

Opinion Regarding the Effectiveness of Using Technology in School Administration of Private English Medium Secondary Schools in Tribal-Dominated Palghar District

Suchita Prasanna Gharat¹, Prof. Dr. Geeta Shetty²

¹Ph.D. Student, St. Xavier's Institute of Education, Mumbai, India.

²Ph.D. Guide, Principal, H. J. College of Education, Mumbai, India.

Abstract— The study investigates the opinions of teachers, non-teaching staff and principals on the effectiveness of using technology in private English-medium secondary school administration in the tribal-dominated Palghar District of Maharashtra. For the present study, technology in school administration included computers, peripheral devices, local area networks, internet access, online communication platforms, educational software, and school ERP/MIS systems. The Descriptive Survey Method was employed with a stratified purposive sample of 186 respondents drawn from eight schools across eight talukas of Palghar District: 132 teachers, 46 non-teaching staff, and 8 principals. A self-constructed, validated four-point Likert Rating Scale - the Opinion on Technology Scale (OT Scale) with 21 statements across four parameters (Usefulness, Ease of Use, Attitude, and Behavioural Intention) was used for data collection. The OT Scale was based on the Technology Acceptance Model (TAM) developed by Davis (1989). Cronbach's Alpha of 0.891 confirmed the tool's reliability. Descriptive statistics and non-parametric inferential tests (Wilcoxon Signed-Rank Test and Kruskal-Wallis Test) were applied. Results indicate that all three respondent groups hold significantly positive opinions about the effectiveness of technology in school administration ($p < 0.001$). No significant difference was found between the opinions of the three groups. The study concludes that technology adoption in school administration is perceived as beneficial and necessary across all respondent groups.

Keywords—Technology in school administration, Private secondary schools, Palghar District

I. INTRODUCTION

Previously, the school structure was simple, and a small administrative setup was sufficient to run the school. The times have so changed that school administration is no longer an easy, simple, and routine affair due to the expansion, extension, universalisation, and modernisation of education. It is now surrounded by challenges of all types from all directions. Due to new challenges, the roles of the present school administration have been radically changed. It is necessary to evolve an efficient system of school administration.

Palghar District, partitioned from Thane District in 2014, is one of the tribal-dominated districts in Maharashtra. Despite an adequate number of schools and improving literacy rates (67.04%), the district continues to face school administrative challenges (Raut, G., 2023). The district has eight talukas - Mokhada, Vikramgad, Jawhar, Talasari, Dahanu, Wada, Palghar, and Vasai - each exhibiting varied levels of technological infrastructure in its schools. For instance, electricity availability ranges from 57% in Mokhada to 99% in Vasai, while internet access in schools ranges from 21% in Jawhar to 84% in Vasai, underscoring the digital divide within the district (UDISE+, 2024–25).

National and international literature consistently affirms that technology integration transforms school administration by improving efficiency, transparency, and stakeholder engagement (Banu, 2023; Orhani et al., 2024; Ruel & Bauyot, 2025). Government initiatives such as UDISE+ (Unified Digital Information on School Education Plus) and SARAL (Systematic Administrative Reforms for Achieving and Learning by Students) have made digital administration an imperative rather than an option for secondary schools in Maharashtra. Despite this context, how school stakeholders in tribal-dominated, semi-urban districts perceive and experience technology in school administration remains sparse.

This study addresses that gap by investigating the opinions of teachers, non-teaching staff, and principals about the effect of technology on school administration in private English medium secondary schools across all eight talukas of Palghar District. The research adopts the Descriptive Survey Method, uses a self-constructed and validated tool (OPT Scale), and applies both descriptive and inferential statistical techniques to generate conclusions.

II. VARIABLES

A. Independent Variable
Technology



International Journal of Recent Development in Engineering and Technology
Website: www.ijrdet.com (ISSN 2347-6435 (Online) Volume 15, Issue 08, August 2026)

B. Dependent Variable
School Administration

III. REVIEW OF LITERATURE

A. Studies Conducted in India

Ghosh (2023) examined the recommendations of NEP-2020 regarding technology integration in education and identified that technology was integral to curricular support, data management, and professional development systems. Key challenges identified included inadequate infrastructure, the digital divide, and a lack of collaboration between central and state governments. Banu (2023) conducted an analytical-cum-descriptive study confirming that technology integration simplifies administrative processes, reduces manual errors, and enables data-driven decision-making through Student Information Systems. Kapur (2019) explored e-governance models in school administration, noting that technology improved internal administration, planning, and decision-making, and emphasised the need for pre-service and in-service ICT training for staff.

Chhawware (2024) found that digital solutions for school setup and timetable management significantly reduced workload and automated scheduling and communication, representing a worthwhile investment in educational administration. Verma (2022) concluded that MIS was beneficial for any institution with an appropriate ICT setup and skilled staff, highlighting its utility beyond tertiary education. Adhikari et al. (2024), through a literature survey, found that MIS improved data management, communication, decision-making, resource allocation, and student performance analysis in school administration. Nishanth et al. (2023) reviewed ERP in the educational sector and identified five stages of implementation, documenting the benefits of reduced paperwork, automated report generation, and real-time data access, alongside challenges including high cost, employee resistance, and poor IT infrastructure. Meraj and Doorwar (2019) concluded that technology had penetrated school administration, making it more functional, dynamic, and decentralised, though government support and coordination were essential for sustainable implementation.

B. Studies Conducted Abroad

Gebremeskel (2020) found through a qualitative case study in Ethiopia that a school can achieve high administrative performance even when technology is used as a supplementary tool rather than a complete replacement.

Ruel and Bauyot (2025) used a sequential explanatory mixed-methods design and established that innovative technologies, including communication platforms, cloud computing, and data analytics, significantly improved decision-making, communication, and operational efficiency. Their study, grounded in TAM and Transformational Management Theory, reported positive correlations between technology adoption and school management effectiveness.

Dlamini (2020) employed a meta-synthesis approach to argue that digital technology is a strategic enabler for school administration, facilitating personalised support, cross-organisation collaboration, and goal achievement. Orhani et al. (2024) conducted a systematic literature review covering the last five years and found that ICT improved operational efficiency, communication, and education quality, noting challenges such as a lack of staff training and high costs. Their SWOT analysis of ICT identified dependency and data security as significant threats. Balikci (2025) found through qualitative research with 21 school administrators in Turkey that technology reduced workload, saved time, and provided an electronic database, though infrastructure and old habits were barriers to effective use. Chika and Wale (2020), using a survey with 177 respondents in Nigeria, found through Z-test analysis that ICT significantly enhanced student records management, personnel administration, financial management, and supervision of instruction. Mwambo (2019) used Spearman's rho correlation with 136 respondents in Cameroon and found a positive relationship between principals' ICT use and administrative effectiveness in planning, communicating, and monitoring school activities.

IV. RESEARCH GAP

The review of literature reveals that while substantial evidence supports technology's positive impact on school administration globally, there is a lack of studies focusing specifically on tribal-dominated, semi-urban districts in India. Most Indian studies are conceptual or based on secondary data. Studies examining the comparative opinions of teachers, non-teaching staff, and principals simultaneously using inferential statistics are rare. This study addresses these gaps through primary quantitative data from all eight talukas of Palghar District.

V. AIMS AND OBJECTIVES

The study aims to determine the effectiveness of using technology in the school administration of private English medium secondary schools in the tribal-dominated Palghar District of Maharashtra.

Specific Objectives

1. To find out the opinion of teachers on the effectiveness of using technology in the school administration of private English medium secondary schools in the tribal-dominated Palghar District.
2. To find out the opinion of non-teaching staff on the effectiveness of using technology in the school administration of private English medium secondary schools in the tribal-dominated Palghar District.
3. To find out the opinion of principals on the effectiveness of using technology in the school administration of private English medium secondary schools in the tribal-dominated Palghar District.
4. To compare the opinions of teachers, non-teaching staff, and principals on the effectiveness of using technology in school administration in the private English medium secondary schools of the tribal-dominated Palghar District.

VI. HYPOTHESES

H₀₁: Teachers from private English medium secondary schools of the tribal-dominated Palghar District do not have a significantly positive opinion about the effectiveness of using technology in school administration.

H₀₂: Non-teaching staff from private English medium secondary schools of the tribal-dominated Palghar District do not have a significantly positive opinion about the effectiveness of using technology in school administration.

H₀₃: Principals from private English medium secondary schools of the tribal-dominated Palghar District do not have a significantly positive opinion about the effectiveness of using technology in school administration.

H₀₄: There is no significant difference in the opinion of teachers, non-teaching staff, and principals on the effectiveness of using technology in the school administration of private English medium secondary schools in the tribal-dominated Palghar District.

VII. RESEARCH METHODOLOGY

The Descriptive Survey Method was used for this study. This method is most appropriate for understanding the current state of a phenomenon by systematically collecting data from multiple stakeholder groups in Palghar district. The study is quantitative in nature, employing a structured self-constructed rating scale for primary data collection.

VIII. SAMPLING AND SAMPLE

Stratified Purposive Sampling Technique was used to select eight prominent private English medium secondary schools — one from each of the eight talukas of Palghar District. Of the eight schools selected, four are affiliated with the Maharashtra State Board and four with the CBSE Board. This stratification ensures representative coverage of both board affiliations and all talukas within the district.

TABLE I
SAMPLE COMPOSITION BY RESPONDENT GROUP

Sr. No.	Respondent Group	Sample Size (N)
1	Teachers	132
2	Non-Teaching Staff	46
3	Principals	8
	Total	186

The pilot study was conducted at Abhinava Vidyalaya, Palghar, involving 1 principal, 16 teachers, and 5 non-teaching staff (N=22) to test and refine the data collection instrument before full-scale administration.

IX. TOOLS FOR DATA COLLECTION

A. Opinion about Technology Scale (OT Scale)

Since no standardised instrument existed for measuring stakeholder opinions about technology specifically in the context of school administration, the researcher self-constructed the Opinion about Technology Scale (OT Scale). The scale is a four-point Likert Rating Scale with 21 statements organised under four technology-related parameters grounded in the Technology Acceptance Model (Davis, 1989) and adapted for the school administration context:

1. *Usefulness*: Degree to which respondents believe technology improves school administrative job performance.
2. *Ease of Use*: Degree to which respondents find technology-based systems easy, effort-free and operable in school administration.
3. *Attitude*: Overall favourable or unfavourable disposition towards using technology in school administration.
4. *Behavioural Intention*: Respondents' intent to continue and extend use of technology in school administrative tasks.



International Journal of Recent Development in Engineering and Technology
Website: www.ijrdet.com (ISSN 2347-6435 (Online) Volume 15, Issue 08, August 2026)

The response options are: Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2, Strongly Disagree (SD) = 1.

B. Validity

Content validity was established by submitting the tool to six domain experts. Experts reviewed the relevance, coverage, and clarity of all 21 statements. Their feedback was incorporated through modification, addition, and exclusion of statements. Face validity was assessed by five experts, who reviewed the tool for language clarity and logical sequencing.

C. Reliability

Cronbach's Alpha was computed from the pilot study data to assess internal consistency.

The computed value of $\alpha = 0.891$ indicates satisfactory and high internal consistency, confirming the tool's reliability for administration to the full sample.

X. DATA ANALYSIS

A. Descriptive Analysis

Descriptive statistics were computed for the responses of each group across the four technology parameters (Usefulness, Ease of Use, Attitude, and Behavioural Intention). The measures calculated include the Mean, Median, Mode, Standard Deviation (SD), Skewness, Kurtosis, Variance, and percentage of positive responses. A mean score above 2 (the midpoint of the 4-point scale) is interpreted as indicating a positive opinion.

TABLE II
DESCRIPTIVE STATISTICS: OVERALL TECHNOLOGY OPINION BY GROUPS

Group	N	Mean	Median	Mode	SD	Skewness	Kurtosis	Variance
Teachers	132	3.62	3.5	3	0.58	+0.62	3.10	0.34
Non-Teaching Staff	46	3.69	3.5	3	0.63	+0.90	3.20	0.40
Principals	8	3.80	4.0	4	0.60	-1.00	3.50	0.36

As shown in Table II, the mean scores of all three respondent groups exceed 3.5 on a 4-point scale, demonstrating strongly positive opinions about using technology in school administration. The mean for teachers (M = 3.62) is slightly lower than that of non-teaching staff (M = 3.69) and principals (M = 3.80).

The low standard deviations across all groups (range: 0.58–0.63) indicate that responses are tightly clustered around the respective means, reflecting high inter-respondent consistency. Teachers and non-teaching staff show slight positive skewness (+0.62 and +0.90 respectively), indicating most scores concentrate in the higher range. Principals show negative skewness (-1.00), confirming that most principals responded with 'Strongly Agree'.

TABLE III
PARAMETER-WISE DESCRIPTIVE STATISTICS FOR ALL THREE RESPONDENT GROUPS

Respondent Group	Parameter	N	Mean	Median	Mode	SD	% Positive
Teachers	Usefulness	132	3.70	3.5	3	0.56	90%
	Ease of Use		3.55	3.5	3	0.59	85%
	Attitude		3.60	3.5	3	0.58	87%
	Behavioural Intention		3.63	3.5	3	0.57	88%
Average		132	3.62	3.5	3	0.58	88%
Non-Teaching Staff	Usefulness	46	3.75	3.5	3	0.61	92%
	Ease of Use		3.60	3.5	3	0.64	87%
	Attitude		3.65	3.5	3	0.63	88%
	Behavioural Intention		3.75	3.5	3	0.62	92%
Average		46	3.69	3.5	3	0.63	90%
Principals	Usefulness	8	3.85	4	4	0.58	95%
	Ease of Use		3.75	4	4	0.61	92%
	Attitude		3.80	4	4	0.59	93%
	Behavioural Intention		3.80	4	4	0.60	93%
Average		8	3.80	4.0	4	0.60	93%

Table III reveals that ‘Usefulness’ consistently receives the highest mean scores across all groups: teachers (M = 3.70, 90% positive), non-teaching staff (M = 3.75, 92% positive), and principals (M = 3.85, 95% positive). ‘Ease of Use’ consistently records the lowest mean scores within each group: teachers (M = 3.55, 85%), non-teaching staff (M = 3.60, 87%), and principals (M = 3.75, 92%). This pattern suggests that while stakeholders strongly value the benefits of technology, ease of use remains relatively more challenging, likely due to limited and irregular ICT training opportunities, particularly for teachers and non-teaching staff. The overall positive response percentage for all three groups combined is 90%, affirming a broadly favourable opinion.

B. Inferential Analysis: Hypothesis Testing (H_{01} to H_{03}) — Wilcoxon Signed-Rank Test

Since the sampling was purposeful (non-probability), the data from the OPT Scale is ordinal (Likert), the principal sample is very small (N = 8), and the distribution of principals’ data is not symmetrical, hence non-parametric tests were applied for all three groups for consistency. A positive opinion on a 4-point scale is defined as a score greater than 2. Therefore, the null hypotheses assume a hypothesised median of 2.5. The Wilcoxon Signed-Rank Test was used to test H_{01} to H_{03} at $\alpha = 0.05$ (one-tailed).

TABLE IV
WILCOXON SIGNED-RANK TEST RESULTS FOR H_{01} TO H_{03}

Group	Hyp. Median	T ⁺	T ⁻	T	Z_{mal}	$Z_{0.05}$	p-value	Decision
Teachers	2.5	172	-20	20	+9.68	1.65	$p < 0.001$	Reject H_{01}
Non-Teaching Staff	2.5	54	-10	10	+5.31	1.65	$p < 0.001$	Reject H_{02}
Principals	2.5	12	-1	1	—	$T_{\text{critical}} = 4$	—	Reject H_{03}

The Wilcoxon Signed-Rank Test results presented in Table IV indicate the following:

H₀₁ (Teachers): $Z_{\text{mal}} = +9.68$ exceeds the critical value $Z_{0.05} = 1.65$ (one-tailed), with $p < 0.001$. The null hypothesis is rejected. Teachers from private English medium secondary schools of the tribal-dominated Palghar District have a significantly positive opinion about the effectiveness of using technology in school administration.

H₀₂ (Non-Teaching Staff): $Z_{\text{mal}} = +5.31$ exceeds the critical value $Z_{0.05} = 1.65$ (one-tailed), with $p < 0.001$. The null hypothesis is rejected. Non-teaching staff from private English medium secondary schools of the tribal-dominated Palghar District have a significantly positive opinion about the effectiveness of using technology in school administration.

H₀₃ (Principals): $N = 8$ (small sample); exact critical value $T_{\text{rit}}^c = 4$ (one-tailed, $\alpha = 0.05$) is used. $T = 1 < T_{\text{rit}}^c = 4$. The null hypothesis is rejected. Principals from private English medium secondary schools of the tribal-dominated Palghar District have a significantly positive opinion about the effectiveness of using technology in school administration.

C. Inferential Analysis: Hypothesis Testing (H₀₄) — Kruskal-Wallis Test

To test whether significant differences exist among the three respondent groups, the Kruskal-Wallis Test was applied at $\alpha = 0.05$.

TABLE V
KRUSKAL-WALLIS TEST RESULTS FOR H₀₄

Group	N	Sum of Ranks	Mean Rank	df	H	χ^2	p-value	Decision
Teachers	132	12,554	95	2	1.50	5.99	0.47	Accept H ₀₄
Non-Teaching Staff	46	3,957	86					
Principals	8	881	110					

As presented in Table V, the computed H value (1.50) is less than the critical χ^2 value (5.99, $df = 2$, $\alpha = 0.05$). The p-value (0.47) is greater than 0.05. Therefore, the null hypothesis H₀₄ is accepted. There is no significant difference in the opinion of teachers, non-teaching staff, and principals on the effect of using technology in school administration. The effect size ($\eta^2 = 0$) is negligible, confirming that inter-group differences are minimal and practically meaningless. Post-hoc comparisons were therefore not required.

The mean ranks show teachers at 95, non-teaching staff at 86, and principals at 110. Although principals record the highest mean rank, this difference is statistically non-significant, suggesting that the broadly positive opinion about technology in school administration is shared uniformly across all three stakeholder groups.

XI. CONCLUSION

This study shows that the opinion of teachers, non-teaching staff, and principals from private English medium secondary schools of the tribal-dominated Palghar District hold a significantly positive opinion about using technology in school administration.

All three null hypotheses regarding the individual groups (H₀₁, H₀₂, H₀₃) were rejected at $p < 0.001$, confirming that each group's positive opinion is statistically significant beyond mere chance. The fourth hypothesis (H₀₄), which proposed no significant difference among the three groups, was accepted ($H = 1.50$, $p = 0.47$), establishing that the positive perception of technology is uniformly held across all stakeholder groups.

Across all groups and all four parameters, 'Usefulness' consistently received the highest mean scores, while 'Ease of Use' recorded comparatively lower scores, pointing to a critical area for training. The overall positive response rate of 90% across 186 respondents is an indication of the readiness of school stakeholders in Palghar District to embrace technology in administrative functions.

These findings align with the broader literature (Banu, 2023; Orhani et al., 2024; Ruel & Bauyot, 2025; Adhikari et al., 2024), which consistently affirms that technology enhances administrative efficiency, data management, and stakeholder communication in schools. The lower ease-of-use scores in this study corroborate findings by Balikci (2025) and Oznacar and Dericioglu (2017), who identified limited ICT training and infrastructure as barriers to proficient use of technology in school administration.

The study recommends that school managements in tribal regions invest in regular ICT training programs for teachers and non-teaching staff. Government bodies should strengthen ICT infrastructure, especially in under-served talukas such as Mokhada and Jawhar, to reduce the digital divide within the district. Future research may extend this study to government and aided schools, include student and parent perspectives.

REFERENCES

- [1] Adhikari, N., Pant, M., Shrestha, B., & Aryal, A. (2024). Management information systems' role and effects on school administration: A review. *Journal of Educational Technology & Administration*, 12(1), 45–62.
- [2] Annual Status of Education Report (ASER). (2024). ASER 2024: Beyond basics. ASER Centre. <https://asercentre.org>
- [3] Anisyah, N., Hidayat, R., & Fauzan, A. (2025). The role of information technology in enhancing the effectiveness of education management in schools. *Journal of Educational Administration and Policy*, 8(2), 112–128.
- [4] Balikci, A. (2025). A qualitative research on school administration interaction with technology. *International Journal of Educational Management*, 39(1), 78–94.
- [5] Balcita, R. E., & Palaoag, T. D. (2020). Integration of school management systems using a centralized database (ISMCD). *International Journal of Advanced Computer Science and Applications*, 11(5), 301–309.
- [6] Banu, A. (2023). The impact of technology integration in educational management and administration. *Indian Journal of Applied Research*, 13(4), 55–61.
- [7] Chika, N., & Wale, R. I. (2020). Influence of information and communication technology in secondary school administration in Abia State. *Journal of Education and Practice*, 11(18), 66–74.
- [8] Chhawware, T. (2024). Enhancing educational administration efficiency: A study on the implementation of digital solutions for school setup and timetable management. *International Journal of Innovative Research in Education*, 11(2), 88–101.
- [9] Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
- [10] Dexter, E. (2023). The impact of technology integration on educational leadership practices and school improvement efforts. *Journal of Educational Leadership*, 19(1), 33–48.
- [11] Dlamini, R. (2020). Digital technology as a strategic enabling tool for administration and management of schools. *South African Journal of Education*, 40(2), 1–12.
- [12] Gebremeskel, Y. (2020). School management in the midst of educational technology advancement. *African Educational Research Journal*, 8(1), 29–37.
- [13] Ghosh, S. (2023). Integration of technology in education in NEP-2020. *Journal of Emerging Technologies and Innovative Research*, 10(6), 245–252.
- [14] Hutami, S. (2024). Utilizing technology and artificial intelligence in educational administration to enhance school performance at junior high school. *Indonesian Journal of Educational Management*, 15(1), 77–90.
- [15] Kapur, R. (2019). Use of technology in school governance and administration. *International Journal of Information and Education Technology*, 9(3), 218–223.
- [16] Kochhar, S. K. (2008). Secondary school administration and supervision. Sterling Publishers.
- [17] Meraj, Q., & Doorwar, V. (2019). Impact of technology on government higher secondary school administration. *Proceedings of the National Conference on Management, IT and Social Sciences*, Gwalior, 2019.
- [18] Ministry of Education. (2020). National Education Policy 2020. Government of India. <https://www.education.gov.in>
- [19] Mwambo, L. (2019). The impact of principals' use of information and communication technologies (ICT) in effective administration in public secondary schools in Fako Division. *Journal of Education and Practice*, 10(30), 55–62.
- [20] Nishanth, K., Deepak, R., & Srinivasan, P. (2023). A state-of-the-art review on implementation of ERP in the educational sector. *International Journal of Engineering and Management Research*, 13(2), 88–95.
- [21] Orhani, S., Bekteshi, L., & Zeqiri, M. (2024). Benefits of information and communication technology (ICT) in the successful management of schools in the world: Increasing the efficiency and quality education. *Journal of Educational Technology Systems*, 52(3), 345–368.
- [22] Oznacar, B., & Dericioglu, S. (2017). The role of school administrators in the use of technology. *Eurasia Journal of Mathematics, Science and Technology Education*, 13(6), 1979–1989.
- [23] Raut, G. (2023). Analytical study of tribal ashram schools of Palghar District (Doctoral Thesis), Life Long Learning and Extension Department, University of Mumbai.
- [24] Ruel, R., & Bauyot, M. (2025). The role of innovative technologies in transforming school management practices: A mixed-method explanatory study. *Asian Journal of Education and Social Studies*, 46(2), 1–18.
- [25] Salee, A., & Sanitlou, N. (2024). The use of information technology for school administration under Sarasas affiliated area 3 schools. *Journal of Educational Management*, 18(1), 55–69.
- [26] Shah, M. (2014). Impact of management information systems (MIS) on school administration: What the literature says. *Procedia – Social and Behavioral Sciences*, 116, 2799–2804. <https://doi.org/10.1016/j.sbspro.2014.01.659>
- [27] Sindhu, I. S. (2012). Educational administration and management. Dorling Kindersley (India) Private Limited.
- [28] UDISE+. (2024–25). School infrastructure taluka-wise, Palghar District. Unified Digital Information on School Education Plus, Ministry of Education, Government of India. <https://kys.udiseplus.gov.in>
- [29] Ukozor, C. U., Agbo, R. C., & Inyaka, G. A. (2024). Basic education management and education management information system in Nigeria. *Journal of Educational Research and Reviews*, 12(4), 101–115.
- [30] Verma, S. (2022). Role of management information systems in the education sector. *Journal of Positive School Psychology*, 6(3), 8748–8755.