	62.9
	Rs 20001-40000	31.4
	Rs 40001-60000	2.9
	Above Rs 60000	2.9
	Total	100
Period of starting SMM	Less than 6 Months	10.0
	6-12 Months	28.6
	13-18 Months	21.4
	Above 18 Months	40.0
	Total	100
Social media platforms used for marketing	Facebook	28.1
	Instagram	21.9
	Twitter	5.4
	WhatsApp	27.7
	YouTube	8.7
	Snapchat	5.4
	LinkedIn	2.8
	Total	100

Method of content sharing	Writeup	35.5
	Photo sharing	39.5
	Video sharing	20.9
	Live streaming	4.1
	Total	100

Source: Table created by Authors

The table presents a comprehensive overview of the business and social media marketing (SMM) profiles of entrepreneurs with disabilities (EWDs). Most respondents have been operating their businesses for 1 to 3 years, primarily in the manufacturing sector (57.1%), with a significant majority (77.1%) running home-based operations as sole proprietors (85.7%). Financially, many report a monthly turnover of less than Rs 20,000, indicating a need for growth in revenue. The adoption of social media marketing has seen considerable engagement, with 40% starting their SMM activities over 18 months ago. Facebook, WhatsApp, and Instagram emerge as the preferred platforms for marketing, while photo sharing and written content are the most common methods of content sharing. These findings highlight the evolving landscape of business operations among EWDs and emphasize the importance of social media in enhancing their marketing efforts.

Table 3: Descriptive Statistics of Effectiveness of SMM Dimension Wise

	N	Minimum	Maximum	Mean	Std. Deviation
Promotion	70	1.00	5.00	4.61	.610
Sales	70	2.00	5.00	4.26	.72786
CRM	70	1.75	5.00	4.38	.66993
Overall mean				4.4164	

Source: Table created by Authors

The above table shows descriptive statistics for three dimensions of SMM, such as promotion, sales, and CRM, as well as an overall mean. The data indicate that respondents view SMM positively across all measured dimensions. The mean score for all three is above 4, indicating a strong effectiveness of SMM. Regarding promotion, the mean score of 4.61 shows that the respondents perceive SMM as highly effective for promoting their products and services. CRM and sales show a mean score of 4.38 and 4.26, respectively, illustrating that SMM effectively manages customer relationships and boosts sales. The std. deviation is slightly higher in the sales dimension, indicating differences in the sales outcomes among the respondents.

Table 4: Descriptive Statistics of Effectiveness of SMM

Dimension	Statements	Mean
Promotion	SMM is a very cost-effective method for promoting products/services	4.71
	I feel very flexible on content sharing related to products/services	4.59
	SMM is an easy way to increase awareness about my products/services among customers	4.60
	My products/services are also promoted through sharing the content by friends and customers	4.53
Sales	I can sell my products/services in a very easy and convenient manner	4.29
	SMM prompts customers to buy my products/services	4.20
	SMM increases the sales volume of my products/services	4.30
	I can generate profits through SMM	4.26
CRM	I can reach and attract a large number of audiences through SMM	4.60
	I can communicate and interact very frequently and efficiently with customers	4.56
	I feel more connected to customers by reacting to their queries and feedback instantly	4.33
	I can build long-term relationships with customers through SMM	4.03

Source: Table created by Authors

The above table shows descriptive statistics of the statements regarding understanding the effectiveness of SMM in three dimensions such as promotion, sales, and CRM, measured through a five-point Likert scale. Here, it is clear that all statements under each dimension have a mean score of above four, which means high effectiveness

among the respondents. “SMM is a very cost-effective method for promoting products/services” is the statement that obtained the highest mean value (4.71), and “I can build a long-term relationship with customers through SMM” has the lowest mean value (4.03).

Table 5: Correlation between SMM and Disability Inclusion

		Disability inclusion	SMM
Disability inclusion	Pearson Correlation	1	.752**
	Sig. (1-tailed)		.000
	N	70	70
SMM	Pearson Correlation	.752**	1
	Sig. (1-tailed)	.000	
	N	70	70

** . Correlation is significant at the 0.01 level (1-tailed).

Source: Table created by Authors

Here, the table shows the correlation between SMM and disability inclusion, which indicates the Pearson correlation coefficient as .752 and p-value as .000 ($p < .01$). It exhibits a positive linear relationship between the variables and accepts the hypothesis. H1, i.e., SMM bridges the disability inclusion gap in marketing-related activities of EWDs. Thus, it has been proved that SMM positively correlates with bridging the disability inclusion gap significantly.

Findings of the Study

The study revealed that SMM is highly effective for micro- and small-level EWDs in the central region of Kerala, particularly in the areas of promotion, sales, and CRM. In the case of promotion, SMM allows EWDs to promote their products and services at a significantly lower cost compared to traditional marketing channels. The study highlights that EWDs find SMM to be highly flexible for sharing content and generating awareness, with user-generated content (e.g., sharing by friends or customers) playing a crucial role in expanding their market reach. This aspect of SMM helps to overcome the challenges of physical mobility and enables EWDs to reach a wider audience from the comfort of their homes or accessible workplaces. In respect to sales, the findings show that SMM is effective in facilitating sales activities among EWDs, with many respondents noting that it simplifies the sales process and enhances profitability. By offering a direct and convenient sales channel, SMM reduces the dependence on physical outlets, making it easier for EWDs to operate businesses without the need for extensive physical infrastructure. This is especially beneficial in reducing travel-related challenges and costs associated with traditional sales methods. Furthermore, SMM has proven to be an invaluable tool for fostering meaningful customer relationships, with respondents indicating a high level of satisfaction in their ability to connect, communicate, and engage with customers through social media platforms. Instant feedback mechanisms, such as comments and messages, allow EWDs to respond quickly to customer inquiries and feedback, helping them build long-term relationships. This real-time interaction enhances customer trust and loyalty, which are critical for sustaining small businesses.

Perhaps one of the most significant findings of this study is the strong positive correlation between SMM and the reduction of the disability inclusion gap in marketing-related activities. The Pearson correlation coefficient of 0.752 ($p < 0.001$) indicates a strong relationship between the use of SMM and the inclusion of EWDs in the broader business community. Thus, SMM helps mitigate various barriers such as travel difficulties, over-dependence on others, physical accessibility issues, and communication challenges. It empowers EWDs to engage more confidently in marketing activities, enhancing their sense of independence and competence in a competitive marketplace.

Conclusion and Suggestions

In the age of rapid changes and digitalisation of the whole range of marketing activities, this research paper provided insight into the effectiveness of SMM among micro and small-level EWDs in the central region of Kerala. While EWDs face significant challenges in marketing activities ranging from mobility restrictions to communication barriers, a lack of accessibility in traditional marketing platforms, and an absence of a disabled-friendly business environment, the digitalisation of businesses offers an unprecedented opportunity to overcome these barriers. The results of this study clearly demonstrate that SMM is highly effective for EWDs, particularly in the dimensions of promotion, sales, and CRM. These findings suggest that digital marketing tools not only enhance visibility and awareness for micro and small businesses but also enable EWDs to efficiently manage customer interactions and relationships, which were traditionally difficult due to physical and societal barriers.

Thus, the study concludes that SMM is not merely a marketing tool but a critical enabler for bridging the disability inclusion gap and enhancing the confidence and self-sufficiency of EWDs.

To further amplify the positive effects of SMM, the study suggests several key measures. Comprehensive training and action plans be developed to enhance the digital marketing skills of EWDs, focusing on the full potential of SMM. These training programs should be customized to address the specific needs of EWDs, providing them with practical tools to manage their businesses independently. In addition, creating awareness about the advantages of SMM for EWDs can further empower them to embrace digital marketing. Governments and institutions should also consider incentivizing the adoption of digital marketing among EWDs through grants, subsidies, or tax benefits, ensuring they have the necessary resources to invest in technology and infrastructure.

Limitations and Scope for Further Research

The present study specifically examined micro- and small-level entrepreneurs with disabilities (EWDs) in the central districts of Kerala. To enhance the findings and applicability of the research, future studies could explore this relationship across different geographical regions and expand the sample size for more generalizable results. Additionally, further investigations could assess the effectiveness of social media marketing (SMM) beyond the dimensions of promotion, sales, and customer relationship management (CRM). Understanding how SMM contributes to enhancing the competencies of EWDs in various contexts would provide a more comprehensive view of its impact on their entrepreneurial success.

References

- Asrath, A. (2018). Social Media Marketing: Advantages and Disadvantages. *Shanlax International Journal of Management*, 6, 152-158. <https://doi.org/10.5281/zenodo.1461333>
- Baffoe, M. (2013). Stigma, Discrimination & Marginalization: Gateways to Oppression of Persons with Disabilities in Ghana, West Africa. *Journal of Educational and Social Research*, 3. <https://doi.org/10.5901/jesr.2013.v3n1p187>
- Bashar, A., Ahmad, I., & Wasiq, M. (2012). Effectiveness of Social Media as a Marketing Tool: An Empirical Study. *Management Research*, 11.
- Bhosale, M. J. (2020). *Usage of Social Media Marketing for Small Business: A comparative analysis of various actions on Social Media*. 8.
- Bonilla-del-Río, M., Figuereo-Benítez, J. C., & García-Prieto, V. (2022). Influencers with physical disabilities on Instagram: Features, visibility and business collaboration. *El Profesional de La Información*, e310612. <https://doi.org/10.3145/epi.2022.nov.12>
- Çaynak, S., & Özer, Z. (2021). Stigma for disabled individuals and their family: A systematic review. *Perspect Psychiatr Care*, 1–10. <https://doi.org/10.1111/ppc.12893>
- Cooney, T. (2008). Entrepreneurs with Disabilities: Profile of a Forgotten Minority. *Irish Business Journal*, 4, 119–129.
- Eltayib, N. H. E., & Bhimani, A. M. C. (2018). *The Effect of Social Media Marketing in Small Business Performance*. 5(1).
- Felix, R., Rauschnabel, P. A., & Hinsch, C. (2017). Elements of strategic social media marketing: A holistic framework. *Journal of Business Research*, 70, 118–126. <https://doi.org/10.1016/j.jbusres.2016.05.001>
- Fitzgerald, H. (2018). Disability and Barriers to Inclusion. In I. Brittain & A. Beacom (Eds.), *The Palgrave Handbook of Paralympic Studies* (pp. 55–70). Palgrave Macmillan UK. https://doi.org/10.1057/978-1-137-47901-3_4
- Grönvik, L. (2007). *Definitions of disability in social sciences: Methodological perspectives*. Acta Universitatis Upsaliensis.
- Hanna, R., Rohm, A., & Crittenden, V. L. (2011). We're all connected: The power of the social media ecosystem. *Business Horizons*, 54(3), 265–273. <https://doi.org/10.1016/j.bushor.2011.01.007>
- Harris, E., & Simon, C. (2010). Disability and Discrimination. *InnovAiT: Education and Inspiration for General Practice*, 3(6), 322–327. <https://doi.org/10.1093/innovait/inq023>

- Jamil, K., Dunnan, L., Gul, R. F., Shehzad, M. U., Gillani, S. H. M., & Awan, F. H. (2022).** Role of Social Media Marketing Activities in Influencing Customer Intentions: A Perspective of a New Emerging Era. *Frontiers in Psychology*, 12, 808525. <https://doi.org/10.3389/fpsyg.2021.808525>
- Jones, N., Borgman, R., & Ulusoy, E. (2015).** Impact of social media on small businesses. *Journal of Small Business and Enterprise Development*, 22(4), 611–632. <https://doi.org/10.1108/JSBED-09-2013-0133>
- Kariapper, R. A. R. (2020).** *Impact of Social Media Marketing for Entrepreneurs in Sri Lankan Business Industry*.
- Kim, H.-C., & Zhu, Z.-Y. (2020).** Improving Social Inclusion for People with Physical Disabilities: The Roles of Mobile Social Networking Applications (MSNA) by Disability Support Organizations in China. *International Journal of Environmental Research and Public Health*, 17(7), 2333. <https://doi.org/10.3390/ijerph17072333>
- Kitching, & Cowling, M. (2019).** Understanding self-employment for people with disabilities and health conditions. *Department for Work and Pensions*.
- Lombard, M., Snyder-Duch, J., & Bracken, C. C. (2002).** Content Analysis in Mass Communication: Assessment and Reporting of Inter-coder Reliability. *Human Communication Research*, 28(4), 587–604. <https://doi.org/10.1111/j.1468-2958.2002.tb00826.x>
- Manzoor, M., & Vimarlund, V. (2018).** Digital technologies for social inclusion of individuals with disabilities. *Health and Technology*, 8(5), 377–390. <https://doi.org/10.1007/s12553-018-0239-1>
- McCarthy, E. J., & Perreault, W. D. (2004).** *Basic Marketing: A Global Managerial Approach*. McGraw-Hill Irwin.
- Oliver, M. (2013).** The social model of disability: Thirty years on. *Disability & Society*, 28(7), 1024–1026. <https://doi.org/10.1080/09687599.2013.818773>
- Oyza, I., & Edwin, A. (2015).** Effectiveness of Social Media Networks as a Strategic Tool for Organizational Marketing Management. *The Journal of Internet Banking and Commerce*, 01(s2). <https://doi.org/10.4172/1204-5357.S2-006>
- Pagán, R. (2009).** Self-employment among people with disabilities: Evidence for Europe. *Disability & Society*, 24(2), 217–229. <https://doi.org/10.1080/09687590802652504>
- Rajamohan, D. S., Devi, E. S., & Sathish, A. (2020).** *Barriers Of Differently Abled Entrepreneurs In Sivaganga Districts: A Factor Analysis*. 9(02).
- Scheer, J., Kroll, T., Neri, M. T., & Beatty, P. (2003).** Access Barriers for Persons with Disabilities: The Consumer's Perspective. *Journal of Disability Policy Studies*, 13(4), 221–230. <https://doi.org/10.1177/104420730301300404>
- Shabbir, M. S., School of Economics, International Islamic University, Islamabad, Pakistan., Ghazi, M. S., Department of Islamic Banking & Finance, International Islamic University, Islamabad, Pakistan., Mehmood, A. R., & Department of Islamic Banking & Finance, International Islamic University, Islamabad, Pakistan. (2016).** Impact of Social Media Applications on Small Business Entrepreneurs. *Management and Economics Research Journal*, 02, 1. <https://doi.org/10.18639/MERJ.2016.02.200914>
- Temple, J. B., & Brandon, P. D. (2009).** Demographic Determinants of Necessary Dissaving Among Older Persons. *Journal of Applied Gerontology*, 28(4), 504–523. <https://doi.org/10.1177/0733464808328791>
- Venkatraman, S. (2017).** *Social Media Marketing*. 1(2).
- World Health Organization & World Bank. (2011).** *World Report on Disability*. World Health Organization.
- Yakiah, D. A., & Sakriya, D. (2020).** *Differently Abled Entrepreneurs in India- Analyzing issues and Challenges*. 8(8).

Lifestyle Changes of Health Driven Women Entrepreneurs in Kerala

Ottina Treasa Mendez
Research Scholar,
Bharata Mata College Thrikkakara,
Kerala, India

Dr. Rafeekamol C.A
Assistant Professor,
Department of Commerce, MES College,
Marampally, Aluva, Kerala.

Abstract

In this transformational world where innovation is at our finger tips, Technology has been vital in bringing about a massive change in the life styles of our young talented generation. Lifestyle of an entrepreneur has always been complicated, creating a imbalance in work life organizing one's social, Physical and financial Life. The studies throw light on drastic lifestyle changes prominently seen in young enthusiastic talented men and women folk in Kochi city, Kerala. Government has tried to take immense measures in uplifting entrepreneurs both at state and central level. The Challenges faced by them were indispensable. Their Physical well- being, Emotional well- being and financial opportunity form the key elements in building their health, wealth and happiness. This study analyses the impacts on entrepreneurial lifestyle, community engagement, Financial and physical wellness. The growth of women entrepreneurs in the society will bring about a vast growth in the health and well- being of the women community which focuses on the third goal of Sustainable Development. An experimental study was conducted among 60 HERBALIFE users who are successful Entrepreneurs today. They focused on restoring their health conditions, leading a healthy lifestyle and being financially stable. Later they built their business empire which eventually had a significant positive relationship on their Life Style Changes. The study explores significant lifestyle changes for members involved in the Herbalife network in Kerala. This study evaluates the participation in this network and how it transforms health and lifestyle of entrepreneurs and the contribution to broader community well-being

Keywords: *Entrepreneurship, Physical well-being, emotional well-being financial opportunity, Life Style Changes.*

Introduction

Health behaviors are dynamic, it varies over individual's lifespan, across settings and overtime (Short and Mollborn, 2015). An ecological model proposed for health promoting combining individual and social factors.(McLeroy et al., 1988) The convergence of health and entrepreneurship has been admissible in today's society. Health has gained consciousness over the years. The study explores significant lifestyle changes for members involved in the Herbalife network in Kerala. Herbalife, a global health and wellness community has been successful over 40yrs in the industry they have thrived to achieve total well-being balancing body, mind and futures. They provide 360⁰ focus on health and wellness. They follow a nutrition philosophy including balanced nutrition, healthy and active life style and personalized plan as key elements. Individuals who wish to lead a healthy life join Herbalife as member merely to enjoy Health benefits and enjoy its nutrition value. Entrepreneurial activities are demanding and complex (Lepeley et al., 2019) .The members with entrepreneurial spirit are introduced to the company's entrepreneurship team where they become the part of Company's marketing team and enjoy great benefits which eventually they build their wealth and happiness leading to overall well-being of their families, society and economy. This study evaluates the participation in this network and how it transforms health and lifestyle of entrepreneurs and the contribution to broader community well-being. Herbalife An entrepreneur will have to face a lot of hurdles and things are difficult until they are attempted. The Company created diverse, equitable opportunities assisting people reach their full potential and live their best. They have been UN Global Compact Member since 2020 and has taken up environmental stewardship as their sustainability strategy. The Company ensures healthy lives and promotes well- being and good health for all ages which is in tune with Third sustainable development goals. Herbalife has strived to ensure healthy lifestyle ultimately creating a healthy economy, keeping in mind the SDG 3 slogan, Health for All. Well-being has been a multi-dimensional (Muhammad et al., 2021).Napoleon the conqueror remarked that the word " impossible" should be taken out of dictionary of an entrepreneur to be successful, keep on tiring tirelessly until your goal is achieved (Vinay Ojha). Entrepreneur is an actor in macroeconomics, one who has the willingness to convert a new idea or invention into a successful innovation(Joseph Schumpeter)

Objectives:

1. To analyse the impact of entrepreneurship through Herbalife business on the overall lifestyle transformation of entrepreneurs in Kochi, Kerala.
2. To Identify the factors influencing entrepreneurs after engaging with Herbalife business.

Hypotheses:

H1 : There is a significant positive relationship between entrepreneurship through Herbalife and their overall lifestyle transformation in Kochi.

H2: There is a significant positive relationship between factors influencing health driven entrepreneurs and lifestyle changes.

Literature Review:

There have been numerous studies showing positive impact on the well-being and quality of entrepreneurs. Entrepreneurs have experienced enormous benefits such as enhanced work-life balance, higher self-esteem, confidence and increased life satisfaction (Banu & Baral, 2019). Studies focused on the importance of considering the diverse experiences of entrepreneurs within their societal contexts, including factors like family responsibilities and labor market structures (Valdes, 2019). Recent researchers analyzed positive relationship in the psychological factors of entrepreneurs, finding significant positive correlations between grit, life satisfaction, and psychological well-being (Samyukta & Swathi, 2023). The study emphasized on implications to the policymakers to extend support to organizations in designing tailored policies and schemes that promote the growth, wellbeing of entrepreneurs in developing countries (Banu & Baral, 2019). The sustainable development goals put forward by UN largely depend on the MSME's (Thomas, 2024).

Digital entrepreneurship acts as a potential solution for meeting challenges in healthcare, utilizing open innovation and emerging technologies (Shamsrizi et al., 2020). Unemployment being a national problem can be reduced by encouraging Youth entrepreneurship and is proposed as a viable option to tackle this situation, with Kerala serving as a case study (Kuriakose & Joseph, 2016). Kudumbasree project are successful examples of women empowerment (Jacob, 2024). A comparative study between two Colombian towns highlighted the impact of different development approaches on community well-being, by fostering local entrepreneurship fostering a more responsible and well-being-conscious approach (Franco & Newey, 2019). The above studies focused on the entrepreneurial potential in addressing SDGs and promoting a sustainable community development, particularly in the context of health, well-being, and responsible production.

Methodology:

Primary Data was collected using a questionnaire method where data was collected from 60 Women Entrepreneurs of Herbalife users who set up their business empire and evaluated how it had a positive effect on their Lifestyle. Respondents from 6 Herbalife wellness Centers were selected for this purpose. Herbalife wellness centers like Daily Dose Nutrition Center, Daily Dose wellness Center, Eat Right Nutrition Center, Green Life Nutrition Center, LGH Nutrition Center, Turning Point Wellness Club from districts like Ernakulam, Thrissur, Alappuzha and Kollam was selected for the same.

Secondary data from various Journals, books, Articles, Newspapers, Magazines were used to support the literature review.

Portraying the Positive Relationship between Herbalife and Entrepreneurship.

Lifestyle of an entrepreneur has always been complicated, creating a imbalance in work life organizing one's social, Physical and financial Life. Herbalife being a Global Nutrition Company with a strong history, Network and marketing plan and which provides common men an opportunity to enter into entrepreneurship. Company focuses on improving Good Health and well-being which is related to Sustainable Development Goal-3. This study analyses the impacts on entrepreneurial lifestyle, community engagement, Financial and physical wellness.

Factors Effecting Entrepreneurial Lifestyle:

1. Physical wellness:

Entrepreneurs deal with high levels of stress and irregular schedules, having a negative impact on their health. A focus on physical health is critical for maintaining work productivity and overall well-being.

A healthy Body will have a healthy Mindset, with this in mind many entrepreneurs have given health prime importance. Right Nutrition with apt exercise will provide the best results for a healthy lifestyle.

2. Emotional well- being:

Entrepreneurs often lead a stressful life juggling multiple roles creating an imbalance in work – life. Herbalife improves the work-life balance allowing entrepreneurs to run their business along with their families and creating a healthy network among their Family circle. The company also recognizes the efforts of the team members and provide family trips increasing the bond between family members. Social networking provides emotional support, mentorship and creates a sense of oneness among the community members.

3. Financial well- being:

Capital is the foundation of a business and those deprived of it are often pulled back from starting their own business. A person who is financially healthy will always a happier lifestyle. Herbalife provides a platform for common men with entrepreneurial spirit to set up a business with minimum capital and ensure greater returns.

Herbalife's Role in Entrepreneurship:

1. Health and Nutrition:

Herbalife products are known for its balanced nutrition and weight management, creating a healthy lifestyle which many entrepreneurs strive for. It Is a perfect meal plan for busy entrepreneurs and help them sustaining their energy and focus

2. Community and Networking:

Herbalife promotes an amicable community among its users and independent distributors. This social network provides opportunities for entrepreneurs.

3. Financial Empowerment:

Herbalife creates passive income for entrepreneurs who earn even while they are asleep. It creates a financial security and stability in one's business assuring them a secured income. It reduces the financial stress of the entrepreneurs and thereby improvising his productivity eventually raising his standard of living.

Analysis and Interpretation:

Qualitative Analysis:

Thematic analysis included various themes like Self-empowerment, Health, Wealth and Wellness, Work life balance, Community Support and Financial Security, which showed there was a transformative impact on health driven entrepreneurs.

Quantitative Analysis:

Table-1: Reliability Analysis (Cronbach's Alpha)

Construct	items	Cronbach's Alpha	Reliability Level
Physical Transformation	5	0.892	High
Financial Independence	5	0.875	High
Financial Success	5	0.883	High
Business Growth	5	0.868	High
Lifestyle Changes	5	0.891	High

Table 2: Descriptive Statistics: Factors effecting over all Well-being:

Variable	Mean	SD	Skewness
Health	4.32	0.678	-0.892
Financial Growth	4.18	0.725	-0.765
Business Success	4.25	0.698	-0.823
Work-Life Balance	4.15	0.742	-0.734

Table 3: Regression Analysis

Independent Variable	Beta	t- value	Sig (p)
Health Transformation	0.432	5.876	0.000
Financial Independence	0.385	4.987	0.000
Business success	0.398	5.234	0.000
Life style Changes	0.412	5.543	0.000

Dependent Variable: Overall, Success

$R^2 = 0.823$

Adjusted $R^2 = 0.815$

$F = 67.543$ ($p < 0.001$)

Table 4: Correlation Matrix Correlation is significant at 0.01 level

Correlation between independent and dependent variables

Construct	H1	F	B	L	H2
Health Transformation (H1)	1	0.765**	0.798**	0.812**	0.845**
		0.000	0.000	0.000	0.000
Financial Independence (F)		1	0.823**	0.789**	0.803**
			0.000	0.000	0.000
Business Growth (B)			1	0.834**	0.856**
				0.000	0.000
Life style Changes (L)				1	0.867**
					0.000
Good health and Well-being					1

$F = 67.543$ ($p < 0.001$)

Method	Model	R	R Square	Adjusted R Square
Enter	1	0.907	.823	.815

Results and Discussions:

Qualitative analysis exhibited a strong thematic spread across the key themes. The main themes included Health, wealth, financial Security, Well-being. Word cloud included terms like Health, Empowerment, Wellness, Nutrition, Transformation, Income, Leadership, Sustainability, Growth, Leadership, Balance, Financial Independence and Fitness. Quantitative analysis revealed there was health transformation showing an 85 % significant improvement in health, 78 % enhancement in energy levels, 72 % achieved their desired goals in weight management and 80 % have shifted to a balanced nutritional lifestyle. Majority who invested their time and capital in the business had achieved financial independence within a time span of 2 yrs and had a steady income developed by strong leadership skills. About 88% of the respondents reported better work -life balance with enhanced social status. Majority experienced a better quality of life style and achieved a better standard of living. Well-being metrics consisted of two key elements like physical well-being and emotional well-being, showing 77% of improved fitness level and 85 % reduction in health issues, majority also mentioned improvement in sleeping habits and better sleep pattern. Majority of the respondents have gained self-confidence, reduced stress levels, maintain better family relationships and have improved mental health. Final well-being had a positive significance on the lifestyle of entrepreneurs creating substantial income, improving their investment pattern and improving their financial decision. The study also analyzed the alignment with SDG-3, which reported 85% of the company's activities contributed to community health and 72% of the entrepreneurs actively promoted wellness programs and 80% supported sustainable health practices. Quantitative analysis can be summarized by stating the internal consistency is strong across measures. All constructs show high reliability where $\alpha > 0.85$. there is a high positive correlation between variables and the means across all variables are (> 4.0). Regression analysis showed a significant relationship having ($p < 0.001$). High F-statistic indicates a good model fit. The internal consistency

is strong across measures. Qualitative analysis can be summarized by stating a high thematic coverage across major themes, strong key word cloud and sufficient narrative evidences.

Implications to the Management (Herbalife):

The Management should invest more in branding and creating awareness among the people. The cost of the product being high, it is considered as the rich man's meal. Reducing the prices will help creating a larger market and expansion its markets across countries becomes hassle-free. Strict measures should be taken on banning unauthorised e-commerce sellers, who create a negative impact on the company's credibility. Maintaining same product quality across countries. Providing adequate training in regional languages among Herbalife users. Providing continuous learning period for interested users who wish to take part in its entrepreneurial sector, keeping in mind the challenges faced by entrepreneurs like time management and work life balance. Certified Nutritional Coaches and mentors should be available at each wellness centre, assisting the members and coaching them at every stage until they become successful entrepreneurs. Management should try to build a strong amicable network among users thereby expanding market possibilities and aiming in generating a sustainable income. There should be a competitive market dynamics and a strong research team who can continuously keep updating product knowledge and launching new products. A strong market research team should consistently keep an eye on consumer behaviour and change in customer taste and preference in short a strong customer relationship management need to be built.

Conclusion:

There has been a significant growth in personal growth and development among entrepreneurs. The Health-driven entrepreneurs has had a significant impact on their creating a positive lifestyle. This life style change has increased their self-reliance and confidence to be mentors to others in boosting their entrepreneurial journey. This has brought about a life style change in health, hygiene and nutrition among family members. Improve health consciousness has led to building a healthy economy there by reducing mortality rates. Increase in financial stability has led to the increase in purchasing power and has increased the standard of living of the economy thereby reducing poverty to a certain extend.

References:

- Al-Qahtani, M., Fekih Zguir, M., Al-Fagih, L., Koç, M., 2022.** Women Entrepreneurship for Sustainability: Investigations on Status, Challenges, Drivers, and Potentials in Qatar. *Sustainability* 14, 4091. <https://doi.org/10.3390/su14074091>
- Apostolopoulos, N., Al-Dajani, H., Holt, D., Jones, P., Newbery, R., 2018.** Entrepreneurship and the Sustainable Development Goals, in: Apostolopoulos, N., Al-Dajani, H., Holt, D., Jones, P., Newbery, R. (Eds.), *Contemporary Issues in Entrepreneurship Research*. Emerald Publishing Limited, pp. 1–7. <https://doi.org/10.1108/S2040-724620180000008005>
- Alsaad, R.I., Hamdan, A., Binsaddig, R., Kanan, M.A., 2023.** Empowerment sustainability perspectives for Bahraini women as entrepreneurs. *Int. J. Innov. Stud.* 7, 245–262. <https://doi.org/10.1016/j.ijis.2023.04.003>
- Daher-Nashif, S., Bawadi, H., 2020.** Women's Health and Well-Being in the United Nations Sustainable Development Goals: A Narrative Review of Achievements and Gaps in the Gulf States. *Int. J. Environ. Res. Public. Health* 17, 1059. <https://doi.org/10.3390/ijerph17031059>
- Fleurbaey, M. and Blanchet, D., 2013.** *Beyond GDP: Measuring welfare and assessing sustainability*. Oxford University Press.
- Huang, R. and Harris, W.B., Amway Corp, 2001.** Nutritional supplement. U.S. Patent Application 29/126,922.
- Lepeley, M.-T., Kuschel, K., Beutell, N., Pouw, N., Eijdenberg, E.L. (Eds.), 2019.** *The Wellbeing of Women in Entrepreneurship: A Global Perspective*, 1st ed. Routledge, Abingdon, Oxon ; New York, NY : Routledge, 2019. | Series: Human centered management. <https://doi.org/10.4324/9780429279836>
- Mbaruku, M., Mutalemwa, D., 2015.** Success Stories of Tanzanian Women Entrepreneurship Programs in Alleviating Poverty: Insights from WORTH Program. *Entrep. Bus. Econ. Rev.* 3, 87–105. <https://doi.org/10.15678/EBER.2015.030107>
- McLeroy, K.R., Bibeau, D., Steckler, A., Glanz, K., 1988.** An Ecological Perspective on Health Promotion Programs. *Health Educ. Q.* 15, 351–377. <https://doi.org/10.1177/109019818801500401>

Muhammad, S., Kong, X., Saqib, S.E., Beutell, N.J., 2021. Entrepreneurial Income and Wellbeing: Women's Informal Entrepreneurship in a Developing Context.

Sustainability 13, 10262. <https://doi.org/10.3390/su131810262>

Rahman, M.M., Hasan, M.J., Chandra Deb, B., Rahman, M.S., Kabir, A.S., 2023. The effect of social media entrepreneurship on sustainable development: Evidence from online clothing shops in Bangladesh. Heliyon 9, e19397. <https://doi.org/10.1016/j.heliyon.2023.e19397>

Short, S.E., Mollborn, S., 2015. Social determinants and health behaviors: conceptual frames and empirical advances. Curr. Opin. Psychol. 5, 78–84. <https://doi.org/10.1016/j.copsyc.2015.05.002>

Surmeli, A., Narla, N.P., Hoeflin, C., 2021. Social Enterprises and Sustainable Development Goals: How a Global Health Project Transformed Into a Social Venture – The Case of

HERA App for Refugees, in: Findıklı, M.A., Acar Erdur, D. (Eds.), Advances in Business Strategy and Competitive Advantage. IGI Global, pp. 192–212. <https://doi.org/10.4018/978-1-7998-4727-4.ch011>

Study of Different Soft Computing Techniques Used For Handwritten Signature Recognition

Sunil Tanaji Salunkhe
Research Scholar,
Swami Ramanand Teerth Marathwada
University Nanded, Maharashtra, India.

Dr. Satonkar Suhas Surykantrao
Research Guide, Assistant Professor & Head of
Computer Science Department,
Swami Ramanand Teerth Marathwada
University Nanded, Maharashtra, India.

Abstract

Handwritten signature recognition has witnessed significant advancements in recent years, with a plethora of research focusing on enhancing the verification process. However, despite these efforts, several gaps persist in the verification process of handwritten signatures. This paper delves into the comparative study of various soft computing techniques employed for handwritten signature recognition, acknowledging its pivotal role in computer vision and soft computing domains. Handwritten signatures serve as crucial authentication mechanisms across diverse sectors, emphasizing the importance of selecting efficient soft computing techniques to ensure robust verification and prevent forgeries. This paper presents a comprehensive review spanning the past 15 years, analyzing more than 20 research papers to compare datasets, feature extraction methods, and classification techniques utilized in signature verification. Moreover, it highlights the challenges associated with each approach and provides insights into the advantages and limitations of soft computing techniques employed for signature feature extraction and classification.

Index Terms - Neural Network, Genetic Algorithm, Soft Computing, Computer Vision

Introduction

The verification of handwritten signatures is inherently complex due to variations in writing styles, individual characteristics, and the presence of noise. Consequently, researchers have turned to soft computing techniques, which encompass a range of computational methodologies inspired by biological systems, to address these challenges effectively. The identification and verification of individuals rely on a variety of physical and behavioral characteristics, including fingerprints, facial features, gestures, retinal patterns, and DNA. Handwritten signature, as a behavioral characteristic, serves as a crucial component in personal verification systems. However, unlike other biometric traits, handwritten signatures present a unique challenge due to their inherent complexity. Handwritten signatures exhibit variability even when authored by the same individual, influenced by factors such as physical condition, psychological state, and writing style. This variability poses significant challenges in developing robust verification systems. Despite these challenges, handwritten signatures remain an indispensable biometric trait, offering a convenient and widely accepted means of personal authentication.

The primary objective of this review paper is to provide a comparative summary of recent advancements in the field of handwritten signature verification. Specifically, we aim to analyze and contrast the findings from over 20 research papers, highlighting the methodologies, datasets, and outcomes of various studies. By synthesizing this information, we seek to identify the strengths and weaknesses of existing approaches, thereby shedding light on potential areas for improvement and future research directions.

We can use Soft computing techniques such as neural networks, fuzzy logic, genetic algorithms, and support vector machines offer flexibility and adaptability, making them well-suited for signature recognition tasks. Given the proliferation of research in this field over the past 15 years, it becomes imperative to conduct a comprehensive comparative study to evaluate the efficacy of various soft computing techniques for handwritten signature recognition. Such an analysis can provide valuable insights into the strengths and limitations of different approaches, thereby guiding researchers and practitioners towards selecting the most appropriate techniques for specific applications.

Literature Review

Based on the summaries provided, it seems that the papers referenced cover challenges in signature verification, such as False Rejection Rate and False Acceptance Rate, and identifies types of forgeries. They mentioned outlines the four basic components of a signature verification system: Data acquisition, Pre- Processing, Feature Extraction, and Recognition/Verification. Author provides details the use of Self- Organizing Map (SOM) for feature extraction and Support Vector Machine (SVM) for classification. Specifies the database used for testing, consisting of genuine and forgery samples from 20 individuals.

- G. Pirlo, V. Cuccovillo, D. Impedovo, P. Mignone developed on-line signature verification technique. They Focused on online signature verification and employs a multi-domain strategy for classification and utilized Dynamic Time Warping (DTW) for evaluating the genuineness of signature segments. They Conducted experimental evaluation using the SUSIG database.
- In this paper Hemanta Saikia, Kanak Chandra Sarma had mentioned different approaches and issues related to offline signature verification systems. Likely provides insights into the state-of-the-art techniques and challenges in the field.
- In this paper author proposed an offline signature verification and recognition system using the Pixel Matching Technique (PMT) and compares it with ANN back-propagation and SVM techniques. Likely provides experimental results to demonstrate the performance of the proposed method.
- In this study, the author explores the efficacy of pre-trained Convolutional Neural Networks (CNN) in feature extraction from genuine and forged signatures. The extracted features are then subjected to classification using Support Vector Machine (SVM), Naive Bayes (NB), and k-Nearest Neighbors (KNN) algorithms. The performance of these classifiers is evaluated based on metrics such as run time, classification error, classification loss, and accuracy using a test-set comprising genuine and forged signature images. The
- Experiments are conducted on the UTSig dataset, and the results are analyzed to assess the effectiveness of each classifier in the verification phase. This study contributes to understanding the comparative performance of different classification algorithms in the context of handwritten signature recognition, providing valuable insights for the development of robust signature verification systems.
- In this paper, Author implemented a machine-learning single-layered Neural Network model (SOM) for signature Detection by collecting multiple users' signatures. They utilized SVM for classification and evaluates performance using FAR and FRR metrics.
- This study focuses on the development and comparison of three algorithms based on the principles of ART-1, ART-2, and Auto-AMN for offline signature verification. The objective is to achieve high accuracy while minimizing time consumption, considering signature verification as a bi-objective optimization problem.

Key points from this study include:

- i. Algorithm Development: Three algorithms based on ART-1, ART-2, and Auto-AMN principles were developed for signature verification.
- ii. Parallel Implementation: Parallel methods were proposed for all three algorithms to distribute computation work across multiple processors, aiming to achieve results in minimal CPU time.

The performances of ART-1, ART-2, and Auto-AMN were compared. The study revealed the following results:

- a) ART-1 achieved 99.89% accuracy with a time consumption of 8.37 seconds in serial and 2.28 seconds in parallel execution.
- b) ART-2 achieved 99.99% accuracy with a time consumption of 5.86 seconds in serial and 1.58 seconds in parallel execution on a quad-core processor.
- c) Auto-AMN achieved a detection accuracy of 75.68% with a time consumption of 9.58 seconds in serial and 2.98 seconds in parallel.

Parameter Settings: For ART-1 and ART-2, the number of cluster unit's 'm' was set to 20. The error threshold was set to 5% for decision-making in the case of AMN. Overall, the study demonstrates the effectiveness of ART-1 and ART-2 algorithms in achieving high accuracy with reduced time consumption, especially when executed in parallel. However, Auto-AMN, despite having lower accuracy, also benefits from parallel execution in terms of time efficiency. These findings contribute to advancing the state-of-the-art in offline signature verification algorithms and provide insights into optimizing performance for real-world applications.

In this research study, the author employs the Artificial Neural Network (ANN) algorithm with Back Propagation for signature recognition. A notable aspect of this study is the development of a mechanism to adaptively adjust the learning rate, aimed at enhancing the accuracy of the system. The primary objective of the study is to assess the effectiveness of the Back Propagation algorithm in recognizing signatures. By Conducting recognition experiments on a number of signatures, the study aims to evaluate the appropriateness of using Back Propagation for this task.

The testing results are obtained using specific parameters:

- Learning rate: 0.64
- Number of iterations: 100

The study reports an accuracy value of 63% based on these parameters. This accuracy value reflects the performance of the ANN algorithm with Back Propagation in recognizing signatures under the specified conditions. Overall, the study contributes to the understanding of the applicability and performance of Back Propagation in signature recognition tasks. It highlights the importance of parameter tuning, such as adjusting the learning rate, in optimizing the accuracy of the recognition system. Further experimentation and optimization may be necessary to improve the recognition accuracy and enhance the effectiveness of the signature recognition system.

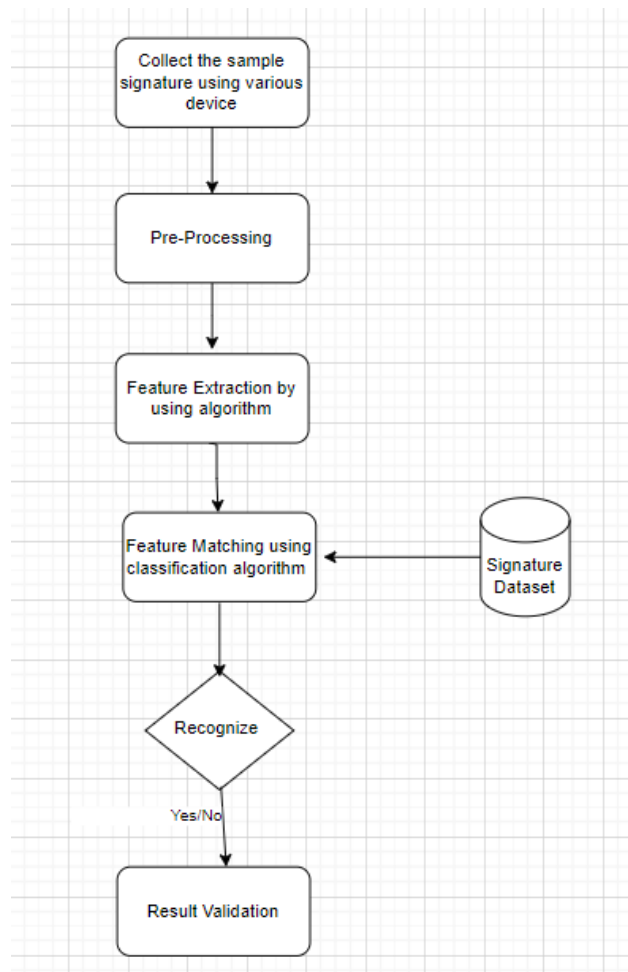
The author introduces a novel fuzzy approach to offline handwritten signature recognition. The solution involves characteristic feature extraction, which begins with finding the signature's centre of gravity. Then, a series of lines are drawn through this centre at various angles, and the cross points of these lines with the signature sample are identified. These cross points are then grouped and sorted to form structures, from which a fuzzy model termed the "fuzzy signature" is created. During the verification phase, the level of conformity between an input sample and the fuzzy signature is calculated. One notable aspect of this approach is its extension in feature extraction and the introduction of the fuzzy model, which had not been previously employed. Moreover, the solution ensures that the information stored within the verification system cannot be used to recreate the original signatures collected during the enrolment phase, enhancing storage safety, particularly in large databases where security is paramount. Additionally, the approach is highly flexible, allowing for the intuitive extension of fuzzy sets through the incorporation of dynamic features, thereby enabling it to function as an online method.

Author utilized special domain features such as high-intensity variation points and cross-over points extracted from genuine as well as test signatures. These features likely serve as distinctive characteristics for signature recognition, contributing to the effectiveness of the verification system.

Working

Implementation of different Stages used for signature verification are as follows:

- a) Data acquisition: - In offline signature verification systems, data is collected using off-line acquisition devices such as cameras or optical scanners. These devices capture the signature image and convert it into a digital format.
- b) Pre-processing the input signatures: - Pre-processing involves improving the quality of the signature data after acquisition. This includes various operations such as converting colour images to grayscale, removing noise, thresholding, morphological operations, cropping, binarization, and normalizing signature size.
- c) Extraction of special features: - Feature extraction techniques for handwritten signatures can be categorized into global and local features:
 - i. Global feature techniques compute features from the entire signature, often focusing on geometric characteristics, wavelet coefficients, and Fourier coefficients.
 - ii. Local feature techniques compute features from specific regions within the signature, including texture features and gradient features.
- d) Classification: - The classification stage involves comparing the extracted features with template signatures stored in the database to determine the class of the tested signature.
 - i. Decision-making regarding the authenticity of the signature is known as verification, typically treated as a two-class classification problem.
 - ii. Verification: Verification Includes following methods:
 - Model-based verification: Describes the data distribution by generating models such as convolutional neural networks (CNN), hidden Markov models (HMM), and support vector machines (SVM).
 - Distance-based verification: Utilizes distance measures for comparing the test signature with reference signatures, often employing dynamic time warping (DTW) for comparison.



Overall, the signature recognition system progresses from data acquisition and pre-processing to feature extraction and classification, with the ultimate goal of accurately verifying the authenticity of handwritten signatures. Each stage plays a crucial role in ensuring the system's effectiveness in real-world applications.

This paper presents a comparative analysis of the most common soft computing techniques utilized for feature extraction and classification in the context of handwritten signature recognition. The study focuses on evaluating the effectiveness of various feature extraction methods and classification techniques through a systematic comparison. The results of this comparison are presented in tabular format, highlighting key performance metrics such as accuracy, precision, recall, and computational efficiency. By synthesizing findings from multiple studies and experiments, this comparative analysis provides valuable insights into the strengths and limitations of different soft computing approaches for feature extraction and classification in handwritten signature recognition systems. These insights can guide researchers and practitioners in selecting appropriate techniques for enhancing the accuracy and efficiency of signature recognition systems in practical applications.

Comparative Analysis

Table 4.1: Study of different feature extraction techniques used in previous research papers.

Feature Extraction Method	Classification Method	Author	Used Dataset	Result	Issued
Global and local features selected using genetic algorithm	Support vector machine (SVM) classifier	Sharif et al. [11]	(A) CEDAR (B) MCYT (C) GPDS	(A) AER for CEDAR is 4.67%. (B) AER for MCYT is 5.0%. (C) AER for GPDS is 3.75%.	In this feature extraction technique, We observed High error rate
Histogram of	Generalized	Tas,kiran	Collected	Accuracy is equal	Here we

oriented gradients (HOG) features	regression neural networks (GRNN) algorithm	and Çam [12]	signature images at Yildiz technical university from 15 person, 40 sample from each.	to 98.33%	observed large implementation costs and processing time
Fine-tuned CNN was used as signature features extraction technique	Support vector machine (SVM) classifier	Bonde et al. [13]	(A)GPDS (B)MYCT-75 (C) UTSig	(A) Accuracy for GPDS is 92.03 (B) Accuracy for MYCT-75 is 90.78 (C) Accuracy for UTSig is 85.46.	We noted accuracy rate is low in standard database Comparative to other feature extraction techniques.
Histogram of oriented gradients (HOG) features	Fuzzy min max classification (FMMC) method	Melhaoui and Bouchaou [14]	Collected dataset from 12 person, 20 signature from each	Recognition rate is equal to 96%.	The recognition rate depends highly on the choice of the sensitivity parameter which regulates how fast the membership Value decreased
Convolutional neural network (CNN)	Support vector machine (SVM) classifier	Mersa et al.[15]	(A) GPDS-Synthetic (B) MYCT-75 (C) UTSig	(A) GPDS-Synthetic EER is 6.81%. (B) MYCT EER is 3.98%. (C) UTSig EER is 9.80%.	Deep networks need rich and plentiful training data, which is rare in signature datasets
Moment invariant features	Efficient fuzzy Kohonen clustering network (FKCN) algorithm.	Suryani et al[16]	They use 80 samples of signatures obtained from 8 persons.	Accuracy is equal to 70%.	In this feature extraction technique we found that the accuracy of the training data is smaller than the accuracy of the test data
Circlet transform (CT), Statistical properties was calculated by the gray level co-occurrence matrices (GLCM)	k-Nearest neighbour (k-NN), Support vector machine (SVM) classifier	Foroozandeh et al. [17]	(A)GPDS-Synthetic (B)MYCT-75 (C) UTSig	(A)EER with GPDS-synthetic is 5.67. (B) EER with MYCT-75 is 7 when r = 1 and 8.20 when r=10. (C) EER with UTSig is	The proposed method did not outperform on MYCT-75 dataset

				6.72.	
Histogram of template (HOT) feature	Support vector machine (SVM) classifier	Serdouk et al. [18]	(A) CEDAR (B)MYCT-75	(A) For CEDAR AER is 1.03% (B) For MCYT-75 AER is 6.40%	Here problems occur when Highlight strokes orientation in handwritten signatures appears then accuracy suddenly dropped.
Ridgelet transform and grid features	Support vector machine (SVM) classifier	Nemmour and Chibani [19]	CEDAR dataset	EER is equal to 4.18	The system can achieve higher accuracies but requires larger runtime
Contourlet transform (CT) based directional code Co-occurrence matrix (DCCM) technique.	Writer-independent decision thresholding	Hamadene and Chibani [20]	(A) CEDAR (B)GPDS	(A) For CEDAR AER is 2.10. (B) For GPDS AER is 18.42	The verification step is performed using only the feature dissimilarity measure

Table 4.2: Study of different Offline Dataset comparison

Dataset name	Language	No. of signers	Genuine	Forge	Total
CEDAR [18]	Belongs to versatile cultural backgrounds	55	24	24	2640
MCYT-75 [18]	Spanish	75	15	15	2250
GPDS-syntheses [11]	Computer-generated dataset		24	30	4000

Table 4.2 display different dataset with the no. of Signatures collected by different author for research and signature languages.

Table 4.3: Comparison between the most used classifiers with their benefits and Limitation.

Logistic Regression	<ul style="list-style-type: none"> Simple and fast to implement. Outputs can be interpreted as probabilities. Suitable for binary classification tasks. 	<ul style="list-style-type: none"> Assumes a linear relationship between features and the log-odds of the response. May not perform well with highly non-linear data. Sensitive to outliers.
Support vector machine (SVM)	<ul style="list-style-type: none"> Versatile, as different kernel functions can be used to handle non-linear data. Robust against overfitting, especially in high-dimensional spaces. 	<ul style="list-style-type: none"> Computationally expensive, especially with large datasets. Requires careful selection of kernel and regularization parameters. Can be sensitive to the choice of the kernel function and its parameters.
Dynamic time warping (DTW)	<ul style="list-style-type: none"> Robust to temporal distortions: DTW can handle time-series data that are stretched or compressed in time, making it suitable for analyzing 	<ul style="list-style-type: none"> Computational complexity: DTW has a time and memory complexity that depends on the lengths of the sequences being compared. It can be

	<ul style="list-style-type: none"> sequences with variable lengths or speeds • Non-linear alignment: DTW finds the optimal alignment between two sequences by warping them in time, allowing it to capture non-linear relationships and patterns in the data. • Versatility: DTW can be applied to various types of time-series data, including speech recognition, gesture recognition, financial time series, and biomedical signal processing. • No assumption of linearity: Unlike some other methods, DTW does not assume linearity or stationarity in the data, making it suitable for analyzing complex and non-linear time-series patterns. 	<ul style="list-style-type: none"> computationally expensive, especially for long sequences or large datasets. • Sensitivity to noise and outliers: DTW may produce suboptimal alignments in the presence of noise or outliers in the data, potentially leading to inaccurate similarity measurements. • Parameter sensitivity: DTW requires setting parameters such as the warping window size, which can significantly affect its performance. Selecting appropriate parameter values can be challenging and may require experimentation. • Memory requirements: Storing the entire distance matrix for computing DTW can consume a large amount of memory, especially for long time-series data. • Not suitable for high- dimensional data: While DTW is effective for analyzing one-dimensional time-series data, it may not perform well with high- dimensional time-series or multivariate time-series data.
Random Forests	<ul style="list-style-type: none"> • Reduces overfitting compared to individual decision trees. • Can handle large datasets with high dimensionality. • Provides an estimate of feature importance. 	<ul style="list-style-type: none"> • More complex than individual decision trees, harder to interpret. • Can be computationally expensive, especially with a large number of trees. • May not perform well with noisy data.
K-nearest neighbour (KNN)	<ul style="list-style-type: none"> • Simple and intuitive. • No training phase, making it easy to implement. • Non-parametric, can handle complex decision boundaries. 	<ul style="list-style-type: none"> • Computationally expensive during testing, as it requires calculating distances to all training examples. • Memory-intensive, especially with large datasets. • Performance can degrade with high-dimensional data due to the curse of dimensionality.
Neural Networks	<ul style="list-style-type: none"> • Can learn complex patterns and relationships in data. • Highly flexible architecture, suitable for various tasks. • Can handle large datasets with high dimensionality. 	<ul style="list-style-type: none"> • Requires a large amount of data for training. • Computationally expensive, especially with deep architectures. • Prone to overfitting, requires careful regularization and tuning.
Decision Trees	<ul style="list-style-type: none"> • Easy to understand and interpret. • Can handle both numerical and categorical data. • Implicitly performs feature selection. 	<ul style="list-style-type: none"> • Prone to overfitting, especially with complex trees. • Can be unstable, small variations in the data can result in different trees. • Not well-suited for capturing complex relationships in the data.

The choice of classifier depends on factors such as the nature of the data, the size of the dataset, computational resources available, and the specific requirements of the problem at hand.

Table 4.4: Study of different feature extraction techniques used by previous author for signature verification.

Method	Example	Pros	Cons
Histogram of Oriented Gradients (HOG)	HOG features were used by Jain et al. (2004) in their work on offline signature verification.	<ul style="list-style-type: none"> • Captures gradient information effectively, useful for capturing edge and texture information. • Robust to changes in illumination and background. 	<ul style="list-style-type: none"> • May be sensitive to noise and clutter in the image. • Computationally intensive, especially for large images.
Local Binary Patterns (LBP)	LBP features were employed by Le et al. (2016) for offline signature verification	<ul style="list-style-type: none"> • Simple and computationally efficient. • Insensitive to changes in illumination. 	<ul style="list-style-type: none"> • Limited in capturing global structure and context. • Not effective for capturing fine texture details.
Scale-Invariant Feature Transform(SIFT)	SIFT features were utilized by Nanni et al. (2009) for online signature verification.	<ul style="list-style-type: none"> • Robust to changes in scale, rotation, and translation. • Captures distinctive local features 	<ul style="list-style-type: none"> • Computationally expensive, especially for large data sets. • Requires careful parameter tuning.
Speeded-Up Robust Features (SURF)	SURF features were used by Ferrer et al. (2007) for offline signature verification	<ul style="list-style-type: none"> • Faster computation compared to SIFT. • Robust to changes in scale and rotation. 	<ul style="list-style-type: none"> • Less distinctive compared to SIFT. • Sensitivity to changes in viewpoint
Gabor Filters	Gabor features were employed by Hollingsworth and Bowyer (2008) for offline signature verification.	<ul style="list-style-type: none"> • Effective in capturing texture and shape information. • Tuneable to different frequencies and orientations 	<ul style="list-style-type: none"> • Computationally expensive, especially for large filter banks. • Sensitive to noise and artifacts.
Discrete Wavelet Transform (DWT)	DWT features were used by Toselli et al. (2007) for online signature verification.	<ul style="list-style-type: none"> • Multiresolution representation captures both global and local features. • Efficient in capturing texture and shape variations. 	<ul style="list-style-type: none"> • Selection of wavelet basis functions can affect performance. • Requires careful selection of decomposition levels.
Principal Component Analysis (PCA)	PCA features were employed by Houmani et al. (2014) for offline signature verification.	<ul style="list-style-type: none"> • Dimensionality reduction facilitates efficient feature representation. • Removes redundant information and noise. 	<ul style="list-style-type: none"> • Assumes linear relationships between variables. • May lose discriminative information in high-dimensional data.

Table 4.4 displayed feature extraction techniques used by previous author for signature verification and we find out the gaps as well as advantages of those techniques used in signature verification.

Conclusion

We concluded that:

- a. The proposed mechanism for signature recognition represents a significant advancement over previous methods. Instead of verifying a single signature input at a time, the system now processes multiple inputs simultaneously for verification. By doing so, we aim to assess both the false acceptance rate and false rejection rate, providing a more comprehensive evaluation of the recognition system's performance.
- b. Despite the availability of various algorithms for handwritten signature recognition, the problem of high false acceptance and rejection rates persists. To address this challenge, we employ soft computing tools, particularly Convolutional Autoencoder. Soft computing offers adaptability and uncertainty handling, making it a suitable approach for signature recognition tasks.
- c. In Convolutional Autoencoder, different signature samples from the same individual are passed as inputs, and the model predicts the authenticity of the signature based on learned knowledge. Through the training process, the model learns from the collected signature samples, enabling it to accurately predict outcomes for new signature inputs.
- d. The supervised learning process involves collecting data to create a signature dataset and training the model through image classification. Additionally, measures such as employing the MD5 algorithm are taken to protect the collected data from potential threats posed by hackers.
- e. Overall, the proposed approach leverages advanced techniques in soft computing and deep learning to enhance handwritten signature recognition accuracy while addressing security concerns associated with data storage and protection. Further research and experimentation in this direction are warranted to refine and optimize the recognition system for real-world applications.

Data Availability Statement (DAS)

Data available within the article or its supplementary materials: -

We confirmed that the data supporting the findings of this study are available within the article [and/or] its supplementary materials.

References

- Kuldipsinh A Vala, N. P. Joshi**, "Signature Detection and Verification using Soft computing", International Journal of Engineering Research & Technology (IJERT), ISSN: 2278-0181, Vol. 3 Issue 4, April – 2014.
- G. Pirlo, V. Cuccovillo, D. Impedovo, P. Mignone**, "On-line Signature Verification by Multi-Domain Classification", December 2014.
- Hemanta Saikia, Kanak Chandra Sarma**, "Approaches and Issues in Offline Signature Verification System", International Journal of Computer Applications (0975 – 8887) Volume 42– No.16, March 2012.
- Indrajit Bhattacharya, Prabir Ghosh, Swarup Biswas**, "Offline Signature Verification Using Pixel Matching Technique", International Conference on Computational Intelligence: Modeling Techniques and Applications (CIMTA) 2013.
- Fadi Mohammad Alsuhiat And Fatma Susilawati Mohamad**, "Offline Signature Recognition Via Convolutional Neural Network And Multiple Classifiers", International Journal Of Network Security & Its Applications · January 2022.
- Kuldipsinh A Vala, N. P. Joshi**, "Signature Detection and Verification using Soft computing", International Journal of Engineering Research & Technology (IJERT), ISSN: 2278-0181, Vol. 3 Issue 4, April – 2014.
- Tirtharaj Dash, Tanistha Nayak, Subhagata Chattopadhyay**, "Handwritten Signature Verification (Offline) using Neural Network Approaches: A Comparative Study". International Journal of Computer Applications (0975 – 8887) Volume 57– No.7, November 2012.
- Asyrofa Rahmi, Vivi Nur Wijayaningrum*, Wayan F. Mahmudy, Andi M. A. K. Parewe**, "Offline Signature Recognition using Back Propagation Neural Network", Indonesian Journal of Electrical Engineering and Computer Science Vol. 4, No. 3, December 2016, pp. 678 ~ 683 DOI: 10.11591/ijeecs.v4.i3.pp678-683.

- Przemyslaw Kudlacik and Piotr Porwik**, “A new approach to signature recognition using the fuzzy method”, Pattern Anal Applic DOI 10.1007/s10044-012-0283-9, 5 July 2012.
- Ravikumar B Panchal, Dr. Dhaval R Bhojani**,” Feature Extraction for Signature Verification Using Hilditch Algorithm”, International Journal of Engineering Research & Technology (IJERT) IJERT ISSN: 2278-0181 IJERTV3IS051330 www.ijert.org Vol. 3 Issue 5, May – 2014.
- M. Sharif, M. A. Khan, M. Faisal, M. Yasmin, and S. L. Fernandes**, “A framework for offline signature verification system: best features selection approach,” Pattern Recognition Letters, vol. 139, pp. 50–59, 2020.
- M. Taxkiran and Z. G. Çam**, “Offline signature identification via HOG features and artificial neural networks,” in Proceedings of the 2017 IEEE 15th International Symposium on Applied Machine Intelligence and Informatics (SAMI), Article ID 000083, Herl’any, Slovakia, January 2017.
- S. V. Bonde, P. Narwade, and R. Sawant**, “Offline signature verification using convolutional neural network,” in Proceedings of the 2020 6th International Conference on Signal Processing and Communication (ICSC), pp. 119–127, Noida, India, March 2020.
- O. E. Melhaoui and S. Benchaou**, “An efficient signature recognition system based on gradient features and neural network classifier,” Procedia Computer Science, vol. 198, pp. 385–390, 2022.
- O. Mersa, F. Etaati, S. Masoudnia, and B. N. Araabi**, “Learning representations from Persian handwriting for offline signature verification, a deep transfer learning approach,” in Proceedings of the 2019 4th International Conference on Pattern Recognition and Image Analysis (IPRIA), pp. 268–273, Tehran, Iran, March 2019.
- D. Suryani, E. Irwansyah, and R. Chindra**, “Offline signature recognition and verification system using efficient fuzzy kohonen clustering network (EFKCN) algorithm,” Procedia Computer Science, vol. 116, pp. 621–628, 2017.
- A. Foroozandeh, A. A. Hemmat, and H. Rabbani**, “Offline handwritten signature verification based on circlet transform and statistical features,” in Proceedings of the 2020 International Conference on Machine Vision and Image Processing (MVIP), pp. 1–5, Iran, February 2020.
- Y. Serdouk, H. Nemmour, and Y. Chibani**, “New histogrambased descriptor for off-line handwritten signature verification,” in Proceedings of the 2018 IEEE/ACS 15th International Conference on Computer Systems and Applications (AICCSA), pp. 1–5, Aqaba, Jordan, October 2018.
- H. Nemmour and Y. Chibani**, “Off-line signature verification using artificial immune recognition system,” in Proceedings of the 2013 International Conference on Electronics, Computer and Computation (ICECCO), pp. 164–167, Ankara, Turkey, November 2013.
- A. Hamadene and Y. Chibani**, “One-class writer-independent offline signature verification using feature dissimilarity thresholding,” IEEE Transactions on Information Forensics and Security, vol. 11, no. 6, pp. 1226–1238, 2016.
- Hashim, Z., Ahmed, H. M., & Alkhayyat, A. H. (2022)**. A comparative study among handwritten signature verification methods using machine learning techniques. Scientific Programming, 2022.

Evaluating the Factors Influencing Citizens' Satisfaction towards E-Governance Services

Shilpa D. Korde

Assistant Professor,
Rosary College of Commerce and Arts
Navelim Salcete Goa, India

S. V. Sukthankar

Associate Professor,
Government College of Arts, Science and
Commerce, Khandola, Marcela, Goa, India.

Abstract

The present study focuses on knowing how well-informed the citizens are about the e-governance services and measuring how satisfied citizens are with the e-governance services offered by the Goa Government. For this purpose, a sample of 150 respondents has been selected and studied. Data was collected through a designed questionnaire and analysed using the chi-square test, ANOVA, and factor analysis. An outcome of the study reveals that citizens are well informed about the e-governance services, and the elements such as reliability, security and privacy, citizen support, and transparency have a significantly positive impact on citizens' satisfaction in the state of Goa.

Keywords: Citizen, E-Governance, Government, Information and Communication Technology, Services, Satisfaction.

Introduction

Public sector organisations provide citizens with various government services that are easily accessible. Governments worldwide try to provide e-services through the public sector to citizens and businesses through e-government. Information Technology is increasingly viewed as a key component in improving how the public sector provides services to citizens (Seneviratne, 1999). In the era of digitalisation, every sector of the economy is trying to use the internet to avail and providing various commodities and services to satisfy customers' needs. In the past two decades around the world, governments have made use of e-governance initiatives to deliver information and services to citizens 24 /7, to the extent that nearly all national governments, most sub-national or state governments, and large numbers of local governments have established websites through which they provide e-government services (Norris & Lloyd, 2006). But to deliver public e-services, efficient user-oriented interaction between government and citizen is essential (Wirtz et al. 2015). With the same intention, in the year 2015, Government of India started "Digital India" with the illusion of transforming India into a "Digitally Empowered Society and Knowledge Economy." Under these initiatives, various mission mode projects were introduced based on 'Digital India.' Services provided through ICT in delivering services to the state's citizens are known as e-governance. By putting government services online, e-governance greatly reduces bureaucracy and enhances the quality of services in terms of time, content, and accessibility (The World Bank, 2015). E-governance refers to any government functions accomplished through information and communication technology, i.e., in digital form. It has been argued that previous literature on e-governance has paid more attention to exploring e-governance services from the supplier side; however, the citizen's perspective has been overlooked, resulting in limited published work (Weerakkody V., 2016). Goa is one of the states that delivers e-governance services to the citizens. This is designed as a crucial point of the Digital India Mission, and through its online portal, the Government of Goa enriches various e-governance services all the time to the citizens in the state of Goa.

Literature Review

Alkrajji A. I. (2020) studied two models, the technology acceptance model and Seddon's, which consider usability, utility, citizen happiness, system quality, and information quality. Data from a survey of 780 foundation-year students at Saudi Arabian government universities were used to compare the models. The dependent variable, citizen satisfaction, was used to examine the validity of the models. Increasing the benefits of e-government services for citizens would increase the efficacy of newly mandated e-government services, according to the findings, which showed that usefulness is a standard and crucial component in both TAM and Seddon's models and has the most significant impact on citizen satisfaction. Anwar M. et al. (2016) analysed and evaluated Afghanistan's present e-government services. Afghanistan adopted the proposed government-to-citizen (G2C) evaluation model to establish standards for citizen satisfaction with e-government services. Demand and supply formed the foundation for the G2C evaluation model's requirements, which significantly impacted citizen satisfaction. The results showed that factors such as service availability across multiple channels, citizen-centric features, para-lingual support, process performance, skills disparity, awareness, information security, and transaction security impact how satisfied citizens are with e-government services. To examine the relationship between interactions, usage of e-Government services and citizen satisfaction, Hazem Mohammad Al-Kaseasbeh et.al (2019) developed the expectation-confirmation theory. Data were analysed by using factor analysis, Item-

total correlation test, and Cronbach's alpha was used to verify the reliability and validity of the questionnaire. The findings indicated that the theory of expectation-confirmation of e-government services evaluation includes the citizens' satisfaction which is supported by perceived usefulness and service quality. Ju, J., et.al. (2019) proved that citizen engagement of e-governance was crucially a social transaction between public and their government where the citizen generates the private value. An attempt was made to analyse the mediating functions of two values based on cognitive integration theory and the civic voluntarism model. The comprehensive model found on ten assumptions about public e-participation in green commuting e-governance was created. Mishra S. S. & Geleta A. T. (2020) examined the mediating effect of perceived service delivery on the relationship between e-government and citizens' satisfaction. The survey of 123 respondents' was made in an Ethiopian context who were accessing services from the newly introduced e-government system at Addis Ababa Vital Events Registration Authority (AAVERA). The impact of the study indicated that the complete mediation effect of perceived service delivery of e-government on citizens' satisfaction. A survey of the British public conducted by the Royal Society for the Encouragement of Arts, Manufactures, and Commerce (2010) indicated that the factors affecting citizen satisfaction, in order of importance, are service quality, efficiency, correctness, and the professionalism of civil servants. In order to determine the quality of e-governance services that affects satisfaction of citizens Singh, V., & Singh, G. (2018) validated the model using confirmatory factor analysis and structural equation modelling. The findings showed that the quality of e-governance services and the information provided to individuals have a substantial influence on their satisfaction level. To analyse the factors affecting citizen satisfaction with e-government services in Turkish Ozturan M. and Surucu U. (2019) made an empirical study of 281 respondents. To estimate the effect of different factors on e-government citizen satisfaction, correlation analysis was used. The results of the study show that the factors such as ease of use, savings, trust, and service quality have positive impact on e-government citizen satisfaction. Olawale Oyewole et.al (2018) conducted their research in Nigeria, attempt was made to analyse the level of awareness and perception of the e-governance information portal by undergraduates. Descriptive survey research design was adapted to study undergraduates and the multistage random sampling technique was used to select sample size. The findings of the research reveal that the level of awareness of the e-governance information portal of Lagos State (Citizens Gate App) by the majority of the respondents was low. Wirtz B. W. & Kurtz O. T. (2016) developed a model for citizen satisfaction of e-governance portals by applying a mixed method approach. The outcome of the study was indicated that integration of downloadable forms, integration of a powerful search function, full online availability of e-government services, and perceived ease of use positively influence citizen satisfaction with e-governance city portals. Warale P. N. and Diwakar H. (2015), in their research paper, attempt to analyse the satisfaction of customers towards the e-governance initiatives to transmit services with a target of twenty additional services. The study described the e-governance initiative, SETU, implemented by Maharashtra Government that has existed for more than a decade. The outcomes of the study revealed that the citizens are marginally satisfied with service quality and that the government has to introduce the latest technologies to accomplish its objectives of accessibility, efficiency and service levels. V. Weerakkody et al (2016) investigated the impact of system quality, information quality, trust, and cost on citizen satisfaction with e-governance services. Data from 1518 e-governance service adopters across the United Kingdom were collected. The outcomes showed that the factors investigated in the study have a significant impact on citizens' satisfaction with e-governance services. Verdegem & Verleye, (2009) found out that Numerous studies about e-government satisfaction were conducted, from the effect of satisfaction on different aspects to determinants of e-government satisfaction.

Identification of Research Problem

The relevant review of literature on the present topic revealed that various conceptual studies had been conducted on services under e-governance, but a few empirical studies that too with limited geographical coverage. With respect to e-governance services, no comprehensive empirical study seems to have been conducted in the state of Goa in the present research area. There is a scarcity of empirically tested relations between e-governance services offered by the Government of Goa and their impact on the satisfaction of citizens considered in the study. In respect of the above, the current study focuses on to know how well-informed the citizen about the e-governance services as well as examine the elements, citizens will consider while using e-governance services. It also tries to measure how satisfied citizens are with the e-governance services provided by the Goa government. For this purpose sample of 150 respondents has been selected and studied. SPSS software is used to analyse the primary data collected through a designed questionnaire.

Research Questions

1. Is there any association regarding the awareness level of citizens towards e-governance services provided by the government?
2. Which factors are considered by citizen while using e-governance services?
3. Is there any significant impact of e-governance services on satisfaction of citizen in the state of Goa?

Objectives of the Study

The main objective of the study is to analyse the impact of e-governance services on the citizen in the state of Goa. However, the specific objectives that have been considered for the purpose of the study are stated below:

1. To study the awareness level of the citizens about the e-governance services provided by the Government of Goa.
2. To examine the factors citizens consider while using e-governance services.
3. To measure the satisfaction level of the citizens availing the e-governance services provided by the Government of Goa.

Research Methodology

Considering the above-mentioned objectives, a quantitative approach was chosen, and the following methodology was adopted for conducting the current study. The sample chosen for the purpose of the current study was citizens using government-to-citizen (G2C) services. Both primary and secondary data have been used. The primary data was collected by distributing questionnaires to 150 respondents, and secondary information was gathered from books, journals, e-books, e-journals, research papers, and official websites. Statistical tools used in the current study for analysis were the chi-square test, factor analysis, and regression analysis.

Hypotheses Formulation

Ho1: There is no association regarding citizens' awareness of e-governance services provided by the government across education in the state of Goa.

Ho2: There is no significant impact of e-governance services on citizens' satisfaction in the state of Goa.

Significance of the Study

The study is significant as it focuses on the factors citizens consider in availing of the services the government offers through e-governance. The research outcomes will help to know the productive areas of the e-governance portal and services and the areas that lack attention. The study will give necessary inputs to the government to introduce necessary changes in the various services to achieve the aim of e-governance.

Data Analysis and Interpretation

Demographic Profile of the Citizens

Table No.1 Demographic Profile of the Citizens

		Frequency	Percent
Gender	Male	74	49.33
	Female	76	50.67
Age	18-30 years	47	31.33
	31-45 years	39	26.00
	46-60 years	31	20.67
	Above 60 years	33	22.00
Education	HSSC	37	24.67
	Graduate	58	38.67
	Post Graduate	40	26.67
	Professional	15	10.00
Internet Usage	Once a month	54	36.00
	Sometimes a month	49	32.67
	Many times a month	47	31.33

Source: Computed from primary data

From Table No. 1, it was found that 49.33 percent of the respondents are male. A large proportion of the respondents is from 18-30 years old (31.33 percent). The options for education ranged from HSSC to professional, where 38.67 percent of respondents are graduates, and in the case of internet usage, respondents are almost equally distributed over three options, namely once a month, sometimes a month, and many times a month.

Analysis of the awareness level of citizens toward e-governance services

An attempt is made to find the awareness level of citizens towards various e-governance services offered by the Government of Goa. Chi –square test is used to analyse the following hypothesis.

Ho1: There is no association regarding the awareness of citizens towards e-governance services rendered by the government across education in the state of Goa.

Table No 2: Association of Respondents with awareness of e-governance services offered by the Government in the state of Goa.

Sr. No.	Awareness tested across Education	Chi-Square Value	Sig. Value	Decision on Null Hypothesis
1	Creation and Distribution of Certificates for Income	0.428	0.004	Reject Null Hypothesis
2	Caste Certificate	0.621	0.002	Reject Null Hypothesis
3	Domicile Certificate	0.320	0.305	Accept Null Hypothesis
4	Birth Certificate	0.783	0.852	Accept Null Hypothesis
5	Death Certificate	0.34	0.025	Reject Null Hypothesis
6	Divergence Certificates.	0.545	0.267	Accept Null Hypothesis
7	Water Bill Payment	0.76	0.007	Reject Null Hypothesis
8	Electricity Bill Payment	0.543	0.043	Reject Null Hypothesis
9	Property Tax	0.876	0.772	Accept Null Hypothesis
10	Motor Vehicle Tax	12.001	0.11	Reject Null Hypothesis

Source: Computed from primary data

From table no.2 the study hypothesized that the awareness of citizens has no association with regard to e-governance services across education of citizens. To study and test this hypothesis, a sample was analysed through a chi-square test. The result reveals that citizens of Goa are aware of e-governance services provided by government of Goa. Services like, the creation and distribution of certificates for income, caste certificates, death certificates, water bill payment, electricity bill payment and motor vehicle tax are found to be significant indicating that citizens are aware of these services. The P-value obtained is less than 0.05 indicates that the null hypothesis is rejected and the alternate hypothesis is accepted at 5% level of significance.

Analysis of the elements considered by citizens in availing the services offered by the government through e-governance.

A factor analysis has been performed to determine the prominent factors which influence on the citizens to avail of the services.

Table No 3: Factor Analysis on factors considered by citizens towards e-governance services in the state of Goa.

Factors considered by citizens in availing services under e-governance				
Factors	Components			
	1	2	3	4
The website information provided is reliable	.884			
The website system operated stably for the e-governance transactions.	.878			
The proper standard is followed in availing services online through the portal.	.860			
All the functions and services on the website operate normally.	.849			
Information shared on sites is accurate.	.781			
Citizens' grievances are handled properly.	.747			
Secrecy is maintained in availing of the services online.				
No risk of losing any files and information		.863		
The portal or sites are safe to use.		.826		
The sites and portal are user-friendly and easy to use.		.805		
Government sites are secure.		.525		
Convenient to avail of the services online.			.836	
Availing services online are cost effective.			.681	
Deliver quick services, and response is instant.			.645	
There is transparency in the services provided.				.672
Transparent transactions				.651
E-Services Government Websites are flexible.				.643
It reduces corruption				.590

Source: Computed from primary data

Table No 4: Variance of Usage

Sr. No	Name of the Factor	Eigen value	% of variance	Cumulative %
1.	Reliability	6.549	40.930	40.930
2.	Security and Privacy	3.446	21.540	62.470
3.	Citizen Support	2.795	17.472	79.942
4.	Transparency	.778	4.862	86.704

Source: Computed from primary data

The parameters used for analysis are Reliability, Security and Privacy, Citizen Support, and Transparency. Factor analysis and regression analysis are used to test the hypothesis. To study significant factors citizens of Goa consider in availing the e-governance services, 18 variables were used in the factor analysis to study the satisfaction of citizens. These variables are compressed into 4 main factors revealing citizens' preference toward e-governance services offered by the government of Goa. These retained factors are named as follows:

1. Reliability
2. Security and Privacy
3. Citizen Support
4. Transparency

“Reliability” as the first factor consists of the online information provided is reliable, trust in online websites and information, the proper standards is followed in availing services through the online portal, no paperwork is involved, information shared on sites are accurate, sites are flexible, citizen’s grievances are handled properly and secrecy is maintained in availing the services online. This indicates that citizens feel availing of services through e-governance is benefiting them as they are of the opinion that online websites are reliable. A proper standard is followed to avail any services. Traditionally when red tapism was followed there were a lot of complexities, loopholes, and no proper standardisation which demotivated citizens to avail of services offline.

Second prominent factor named “Security and Privacy” shows that citizen prefers availing the services under e-governances as there is no risk of losing any file and information, and portal or sites are safe to use and user friendly. Factors such as security and privacy along with secrecy are some of the prominent factors is considered by citizens of Goa in availing the services online.

“Citizen support” as a factor comprises two variables, indicating that the citizens prefer availing services through e-governances as it is convenient for the masses to avail of the services online. Availing online services are cost-effective for them concerning time and distance, and quick services and responses are instant from government authority.

“Transparency” shows that, the citizens prefer and consider transparency as one prominent factor in availing the services through e-governance. Citizens believe that availing of services is better as secrecy can be maintained. Citizens can trace the proceedings of their applied document and are confident that there are fewer loopholes in the system.

The above factor analysis clearly shows the factor matrix containing factor loading for each variable on each factor which is obtained by the best linear combinations of variables expected through rotations converged. These factor loadings are the means of interpreting the role of each variable and the factor. The derived four factors have an Eigen Value of more than 1 and a total variance explained to the extent of 86.704 percent.

Further, regression analysis is performed using the four factors as the independent variables and regressed with the dependent variable, namely “Citizens of Goa are satisfied with the services offered by the government under e-governance”. The test of regression analysis is shown below:

Table No 5: Satisfaction of Citizens towards the e-governance services offered by the Government of Goa. Satisfaction of citizens is the difference between individual expectations and perceived performance. The following hypothesis has been derived for testing.

Ho2: There is no significant impact of e-governance services on the satisfaction of citizens in the state of Goa.		
Dependent variable: Citizens of Goa are satisfied with the services offered by the government under e-governance.		
R²: 0.596	f: 90.284	P: .000^b

Influencing factor	Beta	T-test	P value
Constant	4.012	91.245	.000
Reliability	.564	12.794	.000
Security and Privacy	.403	9.153	.000
Citizen Support	.460	10.438	.000
Transparency	.096	2.171	.031

Source: Primary Data

The Regression analysis has shown that identified factors considered for factors analysis have shown a positive impact on the satisfaction of citizens towards e-governance services of Goa. It is observed that the model is statistically significant. R square has explained 0.596 of total variation on the satisfaction of citizens towards e-governance services. It is observed that the p-values of all independent have significant values at 5% level of significance. All independent variables are found to have a positive impact on the satisfaction of citizens with regard to e-governance services offered in the state of Goa.

This underlines the fact that all independent variables taken together determine the dependent variable. All the independent variables are found to be individually significant and are collectively statistically significant.

Output of regression equation would be = 4.012 + .564 (Reliability) + .403 (Security and Privacy) + .460 (Citizen Support) + .079 (Transparency)

Considering the above equation, the findings indicate that citizens of Goa are satisfied with the e-governance services provided by the Government of Goa.

Conclusion

The main purpose of this study was to identify the factors influencing citizen satisfaction in Goa towards e-governance services. Past studies on satisfaction in different contexts arrived at four external variables relevant to e-government satisfaction. Services provided through ICT or involvement of digital democracy in transmitting services to the citizens of the state is known as e-governance. The study concludes that citizens are well-informed about the different services offered by the government under e-governance. Services like, the creation and distribution of certificates for income, caste certificates, death certificates, water bill payment, electricity bill payment and motor vehicle tax are found to be significant indicating that citizens are aware of these services. From the current research conducted, it can be concluded that reliable, cost effective, convenient, user friendly, quick and instant services are some of the factors considered by citizens in availing the e-governance services. With regards to the impact of e-governance services concerned, it has been found that reliability, security and privacy customer support and transparency have a significantly positive impact on the satisfaction of citizens of the state of Goa.

References:

- Alkraiiji, A. I. (2020).** An examination of citizen satisfaction with mandatory e-government services: comparison of two information systems success models. *Transforming Government: People, Process and Policy*.
- Anwer, M., Esichaikul, V., Rehman, M. and Anjum, M. (2016),** "E-government services evaluation from citizen satisfaction perspective: A case of Afghanistan", *Transforming Government: People, Process and Policy*, Vol. 10 No. 1, pp. 139-167. <https://doi.org/10.1108/TG-03-2015-0017>
- Hazem Mohammad Al-Kaseasbeh et.al. (2019).** E-Government Services Assessment from the Perspective of Citizens Interaction and Satisfaction in Jordan: Pilot Study. *International Journal of Research & Review* Vol.6; Issue 12.pp 50-60.
- Ju, J., Liu, L., & Feng, Y. (2019).** Public and private value in citizen participation in E-governance: Evidence from a government-sponsored green commuting platform. *Government Information Quarterly*, 36(4), 101400.
- Mishra S. S. & Geleta A. T. (2020).** Can an E-Government System Ensure Citizens' Satisfaction without Service Delivery? *International Journal of Public Administration*, Vol. 43, No. 3, 242–252.
- Norris, D.F. and Lloyd, B.A. (2006),** "The scholarly literature on e-government: characterizing a nascent field", *International Journal of Electronic Government Research*, Vol. 2 No. 4, pp. 40-56.
- Ozturan M. and Surucu U. (2019).** Citizen Satisfaction with E-Government Services: Case of Turkey (2019). *International Journal of Research and Scientific Innovation (IJRSI) | Volume VI, Issue XII*.

Olawale Oyewole et.al (2018). Awareness and Perception of E-governance Information Portal by Undergraduates of University of Lagos, Nigeria. *International Journal of Academic Library and Information Science*. Vol. 6(7), pp. 213-221.

RSA (Royal Society for the encouragement of Arts, Manufactures and Commerce). (2010). what do people want, need, and expect from public services? <http://www.ipsos-mori.com/>, accessed 2014/8/7.

Seneviratne, S. J. (1999). Information technology and organizational change in the public sector. In G.D. Garson (Eds.), *Information technology and computer applications in public administration: Issues and trends*. Hershey, PA: Idea Group Publishing

Singh, V., & Singh, G. (2018). Citizen centric assessment framework for e-governance services quality. *International Journal of Business Information Systems*, 27(1), 1-20.

Weerakkodya V. et. al. (2016). Are U.K. Citizens Satisfied With E-Government Services? Identifying and Testing Antecedents of Satisfaction. *Information Systems Management*, VOL. 33, NO. 4, 331–343.

Wirtz, B.W. & Kurtz O.T. (2016) Local e-government and user satisfaction with city portals – the citizens' service preference perspective *Int Rev Public Nonprofit Mark* (2016) 13:265–287.

Wirtz, B. W., & Daiser, P. (2015). E-government: strategy process instruments. Textbook for the Digital Society.http://berndwirtz.com/downloads/WirtzDaiser_2015_E-Government.

Warale, P. and Diwakar, H. (2015). A Study on the Relationship between Service Quality and Citizen Satisfaction for Setu, an E-Governance Initiative, in Maharashtra, India. *Asia Pacific Journal of Research*. Vol: I. Issue XXIX.

V. Weerakkody et al (2016). Are U.K. Citizens Satisfied With E-Government Services? Identifying and Testing Antecedents of Satisfaction. *Information Systems Management*, Vol. 33, No. 4, 331–343.

Verdegem, P., & Verleye, G. (2009). User-centered E-Government in practice: A comprehensive model for measuring user satisfaction. *Government Information Quarterly*, 26(3), 487-497.

A Bibliometric Analysis on International Student Mobility in Higher Education

Lekshmi.S

Research Scholar,

Department of Economics, Sanatana Dharma College, University of Kerala, India.

Abstract

Higher education has a critical role in determining how future generations learn to deal with the problems of sustainable development. It determines a society's intellectual capacity and the strength of its prospects. A complex interplay of international and domestic circumstances appears to have opened the floodgates for student mobility. Student mobility is a bigger development process and can be viewed as a beneficial driver for development when accompanied by appropriate policies. In this way, international student migration is considered an essential factor that plays a determining role in the economic development. International student mobility in higher education is a worldwide phenomenon increasing in scale, scope, complexity, and influence so it is necessary to understand bibliometric analysis on international student mobility in higher education. The study uses Bibliometrix and Biblioshiny, of the R packages were used to examine web of science indexed journal publications focusing on International student mobility. The basic aim of the review is to demonstrate the development of international student mobility in higher education research over the years. The findings of the study highlights that Covid-19 pandemic (after 2020) 16 articles were published which makes it the highest publication year recorded so far. Findings also reveal most important information regarding the Country-wise Scientific Production, impact of journal, knowledge areas of publication domains, most cited countries, keywords in the field by demonstrating networks around the world. Disquisition and directions can provide a basis for countries and international organizations in their policy development on international students mobility and knowledge base and addition for future research.

Keywords: International student mobility, Higher education, Bibliometric analysis

Introduction

Education is the most empowering tool for individuals as well as the economy. Education helps citizens to receive a high level of technological knowledge, qualitative skilled manpower, and awareness of the environmental and social conditions and realities of an economy. Higher education helps to grow the economy through better resource allocation and management. Expansion of Indian higher education is a major part and looking to government and private agencies in active participation through policies and funding. Higher education has a critical role in determining how future generations learn to deal within the problems of sustainable development. It is the determinant of a society's intellectual capacity and the strength of its future prospects. The Students population is one of a nation's most valuable human resources, and its quality determines the nation's pace of growth and development. Massive Student Mobility is one of the leading concerns in the present day world. In this globalized era student mobility flows are not only increasing enormously and highly diversified. Mobility trends in recent period have changed its pace. Student mobility not only transforms physical presence, but also has impact on culture of the migrants, income of the family, Income of the country (remittance), international trade, health of the children, women and family members, technology, policy of host country and receiving country also. Studying mobility and migration resulting from diverse social, economic, or political reasons is essential for the research and development of any economy. Personal motives, economic opportunities, geopolitical factors, and cultural transformations plays significant role in international student mobility. As globalization processes intensify, external student migration of young people also increases. Studying in developed countries is the most popular option for higher education worldwide. A complex interplay of international and domestic circumstances appears to have opened the floodgates for student mobility for higher education. International student mobility in higher education is a worldwide phenomenon increasing in scale, scope, complexity, and influence so it is necessary to understand bibliometric analysis on international student mobility in higher education. There has been a significant increase in the number of studies on higher education over the years. Higher education research has changed in terms of quantity and quality over time. However, there is a lack of a holistic study on of international student mobility in higher education research. The purpose of this research study is to examine the higher education literature holistically addressing most important information regarding the annual scientific publication, Country-wise Scientific Production, impact of journal, knowledge areas of publication domains, most cited countries, keywords in the field by demonstrating networks around the world. Disquisition and directions can provide a basis for countries and international organizations in their policy development on international students mobility and knowledge base and addition for future research.

Methods

Bibliometric is an open-source tool which can be capable to execute comprehensive literature analysis. The citation and network analysis aim to describe how specific disciplines, scientific domains, or research fields are structured and how they evolve over time. For the analysis of the Bib text data relating to the international student mobility and higher education Bibliometrix and Biblioshiny, of the R packages were used. The latest version, 1.4.1717 of R Studio was installed to analyse and map bibliographic data. These are the open-source software for automating the stages of data analysis and data visualization purpose. After converting and uploading.

Results and Discussion

The main information about the extracted data is reported in Table 2.1. A thematic search was performed and downloaded 620 pieces of bibliographic material from the online Web of Science (WoS) database between 2003 and 2021, using the textual phrase " international student mobility in higher education". The textual phrases were searched exclusively in the title, abstract, author keywords, and keywords plus options. It reveals that 869 authors wrote a total number of 620 articles. Collaboration is the key amongst authors, whereby 42 authors have published solely. The documents published in the WoS database during this time period received an average of 2.898 citations per year. Articles, book chapters, proceedings paper, book review, editorial material, and meeting abstract were the document kinds that were selected. The descriptive analysis provides some snapshots about the top productive authors in the field, Most cited document, Most cited journal on the keyword international student mobility in higher education.

Description	Results
Timespan	2003:2021
Sources (Journals, Books, etc.)	179
Documents	277
Average citations per doc	2.27
References	11599
Keywords Plus (ID)	707
Author's Keywords (DE)	869
Authors	769
Authors of single-authored docs	42
Articles	277

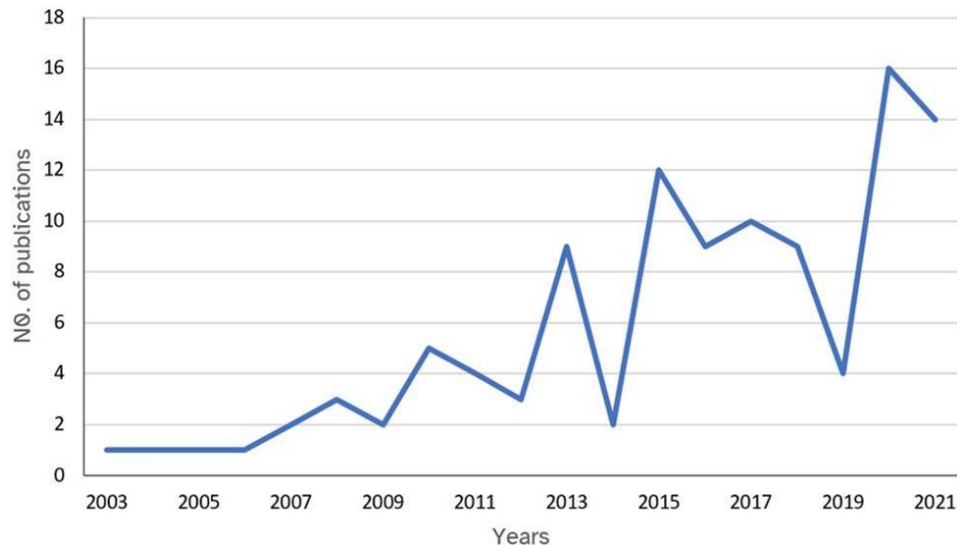
Source: Web of Science

Annual Scientific Production

Analysis from the Bibliometrix R package shows that the field of international student mobility in higher education has a 16 per cent annual growth rate of scientific production from 2003- to 2021. In 2015, 12 articles were recorded, which indicates the beginning of the impressive growth of publications in the field. Covid-19 pandemic (after 2020) 16 articles were published, respectively, which makes it the highest publication year recorded so far. The analysis period covers 18 years of scientific production and it is depicted in Figure 2.1. However, the most significant increase in published articles occurred in the past years. This itself indicates the relevance of the topic international student mobility in higher education (Table showing the actual figure is in the Annexure :1) bibliographic data in R studio, Bibliometrix and biblioshiny performs a descriptive analysis of the data uploaded. The results of the analysis are described below:

Figure 2.1 Annual Scientific Production of the number of publications on international student mobility in higher education (2003-2021)

the number of publications on this subject presents an unsteady increasing trend since 2006 , with a peak of publications in Covid-19 pandemic (after 2020) and 2021 (these two years concentrate more than 25% of the scientific production).

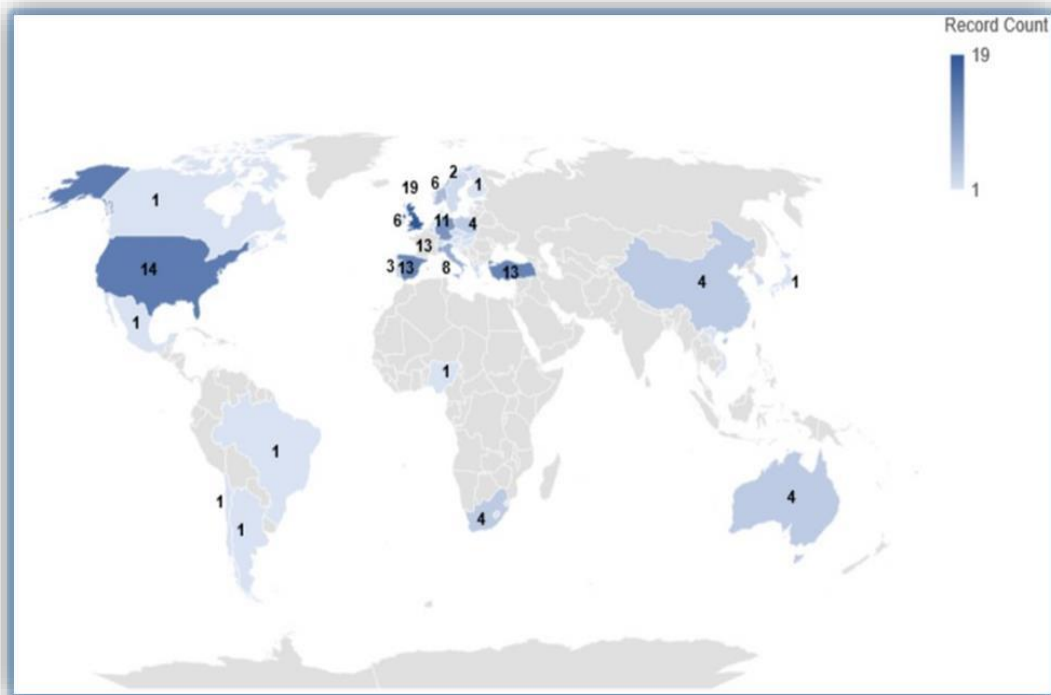


Source: Web of Science

Country-wise Scientific Production

The top 20 countries that contributed most to the domain of international student mobility in higher education are shown in Figure 2.2. The result indicated that the United Kingdom is the top country to productive publications in the domain of international student mobility and higher education. authors' institutional affiliation, our document selection shows that the production of countries such as the United Kingdom and the United States stands out with 19 and 14 documents respectively, followed by Spain (13 documents), Turkey (13 publications) and Germany (11 documents) contribute about 50 percent of the total global publications. . They are the countries that play a major key role in the higher education internationalization research progress. The United Kingdom is the leading country . It generates 248 publications in a total of 132 journals, covering 17.6 percent of the world's total publications. Meanwhile, the United States is the second most productive country, with a total percentage of 12 percent, followed by Australia with a total of 10.5 percent. However, a direct comparison among the leading countries could be a bias, as it does not show a large majority percentage. Although the Total Publications (TP) from Boston College are slightly lower than the UCL Institute of Education, it should be noted that the latter has 30 centers, and therefore a direct comparison might be considered as biased. Otherwise, Newcastle University can be considered as the most productive academic institution in the United Kingdom with ten publications

Figure 2.3 Country-wise Scientific Production of Publications in international student mobility in higher education (2003-2023)



Source: Web of Science

Source Impact of Journals Published Papers on international student mobility in higher education
A total of 620 documents on international student mobility in higher education from web of science. The source impact of the journals published papers of international student mobility in higher education based on the indexes are shown in the Figure 2.3. The h-index is an author-level metric that attempted to measure both the productivity and citation impact of the publications in the area of. The h-index is a way of measuring the productivity and citation impact of the publications of a researcher, scientist or scholar. The index is based on the set of the most cited papers of the authors and the number of citations that they have received in other publication. The results shows that Journal of studies in international education , Higher education are the top journals in with 9 papers each of them.

Figure 2.4 Most Relevant Sources Impact by h- Index on international student mobility in higher education (2003-2023)

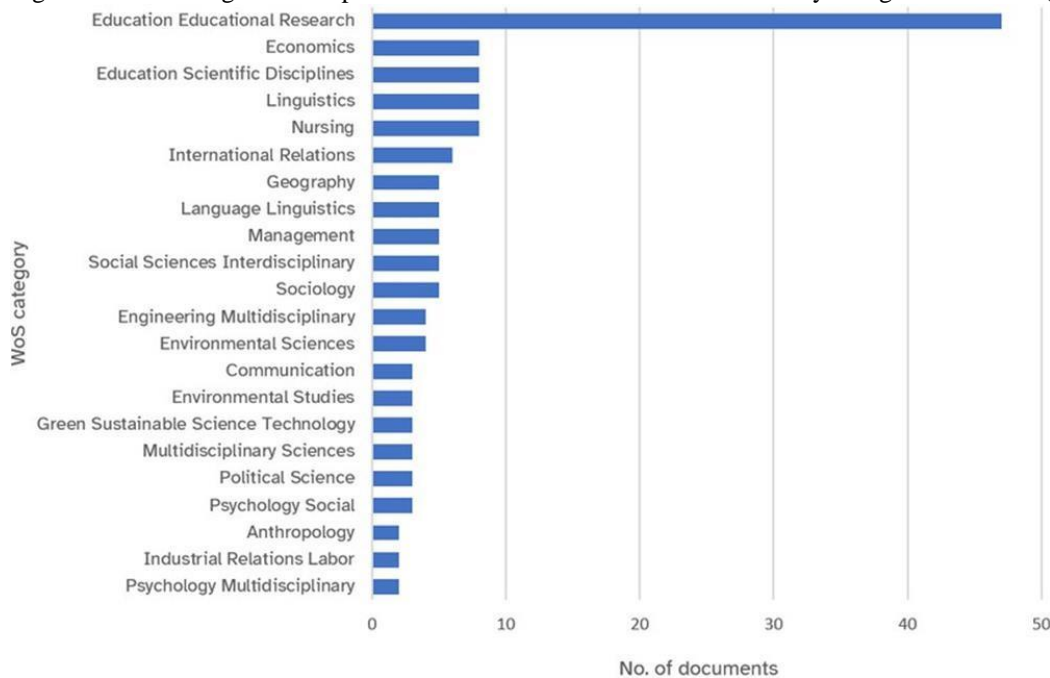
Publication Titles	No of documents
Journal of studies in international education	9
Higher education	9
Nurse education today	3
Nurse education in practice	3
International journal of engineering education	3
Studies in higher education	2
Baltic journal of economics	2
European journal of education	2
International journal of manpower	2

Source: Web of Science

Source of Knowledge areas of publications on international student mobility in higher education research areas of the journals, publications can be grouped into 42 WoS categories. However, almost half of the documents

correspond to Education Educational Research (31 documents). Figure 3 shows the knowledge areas in which more than one document has been published. Knowledge areas of publications on international student mobility in higher education shows that education educational research tops in knowledge domain .economics, education scientific disciplines ,linguistics, nursing comprises other set of major knowledge area.

Figure 2.5 Knowledge areas of publications on international student mobility in higher education (2000-2021)



Source: Web of Science

Most Cited Countries

The citation analysis revealed the most cited countries with publications on the topic of international student mobility in higher education. The results show that USA is prominent in terms of a citation followed by Australia, England, Canada are the countries in which citation are more reflected. Figure 2.6 shows the pictorial representation of the most cited countries in terms of number of citations. It is to be noted that developing countries such as India have a low score of citation on the topic of international student mobility in higher education even though India is country with largest youth population.

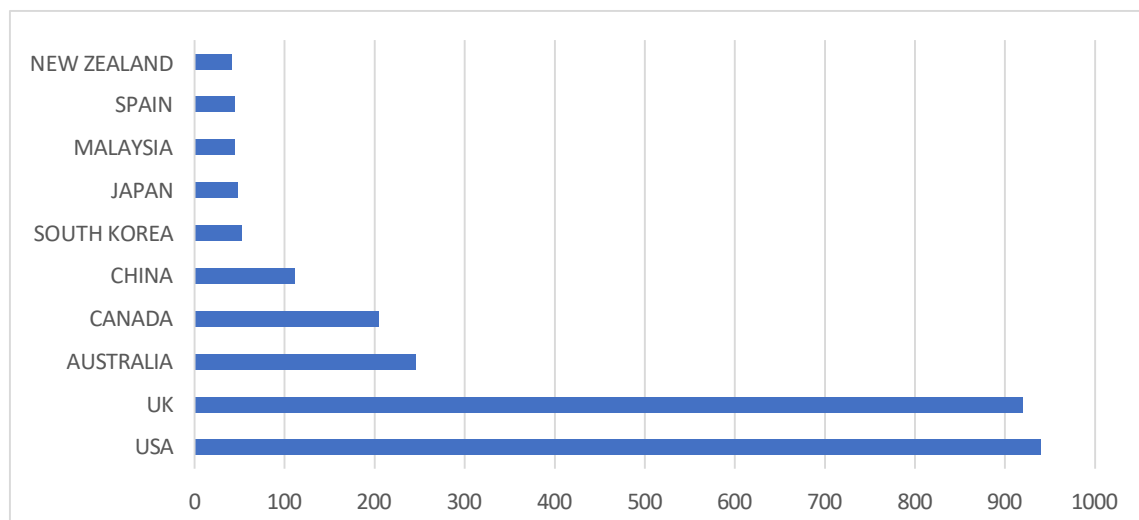
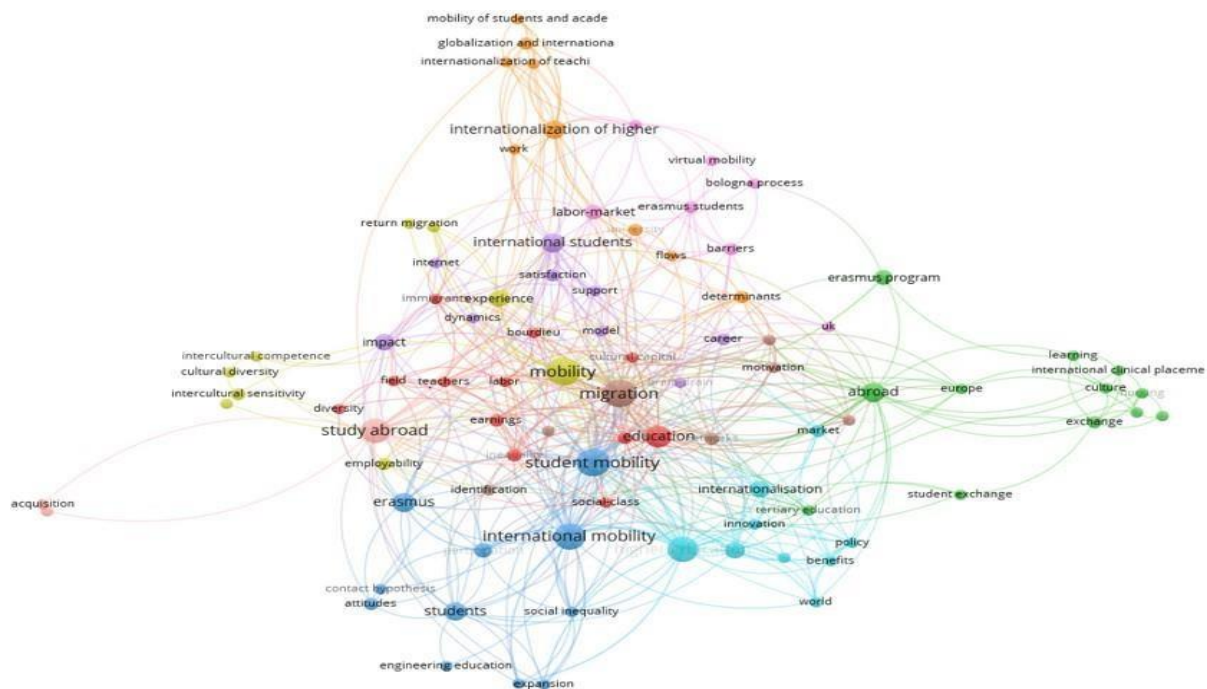


Figure 2.6 Most Cited Countries on the Topic international student mobility in higher education

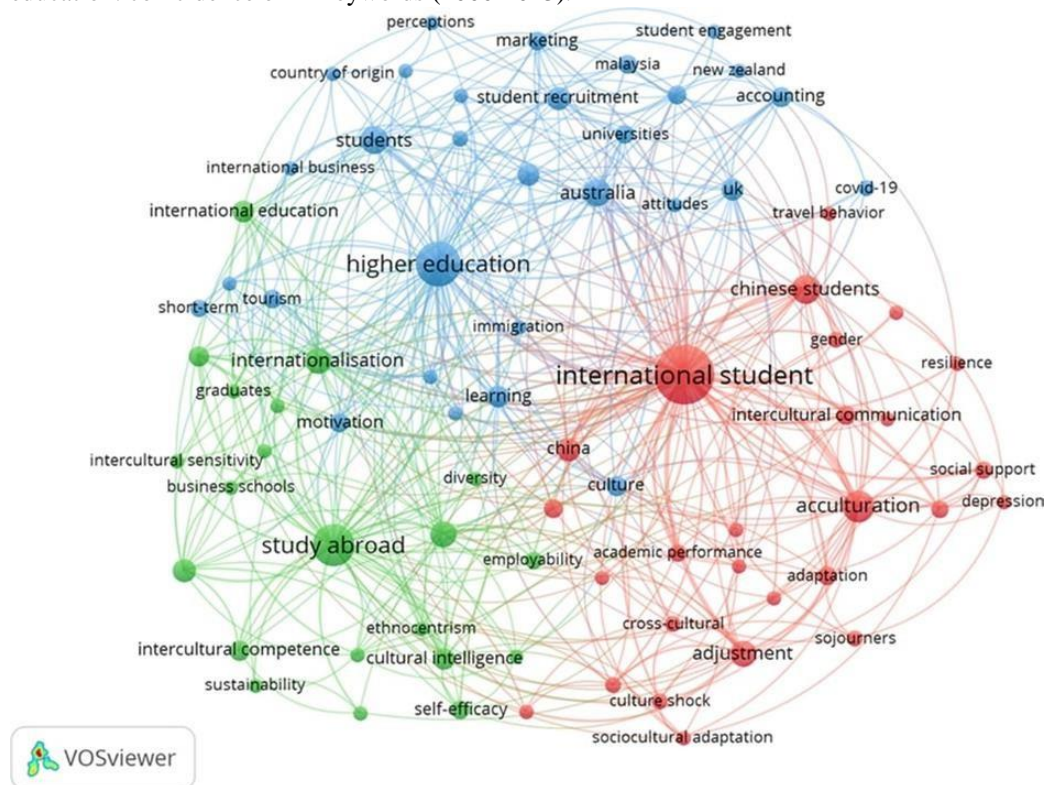
Source: Web of Science

Thematic clusters from the co-occurrence of keywords in publications on international student mobility in higher education: coincidence of 2 or more keywords (2000-2023)



Source: Web of Science

Thematic clusters from the co-occurrence of keywords in publications on international student mobility in higher education: coincidence of 4 keywords (2000-2023).



Source: authors' own work.

The analysis of co-occurrence 4 of keywords shows that, considering a coincidence of 3 keywords, we can identify 7 cluster of publications based on 43 terms. Co-occurrence map of most frequently used keywords in ISM literature (Minimum number of occurrences of a keyword is five. Among the 2196 keywords, 78 meet the threshold).

Word Cloud

Word cloud shows the frequency of occurrence of key words in publications related to international student mobility and higher education. It is clear that international, factors, students are the most repeated keywords used in most of the study related to student mobility.

Figure 2.8 shows the content analysis: word cloud of keywords “international student mobility and higher education”



Conclusion

Higher education has a critical role in determining how future generations learn to deal with the problems of sustainable development. It is the determinant of a society's intellectual capacity and the strength of its future prospects. World higher education system that provides education and training in nearly all elements of human creative and intellectual endeavors, particularly in the arts, sciences, and humanities still a large number of the youth population are migrating to different countries for higher education. From the bibliometric analysis, it is found that there is an increase in the annual scientific production of publications in the field of international student mobility and higher education” which signifies the relevance of this area of research. It shows that of international student mobility and higher education research works are increasing in developed countries rather than developing countries. As far as India is considered, a nation where a huge youth population more studies need to be conducted and explored various dimensions. The findings of this study are based on a list of major journals, documents, and empirically validated authors which shape the discourse of this scope. It further strengthened the growing recognition higher education can play in achieving sustainable development. It can be seen that evident growth of the higher education research and its cross-disciplinary research together, these trends are able to shape an emergent interdisciplinary field of works, with the hope of having an impact on policy and practice in the coming years.

References

- Ardito L, Scuotto V, Del Giudice M, Petruzzelli AM. A bibliometric analysis of research on Big Data analytics for business and management. *Management Decision*. 2019;57(8):1993-2009.
- Guo YM, Huang ZL, Guo J, Li H, Guo XR, Nkeli MJ, et al. Bibliometric analysis on smart cities research. *Sustainability*. 2019;11(13):1-18
- Li X, Lei L. A bibliometric analysis of topic modelling studies (2000-2017). *Journal of Information Science*. 2021;47(2):161-175.
- Gimenez-Espert MD, Prado-Gasco VJ. Bibliometric analysis of six nursing journals from the Web of Science, 2012-2017. *Journal of Advanced Nursing*. 2019;75(3):543-554.

Cretu DM, Morandau F. Bullying and cyberbullying: A bibliometric analysis of three decades of research in education. *Educational Review*. 2022;1-34.

Ivanovic L, Ho YS. Highly cited articles in the education and educational research category in the social science citation index: a bibliometric analysis. *Educational Review*. 2019;71(3):277-286.

Raman A, Thannimalai R, Don Y, Rathakrishnan M. A bibliometric analysis of blended learning in higher education: perception, achievement and engagement. *International Journal of Learning, Teaching and Educational Research*. 2021;20(6):126-151

Esen M, Bellibas MS, Gumus S. The evolution of leadership research in higher education for two decades (1995-2014): A bibliometric and content analysis. *International Journal of Leadership in Education*. 2020;23(3):259-273

Antia-Obong SE, Casselden B, Pickard A. A bibliometric analysis of Journal of Higher Education Management (JHEM) from 2007 to 2016. *Library Philosophy and Practice*(3037). 2019:1-26.

Brandt JS, Hadaya O, Schuster M, Rosen T, Sauer MV, Ananth CV, et al. A bibliometric analysis of top-cited journal articles in obstetrics and gynecology. *Jama Network Open*. 2019;2(12):1-11.

Socio-Economic Status of Plant Nursery Owners: A Study at Khamargachhi in Hooghly District of West Bengal

Kartick Biswas

Assistant Professor,
P.G. Department of Commerce
Hooghly Mohsin College
Chinsurah, Hooghly
West Bengal 712101, India

Dr. Ashoke Mondal

Assistant Professor
Department of Management and Marketing
West Bengal State University,
Barasat, North 24 Parganas,
West Bengal. 700126, India

Abstract

A plant nursery is a place where seedlings are propagated and grown to a desired size under favourable condition until they are ready for sale. Mostly breeding of seedlings is done for the purpose of gardening, forestry, or conservation biology, rather than for agriculture. Sustainability and growth of plant nursery industry mostly depend on socio-economic condition of the plant nursery owners. We hardly think about how nursery owners are, where they live, whether their children have been getting proper education or not, are the nursery owners in a position to fulfil their basic needs or are their family members getting family safety and support from them adequately. So to know these unknowns we have tried to cast focus on the analysis of socio-economic factors of small-scale to large-scale private plant nursery owners at Khamargachhi covering Banerwarpur, Gopalpur, Hatikanda and Paranpur areas in Hooghly district of West Bengal. In this paper we have analyzed the socio-economic factors of private plant nursery owners to investigate whether there is any association between different socio-economic indicators and levels of income of nursery owners in the study area. Under socio-economic factors income, education, employment, family safety and supports, wealth and dwelling place of the nurserymen in the said area have been measured. A Total of 60 nursery farms were selected for collecting primary data using a pre-structured questionnaire. The association is verified by Goodman-Kruskal Gamma coefficient using SPSS software. Findings of the study reveal that level of income of the nursery owners depend on their level of education, length of business and land size.

Key Words: Plant Nursery, Floriculture, Kruskal Gamma Coefficient, Seedlings, Nurserymen, Sustainability, Socio-economic indicator.

Introduction

The scope of agriculture is very wide and plant nursery is a small part of agricultural activity where plants take birth as seedlings or saplings get nurtured and finally grown. The buyers of seedlings, saplings and ready plants etc go to their nearby nursery and pick up their desired one by paying the price of the products to the nursery owners. Almost all types of plants can start life and grow easily with utmost care of the nurserymen within the nursery area. Nursery business is such type of organised and recurring activity of the nursery owners which produce multiple types of plants and distributes in exchange of price. So nursery business is an economic activity in which nurserymen remain engaged in nursery related works for the purpose of earning their living. The output of the nurseries is sold to the other garden owner, wholesaler, retailers, and street vendors and even to the householders. That is why a farmer, a gardener, a businessman, a house owner, or an entrepreneur can be a client of this business.

In the last two or three decades, our world has registered many a change in the climatic condition that is now posing a threat on the survival of mankind. To cope up with this adverse climatic condition, most of the nations of the world have awakened and are now taking steps and action to mitigate and curb it. One of the important steps is to encourage the farmers to open and establish plant nurseries. Many of the past researchers have suggested, only planting of shrubs and trees and thereby making the world greener can bring the global pollution and global warming under control at ease and most effectively. A small percentage of total population of India has taken nursery business as their source of livelihood. Findings and conclusions of the previous researchers (Ghosh and Gupta, Molla et al, Lunawat and Jain, Eko, et al.) reveal that the nursery business is a profitable business and can generate huge employment opportunities not only for the people having required capital but also for the unemployed people. So it can reduce states' as well as nation's unemployment rate. But as the nursery work is a mixture of agriculture activity and normal business activity the sustainability of it depends on various social and economic factors of the nursery owners e.g. their income, education, employment, family safety, and social supports etc. because these factors can significantly affect how well and how long the nursery owners and their family can make their nursery business a profitable source of income..

There is a huge employment at Khamargachhi in Hooghly district under West Bengal, but according to the opinion of many nurserymen government shows no interest in this sector of agriculture. Actually nursery owners are

completely neglected by the government. In spite of that nurserymen give support to the government in two ways: firstly they make the environment conducive to health, secondly they create huge employment. During Lock down period the nurserymen of this area made a contribution of rupees one lakh to the Prime Minister Relief Fund. There are five hundred enlisted nurseries under Balagarh Nursery Association. In addition to this there are many tiny unlisted nurseries in the study area. Electricity bill which are borne by the nurserymen are exorbitant because they are to pay commercial bill in place of agriculture based electric bill. A medium sized nursery paid rupees twenty thousand as electric bill though the income from this source is completely exempt from tax. In Andhrapradesh, the government there has installed in every nursery a 5 horse power motor at free of cost. But in West Bengal there is a lack of effort and kindness from the end of the government. There is a huge soil problem here; soil is collected by paying the huge amount of money to the owners of the brickfield just like royalty. At least one lakh people are involved in this business directly or indirectly. There are one thousand nursery owners, on an average six workers are engaged in each nursery, there are some pot suppliers, some tob suppliers, some insecticides suppliers, some pesticides suppliers, suppliers of papers, some give supply of fruits baskets, van drivers carry nursery materials or product from one nursery to another, there are approximately 600 hawkers who purchase small plant from the nursery owners all amounts to dependence of one lakh people on nursery business.. There is a way to get subsidy and other facilities from the government under the condition of fulfilment of rigorous criteria framed by Central Government.

Significance of study

The present study is very significant in today's economy. The results of our study are expected to be significant in various aspects. Based on the study people as well as government of our country will be aware of the fact that the plant nursery business is flourishing day by day and has a full potential of generating employment for the unemployed persons and creating income in favor of nursery owners. So this study would be helpful to the government in regard to employment generation.

The findings of our study will contribute greatly some valuable information to the government and on the basis of which the government will be able to formulate policy for making possible more growth in this sector in the near future with the potential of alleviate unemployment and reduce global warming.

literature Review

Many scholarly works and studies have been conducted by the academicians and researchers on the different aspects of plant nursery business like preparedness, management, production, finance, marketing and socio-economic factors of plant nursery business. But here an attempt has been made to extract and analyze those literatures which focused only on socio-economic aspects of plant nursery business for the purpose of identifying major factors of socio-economic status of the nursery owners and their effects on the profitability and viability of the plant nursery business:

Lunawat and Jain (2022) conducted a study on 20 private plant nurseries in Raipur districts of Chhattisgarh and its nearby area during 2021-2022 to analyze the socio-economic condition of plant nursery owners and for which they collected primary data by applying survey method. Factors of socio-economic conditions in their study were family-size, level of education, source of income, occupation, longevity and ownership of nursery business, etc. Results of the study revealed that education level and experience of respondents relating to their nursery business are quite satisfactory and nursery businesses were found to be a profitable business. But some of the socio-economic factors, to a little extent, have been hindering the businesses of nursery owners in the area of study.

Eko, et al. (2021) conducted a study in Nigeria, the horn of Africa, during 2021 to understand the socio-economic importance and profitability potential of nursery industries. They collected primary data through structured questionnaire administered to 120 nursery entrepreneurs and used multistage sampling technique for the purpose of analysis. As socio-economic characteristics they analyzed age, marital status, educational level, years of experience, business involvement, land acquisition and source of fund. It reveals that most experienced nursery owners are quite confident about the increase in productivity level by the virtue of certain trade secret that are far beyond the knowing of new entrants in the field.

Molla et al (2020) conducted a study on 17 nursery owners and 10 informants with 8 group discussions in Gondar and Bahirdar Cities to analyze the socio-economic contributions of small tree nursery owners in urban areas. The socio-economic benefits in the study area were measured in terms of employment potential, incomes and uses of income. Findings of the study showed that private tree nursery owners carry out not only nursery activities but also decoration and greening activities. The income deriving from these sources are used for subsistence purpose.

Ghosh and Gupta (2019) in their research paper showed the impact of social factors and economic factors on floriculture at Kolaghat C. D. Block in Purba Medinipur District of West Bengal during 2019. All the people of the study area cultivate various types of flowers irrespective of their caste, class and religion. They also found that

those who belong to higher caste category and micro family with high educational qualification have larger size of orchards in their nurseries.

Mamun, Rahaman and Afrooz (2018) conducted a study after collecting primary data from 105 respondents using a structured questionnaire in Dhaka metropolitan area, Savar Upazila and two Upazilas of Gazipur District of Bangladesh during 2018 to analyse the socio-economic condition of the owners of plant nursery and profitability potential of their business. As socio-economic characteristics of the plant nursery owners they analyzed age, education, experience, length of business, ownership pattern, legal institution, family size etc. The results of their survey revealed that experienced, educated and young nursery owners' earning is more profitable than others. Moreover, these businesses are economically sound in the surveyed area.

Benedict C. Posadas (2018) analyzed the determinants of the level of mechanization of nurseries and greenhouses with a view to develop a socio-economic status of horticulture workers and to find the effect of automation on their safety, skill levels, employment, earnings and retention rates through a survey covering 215 randomly selected wholesale nurseries and greenhouses in eight Southern states using a questionnaire containing 9 factors that were identified to have socioeconomic impacts on mechanization and automation. Respondent age, Respondent education, Input constraints, Labour characteristics, Operational characteristics, annual gross sale, Location and time were identified as the top 7 determinants which have great impact on mechanisation of nurseries in the southern United States.

Haque, Monayem and Rashid (2007) conducted a study at Jessore and Gazipur districts in Bangladesh during 2007 to analyse the socio-economic condition of plant nursery owners. For this purpose four government nurseries, forty private plant nurseries, and six NGO nurseries were selected at random. Family size (no./farm), education level (%), occupation, source of income, length of business, and ownership of land were considered as the factors of socio-economic condition. Their findings showed that the respondents of the observed area bear a satisfactory education level and experience. Besides the nursery businesses in the study area are profitable and can generate substantial number of employment.

Objectives of the Study:

The objectives of the study are:

1. To analyze the socio-economic indicators of the plant nursery owners.
2. To measure the association between income levels and other various socio-economic indicators of plant nursery owners.

Research Methodology:

Sampling Design:

The study is based on primary data which was collected from 60 nursery owners by convenience sampling method through structured questionnaire. Sometimes some secondary data have been incorporated in the study after collecting the same from journals, articles, websites etc. The study area is Khamargachi under Balagarh Police station in Hooghly District of West Bengal. Period of study was from first day of March 2024 to 30th April, 2024.

Statistical Design:

Hypothesis Framed:

Ho1: There is no association between Level of income and Level of education

HA1: There is an association between Level of income and Level of education

Ho2: There is no association between Level of income and Length of Business

HA2: There is an association between Level of income and Length of Business

Ho3: There is no association between Level of income and Size of Land

HA3: There is an association between Level of income and Size of Land

Ho4: There is no association between Level of income and Size of Family

HA4: There is an association between Level of income and Size of Family

Statistical Technique:

The data, collected through questionnaire, have been analyzed by using frequency table, percentage, cross tabulation, etc. to achieve the research objectives.

To measure the association between level of income and other socio economic indicators Goodman-Kruskal Gama coefficient has been used which is a measure of the relationship between two ordinal variables. Entire analysis has been done with the help of Microsoft Excel and SPSS software. Here,

$$\text{Gamma } (\gamma) = \frac{N_s - N_d}{N_s + N_d}$$

Where N=Sample size, N_s = number of Concordant pairs, N_d= Number of Discordant pairs.

Results and Discussion

a. Analysis of The Socio-Economic Aspects of Plant Nursery Owner:

a. Age of respondents:

Age pattern of the 60 respondents is presented in table no.1.

Table No.1: Age

Age of Respondent	Frequency	Percentage
20-30	2	3.33%
30-40	21	35%
40-50	21	35%
50 & above	16	26.67%
Total	60	100%

(Source: Field Survey)

From the Table No.1 it is seen that 70% of the respondents belong to the age group 30--50. So majority of the respondents are from middle age group and they have been dominating the nursery business in the study area.

b. Gender of the respondents:

Gender of the 60 respondents is presented in Table no.2.

Table No.2: Gender of Respondents

Gender	Frequency	Percentage
Male	58	96.67%
Female	2	3.33%
Total	60	100%

(Source: Field Survey)

Table 2 above depicts the gender wise distribution of the respondents. 96.67 % of the nursery owners were male while 3.33% was female. This indicates that majority of the respondents in the study area are male.

c. Educational Qualification:

Education Qualification of the 60 Respondents is depicted in Table no.3

Table No.3: Educational Qualification:

Education Qualification	Frequency	Percentage
Illiterate	9	15%
Up to Class VIII	18	30%
IX-XII	18	30%
Graduation and Above	15	25%
Total	60	100%

(Source: field survey)

Table 3 shows that only 15% of the respondents are illiterate and rest 85% can read and write. 25% of the respondents have their graduation degrees. Majority of the respondents (55%) are class VIII passed owners.

d. Caste:

Castes where the respondents belong is depicted in Table no. 4

Table No.4: Caste of the Respondents:

Caste	Frequency	Percentage
SC	26	43.33%
ST	0	0
OBC-A	6	10%
OBC-B	1	1.67%
General	27	45%
Total	60	100%

(Source: field survey)

Table 4 reveals that except 11.67% of the nursery market the rest of the nursery market is occupied almost equally by the owners belonging to scheduled castes (43.33%) and the owners belonging to general castes (45%). No participation of the ST category was found there. Advancement of scheduled caste owners in this field is remarkable.

e. Annual income of respondents:

Annual Income of Respondents is shown in Table No.5

Table No.5: Annual Income

Annual Income	Frequency	Percentage
Below Rs.100000	10	16.67%
Rs.100001- Rs.250000	24	40%
Rs.250001- Rs.500000	18	30%
Above Rs. 500000	8	13.33%
Total	60	100%

(Sources: field survey)

Table 5 expresses that 16.67% of the respondents have their annual income below Rs.1, 00,000. Majority of the respondents (70%) have their annual income more than Rs. 1, 00,000 but less than Rs. 5, 00,000. Only a few percentages of the respondents (13.33%) have their annual income more than Rs. 5, 00,000.

f. Length of businesses of respondents:

Length of Businesses of Respondents is shown in Table No.6

Table No.6: Length of Business

Annual Income	Frequency	Percentage
Less than 5 years	9	15%
5-10 years	15	25%
11-20 years	22	36.67%
More than 20 years	14	23.33%
Total	60	100%

(Sources: field survey)

Table 6 above depicts only 23.33% of respondents have been running their nursery business for more than 20 years. 15% of the respondents have not yet completed 5 years of their business. Majority of the respondents (60%) have been performing their businesses for 11 years and more. Businesses that are older than 5 years are 85%.

g. Area of land

Land area on which the 60 respondents perform their nursery works is shown in Table No.7

Table No.7: Area of Land

Area of Land	Frequency	Percentage
Less than 2 Bighas	25	41.67%
2-5 Bighas	23	38.33%
6-10 Bighas	10	16.67%
Above 10 Bighas	2	3.33%
Total	60	100%

(Sources: field survey)

Table 7 above depicts only a few percentage (3.33%) of the nurserymen have their land size above 10 bighas and 41.67% of the nurserymen have their land size below 2 bighas. But majority of the nurserymen (55%) have their land size from 2-10 bighas.

h. Family size

The family size of the nursery owners is measured in Table no.8

Table No.8: Family Size

Family Size	Frequency	Percentage
Small	14	23.33%
Medium	28	46.67%
Large	18	30%
Total	60	100%

(Sources: field survey)

Table 8 above depicts that nursery owners from the medium family size have the highest participation (46.67) in nursery business. Again, the participation of the large family size (30%) is more than the participation of the small family (23.33%).

i. Wealth acquisition

Wealth acquired by nursery owners is measured in Table no.9

Table No.9: Wealth Acquisition

Wealth (No. of Home appliances including house) Acquisition	Frequency	Percentage
1-2	0	0
3-4	0	0
5-6	3	5%
7-8	19	31.67%
9-10	38	63.33%
Total	60	100%

(Sources: field survey)

Table 9 above depicts that majority of the respondents (63.33 %) have almost all the assets and 5% of the respondents have only 5-6 assets out of 10 assets we considered.

B. Measurement of The Association Between Level of Income and Other Socio-Economic Aspects:

a. Measurement of association between Level of Income and Level of Education (Hypothesis -1)

Cross tabulation:

		Education Level of the Respondents				
Annual Income of the Respondents		Illiterate	Upto class VIII	Class IX to XII	Graduation	Total
Up to Rs.1,00,000		6	3	1	0	10
Rs.1,00,000 –Rs.2,50,000		2	11	8	3	24
Rs. 2,50,001-Rs.5,00,000		2	4	6	6	18
Above Rs.5,00,000		0	0	2	6	08
Total		10	18	17	15	60
Association between Level of Income and Level of Education						
Dependent variables	Independent variable(Socio economic Factors)	Gamma Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. level	Significance
Level of Income	Level of Education	0.686	0.098	5.694		.000

The gamma value between level of income and level of education is 0.686, and approx T (b) value is 5.694 and it is significant at 1% level. SoHo1 is rejected. It can be concluded that there is an association between level of education and level of income.

b. Measurement of association between Level of Income and Length of Business

(Hypothesis-2):

Cross tabulation:

		Length of the business				
Annual Income of the Respondents		Less than 5 Yrs	5-10 Yrs	11-20 Yrs	More than 20 Yrs	Total
Up to Rs.1,00,000		5	3	1	1	10
Rs.1,00,000 –Rs.2,50,000		3	12	5	4	24

Rs. 2,50,001-Rs.5,00,000	1	3	8	6	18
Above Rs.5,00,000	0	0	4	4	8
Total	9	18	18	15	60
Association between Level of Income and Level of Education					
Dependent variables	Independent variable(Socio economic Factors)	Gamma Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. level Significance
Level of Income	Length of Business	0.617	0.109	4.962	.000

The gamma value between level of income and length of business is 0.617, and approx T (b) value is 4.962, hence it is significant at 1% level. So, Ho2 is rejected. It can be concluded that there is association between length of business and level of income.

c. Measurement of association between Level of Income and Size of Land
(Hypothesis-3):

Cross tabulation

	Size of Land				
Annual Income of the Respondents	Less than 2 Bighas	2-5 Bighas	6 to 10 Bighas	More than 10 Bighas	Total
Up to Rs.1,00,000	9	0	0	1	10
Rs.1,00,000 –Rs.2,50,000	14	10	0	0	24
Rs. 2,50,001-Rs.5,00,000	2	13	3	0	18
Above Rs.5,00,000	0	0	7	1	8
Total	25	23	10	2	60
Association between Level of Income and Size of Land					
Dependent variables	Independent variable(Socio economic Factors)	Gamma Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. level Significance
Level of Income	Size of Land	0.854	0.104	7.133	.000

The gamma value between level of income and size of land is 0.854 and approx T (b) value is 7.133 and it is significant at 1% level. So, Ho3 is rejected. It can be concluded that there is association between level of income and size of land.

a. Measurement of association between Level of income and Size of Family
(Hypothesis-4):

Cross tabulation

	Size of Family			
Annual Income of the Respondents	Small	Medium	Large	Total
Up to Rs.1,00,000	4	6	0	10
Rs.1,00,000 – Rs. 2,50,000	5	9	10	24
Rs. 2,50,001-Rs.5,00,000	5	9	4	18
Above Rs.5,00,000	0	4	4	8
Total	14	28	18	60
Association between Level of income and Size of Family				
Dependent variables	Independent variable(Gamma Value	Asymp. Std. Error(a)	Approx. T(b)

	Socio economic Factors)			
Level of Income	Size of Family	0.268	0.142	1.817

The gamma value between Level of income and Size of family is 0.268, and approx T(b) value is 1.817 so it is insignificant at 1% level. Hence, Ho4 is accepted. It can be concluded that there is no association between size of family and level of income.

Vii. Findings and Conclusions:

- In the above analysis it is seen that majority (70%) of the nursery owners belong to age-group 30-50 years.
- 83.33% of the nurserymen have their annual income more than Rs. 1, 00,000.
- The participation of owners belonging to scheduled caste in this field is remarkable (43.33%).
- Except only 15% of the respondents all other are literate and out of total literate nursery owners 25% of the nursery owners have graduation degree. So, educated persons also started taking entry in this field.
- Majority (50.98%) of the nursery owners have been using the leasehold land rather than acquired land.
- 36.67% of the respondents have been performing their nursery activities for a period ranging from 11-20 years.
- 41.67% of the nurserymen have been using land shorter than 2 bighas.
- Majority of the respondents (63.33%) have almost all the assets like own house, gas, television, refrigerator and washing machine.
- In our study we found that level of income significantly depends on level of education. So, the nursery owners should be more focused on the education of their next generation which in turn would sustain their nursery business for a long period of time as well as would ensure strong source of livelihood of their successors.
- We also found that there is an association between the level of income and length of business. That means the level of income also depends on the length of the business.
- In the study we find that the larger the length of the business (period of business) the more is the amount of profit. So, it can be concluded that at the initial stage of nursery business it is better not to expect huge profit from this business but afterwards it would start giving more profit to the nurserymen with the increase in the length of the business.
- We also found the association between the level of income and size of land. The logic behind this association is economies of large scale operation. If the nurserymen consolidate their land holdings avoiding fragmentation of land, they can earn more profit.

We also found some opinions of the respondents that Government's attention in the nursery sector of the study area does not match with the current employment in the study area. Stakeholders of the nursery sectors in the study area are totally neglected by the government. Though the nursery sector gives support to the society in two respects a) It saves the environment and b) It gives efforts to generate employment and also sustain that employment level. There are more than 1000 nurseries in the field, out of which more than 600 are enlisted to the Balagarh Nursery Association in the area of Khamargachhi. And others are not as they are the small nurseries. More than 1,00,000 persons are directly or indirectly dependent on nursery business in the study area. Average number of workers is 6, Besides, some are supplying pots, some are tubs, some are insecticides and pesticides some are supplying fertilizer and there are some hawkers (more than 500 hawkers are there) who purchase small plants from the nurseries and sell them to the different places surrounding the nursery industry. In one season this nursery needs 100 ton of newspaper, some families give supply of this paper. Some people supplying fruit case. Some people have van for goods carriage In this way total number of persons directly or indirectly dependent on nursery business is approximately more than 1,00,000. So a large number of persons are engaged in the field our Government hardly pays any attention to this sector in the study area. Stakeholders of this sector in the study area are totally deprived. Out of 1000 nurseries, around 750 nursery owners do not have their own land and that is why they do not get any grant or financial assistance from the West Bengal Government. Though there is hardly any scheme of West Bengal Government under which facilities are available but as most of the nurseries fail to fulfill the criterion as laid down in the Governments' regulations they becomes deprived of getting that facilities like Government constructs shed in the individual nurseries and supply vermi- compost to the nursery owners. As more than 75% owners have land size below 5 khathas they are not eligible to get the government assistance. In the way the present condition of the nursery owners have not yet been improved satisfactorily in the study area. So our government should come forward to solve all pertinent problems and accelerate the pace of economic development of the nursery sector in the study area by simplifying the criteria it framed up for providing benefits to the nurserymen. The government should, keeping in view the importance of the nursery industry in the study area, frame up some new policy by which the grievances of the nursery owners can be redressed and thereby they

can be more motivated to invest their full efforts, potentiality and other resources in the field and can generate more employment for the unemployed persons and remove poverty as far as possible. Moreover the contribution of the MSME sector, our GDP and overall the national income and per capita income of our country will be increased. As per field survey nursery owners and others who are dependent on nurseries ensure their willingness and efforts to improve the nursery sectors in the study area, now it is the kindness of the government which can make the nursery industry as a glorious way of livelihood of the people of our society.

Limitations of the Study:

- a) The Study is confined within Khamargachi of Hooghly District and the sample size is small.
- b) The study is based on convenience sampling rather than random sampling so there may be a chance of errors due to the biases of respondent.
- c) The result may be different if large number of respondents were considered.

References:

- Mamun, A., Rahman, A. and Afroz, N., 2018.** A socio-economic analysis of private plant nursery business in Bangladesh. *The Agriculturists*, 16(02), pp.102-114.
- Eko, O.D., Adedokun, M.O., Soaga, J.A., Okojie, L.O., Atanda, T.A. and Abisoye, T., 2021.** Socio-Economic Importance of Tree Nursery Enterprises in Lagos State, Nigeria. *Journal of Applied Sciences and Environmental Management*, 25(1), pp.21-28.
- Haque, M.A., Miah, M.M. and Rashid, M.A., 2007.** An economic study of plant nursery business in Gazipur and Jessore Districts of Bangladesh. *Bangladesh Journal of Agricultural Research*, 32(3), pp.375-385.
- Molla, M., Abtew, A.A. and Tebkew, M., 2020.** Socioeconomic contributions of small-scale private urban tree nurseries in Gondar and Bahirdar Cities. *Cogent Food & Agriculture*, 6(1), p.1785104.
- Ghosh, P.S. and Gupta, K., 2019.** Impact of socio-economic factor on floriculture in Kolaghat CD block, Purba Medinipur District. *Int. J. Innov. Stud. Sociol. Human.*, 4(3), pp.61-69.
- Posadas, B.C., 2018.** Socioeconomic determinants of the level of mechanization of nurseries and greenhouses in the southern United States. *AIMS Agriculture & Food*, 3(3).
- Sahu, A., Chatterjee, S. and Paul, A.K., 2011.** Growth of floriculture and its role in promoting socio-economic status of floriculturists of Panskura and Kolaghat Blocks, Purba Medinipur.

The Role of Fintech in Enhancing MSMEs Growth and Economic Expansion in India

Dr. Jasveen Kaur

Faculty

University Business School (UBS)
Guru Nanak Dev University,
Amritsar-143005 (Punjab, India)

Sarita

Research Scholar

University Business School (UBS),
Guru Nanak Dev University,
Amritsar-143005 (Punjab, India)

Abstract

In the current era of Industrial Revolution 5.0, the Fintech industry finance through technology has become increasingly important to the expansion of the Indian economy. In this regard, the financial technology sector, or Fintech, has emerged as a crucial element of India's economy, particularly impacting the development of MSMEs. MSMEs are the foundation of the Indian economy, making substantial contributions to GDP, exports, and job creation. MSMEs and economic growth are closely related, which emphasizes the need for a supportive financial infrastructure. Fintech promises to provide this infrastructure by resolving the ongoing issues MSMEs face with financing, payments, insurance, and access to microfinance. In order to assess the present state of Fintech and MSMEs in India, this study will look into their growth, influence, and reciprocal significance to the country's economy. Through a thorough review of secondary data from published research, working papers, and credible organizational reports, this study highlights the Fintech sector's significant contributions to resolving the financial and operational bottlenecks that frequently impede the expansion of MSME. Furthermore, Fintech applications have increased MSMEs' capacity to grow, optimize processes, and connect with new clientele, especially via digital channels that promote seamless transactions and effective money management. The study also examines the Fintech industry's overall development trajectory in India, concentrating on key players, legal frameworks, and technological developments that influence how this sector supports MSMEs. Fintech is an essential tool for MSMEs to increase market share, improve revenue generation, and boost operational efficiency in this digital ecosystem. In conclusion, the relationship between Fintech and MSMEs reveals a revolutionary avenue for the development of the Indian economy, offering a framework wherein technologically advanced financial solutions directly tackle the particular difficulties faced by MSMEs. In addition to strengthening MSME flexibility in a cut-throat market, this collaboration has opened the door for inclusive growth and development in the Indian economy as a whole. To better understand the sector's changing role in Industrial Revolution 5.0, future research can expand to longitudinal studies to evaluate the long-term effects of Fintech on MSME performance.

Keywords: Financial technology (FinTech), Micro, small & medium enterprises (MSMEs), Digital economy, Finance, Digital.

Introduction

In the twenty-first century, technology plays a crucial role in enabling people to lead simple, easy lives. Every day, technology is interfering more and more with every part of life. Thus, the demand for technology-based products is raised by this technological interference. Technology affects both the producer and the consumer, or the supply and demand sides, to boost productivity based on higher quality (Brynjolfsson & Saunders, 2009). Fintech can be defined as a company that uses new technology in conjunction with traditional financial methods to provide financial products, such as application-based finance instrument trading and the UPI (Unified Payment Interface) payment system. The term is derived from the words "finance" and "technology." Fintech's economic penetration has grown dramatically over the past 15 years, particularly since its demonization in 2016 (Mohan, 2020). Fintech is the term for this integration of technology and finance (Srikrishnan, 2017). It is marked by the combination of digital technologies, artificial intelligence (AI), robotics, and the Internet of Things (IoT) with traditional industries. The Fourth Industrial Revolution, also known as Industry 4.0 or, more recently, Industry 5.0, is what the world economy is currently going through (Chander & Pal, 2022). It is defined by the combination of digital technologies, artificial intelligence (AI), robotics, and the Internet of Things (IoT) with traditional industries, which is changing how businesses function and engage with markets and customers. Micro, Small, and Medium-Sized Enterprises (MSMEs) are the backbone of the Indian economy (Özdemir & Hekim, 2018). MSMEs rely heavily on finance, without it, their success is unthinkable, and in this day and age, they have integrated finance with technology. These businesses are the backbone of the Indian economy, making a substantial contribution to GDP expansion, job creation, and export revenue. Because they empower a variety of societal groups, such as women entrepreneurs and rural communities, MSMEs are essential for fostering innovation, entrepreneurship, and economic inclusivity (De, 2018). The convergence of MSMEs and Fintech has revolutionary potential. Fintech solutions provide MSMEs with more market opportunities, better risk

CSIBER International Journal – CIJ

A Quarterly Double-Blind Peer Reviewed (Referred/Juried) Open Access International e-Journal – Included in the International Serial Directories

<https://www.siberindia.edu.in/journals/>

management tools, expedited payment systems, and inexpensive financing Agrawal & Zagade). This collaboration is promoting financial inclusion and economic empowerment by changing the way small businesses function and expand in the current digital era. It is challenging to raise money in India without offering adequate security, particularly for loans to MSMEs. Due to the small business's scale, an unfair assumption of credit risk is made. This is where the significance of fin-tech funding models is revealed. It mitigates the drawback of scale being small by assisting in the real-time transparency of business information (Greene & Bala, 2018). By lending money themselves, acting as financial product aggregators, or putting MSME in contact with banks and other financial institutions, fin-tech companies support MSME. The widespread use of smartphones and the rapid advancement of technology have allowed fin-tech companies to provide MSME access to credit that they rightfully deserve. They provide small businesses with creative and adaptable credit products that help them close the funding gap (DAN & Dewi, 2023). The study attempts to provide a broad overview of fin-tech and its significance today. This study focuses on examining the role of fin-tech companies in funding MSME in India and demonstrates that in order to provide MSME the benefits of formal lending, fin-techs and banks must collaborate to provide creative and customized digital offerings. The MSME sector contributes significantly to GDP, exports, and employment, all of which are important for the development of the country. The largest barrier to MSME growth and job creation in developing nations like India is limited access to credit. The lending industry must expand by 80% in order to generate the necessary jobs. The existing financial infrastructure is very expensive and only functions well in cities. It is based on physical branches and relationship managers (Mukherjee, 2018). Fin tech is presenting a promising remedy to get around this. Fin-tech is concentrated on providing quick and easy banking services to the MSME sector anywhere at any time. Lenders can more accurately verify the identity of the business owner with the use of fingerprint and iris scanning (Gupta & Tham, 2018). This is particularly important in nations where millions of people may share the same surname and where there are no addresses or identification registers. Lenders can determine an individual's creditworthiness faster by using psychological testing or mobile phone data analysis. Lending itself is evolving as a result of fin-tech (Van Loo, 2018). Loan arrangements are no longer required to be made at a bank branch thanks to crowdsourcing and mobile banking. Additionally, bit coin enables the settlement of international payments in a matter of minutes. It is much simpler for lenders to stay on top of things, say by automatically advising the business or sending texts, if business owners can handle their accounts and finances with basic apps.

Significance of Fintech in empowering MSMEs

Micro, Small, and Medium-Sized Enterprises (MSMEs) benefit greatly from fintech in a number of ways.

➤ **Finance Access:** Getting financing is one of the main issues facing MSMEs. Small businesses are frequently turned down for loans by traditional lenders because of alleged risks and a lack of collateral. Alternative financing options like invoice financing, crowdfunding, and peer-to-peer lending are provided by fintech platforms. These platforms make it simpler for MSMEs to obtain funding swiftly and at reasonable rates by utilizing technology to evaluate creditworthiness based on alternative data points.

✓ **Cost-Effectiveness:** Fintech solutions help MSMEs operate more economically by streamlining financial procedures. For small businesses, digital payment systems, automated accounting software, and online lending platforms mean less paperwork and middlemen, which means savings in terms of both time and money.

✓ **Financial Inclusion:** By assisting marginalized MSMEs that conventional financial institutions frequently ignore, fintech advances financial inclusion. MSMEs in remote locations or with restricted access to banks can now engage in the formal financial system, enhancing their financial resilience and growth prospects, thanks to mobile banking, digital wallets, and microinsurance products.

✓ **Data-Driven Insights:** Fintech companies use machine learning algorithms and big data analytics to give MSMEs actionable insights into market trends, customer behavior, and financial health. This data-driven strategy aids small businesses in decision-making, operational optimization, and the discovery of fresh avenues for expansion.

✓ **Risk management:** Fintech solutions provide MSMEs with cutting-edge instruments for risk management, including fraud detection systems, credit scoring models, and insurance plans customized to meet their requirements. By reducing risks related to lending, payments, and cybersecurity, these solutions improve small businesses' general stability and sustainability.

✓ **Market Expansion:** Fintech helps MSMEs to reach a wider range of consumers outside of specific geographic areas. Small businesses can grow and compete in global markets thanks to e-commerce platforms, digital marketing tools, and online payment gateways that enable cross-border trade and access to customers worldwide. In general, Fintech enables MSMEs to grow, innovate, and be resilient in the face of changing business conditions

by giving them access to markets, inexpensive financing, effective financial management tools, and risk mitigation techniques.

Role of Fintech on the Growth of Msmes

Micro, Small, and Medium-Sized Enterprises (MSMEs) and financial technology (fintech) have come together in India to form a transformative force that is propelling growth and promoting economic development. Fintech plays an important role in increasing access to finance and promoting the growth of MSMEs by providing flexible products and better ways to solve problems. This fintech creates a foundation that can help MSMEs grow by facilitating digital identity verification, cooperative customer due diligence, data sharing, and payment plans. Additionally, it improves customer satisfaction and lowers the cost and increases accessibility to financial services. It is simpler for MSMEs to record financial transactions using different apps like Khatabook and UPI-based apps when they use fintech. Certain Fintech applications automatically log financial transactions and provide sales data on a weekly or monthly basis to assist MSME participants in comprehending the performance of their business. Additionally, the customer found that working with fintech-enabled businesses went more smoothly since it simplifies payment gateways and allows customers to conduct transactions without having to physically meet with sellers. This makes transactions more convenient, transparent, and accessible, and empowers users while being simple to use. Furthermore, the FinTech industry provides unique and innovative techniques for assessing risks through the use of big data, machine learning, and the creation of credit ratings for customers with negligible to no credit history. which helps companies expand their services throughout all of India. Fintech is tackling these issues and helping MSMEs prosper in a more digital and competitive market with its creative solutions. Enhancing access to financing is one of fintech's most important contributions to MSMEs. MSMEs have historically had difficulty obtaining loans from traditional banks because of their strict credit requirements and dearth of significant collateral. Fintech companies provide creative lending solutions like invoice financing, crowdfunding, and peer-to-peer (P2P) lending by utilizing technology and alternative data sources. These platforms evaluate MSMEs' creditworthiness more quickly and accurately by using big data analytics and sophisticated algorithms. This makes it easier and faster for MSMEs to obtain desperately needed capital. For MSMEs to invest in growth opportunities, grow their businesses, and become more competitive, financial inclusion is essential. Fintech also helps MSMEs operate more efficiently by digitizing their financial procedures. The use of digital payment solutions, like Unified Payments Interface (UPI) and mobile wallets, has completely changed how MSMEs perform transactions. These digital platforms provide easy and safe payment options, cut transaction costs, and lessen reliance on cash. As a result, MSMEs that implement quick and easy payment methods can improve customer satisfaction and manage their cash flows more skill fully. Fintech companies also offer automated invoicing and accounting software that streamlines back-office operations, cutting down on human error and freeing up resources for important business initiatives. Another area where fintech is making great progress is risk management. MSMEs are vulnerable to a range of risks, such as shifts in the market and interruptions in operations, and frequently operate with narrow profit margins. Fintech solutions offer advanced risk management capabilities like customizable insurance plans and real-time fraud detection systems. Blockchain technology, for example, lowers the risk of fraud by guaranteeing the security and transparency of transactions. Fintech-enabled insurance platforms also provide customized policies that address the unique requirements of MSMEs, assisting them in reducing the risks related to their day-to-day operations. Fintech also helps MSMEs grow their customer base and penetrate new markets. MSMEs can reach a wider audience outside of their local markets by using digital platforms with e commerce capabilities. Fintech tools help MSMEs target particular customer segments, personalize their offerings, and interact with their audience more successfully. Examples of these tools are digital marketing and analytics-driven insights. In addition to increasing sales, this greater market penetration also improves customer loyalty and brand visibility. Financial empowerment and financial literacy are additional roles that fintech plays in the MSME sector. Fintech platforms frequently include tools and educational resources to assist MSMEs in understanding market trends, compliance requirements, and financial management. With this information, MSME owners are better equipped to plan strategically for long-term growth, optimize their operations, and make educated decisions. Furthermore, the integration of fintech in the MSME sector has been further stimulated by the government's supportive policies and regulatory framework. The Digital India campaign and the Pradhan Mantri Jan Dhan Yojana, for example, have created a solid foundation for a digital infrastructure that will support the growth of fintech services. MSMEs are more likely to adopt these technologies because regulatory bodies like the Reserve Bank of India (RBI) have established guidelines to guarantee the secure and effective operation of fintech platforms. To summarize, fintech is contributing significantly to the expansion and success of MSMEs in India through facilitating better access to capital, increasing operational effectiveness, offering strong risk management solutions, opening up new markets, and promoting financial literacy. Fintech is predicted to advance MSMEs' economic empowerment as it develops, propelling equitable growth and setting them up for long-term success in the digital era.

Literature Review

In India, fintech has become a relatively new industry in the last few years. Due to the nation's strong and successful government reforms that are driving the nation toward a digital economy, the Indian market has witnessed massive investments in FinTech across multiple industries. Growing smartphone and internet usage has also been beneficial, leading to a rise in FinTech and the usage of digital technology across the nation Erik Feyen & Saal, (2021). The new technology known as financial technology, or fin-tech, aims to compete with established financial practices in the provision of financial services. In India, a new financial services sector known as fin-tech has emerged. Businesses in this sector use technology to deliver financial services. These businesses are involved in a number of industries, including payments, insurance, and wealth management. This study is to comprehend the fin-tech industry's growth and the difficulties it faces Giglio, (2021). The conceptual framework and foundation needed to comprehend the swift and prosperous development of recently developed financial technologies are provided by this article. Fin-tech supports the growth of startups in India, the MSME sector, banks' digital transformation, and the cashless economy. This essay discusses the difficulties the fin-tech sector has faced in India. Due to their vital role in the economy, MSMEs will benefit from increased access to financial products through the use of financial technology, which will also increase their financial literacy Irman et al., (2023). Financial literacy has been shown to be closely correlated with a firm's performance because it is critical for determining the effectiveness of past actions and is used to affect the current situation. Fintech can help MSMEs raise funds for their operations more quickly and can also help with information sharing, customer experience, and other areas. Rahul Kumar et al., (2021). FinTech is a new business model that, as opposed to bank services, actually benefits MSMEs. FinTech offers financial transaction services without requiring an account, unlike other providers. Even though FinTech is not a financial institution like other banks, it is nevertheless subject to Bank Indonesia regulations. The public or consumers are to be protected by this. Companies using the model are required by Bank Indonesia to register their businesses with either the Financial Services Authority or Bank Indonesia Rahma, (2018). A nation or region's ability to create jobs is aided by MSMEs. Even though each MSME employs a relatively small number of people, the MSME sector as a whole employs a sizable number of people. MSMEs frequently have the ability to create distinctive, creative, or high caliber goods or services Marolt et al., (2016). MSMEs typically have greater flexibility and can react more swiftly to shifting market trends because of their smaller size Zahrah & Wijaya, (2019). Fin-Tech is growing faster than ever, but this also means that consumers need to learn more to deal with increasingly sophisticated products and technology Fu et al., (2019). Though research hasn't been able to conclusively show that one gender is more likely than the other to use technology, Generation Z has been found to be less willing to use it than Generation Y Murugan et al., (2021). Noorinasab et al., (2016), Entrepreneurs deal with issues like insufficient funding and how to raise capital for their startups. A lot of business owners are unable to obtain outside funding due to insufficient market credit and security. The loan application procedure takes a long time. Additional issues include a decline in profit due to competition, improperly maintained financial statements by MSMEs' owners, insufficient guarantees for loan funding, equity issues during capital raising, and reliance on money lenders for expensive loans. The financial services industry is undergoing a global transformation due to the phenomenon of innovation in the digital age. A brand-new phenomenon known as Financial Technology (FinTech) emerged as a result of all these developments. A few financial services start-ups have attempted to offer financial services to the general public. Innovations in the field (from current financial institutions) have surfaced as more information. FinTech has grown to be a larger industry than the Internet of Things (IoT), and with quantum computing, it will undergo exponential change in the future. New asset classes and technologies are still being developed, and they will alter the way businesses operate today. Even those who are not involved in this new industry and merely observe it are interested in IoT because it connects many technology-related businesses and industries (Schulte & Liu, 2018; Nakashima, 2018).

Research Objectives

This study's main goal is to investigate the connection between the expansion of MSMEs in India and the Fintech sector. The particular goals consist of;

- To investigate the Fintech industry's development trajectory, key players, regulatory framework, and technological developments in India.
- To analyse the effect of fintech on the following MSMEs growth metrics, costs, revenue, market share, customer acquisition, and operational efficiency.

To comprehend the development trajectory of India's Fintech industry, including its major players, regulatory framework, and technological advancements, a thorough review of the body of existing literature will be undertaken.

Research Methodology

A secondary data analysis will be carried out, depending on previously published literature, in order to achieve the research goals. To comprehend the development trajectory of India's Fintech sector, a thorough review of scholarly and industry-based literature will be conducted. Reputable sources including industry reports, scholarly journals, official publications, and credible financial news outlets will be the source of secondary data. There will be data collection on the adoption of fintech, MSMEs growth metrics, regulatory changes, and regional economic disparities. Technology developments that have affected MSME growth, such as blockchain, artificial intelligence, digital payment platforms, and mobile banking apps, will also be covered in the literature.

Discussion

Fintech

Assessing the current state of the Fintech sector in India entails looking at a number of factors, including its growth trajectory, major participants, regulatory environment, and technological innovations, especially with regard to helping Micro, Small, and Medium-Sized Enterprises (MSMEs). Over the past ten years, India's Fintech industry has grown and changed quickly. Driven first by digital payment solutions, the sector has grown to include wealth management, lending, insurance, and regulatory technology (RegTech), among other financial services. The trajectory of the Fintech industry in India is indicative of a movement towards digital transformation and universal financial inclusion in various domains, including MSMEs. A wide range of entities, including government programs, established financial institutions, startups, and tech firms, comprise India's Fintech ecosystem. Digital payment providers like Paytm, PhonePe, and Google Pay, lending platforms like Lendingkart and Capital Float, insurance aggregators like Policybazaar, and regulatory technology companies providing compliance solutions for MSMEs are some of the major players in the Fintech space. The legal and regulatory environment that oversees the Fintech sector in India has developed to support innovation while guaranteeing consumer safety and legal compliance. Fintech activities are heavily regulated by the Reserve Bank of India (RBI), which has policies and guidelines pertaining to payment systems, digital lending, cybersecurity, data privacy, and anti-money laundering (AML) measures. For MSMEs to confidently adopt Fintech solutions, regulatory clarity and a supportive legal environment are critical. The current state of India's Fintech industry is distinguished by a wide range of creative solutions targeted at addressing the unique needs and difficulties faced by small businesses in the context of assisting MSMEs. Enabling digital wallets, online invoicing, and cashless transactions for MSMEs to enhance customer convenience and liquidity management. Digital lending platforms: These provide MSMEs with quick and easy access to credit solutions through the use of alternative data sources and real-time creditworthiness assessments. Ensuring compliance with legal requirements by offering MSMEs automated compliance solutions for tax computations, regulatory reporting, and GST filings. Using digital platforms, MSMEs can easily manage their finances, obtain working capital loans, and complete banking transactions. All things considered, the current state of the Fintech industry in India offers a thriving ecosystem of cutting-edge services and solutions designed to empower MSMEs, boost their competitiveness, and promote inclusivity and economic growth.

MEMEs

Analysing how Fintech interventions affect different performance metrics of Micro, Small, and Medium Enterprises (MSMEs), such as revenue growth, cost reductions, market penetration, customer acquisition, and operational effectiveness, is necessary to assess the impact of Fintech on MSME growth. By providing access to new markets, facilitating online sales channels, optimizing pricing strategies, and boosting customer engagement, fintech interventions can significantly contribute to the revenue growth of MSMEs. Fintech platforms, for instance, that provide e-commerce capabilities, digital marketing tools, and analytics-driven insights, can assist MSMEs in growing their clientele, revenue streams, and sales. By automating repetitive tasks, cutting paperwork, optimizing efficiency, and streamlining processes, fintech solutions frequently result in cost savings for MSMEs. Digital payment solutions, for example, lower transaction costs, do away with the need for manual cash handling, and enhance cash flow management. Similar to this, MSMEs can cut costs by saving time and money with automated invoicing systems and cloud-based accounting software. MSMEs can expand their customer base and enter new markets with the help of fintech interventions. Digital marketing campaigns, focused promotions, tailored products, and online channels that link MSMEs with prospective clients around the world are used to accomplish this. Fintech also makes cross border transactions easier, which enables MSMEs to trade internationally and reach a wider market. Fintech platforms help MSMEs acquire new customers by providing easy-to-use financial services, tailored product recommendations, frictionless payment processes, and loyalty initiatives. For instance, AI-driven algorithms are used by digital lending platforms to evaluate credit risk and provide customized loan products to MSMEs, drawing in new clients who might not otherwise have access to traditional banking services. By offering real-time data analytics, predictive insights, task automation, and

business process integration, fintech solutions improve the operational effectiveness of MSMEs. Better decision-making, more effective resource allocation, quicker reaction times, and increased efficiency all result from this. Supply chain finance platforms, for example, help MSMEs manage their working capital better, lower supply chain risks, and optimize inventory management.

Conclusion

Over the past ten years, the Fintech industry in India has experienced tremendous growth and change. Initially driven by digital payment solutions, the industry now offers a wide range of financial services, including wealth management, lending, insurance, and regulatory technology (RegTech). This development is indicative of a larger trend toward financial inclusion and digital transformation, especially for MSMEs (micro, small, and medium-sized enterprises). The Fintech ecosystem in India is made up of a wide variety of organizations, including government initiatives, well-known financial institutions, tech companies, and startups. Prominent firms like Paytm, PhonePe, Lendingkart, and Policybazaar provide cutting-edge solutions designed specifically to meet the requirements of MSMEs. The Reserve Bank of India (RBI) is in charge of overseeing the regulatory environment, which has developed to strike a balance between innovation, consumer protection, and legal compliance. This framework gives MSMEs the assurance they need to embrace Fintech solutions. The Fintech sector in India is currently characterized by an abundance of innovative solutions designed to tackle the particular challenges faced by micro, small, and medium enterprises. Online invoicing, cashless transactions, and digital wallets improve customer convenience and liquidity management. Digital lending platforms offer instant credit availability through real-time evaluations and alternative data sources. Legal compliance is guaranteed by automated compliance solutions, and working capital access and effective financial management are made possible by digital platforms. Analyzing how Fintech interventions affect MSME growth reveals notable gains in a number of performance indicators. Fintech makes it easier to grow your revenue by opening up new markets, streamlining your pricing tactics, and increasing customer interaction with e-commerce and digital marketing tools. Automation, streamlined procedures, and cheaper transaction costs all contribute to cost reductions that improve productivity and cash flow management. Fintech platforms facilitate cross-border transactions and enable targeted promotions and tailored products, thereby expanding market penetration. Personalized loan products and user-friendly financial services that use AI-driven algorithms to assess credit risk improve customer acquisition. Task automation, predictive insights, and real-time data analytics all increase operational effectiveness by facilitating better resource allocation and decision-making. In summary, India's Fintech market currently provides a thriving ecosystem of cutting-edge services and products aimed at empowering MSMEs, boosting their competitiveness, and promoting inclusive economic growth. Fintech interventions have the potential to significantly accelerate the growth and development of MSMEs in India, provided that regulations remain supportive and technological advancements continue to occur.

Implication and Future Research

Fintech's integration with the Indian MSME sector has significant ramifications that affect the economy on several fronts. The convergence of technology and finance poses a dual prospectus for Micro, Small, and Medium-Sized Enterprises (MSMEs), which play a pivotal role in propelling India's economic expansion. One of the biggest effects is the improvement of MSMEs' access to capital through improved financial inclusion. Due to perceived risks and a lack of collateral, MSMEs were historically underserved by traditional banking systems. However, today, they have access to a variety of financing options, including invoice financing, crowdfunding, and peer-to-peer lending. Fintech platforms use technology to evaluate creditworthiness based on non-traditional data points, which facilitates funding for small businesses. This amalgamation of By enabling MSMEs in remote locations or with restricted banking access to engage in the formal financial system, this democratization of finance promotes resilience and wider economic participation. Fintech solutions reduce the operational burdens that usually impede MSMEs by streamlining financial processes. Online lending platforms, automated accounting software, and digital payment systems reduce the need for paperwork and middlemen, saving a significant amount of time and money. By reallocating resources to core business operations, these efficiencies enable MSMEs to increase profitability and productivity. Additionally, cloud-based accounting and digital invoicing tools enhance cash flow management, which is critical to small businesses' viability. Market Expansion and Revenue Growth: By giving MSMEs the resources they need to reach out to new clients and break into international markets, fintech promotes market expansion. Digital marketing tools, online payment gateways, and e-commerce platforms allow MSMEs to trade internationally, which broadens their customer base beyond local markets. Gaining access to a larger market has the potential to greatly increase sales and propel company expansion. Fintech platforms' analytics-driven insights also assist MSMEs in improving customer engagement, streamlining pricing strategies, and customizing their goods to effectively meet market demands. The MSME sector's adoption of fintech promotes an innovative culture. Big data, machine learning, and artificial intelligence (AI) give MSMEs instant access to

information about consumer behaviour, market trends, and financial health. These technologies make it possible to make wiser decisions, allocate resources more effectively, and react to changes in the market more quickly. In addition, the incorporation of blockchain and IoT into supply chain finance improves efficiency and transparency while lowering supply chain risks and maximizing inventory control. Problems and Things to Think About: Despite these advantages, there are still issues with fintech integration in the MSME sector. To guarantee the long-term adoption of fintech solutions, concerns like cybersecurity, data privacy, and the digital divide must be addressed. It is imperative that regulatory frameworks adapt to strike a balance between innovation and consumer protection. This will allow MSMEs to confidently embrace new technologies without sacrificing security or compliance. In conclusion, fintech has far-reaching and revolutionary effects on MSMEs in India. Fintech enables MSMEs to prosper in a competitive environment by improving risk management, market access, operational efficiency, and financial inclusion. To fully realize fintech's potential in promoting sustainable growth and economic development in the MSME sector, however, issues with security, regulations, and digital literacy must be resolved.

References

- Agrawal, S., Gupta, G. and Zagade, A., 2020.** Fintech: a New Revolution in India. Journal NX, pp.47-57.
- Brynjolfsson, E. and Saunders, A., 2009.** Wired for innovation: How information technology is reshaping the economy. Mit Press.
- Chander, B., Pal, S., De, D. and Buyya, R., 2022.** Artificial intelligence-based internet of things for industry 5.0. Artificial intelligence-based internet of things systems, pp.3-45.
- De, N. and Mondal, T., 2018.** Micro, Small & Medium Enterprises (MSMEs) and Potential Women Entrepreneurs for Inclusive Growth in India. International Journal of Research in Management, 8(1), pp.95-107.
- DAN, S.S. and Dewi, E.F., 2023.** The Future of Digital Finance In Southeast Asia: A Legal Perspective. Prenada Media.
- Feyen, E., Frost, J., Gambacorta, L., Natarajan, H. and Saal, M., 2021.** Fintech and the digital transformation of financial services: implications for market structure and public policy. BIS papers.
- Fu, J. and Mishra, M., 2020.** The global impact of COVID-19 on FinTech adoption. Swiss Finance Institute Research Paper, (20-38).
- Giglio, F., 2022.** Fintech: A literature review. International Business Research, 15(1), pp.80-85.
- Gupta, P. and Tham, T.M., 2018.** Fintech: the new DNA of financial services. Walter de Gruyter GmbH & Co KG.
- Greene, E.F., Amico, J.M. and Bala, S., 2018.** Blockchain, marketplace lending and crowdfunding: emerging issues and opportunities in fin tech. In Research Handbook on Shadow Banking (pp. 253-296). Edward Elgar Publishing.
- Irman, M., Budiyo, B. and Suwito, S., 2023.** Increasing financial inclusion through financial literacy and financial technology On MSMEs. International Journal Economics Development Research, pp.126-141.
- Mohan, D., 2020.** The financial services guide to Fintech: Driving banking innovation through effective partnerships. Kogan Page Publishers.
- Morgan, P.J. and Trinh, L.Q., 2020.** Fintech and financial literacy in Viet Nam (No. 1154). ADBI Working Paper Series.
- Mukherjee, S., 2018.** Challenges to Indian micro small scale and medium enterprises in the era of globalization. Journal of Global Entrepreneurship Research, 8, pp.1-19.
- Özdemir, V. and Hekim, N., 2018.** Birth of industry 5.0: Making sense of big data with artificial intelligence, "the internet of things" and next-generation technology policy. Omics: a journal of integrative biology, 22(1), pp.65-76.
- Rahma, T.I.F., 2018.** Persepsi Masyarakat Kota Medan Terhadap Penggunaan Financial Technology. At-tawassuth: jurnal ekonomi islam, 3(1), pp.184-203.
- Srikrishnan, S., 2017.** Demonetization, the movement to an electronic payments system and the inch towards full financial inclusion in the Indian economy.

Schulte, P. and Liu, G., 2018. FinTech is merging with IoT and AI to challenge banks: how entrenched interests can prepare. *The Journal of alternative investments*, 20(3), p.41.

Van Loo, R., 2018. Making innovation more competitive: The case of fintech. *UCLA L. Rev.*, 65, p.232.

Zahrah, A. and Wijaya, P.A., 2019. Manfaat eksistensi usaha mikro kecil menengah (UMKM) terhadap unemployment rate. *Society*, 10(2), pp.110-10 \

Exploring Consumer Trends in Plus-size Apparel in Meerut City: An Analysis of Social Media Advertising Impact.

Harshi Garg

Research scholar,
School of Commerce and Management, IIMT
University, Meerut (U.P), India.

Priyank Sharma

Associate professor,
School of Commerce and Management, IIMT
University, Meerut (U.P), India.

Abstract

This research aimed to determine the elements that shape the views and actions of consumers when they buy plus-size Apparel. The fast development of technology shows that it is essential for companies to recognize their intended audience in the worldwide economy. Factor Analysis was used to analyse the information obtained from 400 shoppers. The researchers carried out exploratory, and reliability factor analyses to extract the effectiveness of the construct of the Factor analysis. The Kaiser- Mayer- Olkin standards were employed to determine the appropriateness of the parameters used in the Factor analysis and verify the number of participants. KMO value was 0.765; $P < 0.01$, and each variable was significant. The reliability scores of the variables were .854, .826, .798, .814, .835, and .752 which shows an acceptable Factor Analysis.

Keywords: Fashion Advertising, Fashion Industry, Plus-size Fashion, Consumer Trends, Apparel, Social Media Marketing.

Introduction

Social Networking sites are electronic spaces where individuals may interact with one another in professional as well as social contexts. online Pictures, social communities, Facebook, WhatsApp, and Instagram are the fastest growing. Buyers trust considerably more on social networking sites than other kinds of media which affects consumers' views of society (Özmen et al., 2022). Networking has become essential for companies to market their business effectively. Organizations have to actively utilize the internet to project a positive perception of their organization (Vrtana & Krizanova, 2023a). Social media has an outstanding volume of imagery, it is an improved place to advertise images than other alternatives like Instagram, particularly prevalent with ladies ages 18 to 29 (Abayi & Khoshtinat, 2016; Vrtana & Krizanova, 2023b).

Gender is a key factor in the buying habits of consumers. The generation known as Z includes the years 1995 to 2010 and is characterized by digital media, consequently, they have no exposure to pre-digital items (Vrtana & Krizanova, 2023b). The generation that follows is referred to as the E-commerce Natives as their conduct, positions, and culture are greatly affected by their presence on the internet. The internet has an enormous effect on how a generation sees oneself, stressing the value of connecting their sense of self with the content of social media they receive (Al Idrus et al., 2020; Sundaram et al., 2020).

Generation z frequently exhibits reservations toward conventional advertising when compared with purchasing via the Internet. Marketers have historically employed photographs of people to be glorified and highlighted. This leads shoppers to contrast themselves, how they live, and their exteriors, whether or not they are paying attention, with these perfect advertisements (Shareef et al., 2017). The image of the desired female figure in marketing continues to be an issue of continuing dispute. The excessive employment of unintentionally thin models is an important issue, especially within the world of fashion. Based on research celebrities are still thinner than usual women, Advertisers employ desirable models as they promote a positive mindset among shoppers. (Ajami et al., 2024).

The models are frequently selected to create thoughts and feelings regarding the organization in question. Celebrities are usually more attractive than the average individual. Extremely attractive images have been deployed in marketing to emotionally influence the idea that the customer becomes, to improve advertisement efficiency (Barnes Manuel, 2009). The scientific community has examined the adverse effect of showing unrealistic female images in entertainment on female body satisfaction. Studies have indicated that thin models harm women's confidence and body image (Arora & Agarwal, 2019). This can have adverse consequences that are detrimental, the prior study has discovered that females who are subjected to thin and unreal models have a greater likelihood of experiencing body dissatisfaction, and gender-related stress (Zong, 2022).

Literature Review

The content of this section tackles the literature that addresses the appropriate themes. First, Marketing and the elements of it that are essential to our investigation. This will be followed by a summary of the intended

demographic features. Next, societal views are addressed in more detail, particularly their connection with the subject of my study. Finally, the Hypothesis is created and stated.

Fashion Advertising on (Social Media) Facebook, WhatsApp, and Instagram.

(Voorveld et al., 2018) asserted that a combination of the speedy extension of public networks & online communities is more significant than previously for companies to take advantage of as a means of advertising. (Wright et al., (2010) concluded that Instagram and Facebook are the most rapidly expanding social media systems, with significant possibilities and opportunities for enterprises to utilize. In 2018, companies might spend \$1 billion on Instagram marketing alone. This demonstrates that employing Instagram is an inexpensive yet successful strategy for companies to use images to promote their company and services.

(Harris et al., 2019) explored that the user of Instagram may repost important and easily participate with their followers. This renders Instagram a highly effective social media medium for promoting Fashion material. When it refers to apparel firms' Facebook and Instagram existence, 65% of the industry's most prominent packaging has regular profiles on the platform.

(Srivastava et al., 2017) revealed that Facebook can be a successful marketing instrument, along with linking to the style of the brand's web page.

(Çakiroğlu, 2019) examined that the company safely boosts customer engagement along with income. (Frandsen et al., 2014) depicted that the material that organizations post directly on their social media accounts has been proven to have an even greater impact on revenue among consumers who encounter it.

(Choudry et al., 2022) concluded that Brand announcements on Facebook and Instagram are significant techniques for advertising that have been proven to improve client shopping. Firms need to think about how they physically express their goods and services, & these platforms have grown into an outlet for clients to create views and sentiments.

YouTube, Facebook, Instagram as a social Media mode

(Tarokh et al., 2015) researched that social media networks are communities in which individuals may communicate with other people digitally. Interaction and participation may take place for both business or simply social objectives. Numerous social media sites are out there, But Facebook and Instagram have become the most effective. Visitors can produce their material or just look at material generated by others.

(Hanaysha, 2016) Examined that Women aged between 18 to 30 are especially interested in employing the smartphone app, which makes it an ideal advertising tool for companies addressing this age group. (Frick et al., 2021) demonstrated that Fashion companies depend extensively on YouTube bloggers to market their products through photographs. Email has an enormous amount of visual material, and fresh material continues to be created. (Boateng & Okoe, 2015) studied that Instagram is more successful in envision marketing than other competitors like Facebook & YouTube can greatly affect consumer actions and thoughts. It has been suggested that internet usage has become more essential for users than other types of media outlets, and it may have a major effect on people and their political ideals (Alavi et al., 2019).

(Misra et al., 2018) evaluated that social media is inexpensive and businesses can use it to their benefit when marketing their products. The internet has a major effect on how buyers evaluate brands & Organizations that use social media to communicate have a bigger brand than those that don't. (Shubhangam et al., 2020) summarised that Firms that interact with prospective consumers on the Internet could establish positive relationships with their companies, Experts believe that the portrayal of females on Internet sites should be examined thoroughly.

(Li et al., 2022) studied that Instagram may promote impulse buying, and some variables affect consumer buying choices, particularly marketing advertisements and Pictures supplied by firms & Directions from peers and experts affect how consumers act. (Winter et al., 2021) argued that the variety of marketing has a footprint on the buying habits of shoppers. Social media is a successful instrument for interacting with consumers, particularly for style producers, Multiple platforms can be employed for different kinds of connections, consequently, the company needs to comprehend the intent and objectives of its business.

Purchase Intention

(Padival et al., 2019) examined that marketers may use web pages to affect the actions of users. As an outcome, companies have to comprehend the psychological effects of their layouts. (Wright et al., 2010) advised that companies employ effective approaches to establish connections with their clients. The advertising of the company doesn't need to be restricted to illustrating the good itself.

(Pamela Lukito & Yustini, 2019) suggested that the company could additionally concentrate on creating beneficial relationships with its consumers & the intent to buy anticipates the real buying process, a favorable mindset may affect plans for buying. When companies develop an advantageous connection with a brand, it could result in higher plans to buy.

(Nadarzynski et al., 2019) revealed that the perception that individuals have about fashionable ads impacts their perspective regarding the brand.

(Mittal & Singh Malik, 2017) explained that the desire of shopper to satisfy up-to-date beauty norms and dreams affects their choice of products. Previous studies highlight the established connection between mindsets and purchasing choices. It is currently questionable whether adopting plus-size models is the most effective approach for positively affecting opinions.

Problem statement

The market for clothing in India is growing rapidly. Standard sizes M and L are readily available on websites. Still, consumers who are plus size are worried since they can't discover their ideal size on websites that concentrate on plus size. The present research concentrates on viewing and identifying how consumer relationships influence the development of the plus-size clothing sector. It highlights critical shopper traits and possibilities for industries to swiftly react to this developing apparel sector.

Objective of the study

To explore the social media advertisements on several platforms that affect the exposure of plus-size Apparel brands.

Hypothesis of the study

H₀: There is no positive impact of Social Media Ads on the purchasing intention of consumers.

H₁: There is a positive impact of Social Media Ads on the purchasing intention of consumers.

Research Methodology

In the present research, investigators seek to learn how people act when ordering plus-size Apparel digitally from social media platforms in Meerut City. Exploratory Factor Analysis, Reliability analysis, and descriptive study were applied throughout this research, and the findings were drawn implementing each of these techniques. The investigators applied only the questionnaire approach for gathering their main data. To gather data, a survey was created and spread online for responders using Google Forms as a platform. because of limitations, the number of people that were identified was restricted to Meerut city.

Data Collection: The subject matter of the research comprised both females and males. The final sample was 450 respondents, of whom only 400 submitted the questionnaire. The form of sampling employed in the study was sampling for convenience, which acquires data more quickly, is easily accessible, and is easier to use. Applicants obtained a questionnaire that was self-organized for collecting data. A selection of specified closed-end polls has been created from prior studies, with a Likert scale of five points acting as an internationally recognized method of evaluating each factor. The data gathered was carefully assessed and divided into groups to prepare for the examination. Throughout the entire process of cleaning, solely data from 400 individuals was considered necessary for the study's objective. The current investigation applied SPSS Software for qualitative scrutiny, testing of reliability, and Factor analysis.

Result and Discussion

Table 1: Demographic profile

Components	Classifications	Frequency	Percentage
Gender	Male	144	36
	Female	256	64
Age	20 or below	32	8
	21-30	96	24
	31-40	124	31
	41-50	136	34
	50 or above	12	3
Qualification	Schooling	116	29
	Graduate	128	32
	Postgraduate	104	26
	Professional Degree	44	11
	Others	8	2

Occupation	Student	84	21
	Employee	120	30
	Business	24	6
	Housewife	120	30
	Others	52	13

Source: Authors' calculations

Table 1 clarifies that the male purchasers are 144 (36% contributors), and females are 256 (64%). The age range of participants was 20 or below 32 (8%) was the lowest, followed by 21-30 (24%), 31-40 (31% respondents), 41-50 (34%) was the highest, and remaining were 50 or above (3%). Only. Qualification of the respondents were schooling person 116 (29%), followed by graduate (32%), followed by post-graduate (26%), professional (11%), and remaining (2%). Occupations of the participants were students numbered 84, followed by employees 120, business persons 24, and housewives 120, the remaining 52 respondents only.

Table 2: Favourite Plus-size brands purchased online

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Eloquii	83	20.8	20.8	20.8
	Good American	17	4.3	4.3	25.0
	Reformation	21	5.3	5.3	30.3
	Anthropologie	60	15.0	15.0	45.3
	Asos	58	14.5	14.5	59.8
	Curvy Glam	52	13.0	13.0	72.8
	Fashion Forward Plus	1	.3	.3	73.0
	H&m	108	27.0	27.0	100.0
	Total	400	100.0	100.0	

Source: Authors' calculations

Table 2 reveals that among 400 respondents, most of the respondents shop for H&M brand 27% (108), followed by Eloquii 20.8% (83), Good American 4.3% (17), Reformation 5.2% (21), Anthropologie 15% (60), Asos 14.5% (58), Curvey Glam 13% (52), Fashion Forward (1).

Exploratory Factor Analysis

Table 3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.765
Bartlett's Test of Sphericity	Approx. Chi-Square	4900.242
	df	210
	Sig.	.000

Source: Authors' calculations

Table 4: Rotated Component Matrix

	Component					
	1	2	3	4	5	6
Facebook Ads						
I was overwhelmed when I saw a plus-size Apparel ad on Facebook.	.767					
I often find out about unique plus-size fashion via Facebook Ads.	.861					
I make my mind ready to purchase plus-size fashion products when I go through the product ads via Facebook.	.870					

I received significant information regarding plus-size Apparel through Facebook ads.	.704					
WhatsApp Channel						
I received messages from WhatsApp, that those fashion brands are helpful to know about new oversized fashion.	.735					
I received updates regarding oversized fashion sales and offers on WhatsApp.	.854					
I like the feature of the WhatsApp channel which provides plus-size fashion recommendations.	.866					
I love to engage with oversized fashion marketing suggesting through WhatsApp.	.711					
Instagram Reels						
Instagram reels are an interesting method to find out oversized apparel sites.		.761				
I check out the pages of plus-size influencers on Instagram.		.821				
Shorts features of Instagram affect my buying intention for plus-size Apparel.		.743				
I believe the apparel brands are displayed in Instagram Reels.		.810				
YouTube Blog						
The material from bloggers affects my fashion preferences for oversized clothes.			.804			
I checkout YouTube channels that provide the purchasing apps of plus-size apparel.			.849			
YouTube influencers are a trustable community getting information for bigger-size apparel.			.825			
Email Ads						
I updated myself through an email I received regarding plus-size fashion.				.723		
I received discounts and offers from various e-commerce websites for plus-size fashion.				.795		
I am interested to see the information regarding Apparel via email.				.835		
Purchasing Intention						
I am interested in shopping for plus-size Apparel products from those websites I see on social media.					.825	
My Motive to shop for oversized fashion increases when I view good recommendations online.					.884	
Seeing advertisements and discounts on social networking sites affects my Motive to shop for plus-size clothes.					.736	

Source: Authors' calculations

Findings

- Findings depict the normalized loadings of factors for every component, giving illumination on the connection between specific components and the whole concept.
- The results of this paper revealed that The Model is Acceptable, and the Hypotheses support the study's findings. A complete review of the strategy's effectiveness demands an in-depth review of numerous factors.
- Findings concluded that an extensive review of social network elements throughout commercials, covering Fb, WhatsApp, Instagram, YouTube, and Email was performed through customized techniques. Furthermore, an original set of 5 standards has been established for evaluating the effect of online media ads on the complex terrain of customer buying habits.
- EFA revealed a significant acceptance, confirmed by a variety of significant fit indicators. EFA reported an impressive combining value, over the set criteria for system adequacy. KMO value is .765, So we Accept the Alternative Hypothesis. It shows that there is a positive impact of social media ads that are disseminated on various platforms on the purchasing intention of the shoppers when they buy plus-size Apparel.

CSIBER International Journal – CIJ

A Quarterly Double-Blind Peer Reviewed (Referred/Juried) Open Access International e-Journal – Included in the International Serial Directories

<https://www.siberindia.edu.in/journals/>

- The factors were extracted in the analyses as follows Facebook Ads, WhatsApp Channel, Instagram Reels, YouTube bloggers, and Email, Purchasing Intention.
- The study's results indicated several previously unnoticed truths. Although being aware that everybody has concerns for their wellness and health and managing their physique in the modern era, numerous shoppers experience oversized issues, because they cannot easily find their body type in digital retailers.
- Shoppers attempt to work their measurements, consequently, they don't have numerous colors, shades, or variations. They incur sacrifices on their workmanship and quality.
- Individuals now purchase larger-sized Apparel on the web because it reduces time and enables them to select a greater variety of products that they desire in a single place.

Suggestion

- Online shopping for plus-size cannot substitute for regular enterprises.
- Plus-size Apparel websites have to keep a favourable consumer rating while presenting their goods with such a method that both shoppers and vendors feel they are affordably priced.
- E-commerce plus-size Apparel stores ought to reconsider the way they contact their clientele.

Conclusion

This research investigation on the performance of online media ads for particular clothing brands provides the spotlight on the varied influence of social network ad efforts on company viability. The data confirms the Null hypothesis, showing the crucial role of Fb, WhatsApp, Instagram, and Email in the achievement of clothing brands. The outcomes underline the tactical significance of creating a solid online presence for user attraction and retention, and they also emphasize the calculated application of online ads to improve reputation and picture. The continuing popularity of automated technique expertise and information has led to an evolution from conventional stores to Internet plus-size traders.

Surfing on the web pages has grown into one of its most effective indicators to get promoted items and services. Stores that sell goods must be adaptable to shifting shopper requirements, beliefs, opinions, and actions to stay in the company. The opinion of society within shopping has changed, and retailers are no longer capable of assessing correctly if they do not verify their company via an online route. Though they offer an attractive buying experience that is rarely negligible. The research project intended to assess the socioeconomic characteristics of Meerut City's internet plus-size consumers, in addition to the variables that influence buyers' perceptions regarding online purchases. It appears that a greater awareness of the significance of dressing plus-size and the advantages of purchasing online for such things would help merchants in Indore to reach a greater degree of present performance when it pertains to online marketing of plus-size apparel.

References

- Abayi, M., & Khoshtinat, B. (2016).** Study of the Impact of advertising on online shopping tendency for airline tickets by considering motivational factors and emotional factors. *Procedia Economics and Finance*, 36, 532–539. [https://doi.org/10.1016/s2212-5671\(16\)30065-x](https://doi.org/10.1016/s2212-5671(16)30065-x)
- Ajami, Z., Szabó, M., & Manzoor, A. (2024a).** From Ideal to Real: The Transformation of Women's Fashion Marketing in Adaptation to Body Positivity
- Al Idrus, S., Abdussakir, & Djakfara, M. (2020).** The effect of entrepreneurial orientation and technology orientation on market orientation with education as a moderation variable. *Management Science Letters*, 10(10), 2351–2360. <https://doi.org/10.5267/j.msl.2020.2.029>
- Alavi, S. S., Mehdiuezhad, I., & Kahshidinia, B. (2019).** A trend study on the impact of social media on advertisement. *International Journal of Data and Network Science*, 3(3), 185–200. <https://doi.org/10.5267/j.ijdns.2019.2.005>
- Arora, T., & Agarwal, B. (2019).** Empirical Study on Perceived Value and Attitude of Millennials Towards Social Media Advertising: A Structural Equation Modelling Approach. *Vision*, 23(1), 56–69. <https://doi.org/10.1177/0972262918821248>
- Barnes Manuel, M. (2009).** Using 3d body scan measurement data and body shape assessment to build anthropometric profiles of tween Girls.

- Boateng, H., & Okoe, A. F. (2015).** Determinants of Consumers' Attitude towards Social Media Advertising. *Journal of Creative Communications*, 10(3), 248–258. <https://doi.org/10.1177/0973258615614417>
- Çakiroğlu, A. D. (2019).** Social media advertising. In *Digital Marketing Applications* (pp. 105–117). Peter Lang AG. <https://doi.org/10.4324/9781315623252-16>
- Choudry, A., Bakar, A., & Saeed, A. (2022).** Social Media Advertisement Impact on Consumer Behaviour article details abstract History: under a Creative Commons Attribution Non-Commercial 4.0. *Journal of Tourism, Hospitality, and Services Industries Research (JTHS)*, 2(2). <https://doi.org/10.52461/jths.v2i02.1692>
- Frandsen, M., Walters, J., & Ferguson, S. G. (2014).** Exploring the viability of using online social media advertising as a recruitment method for smoking cessation clinical trials. *Nicotine and Tobacco Research*, 16(2), 247–251. <https://doi.org/10.1093/ntr/ntt157>
- Frick, V., Matthies, E., Thøgersen, J., & Santarius, T. (2021).** Do online environments promote sufficiency or overconsumption? Online advertisement and social media effects on clothing, digital devices, and air travel consumption. *Journal of Consumer Behaviour*, 20(2), 288–308. <https://doi.org/10.1002/cb.1855>
- Hanaysha, J. (2016).** The Importance of Social Media Advertisements in Enhancing Brand Equity: A Study on Fast Food Restaurant Industry in Malaysia. *International Journal of Innovation, Management and Technology*, 7(2), 46–51. <https://doi.org/10.18178/ijimt.2016.7.2.643>
- Harris, J. M., Ciorciari, J., & Gountas, J. (2019).** Consumer neuroscience and digital/social media health/social cause advertisement effectiveness. *Behavioral Sciences*, 9(4). <https://doi.org/10.3390/bs9040042>
- Li, S. C., Chen, Y. C., Chen, Y. W., & Huang, Y. (2022).** Predicting Advertisement Revenue of Social-Media-Driven Content Websites: Toward More Efficient and Sustainable Social Media Posting. *Sustainability (Switzerland)*, 14(7). <https://doi.org/10.3390/su14074225>
- Misra, A. K., Rai, R. K., & Takeuchi, Y. (2018).** Modeling the control of infectious diseases: Effects of TV and social media advertisements. *Mathematical Biosciences and Engineering*, 15(6), 1315–1343. <https://doi.org/10.3934/mbe.2018061>
- Mittal, S. K., & Singh Malik, J. (2017).** Effectiveness of Social Media Advertisement in Promoting Business: A Study with Special Reference To NCR. *International Journal of Advanced Scientific Research and Management*, 2(8). www.ijasrm.com
- Nadarzynski, T., Burton, J., Henderson, K., Zimmerman, D., Hill, O., & Graham, C. (2019).** Targeted advertisement of chlamydia screening on social media: A mixed-methods analysis. *Digital Health*, 5. <https://doi.org/10.1177/2055207619827193>
- Özmen, E., Karaman, E., Bayhan, N. A., Özmen, E., Karaman, E., & Bayhan, A. (2022).** Users' emotional experiences in online shopping: Effects of design components. *OPUS-Journal of Society Research*, 19(45), 6–18. <https://doi.org/10.26466/opusjr>
- Padival, A., Michael, L. K., & Hebbar, S. (2019).** Consumer perception towards social media advertisements: A study was done in a Semi-Urban City in South India. *Indian Journal of Marketing*, 49(2), 38–51. <https://doi.org/10.17010/ijom/2019/v49/i2/141582>
- Pamela Lukito, L., & Yustini, R. (2019).** The Mediation Effect of Customer Perceived Value and Attitude Toward Advertisement on Social Media Influencer's Credibility on Purchase Intention. In *JMBE Journal Of Management and Business Environment* (Vol. 1, Issue 1).
- Shareef, M. A., Mukerji, B., Schwartz, G., Dwivedi, Y. K., Rana, N. P., & Islam, R. (2017).** Social media marketing: Comparative effect of advertisement sources. <http://hdl.handle.net/10454/18092>
- Srivastava, A., Datt, M., Chaparala, J., Mangla, S., & Patnaik, P. (2017).** Social media advertisement outreach: Learning the role of aesthetics. *SIGIR 2017 - Proceedings of the 40th International ACM SIGIR Conference on Research and Development in Information Retrieval*, 1193–1196. <https://doi.org/10.1145/3077136.3080759>
- Tarokh, M. J., Arian, H. S., & Speily, O. R. B. (2015).** *Discovering Influential Users in Social Media to Enhance Effective Advertisement*. www.ACSIJ.org

Voorveld, H. A. M., van Noort, G., Muntinga, D. G., & Bronner, F. (2018). Engagement with Social Media and Social Media Advertising: The Differentiating Role of Platform Type. *Journal of Advertising*, 47(1), 38–54. <https://doi.org/10.1080/00913367.2017.1405754>

Vrtana, D., & Krizanova, A. (2023a). The Power of Emotional Advertising Appeals: Examining Their Influence on Consumer Purchasing Behavior and Brand–Customer Relationship. *Sustainability (Switzerland)*, 15(18). <https://doi.org/10.3390/su151813337>

Vrtana, D., & Krizanova, A. (2023b). The Power of Emotional Advertising Appeals: Examining Their Influence on Consumer Purchasing Behavior and Brand–Customer Relationship. *Sustainability (Switzerland)*, 15(18). <https://doi.org/10.3390/su151813337>

Winter, S., Maslowska, E., & Vos, A. L. (2021). The effects of trait-based personalization in social media advertising. *Computers in Human Behavior*, 114. <https://doi.org/10.1016/j.chb.2020.106525>

Wright, E., Khanfar, N. M., Harrington, C., & Kizer, L. E. (2010a). The Lasting Effects Of Social Media Trends On Advertising. In *Journal of Business & Economics Research* (Vol. 8).

Wright, E., Khanfar, N. M., Harrington, C., & Kizer, L. E. (2010b). The Lasting effects of Social Media trends On Advertising. In *Journal of Business & Economics Research* (Vol. 8).

Working Condition of Employees in Higher Education Department of Jammu and Kashmir

Aabid Yousuf
Research Scholar,
Gulzapora, Awantipora,
Pulwama, Jammu and
Kashmir, India.

Dr. Aasim Mir
Assistant Professor
Gulzapora, Awantipora,
Pulwama, Jammu and
Kashmir, India.

Dr. Gaurav Seghal
Assistant Professor
Gulzapora, Awantipora,
Pulwama, Jammu and
Kashmir, India.

Abstract

The higher education department of Jammu and Kashmir is well structural sector of the UT. The working conditions of employees in the higher education department of Jammu and Kashmir have a significant impact work life balance of the employees of Jammu and Kashmir. Understanding the factors that contribute to a positive work environment is crucial for improving employee work life balance and productivity. Some of the key aspects that influence working conditions include the physical infrastructure of the workplace, availability of resources and facilities, workload management, work-life balance, level of support and recognition from supervisors. This abstract highlights the importance of working conditions in the higher education department of Jammu and Kashmir and emphasizes the need for a positive work environment to enhance employee work life balance. Furthermore, it suggested that conducting research to identify specific areas of improvement in working conditions can guide organizational efforts to improve employee work --life balance and well-being.

Keywords Higher Education institutions, Jammu and Kashmir, working conditions, working environment and Working place.

Introduction

The Higher Education Department of Jammu and Kashmir is a well-established sector in the state. It is the agency of the Government of Jammu and Kashmir entrusted to provide better teaching, learning, and research facilities to the prospective scientists, leaders, and professionals who are in the making. The main aim is to provide higher educational facilities to all sections of society and to provide a better environment for faculty to attain excellence in research, teaching, and innovations. The Higher Education Department of J&K State is multifaceted and multidimensional as it offers varied courses to promote the education of society. This department has various societies/VoTs for different subjects and in the near future, this will be the flagship of the Higher Education Department. The higher education scenario in the state has transformed radically over the last few years. The working conditions of employees in the higher education department of Jammu and Kashmir are an important aspect to consider when evaluating the overall performance and effectiveness of the department Fatimah et al., (2021); It is essential to understand the impact of working conditions on employee satisfaction, productivity, and overall job performance Bala & Jayavardhini, (2018); Furthermore, the working conditions can significantly influence the retention of the teaching staff and their commitment to the institution Afaq et al., (2022). The most common problems experienced at work due to inconsistencies between work and family are fatigue, poor performance, job dissatisfaction and job turnover Allen et al (2000) Understanding the working conditions of employees in the higher education department of Jammu and Kashmir is crucial for assessing the department's effectiveness and employee satisfaction. This information can help identify areas of improvement and implement strategies to create a more conducive and motivating work environment for the employees. This can ultimately lead to increased productivity, job satisfaction, and overall success of the department. Additionally, knowledge of the working conditions can support decision-making processes related to human resource strategies and policies, enabling the department to attract and retain highly qualified and committed staff of the HEI of Jammu and Kashmir.

To gain insight into the current working conditions of employees in the higher education department of Jammu and Kashmir, it is important to conduct a comprehensive survey and analysis. This survey should cover various aspects such as the physical work environment, workload, opportunities for professional development, support from management, and work-life balance. By conducting interviews and surveys with employees at different levels within the department, we can gather valuable feedback on their experiences and challenges. This information will help in identifying specific areas that require improvement and allow for the implementation of targeted strategies to enhance the working conditions. Additionally, it is crucial to assess the existing policies and benefits offered to the employees. This includes evaluating aspects such as healthcare, retirement plans, and other perks that contribute to the overall well-being of the employees.

Background of the Higher Education Department

In this vista, the department has reintroduced reforms to bring in systemic changes in the administration and academic sectors of higher education. These initiatives have been launched against the backdrop impact of political violence, which has adversely affected the educational avenues of youth and the erosion of standards and values in various public institutions.

Taking into account the expansion, multifaceted problems, and diversified nature of higher education, the department had to adjust its priorities and strategies in a flexible manner. Over the years, the department has realized that the system based on regulation and inspection will not serve any purpose. This will call for a concerted and cooperative process which brings together government, private sectors, and the civil society in building policies and monitoring their implementations and in bringing about innovative changes in the system. The higher education scenario in the state has transformed radically over the past 6 decades. The expansion has been multi-sectorial. In the state sector, the number of universities has increased from one to four, the number of government degree colleges from 11 to 86 for general education and 5 for women. The government has taken some historic initiatives in establishing community colleges and the introduction of the semester system.

The Higher Education Department in the state of Jammu and Kashmir was created in the year 1948 with a view to cater to the needs of higher education in the state. The department was set up with an aim to develop the systems of higher education and promote research and extension. The HEI of Jammu and Kashmir having the mission of promote quality through sustained efforts, convictions dedication and raising institutions to new pinnacle of excellence. To promote knowledge, skills and exposing them to disciplinary talent amongst students, to impart core areas competence to transform students as prospective entrepreneurs and to develop scientific temper among the students. It is a well-known fact that the department of higher education in the state of Jammu and Kashmir is confronted with Herculean tasks of access, equity, quality, and relevance and make the J&K a hub of academic excellence by providing equitable to value based and quality education, keeping pace with the evolving socio-economic and cultural trends, thereby nurturing the young learners towards a progressive and productive civilization.

Work-life balance

Work- life balance is defined as an individual's ability to meet their work and family commitments, as well as other non- work responsibility and activities. Work –life balance is a challenging issue that has attracted attention of the researchers. Work-life balance in its broadest sense, is defined as a satisfactory level of involvement of 'fit' between the multiple roles in a person's life. In this climate managing the boundary between home and work is becoming more challenging. Organization need to ensure they not just encourage but mandate a practical and workable work/life policy, benefiting and meeting the needs of both the organization and its employees. This study is an attempt to contribute afresh with a new perspective to the field of human resources and behavioral sciences with special reference to emotional intelligence in relation of employees work-life balance in HEI of Jammu and Kashmir. Work- life balance has been defined by different scholar's Greenhaus (2000) defined it as satisfaction and good functioning at work and at home with a minimum of role conflict. Felstead et al (2000) defined defines as work life balance as the relationship between the institutional and cultural times and space of work and non work in societies. Ayman et al. (2007) defines as only with the work and family and put forward the concept of "life balance" Scholars defined life balance as fulfilling the demands satisfactorily in the three basic areas of life; namely, work, family and private. Works demands work hours, work intensity and proportion of working hours spent in work. WLB means that an individual whether man or women, young or older, can enjoy the combination they desire among activities in their job, family, community and self-development (Murata 2007).

Working condition

Working conditions are a wide range of terms such as the work environment, hours of work and job tasks in an organization. Health, safety and welfare are the elements that can explain the importance of working conditions. Good working conditions are crucial to all workers of all races in the world. It does not refer to pay, but to the safety and health of the worker. Poor working conditions can lead to many harmful effects on the safety and health of the workers, such as psychological or mental damage, injury, or even death. In a bad situation, workers can also bring their problems that occur in their workplace to their house, which can have serious effects on their family. A stimulating and safe workplace is one of the famous subjects for workers. A good workplace is normally voted on by workers surrounding security and safety risks and health. When all workers have access to good working conditions, productivity would be higher and it would reduce the possibility of accidents occurring and it will helps in the achieving the objectives of the HEI of the Jammu and Kashmir (UT).

Literature of review

The higher education department of Jammu and Kashmir faces numerous challenges including low enrollment, poor infrastructure and high dropout rates Sharma (2014); Research conducted by Sheetal Sharma (2014); she founded challenges faced by the higher education system in the rural areas of developing and underdeveloped countries include issues related to political, economic and social factors, relating to the low enrollment, poor completion rates, inadequate infrastructure and high dropout rates. Institutions in these areas also struggle with the implementation of best practices and quality. Tri et al., (2016) the main findings of the research is that work-life balance programs were found to positively impact organizational citizenship behaviors, in role performance and organizational commitment of employees in the Indonesian higher education sector. Adopting formal organizational support for work-family issues can improve employee attitudes and behaviors, which in turn benefits the organization; the relationship between work-life balance programs and these employee outcomes was tested through a survey across Indonesian higher education institutions. The term emotional intelligence was first used by Mayer and Salovey, who postulated that EI involves the ability to perceive accurately, appraise and express emotion and to regulate the Same to promote both emotional and intellectual growth Salovey and Mayer (1990). Luck et al., (2017) work life balance is an important aspect of work and family which should be embraced to improve employees performance. The main findings of the research founded that work- family priorities conflict negatively affects employees performance, work-life balance is important for improving employee's performance. Organizations should find ways to balance employee's work and family responsibilities to reduce work-family conflict and improve performance. S.Noronha et al., (2017) the research findings shows that indian organizations are increasingly providing various work-life balance programs and initiatives to help their employees, especially women, balance their work and personal/family responsibilities. These programs include flexible work arrangements, childcare facilities, leave policies and other benefits that aim to improve employee well-being and retention. The implementation of these work-life balance programs is seen as beneficial for both employees and organizations as it can reduce stress, increase job satisfaction, and improve organizational performance. Quintana et al., (2019) the main findings of the study founded that STEAM teachers have limited access to work-life balance benefits, with only promotion, training and sickness leave being commonly available. The findings shows that work-life balance affects the well-being of STEAM teachers, causing physical, emotional and psychological stress due to factors like work demands, family issues and time management. The study also shows that work-life balance also impacts the teaching performance of STEAM teachers affecting their emotional state, relationships with students, willingness to take on additional work, enjoyment of teaching and risk of burnout. Aqeel et al., (2018) the work- life balance situation for female teachers in private education institutions in Bangladesh is moderate. Work-life balance can be improved by providing flexible working hours, transport and residential facilities, childcare and reduced workload and hours. Providing the support can help female teachers better manage their dual responsibilities of work and family. Noronha et al., (2020) The research findings shows the overall level of challenges faced by women in the sample was moderate across the three domains of individual factors, family factors and organizational factors, study shows that there was a significant negative correlation between the challenges faced in these three domain and work- life balance, meaning that the higher the challenges, the lower the work- life balance. Reducing the challenges faced by women in these three domains could lead to higher work-life balance. Kumari et al., (2019) The main findings shows that work- life balance has a positive influence on employee performance and behavior, it increase job satisfaction, commitment, engagement and reduce stress, which ultimately increase employee performance. A conceptual framework is proposed that focuses on the relationship between work- family conflict and job performance, with work- life balance as a mediating factor. Sheikh et al., (2021) the research finding shows that employee behavior has a positive and significant effect on employee engagement, interpersonal relationships and work-life balance. Workplace stress has a negative and significant effect on work-life balance. The research study recommends using person-centered stress management technique to improve employee well- being. Sanjeevet et al. (2022); the higher education system in Jammu and Kashmir has seen significant growth in the number of institutions. There is a concern that the current system is producing educated unemployed individuals rather than skilled workers. The researcher recommendations include upgrading technology and infrastructure, improving recruitment policies and implementing the national Education policy 2020. A. Gupta (2021); the researcher identified the main problems faced by student including lengthy courses, distance between institutions and residence, inability to express ideas, lack of financial support, communication skills and financial problems in the family. Teachers on the other hand, reported issues with workload, job insecurity and lack of access to the research resources. S.Das (2022) research findings include the significant growth of education in Jammu and Kashmir due to e government, the importance of e- governance initiatives in higher education for improved governance and the role of the Department of Higher education in maintaining government facilities for colleges and universities. Rakhi Rajput (2023) researcher findings include the investigation of social and economic problems faces by rural women in accessing higher education, the identification of barriers hindering their pursuit of education despite advancement and the aim to

propose solutions to address these challenges. Tawheed lateef (2021); the education system in Jammu and Kashmir is facing significant challenges and is not progressing adequately compared to other india states. The literacy rate in Jammu and Kashmir is lower than the national average, indicating a need for improvement in the education sector. Karakas et al., (2004) identified that the following factors as a major issue of work life balance, spending good time with family members, getting free time to be able to relex for emotional wellbeing and health of family members, having good communication and support from the fellow colleagues, obtaining high quality child care and education and being satisfied with the work load. Boles and McMurray (1996) founded in their study that majority of the employees remained preoccupied with work issues even after leaving the work place and feel difficulties in sleep at home. The contribution of the teaching staff plays an important role in success of the institution. The institution must identify such issues which are important to improve the quality of the institution. The researcher highlights the problems and challenges faced by the education system in Jammu and Kashmir emphasizing the importance of suitable measures and recommendations for improvement.

A number of studies have proved that there is a correlation between WLB, EI, awareness of work life policy, family and work-life conflicts and organizational support that together contributes to WLB. The problem is that after extensive literature study it is found that there are enormous studies on work-life balance and Emotional intelligence separately but there is inadequate study on Impact of Working Conditions on work life balance of Employees in Higher Education Department of Jammu and Kashmir, Where the challenges is greater and tough. This research is focused on the Impact of Working Conditions on work life balance of Employees in Higher Education Department of Jammu and Kashmir

Research objectives

- To examine the growth and transition of higher education in Jammu and Kashmir concerning work-life balance
- To explore the socio- economic profile of professional in Jammu and Kashmir to understand how it affects their work life balance

Research methodology

The descriptive approach has been used for analyzing the present study. Primary data was collected through a well structured questionnaire was distributed among the faculty members of higher education institutions of Jammu and Kashmir. The researcher personally visited all the higher education institutions of Jammu and Kashmir and collected the data for sampled teaching faculties of the govt. degree colleges of Jammu and Kashmir (UT). The total number of sample size was 1032 and questionnaire rating scale was based on 1-5 i,e (strongly disagree – agree) the analysis of data was done by using SPSS software.

Table No. 1.1: Gender description

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	666	64.5	64.7	64.7
Valid Female	364	35.3	35.3	100.0
Total	1030	99.8	100.0	
Missing System	2	.2		
Total	1032	100.0		

Fig.1

The total number of sample size is 1030 out of which male percentage is 64.4 in female percentages is 35.5. The study also found that the maximum number of females is working in Jammu division as compare to Kashmir division.

Table No. 1.2: Statistics description of working conditions and work life balance

	WC1	WC2	WC3	WC4	WC5	WC6	WC7	WC8	WC9	WC10	WC11	WC12
N	1029	1030	1030	1030	1030	1030	1029	1030	1030	1030	1030	1030
Valid Missin g	3	2	2	2	2	2	3	2	2	2	2	2
Mean	3.90	4.01	3.97	3.39	1.80	3.53	3.48	3.17	3.10	3.43	3.35	3.48
Std. Error of Mean	.026	.025	.023	.024	.033	.028	.025	.024	.021	.027	.026	.022
Mode	4	4	4	3	1	4	3	3	3	4	3	4
Std. Deviation	.831	.806	.739	.766	1.050	.897	.804	.772	.681	.861	.847	.709
Skew ness	1.191	-1.194	-1.193	.110	.867	-.358	.050	.185	-.460	-.611	-.153	-.699
Std. Error of Skew ness	.076	.076	.076	.076	.076	.076	.076	.076	.076	.076	.076	.076

Fig 2

Impact of working conditions on work life balance in Higher Education Department Jammu and Kashmir is the subject matter of the present investigation. The field of higher education reflects the barometer of socio-economic, political, technological, and educational development within a nation. The role of teachers and teaching in higher education has been very crucial and considered as one of the strategic teaching in respect of grooming the human capital for a dynamic and knowledge-based economy in the rapidly changing knowledge society. The performance of any institute or organization entirely depends upon the work culture of those working in it. Without a suitable work culture that provides an enabling atmosphere and facilities for the growth and satisfaction of its employees, it is impossible for an organization to deliver the goods expected from them. Professor Geetam Tewari mentioned that the field of human resources cannot contribute much to the development unless its empowerment, growth, and satisfaction of human resources are given due weightage through the government and its statutory bodies.

4.1 Factors Affecting Employee Productivity

People are more productive on the days when they feel good compared to the days when they do not feel as good. This has led to recent studies of mood and its effects on work productivity. The most productive people (in terms of working hours) were generally in a good mood; those in a moderate mood were in turn more productive than the least happy people. Workers with mood states rated as pleasant were more effective in information processing, displayed more creative and flexible problem solving and decision making, and used a more effective interpersonal working style than workers with mood states rated as unpleasant. The conclusion was that good mood may have favorable effects on job performance. A recently study conducted by “James Avey and Tara Wernsing” has proposed a more generalized model of the influences of mood on job satisfaction and job performance.

Nature of the work that the employee is doing is often seen as a key factor in determining productivity. There are many jobs that are demanding and stressful, others that are more routine and procedural. The nature of the job can have a large bearing on productivity. Employee stress or the condition of being overstressed, on the job often has a negative effect on productivity. Often the employees that are much stressed take on the mentality of "I have to get this done as fast as possible so I can get out of here." This often leads to sloppy work being done. Workers who have high job satisfaction are generally more productive than those who are dissatisfied. In a study of air traffic controllers, job satisfaction was linked to job performance. A content workforce was associated with fewer mental errors and more efficient work. Post suggests that job satisfaction is indeed casually related to job performance; the correlation is higher for intrinsic satisfaction (relationships, promotions) than extrinsic satisfaction (working conditions, pay). It is commonly known that the healthier an employee is, the less likely they are to miss work days. The less work days that an employee misses, the more work they get done. An analysis of the impact of diet on productivity at work reported that unhealthy eating is associated with a loss of productivity of 20-39%.

Work Environment

The final feature of a work environment is the reinforcement of employee behavior. This is done by recognizing and rewarding desirable employee performance and providing sanctions for undesirable performance. It is obvious that employees who are rewarded for good performances are likely to perceive the job in a positive light and hence be more willing to work harder. However, the most important element in the reinforcement of employee behavior is the avoidance of stagnation in employee performance. This is a state where employees continue to do the minimum required work because there is no incentive to do more. This often happens when management takes

employee performance for granted and only notices when the work is not done. By continually recognizing employee performance and regularly providing feedback, management can prevent stagnation and maintain and increase employee productivity.

The second feature of a work environment is the amount of effort put into developing good relationships and attitudes between employees. Essentially, the more effort put into the interactions between employees and the clearer the guidelines about proper attitudes and behavior, the more the work environment will reflect the intentions of management. Hence, if a positive attitude is encouraged and there are good relationships between employees, then the work environment will be more constructive and conducive to employee productivity.

Another aspect that has a strong influence on employee productivity is the work environment. In this context, the work environment can be defined as the relationship between all employees and the company itself with an emphasis on the quality of that interaction. Within the work environment, there are three key features which influence employee productivity. Firstly, how well staff get on with one another and their superiors. If a friendly and cooperative atmosphere exists between employees and their superiors, it can lead to employees feeling more satisfied with their jobs and, as a result, more effort is put into their work, hence increasing their productivity. Also, if there is a good rapport between employees, it can only lead to a positive effect on employee productivity. This is due to the fact that good relationships with colleagues can make the job seem less stressful and more enjoyable.

Long working hours

Long working hours typically refers to work schedules that significantly exceed the standards or typical work hours in a given context, often leading to adverse effects on an individual's health, well-being and productivity. The long work-related disease burden is particularly significant in men. Studies shows that people living in the western pacific and south-East Asia regions and middle aged or older workers. With working long hours now known to be responsible for about one-third of the total estimated work-related burden of disease, it is establish as the risk factor with the largest occupational disease burden. The thinking shift toward's the relatively new and more psychological-social occupational risk factor to human health. Government can take the following actions to protect health of the individuals who work for long working hours. Govt. can introduce, implement and enforce laws, regulations and policies that ban mandatory overtime and ensure maximum limits on working time, bipartite or collective bargaining agreements between employers and worker's associations can arrange working time to be more flexible, while at the same time agreeing on a maximum number of working hours.

Cultural and societal pressures: in the HEI of Jammu and Kashmir one of the main pressures faced by the HEI is the cultural and societal pressure faced during their working. The main reason of education backwardness among the tribal people not only in the Jammu and Kashmir, but overall the whole country. Government of India and all the states encourage the education in the backward and tribal areas. So, they can avail the benefits of education. With this cultural pressure will eliminate from the society and also among the HEI of Jammu and Kashmir.

Daily Stress and work-life imbalance: long working hours, coupled with inadequate leave policies, coupled with inadequate leave policies, contribute to significant stress level among HEI employees making it difficult to achieve a healthy work-life balance. Work life imbalance among female faculty members is more than the man faculty members. Female faculty members face lot of stress and work overload of the family as well as the department work. Female faculty members face the work –family conflict is one of the main reasons of work imbalance among the female faculty members. Also Children care is one of the issues faced by the faculty members of HEI. The department provides maternity leave to the female faculty but without the pay. Females face lot of stress to perform their work proper.

4.6 High level of negative emotions: many indian employees report daily experiences of stress (31%), anger (33%), sadness (42%) and loneliness (29%) highlighting a stressful work environment with insufficient support system and demanding job conditions.

Poor infrastructure: on the main challenge of HEI of Jammu and Kashmir is the lack of infrastructure. The college's infrastructure was not updated and the equipment of the department is not properly work and there is a lack of equipment among the department of HEI. The faculty and Students face a lot of difficult will performing their experiment and other activities. HEI should provide basic needs of the colleges so that teachers and student will perform their activities properly. It will reduce the stress among the faculty members and with this they do maximum contribution to the development of higher education in the region.

Discussion

The impact of working conditions on work life balance in higher education department of Jammu and Kashmir is a crucial aspect that affects the well being and productivity of employees. There is limited information available

on the specific working conditions on HEI of Jammu and Kashmir. So, we can infer some insights from past related studies

The Govt. of Jammu and Kashmir grants study leave to its employees for pursuing higher studies to certain conditions. The provision acknowledged the importance of continuous learning and professional development for employees can have positive impact on their work life balance. Extra research is likewise expected to look work and family adjusts and furthermore discovers more results of work and family struggle. So, as to achieve top to bottom comprehension of one's and family life, scientists need to ponder numerous points of view like work pressure, personal satisfaction, emotional wellness and work requests. The developing emotional intelligence skills can help employees better manage the demands of work and personal life.

Findings:

The following research findings from the above studies are as mentioned as below

- The factors impacting work-life balance of HEI of Jammu and Kashmir is the employees felling exhausted at the end of days work.
- The major work related factor interfering with the personal life were, carrying cell phones and checking email at home after returning from work.
- The highest difference was noticed in work from home over all the time like checking papers of the candidates, office work and other administrative work.
- Use of emotions to facilities performance negatively influenced factor impacting work-life balance.
- Appraisal and recognition of emotion in others had a significant influence on work related factors interfering with personal life
- Appraisal and expression of emotion in the self negatively influenced level of risk to an employee's position with the usage of work life balance programs.
- Regulation of emotion in the self positively influenced level of risk to an employee's position with usage of work life balance programs.

Conclusion

In conclusion while there is limited direct information on the working conditions in the higher education department of Jammu and Kashmir related studies and policies suggest the importance of work life balance for employees and well being. These studies offer more inclusive model of the influence of emotional intelligence and work-life balance. Applying emotional intelligence makes employees feel comfortable within and with people around them. Emotional intelligence is the ability of an individual's to appropriately and successfully respond to a vast variety of emotional aspects. The provision for study leave and the emphasis on higher education reforms in Jammu and Kashmir indicates recognition of the need to support employee's personal and professional development which can contribute to a better work life balance. The lack of infrastructure and the department should be making available for the HEI of Jammu and Kashmir. However, more research is needed to specifically examine the impact of working conditions on work life balance in the HEI of Jammu and Kashmir

References

- Nasuna, G., Arinaitwe, J., Barigye, E., & Kyayemagye, F. (2022). Effect of School Infrastructure on Pupil Enrolment in Universal Primary Education Schools: A Case of Mbarara City, Uganda. *March to April 2022*.
- Bala, M. L., & Jayavardhini, M. V. A Study on Employee Retention in Higher Education with Special Reference to Thanjavur District.
- Pasaribu, N. R., Girsang, E., Nasution, S. L. R., & Ginting, C. N. (2022). Evaluation Of Planning And Implementation Occupational Safety And Health In Hospital Embung Fatimah Batam In 2021. *International Journal of Health and Pharmaceutical (IJHP)*, 2(2),
- Afaq, A., Khan, Q., Arshad, A., Sibte-Ali, M., & Malik, A. A. (2022). The job satisfaction of academic staff in higher educational institutes. *Journal of South Asian Studies*, 10(1), 95-101.225-232.
- Bibi, N., Akhtar, M. M. S., & Ishaque, M. M. (2021). Exploration of Job Satisfaction Level of University Teachers: A Comparison between Public and Private Universities. *Pakistan Journal of Social Sciences*, 41(3), 515-526.
- Rahman, S. M., & Al-Amin, S. (2014). Job satisfaction among government college teachers in Comilla district, Bangladesh. *J. Bus. Stud.*, 35(1), 227-243.

- Ali, S., Hussain, I., Shahzad, F., & Afaq, A. (2022).** A multidimensional model of abusive supervision and work incivility. *Sustainability*, 14(11), 6505.
- Macias, T. A., Chapman, M., & Rai, P. (2024).** Supervisor interactional injustice and employee counterproductive work behaviour and organisational citizenship behaviours: the mediating role of distrust. *International Journal of Organizational Analysis*, 32(2), 318-332.
- Tanaka, S., Maruyama, Y., Ooshima, S., & Ito, H. (2011).** Working condition of nurses in Japan: awareness of work–life balance among nursing personnel at a university hospital. *Journal of clinical nursing*, 20(1-2), 12-22.
- Mwangi, L.M., Boinett, C.C., Tumwet, E.C., & Bowen, D. (2017).** Effects of Work life Balance on Employees Performance in Institutions of Higher Learning. *Kabarak Journal of Research & Innovation*.
- Afrianty, T.W., Issa, T., & Burgess, J.T. (2016).** Indonesian Work Life Balance Policies and Their Impact on Employees in the Higher Education Sector.
- Shaikh, S.B., & Wajidi, A. (2021).** Role of Employee Behaviour and Job Stress on Work-Life Balance: A Case of HEIs of Pakistan. *Journal of Entrepreneurship, Management, and Innovation*.
- Quintana, C.B., Mercado, F.M., & Balagtas, A.O. (2019).** Perception of STEAM Teachers on the Influence of Work-Life Balance on Well-being and Teaching Performance. *The Normal Lights*.
- Kumari, V., & Vasantha, S. (2019).** Impact of Work Life Balance on Employee Performance. *Indian Journal of Public Health Research & Development*.
- Soomro, A.A., Breiteneker, R.J., & Shah, S.A. (2018).** Relation of work-life balance, work-family conflict, and family-work conflict with the employee performance-moderating role of job satisfaction.
- Noronha, S.D., & Aithal, P.S. (2020).** Work-Life Balance Issues Encountered by Working Women in Higher Education Sector. *Scholedge International Journal of Management & Development* ISSN 2394-3378.
- Noronha, S.D., & Aithal, S. (2017).** Organizational Strategic Approach towards Work Life Balance of Women in India. *Culture Area Studies eJournal*.

Implementation and Analysis of Attendance Management System using Facial Biometrics

Mohammed Shameer M C
Department of Computer
Science, Farook College,
Kozhikode, Kerala, India

Mubeena V
Assistant Professor
Department of Vocational
Studies, Farook College,
Kozhikode, Kerala, India

Habis Hassan
Assistant Professor
Department of Vocational
Studies, Farook College,
Kozhikode, Kerala, India

Abstract

Attendance tracking and management play a critical role in ensuring operational efficiency and academic performance in educational institutions. Traditional methods are often prone to errors, time-consuming, and susceptible to fraudulent activities. This study proposes an automated attendance management system leveraging facial recognition technology to address these challenges. The system employs the Haar-Cascade Classifier for face detection and the Local Binary Patterns Histogram (LBPH) algorithm for face recognition, ensuring high accuracy and reliability.

The research methodology includes three phases: database creation with pre-processed facial images, real-time face detection and recognition from live video streams, and attendance marking in CSV files. The system achieves a recognition accuracy of 98.15%, with performance varying based on camera orientation and lighting conditions. Experimental results demonstrate that optimal camera angles (20°–30°) significantly enhance recognition accuracy.

By eliminating manual attendance processes and integrating advanced facial recognition techniques, the proposed system reduces administrative workload and minimizes errors, offering a scalable, contactless, and efficient solution for attendance tracking. This study contributes to the growing field of biometric-based automation in education and highlights the importance of camera positioning in real-world applications.

Keywords Face Detection, Recognition, OpenCV, Attendance Management, Haar Cascade Classifier, LBPH.

Introduction

Attendance management is the practice of monitoring and tracking presence or absence of a particular person in the organization or events. The organization depends on manual or automated means to track the staff attendance. The process of tracking attendance is a complex and time consuming task (Karunakar et al., 2020). It involves recording, analyzing, and managing attendance data to ensure that the members are attending regularly and meeting the minimum attendance requirement set by the organization.

Attendance tracking and management in any educational institution is really important for a few reasons. Firstly, it directly correlates with academic performance as students who attend classes regularly are more likely to engage with course materials, participate actively, and perform better in assessments. Monitoring attendance aids in identifying students at risk of academic setbacks or dropout, thereby facilitating timely intervention, action and support mechanisms to ensure their retention and progression (Kamil et al., 2023). Efficient attendance management allows institutions to allocate resources effectively, optimize classroom scheduling, and deploy faculty efficiently, thereby enhancing operational efficiency. In short, attendance management is key to ensure students learn well, do well and institution runs smoothly.

In this article, we propose an attendance tracking and management system that makes use of face detection and face recognition techniques. Face detection is used to identify and locate the faces in the classroom video or image and extract sub images for each face. In face recognition, the facial images detected will be compared with images stored in the database consisting of images of the students in the class, and their attendance will be recorded accordingly.

Later sections of this research article are organized as follows. Section 2 reviews the existing techniques and available methods used for automating attendance management. Section 3 discusses the methodology used for the research. Section 4 explains the details of implementing the attendance management system using Haar classifier and local binary pattern histogram method for different projection angles. Section 5 analyses the result and section 7 concludes the research findings.

Literature review

Literature showcases many automated attendance management system based on facial detection. A method based on Radio Frequency Identification (RFID) for facial recognition is proposed in (Akbar et al., 2018). Accuracy of this method is very low and it requires direct line of sight for scanning and capturing the facial information. Similarly, brightness, capturing angle and occlusion can also affect the accuracy of such systems.

Another method for recording attendance based on iris biometrics is proposed in paper (Okokpujie et al., 2017). This method requires iris patterns to be stored in the database for recognition. This method captures the eye image for detection and recognizing the attendees. This method is very expensive and use of glasses and lenses causes hurdles in capturing iris patterns (Smitha & Afshin, 2020).

OpenCV provides several methods for facial image recognition, which can be categorized into traditional methods and deep learning-based approaches.

Eigenfaces

This approach uses dimensionality reduction and linear algebra concepts to recognize faces. This pioneering technique is easy to implement and thus used in various applications at that time such as handwritten recognition, lip-reading and medical image analysis (Khan et al., 2019).

PCA (Principal Component Analysis) is a dimensionality reduction technique that was proposed by Pearson in 1901. It uses Eigen values and Eigen Vectors to reduce dimensionality and project a training sample/data on small feature space. This approach is very sensitive for light variations and relies on linear transformations. Since this method concentrate on global facial features, making it difficult to identify similar or identical faces (Kumar et al., 2022; Varadharajan et al., 2016).

Local Binary Patterns Histograms (LBPH)

Local Binary Patterns (LBP) are visual descriptors utilized for classification in the field of computer vision. They represent a specific case of the Texture Spectrum model (Song et al., 2013). LBP has proven to be an effective feature for texture classification, and research indicates that combining LBP with the Histogram of Oriented Gradients (HOG) descriptor significantly enhances detection performance on certain datasets. Additionally, various enhancements to the original LBP have been developed for background subtraction applications (He, Sang & Huang, 2011)

Fisherfaces

Fisherfaces is a technique used primarily in facial recognition and image analysis, built on the principles of linear discriminant analysis (LDA). The approach focuses on maximizing the ratio of between-class variance to within-class variance, which enhances the separability of different classes, such as various individuals' faces, in the feature space. This method effectively reduces dimensionality while preserving the discriminative features necessary for accurate classification (Anggo & Arapu, 2018).

Fisherfaces often outperforms other methods like PCA (Principal Component Analysis) in tasks where class differences are crucial. It can handle variations in lighting and pose better than some other techniques, making it more reliable in real-world scenarios. The calculations involved in determining the covariance matrices and optimizing class separability can be resource-intensive, particularly for large datasets. Fisherfaces may be affected by outliers in the dataset, which can skew the results and lead to misclassification. (Belhumeur, Hespanha & Kriegman, 1997; Anggo & Arapu, 2018).

Scale Invariant Feature Transform (SIFT)

The Scale-Invariant Feature Transform (SIFT) is a widely used algorithm in computer vision for detecting and describing local features in images. Its approach involves identifying key points in an image across various scales by constructing a scale-space representation, enabling the detection of features that remain consistent despite changes in scale and rotation. SIFT extracts distinctive descriptors around these key points, which are robust to transformations, allowing for effective matching across different images.

SIFT features are resilient to changes in scale, rotation, and illumination, making them highly effective for object recognition in diverse conditions. SIFT is versatile and can be applied to various tasks, including image stitching, 3D reconstruction, and tracking. It produces rich, distinctive descriptors that facilitate accurate matching between images. SIFT can be computationally intensive, particularly in generating scale-space representations and extracting descriptors, which may hinder real-time applications. In images with many repetitive textures, SIFT may struggle to distinguish between features, potentially leading to incorrect matches. (Jubair, Mahna & Wahhab, 2019; Nixon & Aguado, 2020).

Speed Up Robust Features (SURF)

Speeded Up Robust Features (SURF) is a computer vision algorithm designed for object recognition and image registration, focusing on detecting and describing local features in images. The approach utilizes a Hessian matrix-based measure to identify key points in an image, allowing for rapid computation and scale-invariance (Bay, Tuytelaars & Van Gool, 2006). SURF features are robust to changes in scale and rotation, making them effective for matching objects across different views and lighting conditions.

SURF is optimized for performance, and it exhibits strong resilience to image transformations, including rotation, scaling, and even partial occlusion, enhancing its applicability in real-world scenarios. SURF was patented, which limits its usage in some open-source applications and can complicate integration into certain projects. SURF can be sensitive to noise and image quality, which may impact feature detection in less-than-ideal conditions. The algorithm may struggle with images that have low contrast, as the key point detection relies heavily on the presence of strong edges (Bay et al., 2008).

The literature emphasis highlights that attendance management using iris scanning and RFID has many demerits in real time facial recognition. Eigenfaces and Fisherfaces are computationally intensive and may require a large amount of data for effective training.

Principal Component Analysis (PCA) used in Eigen and Linear Discriminant Analysis (LDA) used in Fisherfaces assume linear relationships, which may not adequately capture complex variations in face images. So these methods can struggle to scale efficiently with large datasets compared to deep learning approaches. The LBPH method analyzes local patterns in the given image and is less sensitive to light changes. Hence we propose to implement LBPH method in this research.

Methodology

A video stream captured using a camera is the input given to the system. Following are the major components in this automated attendance tracking system.

Haar Cascade Classifier: Object Detection using Haar feature-based cascade classifiers is an efficient method responsible for detecting facial images from video streams. It is a machine learning based approach in which cascade function is trained from a lot of positive and negative images. It is then used to detect objects in other images. This method uses features like edges, lines and other textures to identify faces using a pre-trained cascade classifier.

Face Detection: Once the Haar Cascade Classifier identifies potential face regions in an image, the face detection module refine these detections. This module analyzes the identified areas to accurately pinpoint the exact boundaries of each face, ensuring that the detection is not only reliable but also precise. By focusing on the specific contours and features of the faces within the initial regions, this process enhances the overall accuracy of face detection, making it more effective for subsequent process. This approach ensures that the system can differentiate between multiple faces and handle variations in size, orientation, and lighting conditions.

Face Recognition: The Local Binary Patterns Histogram (LBPH) is used for face recognition - identifying the camera captured image against the image already stored in the database. The Local Binary Pattern is applied to the image and compared against the pivotal pixel of the captured image, and then the histogram value is computed for the said lbp image. LBPH is capable of analyzing the variation in pixel intensities along localized regions of the facial image to create histograms.

Implementation of LBPH (Local Binary Patterns Histograms) algorithm is carried out using face recognition module available with OpenCV. The LBPH algorithm begins with training on a dataset of pre-processed face images paired with their corresponding labels (IDs). During this training phase, the algorithm extracts key features from the images by analyzing the local binary patterns, which capture texture information essential for distinguishing between different faces.

As it processes the images, LBPH builds a robust model that learns to recognize unique facial characteristics. This model then becomes capable of accurately identifying faces in new images by comparing them to the features stored from the training set. The use of pre-processed images enhances the algorithm's performance by normalizing variations in lighting, pose, and scale, ensuring that the model is not only efficient but also resilient to common challenges in face recognition tasks.

Pre-processing: Pre-processing of the facial images are performed before training the LBPH model. This process includes translating the images to its gray-scale equivalent, resizing and adjusting the images to standard dimension to ensure consistency across the dataset. Normalizing their pixel-values is also performed to enhance the model's performance by adjusting the brightness and contrast, which helps the algorithm better identify facial features.

Attendance Management: Once the individual is identified, the attendance is recorded using CSV files. This module is responsible to marking attendance using recognized images along with date and time, storing attendance and generating reports accordingly.

Implementation

Primary Database Creation and Training

The process begins with the development of an original database containing images of students by capturing live real-time videos. These videos are then split into hundreds of frames using OpenCV. Each frame undergoes conversion to grayscale, and only the faces of the students are extracted and stored as individual images. The LBPH (Local Binary Patterns Histograms) algorithm is employed for rigorous training the system, storing respective histogram values for each student's face. During attendance marking, the stored and trained images are compared against the captured images, allowing for accurate identification and attendance recording. This method leverages OpenCV for efficient video frame splitting and integrates LBPH algorithm for facial recognition, ensuring a robust attendance tracking system without human intervention. A sample data set created is shown in Fig. 1.

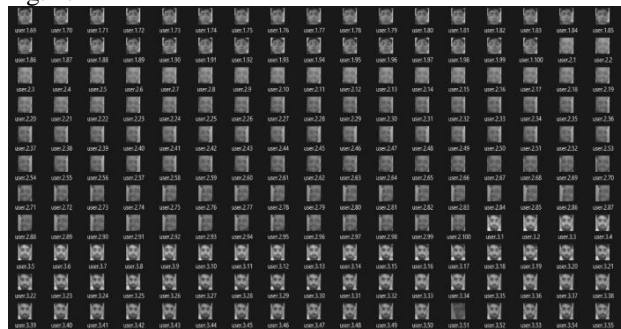


Figure 1: Data set created

System Design

The students should be registered with the system and their images should be uploaded to the database. The captured images are compared with such images to predicting the presence. In this experiment, we have loaded 20 images of each student. The complete use-case of the proposed system is as depicted in the Fig 2.

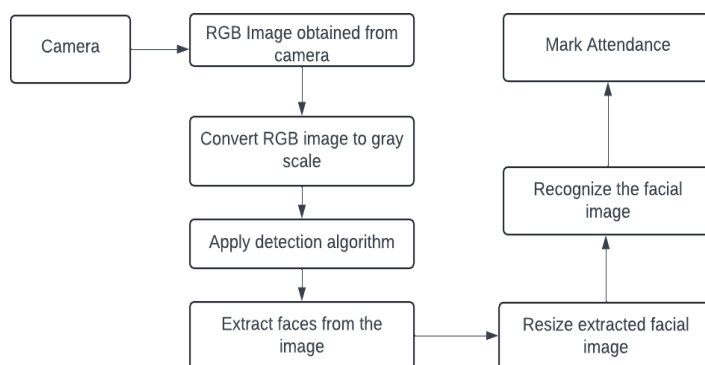


Figure 2: Image Capturing and Processing

Image Capturing

Real time videos of the class room are captured using mobile device or camera linked to laptop. In this experiment a 15 MB camera is mounted on the wall as displayed in Fig. 3.

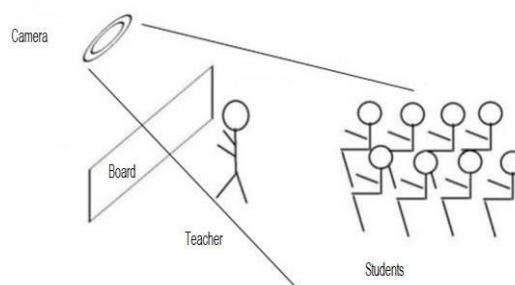


Figure 3: Capturing live videos of the classroom

Image Detection

The images extracted from the streaming videos are converted into a grey scale pattern before applying the detection algorithm. A sample generated gray-scale image is displayed in Fig 4. The Haar Cascade algorithm serves as a pivotal tool in video processing, particularly in the identification of individual faces within a frame. By leveraging Haar Cascade, the algorithm detects faces by recognizing patterns of contrast between light and dark areas. Once identified, it meticulously extracts distinct facial features of an individual such as eyes, nose, and ears, vital for accurate and precise recognition and analysis. This process of feature extraction enables the algorithm to isolate and focus solely on the regions of interest (ROIs) within the face, optimizing computational resources by disregarding extraneous information. By employing this principle, the algorithm efficiently processes only the necessary portions of the image while cropping out irrelevant regions, thereby enhancing both accuracy and performance in facial recognition tasks within the context of student monitoring or similar applications.



Figure 4: A grey scale image generated from captured image

The detectMultiScale module of OpenCV is used for detecting images. This module consider three crucial parameters: (a) scaleFactor: it is the amount of scaling applied to the image. (b) minNeighbors: indicate the number of adjacent images to be considered. Increasing the value improves the quality of capture but reduces the number of faces detected. (c) midsize: indicates the minimum size of the object. Along with these factors, the camera angle is another important parameter that should be taken in account. An appropriate angle should be set for proper image capture. In this experiment, the scale factor is set to 1.3 and minNeighbors is given as 6. The default minSize (30,30) is chosen (Becoming Human, 2018; Nirmalayakar et al., 2012).

To analyze the importance of camera angle, we tried different angles and computer the accuracy of facial recognition.

Table No. III- Accuracy For Different Projection Angles

Angle	Accuracy
0 - 20	78%
20- 30	98.15%.
30-50	97.8%
50-90	64.2%

Image Matching

Recognize a student by comparing a captured image against images stored in a database, the LBPH algorithm (Local Binary Pattern Histogram) is employed. This algorithm extracts local binary patterns from the image, creating a histogram representation of these patterns. Each image in the database has its own histogram value, which serves as a unique identifier. When the camera captures a new image, its histogram value is calculated using the LBPH algorithm. This calculated histogram is then compared against the stored histogram values of the images in the database. By cross-checking these values, the system can determine the closest match, thereby identifying the student associated with the captured image. This method of recognition is robust and efficient, making it suitable for various applications such as attendance systems, access control, and surveillance.

Attendance Marking

If the histogram values computed for the identified image matches with the any of the image stored and available in the database, then the attendance for that student is marked in a CSV file. A value of “P” is recorded in the file to indicate the students are present and a “A” value indicate the absence or the face cannot be recognized properly. A sample attendance sheet with timestamp value is shown in Fig 5.

Roll No	Name	TimeStamp	Attendance
101	Aleena	45567.42378	P
102	Arjun	45567.43316	P
103	Habis	45567.44132	P
104	Justin	45567.42072	P
105	Mubeena	45567.44528	P
106	Shameer	45567.45628	P
107	Shayan	45567.42948	P
108	Shazil	45567.43887	P
109	Shazin		A
110	Yazin	45567.45442	P

Figure 5: Sample Attendance Marking

Result and Analysis

An automated attendance management system that make use of biometric features to recognize and identify the students in a classroom is implemented using OpenCV is demonstrated in this research paper. The model makes use of Haar Cascade classifier and Local Binary Patterns (LBP) for feature extraction. The accuracy of the automated model is computed 98.15% from the experiment. It is also established that face recognition was sensitive to face background, light, and head/camera orientations. To highlight the importance of camera projecting angle, the experiment is repeated by adjusting the camera projection angle and it is found that optimal accuracy is obtained for an orientation of 20-30 degree. Deviating from this optimal value reduces the prediction accuracy as shown the Fig 6 given below.

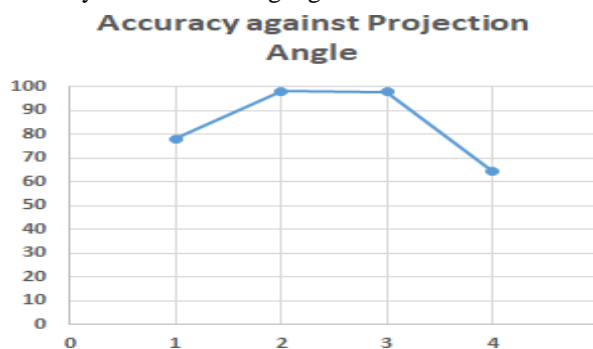


Figure 6: Facial Recognition Accuracy for different Projection Angle

Conclusion

The implementation and analysis of the attendance management system using facial biometrics records a significant technological advancement in the attendance tracking and management processes. Such a system put forth many advantages over traditional system including reduced human intervention. The system put forward a streamlined approach to identify and authorize student presence in classrooms. By utilizing facial biometrics and advanced algorithms, such as Haar Cascade and Local Binary Patterns Histograms (LBPH), the system realizes a high level of precision and accuracy and automation in attendance management.

The proposed architecture involves several key phases, including database creation and training, real-time image capturing, image detection using Haar Cascade, image matching via LBPH algorithm, and attendance marking based on image comparison. This methodology ensures efficient processing of live classroom videos, accurate identification of students, and record attendance without human intervention.

The result analysis showcases a commendable precision rate of 98.15% for the implemented model, demonstrating its effectiveness in facial image detection and recognition tasks. The performance of the proposed system is underlined by its superior precision rate over alternative methods, including LBP with PCA and SVM, LBP with KNN classification, Eigen face recognition with PCA, sensor-based methods, and CNN-based approaches.

In essence, the attendance tracking and management system using on facial biometric identification offers a robust, contactless, and convenient alternative to traditional attendance tracking methods. It not only reduces administrative workload but also minimizes the risk of errors and fraudulent activities associated with manual or card-based systems. The system's high accuracy rate and efficiency make it a valuable asset for educational institutions seeking to optimize attendance management processes and enhance operational efficiency.

References

- Karunakar, M., Sai, C. A., Chandra, K., & Kumar, K. A. (2020). Smart attendance monitoring system (SAMS): A face recognition-based attendance system for classroom environment. *International Journal for Recent Developments in Science and Technology*, 4(5), 194–201.
- Kamil, M. H. M., Zaini, N., Mazalan, L. L., & Ahamad, A. H. (2023). Online attendance system based on facial recognition with face mask detection. *Multimedia Tools and Applications*, 82, 34437–34457. <https://doi.org/10.1007/s11042-023-14842-y>
- Akbar, M. S., Sarker, P., Mansoor, A. T., Al Ashray, A. M., & Uddin, J. (2018). Face recognition and RFID verified attendance system. In *2018 International Conference on Computing, Electronics & Communications Engineering (iCCECE)* (pp. 168–172). Southend, UK: IEEE. <https://doi.org/10.1109/iCCECOME.2018.8658705>
- Okokpuije, K. O., Noma-Osaghae, E., Okesola, O. J., John, S. N., & Robert, O. (2017). Design and implementation of a student attendance system using iris biometric recognition. In *2017 International Conference on Computational Science and Computational Intelligence (CSCI)* (pp. 563–567). Las Vegas, NV: IEEE. <https://doi.org/10.1109/CSCI.2017.96>
- Smitha, Hegde, P., & Afshin. (2020). Face recognition-based attendance management system. *International Journal of Engineering Research and Technology*, 9. <https://doi.org/10.17577/IJERTV9IS050861>
- Khan, M., Chakraborty, S., Astya, R., & Khepra, S. (2019). Face detection and recognition using OpenCV. In *2019 International Conference on Computing, Communication, and Intelligent Systems (ICCCIS)* (pp. 116–119). IEEE. <https://doi.org/10.1109/ICCCIS48478.2019.8974493>
- Kumar, A., Chaudhary, S., Sangal, S., & Dhama, R. (2022). Face detection and recognition using OpenCV. *International Journal of Computer Applications*, 184(11), 23–32. <https://doi.org/10.5120/ijca2022922085>
- Varadharajan, E., Dharani, R., Jeevitha, S., Kavinmathi, B., & Hemalatha, S. (2016). Automatic attendance management system using face detection. In *2016 Online International Conference on Green Engineering and Technologies (IC-GET)* (pp. 1–3). IEEE. <https://doi.org/10.1109/GET.2016.7916753>
- Song, K.-C., Yan, Y.-H., Chen, W.-H., & Zhang, X. (2013). Research and perspective on local binary pattern. *Acta Automatica Sinica*, 39, 730–744. [https://doi.org/10.1016/S1874-1029\(13\)60051-8](https://doi.org/10.1016/S1874-1029(13)60051-8)
- He, Y., Sang, N., & Huang, R. (2011). Local binary pattern histogram-based texton learning for texture classification. In *2011 18th IEEE International Conference on Image Processing* (pp. 841–844). IEEE. <https://doi.org/10.1109/ICIP.2011.6116688>
- Anggo, M., & Arapu, L. (2018). Face recognition using Fisherface method. *Journal of Physics: Conference Series*, 1028, 012119. <https://doi.org/10.1088/1742-6596/1028/1/012119>
- Belhumeur, P. N., Hespanha, J. P., & Kriegman, D. J. (1997). Eigenfaces vs. Fisherfaces: Recognition using class-specific linear projection. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 19(7), 711–720. <https://doi.org/10.1109/34.598228>
- Anggo, M., & Arapu, L. (2018). Face recognition using Fisherface method. *Journal of Physics: Conference Series*, 1028, 012119. <https://doi.org/10.1088/1742-6596/1028/1/012119>
- Jubair, A. S., Mahna, A. J., & Wahhab, H. I. (2019). Scale-invariant feature transform-based method for objects matching. In *2019 International Russian Automation Conference (RusAutoCon)* (pp. 1–5). IEEE. <https://doi.org/10.1109/RUSAUTOCON.2019.8867657>
- Nixon, M. S., & Aguado, A. S. (2020). Low-level feature extraction (including edge detection). In *Feature Extraction and Image Processing for Computer Vision* (4th ed., pp. 141–222). Academic Press. <https://doi.org/10.1016/B978-0-12-814976-8.00004-X>
- Bay, H., Tuytelaars, T., & Van Gool, L. (2006). SURF: Speeded up robust features. In Leonardis, A., Bischof, H., & Pinz, A. (Eds.), *Computer Vision – ECCV 2006* (Vol. 3951, pp. 404–417). Springer. https://doi.org/10.1007/11744023_32
- Bay, H., Ess, A., Tuytelaars, T., & Van Gool, L. (2008). Speeded-up robust features (SURF). *Computer Vision and Image Understanding*, 110(3), 346–359. <https://doi.org/10.1016/j.cviu.2007.09.014>

Becoming Human. (2018). Face detection using OpenCV with Haar cascade classifiers. *Becoming Human*. Retrieved October 4, 2024, from <https://becominghuman.ai/face-detection-using-opencv-with-haar-cascade-classifiers-941dbb25177>

Nirmalayakar, M. K. D., Debbarma, A., Saha, A., & Pal, D. R. (2012). Study of implementing automated attendance system using face recognition technique. *International Journal of Computer and Communication Engineering*, 1(2), 134–138.

Singh, D., et al. (2014). *International Journal of Computer Science and Mobile Computing*, 3(2), 633–636.

The Influence of Active vs. Inactive Lifestyles on Health Outcomes in Contemporary Society: A Comparative Analysis

Vishal Vinayakrao Patil

Assistant Professor,

Department of Business Administration and
Research, Shri Sant Gajanan Maharaj College
of Engineering, Shegaon, Maharashtra, India

Dr. Satya Mohan Mishra

Assistant Professor,

Department of Business Administration and
Research, Shri Sant Gajanan Maharaj College
of Engineering, Shegaon, Maharashtra, India

Abstract

Technological improvements, urbanization, and changing work settings have all had a significant impact on modern lifestyles. These alterations have resulted in a clear distinction between inactive, sedentary lives and more physically active ones. This research compares the health effects of both inactive and active lifestyles, with an emphasis on physical, mental, and emotional well-being. Sedentary lifestyles, which include prolonged sitting, little physical activity, and a reliance on technology, have been related to an increase in obesity, cardiovascular disease, diabetes, and mental health issues like anxiety and depression. These health concerns are increased by poor food habits and unpredictable sleep patterns, which are frequent among those who live sedentary lifestyles. Active lifestyles, which include frequent physical activity, healthy foods, and consistent routines, have been demonstrated to greatly reduce the risk of chronic illnesses. Regular physical activity benefits not just cardiovascular and muscular health, but also mental clarity, emotional stability, and social connections. The study found that active people have better stress management skills, improved cognitive function, and higher overall life satisfaction than their sedentary counterparts. The study emphasizes the value of encouraging physical activity through public health interventions, educational programs, and workplace activities. It also implies that including even moderate amounts of physical activity into daily routines can result in long-term health advantages and mitigate the negative consequences of inactivity. As modern society evolves, promoting active lifestyles becomes increasingly important in addressing the mounting health concerns of the twenty-first century.

Keywords: Modern Lifestyle, Sedentary Behavior, Physical Activity, Chronic Disease, Mental Health

Introduction:

In today's rapidly advancing world, the stark contrast between active and inactive lifestyles has become a significant point of concern in public health. Technological advancements and societal shifts have made modern life more convenient, but they have also contributed to an increasingly sedentary culture. Desk jobs, digital entertainment, and widespread access to labor-saving devices have drastically reduced physical activity in daily routines. This shift has led to a growing divide between those who lead active lives, regularly engaging in physical exercise, and those who lead inactive or sedentary lives, characterized by prolonged sitting and minimal movement. The health implications of these divergent lifestyles are profound. Physical inactivity has been identified as a major risk factor for numerous chronic diseases, including cardiovascular conditions, obesity, diabetes, and mental health disorders. In contrast, maintaining an active lifestyle is associated with a wide range of physical and psychological benefits. Regular exercise promotes cardiovascular health, strengthens muscles and bones, aids in weight management, and improves mental well-being by reducing stress, anxiety, and depression.

One of the main preventable causes of death in the world, according to the World Health Organization (WHO), is physical inactivity. Sedentary lifestyles raise the risk of non-communicable diseases (NCDs), which account for a significant amount of death worldwide. Active people, on the other hand, typically live longer, have higher quality of life, and have better overall health results. The purpose of this study is to examine how active and inactive lifestyles affect health outcomes in modern society. This study intends to highlight the advantages of physical activity while also bringing attention to the health hazards associated with inactivity by comparing these two lifestyles. This essay will also examine the larger social and environmental elements that impact lifestyle decisions, highlighting the need of creating a culture that encourages physical activity and well-being in a world where people are becoming more sedentary.

People can make better decisions about their everyday activities if they are aware of the negative effects that contemporary lifestyle choices have on their health. This comparative analysis offers important insights into how active and inactive lifestyles impact health outcomes, providing guidance for both individual and societal methods to increasing well-being in today's world, as public health concerns around inactivity continue to rise.

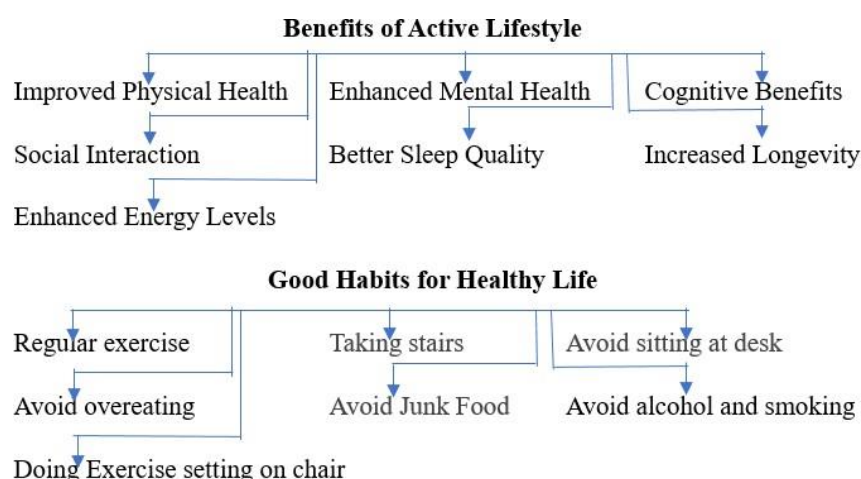
Difference between Inactive and Active Lifestyle

CSIBER International Journal – CIJ

A Quarterly Double-Blind Peer Reviewed (Referred/Juried) Open Access International e-Journal – Included in the
International Serial Directories

<https://www.siberindia.edu.in/journals/>

Aspect	Inactive Lifestyle	Active Lifestyle
Physical Activity	Sedentary behavior dominates, with little to no regular activity (for example, lengthy hours sitting at a desk).	Regular physical exercise, such as jogging, swimming, or participating in sports (for example, taking a fitness class).
Dietary Habits	Processed foods, excessive sugar consumption, and inconsistent eating habits are common.	Emphasizes nutritious foods, balanced meals, and consistent eating habits.
Health Outcomes	Obesity, cardiovascular disease, diabetes, and mental health disorders are all at an elevated risk.	Improved physical fitness, reduced risk of chronic diseases, improved mental health, and general well-being.
Social Engagement	Limited social connections due to a propensity for solitary activities (such as watching TV).	Active participation in social activities, group sports, or fitness classes, which fosters social bonds (for example, joining a running club).
Sleep Patterns	Irregular sleep habits are frequently associated with ill health and stress.	Regular sleep habits accompanied by physical exercise result in improved sleep quality (for example, going to bed and waking up at consistent times).



Literature Review

Kumar (2019) investigates the impact of physical activity on chronic illness prevention in urban populations, emphasizing the worrying fall in physical activity owing to urbanization. The study convincingly linked sedentary lifestyles to an increased risk of chronic disorders such as cardiovascular disease, diabetes, and obesity. Kumar underlines the necessity of engaging in everyday physical activity like walking and cycling to reduce these health hazards. The study also recommends for urban planning that promotes active lifestyles, as a solution to the growing health crisis. Kumar's work serves as a timely reminder of the link between active living and disease prevention, especially in metropolitan areas where sedentary behavior is on the rise.

Sharma (2021) investigates the interaction of technology, work environments, and health, with a particular emphasis on how physical activity can mitigate the health concerns associated with current sedentary lifestyles. The research discusses how technological improvements have contributed to a decrease in physical activity, particularly in workplaces where prolonged sitting is commonplace. Sharma emphasizes the importance of regular exercise in lowering the risk of chronic diseases like heart disease, obesity, and mental health issues. The report recommends workplace wellness programs that encourage physical exercise, such as walking meetings and

scheduled break times for movement. Overall, Sharma presents persuasive evidence that even moderate physical activity can improve well-being and lower health risks in technology-driven workplaces.

Reddy (2015) investigates the consequences of urbanization on the increase of lifestyle diseases, with a special emphasis on the function of physical activity. The study discusses how fast urban expansion has resulted in more inactive lifestyles due to an increased reliance on technology, transportation, and modern amenities. Reddy examines the link between decreased physical activity and an increase in lifestyle-related disorders like diabetes, hypertension, and cardiovascular problems. The study underlines the importance of urban planning that promotes active living, such as accessible parks and pedestrian-friendly zones, in combating these health risks. Reddy also emphasizes the necessity of public health measures that promote physical activity in order to lessen the burden of lifestyle diseases among urban populations.

Kaur (2020) explores the link between nutritional habits and lifestyle choices, focusing on active and inactive lives. The study stresses how dietary patterns have a substantial impact on general health and well-being, pointing out that people who live sedentary lifestyles frequently have lower nutritional habits, which exacerbate health risks. Kaur investigates the relationship between diet and physical activity, concluding that a well-balanced diet combined with frequent exercise is essential for avoiding lifestyle-related ailments such as obesity and cardiovascular disease. The report also discusses the socioeconomic factors that influence dietary choices and physical activity levels, advocating for public health policies that promote healthy eating and active living. Overall, Kaur's research emphasizes the necessity of combining adequate nutrition and an active lifestyle to improve health outcomes.

Verma (2014) investigates the negative impacts of sedentary behavior on both physical fitness and mental health. The study emphasizes the growing prevalence of sedentary behaviors in modern culture, relating them to an increased risk of chronic diseases like obesity, diabetes, and cardiovascular disease. Verma highlights the importance of physical fitness as a countermeasure to the harmful effects of inactivity, claiming that regular exercise not only improves physical health but also mental health by lowering anxiety and sadness. The article supports for increased public awareness and educational measures to encourage active living, emphasizing that including physical activity into everyday routines is critical for enhancing overall health and reducing lifestyle-related disorders.

Singh and Sidhu (2022) offer a thorough kinematic analysis of the hurdle clearing technique in the 110m hurdle race, revealing insight on the complexities of athletic performance and its implications for physical fitness. The study underlines the significance of technical skill in improving performance and reducing injury risk among athletes. The authors demonstrate how precise motions contribute to overall race efficiency by evaluating several aspects of hurdle clearing, such as takeoff and landing mechanics. This study emphasizes the importance of correct training and technique in competitive sports, implying that targeted physical activity can enhance athletic performance while simultaneously promoting overall fitness and well-being. Singh and Sidhu's findings urge for the integration of biomechanical analysis in training regimens, highlighting how such insights can benefit.

Puri, Mishra, Jhajharia, and Singh (2014) report a comparative study of volleyball players' coordinative abilities across age groups, emphasizing the impact of physical exercise on athletic performance. The study looks into how age affects physical coordination, a critical component in sports like volleyball. The authors discovered that younger athletes have stronger coordination skills, which can be linked to both physical development and training. This study emphasizes the need of individualized training regimens that address athletes' developmental stages in order to improve their physical talents and overall performance. Furthermore, the findings highlight the importance of leading an active lifestyle through sports, which not only improves athletic performance but also increases physical fitness and health across all age groups. The research contributes.

Sharma and Singh (2014) explore the impact of relative exercises on the lifestyles of older citizens, with a focus on the physical, mental, and social benefits of regular exercise. The study underscores the significance of individualized fitness programs that address the unique demands and capacities of older persons. The authors emphasize that regular physical activity can lead to greater mobility, muscle strength, and overall health, all of which are essential for older people to preserve their independence and quality of life. Furthermore, the study shows that exercise has a favorable influence on mental health, reducing anxiety and depression among seniors. Overall, Sharma and Singh's work highlights the importance of fostering active lifestyles among older populations to counteract the problems.

Dr. Mandeep Singh (2017) investigates the dynamics of family stress experienced by working and non-working parents, offering light on the differences in issues confronting these two groups. According to the report, working

parents frequently face difficulties such as time management, balancing professional and family commitments, and financial pressures.

Raj (2018) investigates the link between stress and sedentary labor in the digital age, highlighting the health concerns linked with prolonged sitting and insufficient physical activity. The study examines how current work conditions, which are characterized by intensive computer usage and minimal mobility, relate to increased stress and a variety of health problems, including obesity, cardiovascular disease, and mental health disorders. Raj explores the psychological effects of sedentary behavior, emphasizing how a lack of physical activity can lead to a worse mood and increased worry.

Research Methodology

Objectives

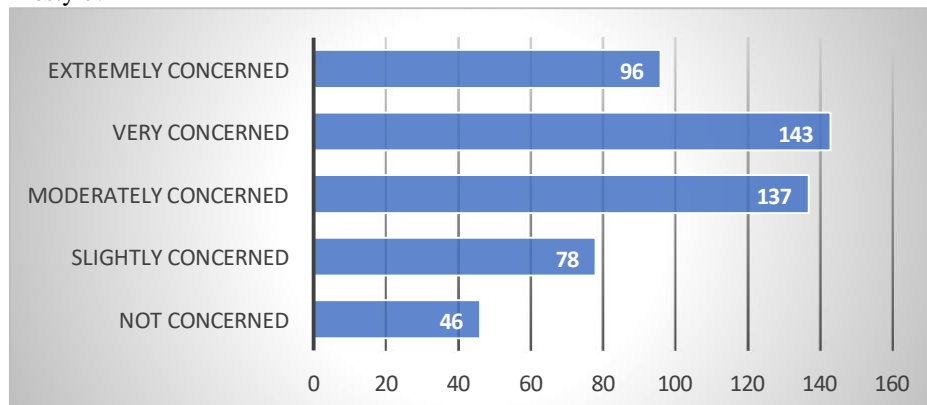
- To assess the health risks associated with sedentary lifestyles.
- To evaluate the Benefits of Active Lifestyles.
- To identify Effective Strategies to Promote Physical Activity

Sampling Techniques: - Simple Random Techniques

Sample Size: 500 Respondents

Data Analysis

Figure No. 1: To what extent do you worry about the long-term health hazards associated with a sedentary lifestyle?



According to the findings, a sizable proportion of respondents are concerned about the long-term health risks associated with sedentary lifestyles. A total of 47.8% are "very concerned" (143 respondents) or "extremely concerned" (96 respondents), indicating a high level of awareness about the linked health hazards. Furthermore, 27.4% (137 respondents) are "moderately concerned," which indicates moderate fear. In comparison, 15.6% (78 respondents) are only "slightly concerned," while a smaller 9.2% (46 respondents) are "not concerned." The majority of respondents indicate varied degrees of concern, indicating that most people are aware of the problems associated with sedentary lifestyles.

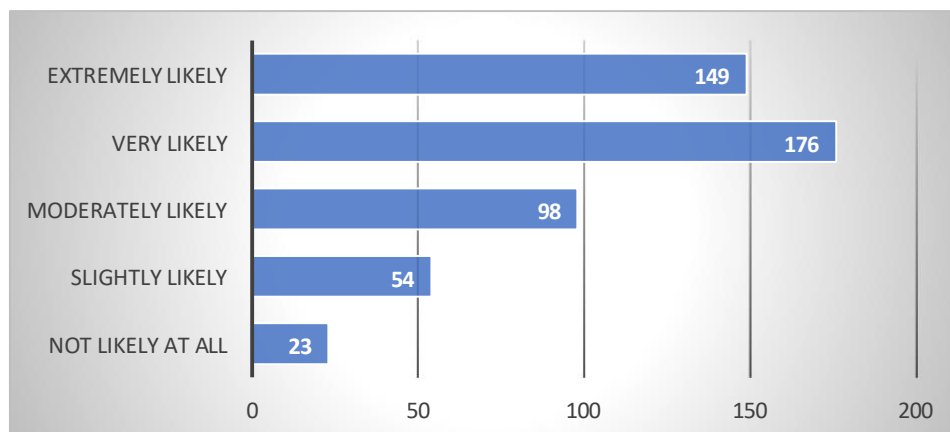


Figure No. 2 : To what extent do you think a more active lifestyle could lower the health risks associated with a sedentary lifestyle?

According to the findings, the majority of respondents feel that living a more active lifestyle can greatly minimize the health risks connected with sedentary behavior. A total of 65% of respondents believe it is either "very likely" (176 respondents, 35.2%) or "extremely likely" (149 respondents, 29.8%) to reduce health risks. Additionally, 19.6% (98 respondents) think it is "moderately likely." A smaller proportion, 10.8% (54 respondents), think it is just "slightly likely," while only 4.6% (23 respondents) believe it is "not likely at all."

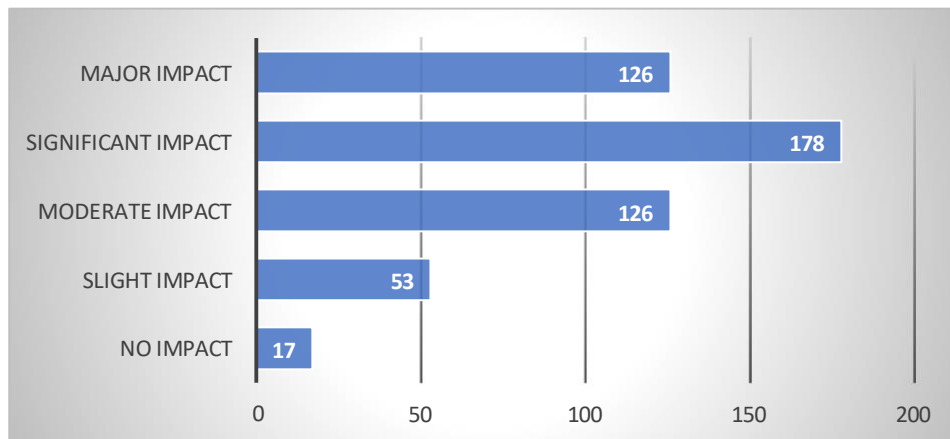


Figure No. 3 : To what degree do you think leading an active lifestyle benefits your mental well-being?

According to the findings, the vast majority of respondents believe that living an active lifestyle improves their mental health. Specifically, 35.6% (178 respondents) perceive a "significant impact," while 25.2% (126 respondents) believe it has a "major impact." Furthermore, 25.2% (126 respondents) report a "moderate impact," showing that most people see evident mental health benefits from staying active. In contrast, 10.6% (53 respondents) believe the influence is "slight," while only 3.4% (17 respondents) believe there is "no impact" at all.

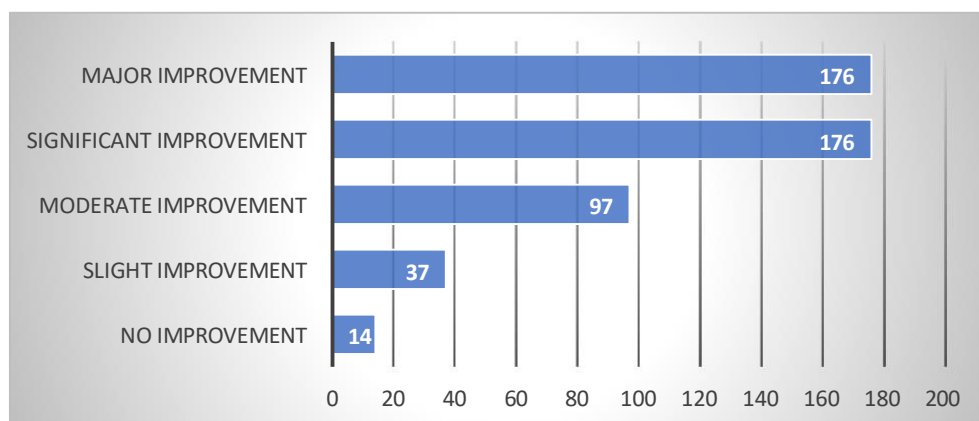


Figure No. 4 : To what extent do you think regular exercise enhances your physical well-being?

The statistics reveal that people strongly believe in the benefits of frequent exercise for their physical well-being. Regular exercise improves the physical health of 70.4% of respondents, with "significant improvement" (176 respondents, 35.2%) and "major improvement" (176 respondents, 35.2%). Additionally, 19.4% (97 respondents) reported a "moderate improvement." Only 10.2% of respondents believe the effects are limited, with 7.4% (37 respondents) finding "slight improvement" and 2.8% (14 respondents) reporting "no improvement." The statistics indicate that people are aware of the benefits of exercise for their physical health.

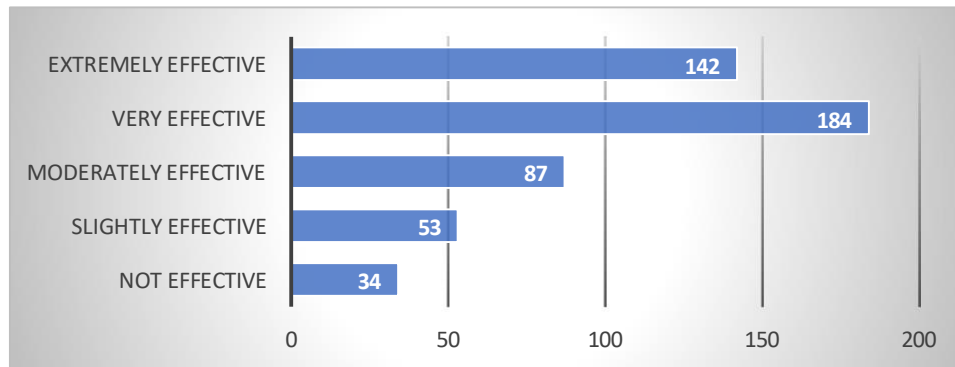


Figure No. 5: How effective do you think community programs (e.g., fitness events, group exercises) are in promoting physical activity?

According to the findings, the majority of respondents felt that community activities (such as fitness events and group workouts) are successful in encouraging physical activity. Specifically, 36.8% (184 respondents) consider these initiatives "very effective," while 28.4% (142 respondents) consider them "extremely effective." An further 17.4% (87 respondents) consider them "moderately effective." In contrast, a smaller percentage—17.4% combined—believes these initiatives have low influence, with 10.6% (53 respondents) ranking them "slightly effective" and 6.8% (34 respondents) rating them "not effective."

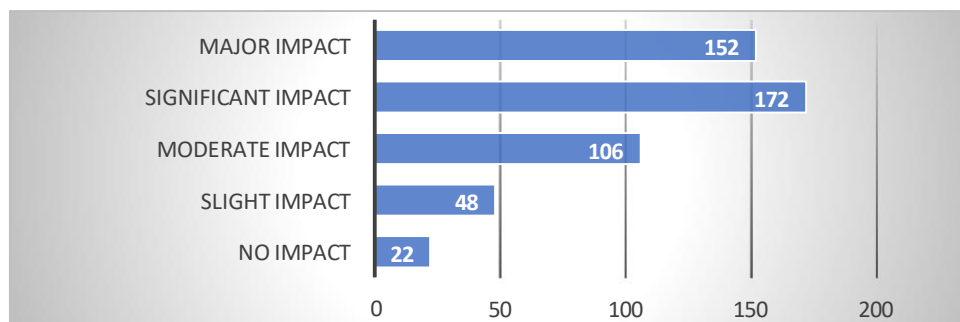


Figure No. 6: To what extent do you believe workplace wellness programs (e.g., fitness challenges, standing desks) encourage physical activity?

According to the findings, the majority of respondents believe that workplace wellness programs (such as fitness challenges and standing workstations) promote physical activity. Specifically, 34.4% (172 respondents) believe these initiatives have a "significant impact," while 30.4% (152 respondents) think they have a "major impact." Additionally, 21.2% (106 respondents) saw a "moderate impact." Only 14% of respondents believe the programs have minimal influence, with 9.6% (48 respondents) indicating a "slight impact" and 4.4% (22 respondents) claiming "no impact."

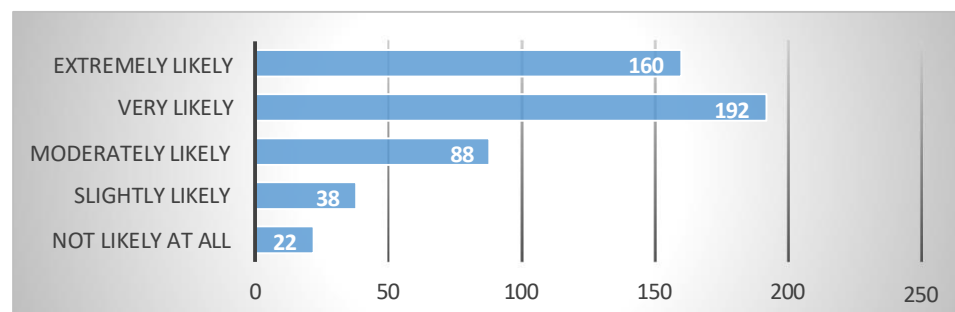


Figure No. 7: How likely are financial incentives (e.g., gym memberships, fitness tracking rewards) to motivate people to be more active?

According to the research, the majority of respondents believe that financial incentives (such as gym memberships or fitness tracking awards) are good motivators for physical exercise. Specifically, 38% of respondents (192) believe these incentives are "very likely" to drive people, while 32% (160) think they are "extremely likely." Another 18% (88) believe they are "moderately likely" to make an influence. In comparison, only 12% (60 total) of respondents are either "not likely at all" (22) or "slightly likely" (38) to be driven by such incentives.

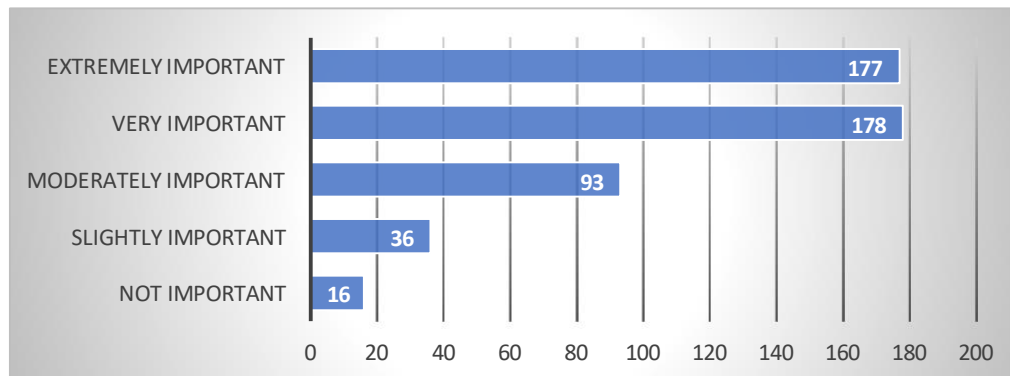


Figure No. 8: How important is the availability of accessible outdoor spaces (e.g., parks, walking trails) in encouraging physical activity?

According to the findings, a great majority of respondents believe that accessible outdoor areas (such as parks and walking trails) are critical for encouraging physical exercise. Specifically, 35.6% (178 respondents) assess them as "very important," while 35.4% (177 respondents) evaluate them as "extremely important," demonstrating significant agreement on their importance. Furthermore, 18.6% (93 respondents) consider them "moderately important," while just 10.4% (52 respondents combined) regard them as having little value, with 16 respondents considering them "not important" and 36 as "slightly important."

Findings and Result

- The study found that a sizable majority of respondents are concerned about the long-term health hazards associated with a sedentary lifestyle. With over 46% indicating significant levels of worry, it is clear that awareness of these health risks is widespread. This emphasizes the necessity of supporting active lives and implementing ways to reduce the hazards of inactivity, resulting in healthier communities and improved overall well-being.
- According to the poll results, respondents strongly believe that leading a more active lifestyle can greatly minimize the health risks linked with sedentary behavior. With 65% saying it is "very likely" or "extremely likely" to reduce these risks, the data show that physical activity is widely recognized for its health advantages. This awareness highlights the importance of continuing to promote active living as a crucial strategy for improving public health outcomes and preventing chronic diseases caused by inactivity.
- The data show that living an active lifestyle is universally acknowledged as good for mental health. The vast majority of responder's report varied degrees of influence, with many noting "significant" or "major" improvements in their mental health. This emphasizes the need of incorporating physical activity into everyday routines to improve mood, reduce stress, and increase psychological resilience. Encouraging active lifestyle can help communities achieve better mental health outcomes.
- According to the findings, respondents strongly agree that frequent exercise improves their physical well-being. The vast majority of people report "significant" or "major" improvements as a result of their exercise routines, demonstrating the importance of physical activity in sustaining health. This award emphasizes the importance of promoting regular exercise as a key component of a healthy lifestyle, lowering the risk of chronic diseases and improving overall quality of life.
- The findings show that community programs, such as fitness events and group workouts, are successful in encouraging physical activity. The vast majority of respondents rate these programs as "very effective" or "extremely effective," emphasizing their importance in motivating involvement and establishing a feeling of community. This highlights the necessity of investing in and growing community-based fitness programs to improve public health and encourage people to live more active lives.

- The data show that workplace wellness programs are widely seen as helpful in boosting physical activity among employees. A sizable majority of respondents believe that these initiatives have a "moderate" to "major" impact on encouraging active living. This shows that firms should continue to introduce and expand such programs, since they not only promote better physical health but also foster a culture of well-being, productivity, and employee engagement in the workplace.
- The findings show that financial incentives, such as gym memberships and fitness tracking awards, are widely regarded as effective motivators for increasing physical activity. The majority of respondents say these incentives are "very likely" or "extremely likely" to increase participation in active lifestyles. This shows the potential for businesses and policymakers to use financial incentives to promote health and fitness, resulting in better public health outcomes and lower healthcare expenditures.
- The findings emphasize the crucial role of publicly accessible outdoor areas, such as parks and walking trails, in encouraging physical exercise. The vast majority of respondents believe that these venues are "very important" or "extremely important" in supporting active lives. This emphasizes the importance of urban planners and legislators investing in and maintaining such facilities, which provide critical environments that promote exercise, improve community well-being, and contribute to healthier populations.

Conclusion

A comparison of active and inactive lifestyles in contemporary culture gives important insights into their respective health effects. The findings show that people are generally concerned about the long-term health risks associated with a sedentary lifestyle, emphasizing the need for enhanced knowledge and preventive measures. Respondents strongly feel that living a more active lifestyle helps reduce health risks, with many recognizing the mental and physical benefits of regular exercise. Furthermore, the efficacy of community programs and workplace wellness efforts has a favorable impact on physical activity promotion. Financial incentives and accessible outdoor places are also important in encouraging an active lifestyle. Collectively, these observations highlight the importance of encouraging active living through community participation and supportive environments to improve overall health and well-being.

"The body requires both exercise and a balanced diet, while the soul craves junk and spicy food. Now the question arises: should we heed the needs of the soul or the body? The body may deteriorate, but the soul remains eternal."

References

Kumar, V. (2019). Physical activity patterns and chronic disease prevention in urban populations. *International Journal of Physical Education, Sports and Health*, 6(2), 78-85.

Sharma, A. (2021). Technology, work environment, and health: The role of physical activity in mitigating health risks. *International Journal of Wellness*, 10(4), 124-130.

Reddy, R. (2015). Urbanization and its role in the rise of lifestyle diseases: A focus on physical activity. *Journal of Urban Health*, 8(1), 45-53.

Kaur, R. (2020). Nutritional habits and their interplay with active and sedentary lifestyles. *Journal of Nutrition and Physical Activity*, 14(3), 201-210.

Verma, S. (2014). Sedentary lifestyle and its impact on health: A focus on physical fitness and mental well-being. *Indian Journal of Physical Education and Health*, 9(2), 62-69.

Singh, M., & Sidhu, A. S. (2022). Kinematical analysis of hurdle clearance technique in 110m hurdle race. *Journal of Human Kinetics*, 15(1), 88-97.

Puri, P. C., Mishra, P., Jhajharia, B., & Singh, M. (2014). Coordinative abilities of volleyball players in different age groups: A comparative study. *International Journal of Sports Science*, 7(3), 130-137.

Sharma, N. P., & Singh, M. (2014). Senior age group relative exercises and impact on their lifestyle. *Indian Journal of Gerontology*, 5(2), 45-54.

Dr. Mandeep Singh. (2017). A study of family stress among working and non-working parents. *Indian Journal of Psychology*, 12(4), 89-98.

Raj, S. (2018). Stress and sedentary work: Understanding health risks in the digital age. *Journal of Occupational Health and Safety*, 11(2), 112-120.

<https://www.hindustantimes.com/lifestyle/health/8-daily-habits-to-stay-active-and-avoid-harmful-effects-of-sedentary-lifestyle-101674304370534.html>

Effectiveness of Moment Marketing: A study of Product And Service Based Advertisements

Pooja Verma
Research Scholar,
Shri Vaishnav Vidyapeeth
Vishwavidyalaya Indore,
India.

Dr. Pragya Jaroliya
Professor,
Shri Vaishnav Vidyapeeth
Vishwavidyalaya Indore, India

Dr. Deepak Jaroliya
Professor,
Prestige Institute of
Management & Research
(PIMR) Indore, India

Research Aims:

Moment marketing is becoming more and more popular, and this has had a significant effect on consumer markets, especially in terms of how it affects consumer attitudes and behaviours towards branding. A deeper understanding of how Indian customers interact with and react to these moment marketing activities is crucial for maximizing the potential of moment marketing. To better understand how moment marketing affects consumer behavior and preferences, this study examines the psychology of Indian consumers and the impact on branding factors. This study explores the components of moment marketing creates consumer interest and show how those features result in branding intents to determine what characteristics drive customer engagement with these kinds of promotions.

Design/methodology/approach:

The exploratory study examines the effects of moment marketing on branding for Product & Service Based Advertisements. A sample of 390 respondents from social media users was surveyed using a self-developed scale. Responses were collected on a 5- point Likert scale, from "Strongly Disagree" (1) to "Strongly Agree" (5). Data analysis was conducted using SPSS, employing factor analysis with varimax rotation to identify key factors. A regression analysis was applied to assess the impact of independent variables on the dependent variables for Product & Service Based Advertisements separately.

This study enhances understanding of Moment Marketing by identifying the various factors. From which Alluringness and Consumer Orientation are consistently vital in both product and service ads. In product-based commercials, Alluringness, Consumer Orientation, Social Marketing, and Moment Marketing influence Brand Acquaintance, while Alluringness, Consumer Orientation, and Social Marketing affect Brand Cognizance but not Engrossing Marketing. While for service-based ads, Societal Marketing, Innovative Marketing, Alluringness, Engrossing Marketing, and Consumer Orientation significantly impact Brand Exploration and Acquaintance. However, Brand Cognizance in services is driven by Innovative Marketing, Alluringness, Engrossing Marketing, and Consumer Orientation, with no clear effect from Societal Marketing.

This study solely includes data from social media users and is restricted to the Madhya Pradesh region. Traditional media has also been the subject of extensive inquiry. By identifying the relationship between moment marketing and branding as well as the way various moment marketing elements contribute to brand belonging, this research advances our understanding of how moment marketing processes branding. There are also practical implications to this. This study provides guidance on the necessity of a unique strategy to branding through moment marketing to digital marketers and businesses. Moment marketing allows businesses to work more directionally or in a way that acknowledges the opportunities and difficulties that customers bring to the process while selling goods and services.

Keywords: Brand Acquaintance, Brand Exploration, Brand Cognizance, Alluringness, Consumer Orientation, Societal Marketing, Engrossing Marketing.

Introduction

In the era of social media and digital advertising, businesses use moment marketing as a tactic. By introducing themselves into popular moments that are already generating a lot of discussion, they try to gain traction. Nowadays, almost all businesses use social media to market themselves and are constantly searching for fresh ways to interact with their clientele. Brands are finding it harder and more expensive to get consumers to notice them. With digital media, people have access to a wide variety of content alternatives and the ability to bypass ads. Customers rarely enjoy direct advertising, and if it doesn't interest them, they won't watch it. To solve this issue, moment marketing is essential. Moment marketing is a kind of advertising that concentrates on reaching customers when it counts most, that is, when they are actively seeking you out. The capacity to capitalize on events that are taking place and develop communications and marketing materials around them is known as

moment marketing. These days, moment marketing is a popular strategy for engaging an audience. Moment marketing has emerged as a unique marketing tactic that the sector has embraced. According to Aggarwal (2021) in economic times, Moment Marketing is a promotional approach focused on trending news, events, or occasions; utilized by brands largely on social media and digital platforms to get some traction and improve brand exposure and sales. Moment Marketing is a marketing strategy that companies employ in the age of social media and digital advertising. They attempt to get traction by inserting themselves into trendy moments that are already creating a lot of buzzes. According to Gajbe (2022) using some moments of social media to influence customers and to attract customers towards the product is called moment marketing.

Moment marketing has arisen as a distinct marketing strategy adopted by the industry. In the context of social media advertising, moment marketing is undoubtedly revolutionary. Brands may provide extremely relevant and captivating content that instantly connects with people by using current events, trends, or cultural phenomena. Moment marketing is a real-time marketing strategy that involves creating and distributing content that is relevant to current events, trends, or cultural phenomena. It's about seizing the moment and leveraging it to connect with the audience in a meaningful way. Moment marketing is the capacity to shape your online advertising activity based on any relevant moment from the offline world in real-time.

According to TVTY (2016) the first and most successful moment marketing company in the world.” In today's digital advertising landscape, moments are critical to achieving objectives. In digital marketing, showing the appropriate ad at the right moment is a crucial step in converting the audience. Moment marketing refers to a company's proactive response to a customer's reaction to an ad campaign, a brand post, a recent brand association, or any other current event. It takes advantage of having the appropriate message at the right time, to the point that it appears to be a spontaneous reaction. Moment marketing is a low-cost method that can help spread viral content. Another benefit of instant marketing is that it increases client interaction and two-way conversation. Moment marketing is a tactic used by companies in the era of social media and digital advertising. They attempt to get traction by introducing themselves into trending subjects that are already drawing a lot of attention. New media marketing strategies are changing the marketing landscape.

Types of Advertisements

Product-based Advertisements

According to Meyer (2023), Product-based advertising is a marketing tactic that uses promotions on various platforms, including social media, print, radio, television, SMS, email, and commercials, to try and generate demand for the product. Product-based advertisements emphasize the characteristics, advantages, and special selling factors of a particular product. These advertisements seek to educate and influence prospective consumers; they frequently use eye-catching imagery and powerful copy to leave a lasting impact on the viewer. The correct target market can be reached with a well-executed product advertising campaign, which will inform them of the characteristics and advantages of your products as well as what makes them different from the competitors. Product advertising promotes better brand awareness and recognition through products. The effectiveness of a product, its features, pricing, or any other distinguishing quality that sets it apart from the competition are the key factors in product-based marketing.

Service-based Advertisements

Service-based advertisements focus on services rather than tangible goods and are meant to highlight the intangible goods and services that companies and organizations offer. These commercials hope to raise brand awareness, entice new customers, and educate prospective clients about the advantages and worth of the services provided. Financial services, healthcare, hospitality, education, consultancy, entertainment, and more are a few services that could be advertised. Since services are intangible, their advantages and results are frequently highlighted in marketing. For instance, a cleaning service advertisement can highlight a customer's immaculate home and increase free time. Advertisements that focus on services frequently evoke feelings in viewers by emphasizing the pleasure and pleasant experiences they will provide. For example, a travel agency may include pictures and testimonials of contented clients having a great time on vacation.

Branding and Moment Marketing

According to Jahan et al. (2024) Branding is the key to creating a unique personality in the market. A powerful brand makes it easier for customers to recognize and distinguish one product from another in a crowded market full of identical offerings. Customers are more likely to select a product based on their familiarity and favorable connections with a well-designed brand since it leaves a lasting impression. Developing a distinctive identity for the company, goods, or services is the process of branding. It's the whole impression made on the audience, not simply the logo or tagline. A brand's identity and general perception are shaped by several crucial elements that are all part of the complex process of branding. Together, these elements help customers form a consistent and

identifiable mental image. The following are the key elements of branding: Brand Identity, Brand Image, Brand Personality, Brand Values, Brand Positioning, Brand Voice, Brand Experience, Brand Equity, Brand Loyalty, Brand Awareness, Brand Promise and Brand Associations. Together, these branding elements produce a thorough and unified brand identity. A strong, enduring, and favorable impression in the eyes of customers is produced by a well- executed branding strategy, which makes sure that all these components complement and reinforce one another. Increased consumer loyalty, brand equity, and commercial success follow from this. Businesses of all stripes can benefit greatly from the use of branding as a tool. Brand owners can reap significant benefits if they utilize their product appropriately. On the other hand, negative outcomes may arise from poorly managed brands. There are numerous strategies to guarantee branding success. A great branding campaign must include a few essential elements, such as selecting the ideal name, utilizing the appropriate advertising, implementing the best plan, and employing the most pertinent application strategies (Rooney, 1995). According to LeBoeuf et al. (2010). The relationships between goods and attitude functions are changed by branding. To be more precise, when a product category is branded, those generally associated with symbolic attitudes are linked to more symbolic, less utilitarian attitudes, and those generally associated with utilitarian attitudes are linked to less utilitarian, more symbolic attitudes. Padmi & Suparna (2021) assert that brand image which refers to the overall sentiments and beliefs of customers about a brand and its consequences for consumer behavior plays a significant role that considerably determines brand equity. A company's brand image can affect a customer's choice to buy a product. Before making a purchase, people frequently consider a product's brand image. If a brand has a positive reputation relative to its competitors, consumers are more likely to choose to buy products from that brand than from one that has a negative reputation.

Brands have a fantastic potential to develop memorable and significant campaigns with moment marketing. Effective implementation has the potential to greatly improve brand perception, engagement, and image. Through comprehension of the intended audience, keeping up with cultural shifts, and possessing an agile response system, brands may leverage moment marketing to create enduring relationships. Numerous activities, such as texting, updating information or installed apps, or sharing a vacation snapshot, are what cause the mobile outbursts. At the time when the consumer needs assistance making decisions or forming the options they are more open to the effect of brands and there are a lot of intent, meaning, and immediacy like "I want to know," "I want to go," "I want to buy," and "I want to do' moments. 82% of smartphone owners claim to check their phones before making a purchase in a store, and 91% of them look to their phones for inspiration when working on a task. These micro moments are crucial points of contact in today's consumer journey, and their cumulative effect determines how the journey concludes (Elena & Cristian, 2017). The same objective of building a powerful, identifiable identity that connects with customers is where branding and moment marketing work well together. Effective moment marketing starts with a clearly defined brand, which makes sure that material created in real time reflects the voice and values of the brand. For instance, a company that is well-known for its wit and humor can use moment marketing to its advantage by swiftly reacting to popular subjects with astute, relevant remarks. By utilizing current events, trends, or cultural moments, moment marketing enables organizations to establish a connection with their target audience. This strategy keeps brands current and demonstrates that they are aware of global events. When executed effectively, it can result in higher levels of engagement since the user's +value material that is relevant to them and speaks to their interests or worries. Moment marketing gives brands a chance to express their individuality and voice. Whether a company is recognized for its compassion, comedy, or creative thinking, reacting to current events enables it to convey these attributes in a genuine and unplanned manner. By doing this, the brand may become more approachable and memorable to customers by humanizing it.

Review of Literature

Moment marketing is a kind of advertising that concentrates on reaching customers when it counts most—that is, when they are actively seeking you out. The capacity to capitalize on events that are taking place and develop communications and marketing materials around them is known as moment marketing Gajbe (2022). According to TVTY (2016) digital marketers are turning to moment marketing and employing more advanced strategies. To deal with advertising inflation, marketers are employing a variety of techniques. As a result, there has been a boom in interest in moment marketing. Liu and Hill (2021) had shown Moment marketing as a vibrant new subset of contextual advertising that involves employing real-time web advertising to be triggered by offline occurrences. Products for this kind of cross-channel coordination are being developed by both big businesses and small businesses. According to ET Brand Equity (2021) nowadays Brands are employing this promotion strategy more than before. Marketers leverage these trends to attract attention and stay at the forefront of consumers' minds because they want to participate in consumer conversations. They can rapidly and affordably reach their target audience by moment marketing. Moment marketing for brands is a fresh and entertaining approach to communicate with the audience and produce micro-moments of interaction. Even while these may appear like

easy and basic creative endeavors, mastering them requires a lot of time, effort, expertise, practice, and experience (Dilip Guru, 2021).

TVTY (2016) demonstrated that the percentage of digital marketing managers who claimed they were launching moment marketing campaigns utilizing automated procedures increased to 52% in November 2015 from just 32% in November 2015. This indicates that the moment marketing is becoming more and more dependent on technology. Merely 47% of participants engaged the market research team, 35% the sales team, and 32% the creative team in the process of creating a moment marketing plan. Biswas and Shah (2020) examined a range of moment marketing factors, including product expertise, cost, moment awareness, post lucidity, post timing, online platform, emotions, and user involvement that impact a customer's propensity to buy. It is clear from the outcome that there is some degree of correlation between all these characteristics. Liu and Hill (2021) research indicate that the filtering effects may not be long-lasting, which supports the need for real-time, coordinated search advertising spending at contextually appropriate times. Our study adds to the body of knowledge already available in the field of cross-channel marketing and offers perspectives on current marketing tactics.

According to Singh (2022) Creative advertising is all the rage these days, and moment marketing is at its peak. It can assist marketers in connecting with a bigger group of clients at once and developing stronger, long-lasting relationships. Being faithful to the brand's identity, ethos, and purpose while promoting it at the appropriate time are essential to getting it properly. TVTY (2016) found that the moment marketing is the most typical approach is to increase the emphasis of marketing tactics, such as by launching fewer ads, employing more precise audience targeting, or emphasizing engagement. Approximately half of the respondents are cutting back on spending or asking for additional funding. Moment marketing is becoming more and more popular as a result. Moment marketing works incredibly well and offers a wide range of advertising opportunities, particularly for grabbing the attention of consumers for a range of businesses and products catered to distinct target markets. Keeping an eye on current trends and maintaining a presence on social media platforms can help create appealing and captivating campaigns and ads. It may be used for a variety of things, including advertising, promotion, customer engagement, brand positioning that is relevant, and much more, with only a little imagination, a healthy sense of humor, and speedy content production and distribution. It is also doable; companies of all sizes may employ this kind of marketing to promote their goods in novel and affordable methods Sharma et al. (2021). Dasgupta, TOI (2021) stated that Contrary to popular assumption, moment marketing is not a recent concept. Although it has been there for a while, there has been an increase in the past two to three years in the number of opportunities that businesses have taken advantage of to sell their goods, services, or brand. The instant marketing trend has also attracted an increasing number of firms.

According to Agrawal and Pedada, (2021) the most popular social media postings are humorous ones, and people think that funny ads help people remember products better. Brands are making use of this data by mixing it with current events to produce posts that users of social media can share with their networks which naturally increases brand recognition. Zhang (2023) concluded that by taking advantage of current events, moment marketing can develop communications and marketing materials centered around them. Using this, brands may join the ongoing discussions that are relevant to their target audience. Moments, a social network for the acquaintance society, has speeded up the growth of "micro-businesses," or advertising. For developers looking to build a long-lasting business among younger consumers, the ideal Moment advertisement can use precision marketing to reach the correct audience and convey the right message. It can also upsell and cross-sell to current clients. Sinha and Modak (2019) said that Marketers need to start moving toward a contextual, moments-based strategy if they want consumers to pay attention. To accomplish that, not only marketing but the entire company will need to structure itself around those times. People enjoy talking about recent events and popular news. The psychological tendencies of the audience and how they react to various techniques are everything. When a piece of content becomes popular, brands become aware of it and use the trending news to increase sales and brand recognition. These posts are shared by users, which is how moment marketing helps businesses (Wassan, 2022).

Micro-moments happen when people instinctively reach for a gadget, most commonly a smartphone, to fulfill a need to do, study, find, watch, or purchase anything. The practice of marketing is changing from that of an art to that of a profession with strong theoretical foundations. These are intentional times when choices are made and tastes are formed (Gajbe, 2022). According to TVTY (2016) While using moment marketing to promote a specific event might be a more efficient way to target marketing budget and increase customer engagement, marketers are starting to target "moments within moments," which is an even more specific strategy. Spend is further optimized at the precise moment when customers are most likely to be paying attention thanks to these incredibly focused micro moments. BILOŠ et al. (2018) demonstrated certain micro-times, which are the moments of consumer requirements, have an impact on user behavior and hence offer an important study platform. Throughout the entire user experience, there are intent-driven moments when preferences are shaped, and decisions are made. These are known as micro-moments. These micro-moments occur when people instinctively grab for a mobile device to

quickly respond to any kind of urgent demand. Users have very high expectations in those situations because they want firms to use contextual data to proactively anticipate their requirements. Thus, the user's intent, context, and immediacy determine every microsecond. According to the study, 34% of brands currently use micro-moments within events as the catalyst for in-the-moment promotions. With this strategy, travel and automotive lead the way, but only half of them is utilizing microseconds. The consumer goods industry is trailing behind, as none of the respondents employed the micro moment strategy. Additionally, brands are continuously tracking data regarding certain moments that could happen at any time. The term "Always Ready" campaign refers to a campaign that started using this data (TVTY, 2016). Enache and Morozan (2017) had shown that successful micro moments provide consumers with an improved experience and yield tangible business outcomes for brands. Entrepreneurial marketers will naturally sustain a new level of meaningful customer connection if they concentrate on micro moments, human-centered behaviors and expectations, and related tech. Simonov et al., (2022) suggested that when creating and rating media content, platforms and media producers should also take suspense and surprise metrics into account. Measures of suspense and surprise are within the control of the content designer for a range of media goods since they are derived directly from viewers' thoughts about the possibility of changes in the ingested material. Schamp et al., (2022) showed that most of the attitudinal effects are dependent on emotional attachment, according to a multivariate meta-regression on cause related marketing modifiers based on four conceptual pillars: transparency, indications of sincerity, purchase context, and consumers' emotional attachment to cause related marketing.

Silva (2018) believed that posting a specific post about a real-time moment didn't have as much of an influence as initially assumed. Thus, being a sponsor and investing in an event through sponsorship agreements has no greater advantage when brands create content currently. Overall, this shows that official sponsorship brands have mostly no more significant effect in brand equity and customer engagement when compared to non-sponsorship brands. Being a sponsor and investing in an event through sponsorship agreements has no greater advantage when brands create content now because official sponsorship brands have largely no more significant effect on brand equity and customer engagement when compared to non-sponsorship brands. In addition to describing and supporting the mechanics behind these impacts, cross-channel advertising can be successful. In particular, the study demonstrates the effectiveness of TV moment-based channel coordination for sponsored search advertising optimization. This tactic works because TV advertising can enhance the quality of online search traffic (i.e., the people who search, where they search, and how they search), increasing the likelihood that the typical searcher will interact more with the organic and/or sponsored results on the SNAP in the instant that follows a TV ad. In the end, this raises the CTR for every search impression (Liu and Hill, 2021).

According to Speed and Thompson (2000) a sponsorship's responsiveness is active when consumers are aware that it is being sponsored by an official entity. The longer an official sponsor has been involved, the more likely it is that customers will remember the brand and associate it with the event it is sponsoring. Silva (2018) stated that moment marketing and sporting events found no greater impact on brand awareness or brand image when comparing a moment marketing post with a typical one from the same company. However, an intriguing finding emerged from the analysis of brand loyalty and overall brand equity: non-sponsorship brands, or those that engage in ambush marketing, have a greater influence on this variable than official sponsor brands. This finding suggests that sponsorship did not aid brands in standing out from the competition. There were no variations observed in the influence on customer engagement between the official sponsor brands and the non-sponsorship brands.

Rationale of the study

Moment marketing is an effective tool in today's marketing environment, having revolutionized the way businesses advertise their products and services. Moment marketing is becoming more and more popular, and this has had a big impact on market dynamics and customer behavior. But more research is needed to fully understand the subtleties of how moment marketing affects consumer perception towards branding. To better understand how customers respond to moment marketing efforts and how they resonate with them, this study will investigate consumer behavior, preferences, and responses to these ads. This study aims to identify the critical components that influence consumers perception towards branding with respect to product and service advertisements by investigating what draws their interest and motivates them to participate in moment marketing.

Objectives

- To analyze the perceived impact of moment marketing on branding amongst consumers for Product-based advertisements.
- To analyze the perceived impact of moment marketing on branding amongst consumers for Service-based advertisements.

Research Method

The Study: The study is exploratory in nature that explored the factors of moment marketing, as well examined the impact of Moment Marketing on consumer perception towards Branding through on social media for product-based advertisements and service-based advertisements both.

Sample and Area of the Study: For the study, a sample of 390 respondents has been taken that is comprised of consumers that belong to different demographics like age, Gender, Family Income and Occupation. In demographics Age includes three groups of 15-25 years, 30-40 years, above 45 years, Gender includes Male and Female category, Family Income includes three groups of Rs.10,000-30,000, Rs.30,000-50,000 and Above Rs.50,000 and Occupation also included three categories of Students, Employed and Businessmen. The data has been collected from the social media users located in different cities of India.

Tool for Data Collection: For the study, primary data was collected with the help of a self- designed questionnaire. As per the relevant literature and the objectives, 45 attributes were drawn for moment marketing concerning branding. First, taken expert opinions of 100 experts, of which 50 experts were academicians and 50 from digital marketing experts for the face validity. For the selection of items fourth quartile acceptance was considered i.e., 75 percent and above acceptance for an attribute by the judges. After that the final list of 28 attributes was used to develop the scale. The item-total correlations were computed for the scale through SPSS. All statements were found to have a significant correlation with the total score at 0.01 level. Which shows the validity of statements. The reliability check was done of the data collected from the sample of 390 for the above selected items which shown the Cronbach's alpha value 0.943 and Split-Half (Spearman- Brown Prophecy Formula) value was .940 which indicates that the instruments is reliable. By using the developed scale, the respondents were asked to respond on a questionnaire for product- based advertisements and service base advertisements separately. The questionnaire was also included two images of social media posts of moment marketing ads in which one was of product (Amul), and another was of service (Zomato). The questionnaire was on 'Likert Scale' (Five Point Scale) ranging from "Strongly Disagree" being 1 to "Strongly Agree" being 5.

Tool for Data Analysis: The analysis of collected data was carried out using Statistical Package for Social Science (SPSS). Firstly, factor analysis was carried out to cluster the factors. The raw data was subjected to Factor Analysis using the Principal Component method with Varimax Rotation for exploring the factors of Moment Marketing and Branding for product-based advertisements and service base advertisements both. The reliability was determined to be strong, as seen by the Cronbach Alpha found to be 0.899 for product-based advertisements and 0.910 for service-based advertisements. Factor analysis was applied to the data because every statement was considered relevant. Bartlett's test of sphericity and the Kaiser-Meyer Olkin (KMO) measure of sample adequacy were computed to find out if the data were suitable for factor analysis. According to Hair et al., (1989) substantial Bartlett's test and a KMO score of 0.50 or above indicate that the data are suitable for factor analysis. The study's KMO values were found 0.906 for product-based advertisements and 0.871 for service-based advertisements, which show that the sample size was sufficient for factor analysis. The factor analysis resulted in the identification of 6 factors for Product-based advertisements and 8 factors for Service-based advertisements which are shown below:

Table 1: Showing factors of Moment Marketing and Branding for Product-based advertisements

Factor	Name of the factors	Variables	Factor load	Mean	Standard deviation
F1	Brand acquaintance	Total- 12	6.379	46.3821	7.88250
F2	Alluringness	Total- 5	2.839	19.5000	3.42586
F3	Consumer oriented	Total- 4	2.323	15.4615	2.85598
F4	Societal marketing	Total- 3	1.683	11.7487	2.19334
F5	Engrossing marketing	Total- 2	1.212	7.7821	1.68196
F6	Brand cognizance	Total- 2	1.424	8.394872	1.391481

Table 2: Showing factors of Moment Marketing and Branding for Service-based advertisements

Factor	Name of the factors	Variables	Factor load	Mean	Standard deviation
F1	Brand acquaintance	Total- 6	3.227	22.4744	4.07363
F2	Societal marketing	Total- 2	1.356	7.4641	1.75856
F3	Brand exploration	Total- 3	1.543	10.8333	2.35542

F4	Brand cognizance	Total- 4	2.473	15.4077	2.77066
F5	Innovative marketing	Total- 4	2.225	14.6846	2.92151
F6	Alluringness	Total- 3	1.72	11.1077	2.20742
F7	Engrossing marketing	Total- 3	1.345	11.3667	2.19989
F8	Consumer oriented	Total- 3	1.242	11.2718	2.16610

The obtained factors were separated into two groups of moment marketing factors and branding factors. In case of Product-based advertisement, Alluringness, Consumer-Oriented, Societal Marketing and Engrossing marketing were taken as factors of moment marketing and Brand Acquaintance and Brand Cognizance were taken as factors of Branding. To check the impact of moment marketing on branding for Product-based advertisements, factor wise hypotheses were formed which are given below:

H01– Alluringness has no significant effect on Brand Acquaintance as a function of Moment Marketing for Product-based Brands.

H02 – Consumer orientation has no significant effect on Brand Acquaintance as a function of Moment Marketing for Product-based Brands.

H03 – Societal Marketing has no significant effect on Brand Acquaintance as a function of Moment Marketing for Product-based Brands.

H04 – Engrossing Marketing has no significant effect on Brand Acquaintance as a function of Moment Marketing for Product-based Brands.

H05 – Alluringness has no significant effect on Brand Cognizance as a function of Moment Marketing for Product-based Brands.

H06 – Consumer orientation has and significant effect on Brand Cognizance as a function of Moment Marketing for Product-based Brands.

H07 – Societal Marketing has no significant effect on Brand Cognizance as a function of Moment Marketing for Product-based Brands.

H08 – Engrossing Marketing has no significant effect on Brand Cognizance as a function of Moment Marketing for Product-based Brands.

To test the above hypotheses, the multiple regression analysis is conducted to observe the relationship between the Alluringness, Consumer-Oriented, Societal Marketing and Engrossing marketing (factors of moment marketing) as independent variables and Brand Acquaintance and Brand Cognizance (factors of Branding) as dependent variables for product-based advertisements. Regression analysis for brand acquaintance shown in Table 3 & for Brand cognizance shown in Table 4 which are mentioned below:

Table 3: Coefficients of Regression for Brand Acquaintance (Product-based advertisements)

Coefficients (R-square= 0.55)								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta				B
1	(Constant)	5.647	1.902		2.969	.003		
	Alluringness	.737	.095	.320	7.748	.000	.684	1.461
	Consumer Oriented	.588	.114	.213	5.152	.000	.683	1.464
	Societal Marketing	.880	.153	.245	5.760	.000	.648	1.544
	Engrossing Marketing	.891	.186	.190	4.777	.000	.739	1.353
a. Dependent Variable: Brand Acquaintance								

Table 4: Coefficients of Regression for Brand Cognizance (Product-based advertisements)

Coefficients (R-square= 0.45)								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.029	.446		9.041	.000		
	Alluringness	.062	.022	.153	2.795	.005	.684	1.461
	Consumer Oriented	.111	.027	.228	4.148	.000	.683	1.464
	Societal Marketing	.093	.036	.147	2.608	.009	.648	1.544
	Engrossing Marketing	.043	.044	.053	.995	.320	.739	1.353

a. Dependent Variable: Brand Cognizance

Same process was done with Service-based advertisements in which Societal marketing, Innovative Marketing, Alluringness, Engrossing marketing and Consumer-oriented marketing were taken as factors of moment marketing and Brand Acquaintance, Brand exploration, and Brand Cognizance were taken as the factors of Branding. By using the factors of Moment Marketing and Branding, Regression analysis was applied to assess the impact of various factors of moment marketing as independent variables on the factors of Branding as dependent variables for service-based advertisements. To check the impact of moment marketing on branding for Service-based advertisements, factor wise hypotheses were formed which are given below:

H09 – Societal Marketing has no positive and significant effect on Brand Acquaintance as a function of Moment Marketing for Service-based Brands.

H10 – Innovative Marketing has no positive and significant effect on Brand Acquaintance as a function of Moment Marketing for Service-based Brands.

H11 – Alluringness has no positive and significant effect on Brand Acquaintance as a function of Moment Marketing for Service-based Brands.

H12 – Engrossing Marketing has no positive and significant effect on Brand Acquaintance as a function of Moment Marketing for Service-based Brands.

H13 – Consumer orientation has no positive and significant effect on Brand Acquaintance as a function of Moment Marketing for Service-based Brands.

H14 – Societal Marketing has no positive and significant effect on Brand Exploration as a function of Moment Marketing for Service-based Brands.

H15 – Innovative Marketing has no positive and significant effect on Brand Exploration as a function of Moment Marketing for Service-based Brands.

H16 – Alluringness has no positive and significant effect on Brand Exploration as a function of Moment Marketing for Service-based Brands.

H17 – Engrossing Marketing has no positive and significant effect on Brand Exploration as a function of Moment Marketing for Service-based Brands.

H18 – Consumer orientation has no positive and significant effect on Brand Exploration as a function of Moment Marketing for Service-based Brands.

H19 – Societal Marketing has no positive and significant effect on Brand Cognizance as a function of Moment Marketing for Service-based Brands.

H20 – Innovative Marketing has no positive and significant effect on Brand Cognizance as a function of Moment Marketing for Service-based Brands.

H21 – Alluringness has no positive and significant effect on Brand Cognizance as a function of Moment Marketing for Service-based Brands.

H22 – Engrossing Marketing has no positive and significant effect on Brand Cognizance as a function of Moment Marketing for Service-based Brands.

H23 – Consumer orientation has no positive and significant effect on Brand Cognizance as a function of Moment Marketing for Service-based Brands.

To test the above hypotheses, the multiple regression analysis is conducted to observe the relationship between the Societal marketing, Innovative Marketing, Alluringness, Engrossing marketing and consumer-oriented marketing (factors of moment marketing) as independent variables and Brand Acquaintance, Brand exploration and Brand Cognizance (factors of Branding) as dependent variables for service-based advertisements. Regression analysis for brand acquaintance shown in Table 5, for Brand exploration shown in Table 6 & for Brand cognizance shown in Table 7 which are mentioned below:

Table 5: Coefficients of Regression for Brand Acquaintance (Service-based advertisements)

Coefficients ^a								
Model		Unstandardized Coefficients		Standard ized Coefficie Nts	T	Sig	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.665	.983		2.713	.007		
	SOCIETAL_MARKETING	.277	.097	.119	2.867	.004	.702	1.425
	INNOVATIVE_MARKETING	.234	.061	.168	3.810	.000	.630	1.587
	ALLURINGNESS	.305	.077	.165	3.958	.000	.700	1.429
	ENGROSSING_MARKETING	.285	.075	.154	3.780	.000	.737	1.358
	CONSUMER_ORIENTEDTION	.682	.086	.363	7.962	.00	.588	1.702

a. Dependent Variable: BRAND_ACQUAINTANCE

Table 6: Coefficients of Regression for Brand Exploration (Service-based advertisements)

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig	Collinearity Statistics	
		B	Std. Error	Beta				B
1	(Constant)	1.374	.664		2.071	.039		
	SOCIETAL_MARKETING	.276	.065	.206	4.227	.000	.702	1.425
	INNOVATIVE_MARKETING	.145	.041	.180	3.495	.001	.630	1.587
	ALLURINGNESS	.226	.052	.212	4.354	.000	.700	1.429
	ENGROSSING_MARKETING	.103	.051	.097	2.032	.043	.737	1.358
	CONSUMER_ORIENTEDTION	.141	.058	.129	2.434	.015	.588	1.702

a. Dependent Variable: BRAND_EXPLORATION

Table 7: Coefficients of Regression for Brand Cognizance (Service-based advertisements)

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig	Collinearity Statistics	
		B	Std. Error	Beta				B
1	(Constant)	4.593	.790		5.812	.000		
	SOCIETAL_MARKETING	.066	.078	.042	.846	.398	.702	1.425
	INNOVATIVE_MARKETING	.077	.049	.081	1.563	.119	.630	1.587
	ALLURINGNESS	.161	.062	.128	2.594	.010	.700	1.429
	ENGROSSING_MARK	.238	.061	.189	3.935	.000	.737	1.358

	ETING							
	CONSUMER_ORIENT ETION	.417	.069	.326	6.051	.000	.588	1.702

a. Dependent Variable: BRAND_COGNIZANCE

Results & Discussion

The result of the model of the product-based advertisements in Table 3 & 4 shows that the Brand Acquaintance and Brand Cognizance are positively related to the Alluringness, Consumer- Oriented, Societal Marketing and Engrossing marketing. The relationship is statistically significant. Therefore, the null hypotheses H1, H2, H3, H4, H5, H6, H7 and H8 are rejected. The standardised coefficients of the Alluringness, Consumer-Oriented, Societal Marketing and Engrossing marketing for Brand Acquaintance are .73, .58, .88 and .89 respectively and for Brand cognizance are .06, .11, .09 and .04. For Brand acquaintance Societal Marketing and Engrossing marketing are higher than the coefficients from Alluringness and Consumer-Oriented and for Brand cognizance Consumer-oriented factor has the higher coefficient, which shows the high effect on branding. Coefficient values of all the factors showing a positive relation with brand acquaintance and brand cognizance. The multiple regression model for the Brand acquaintance has the satisfactory R-Square of .550 and for the Brand cognizance the R-Square 0.455, which shows that there is a significant impact of moment marketing on branding for product-based advertisements. The p-value found 0.000 for both, which is less than 0.05, suggesting that the regression model is significant.

The result of the model of the service-based advertisements in Table 5, 6 & 7 shows that the Brand Acquaintance, Brand exploration and Brand Cognizance are positively related to the Societal marketing, Innovative Marketing, Alluringness, Engrossing marketing and Consumer-oriented marketing. The relationship is statistically significant. Therefore, all the null hypotheses from H9 to H23 are rejected. The standardised coefficients of the Societal marketing, Innovative Marketing, Alluringness, Engrossing marketing and Consumer-oriented marketing for Brand Acquaintance are .27, .23, .30, .28 and .68 respectively, for Brand exploration .27, .14, .22, .10, .14 and for Brand cognizance are .06, .07, .16, .23 and .41. For Brand acquaintance Consumer- oriented factor has the higher coefficient, for Brand exploration Societal marketing has the higher coefficient and for Brand cognizance again Consumer-oriented factor has the higher coefficient. Coefficient values of all the factors showing a positive relation with brand acquaintance, brand exploration and brand cognizance. The multiple regression model for the Brand acquaintance has the R-Square of .729, for Brand exploration the R-Square value is 0.601 and for the Brand cognizance the R-Square 0.588, which shows that there is a significant impact of moment marketing on branding for service-based advertisements. The p-value found 0.000 for all, which is less than 0.05, suggesting that the regression model is significant.

In previous research, Gajbe (2022) demonstrated that the moment marketing efficiently uses popular events as a springboard to produce timely and pertinent content, significantly boosting brand value, recall, and audience engagement at a low cost. According to Urde (2003) brand orientation is crucial because it allows a company to build a sustainable competitive advantage and promote loyalty by focusing its strategy on brand management. The effectiveness of emotional advertising is emphasized by Ghorbanzadeh et al. (2020) and claim that emotional advertising strengthens customer-brand bonds and affects consumer behavior. Leahy (2018) continues, "Brand association and personality strengthen brand loyalty, which is driven by both rational and emotional factors." According to Tuti and Sulistia (2022), client engagement is essential for increasing brand trust, loyalty, and consumer happiness. Influencer marketing's effects are examined by Haque et al. (2023) stated that social media interaction, particularly on social networks, can boost brand loyalty and buy intent. Jahan et al. (2024) said that by creating a strong brand identity, successful branding increases consumer behavior, trust, and loyalty.

Conclusion & Implications

The main objective of the research was to study the impact Moment Marketing on branding for product and service-based advertisements. For product-oriented ads Brand Acquaintance is greatly influenced by Alluringness, Consumer Oriented, Social Marketing, and Moment Marketing in the context of product-based advertisements, whereas Brand Cognizance is influenced by Alluringness, Consumer Oriented, and Social Marketing, but not by Engrossing Marketing. In service-oriented ads, Societal Marketing, Innovative Marketing, Alluringness, Engrossing Marketing, and Consumer Oriented elements all have a big impact on Brand Acquaintance and Brand Exploration. However, Innovative Marketing, Alluringness, Engrossing Marketing, and Consumer Oriented aspects influence Brand Cognizance in service-based commercials, but Societal Marketing has no discernible effect. Notably, in both product- and service-based advertising, alluringness and consumer-oriented factors are constantly important. This research enhances the understanding of branding processes through moment marketing by recognizing the interaction between moment marketing and branding, as well as the ways

in which different moment marketing aspects contribute to brand belonging. This has practical ramifications as well. This study offers advice to digital marketers and companies about the need for a distinctive approach to branding through moment marketing. One that uses moment marketing for product and service-based products can work more directionally or in a way that recognizes the opportunities and challenges that consumers bring to the process. As digital marketers grow a feeling of identity with the branding through digital platforms, to them this research can assist in doing marketing more successfully, and how moments may be used for various branding objectives for various kinds of products and services.

References

- Biloš, A., Turkalj, D., & Kelić, I. (2018).** Micro-moments of user experience: An approach to understanding online user intentions and behavior. *CroDiM: International Journal of Marketing Science*, 1(1), 57-67.
- Biswas, S., & Shah, D. (2020).** Examining the effect of Moment Marketing on the purchase intention of a customer in India. *International Journal of Advanced Science and Technology*, 29, 2169-2175.
- da Silva, B. H. G. S. (2018).** Effect of moment marketing and brand sponsorship in brand equity and customer engagement (Master's thesis, ISCTE-Instituto Universitario de Lisboa (Portugal)).
- Dasgupta, P. (2021, December 13).** Moment marketing- A trend to stay or a bypassing trend? Retrieved from <https://timesofindia.indiatimes.com/blogs/voices/moment-marketing-a-trend-to-stay-or-a-bypassing-trend/>
- Elena, E., & Cristian, M. (2017).** MICRO MOMENTS MARKETING–TENDENCIES IN THE BRANDS MARKETING. *Management Strategies Journal*, 35(1), 304-310.
- Gaurav G. Gajbe.** Analytical Study of Moment Marketing on The Sales of Large-Scale Companies in India. *International Journal for Modern Trends in Science and Technology* 2022, 8 pp. 224-227.
- Ghorbanzadeh, D., & Rahehagh, A. (2020).** The role of emotional structures in the relationship between satisfaction and brand loyalty. *Cogent Psychology*, 7(1), 1782098.
- Guru, D. (2021, February 26).** How brands use moment marketing & how can you succeed? Retrieved from <https://www.upgrad.com/blog/moment-marketing-for-brands/>
- Haque, I. U., Khan, S., & Mubarik, M. S. (2023).** Effect of social media influencer on consumer purchase intention: A PLS-SEM study on branded luxury fashion clothing. *Journal Of Mass Communication Department, Dept of Mass Communication, University of Karachi*.
- Jahan, T., Jahan, A., Pallavi, M., Alekhya, M., & Lakshmi, M. S. (2024).** A Study on the Importance of Branding and Its Effects on Products in Business. *International Research Journal on Advanced Engineering and Management (IRJAEM)*, 2(04), 656-661.
- Leahy, R., Fenton, P., & Barry, H.** Brand Purpose and Sustainability: The Role of Experiential Marketing in Building Brand-Consumer Relationships through Brand Purpose Sustainability Messaging.
- LeBoeuf, R. A., & Simmons, J. P. (2010).** Branding Alters Attitude Functions and Reduces the Advantage of Function-Matching Persuasive Appeals. *Journal of Marketing Research*, 47(2), 348-360. <https://doi.org/10.1509/jmkr.47.2.348>
- Liu, J., & Hill, S. (2021).** Frontiers: Moment marketing: Measuring dynamics in cross-channel ad effectiveness. *Marketing Science*, 40(1), 13-22.
- Omnisend. (2023, December 15).** Product advertising: Benefits, types, examples, and strategies (B. Meyer, Ed.) [Review of Product advertising: Benefits, types, examples, and strategies]. Omnisend; omnisend. <https://www.omnisend.com/blog/product-advertising/>
- Padmi, I. G. A. M. M., & Suparna, G. (2021).** The Role of Brand Image Mediates the Effect of Electronic Word of Mouth on Repurchase Intention in Starbucks Coffee. *International Journal of Management and Commerce Innovations*, 9, 328–338.
- Pedada, P. a. a. K. (2021, November 15).** Timing, sensitivity, and wit: Cornerstones of moment marketing. Retrieved from <https://www.forbesindia.com/article/isbinsight/timing-sensitivity-and-wit-cornerstones-of-moment-marketing/71535/1>

- Rooney, J. (1995)**, "Branding: a trend for today and tomorrow", *Journal of Product & Brand Management*, Vol. 4 No. 4, pp. 48-55. <https://doi.org/10.1108/10610429510097690>
- Schamp, C., Heitmann, M., Bijmolt, T. H. A., & Katzenstein, R. (2023)**. The Effectiveness of Cause-Related Marketing: A Meta-Analysis on Consumer Responses. *Journal of Marketing Research*, 60(1), 189-215. <https://doi.org/10.1177/00222437221109782>
- Sharma, S., Sisodia, R., Sharma, M., & Sharma, A. (2021)**. Moment Marketing: The Next Big Thing In Content Marketing. *Webology* (ISSN: 1735-188X), 18(5).
- Simonov, A., Ursu, R. M., & Zheng, C. (2023)**. Suspense and Surprise in Media Product Design: Evidence from Twitch. *Journal of Marketing Research*, 60(1), 1-24. <https://doi.org/10.1177/00222437221108653>
- Singh, B. (2022, October 8)**. Every moment matters: The need for moment marketing. Retrieved from <https://timesofindia.indiatimes.com/blogs/voices/every-moment-matters-the-need-for-moment-marketing/>
- Speed, Richard & Thompson, Peter. (2000)**. Determinants of Sports Sponsorship Response. *Journal of the Academy of Marketing Science*. 28. 10.1177/0092070300282004.
- Tuti, M., & Sulistia, V. (2022)**. The customer engagement effect on customer satisfaction and brand trust and its impact on brand loyalty. *Jurnal Manajemen Bisnis*, 13(1), 1-15.
- TVTY (2016)** An analysis of moment marketing adoption and best practice strategy, *Mastering Moment Marketing*, PP 01-22.
- Urde, M. (2003)**. Core value-based corporate brand building. *European Journal of marketing*, 37(7/8), 1017-1040.
- Wassan, S. (2022, January 4)**. Moment marketing is the new "Trend". Retrieved from <https://medium.com/new-writers-welcome/moment-marketing-is-the-new-trend-32f3fa2cd722>
- www.ETBrandEquity.com. (2021, October 8)**. Moment marketing: A double-edged sword. Retrieved from <https://brandequity.economictimes.indiatimes.com/news/marketing/moment-marketing-a-double-edged-sword/86858229>
- Zhang, M. (2021)**. An Empirical Study of Moments Marketing Influencing the Differences in Consumer's Perception of Purchase Consumption in Sichuan. *Learning & Education*, 10(6), 81-82.
- Sinha, K., & Modak, K. C. (2019)**. Impact of moment marketing on consumer buying behaviour for fast moving consumer goods. *International Journal of Research and Analytical Reviews*, 1138-1142.