ATM BRANCH EXPANSION IN INDIA - ANALYZING CAGR AND MARKET SHARE DYNAMICS

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Abstract:
The development and introduction of Automated Teller Machines (ATMs) in the Indian banking sector has been remarkable in the past two decades, owing to the advancements in technology and changes in customer's preferences on banking. The present study aims to study the growth patterns of ATM branches in India, with a specific focus on Compound Annual Growth Rate (CAGR) insights and market share trends. By analyzing these factors, we aim to study the driving forces behind the expansion of ATM networks within the Indian financial services sector. This study is essential for various stakeholders in the banking sector to navigate the complex ATM market and to capitalize on emerging opportunities.
Keywords:
Automated Teller Machines (ATMs), Competitive dynamics, Compound Annual Growth Rate (CAGR), Driving forces.

1. Introduction:
In recent years, the landscape of Automated Teller Machines (ATMs) has witnessed significant evolution, driven by technological advancements and shifting consumer behaviour. This study develops into the growth categories of ATM branches, focusing on Compound Annual Growth Rate (CAGR) insights and trends in market share. By analyzing these factors, we aim to uncover the driving forces behind the expansion of ATM networks and the competitive dynamics within the financial services sector. Understanding these trends is crucial for stakeholders seeking to navigate the increasingly complex ATM market and capitalize on emerging opportunities. The development of the Indian economy is the one of the important aspect is that Indian financial system. It includes financial institutions, financial markets, financial instruments and financial services. Now the one of the aspect is in that financial institutions considering banking and non banking financial institutions and development orientations of the banks. So ATM's are one of the significant points to develop the branch networking. This is helping them to meet in the minds of the customer expectations to gain the market share of the today's core competency in the world.

2. Review of Literature:
BS Sawant (2011)[1], in his study highlighted the importance of implementing latest technologies and has highlighted the introduction of ATMs for the development of the banking industry through ATMs.

T.Ravi Kumar (2013)[2],in rural economy and their empowerment emphasized the role of Scheduled Commercial Banks and Cooperative Banks in the growth of financial inclusion through the expansion of branches and ATMs to serve the poor and unbanked population.

Ms. JishaJoseph and Dr. Titto Varghese (2014)[3], study highlighted the number of bank branches and ATM usage are the significant factors responsible for the bank growth rate as well as financial inclusion.

Deshmukh.M.S., & Rupesh Pawar. (2016)[4], has emphasized that the growth and development of rural economy to a greater extent depends upon the scheduled commercial banks as it foster the supply of rural credit by deploying the branch network in rural and backward areas**.**

Gowsyashaik and Raja Babu (2019)[5]in their study found that the growth rate of total
Number of branches in both India and Andhra Pradesh very similar, initial years the growth rate has been increased later decreased.

Maity and Sahu (2019)[6], stressed the vitality of branch expansion for bank sustainability and reaching the unreached to bring financial inclusion.

3. Study of Research:

This study concentrates on ATM growth trends in India, focusing on Compound Annual Growth Rate (CAGR) insights and market share.
Some of the key findings are:

✓ **Indian ATM Market Size and Growth**:
The revenue of the Indian ATM market is anticipated to grow at a positive compound annual growth rate (CAGR) of almost 6.7% between FY 2018 and FY 2023.The significant contributors will be ATM repair and maintenance services, cash management, and other service charges.

✓ **Micro Automated Teller Machines in India:**
Micro-ATMs are increasing rapidly in India. Since March 2020, the m-ATM network has grown at a robust 70% CAGR, while traditional ATM networks grew by a mere 3% during the same period. Factors driving m-ATM adoption include lower commercial viability, especially in rural India, and increasing acceptance of m-ATMs for financial transactions.

✓ **Technological Developments and Rapid Urbanization:**
Rapid urbanization in both developed and emerging economies is a primary driver for ATM market growth. The 24x7 availability of cash, along with features like fund transfer and bill payment, contributes to the demand for ATMs in India. Technological advancements, including digital convergence, IOT data analysis, and biometrics, are expected to further fuel market growth.

4. Objectives of the study:

❖ To know the number of ATMs to improve accessibility and convenience for customers.
❖ To examine the target CAGR for ATMs and branches over a specific period to ensure sustainable growth.

5. **Methodology:** In this study, secondary data was utilized from reputable source RBI and different sources.

6. **Scope of the study:** This study is only we are focused on the financial inclusion parameters and how they will affect the Indian economy. Based on these variables in this study we are considering only some variables. It is only limited to the branches and growth of the ATMs and branches.

7. Limitations of the study:

• Data Availability and Quality.
• Sample Size and Representativeness.
• Assumptions and Simplifications.

8. Data Analysis and Interpretation:

Table -1: Population Group –wise Number of Branches of Scheduled Commercial Banks (SCB's)

YEAR	RURAL	% SHARE	SEMI-URBAN	% SHARE	URBAN	% SHARE	METROPOLITAN	% SHARE	TOTAL	% SHARE
2012	34063	34.55	26440	26.82	18105	18.363	19985	20.27	98593	100%
2013	36935	34.68	29327	27.54	19253	18.077	20991	19.71	106506	100%
2014	41959	35.59	32591	27.65	20855	17.691	22479	19.07	117884	100%
2015	45138	35.70	34973	27.66	22346	17.672	23994	18.97	126451	100%
2016	48263	35.67	37575	27.77	24010	17.745	25459	18.82	135307	100%
2017	49860	35.51	38931	27.72	25103	17.877	26530	18.89	140424	100%
2018	50860	35.70	39616	27.81	25458	17.869	26536	18.63	142470	100%
2019	51609	35.30	41031	28.07	26399	18.057	27157	18.58	146196	100%
2020	52382	34.91	42441	28.29	27446	18.292	28133	18.75	150046	100%
2021	52651	34.81	42443	28.06	27433	18.136	28181	18.63	151261	100%
2022	53372	35.14	42685	28.10	27565	18.147	28275	18.61	151897	100%

Source: Ministry of Finance–Govt.of.India- RBI

Interpretation: Observed from the above table 1-above 12 years of data every year rural, semi-urban, urban and metropolitan areas branches are increased. In the year 2018, the highest branches are opened in rural and semi-urban. The metropolitan cities re-established a high level of branches in the year of 2012 itself only.

Chart:1-Population Group-wise number of branches of Scheduled Commercial Banks (SCBs):
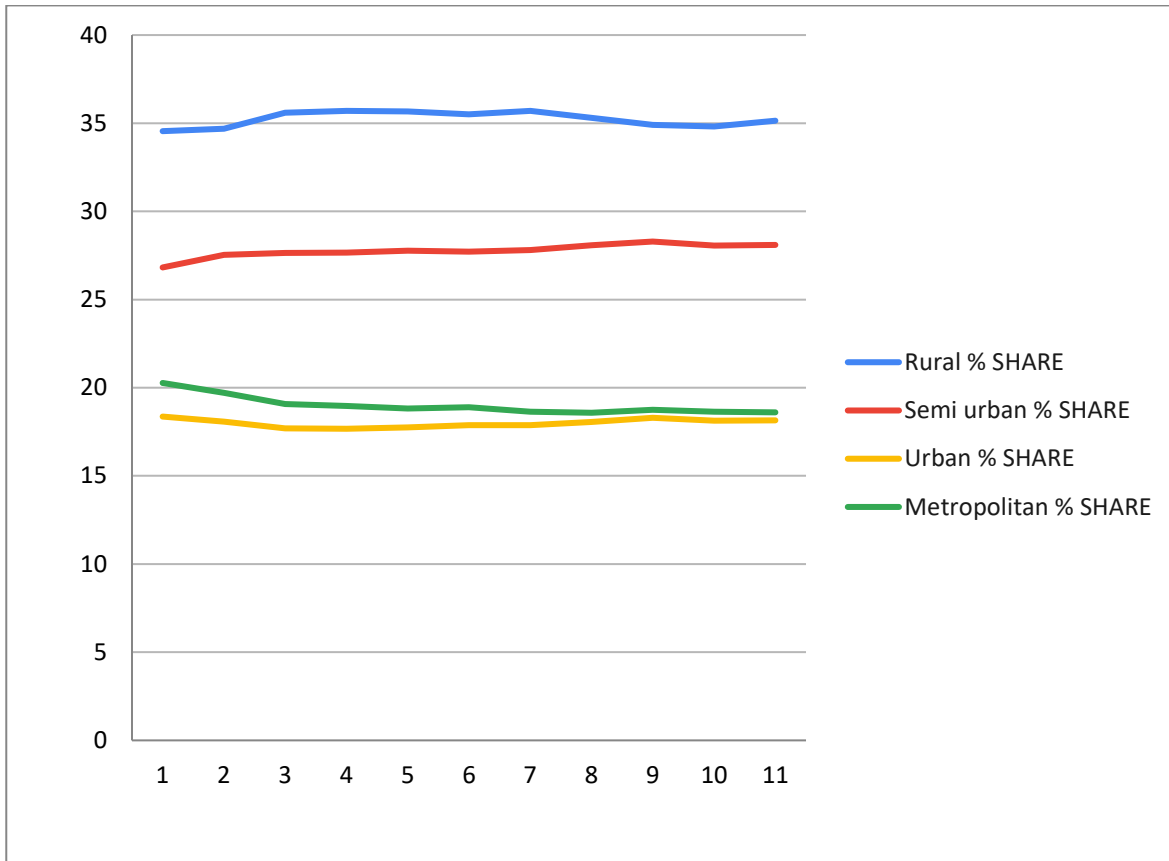
Table-2:

**Population Group wise number of branches of Scheduled Commercial Banks (SCBs) :**

YEAR	RURAL	Growth Rate	CAGR	SEMI-URBAN	Growth Rate	CAGR	URBAN	Growth Rate	CAGR	METROPOLITAN	Growth Rate	CAGR	TOTAL	Growth Rate	CAGR
31.03.2012	34063			26440			18105			19985			98593		
31.03.2013	36935	7.78		29327	9.84		19253	5.96		20991	4.79		106506	7.43	
31.03.2014	41959	11.97	6.78%	32591	10.02	6.89%	20855	7.68	5.4	22479	6.62	4.9	117884	9.65	6.19
31.03.2015	45138	7.04		34973	6.81		22346	6.67		23994	6.31		126451	6.77	
31.03.2016	47307	4.58		36901	5.22		23558	5.14		25397	5.52		133163	5.04	
31.03.2017	49860	5.12		38931	5.21		25103	6.15		26530	4.27		140424	5.17	
31.03.2018	50860	1.97		39616	1.73		25458	1.39		26536	0.02		142470	1.44	
31.03.2019	51609	1.45	1.09	41031	3.45	1.74	26399	3.56	1.80	27157	2.29	1.12	146196	2.55	1.4
31.03.2020	52382	1.48		42213	2.80		27318	3.36		28133	3.47		150046	2.57	
31.03.2021	52651	0.51		42441	0.54		27446	0.47		28055	-0.28		150593	0.36	
31.03.2022	53204	1.04	1.08	42443	0.00	1.44	27433	-0.05	1.49	28181	0.45	1.01	151261	0.44	1.24
OVER ALL CAGR - 11YRS			4.13			4.39			3.85			3.17			3.96

Source: Ministry of Finance–Govt.of.India- RBI

Interpretation:

Table 4.2 explains the growth of branches in scheduled commercial banks in India, which has a decreased growth rate compared to the past twelve years. Overall also the compound annual growth rate is decreased.

Chart:2- Population Group wise number of branches of Scheduled Commercial Banks (SCBs) :
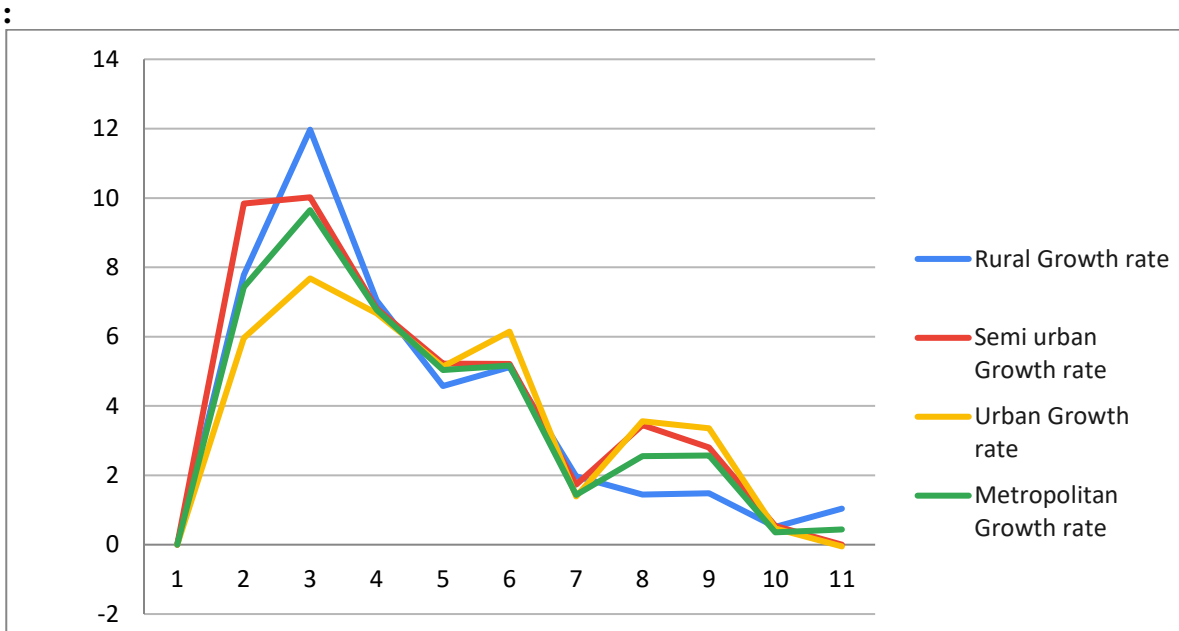
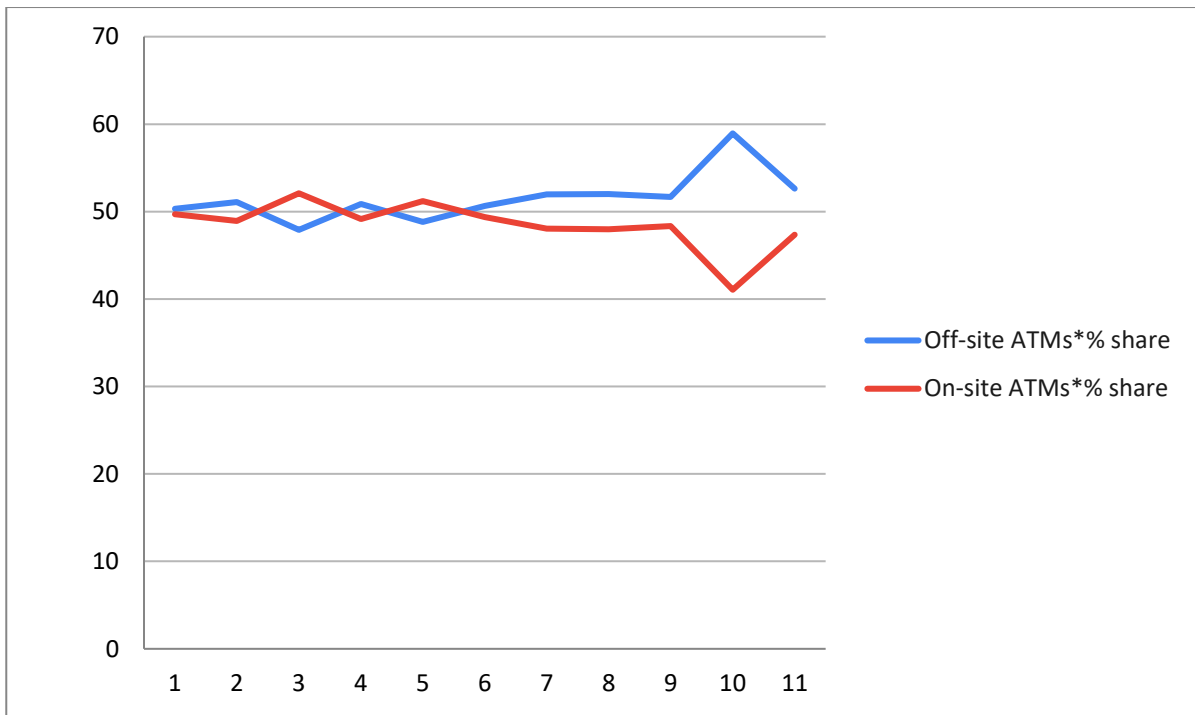**Table-3:Number of ATM's of Scheduled Commercial Banks (SCBs)**

YEAR	Off-site ATMs*	% Share	On-site ATMs	% Share	Total ATMs*	% Share
31.03.2012	48141	50.31	47545	49.69	95686	100%
31.03.2013	58254	51.09	55760	48.91	114014	100%
31.03.2014	76676	47.91	83379	52.09	160055	100%
31.03.2015	92191	50.86	89061	49.14	181252	100%
31.03.2016	97210	48.82	101950	51.21	199099	100%
31.03.2017	112666	50.64	109809	49.36	222475	100%
31.03.2018	115471	51.96	106776	48.04	222247	100%
31.03.2019	115323	52.02	106380	47.98	221703	100%
31.03.2020	121086	51.67	113271	48.33	234357	100%
31.03.2021	140618	58.94	97970	41.06	238588	100%
31.03.2022	129766	52.63	116794	47.37	246560	100%

Source: Ministry of Finance–Govt.of.India- RBI
Interpretation:

The above table depicts the percentage of shares of the ATMs established in commercial banks indicating the year 2021 offsite ATMs' share is high, and the on-site ATM's share is in 2014.least offsite ATMs"s are in the year 2014. In the year 2021 site ATMs were low. Here we observed that 2014 and 2021 and high and low indicate the ATM"s performance.

Chart: 3: Number of ATM's of Scheduled Commercial Banks

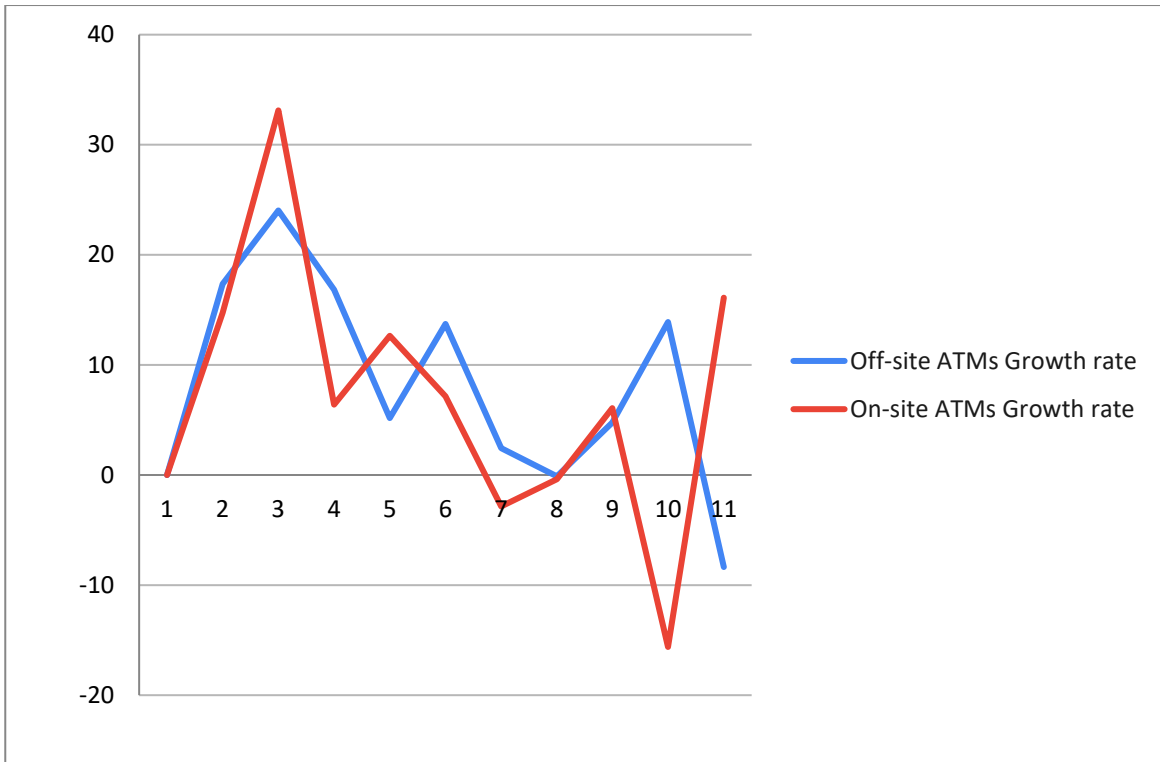**Table: 4: Number of ATMs of Scheduled Commercial Banks (SCB's)**

YEAR	Off-site ATMs*	Growth Rate	CAGR	On-site ATMs	Growth Rate	CAGR	Total ATMs*	Growth Rate	CAGR
31.03.2012	48141			47545			95686		
31.03.2013	58254	17.36		55760	14.73		114014	16.08	
31.03.2014	76676	24.03	15.09	83379	33.12	16.48	160055	28.77	
31.03.2015	92191	16.83		89061	6.38		181252	11.69	
31.03.2016	97210	5.16		101950	12.64		199099	8.96	15.78
31.03.2017	112666	13.72		109809	7.16		222475	10.51	
31.03.2018	115471	2.43		106776	-2.84		222247	-0.10	
31.03.2019	115323	-0.13	4.53	106380	-0.37	-2.25	221703	-0.25	
31.03.2020	121086	4.76		113271	6.08		234357	5.40	
31.03.2021	140618	13.89		97970	-15.62		238588	1.77	1.4
31.03.2022	129766	-8.36	2.38	116794	16.12	1.03	246560	3.23	1.72
OVER ALL CAGR 11 YRS			9.43			8.51			8.98

Source: Ministry of Finance–Govt.of.India- RBI

Interpretation:
In the above table, we observed the ATM growth of the scheduled commercial banks.total overall CAGR offsite ATM:s growth is high. Compare to the above.On-site ATMs''s are high in the first five years.

Chart: 4:Number of ATMs of Scheduled Commercial Banks(SCB's)

Table:5-No. of ATMs of public sector banks-
Number of ATMs of Scheduled Commercial Banks (SCBs), Small finance Banks (SFBs), Payment Banks
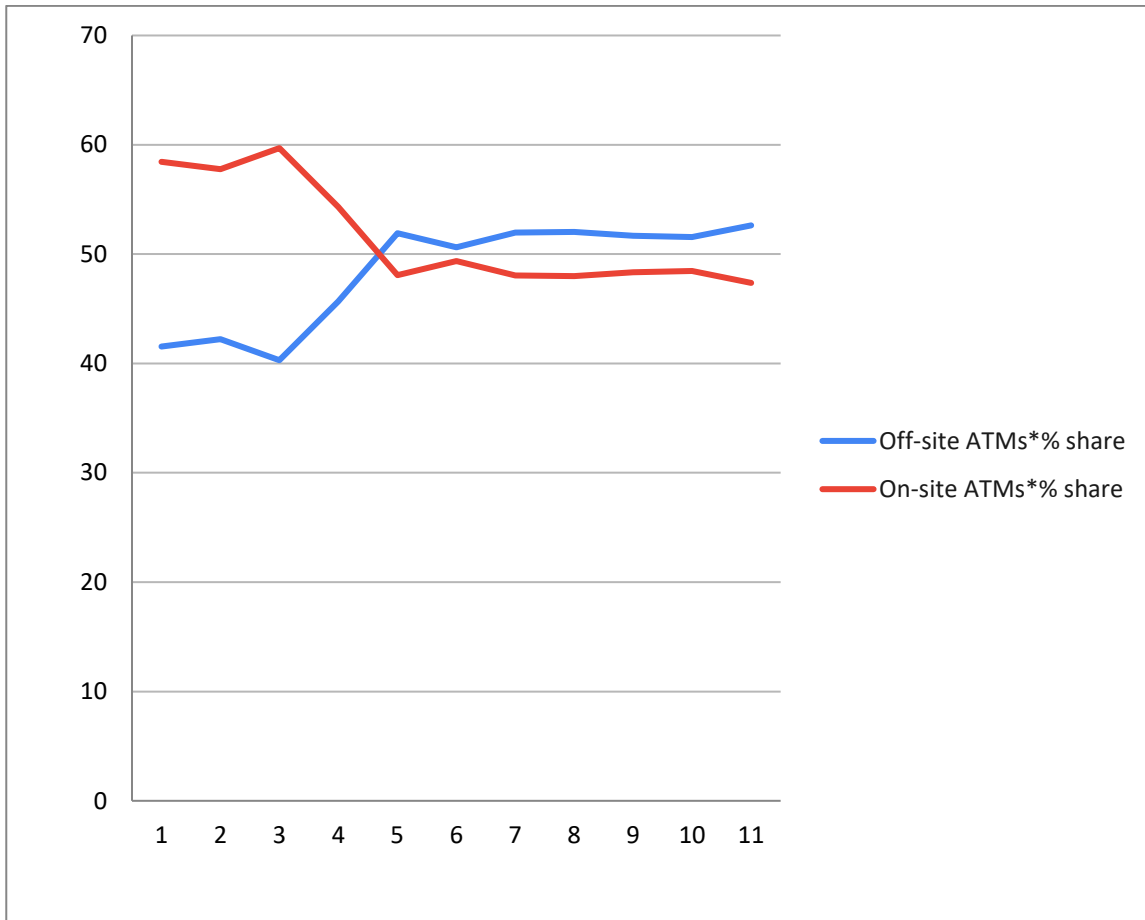
(PBs) and White Label ATM Operators.

YEAR	Off-site ATMs*	%Share	On-site ATMs	%Share	Total ATMs*	%Share
31.03.2012	24181	41.55	34012	58.45	58193	100%
31.03.2013	29411	42.23	40241	57.77	69652	100%
31.03.2014	44504	40.30	65920	59.70	110424	100%
31.03.2015	58763	45.67	69902	54.33	128665	100%
31.03.2016	110111	51.92	101950	48.08	212061	100%
31.03.2017	112666	50.64	109809	49.36	222475	100%
31.03.2018	115471	51.96	106776	48.04	222247	100%
31.03.2019	115323	52.02	106380	47.98	221703	100%
31.03.2020	121086	51.67	113271	48.33	234357	100%
31.03.2021	122983	51.55	115605	48.45	238588	100%
31.03.2022	129766	52.63	116794	47.37	246560	100%

Source: Ministry of Finance–Govt.of.India- RBI
Interpretation:
In the above table it explains about the percentage of share is also very high in the year 2022 i.e. 52.63%on site ATM"s percentage of share is in the year 2014.

Chart:5 Number of ATMs of Scheduled Commercial Banks (SCBs), Small finance Banks (SFBs), Payment Banks

Table of 6: ATMs of Scheduled Commercial banks, Small Finance Banks, Payment

Banks and white-label operators

| YEAR	Off-site ATMs*	Growth Rate	CAGR	On-site ATMs	Growth Rate	CAGR	Total ATMs*	Growth Rate	CAGR
31.03.2012	24181			34012			58193		
31.03.2013	29411	17.78		40241	15.48		69652	16.45	
31.03.2014	44504	33.91	35.41	65920	38.95	24.55	110424	36.92	29.51
31.03.2015	58763	24.27		69902	5.70		128665	14.18	
31.03.2016	110111	46.63		101950	31.44		212061	39.33	
31.03.2017	112666	2.27		109809	7.16		222475	4.68	
31.03.2018	115471	2.43		106776	-2.84		222247	-0.10	
31.03.2019	115323	-0.13	1.76	106380	-0.37	1.03	221703	-0.25	1.4
31.03.2020	121086	4.76		113271	6.08		234357	5.40	
31.03.2021	122983	1.54		115605	2.02		238588	1.77	
31.03.2022	129766	5.23	2.38	116794	1.02	0.56	246560	3.23	1.72
Over all CAGR 11 yrs			16.5			11.86			14.02

Source: Ministry of Finance–Govt.of.India- RBI

Interpretation: the above table depicts the growth rate of the off-site ATM's first five years it shows increasing the CAGR of 35.41%.after the next years, it slowly reduced. On site, ATMs are also shoe casing the same increasing mode first years the CAGR is 24.55%.

Chart:6-ATMs of Scheduled Commercial banks, Small Finance Banks, Payment

Banks and white-label operators
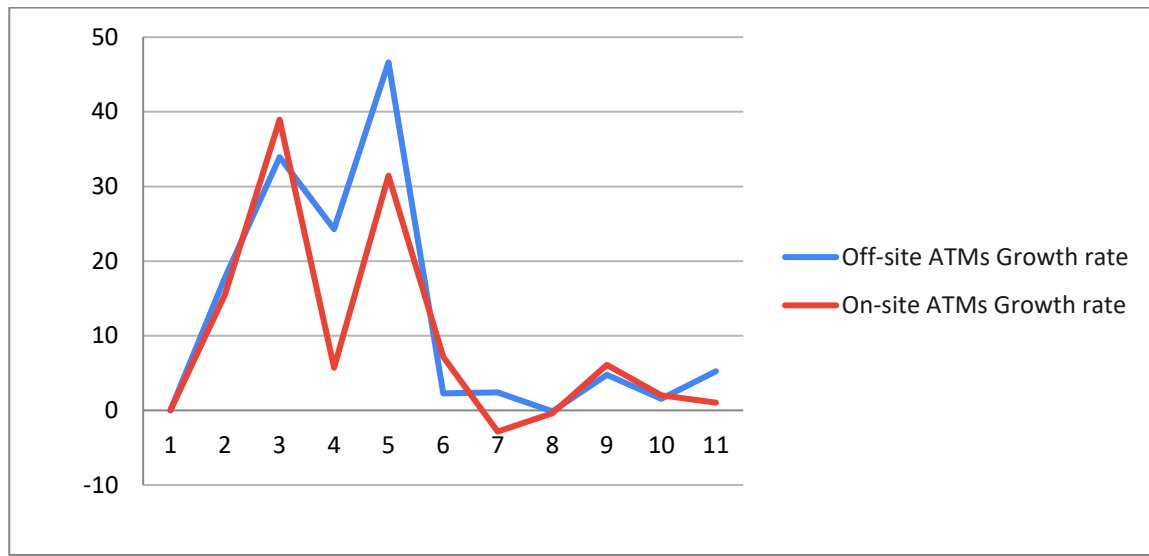
9. Findings:

• The past two decades has witnessed a steady growth in the number of branches across various geographical areas in India. In the year 2018, a large number of branches were opened in rural and semi-urban regions, this is in addition to a resurgence in branch establishment at metropolitan cities saw a as early as 2012.

• The compound annual growth rate (CAGR) for branches overall has also experienced a decline in the past twelve years.

• The percentage shares of on-site and off-site ATMs can be used to determine how well commercial banks' ATMs are performing. The study finds that in 2021, offsite ATMs had a higher share, while in 2014, on-site ATMs were more in number. This trend suggests a shift in ATM deployment strategies over time.

• The growth of offsite ATMs in scheduled commercial banks exhibits a higher compound annual growth rate (CAGR) overall. However, on-site ATMs have dominated the initial five years of the study period.

• With a CAGR of 35.41%, the growth rate of off-site ATMs showed a notable increase in the first five years. However, this growth rate progressively decreased in the years that followed. Similarly, with a CAGR of 24.55% over the same time frame, on-site ATMs also saw an early upward trend.

10. Suggestions:

• Expand Branch Network: To reach a wider range of clients, think about setting up branches in a combination of rural, semi-urban, and urban locations.

• Analyze ATM Deployment Strategies: Asses the ratio between on-site and offsite ATMs to optimize performance and convenience for customers.

- Monitor CAGR Trends: Continuous tracking of Compound Annual Growth Rates (CAGR) to adapt strategies based on changing market dynamics.
- Focus on Initial Years' Growth: Pay attention to the early years of ATM deployment, as they often set the path for long-term success.
- Mitigate Declining Growth Rates: Address factors contributing to declining growth rates in later years to sustain ATM network expansion.

11. Conclusion:

The dynamic growth of ATM networks reflects both technological progress and changing consumer preferences. The Compound Annual Growth Rate (CAGR) serves as a compass, guiding stakeholders through these changing scenarios. By closely monitoring market share trends, financial institutions can adapt strategically and capitalize on emerging opportunities. As ATMs are a part of modern banking, staying updated remains important than any other aspect.

12. Future scope of the study:

- Explore security enhancements to protect against cyber threats and fraud.
- Analyze consumer preferences related to ATMs (e.g., contactless transactions, personalized services).
- Assess accessibility challenges and propose solutions for equitable ATM distribution.

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