Criteria 3- Research, Innovations and Extension
KEY INDICATOR- 3.2. Research Publication and Awards

3.2.2. Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during the year

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Supporting Documents

Academic Year	Title of the book/chapters/ Paper published	Name of the Teacher/s	Page No.	Annexure No.
2023-24	Organizational Behaviour	Prof.(Dr.)Sunil S. Dhanawade	3-4	1
	Basics of Marketing	Prof.(Dr.)Sunil S. Dhanawade	5	2
	Emerging Trends in Commerce and Management	Prof.(Dr.)Sunil S. Dhanawade	6-7	3
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	The Role of AI in HEI's: Opportunities and Consideration	Prof. Dr. Madhulika A. Gupta	10-14	5
	An Analytical Study of Urban Co-operative Banks in India	Prof. Dr. Madhulika A. Gupta	15-24	6

Organizational Behaviour

(As per NEP 2020 syllabus)

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Dr. Geeta Srinivas Rao
Dr. Vidya Ratnakar Bhandwalkar
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Organizational Behaviour
(As per NEP 2020 syllabus)

Authors

Prof. (Dr.) Sunil S Dhanawade
Director
Shikshan Mahrshi Dr. D.Y.Patil Shikshan Sanstha's Dr.D.Y.Patil Centre for Management and Research
Pune, Maharashtra, India

Dr. Geeta Srinivas Rao
Associate Professor
MIT College of Management
Pune, Maharashtra, India

Dr. Vidya Ratnakar Bhandwalkar
Assistant Professor
DPCOE – Dhole Patil College of Engineering
Pune, Maharashtra, India

Dr. Jyoti Bhanage
Assistant Professor
IIMP (Indira Institute)
Pune, Maharashtra, India

Editor

Dr. Hansraj Thorat
Head Research
ASM Group of Institutes
Pune, Maharashtra, India

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Dr. Sunil S Dhanawade
Director, Dr. D. Y. Patil Centre for Management and Research
Pune, Maharashtra, India.

Dr. Neetu Randhawa
Sr. Assistant Professor, Indira School of Business Studies
PGDM, Pune, Maharashtra, India.

for publishing the book chapter entitled

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Authors

Dr. Sandip Sane
Professor and Director
ASMS Institute of Business Management and Research
Pune, India.

Prof. (Dr.) Madhulika Gupta
Professor & Head
Department of MBA
Dr. D.Y. Patil Centre for Management and Research
Pune, India.

Dr. Swapnil S Phadtare
Assistant Professor
CES's Indira Global School of Management
Pune, India.

Editor
Dr. Nilesh Anute
Associate Professor
ASMS Institute of Business Management and Research
Pune, India.

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THE ROLE OF AI IN HEI'S: OPPORTUNITIES AND CONSIDERATIONS

Prof.(Dr.)Madhulika Gupta

Professor, Dr. D.Y.Patil Centre for Management and Research, Chikhali, Pune, Maharashtra, India

Prof. Madhuri Chaudhari

Assistant Professor, Dr. D.Y.Patil Centre for Management and Research, Chikhali, Pune, Maharashtra, India

Mr. Anurag Shahoo

Principal Application Developer, ADP - Automatic Data Processing, Parsippany, New Jersey, United States

ABSTRACT

Recently, Artificial Intelligence (AI) has arisen as a paradigm shifter in in several areas, including education Industry. AI embraces and revolutionizes the teaching & learning process, steering in an epoch of incomparable approachability and efficiency for edification across the country. As a zealous supporter in the unexploited prospective of the human mind and its significant capability for progression, I unswervingly recommend the incorporation of artificial intelligence (AI) with the education Industry. Implementation of AI as a combined instrument can lay the foundations for making edification reachable to everyone, endowing learners to utilize their intellectual skills and crack a perkier prospect for themselves. Ensuing are a few ways I trust AI can transform education.

Artificial intelligence (AI) is a wide axiom that incorporates machine learning, profound knowledge, and natural language dispensation. It is governed by potent computers and massive data that are handled by algorithms. AI is being employed to discourse concerns in a multiple sectors, including cyber security, medical management, farming, industries, Digital banking, and Cyber Crimes & attacks, as it continues to pervade humanity. AI is augmenting our capability to systematize iterative work, streamlining procedures, distinguishing and classifying metaphors, designs, and voice, make prophecies, and even take decisions by capitalizing computer system & using computational powers to process data and acquire efficiency.

Artificial intelligence (AI) has developed as a game-changer in in many sectors, and its impact on higher education is inevitable. AI has numerous possibilities for augmenting the standard and approachability of education, with the capability to modernize managerial, training, and teaching & learning processes. Conversely, there are aspects that we need to consider to guarantee accountable and moral implementation of AI in education Industry.

KEYWORDS: Artificial Intelligence, Education, Digital, HEIs, Chabots

INTRODUCTION

The drive of HEIs around the realm is to coach and educate students in innovative techniques of rational and critical thinking as well as to prepare them with the understanding and expertise required as they shift to the corporate world. The recent advancements in AI have the potential to revolutionize nearly all aspects of our world. This is particularly accurate for learners who are about to enter an AI driven Industry. There are a many of prospects for expending AI in education, but also there are a many of problems concerned

with integrity, data safety, and confidentiality, fairness, teacher training and willingness, and infrastructural precincts. We should recognize the significance of proficiency, progress and empirical wisdom to concoct students for the corporate world. AI-driven online platforms and tools offer students with access to courses that emphasis on professional development.

LITERATURE REVIEW

1. Mohammed Banu Ali (2021) IoT is a rapidly emerging technology in education that attracts researchers, students, and administrators. This chapter reviews the opportunities and challenges of the IoT to determine whether there are potential communication and information sharing cultures in higher education institutions (HEIs). Despite the findings revealing stakeholders' demand for a better collaborative learning environment and better information sharing capabilities, IoT has various security and interoperability concerns that present an unattractive prospect for HE stakeholders to embrace IoT. IoT has the potential to meet HEIs system expectations, though stakeholders remain distant toward embracing IoTs. This indicates that stakeholders are not ready to embrace IoTs, thus prompting the need to study why stakeholders are resistant towards the IoT.
2. Mark Schofield(2021), Gamification is a novel technology that can potentially motivate student learning. This chapter reflects on the implementation of a gamified application to support students' learning in terms of learning important facts concerning their study program. The scope of the chapter refers to two design features in which tests were conducted on the different configurations in a field experiment among UK university students. The initial feature identified was feedback, where it was anticipated that engagement would increase, with tailored feedback having a greater impact than generic feedback. The next feature identified was circumventing users from binge gaming through session limits, as this may potentially prevent deep learning. The findings suggest that tailored feedback was less effective than generic feedback, contradicting the initial anticipation. Session limits were found to not circumvent binging without a reduction in sessions. The findings suggest that gaming properties of gamified applications could impact sustaining and encouraging play.
3. Aniekan Essien, Godwin Chukwukelu, Victor Essien (2021), This chapter provides a sense of what artificial intelligence is, its benefits, and integration to higher education. Seeing through the lens of the literature, this chapter will also explore the emergence of artificial intelligence and its attendant use for learning and teaching in higher education institutions. It begins with an overview of artificial intelligence and proceeds to discuss practical applications of emerging technologies and artificial intelligence on the manner in which students learn as well as how higher education institutions teach and develop. The chapter concludes with a discussion on the challenges of artificial intelligence on higher education.
4. Helen Crompton & Diane Burke(2023), This systematic review provides unique findings with an up-to-date examination of artificial intelligence (AI) in higher education (HE) from 2016 to 2022. Using PRISMA principles and protocol, 138 articles were identified for a full examination. Using a priori, and grounded coding, the data from the 138 articles were extracted, analyzed, and coded. The findings of this study show that in 2021 and 2022, publications rose nearly two to three times the number of previous years. With this rapid rise in the number of AIEd HE publications, new trends have emerged. The findings show that research was conducted in six of the seven continents of the world.

5. Olaf Zawacki-Richter, Victoria I. Marín, Melissa Bond & Franziska Gouverneur(2019), According to various international reports, Artificial Intelligence in Education (AIEd) is one of the currently emerging fields in educational technology. Whilst it has been around for about 30 years, it is still unclear for educators how to make pedagogical advantage of it on a broader scale, and how it can actually impact meaningfully on teaching and learning in higher education. This paper seeks to provide an overview of research on AI applications in higher education through a systematic review.

OPPORTUNITIES

1. AI is laying foundation for additional ingress, and backing for students, professors, and admins in HEIs by: rapid and rigorous data analysis, Smarter and more supportive computer-generated Chabot's and support. Recognizing and averting plagiarism and deception.
2. AI proposes an exclusive prospect for professors to encourage creativeness and innovation. By integrating AI-fuelled tools in jobs demanding thinking and idea generation, professors can encourage pupils to contemplate analytically and ingeniously and generate excellent course outcomes.
3. AI can revolutionize education system to the different level by providing students with the required expertise for the future. As AI can foresee upcoming high-demand expertise, facilitating colleges to adapt their program consequently and confirm that students are prepared to be successful in the corporate world.
4. Also in the area research, AI can play a transformational role. AI's provides proficiency in pattern recognition, predictive analytics, and data processing permits for the quick detection and finding a solution of intricate research problem, thus enhancing the quality of research work with speed. AI's key advantage originates from faster data analysis, allowing researchers to work with huge data with extra proficiently.
5. Another way of expending AI in colleges is through chatbots. These chatbots gives modified and interactive learning involvements to students, providing 24/7 backing while refining approachability. By engendering exclusive discussions with each student, AI-fuelled Chabot's can support professors manage many students at a time.
6. From students developing innovative technical expertise to professors enlightening future innovators & researchers pursuing revolutionizing scientific discoveries, AI is rapidly becoming predominant in HEIs and functional in novel and embryonic means.
7. Fast-tracking AI-Fuelled Scientific Research- AI is developing as a feasible answer to significantly quicken the research process, saving researcher's time, dropping costs for colleges, and eventually fetching the impression of faster innovative research outcomes.
8. AI can assist in Tailored Culture for education practices grounded on individual requirements. A study found that 93% of educators trust that AI has the potential to augment student outcomes through tailored learning methods.
9. No one likes lengthy and time consuming documentation and paperwork which is an integral part of any education system. AI pounces in as the clerical champion, powering and automating repetitive chores and freeing up valued time for professors.

In fact, a report suggested that AI can help professors save up to 30% of their time and assist in proficient administrative tasks

10. Learning knows no limitations, and neither does AI. AI can aid bridge the gap in global edification, enabling excellent and quality education more reachable globally to students

CONSIDERATIONS

1. One of the important considerations in using AI in HEIs is to disparagingly contemplate the ethical consequences of it. By taking steps to guarantee impartiality, transparency, secrecy, security, explain ability, human inaccuracy, reliability, and long-term effects, AI can be deliberately created to align with human ethics and follow principled standards.
2. The incorporation of AI into HEIs presents instructive challenges that necessitate considerable deliberation and premeditated application to confirm effective learning results.
3. HEIs should confirm transparency in how AI structures are used and what results they make. This transparency will nurture trust and culpability amongst stakeholders.
4. AI structures must be used as tools to counterpart and backing human decision, not substitute it. Professors should preserve oversight of AI-fuelled results and arbitrate as and when needed.
5. AI must not substitute the treasured human interface and mentorship that are indispensable for holistic progress of students.
6. Excessive reliance on AI can shrink prospects for students to improve critical thinking skills, which are vital for lifelong wisdom and triumph.
7. The efficacious employment of AI in HEIs entails Budgetary Planning, Cost considerations, Technological Infrastructure Upgrades, and continuous backing from educationalists and admin staff.

LEARNING OUTCOMES

All kinds of artificial intelligence (AI), such as machine learning, generative AI, and computer vision are rapidly becoming predominant in all capacities of higher education nowadays. These tools assist and advance teaching and learning process, generate greater instructive understandings, rationalize procedures, and quicken scientific research. Defining the correct expertise desirable to backup these novel and stimulating AI-fuelled projects & research throughout the campus can be thought-provoking for IT experts. For example any IT company can assist in AI-in-higher-education and can help institutes find more easily the exact mixture of hardware, software, and security desirable for success. The requirement for graduates with AI expertise is predictable to speedily breed in couple of years. A 2023 survey of educationalists and IT experts found that 69 percent of all respondents detected growing requirement from companies for graduates with AI technical skills. Henceforth there has been an industry-wide change to generate new AI offerings, boost current syllabi, and upsurge the complete approachability of AI training in a broader diversity of students.

CONCLUSION

The application of AI to HEIs has exhilarating potential for enlightening managerial, training, and education procedures. Few instances of the probable benefits comprise tailored erudition, intellectual training, data analytics, and streamlined administrative processes. Nevertheless, ethical, principled and moral considerations, inspiring human-machine association, assuring fairness and approachability, and embracing a philosophy of unceasing culture of learning are all essential for accountable AI application. HEIs might practice AI powered tools ensuring to advance edification and give students more power in the digital epoch by implementing it with purpose and mindfulness consciousness. The incorporation of AI in HEIs signifies a change headed for a more comprehensive, tailored, and competent education system. By connecting the supremacy of AI, we can upraise learning to innovative altitudes, guaranteeing that every student has the prospect to achieve their full potential. With accountable employment, AI's unified synthesis with education promises a positive, more favourable future for students through the country.

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AN ANALYTICAL STUDY OF URBAN CO-OPERATIVE BANKS IN INDIA

Dr. Madhulika Gupta

Professor, Dr. D. Y. Patil, Centre for Management and Research,
Chikhali, Pune, Maharashtra, India.

Madhuri Chaudhari

Assistant Professor, Dr. D. Y. Patil Centre for Management and Research,
Chikhali, Pune, Maharashtra, India.

Abstract

The origins of the urban cooperative banking movement in India can be traced to the close of nineteenth century when, inspired by the success of the experiments related to the cooperative movement in Britain and the cooperative credit movement in Germany such societies were set up in India. Cooperative societies are based on the principles of cooperation, - mutual help, democratic decision making and open membership[10]. The major utility of urban cooperative banks are to encourage saving by magnetizing deposits from members and non- members and to advance loans to the members. The objectives and functions of these banks are mainly to raise funds for lending money to its members. The Reserve Bank controls and administer the banking functions of UCBs under the provisions of Banking regulation Act, 1949(AACS). Urban Co-operative Banks (UCBs) inhabit an imperative place amid the Non-Agricultural Credit Society. They provide to the credit needs of people residing in urban areas. UCB's advance loans mostly to the small traders, Assistant and monthly income group people. UCB's also advance against gold, silver and produce.. The study intends to analyse the performance of selected UCB's. For this purpose fall in number of UCB's, merger in UCB's , Rate of Growth of UCB With Respect To Liabilities and Assets were studied along with the assessment and evaluation of financial performance of scheduled and non-scheduled UCB.

Keywords: *Banking Sector, Urban Cooperative Banks, Cooperative Banking, Financial Performance, Banking Regulations.*

JEL Classification: E500, E580

I. INTRODUCTION

While UCBs strive to deliver institutional credit at affordable costs in urban and semi-urban areas, rural co-operatives provide financial services in villages and small towns by leveraging on their geographical and demographic outreach. The growth of co-operative institutions has not, however, been commensurate with the overall growth of the banking sector – at the end of March 2017, they accounted for only 11 per cent of the total assets of scheduled commercial banks (SCBs) in comparison to 19 per cent share in 2004-05. **Alok Goyal and Harvinder Kaur (2011)**[6] Urban Cooperative Banks is the important constituent of Indian banking system. These banks have expanded their operations over the last two decades. It was found in the present study that the situation of NPA in banks has improved over the period of study. But in 2007-08, the NPA in these banks have grown in comparison of the previous year. In general, it may be concluded that the 67 position of NPA has improved considerably. Most of the Urban Cooperative Banks have CRAR ratio

of more than 9 percent. It was also find in the study that ROA exhibited in the years 2008-09 and 2009-10 and actual ROA deviated from its potential throughout the decade.

II. OBJECTIVE OF THE STUDY

- To schoolwork fall in number of UCB's. And find out out merger in UCB's.
- To study share of UCB's in total assets along with Rate of Growth of UCB With Respect To Liabilities and Assets
- To study investment by UCB's and analyze the financial performance.

III. RESEARCH METHODOLOGY

The required data for the study is basically secondary in nature and the data is collected from the annual report of the UCB's. It includes required financial data collected from RBI's official websites and some other websites on the internet for the purpose of getting all the required financial data of the banks.

The researcher had to use fact and information already available through financial statements of earlier years and analyze these to make critical evaluation of the available material. Hence by making the type of the research conducted to be both descriptive and analytical in nature. From the study, the type of data to be collected and the procedure to be used for this purpose were decided.

IV. LITERATURE REVIEW

1. **Bhaskaran and Josh (2000)[1]** concluded that the recovery performance of co-operative credit institutions continues to unsatisfactory which contributes to the growth of NPA even after the introduction of prudential regulations. They suggested legislative and policy prescriptions to make co-operative credit institutions more efficient, productive and profitable organization in tune with competitive commercial banking.
2. **Mavaluri, Boppana and Nagarjuna (2006)[2]** suggested that performance of banking in terms of profitability, productivity, asset quality and financial management has become important to stable the economy. They found that public sector banks have been more efficient than other banks operating in India.
3. **Jain (2001)[3]** has done a comparative performance analysis of District Central Cooperative Banks (DCCBs) of Western India, namely Maharashtra, Gujarat and Rajasthan and found that DCCBs of Rajasthan have performed better in profitability and liquidity as compared to Gujarat and Maharashtra.
4. **Dutta and Basak (2008)[4]** suggested that Co-operative banks should improve their recovery performance, adopt new system of computerized monitoring of loans, implement proper prudential norms and organize regular workshops to sustain in the competitive banking environment.

5. **Pal and Malik (2007)**[5] investigated the differences in the financial characteristics of 74 (public, private and foreign) banks in India based on factors, such as profitability, liquidity, risk and efficiency. It is suggested that foreign banks were better performers, as compared to other two categories of banks, in general and in terms of utilization of resources in particular.

V. DATA ANALYSIS

1. Fall in Number of UCB's

Table 01

Year	Fall In number UCB
2004-2005	54
2005-2006	19
2006-2007	40
2007-2008	43
2008-2009	49
2009-2010	47
2010-2011	29
2011-2012	27
2012-2013	12
2013-2014	17
2014-2015	10
2015-2016	5
2016-2017	12
2017-2018	11

(Source: Secondary data)

Chart 01

Analysis

1. The Number of UCB's is decreasing from March 2004 to March 2018 , the number of UCB's in March 2004 are 1928 and number of UCB in March 2018 are 1551.The fall in number of UCB is very low in year 2015-2016. i.e. 5

2. **Number of Mergers of UCB's**

Table 02

State	Number of mergers of UCBs
Punjab	1
Uttarakhand	2
Uttar pradesh	2
Chattisgarh	2
Rajasthan	3
Karnataka	4
Andhrapradesh	12
Gujrat	31
Maharashrtra	72

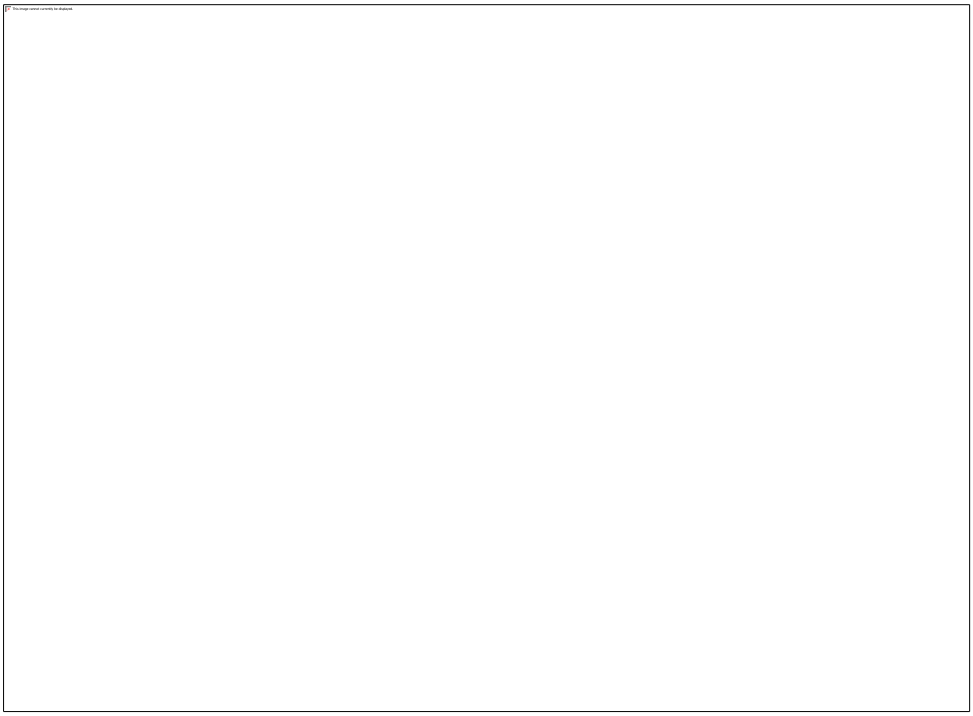

Chart 02

Analysis

The Highest number of mergers of UCB's are in Maharashtra i.e. 72, whereas the Punjab state is having very least no of mergers of UCB's i.e. only one.Gujarat state also have high number of mergers of UCB'S i.e. 31

3. Growth of Total Asset in UCB's

Table 03

Year	Tier wise composition UCBs
2009-2010	22
2010-2011	19
2011-2012	17
2012-2013	16
2014-2014	15
2014-2015	13
2015-2016	14
2016-2017	14
20187-2018	13

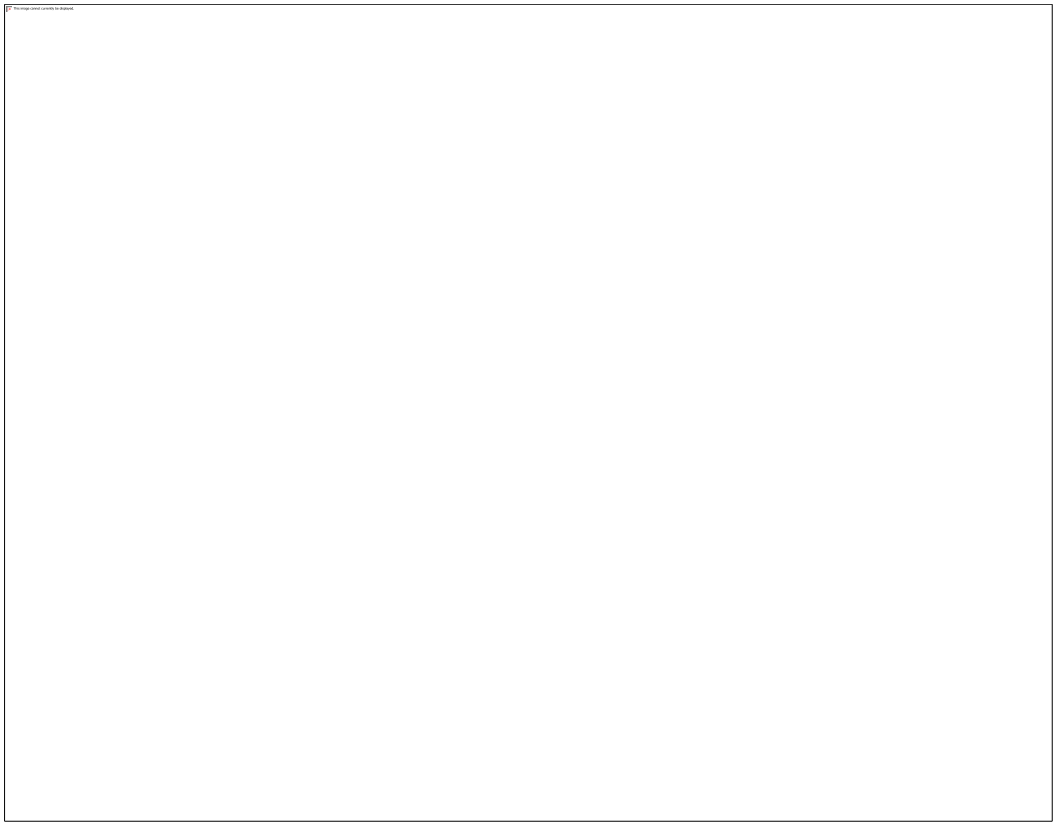

Chart 03

Analysis

Share of Tier II UCB's assets in total shares are more than share of Tier I UCB's in total assets. The share of Tier I & Tier II in 2009-10 are 22 & 35 respectively. The Tier II share in total number of UCBs are increasing from 2009-10 to 2017-18.

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4. Assets growth of UCB's

Table 04

Year	Asset Growth of UCBs
2006-2007	14.00
2007-2008	6.00
2008-2009	12.50
2009-2010	18.00
2010-2011	12.50
2011-2012	10.50
2012-2013	12.50
2013-2014	14.00
2014-2015	10.50
2015-2016	10.60
2017-2018	4.00

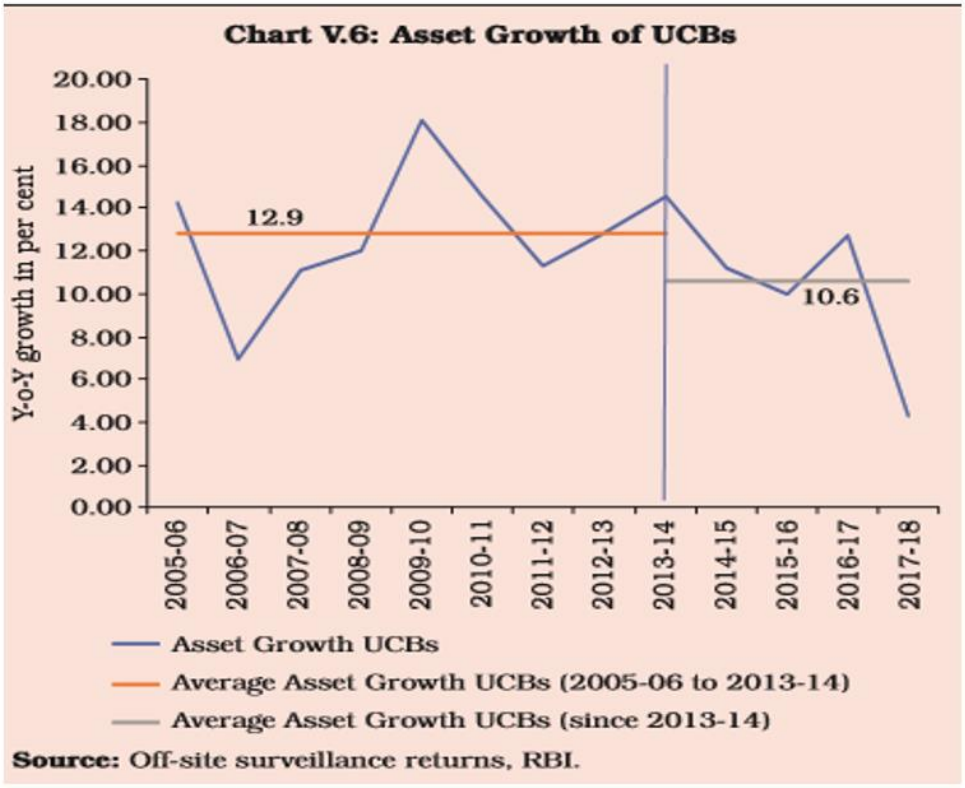

Chart 04

Analysis

1. The average Asset growth of UCB's is 12.9 % with in financial year 2005-06 to 2013-14.
2. The asset growth UCB's are very less in 2017-18.The Average Asset Growth UCB's in 2013-14 is 10.6 %.

5. Rate Of Growth of UCB With Respect To Liabiliets And Assets

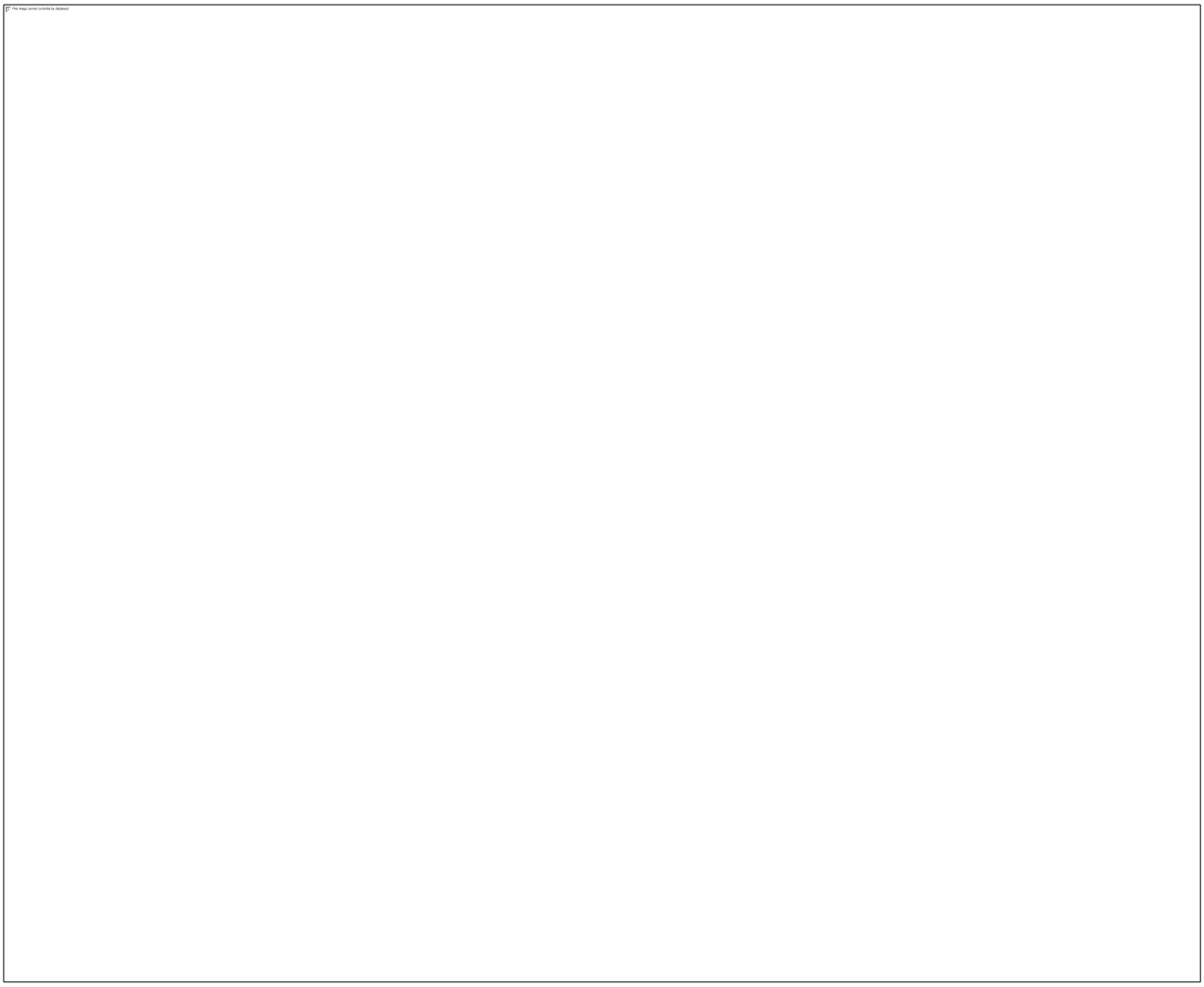

Chart 06

Analysis

The Rate of growth of all UCBs is decrease from 12.8 to 4.3 (%) from year 2016-17 to 2017-18.The distribution of UCBs was bi-modal, with peaks in the asset size between ₹0.25 to ₹0.5 billion bracket and in the ₹1 to ₹2.5 billion bracket in 2014-15. Since 2016-17, however, the distribution has become uni-modal i.e. the distribution has shifted to the right, with the share of UCBs with an asset size of more than ₹10 billion increasing to 6.2 per cent in 2017-18 from 4.6 per cent in 2014-15

6. Investments By UCB's

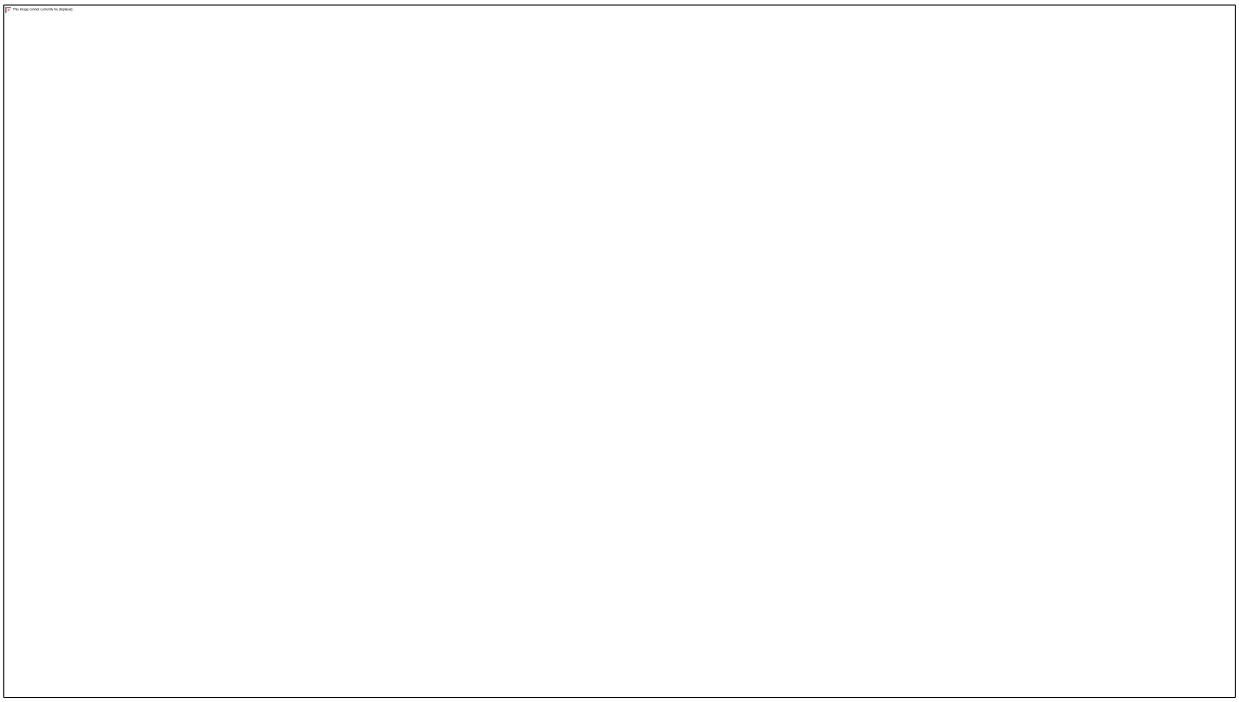

Chart 07

Analysis

A moderation in investment in central government securities, which account for around 67 per cent of total investment, drove the deceleration in total investments.

7. Financial Performance of Scheduled And Non-Scheduled UCB

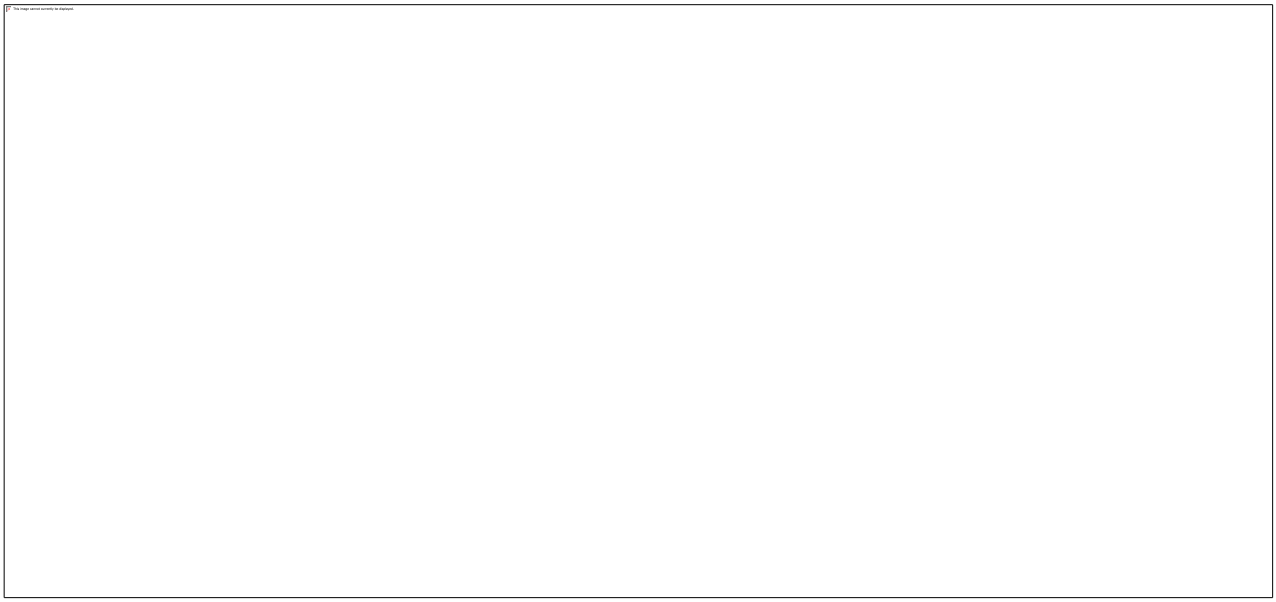

Chart 08

Analysis

1. UCBs are required to maintain minimum capital to risk-weighted assets ratio (CRAR) at par with the SCBs at 9 %. During 2017-18, 97 % of non-scheduled urban cooperative banks (NSUCBs) had CRAR of 9 % ,
2. While 93 % of scheduled urban co-operative banks (SUCBs) had achieved the minimum ratio.

VI. FINDINGS

1. Number of UCB's in March 2004 are 1928 and number of UCB in March 2018 are 1551. The fall in number of UCB is very low in year 2015-2016. i.e. 5
2. The Highest number of mergers of UCB's are in Maharashtra i.e. 72
3. In spite of the number of UCBs coming down after consolidation, their asset size increased manifold, underscoring the policy focus on strengthening their financial position
4. A moderation in investment in central government securities, which account for around 67 per cent of total investment, drove the deceleration in total investments.
5. The During 2017-18, 97 % of non-scheduled urban cooperative banks (NSUCBs) had CRAR of 9 %

VII. SUGGESTIONS

The important indicators of Cooperative Credit Societies are creation of deposits and augmentation of volume of share capital and reserve funds. Hence, effort should be made to bring more and more people under the activities of cooperative structure and principles in order to achieve the desired objectives.

VIII. CONCLUSION

While remedial measures initiated by the Reserve Bank have resulted in consolidation in the UCB sector, weaknesses in the rural cooperative segment persist, reflecting operational and governance-related impediments.

During 2017-18, the moderation in UCBs' consolidated balance sheet was due to slowdown in growth of deposits—which account for 81 per cent of total liabilities—from the demonetization-driven high base of the previous year.

Deceleration in capital and reserves added to the subdued expansion in their combined balance sheet, although deceleration in deposits was partly offset by a higher reliance on borrowings.

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AUGMENTED HORIZONS: EXPLORING THE TRANSFORMATIVE IMPACT OF VR AND AR TECHNOLOGIES

Prof. Dr. Shilpa Naresh Agarkar Director Global Relations, Suryadatta Group of Institutes Bavdhan, Pune, India shilpa.agarkar@gmail.com
Prof. Dr. Jayshri Appaso Patil HoD MCA Dept, Dr. D. Y. Patil Center Management and Research (MBA & MCA) Chikhali, Pune, India pjayshri14@gmail.com

***Abstract*—This research paper delves into the dynamic landscape of Augmented Reality (AR) and Virtual Reality (VR) technologies, assessing their pervasive influence across a myriad of sectors. The study comprehensively examines the adoption and impact of AR and VR in the realms of Gaming, Education, Healthcare, Real Estate, Retail, Automotive, Manufacturing, Tourism, Marketing, Military, Sports, social media, and Telecommunications.**
Keywords—Virtual Reality, Augmented Reality, Interactive learning

I. INTRODUCTION

The transformative impact of Virtual Reality (VR) and Augmented Reality (AR) across diverse sectors. VR immerses users in gaming, education, healthcare, real estate, retail, automotive, tourism, and events, while AR enhances mobile gaming, education, surgical precision, property buying, retail experiences, navigation, marketing, military training, sports events, and social media engagement. This integration reshapes traditional paradigms, offering lifelike simulations, interactive learning, enhanced buying experiences, virtual try-ons, immersive shopping, design prototyping, maintenance procedures, virtual travel, location-based information, audience engagement, communication experiences, and virtual meetings.

A holistic overview of the applications of AR and VR technologies, illustrating their transformative impact on various sectors. As these technologies continue to evolve, their versatility and adoption across diverse domains underscore their potential to reshape industries, enhance user experiences, and drive innovation in the digital era.

II. APPLICATIONS OF AR / VR

Augmented Reality (AR) and Virtual Reality (VR) have gained popularity across various sectors due to their immersive and interactive capabilities. Here are some sectors where AR and VR are widely adopted:

1. Gaming and Entertainment: Enhancing Immersion with Virtual and Augmented Reality

Virtual Reality (VR) and Augmented Reality (AR) technologies have revolutionized the gaming and entertainment industry, offering immersive experiences that blur the lines between the digital and physical worlds. From interactive gaming environments to engaging storytelling experiences, VR and AR have transformed how users interact with content.

a. Virtual Reality (VR) in Gaming:

VR technology creates simulated environments that users can interact with, typically through a headset or goggles. In gaming, VR offers a level of immersion unparalleled by traditional gaming experiences. Players can step into virtual worlds, where they have the freedom to explore, interact with objects, and engage in gameplay activities.

Case Study 1: Oculus Rift

Oculus Rift, a leading VR headset developed by Oculus VR (now owned by Meta Platforms, Inc.), has revolutionized the gaming industry. With its high-quality display and precise motion tracking, Oculus Rift offers users an immersive gaming experience like never before. Games like Beat Saber and Half-Life: Alyx have garnered critical acclaim for their innovative use of VR technology.

Case Study 2: PlayStation VR

PlayStation VR, developed by Sony Interactive Entertainment, brings VR gaming to console players. Compatible with the PlayStation 4 and PlayStation 5 consoles, PlayStation VR offers a wide range of

gaming experiences, from action-packed adventures to immersive simulations. Titles like Astro Bot Rescue Mission and Blood & Truth showcase the potential of VR gaming on console platforms.

b. Augmented Reality (AR) in Gaming and Entertainment:

AR overlays digital content onto the real world, enhancing the user's perception of their surroundings. In gaming and entertainment, AR technology enables unique experiences that blend virtual elements with the physical environment, creating immersive and interactive scenarios.

Case Study 1: Pokémon GO

Pokémon GO, developed by Niantic, Inc., became a global phenomenon upon its release in 2016. The mobile game utilizes AR technology to allow players to capture virtual Pokémon overlaid onto real-world locations. By leveraging GPS and camera functionalities, Pokémon GO encourages players to explore their surroundings, discover new Pokémon, and engage in social interactions with other players.

Case Study 2: Minecraft Earth

Minecraft Earth, developed by Mojang Studios (a subsidiary of Microsoft), is an AR-based adaptation of the popular sandbox game Minecraft. In Minecraft Earth, players can build and explore virtual structures overlaid onto the real world using their smartphones or tablets. The game encourages collaboration and creativity, allowing players to interact with digital content in physical spaces.

2. Education and Training: Transforming Learning with Virtual and Augmented Reality

Virtual Reality (VR) and Augmented Reality (AR) technologies have revolutionized the education and training sector, offering immersive and interactive learning experiences that enhance engagement and knowledge retention. From realistic simulations to interactive textbooks, VR and AR have transformed traditional educational methods and training programs.

a. Virtual Reality (VR) in Education and Training:

VR technology creates immersive, computer-generated environments that users can explore and interact with. In education and training, VR is employed to create realistic simulations and virtual environments that simulate real-world scenarios, allowing learners to gain practical experience in a safe and controlled environment.

Case Study 1: Medical Simulation

VR technology is widely used in medical education and training for simulating surgical procedures, patient examinations, and medical emergencies. Institutions like Stanford University School of Medicine utilize VR simulations to train medical students and healthcare professionals in a risk-free environment. By providing hands-on experience with virtual patients and medical equipment, VR simulations enhance learning outcomes and improve clinical skills.

Case Study 2: Flight Simulation

Aviation training programs leverage VR simulations to train pilots in various flight scenarios and emergency procedures. Companies like CAE Inc. develop VR-based flight simulators that replicate cockpit environments and flight dynamics with high fidelity. These simulators enable trainee pilots to practice maneuvers, navigation, and emergency protocols in a realistic virtual environment, improving their proficiency and confidence before actual flight operations.

b. Augmented Reality (AR) in Education and Training:

AR technology overlays digital content onto the real world, enhancing the user's perception of their environment. In education and training, AR is used to create interactive learning experiences that blend virtual and physical elements, bringing textbooks and learning materials to life.

Case Study 1: Interactive Science Textbooks

AR-enabled textbooks and educational materials offer interactive learning experiences for students. Companies like Pearson Education develop AR-enhanced textbooks that provide supplementary content, such as 3D models, animations, and simulations. Students can use their smartphones or tablets to scan AR markers in the textbook and access additional information, making learning more engaging and immersive.

Case Study 2: Architectural Visualization

In architecture and design education, AR technology is utilized to visualize architectural concepts and spatial designs. Tools like ARchitect by Morpholio enable students to overlay digital models onto physical spaces using AR-compatible devices. This allows students to explore architectural designs in real-world contexts, visualize scale and proportion, and understand spatial relationships more effectively.

3. Healthcare: Advancing Patient Care with Virtual and Augmented Reality

Virtual Reality (VR) and Augmented Reality (AR) technologies are transforming the healthcare industry, offering innovative solutions for medical training, surgical procedures, therapy sessions, and patient care. These immersive technologies enhance medical education, improve surgical precision, and provide real-time information to healthcare professionals, ultimately leading to better outcomes for patients.

a. Virtual Reality (VR) in Healthcare

VR technology creates simulated environments that users can interact with, providing realistic training scenarios and therapeutic experiences. In healthcare, VR is utilized for medical training, surgical simulations, and therapy sessions, offering immersive learning environments and therapeutic interventions.

Case Study 1: Medical Training and Education

VR is widely used for medical training and education, allowing students and healthcare professionals to practice procedures and scenarios in a safe and controlled environment. Institutions like the University of California, Los Angeles (UCLA) Health utilize VR simulations to train medical students, residents, and surgeons in various medical procedures, such as patient assessment, CPR, and trauma management. VR training enhances skill acquisition, decision-making, and teamwork among healthcare providers.

Case Study 2: Surgical Simulations

VR-based surgical simulations enable surgeons to practice complex procedures and refine their surgical techniques before performing operations on actual patients. Companies like Osso VR develop immersive training modules that replicate surgical environments and anatomical structures with high fidelity. Surgeons can interact with virtual patients, surgical instruments, and anatomical models, allowing for realistic simulations and skill development in a risk-free setting.

b. Augmented Reality (AR) in Healthcare

AR technology overlays digital information onto the real world, providing real-time data visualization and guidance during medical procedures. In healthcare, AR is applied in surgery to provide surgeons with enhanced visualization, navigation, and decision support, improving surgical outcomes and patient safety.

Case Study 1: AR-Assisted Surgery

AR-assisted surgery systems, such as Microsoft HoloLens and AccuVein, provide surgeons with real-time information and data overlay during surgical procedures. AR headsets overlay patient anatomy, medical imaging, and surgical navigation guidance onto the surgeon's field of view, enhancing spatial awareness and precision during surgery. This enables surgeons to perform minimally invasive procedures with greater accuracy and efficiency, reducing surgical complications and improving patient outcomes.

Case Study 2: Vein Visualization

AR vein visualization devices, like the AccuVein AV400, use near-infrared technology to visualize veins beneath the skin's surface in real time. By overlaying a digital map of veins onto the patient's skin, healthcare providers can locate veins more easily during procedures such as venipuncture, intravenous (IV) cannulation, and blood draws. AR vein visualization improves first-stick success rates, reduces procedure time, and minimizes patient discomfort, especially in patients with difficult-to-access veins.

4. Real Estate: Revolutionizing Property Viewing with Virtual and Augmented Reality

Virtual Reality (VR) and Augmented Reality (AR) technologies are reshaping the real estate industry, offering innovative solutions for property viewing, marketing, and sales. From immersive virtual property tours to interactive property listings, VR and AR enhance the home buying experience for potential buyers and streamline the sales process for real estate professionals.

a. *Virtual Reality (VR) in Real Estate*

VR technology creates immersive, computer-generated environments that users can explore and interact with, providing a realistic and immersive property viewing experience. In real estate, VR enables virtual property tours, allowing potential buyers to explore properties remotely from the comfort of their homes.

Case Study 1: Virtual Property Tours

Real estate companies and property developers utilize VR technology to create virtual property tours that showcase properties in detail. Platforms like Matterport and Zillow 3D Home enable real estate agents to capture 3D scans of properties and create interactive virtual tours that prospective buyers can navigate online. VR property tours offer an immersive experience, allowing buyers to explore every room and corner of a property as if they were physically present.

Case Study 2: Architectural Visualization

VR technology is also used in architectural visualization to showcase unbuilt properties and development projects. Real estate developers and architects create virtual models of planned buildings and residential communities, allowing stakeholders to visualize the project's design, layout, and amenities in a virtual environment. VR architectural visualization helps investors, buyers, and developers make informed decisions and gain a better understanding of the property before construction begins.

b. Augmented Reality (AR) in Real Estate

AR technology overlays digital information onto the real world, providing additional context and information about properties when viewed through a smartphone or tablet. In real estate, AR is used in property listing apps to enhance property descriptions and provide interactive features for potential buyers.

Case Study 1: AR Property Listings

Real estate apps like Zillow and Realtor.com utilize AR technology to enhance property listings with interactive features and additional information. When viewing a property listing through a smartphone or tablet, users can access AR overlays that provide details about the property's features, nearby amenities, and neighborhood statistics. AR property listings make the home buying process more engaging and informative for potential buyers, helping them make informed decisions about properties they are interested in.

Case Study 2: Furniture Placement

AR technology is also used in real estate apps to visualize furniture placement and interior design options in empty or unfurnished properties. Apps like IKEA Place and Houzz use AR to overlay virtual furniture and decor onto the camera view of a room, allowing users to see how different pieces would look in the space. AR furniture placement tools help buyers visualize the potential of a property and customize the space to their preferences before making a purchase.

5. Automotive: Enhancing Design and Navigation with Virtual and Augmented Reality

Virtual Reality (VR) and Augmented Reality (AR) technologies have transformed the automotive industry, offering innovative solutions for vehicle design, testing, navigation, and driver assistance. From virtual vehicle prototyping to augmented reality heads-up displays (HUDs), VR and AR technologies enhance the driving experience, improve safety, and streamline automotive design and development processes.

a. Virtual Reality (VR) in Automotive

VR technology creates immersive, computer-generated environments that enable designers and engineers to visualize, prototype, and test vehicles in virtual environments. In the automotive industry, VR is utilized for vehicle design, engineering simulations, and virtual testing scenarios.

Case Study 1: Virtual Vehicle Prototyping

Automotive manufacturers like Ford and BMW use VR technology for virtual vehicle prototyping, allowing designers and engineers to explore different design concepts and configurations in a virtual environment. VR enables stakeholders to visualize vehicle interiors and exteriors, assess ergonomics, and make design decisions before physical prototypes are built. By streamlining the design iteration process, VR reduces time-to-market and development costs for new vehicle models.

Case Study 2: Virtual Testing and Simulation

VR technology is also used for virtual testing and simulation of vehicle performance, safety, and reliability. Automotive engineers conduct virtual crash tests, aerodynamic simulations, and driving simulations in VR environments to evaluate vehicle performance under various conditions and scenarios. VR simulations enable engineers to identify design flaws, optimize vehicle performance, and enhance safety features before physical testing and production.

b. Augmented Reality (AR) in Automotive

AR technology overlays digital information onto the real world, providing drivers with real-time navigation instructions, vehicle data, and safety alerts through heads-up displays (HUDs) and windshield projections.

Case Study 1: Heads-Up Displays (HUDs)

Automotive manufacturers like BMW, Mercedes-Benz, and Audi integrate AR technology into heads-up displays (HUDs) to provide drivers with relevant information and alerts without taking their eyes off the road. AR HUDs project navigation instructions, speed limits, lane guidance, and traffic information onto the windshield or a transparent display in the driver's line of sight. By overlaying digital information onto the real-world environment, AR HUDs enhance situational awareness, reduce driver distraction, and improve safety on the road.

Case Study 2: Augmented Reality Navigation

AR navigation systems, like Google Maps AR Navigation and BMW's Augmented Reality Navigation, use AR technology to provide drivers with real-time navigation instructions overlaid onto the camera view of the road ahead. AR navigation systems display directional arrows, street names, and points of interest directly onto the live camera feed, making it easier for drivers to follow directions and navigate complex intersections and landmarks. By integrating digital navigation cues with the real-world environment, AR navigation systems enhance the driving experience and reduce reliance on traditional maps and GPS displays.

6. Manufacturing and Design: Revolutionizing Processes with Virtual and Augmented Reality

Virtual Reality (VR) and Augmented Reality (AR) technologies have revolutionized the manufacturing and design industry, offering innovative solutions for prototyping, design reviews, assembly, maintenance, and repair tasks. From virtual prototyping to augmented reality guidance, VR and AR enhance efficiency, accuracy, and safety in manufacturing and design processes.

a. Virtual Reality (VR) in Manufacturing and Design

VR technology creates immersive, computer-generated environments that enable designers, engineers, and manufacturers to visualize, prototype, and optimize products and processes in virtual space. In the manufacturing and design industry, VR is utilized for prototyping, design reviews, virtual assembly lines, and training simulations.

Case Study 1: Virtual Prototyping

Manufacturing companies leverage VR technology for virtual prototyping, allowing designers and engineers to create and refine product designs in a digital environment before physical prototypes are built. VR prototyping enables stakeholders to visualize product concepts, assess design feasibility, and identify potential issues early in the development process, reducing time-to-market and production costs.

Case Study 2: Virtual Assembly Lines

VR technology is used to simulate and optimize assembly processes in manufacturing facilities. Virtual assembly lines allow manufacturers to design and test production workflows, assembly sequences, and ergonomics in a virtual environment. By identifying inefficiencies and ergonomic issues before

implementation, VR assembly simulations improve production efficiency, worker safety, and product quality.

b. Augmented Reality (AR) in Manufacturing and Design

AR technology overlays digital information onto the real world, providing workers with real-time guidance, instructions, and data visualization during maintenance, repair, and assembly tasks. In the manufacturing and design industry, AR is applied in maintenance and repair tasks, providing step-by-step guidance and access to relevant information.

Case Study 1: AR Maintenance and Repair

Manufacturing companies utilize AR technology to assist technicians and maintenance personnel in performing maintenance and repair tasks on machinery and equipment. AR maintenance applications overlay step-by-step instructions, diagrams, and contextual information onto the technician's field of view through smart glasses or tablets. By providing real-time guidance and access to relevant documentation, AR maintenance solutions improve task efficiency, accuracy, and safety, reducing downtime and minimizing errors.

Case Study 2: AR Training Simulations

AR technology is used to create immersive training simulations for manufacturing and assembly tasks. AR training applications simulate real-world scenarios and provide trainees with hands-on experience in a virtual environment. Trainees can interact with virtual objects, equipment, and tools, and receive real-time feedback and guidance. AR training simulations improve trainee engagement, retention, and proficiency, accelerating the learning curve and reducing training costs for manufacturing companies.

7. Tourism and Hospitality: Transforming Travel Experiences with Virtual and Augmented Reality

Virtual Reality (VR) and Augmented Reality (AR) technologies have revolutionized the tourism and hospitality industry, offering immersive and interactive solutions for travelers to explore destinations, preview accommodations, and discover points of interest. From virtual travel experiences to augmented reality guides, VR and AR enhance the way people plan, experience, and remember their travel adventures.

a. Virtual Reality (VR) in Tourism and Hospitality

VR technology creates immersive, computer-generated environments that allow users to experience destinations and accommodations virtually. In the tourism and hospitality industry, VR is utilized for virtual travel experiences, destination previews, and immersive hotel and resort showcases.

Case Study 1: Virtual Travel Experiences

Travel agencies and tourism organizations leverage VR technology to offer virtual travel experiences that allow users to explore destinations from the comfort of their homes. Platforms like YouVisit and Oculus Travel enable users to embark on virtual tours of iconic landmarks, scenic attractions, and cultural sites around the world. VR travel experiences provide travelers with a preview of destinations, helping them plan their trips and make informed decisions about where to visit.

Case Study 2: Immersive Hotel Showcases

Hotel chains and resorts use VR technology to create immersive showcases of their accommodations and amenities. VR hotel tours allow potential guests to explore guest rooms, suites, restaurants, pools, and recreational facilities in virtual reality. By providing an immersive preview of the property, VR hotel showcases enhance the booking experience for travelers and increase confidence in their accommodation choices.

b. Augmented Reality (AR) in Tourism and Hospitality

AR technology overlays digital information onto the real world, providing travelers with contextual information, navigation assistance, and interactive experiences when exploring new locations.

Case Study 1: AR Points of Interest

- Mobile apps like TripAdvisor and AR City utilize AR technology to provide travelers with information about points of interest, landmarks, and attractions when exploring new destinations. AR points of interest overlay digital labels, descriptions, and reviews onto the camera view of the user's

smartphone or tablet, allowing travelers to learn more about their surroundings and discover hidden gems as they explore.

Case Study 2: Augmented Reality Navigation

AR navigation apps, such as Google Maps Live View and AR Street View, use AR technology to provide travelers with real-time navigation instructions overlaid onto the camera view of the road ahead. AR navigation guides users to their destination with directional arrows, street names, and points of interest displayed directly onto the live camera feed, making it easier to navigate unfamiliar streets and landmarks.

These technologies continue to evolve, and their applications are expanding into new domains as technology advances and user acceptance grows.

III. Conclusion

In an era defined by technological innovation, VR and AR technologies stand at the forefront of revolutionizing multiple industries. From captivating gaming experiences to immersive educational tools, and from enhancing healthcare outcomes to reshaping real estate transactions, the impact of VR and AR is profound and far-reaching.

As evidenced by their integration into education, healthcare, real estate, automotive, manufacturing, tourism, and beyond, VR and AR are not merely trends but rather catalysts for profound change. With each sector embracing these technologies, we witness a paradigm shift towards more immersive, interactive, and efficient processes. Looking ahead, the potential of VR and AR seems boundless. As hardware and software continue to advance, and accessibility increases, we stand on the brink of a future where virtual and augmented realities seamlessly blend into our everyday lives. The possibilities for innovation, creativity, and improvement across industries are limitless, promising a future where the boundaries between the physical and digital worlds blur, and human experiences are enriched in ways previously unimaginable.

In conclusion, "Augmented Horizons" serves as a testament to the transformative power of VR and AR technologies. It is a journey through the landscapes of innovation, discovery, and potential, offering insights into how these technologies are reshaping our world and shaping the future of human experience.

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Authors

Prof. Jeevan Babulal Ahire
Assistant Professor, Dr. D. Y. Patil Institute of Management and Research
Pimpri Pune, Maharashtra, India.

Prof. Nitpal Singh
Associate Director, Department of Pharmaceutical Management
MIMA Institute of Management, Pune, Maharashtra, India.

Mrs. Madhuri Ajit Chaudhari
Assistant Professor, Dr. D. Y. Patil Center for Management and Research
Pune, Maharashtra, India.

Dr. Amar Prabhakar Narkhede
Associate Professor, at ISMS Sankalp Business School
Pune, Maharashtra, India.

Editor

Dr. Nilesh Vitthal Limbore
Director, Sharadchandra Pawar Institute of Management and Research
Pune, Maharashtra, India.

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Prof. Jeevan Babulal Ahire is an accomplished professional with 9 years of experience in the field of marketing. Currently pursuing a Ph.D. in Marketing Management, he has demonstrated a strong commitment to research, having published 15 research papers in both national and international journals. Prof. Ahire's expertise spans across various areas including marketing, digital marketing, consumer behaviour, product manager skills, branding, and advertising. Currently working at Dr. D. Y. Patil Institute of Management and Research, Pimpri Pune, as an Assistant Professor, his extensive experience and deep knowledge make him a valuable contributor to the field of marketing management.

Prof. Nitpal Singh, is presently working as an Associate Director, Department of Pharmaceutical Management at MIMA Institute of Management. He has completed B. Pharmacy and M.B.A from University of Pune. He worked in sales and brand management in Emcure Pharma, Zuventus Healthcare and Biostar Pharma. He has a remarkable experience in Pharmaceutical management, Academics, Pharma sales, Training and Brand Management. He has expertise in Corporate Management, Corporate tie ups, Corporate Acquisitions, Products & Brands Acquisitions, Strategic Business Planning, Market Research and Vendor Management. He has recruited, trained and developed local and ex-pats in respective areas. He has a rich experience in developing sales territory, handling brands, conducting cycle meetings, designing and implementing marketing strategies across India. His research papers have been published in reputed journals including Scopus, UGC CARE listed and ABDC journal. He has up skilled himself by participating in various workshops and faculty development programs.

Mrs. Madhuri Ajit Chaudhari is currently working as Assistant Professor at Dr. D. Y. Patil Center for Management and Research. Her qualifications include BCS, MCM, MBS (Marketing) Pursuing Ph.D (Marketing Management). She is having 14 years of teaching experience. Her academic interests include subjects like Basic of Marketing, Marketing Management, Consumer Behavior. She has published various research papers in ABDC, and UGC Care-listed journals.

Dr. Amar Prabhakar Narkhede is currently working as an Associate Professor, at ISMS Sankalp Business School, Pune His qualifications include Ph.D. (Commerce and Management), MBA (Marketing), B.E.(ExTC). He has 12 years of teaching experience in various high repute management institutes and industrial experience in B-B marketing. Leveraging more than decade of extensive experience in successful in detail research-oriented work, with a contribution in the field of Post Graduate Teaching Operations by continuous improvement initiatives. Award winning and result driven professional with experience in Higher Education Administration with Cross Functional coordination expertise. Dr. Amar P Narkhede has published 21 Quality Research Papers in National International peer reviewed journals including UGC Care, ABDC and Scopus. He also attended various FDP on different topics.

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THE ROLE OF AI IN HEI'S: OPPORTUNITIES AND CONSIDERATIONS

Prof.(Dr.)Madhulika Gupta

Professor, Dr. D.Y.Patil Centre for Management and Research, Chikhali, Pune, Maharashtra, India

Prof. Madhuri Chaudhari

Assistant Professor, Dr. D.Y.Patil Centre for Management and Research, Chikhali, Pune, Maharashtra, India

Mr. Anurag Shahoo

Principal Application Developer, ADP - Automatic Data Processing, Parsippany, New Jersey, United States

ABSTRACT

Recently, Artificial Intelligence (AI) has arisen as a paradigm shifter in in several areas, including education Industry. AI embraces and revolutionizes the teaching & learning process, steering in an epoch of incomparable approachability and efficiency for edification across the country. As a zealous supporter in the unexploited prospective of the human mind and its significant capability for progression, I unswervingly recommend the incorporation of artificial intelligence (AI) with the education Industry. Implementation of AI as a combined instrument can lay the foundations for making edification reachable to everyone, endowing learners to utilize their intellectual skills and crack a perkier prospect for themselves. Ensuing are a few ways I trust AI can transform education.

Artificial intelligence (AI) is a wide axiom that incorporates machine learning, profound knowledge, and natural language dispensation. It is governed by potent computers and massive data that are handled by algorithms. AI is being employed to discourse concerns in a multiple sectors, including cyber security, medical management, farming, industries, Digital banking, and Cyber Crimes & attacks, as it continues to pervade humanity. AI is augmenting our capability to systematize iterative work, streamlining procedures, distinguishing and classifying metaphors, designs, and voice, make prophecies, and even take decisions by capitalizing computer system & using computational powers to process data and acquire efficiency.

Artificial intelligence (AI) has developed as a game-changer in in many sectors, and its impact on higher education is inevitable. AI has numerous possibilities for augmenting the standard and approachability of education, with the capability to modernize managerial, training, and teaching & learning processes. Conversely, there are aspects that we need to consider to guarantee accountable and moral implementation of AI in education Industry.

KEYWORDS: Artificial Intelligence, Education, Digital, HEIs, Chabots

INTRODUCTION

The drive of HEIs around the realm is to coach and educate students in innovative techniques of rational and critical thinking as well as to prepare them with the understanding and expertise required as they shift to the corporate world. The recent advancements in AI have the potential to revolutionize nearly all aspects of our world. This is particularly accurate for learners who are about to enter an AI driven Industry. There are a many of prospects for expending AI in education, but also there are a many of problems concerned

with integrity, data safety, and confidentiality, fairness, teacher training and willingness, and infrastructural precincts. We should recognize the significance of proficiency, progress and empirical wisdom to concoct students for the corporate world. AI-driven online platforms and tools offer students with access to courses that emphasis on professional development.

LITERATURE REVIEW

1. Mohammed Banu Ali (2021) IoT is a rapidly emerging technology in education that attracts researchers, students, and administrators. This chapter reviews the opportunities and challenges of the IoT to determine whether there are potential communication and information sharing cultures in higher education institutions (HEIs). Despite the findings revealing stakeholders' demand for a better collaborative learning environment and better information sharing capabilities, IoT has various security and interoperability concerns that present an unattractive prospect for HE stakeholders to embrace IoT. IoT has the potential to meet HEIs system expectations, though stakeholders remain distant toward embracing IoTs. This indicates that stakeholders are not ready to embrace IoTs, thus prompting the need to study why stakeholders are resistant towards the IoT.
2. Mark Schofield(2021), Gamification is a novel technology that can potentially motivate student learning. This chapter reflects on the implementation of a gamified application to support students' learning in terms of learning important facts concerning their study program. The scope of the chapter refers to two design features in which tests were conducted on the different configurations in a field experiment among UK university students. The initial feature identified was feedback, where it was anticipated that engagement would increase, with tailored feedback having a greater impact than generic feedback. The next feature identified was circumventing users from binge gaming through session limits, as this may potentially prevent deep learning. The findings suggest that tailored feedback was less effective than generic feedback, contradicting the initial anticipation. Session limits were found to not circumvent binging without a reduction in sessions. The findings suggest that gaming properties of gamified applications could impact sustaining and encouraging play.
3. Aniekan Essien, Godwin Chukwukelu, Victor Essien (2021), This chapter provides a sense of what artificial intelligence is, its benefits, and integration to higher education. Seeing through the lens of the literature, this chapter will also explore the emergence of artificial intelligence and its attendant use for learning and teaching in higher education institutions. It begins with an overview of artificial intelligence and proceeds to discuss practical applications of emerging technologies and artificial intelligence on the manner in which students learn as well as how higher education institutions teach and develop. The chapter concludes with a discussion on the challenges of artificial intelligence on higher education.
4. Helen Crompton & Diane Burke(2023), This systematic review provides unique findings with an up-to-date examination of artificial intelligence (AI) in higher education (HE) from 2016 to 2022. Using PRISMA principles and protocol, 138 articles were identified for a full examination. Using a priori, and grounded coding, the data from the 138 articles were extracted, analyzed, and coded. The findings of this study show that in 2021 and 2022, publications rose nearly two to three times the number of previous years. With this rapid rise in the number of AIEd HE publications, new trends have emerged. The findings show that research was conducted in six of the seven continents of the world.

5. Olaf Zawacki-Richter, Victoria I. Marín, Melissa Bond & Franziska Gouverneur(2019), According to various international reports, Artificial Intelligence in Education (AIEd) is one of the currently emerging fields in educational technology. Whilst it has been around for about 30 years, it is still unclear for educators how to make pedagogical advantage of it on a broader scale, and how it can actually impact meaningfully on teaching and learning in higher education. This paper seeks to provide an overview of research on AI applications in higher education through a systematic review.

OPPORTUNITIES

1. AI is laying foundation for additional ingress, and backing for students, professors, and admins in HEIs by: rapid and rigorous data analysis, Smarter and more supportive computer-generated Chabot's and support. Recognizing and averting plagiarism and deception.
2. AI proposes an exclusive prospect for professors to encourage creativeness and innovation. By integrating AI-fuelled tools in jobs demanding thinking and idea generation, professors can encourage pupils to contemplate analytically and ingeniously and generate excellent course outcomes.
3. AI can revolutionize education system to the different level by providing students with the required expertise for the future. As AI can foresee upcoming high-demand expertise, facilitating colleges to adapt their program consequently and confirm that students are prepared to be successful in the corporate world.
4. Also in the area research, AI can play a transformational role. AI's provides proficiency in pattern recognition, predictive analytics, and data processing permits for the quick detection and finding a solution of intricate research problem, thus enhancing the quality of research work with speed. AI's key advantage originates from faster data analysis, allowing researchers to work with huge data with extra proficiently.
5. Another way of expending AI in colleges is through chatbots. These chatbots gives modified and interactive learning involvements to students, providing 24/7 backing while refining approachability. By engendering exclusive discussions with each student, AI-fuelled Chabot's can support professors manage many students at a time.
6. From students developing innovative technical expertise to professors enlightening future innovators & researchers pursuing revolutionizing scientific discoveries, AI is rapidly becoming predominant in HEIs and functional in novel and embryonic means.
7. Fast-tracking AI-Fuelled Scientific Research- AI is developing as a feasible answer to significantly quicken the research process, saving researcher's time, dropping costs for colleges, and eventually fetching the impression of faster innovative research outcomes.
8. AI can assist in Tailored Culture for education practices grounded on individual requirements. A study found that 93% of educators trust that AI has the potential to augment student outcomes through tailored learning methods.
9. No one likes lengthy and time consuming documentation and paperwork which is an integral part of any education system. AI pounces in as the clerical champion, powering and automating repetitive chores and freeing up valued time for professors.

In fact, a report suggested that AI can help professors save up to 30% of their time and assist in proficient administrative tasks

10. Learning knows no limitations, and neither does AI. AI can aid bridge the gap in global edification, enabling excellent and quality education more reachable globally to students

CONSIDERATIONS

1. One of the important considerations in using AI in HEIs is to disparagingly contemplate the ethical consequences of it. By taking steps to guarantee impartiality, transparency, secrecy, security, explain ability, human inaccuracy, reliability, and long-term effects, AI can be deliberately created to align with human ethics and follow principled standards.
2. The incorporation of AI into HEIs presents instructive challenges that necessitate considerable deliberation and premeditated application to confirm effective learning results.
3. HEIs should confirm transparency in how AI structures are used and what results they make. This transparency will nurture trust and culpability amongst stakeholders.
4. AI structures must be used as tools to counterpart and backing human decision, not substitute it. Professors should preserve oversight of AI-fuelled results and arbitrate as and when needed.
5. AI must not substitute the treasured human interface and mentorship that are indispensable for holistic progress of students.
6. Excessive reliance on AI can shrink prospects for students to improve critical thinking skills, which are vital for lifelong wisdom and triumph.
7. The efficacious employment of AI in HEIs entails Budgetary Planning, Cost considerations, Technological Infrastructure Upgrades, and continuous backing from educationalists and admin staff.

LEARNING OUTCOMES

All kinds of artificial intelligence (AI), such as machine learning, generative AI, and computer vision are rapidly becoming predominant in all capacities of higher education nowadays. These tools assist and advance teaching and learning process, generate greater instructive understandings, rationalize procedures, and quicken scientific research. Defining the correct expertise desirable to backup these novel and stimulating AI-fuelled projects & research throughout the campus can be thought-provoking for IT experts. For example any IT company can assist in AI-in-higher-education and can help institutes find more easily the exact mixture of hardware, software, and security desirable for success. The requirement for graduates with AI expertise is predictable to speedily breed in couple of years. A 2023 survey of educationalists and IT experts found that 69 percent of all respondents detected growing requirement from companies for graduates with AI technical skills. Henceforth there has been an industry-wide change to generate new AI offerings, boost current syllabi, and upsurge the complete approachability of AI training in a broader diversity of students.

CONCLUSION

The application of AI to HEIs has exhilarating potential for enlightening managerial, training, and education procedures. Few instances of the probable benefits comprise tailored erudition, intellectual training, data analytics, and streamlined administrative processes. Nevertheless, ethical, principled and moral considerations, inspiring human-machine association, assuring fairness and approachability, and embracing a philosophy of unceasing culture of learning are all essential for accountable AI application. HEIs might practice AI powered tools ensuring to advance edification and give students more power in the digital epoch by implementing it with purpose and mindfulness consciousness. The incorporation of AI in HEIs signifies a change headed for a more comprehensive, tailored, and competent education system. By connecting the supremacy of AI, we can upraise learning to innovative altitudes, guaranteeing that every student has the prospect to achieve their full potential. With accountable employment, AI's unified synthesis with education promises a positive, more favourable future for students through the country.

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IMPACT OF DIGITAL MARKETING ON CONSUMER PURCHASING BEHAVIOR ON HERBAL COSMETIC PRODUCTS WITH REFERENCE TO PIMPRI CHINCHWAD CITY

Madhuri Chaudhari [1], Dr. Apurva Jain [2], Dr. Shivanand Sanmath [3]

[1] Research Scholar, Management Department of Pacific Academy of Higher Education and Research University, Udaipur, India
[2] Pacific Academy of Higher Education and Research University, Udaipur, India
[3] Director, ISMR, Pune, India

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ABSTRACT

Companies spend a lot of money on digital relationships with potential customers. In the modern world, digital marketing has become an important part of companies' marketing plans. It is an effective tool that enables companies to successfully convey their brand message to a large audience. Digital marketing has significantly changed consumer behavior.

This study focus on digital marketing - changes in consumer behavior under the influence of digital technology. The aim of this study is to analyze the effects of digital marketing on consumer buying behavior and to determine whether consumers should be aware of digital marketing and how it affects their purchasing.

According to the findings of the decision survey, the majority of people are familiar with digital marketing. They embrace digital marketing and that has influenced their decision to shop online.

To increase the number of customers for online businesses and increase the volume of goods and services they sell and help them save time.

Keywords: Herbal Cosmetic, Digital Marketing, Companies

1. INTRODUCTION

Digital marketing generally refers to online marketing campaigns viewed on a computer, phone, tablet or other device. This can take many forms, including online videos, display ads, search engine marketing, paid social ads, and social media posts. Digital marketing is often compared to "traditional marketing" such as magazine ads, billboards, and direct mail. Ironically, television is often combined with traditional marketing. Marketing refers to the activities a company undertakes to promote the purchase or sale of its products or services. Marketing includes advertising and allows businesses to sell products and services to consumers, other businesses, and organizations.

The Indian herbal herbal cosmetics industry is growing in terms of product development and marketing. Indian consumer preferences are shifting from 'merely functional' products to more 'advanced and specialized' herbal cosmetic products.

Leading players have streamlined their advertising spend to effect savings that have led them to improve their pricing strategies as well as offer freebies to retain customers. Understanding customer behavior is key to the success of business organizations. Marketing personnel are constantly analyzing buying behavior and purchasing decisions to predict future trends. Consumer behavior can be explained as the analysis of how, when, what and why people buy.

Nowadays consumers are spending more and more money on herbal cosmetic products. They apply herbal cosmetic products on the skin and various parts of the body to make them attractive, smooth and enhance their attractiveness. Consumers prefer online shopping as online portals provide maximum options about the product. Customers get ample discounts and also customers can purchase items at their convenient time.

2. TYPES OF DIGITAL MARKETING CHANNELS

Digital marketing channels have evolved since the 1990s and continue to do so. Here are eight of the most common channels in use today. Digital marketing, also called online marketing, is the promotion of brands to connect with potential customers using the internet and other forms of digital communication.

Pay-Per-Click Advertising

Pay-per-click (PPC) advertising enables marketers to reach audiences on news and other websites and digital platforms through paid ads. Marketers can set up PPC campaigns on Google, Bing, LinkedIn, X (formerly Twitter), Pinterest, and Facebook and show their ads to people searching terms related to their products or services.

Content Marketing

The goal of content marketing is to reach potential customers through the use of written, visual, or video content that interests them. That content is usually published on a website and then promoted through social media, email marketing, search engine optimization, or even pay-per-click campaigns. Content marketing attempts to be more subtle than advertising, and the product or service the sponsor is attempting to market may or may not be conspicuously highlighted.

Email Marketing

Email marketing is still one of the most effective digital marketing channels, though many people associate it with spam and treat such messages accordingly. Many digital marketers use their other digital marketing channels to collect names for their email lists. Then, through email marketing, they try to turn those leads into customers.

Social Media Marketing

The primary goals of a social media marketing campaign are to build brand awareness and establish trust. As you go deeper into social media marketing, you can use it to obtain leads and as a direct marketing or sales channel. Promoted posts and tweets are two examples of social media marketing.

Affiliate Marketing

Affiliate marketing is one of the oldest forms of marketing, and the digital world has given it new life. In affiliate marketing, companies and individual "influencers" promote another company's products and get a commission every time a sale is made or a fresh lead is added to their list. Many well-known companies, including Amazon, have affiliate programs that pay out millions of dollars to affiliates that help sell their products.

Video Marketing

A lot of internet users turn to sites like YouTube before making a buying decision, to learn how to do something, to read a review, or just to relax. Marketers can use any of several video marketing platforms, including Facebook Videos, Instagram, and TikTok, to run a video marketing campaign. Companies find the most success with video by integrating it with SEO, content marketing, and broader social media marketing campaigns.

Text Messaging

Companies also use text messages (formally known as SMS, or short message service) to send information about their latest products and promotions. Nonprofit organizations and political candidates also use texting to promote themselves and solicit donations. Today many marketing campaigns make it possible for consumers to make a payment or donation via a simple text message.

CONSUMER BUYING BEHAVIOR - Consumer Buying Behavior refers to the actions taken (both on and offline) by consumers before buying a product or service. This process may include consulting search engines, engaging with social media posts, or a variety of other actions.

CONSUMER BUYING BEHAVIOR PROCESS - The consumer buying process is a series of steps that consumers take to make a buying decision.

1) **Problem Recognition** (awareness of need) -difference between the desired state and the actual condition. Deficit in assortment of products. Hunger--Food. Hunger stimulates your need to eat. Can be stimulated by the marketer through product information--did not know you were deficient? I.E., see a commercial for a new pair of shoes, stimulates your recognition that you need a new pair of shoes.
2) **Information search-**

- Internal search, memory.
- External search if you need more information. Friends and relatives (word of mouth). Marketer dominated sources; comparison shopping; public sources etc.

A successful information search leaves a buyer with possible alternatives, the evoked set.

3) **Evaluation of Alternatives--**need to establish criteria for evaluation, features the buyer wants or does not want. Rank/weight alternatives or resume search. May decide that you want to eat something spicy, indian gets highest rank etc..
4) **Purchase decision--**Choose buying alternative, includes product, package, store, method of purchase etc.
5) **Purchase--**May differ from decision, time lapse between 4 & 5, product availability.
6) **Post-Purchase Evaluation**--outcome: Satisfaction or Dissatisfaction. Cognitive Dissonance, have you made the right decision. This can be reduced by warranties, after sales communication etc.

Objective

- To study the impact of Social media marketing on Consumer buying behavior on herbal herbal cosmetic product.

- To study the impact of You tube marketing on Consumer buying behavior on herbal herbal cosmetic product
- To study the impact of Search engine optimization on Consumer buying behaviour on herbal cosmetic product
- To study the impact of E-mail marketing on Consumer buying behaviour on herbal cosmetic product

3. RESEARCH METHODOLOGY

The methodology of the study includes:

Area of Study The area of the study is limited to Pimpri chinchwad area.

Sources of Data

- Primary data is collected from questionnaire among consumer of Pimpri chinchwad area to understand their online buying behavior of herbal cosmetic products. The structured questionnaire is used
- Secondary data - research paper , books and websites referred to collect secondary data
- Sample Size Information has been collected from 50 consumer in Pimpri chinchwad area.

4. REVIEW OF LITERATURE

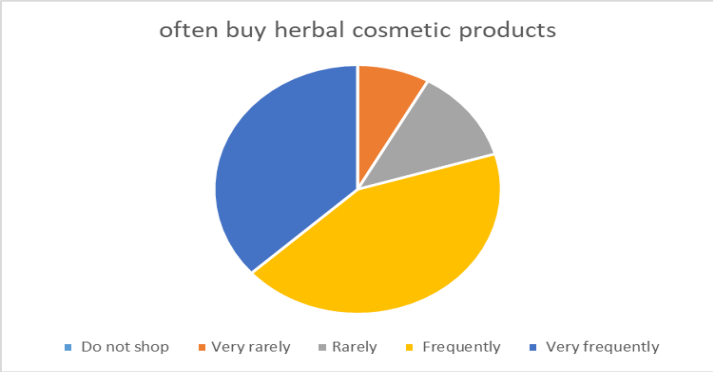
1) Impact of Digital Marketing on the Buying Behavior of Consumer, Nazarov , A.D , In 2020, the growth of users who use voice assistants began. Soon, companies will spend a lot of money not only on contextual advertising but also for their product to be indexed during voice search. Advertising departments use any channels through which you can effectively influence the consumer. Advertising using digital technologies is more effective for business than offline counterparts. Online advertising is much cheaper and more understandable in terms of performance than traditional promotion methods. Companies around the world are increasingly abandoning advertising on television, radio, banners, preferring more complex but effective paths to a potential client. The best solution today would be advertising on a smartphone screen rather than a huge banner at the exit from the metro.
2) IMPACT OF DIGITAL MARKETING ON CONSUMER PERCEPTION AND BUYING BEHAVIOUR, Dr.P.Rama Krishna , Mr.N.Krishna,Mr. Neelapala Venkat, Mr.M Sameer Kumar,Mr.M Srinivasa Rao, Mrs. B Kusuma , (2022) , this study focus on understand how digital marketing aspects were evaluated in connection to consumer perception and buying behaviour .As a result, the findings of this study show that the digital marketing dimensions and consumer perception and buying behaviour are positively associated
3) Buying Behaviour of College Girls Students Relating to Herbal cosmetic Products in Madurai Region , M. Muthu Vadivoo (2017) , This study concludes that mostly college female students prefer herbal cosmetic products. The study also concludes that there is no relationship between marital status and herbal cosmetic product use.
4) Demand of herbal cosmetic product is increase in many reason Some customer demand due to the skin problems, some customer demand due

to the hygienic maintenance and some customer demand fashion design. Customer purchase the product because of glowing and fresh skin, no marks and antimarks, image of stylish and confident, treated as updated with the fashion and its following design, healthy skin and so on. This study suggest that to aware people regarding use and benefit of herbal cosmetic product. Day by day people lifestyle is changing and changing their shopping habit also. CONSUMER BEHAVIOUR TOWARDS HERBAL COSMETIC PRODUCTS: A CASE OF DELHI NCR (2011),

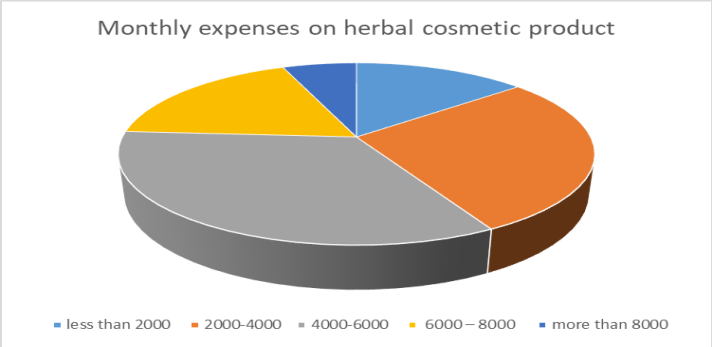
5) A Study on the Purchase Behavior and Herbal cosmetic Consumption Pattern amongYoung Females in Delhi and NCR, (2013), , This study explored various factors associated with purchasing patterns and behavior of female herbal cosmetic consumers for herbal Herbal cosmetic Products in Delhi and NCR. According to this study, women's spending on herbal cosmetic product depends on their income. Women mostly prefer herbal products. The study concluded that there is a great opportunity for herbal herbal cosmetic industry.

5. ANALYSIS AND RESULT

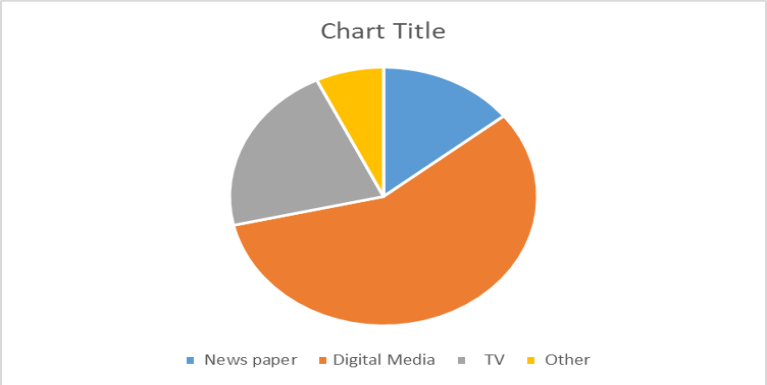
AS per data collected, most of the buyers buy herbal cosmetic products online.



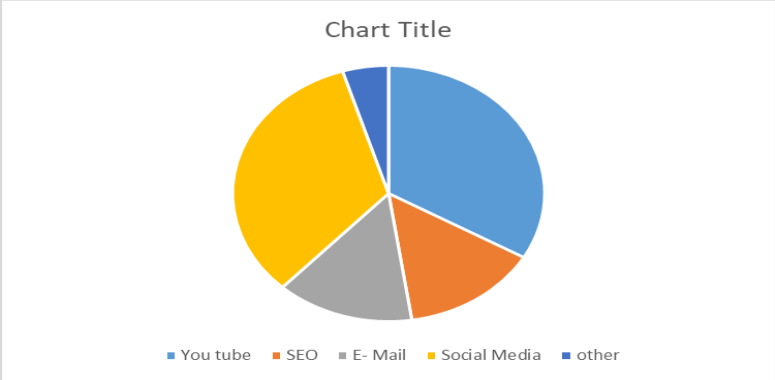
Consumers are willing to spend 2000 to 6000 rupees for an online herbal cosmetic product. depends on their income consumer purchase herbal cosmetic product.



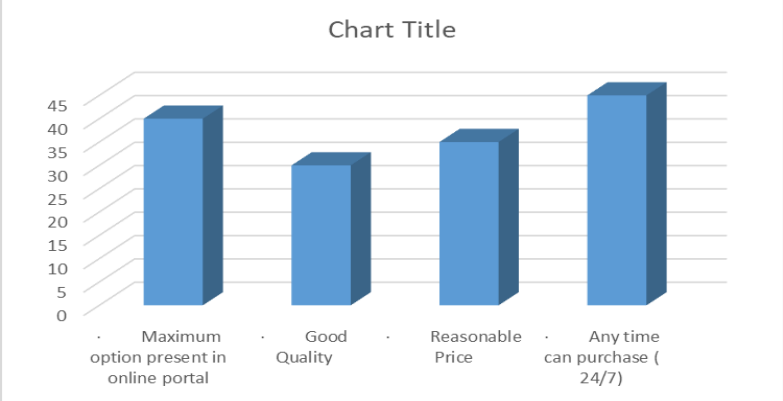
Mostly consumer received information through digital marketing rather than other sources. most of time consumer active on their smart phone , so they can easy received Digital Ad.



Mostly consumer received information through digital marketing. social media and YouTube are effective way of digital marketing.



Customers prefer online shopping as they get maximum choice and can order at any time as per their convenience.



6. CONCLUSION

This study was conducted to understand digital marketing aspects were evaluated in connection to consumer buying behaviour The results indicated that all the dimensions of digital marketing are significant predictor of "Consumer buying behaviour". As a result, the findings of this study show that the digital marketing dimensions and consumer buying behaviour are positively associated. Most of the people online purchase herbal cosmetic product. mostly consumer received information through social media and you tube. Customers prefer online shopping as they get maximum choice and can order at any time as per their convenience.

CONFLICT OF INTERESTS

None.

ACKNOWLEDGMENTS

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AN ANALYTICAL STUDY OF URBAN CO-OPERATIVE BANKS IN INDIA

Dr. Madhulika Gupta

Professor, Dr. D. Y. Patil, Centre for Management and Research,
Chikhali, Pune, Maharashtra, India.

Madhuri Chaudhari

Assistant Professor, Dr. D. Y. Patil Centre for Management and Research,
Chikhali, Pune, Maharashtra, India.

Abstract

The origins of the urban cooperative banking movement in India can be traced to the close of nineteenth century when, inspired by the success of the experiments related to the cooperative movement in Britain and the cooperative credit movement in Germany such societies were set up in India. Cooperative societies are based on the principles of cooperation, - mutual help, democratic decision making and open membership[10]. The major utility of urban cooperative banks are to encourage saving by magnetizing deposits from members and non- members and to advance loans to the members. The objectives and functions of these banks are mainly to raise funds for lending money to its members. The Reserve Bank controls and administer the banking functions of UCBs under the provisions of Banking regulation Act, 1949(AACS). Urban Co-operative Banks (UCBs) inhabit an imperative place amid the Non-Agricultural Credit Society. They provide to the credit needs of people residing in urban areas. UCB's advance loans mostly to the small traders, Assistant and monthly income group people. UCB's also advance against gold, silver and produce.. The study intends to analyse the performance of selected UCB's. For this purpose fall in number of UCB's, merger in UCB's , Rate of Growth of UCB With Respect To Liabilities and Assets were studied along with the assessment and evaluation of financial performance of scheduled and non-scheduled UCB.

Keywords: *Banking Sector, Urban Cooperative Banks, Cooperative Banking, Financial Performance, Banking Regulations.*

JEL Classification: E500, E580

I. INTRODUCTION

While UCBs strive to deliver institutional credit at affordable costs in urban and semi-urban areas, rural co-operatives provide financial services in villages and small towns by leveraging on their geographical and demographic outreach. The growth of co-operative institutions has not, however, been commensurate with the overall growth of the banking sector – at the end of March 2017, they accounted for only 11 per cent of the total assets of scheduled commercial banks (SCBs) in comparison to 19 per cent share in 2004-05. **Alok Goyal and Harvinder Kaur (2011)**[6] Urban Cooperative Banks is the important constituent of Indian banking system. These banks have expanded their operations over the last two decades. It was found in the present study that the situation of NPA in banks has improved over the period of study. But in 2007-08, the NPA in these banks have grown in comparison of the previous year. In general, it may be concluded that the 67 position of NPA has improved considerably. Most of the Urban Cooperative Banks have CRAR ratio

of more than 9 percent. It was also find in the study that ROA exhibited in the years 2008-09 and 2009-10 and actual ROA deviated from its potential throughout the decade.

II. OBJECTIVE OF THE STUDY

- To schoolwork fall in number of UCB's. And find out out merger in UCB's.
- To study share of UCB's in total assets along with Rate of Growth of UCB With Respect To Liabilities and Assets
- To study investment by UCB's and analyze the financial performance.

III. RESEARCH METHODOLOGY

The required data for the study is basically secondary in nature and the data is collected from the annual report of the UCB's. It includes required financial data collected from RBI's official websites and some other websites on the internet for the purpose of getting all the required financial data of the banks.

The researcher had to use fact and information already available through financial statements of earlier years and analyze these to make critical evaluation of the available material. Hence by making the type of the research conducted to be both descriptive and analytical in nature. From the study, the type of data to be collected and the procedure to be used for this purpose were decided.

IV. LITERATURE REVIEW

1. **Bhaskaran and Josh (2000)[1]** concluded that the recovery performance of co-operative credit institutions continues to unsatisfactory which contributes to the growth of NPA even after the introduction of prudential regulations. They suggested legislative and policy prescriptions to make co-operative credit institutions more efficient, productive and profitable organization in tune with competitive commercial banking.
2. **Mavaluri, Boppana and Nagarjuna (2006)[2]** suggested that performance of banking in terms of profitability, productivity, asset quality and financial management has become important to stable the economy. They found that public sector banks have been more efficient than other banks operating in India.
3. **Jain (2001)[3]** has done a comparative performance analysis of District Central Cooperative Banks (DCCBs) of Western India, namely Maharashtra, Gujarat and Rajasthan and found that DCCBs of Rajasthan have performed better in profitability and liquidity as compared to Gujarat and Maharashtra.
4. **Dutta and Basak (2008)[4]** suggested that Co-operative banks should improve their recovery performance, adopt new system of computerized monitoring of loans, implement proper prudential norms and organize regular workshops to sustain in the competitive banking environment.

5. **Pal and Malik (2007)**[5] investigated the differences in the financial characteristics of 74 (public, private and foreign) banks in India based on factors, such as profitability, liquidity, risk and efficiency. It is suggested that foreign banks were better performers, as compared to other two categories of banks, in general and in terms of utilization of resources in particular.

V. DATA ANALYSIS

1. Fall in Number of UCB's

Table 01

Year	Fall In number UCB
2004-2005	54
2005-2006	19
2006-2007	40
2007-2008	43
2008-2009	49
2009-2010	47
2010-2011	29
2011-2012	27
2012-2013	12
2013-2014	17
2014-2015	10
2015-2016	5
2016-2017	12
2017-2018	11

(Source: Secondary data)

Chart 01

Analysis

1. The Number of UCB's is decreasing from March 2004 to March 2018 , the number of UCB's in March 2004 are 1928 and number of UCB in March 2018 are 1551.The fall in number of UCB is very low in year 2015-2016. i.e. 5

2. **Number of Mergers of UCB's**

Table 02

State	Number of mergers of UCBs
Punjab	1
Uttarakhand	2
Uttar pradesh	2
Chattisgarh	2
Rajasthan	3
Karnataka	4
Andhrapradesh	12
Gujrat	31
Maharashrtra	72

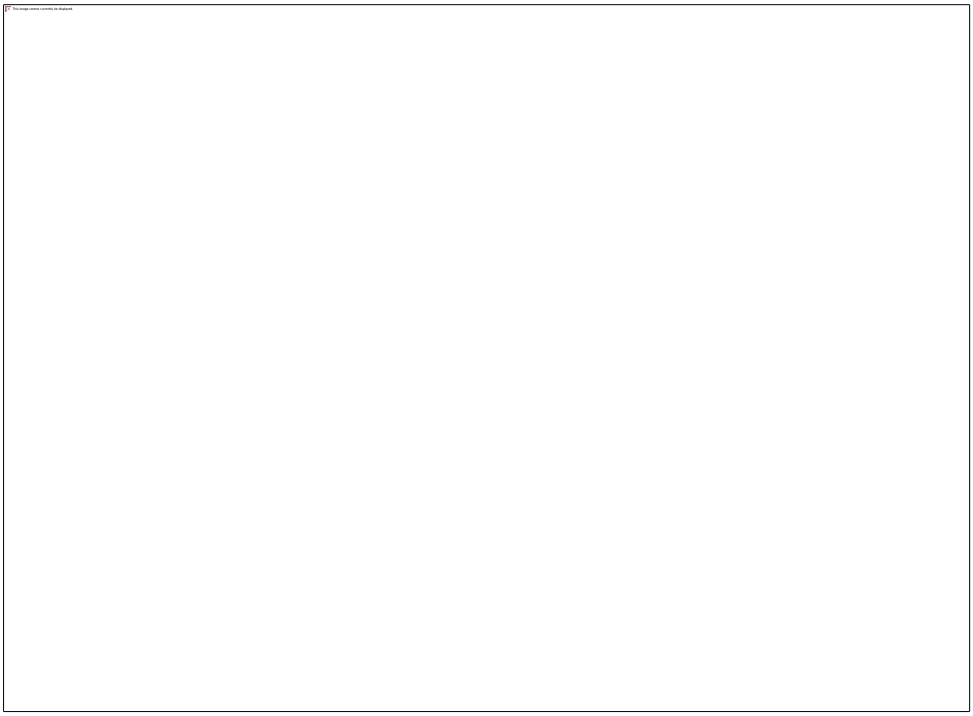

Chart 02

Analysis

The Highest number of mergers of UCB's are in Maharashtra i.e. 72, whereas the Punjab state is having very least no of mergers of UCB's i.e. only one.Gujarat state also have high number of mergers of UCB'S i.e. 31

3. Growth of Total Asset in UCB's

Table 03

Year	Tier wise composition UCBs
2009-2010	22
2010-2011	19
2011-2012	17
2012-2013	16
2014-2014	15
2014-2015	13
2015-2016	14
2016-2017	14
20187-2018	13

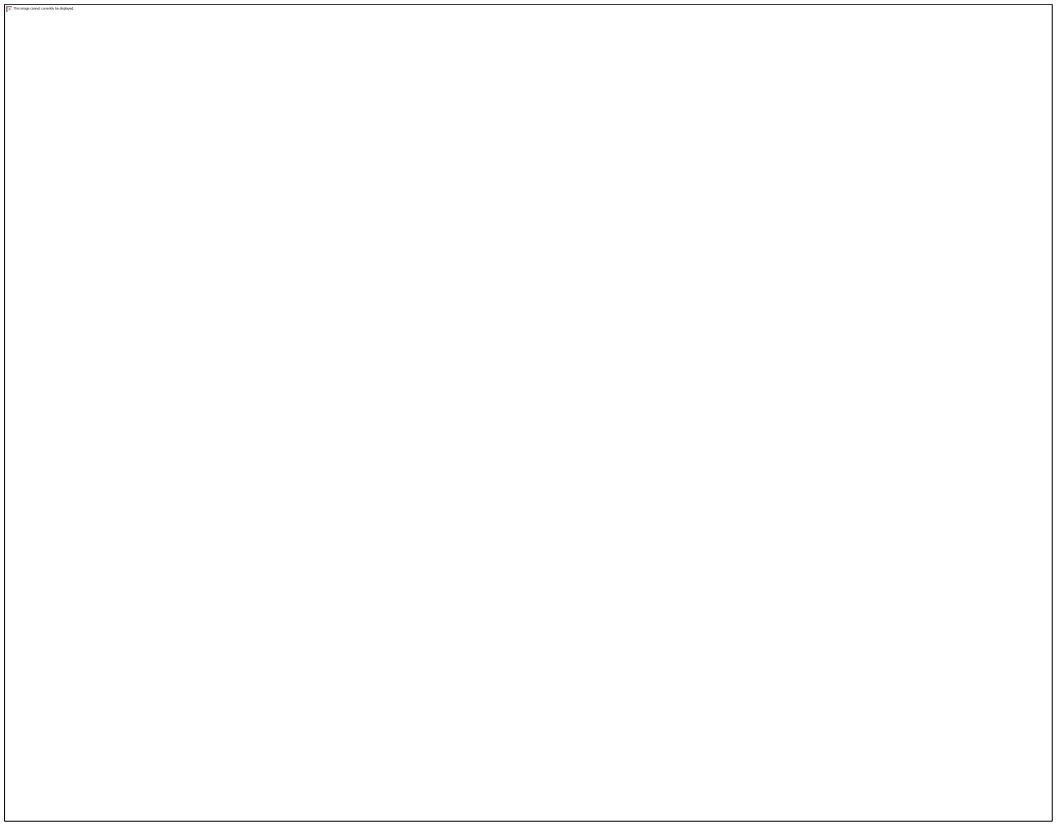

Chart 03

Analysis

Share of Tier II UCB's assets in total shares are more than share of Tier I UCB's in total assets. The share of Tier I & Tier II in 2009-10 are 22 & 35 respectively. The Tier II share in total number of UCBs are increasing from 2009-10 to 2017-18.

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4. Assets growth of UCB's

Table 04

Year	Asset Growth of UCBs
2006-2007	14.00
2007-2008	6.00
2008-2009	12.50
2009-2010	18.00
2010-2011	12.50
2011-2012	10.50
2012-2013	12.50
2013-2014	14.00
2014-2015	10.50
2015-2016	10.60
2017-2018	4.00

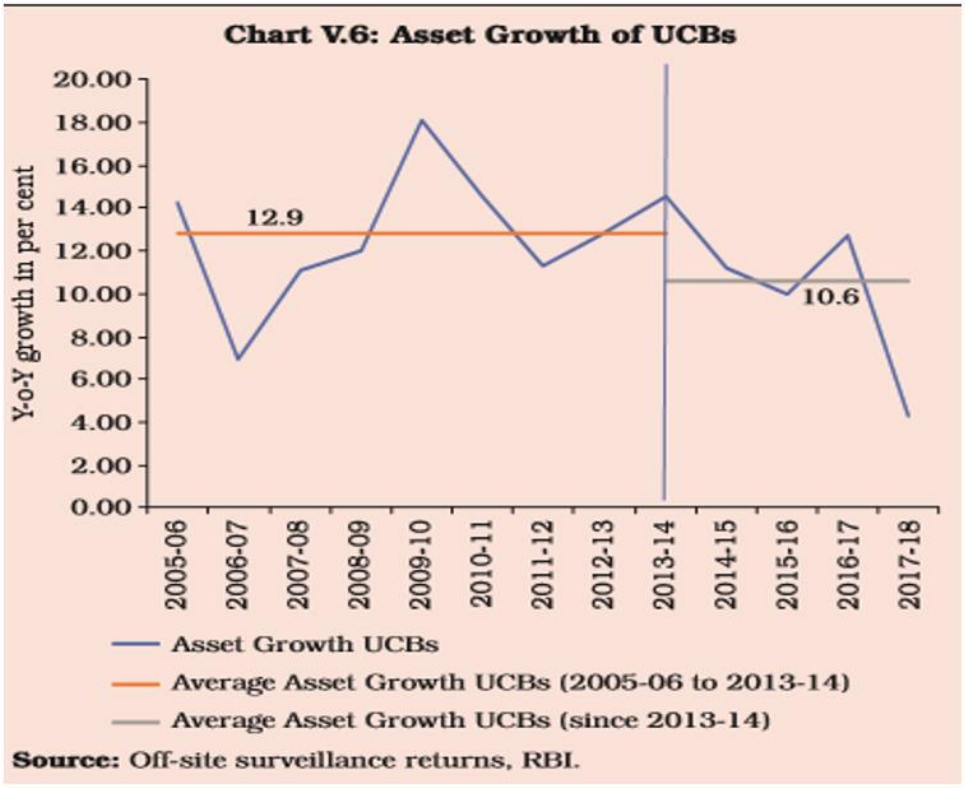

Chart 04

Analysis

1. The average Asset growth of UCB's is 12.9 % with in financial year 2005-06 to 2013-14.
2. The asset growth UCB's are very less in 2017-18.The Average Asset Growth UCB's in 2013-14 is 10.6 %.

5. Rate Of Growth of UCB With Respect To Liabiliets And Assets

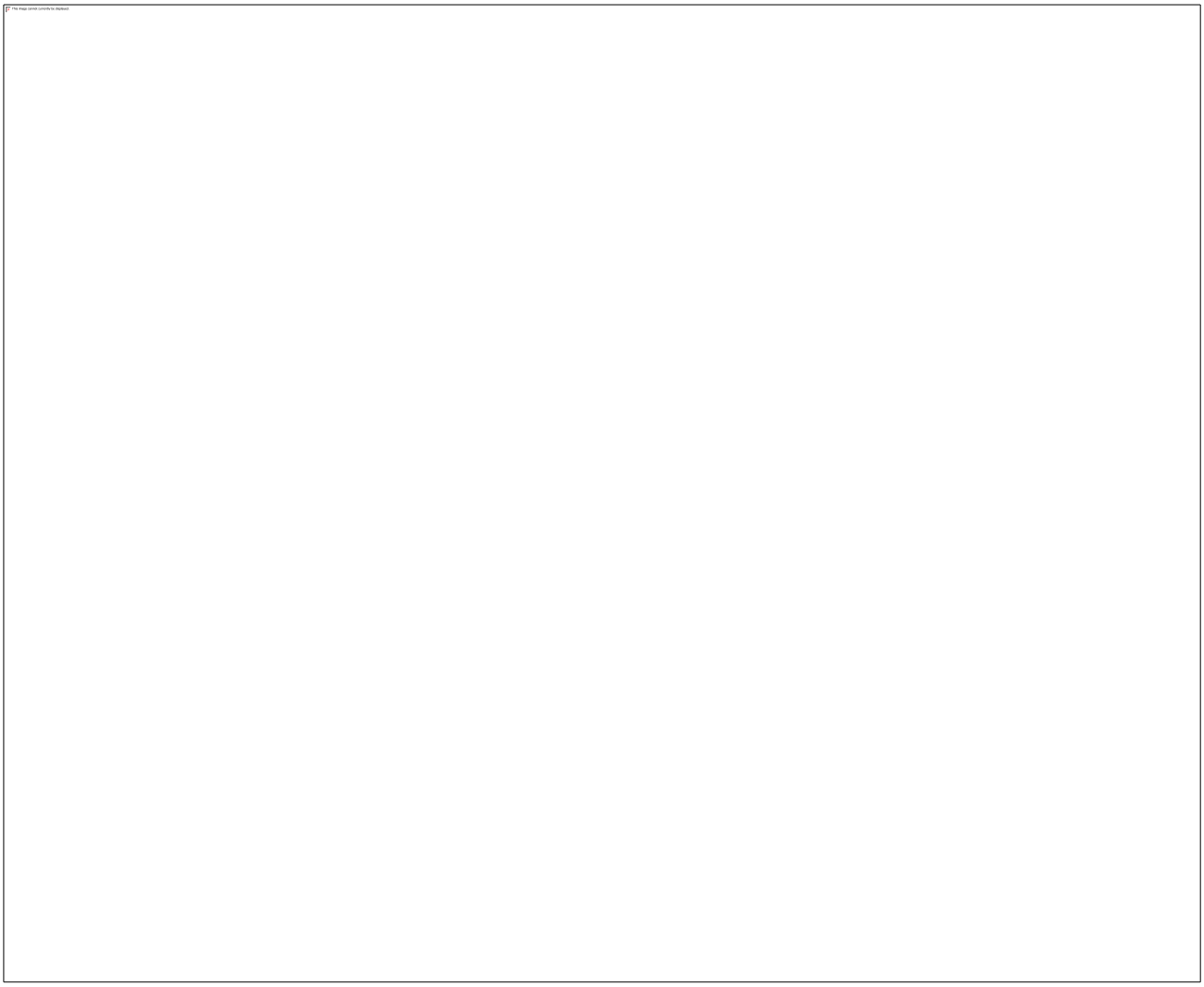

Chart 06

Analysis

The Rate of growth of all UCBs is decrease from 12.8 to 4.3 (%) from year 2016-17 to 2017-18.The distribution of UCBs was bi-modal, with peaks in the asset size between ₹0.25 to ₹0.5 billion bracket and in the ₹1 to ₹2.5 billion bracket in 2014-15. Since 2016-17, however, the distribution has become uni-modal i.e. the distribution has shifted to the right, with the share of UCBs with an asset size of more than ₹10 billion increasing to 6.2 per cent in 2017-18 from 4.6 per cent in 2014-15

6. Investments By UCB's

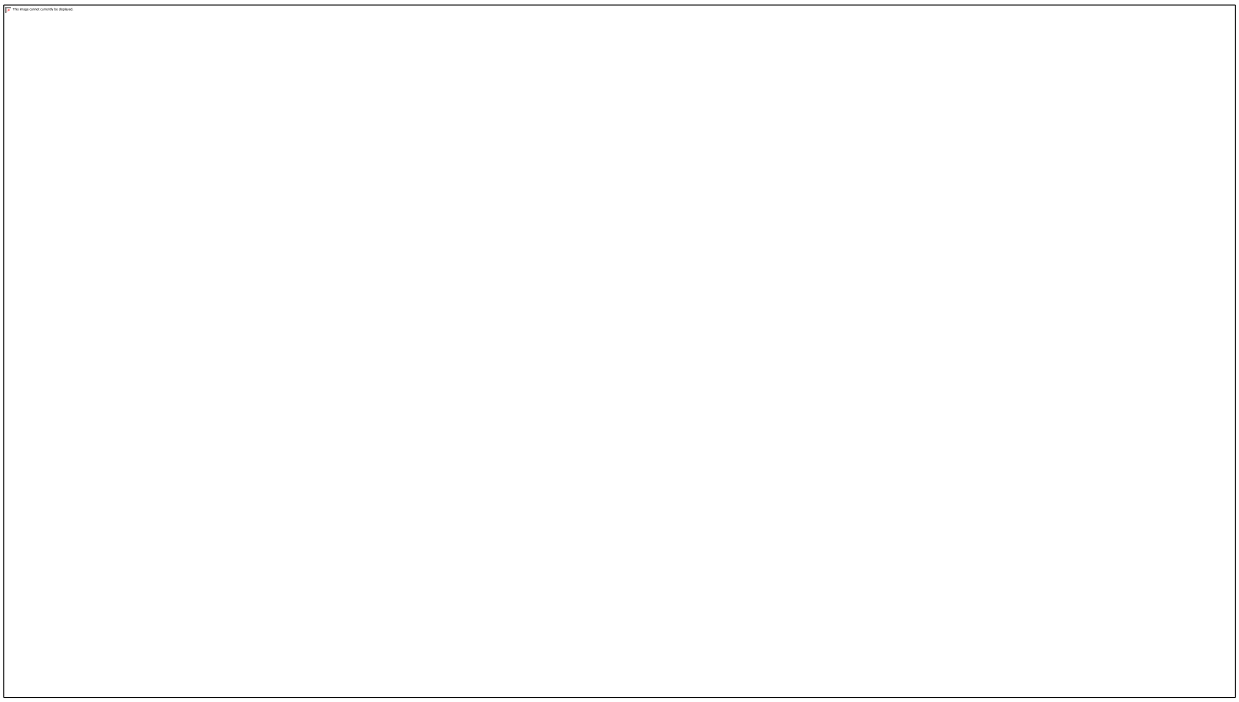

Chart 07

Analysis

A moderation in investment in central government securities, which account for around 67 per cent of total investment, drove the deceleration in total investments.

7. Financial Performance of Scheduled And Non-Scheduled UCB

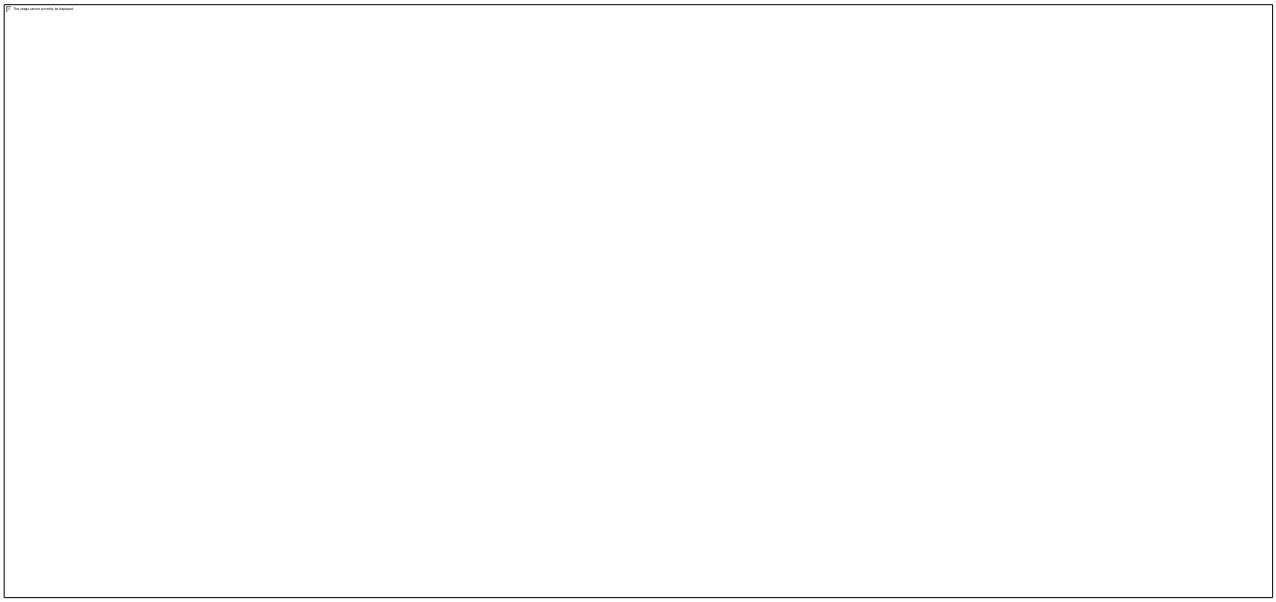

Chart 08

Analysis

1. UCBs are required to maintain minimum capital to risk-weighted assets ratio (CRAR) at par with the SCBs at 9 %. During 2017-18, 97 % of non-scheduled urban cooperative banks (NSUCBs) had CRAR of 9 % ,
2. While 93 % of scheduled urban co-operative banks (SUCBs) had achieved the minimum ratio.

VI. FINDINGS

1. Number of UCB's in March 2004 are 1928 and number of UCB in March 2018 are 1551. The fall in number of UCB is very low in year 2015-2016. i.e. 5
2. The Highest number of mergers of UCB's are in Maharashtra i.e. 72
3. In spite of the number of UCBs coming down after consolidation, their asset size increased manifold, underscoring the policy focus on strengthening their financial position
4. A moderation in investment in central government securities, which account for around 67 per cent of total investment, drove the deceleration in total investments.
5. The During 2017-18, 97 % of non-scheduled urban cooperative banks (NSUCBs) had CRAR of 9 %

VII. SUGGESTIONS

The important indicators of Cooperative Credit Societies are creation of deposits and augmentation of volume of share capital and reserve funds. Hence, effort should be made to bring more and more people under the activities of cooperative structure and principles in order to achieve the desired objectives.

VIII. CONCLUSION

While remedial measures initiated by the Reserve Bank have resulted in consolidation in the UCB sector, weaknesses in the rural cooperative segment persist, reflecting operational and governance-related impediments.

During 2017-18, the moderation in UCBs' consolidated balance sheet was due to slowdown in growth of deposits—which account for 81 per cent of total liabilities—from the demonetization-driven high base of the previous year.

Deceleration in capital and reserves added to the subdued expansion in their combined balance sheet, although deceleration in deposits was partly offset by a higher reliance on borrowings.

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Assistant Professor, Dr. D. Y. Patil Institute of Management and Research
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Dr. Rachana Chavan
Assistant Professor, Dr. D Y Patil Center for Management & Research
Pune, Maharashtra, India

Mrs. Prajali Patil
Assistant Professor, Dr. D.Y. Patil Centre for Management and Research
Pune, Maharashtra, India

Mrs. Rekha Patil
Assistant Professor, Dr. D. Y. Patil College of Computer and Business Studies
Pune. Maharashtra, India.

Editor

Dr. Namita Chawla
Assistant Professor, ASM's Institute of Business Management and Research
Pune, Maharashtra, India.

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Authors

Dr. Manisha Anil Kumbhar
Director and Professor, Suryadatta Institute of Business Management & Technology, Pune, Maharashtra, India.

Prof. Nitin Ganeshar
Assistant Professor, Yashaswi's International Institute of Management Science, Pune, Maharashtra, India.

Prof. Smita Chavan
Assistant Professor, Suryadatta Institute of Business Management & Technology, Pune, Maharashtra, India.

Mrs. Prajali Patil
Assistant Professor, Dr.D.Y.Patil Centre for Management and Research Pune, Maharashtra, India.

Editor

Prof. Pradeep Kumar Shitole
Assistant Professor, STES's Sinhgad College of Arts and Commerce Pune, Maharashtra, India

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