

Exploring Tech Adoption and Resistance to New Systems at St. Michael's College, Iligan City

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ABSTRACT: This study explores the level of technological adoption and resistance among personnel of St. Michael's College of Iligan, Inc. (SMCII) following the implementation of a School Management System (SMS). Utilizing a descriptive – correlation research design, the study employed the established models such as Technology Acceptance Model (TAM), Diffusion of Innovations (DOI), and Theory of Planned Behavior (TPB) to examine factors underlying user acceptance and resistance. Results revealed an overall high level of technological adoption particularly in perceived usefulness and behavioral intention to continue use of the School Management System (SMS). Also, a low level of resistance on technological anxiety and fear of change. Significant results were found across demographic category indicating resistance inversely correlated to perceived ease of use, compatibility with work practices and perceived system value. This study emphasizes the relevance of the context, that is, awareness of training and sustaining organizational support ensuring inclusive and successful digitalization of St. Michael's College of Iligan, Inc.

KEYWORDS: technology adoption, resistance to change, school management system, educational technology

I. INTRODUCTION

Artificial Intelligence (AI) represents an expeditiously advancing sector within the field of computer science, dedicated to the development of intelligent systems capable of executing tasks traditionally associated with human cognition. The proliferation of AI technologies is increasingly evident across various domains, including healthcare, finance, and transportation. The potential for AI to enhance efficiency, accuracy, and decision-making processes holds the promise of fundamentally altering numerous sectors. AI systems engage in continuous learning and refinement through sophisticated machine learning algorithms. These algorithms empower machines to analyze extensive datasets, uncovering patterns and insights that elude human detection. Such advancements have significantly propelled the fields of natural language processing, computer vision, and speech recognition. Nevertheless, the implementation of AI raises concerns regarding potential job displacement and biases in decision-making frameworks. Consequently, it is imperative that ethical considerations are integrated into AI research and development endeavors. While AI possesses the capability to enhance societal welfare and improve individual quality of life, its application must be governed by ethical standards.

However, the successful implementation of technology is contingent not solely upon the design of the system but is equally influenced by human factors — specifically, the preparedness and willingness of personnel to accept change. Resistance may stem from a lack of familiarity, perceived intricacy, apprehensions regarding workload, or even discrepancies with the cultural values of the institution. Empirical studies indicate that the acknowledgment and consideration of cultural and organizational dynamics are paramount in facilitating sustainable digital adoption (Ranchhod & Munemo, 2023).

Consequently, this study aims to evaluate the degree of technological adoption and resistance among SMCII personnel concerning the recently introduced School Management System (SMS). In addition to quantifying acceptance rates, the research delved into underlying attitudes and perceptions to ascertain whether and where cultural adaptation or bespoke support programs are warranted.

II. THEORETICAL AND EMPIRICAL BACKGROUND

The incorporation of novel digital systems at St. Michael's College of Iligan, Inc. (SMCII)—encompassing enrollment, grading, assessment, educator evaluation, and attendance surveillance—demands an in-depth comprehension of the determinants affecting technology acceptance and resistance among its staff. In pursuit of this objective, four interconnected theoretical frameworks offer a robust analytical structure: the Technology Acceptance Model (TAM), the augmented TAM models (TAM2 and TAM3), the Diffusion of Innovations (DOI) Theory, and the Theory of Planned Behavior (TPB).

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Technology Acceptance Model (TAM, TAM2, and TAM3)

Originally conceptualized by Davis (1989), the Technology Acceptance Model (TAM) posits that two fundamental components—perceived usefulness and perceived ease of use—constitute pivotal determinants of an individual's intention to embrace a specific technological innovation. Subsequent extensions, including TAM2 (Venkatesh & Davis, 2000) and TAM3 (Venkatesh & Bala, 2008), have augmented the model by incorporating additional variables such as subjective norms, job relevance, output quality, computer self-efficacy, and computer anxiety. These advancements have rendered the model more applicable within organizational contexts, where both social influences and individual variances significantly impact technology adoption. For instance, Setälä et al. (2025) identified that compatibility—the extent to which a technology corresponds with users' existing practices and values—exerts a substantial influence on the perceived usefulness of generative AI tools in mathematics education. This underscores the significance of contextual alignment in promoting adoption. In TAM3, perceived ease of use is influenced by personal characteristics such as computer anxiety and playfulness, rendering these constructs particularly salient in digital transformation environments like SMCII. Consequently, it is imperative to ensure that the newly implemented SMS—School Management Systems—aligns with the institution's educational pedagogy and integrates seamlessly with users' established workflows, as this is essential for fostering user acceptance and achieving successful implementation.

Diffusion of Innovations (DOI) Theory

The DOI theory basically explains how, why, and at what rate new ideas and technologies spread within a social system. According to the theory, adopters can be classified into the following segments: innovators, early adopters, early majority, late majority, and laggards—each having distinct characteristics that influence their adoption behavior. Phillips (2025) recently studied that AI is being adopted by higher educational institutions very fast and was also seen spreading among other social dynamics and networks as influencing adoption decisions. At SMCII, understanding the categories of such adopters will help on the implementation strategy tailoring such that there are already support mechanisms in place for each group to see the diffusion of new digital systems. Besides, some of the DOI constructs like compatibility and perceived complexity were brought into this study, to ascertain how the newly installed systems associate with existing work practice and how difficult such systems were perceived as being by users.

Theory of Planned Behavior (TPB)

According to Ajzen (1991), behavioral intention is influenced by attitude toward the behavior, subjective norm, and perceived behavioral control. By influencing adoption intention, these three factors have become critical to understanding adoption in education technology settings. Ivanov et al. (2024) validated attitudes, subjective norms, and perceived behavioral control as significant predictors influencing the adoption of generative AI tools in higher education settings. This implies that for SMCII, creating a climate of support where faculty and staff can actually believe in their ability to use a new system, while looking at social influences and attitudes, can be important for intensifying adoption.

Resistance to Change Frameworks

Reducing Resistance to Change: This study intersects the resistance theory to change, carrying psychological and organizational factors that would hinder the adoption, with the study of barriers to technology adoption. Constructs such as technological anxiety, fear of job displacement, and perceived complexity, although somewhat incorporated within TAM3 and DOI, are more widely reflected through organizational change literature. According to Erumban and de Jong (2021), research findings contingent to change, in particular job security, are believed to influence much the inhibitive effect toward digitalization in establishments. It succinctly argues for adoption inhibitors and enablers.

Empirical studies have highlighted numerous complex dimensions regarding technology adoption within educational contexts. The meta-analytic study by Misirlis and Munawar (2023) demonstrated that self-efficacy together with subjective norms had significant impacts on both attitude and perceived usefulness which then led to the intention to utilize educational technologies. Granić (2022) argued that understanding the multifaceted elements influencing technology adoption requires the integration of several theoretical frameworks.

In the local context, this shift towards digital brought to the fore the opportunities and hurdles of marrying technology and education amid the pandemic. Research has attributed shortcomings, such as digital literacy lag, infrastructure deficiencies and resistance to change, as major obstacles to technology uptake. Tayao and Santos (2023) noted that perceived organisational support and user anxiety are essential predictors affecting the faculty members' acceptance of LMS technology in provincial colleges. Solving these difficulties will demand an intimate knowledge of the local context. By working with the TAM, TAM2, TAM, DOI, and TPB models, and applying theories of organizational resistance, this study proposes the analysis of the influencing elements for the acceptance and resistance to new digital systems within SMCII. The results will be used to develop targeted interventions and support tools that work to facilitate the successful adoption of technology within the academic and administrative systems of the institution.

III. OBJECTIVE OF THE STUDY

The implementation of a SMS - School Management System at St. Michael's College of Iligan City, Inc. (SMCII) represents a major step toward streamlining academic operations. This system spans critical functions such as enrollment, grading, assessments, grade evaluations, teacher evaluations, and attendance monitoring. However, the success of these digital initiatives is significantly influenced by the level of technological adoption and resistance among SMCII personnel. This study aims to assess not only the level of technical adoption but also the level of resistance on the implemented new systems.

Specifically, the study seeks to answer the following research questions:

1. What is the demographic profile of the respondents in terms of age, sex, designation, and length of service?
2. What is the respondents perceived level of technological adoption related to the new School Management System in terms of perceived usefulness, perceived ease of use, compatibility with existing work practices, organizational support, and behavioral intention to continue using practices?
3. What is the respondents' perceived level of resistance to the new digital systems in terms of technological anxiety, fear of change & job security threats, and perceived complexity?
4. Is there a significant difference in the respondents' level of technological adoption and resistance when grouped according to demographic profiles?
5. What is the relationship between the respondents' level of technological adoption factors and their resistance behaviors?

III. METHODOLOGY

This study employs a descriptive – correlational research design, wherein gathering of data through cross – sectional survey from non – teaching, teaching and administrations of St. Michael's College of Iligan, Inc. (SMCII). This research design allows the identification of patterns, relationships and significant differences on technological adoption and resistance in the full digitalization of some SMCII processes. This research provides immediate, actionable insights for institutional improvement supporting SMCII's goal of fostering a responsive and innovative innovations in the academic community aligned with the Ignacian Marian Education.

Data collection involved a structured, self-administered questionnaire specifically adapted to SMCII's newly deployed School Management System (SMS).

The questionnaire consists of three main parts namely, demographic profile, Technological Adoption Assessment (TAM, TAM2 and TAM 3), and Technological Adoption Assessment. The target population consists of all full-time and part-time faculty members, administrative staff, and non – teaching personnel. Stratified random sampling was utilized ensure fair representation across different departments and designations for teaching and non-teaching personnel.

Data analysis of data was done from descriptive to inferential analysis of data. Descriptive statistics was utilized to answer research problem one (1) to three (3), Mann – Whitney U Test and Kruskal – Wallis H Test research problem (4) and Spearman Rho Correlation in research problem five (5). This detailed analysis will support evidence-based recommendations for SMCII's SMS – School Management System

Ethical Considerations

This study upholds the ethical standards in protecting welfare and ensuring data integrity. Informed consent was given to with clarity and accessibility that accommodates different level of digital literacy ensuring that respondents completely understand the researches' purpose, procedures and rights. Anonymity and confidentiality were strictly maintained with all responses anonymized and results reported in aggregate form. Participation was voluntary and withdrawal was without repercussions. Before data collection was done, research protocol adheres to review and approval by SMCII's ethical review. Findings of the study will be shared transparently to SMCII community, to continuously improve the existing SMS supporting the institutions learning while preserving respondents' dignity in full alignment with Institutions' core values of Faith, Excellence and Service.

IV. RESULTS AND DISCUSSION

This section presents the demographic profile of the respondents involved in the study titled “Exploring Tech Adoption and Resistance to New Systems at St. Michael's College, Iligan City.” The data helped the researchers see what kinds of users interacted with the School Management System (SMS), which provided context for understanding how people adopt or resist the new technology.

Table 1.: Distribution of Respondents' Demographic Profile

Profile	Frequency	Percent
Age Interval	20 – 29 years old	24
	30 – 39 years old	21
	40 – 49 years old	11
	50 – 59 years old	10
		14.3

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	60 years old and above	4	5.7
Sex	Female	46	65.7
	Male	24	34.3
Designation	Administrator	16	22.9
	Faculty	30	42.9
	NTP (Non-teaching Personnel)	24	34.3
Department	Basic Education	17	24.3
	Higher Education	53	75.7
Length of Service	Less than 5 years	33	47.1
	5 – 9 years	18	25.7
	10 – 19 years	10	14.3
	20 years and above	9	12.9

Most respondents were aged 20–29 years old (34.3%) and 30–39 years old (30.0%), meaning more than half of the group were young adults. This shows that the college's workforce has many younger members who may be more familiar with digital tools. These people are often more open to new technology because they may have used similar systems before. More than half of the participants were female (65.7%). This might reflect a general pattern in education, where more women are present in teaching and administrative roles. Since women make up a larger portion of the staff, how they respond to technology affects the college's overall adoption rate. Moreover, faculty members (42.9%) made up the largest group of respondents, followed by non-teaching personnel (34.3%), and administrators (22.9%). This shows that those who teach are the most involved with the system. They likely use it for grading, checking attendance, and submitting evaluations—so their feedback is important when deciding what works and what does not. A large part of the group (75.7%) came from Higher Education, with just 24.3% from Basic Education. This result may reflect the focus of the new digital system, which might be used more often or tested first in the college department. It also means that insights from the Basic Education department level may be limited unless more people from that group are involved in future assessments. In terms of length of service, almost half the respondents (47.1%) had been with the school for less than 5 years.

This supports the idea that newer employees are more present during this digital shift. They may find it easier to learn and accept the new system because they are not yet used to the older, manual ways of working. The findings suggest that the school has a young and newly hired group of workers. This can be a good thing when it comes to using new technology, since they are more likely to try it out and keep using it. However, there is also a smaller group of older or longer-serving staff who may need extra support. These individuals may feel more anxious about switching to a new system or may find it harder to change routines they've followed for many years. These insights help the school understand where to provide more training or assistance. For example, the basic education department personnel with longer service years might need more attention to make sure the technology works for everyone. The demographic profile shows the starting point for building better programs that support the smooth use of the SMS for all personnel.

Table 2.: Level of Technological Adoption of the Respondent

Dimensions	Min	Max	Mean	SD	Qualitative Interpretation
Perceived Usefulness	1.00	5.00	4.24	1.152	Very High
Perceived Ease of Use	1.00	5.00	4.00	.992	High
Compatibility with Existing Work Practices	1.00	5.00	4.04	1.032	High
Organizational Support	1.00	5.00	4.02	1.002	High
Behavioral Intention to Continue using the System	1.00	5.00	4.15	1.027	High
Total Mean (Technological Adoption)	1.00	5.00	4.09	.982	High

The results in Table 2 show that the respondents had a “High” overall level of technological adoption for the new School Management System (SMS), with a total mean of 4.09. This suggests that the users are mostly positive toward the system and are likely to keep using it. The highest-rated factor was Perceived Usefulness, which got a mean score of 4.24. This falls under the “Very High” category. This means that many of the respondents believe that the system helps them do their tasks better and more

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efficiently. When people find a system useful, they are more willing to adopt it fully. The Behavioral Intention to Continue Using the System also received a high score (4.15). This means users plan to keep using the SMS and likely see it as part of their regular work routine now. High behavioral intention is a good sign that adoption will continue and grow stronger over time. Other factors such as Perceived Ease of Use (4.00), Compatibility with Work Practices (4.04), and Organizational Support (4.02) were also rated High.

This shows that the system fits well into existing workflows, is not too difficult to use, and has support from the school administration. These are important areas for making sure the system is not only accepted but used effectively. The consistency of scores across all dimensions shows that respondents found the new system practical and well-integrated. It works with their current tasks, and they feel that help is available if needed. These factors work together to reduce resistance and promote stronger adoption. Thus, the findings show that users have accepted the SMS positively. The system is viewed as helpful, easy to work with, and well supported. These strengths build a solid base for the school's digital transformation efforts. However, the standard deviations (close to 1.0) show there is still some variation in responses. This means that while many are happy with the system, a few may still need extra help or training to fully adjust.

Table 3.: Level of Resistance of the Respondent

Dimensions	Min	Max	Mean	SD	Qualitative Interpretation
Technological Anxiety	1.00	5.00	2.66	.954	Low
Fear of Change and Job Security Threats	1.00	5.00	2.26	1.015	Low
Perceived Complexity	1.00	5.00	2.40	.954	Low
Total Mean (Resistance)	1.00	5.00	2.44	.912	Low

The results in Table 3 show that overall resistance to the SMS – School Management System of SMCII is low, with a total mean score of 2.44. This is a good sign—it means that most personnel are not against the changes and are generally open to using the new School Management System (SMS). Among the three areas of resistance, the Fear of Change and Job Security Threats had the lowest score (2.26). This suggests that staff members don't feel threatened by the system and likely understand that it is meant to help, not replace them. The score for Perceived Complexity was also low (2.40), meaning users do not find the system too hard to use. This matches the earlier result where people said the system was easy to understand and fit well with their work routines. The highest score among the resistance factors was for Technological Anxiety (2.66), but it still remained in the "Low" range. Some nervousness is expected when learning something new, especially for those who may not be as tech-savvy, but the overall response shows growing comfort and confidence.

These results suggest that the roll-out of the system was handled in a supportive way. The school may have helped ease fears through training, guidance, and good communication. With low resistance and positive adoption levels, it's clear that the personnel are adjusting well and ready to keep using the system. This kind of smooth transition sets a strong foundation for future digital improvements at the college.

Table 4.: Results on the Analysis of the Respondent Level of Technological Adoption and Resistance when Classified According to their Profile

DV	Profile	Mean	DE	Statistical Value	P – value
Perceived Ease of Use	Female	3.78		372.00	.024*
	Male	4.42			
Fear of Change and Job Security Threats	Administrator	1.79		7.12	.028*
	Faculty	2.31			
	NTP (Non-teaching Personnel)	2.51			

*Significant at 0.05 level

The results in the table show that there is a statistically significant difference in two specific variables when respondents are grouped according to their demographic profiles: Perceived Ease of Use by sex and Fear of Change and Job Security Threats by job designation. These findings provide insight into how different groups experience and respond to the implementation of the School Management System (SMS) at SMCII.

For Perceived Ease of Use, males reported a significantly higher mean score (4.42) compared to females (3.78), with a p-value of 0.024, indicating that this difference is statistically significant. This suggests that male respondents found the system easier

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to use than their female counterparts. This difference may be due to varying levels of digital confidence or prior exposure to similar systems, highlighting the need to provide more inclusive and accessible training sessions, especially geared toward enhancing digital ease among female staff.

In terms of Fear of Change and Job Security Threats, the results show a significant difference across job roles, with Non-teaching Personnel (NTPs) showing the highest level of concern (mean = 2.51), followed by Faculty (2.31), and Administrators with the lowest (1.79). The p-value of 0.028 confirms that this difference is statistically meaningful. This indicates that NTPs may feel more vulnerable or uncertain about how the new system could impact their roles. These concerns could stem from a lack of role-specific training or communication about how the system supports—rather than replaces—their responsibilities. The college may consider targeted reassurance, transparent messaging, and continuous support to help alleviate these concerns and promote equal confidence in the digital transformation process.

Table 5.: Relationship Between Respondents' Level of Technological Adoption and Resistance

Variables		Correlation Coefficient	p-value
Technological Anxiety	Perceived Usefulness	-.073	.548
	Perceived Ease of Use	-.154	.203
	Compatibility with Existing Work Practices	-.078	.521
	Organizational Support	.037	.764
	Behavioral Intention to Continue using the System	-.151	.211
Fear of Change and Job Security Threats	Perceived Usefulness	-.281	.019*
	Perceived Ease of Use	-.355	.003**
	Compatibility with Existing Work Practices	-.309	.009**
	Organizational Support	-.217	.072
	Behavioral Intention to Continue using the System	-.367	.002**
Perceived Complexity	Perceived Usefulness	-.213	.077
	Perceived Ease of Use	-.359	.002**
	Compatibility with Existing Work Practices	-.250	.037*
	Organizational Support	-.148	.221
	Behavioral Intention to Continue using the System	-.292	.014*
Technological Adoption	Resistance	-.274	.022*

*Significant at 0.05 level

**Significant at 0.01 level

Table 5 shows the relationship between the respondents' technological adoption and its' resistance behavior. Utilizing Spearman Rho correlation, results revealed that higher adoption tendencies were related to lower resistance behavior. The findings show that technological anxiety does not significantly correlate with any of the technological adoption dimensions. This implies that feelings of anxiety do not appear to directly related to perceived usefulness, ease of use, support pr behavioral intention. Thus, personnel may adopt the system but they still experience frequent uncertainty or anxiousness independently of those positive views. Conversely, fear of change and job security threats shows significant negative correlations with nearly all technological adoption dimensions. It can be noted that, a strong association between perceived ease of use ($r=-.355, p=.003$) behavioral intention to continue using the system($r=-.367, p=.002$) and compatibility with existing work practices ($r=-.309, p=.009$). The inverse direction of association connotes negative correlation indicates that as users' perception of the system as easier to use, its compatibility to work, and the intention to keep using the system, the fear of change and job security decreases. Implying that, a more comfortable and beneficial school management system seems likely to less feeling of anxiety in replacing or disrupting their roles.

Moreover, perceived complexity also reveals a few important significant relationships. That is perceived ease of use ($r=-.359, p=.002$), compatibility with work practices $r=-.250, p=.037$) and behavioral intention to continue using the system ($r=-.292, p=.014$). This findings implies that a user find the system easy of use and well – matched to their respective task, the less likely to see its complication. With that, lower complexity is related to higher level of technology acceptance.

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Overall, the findings revealed a moderate negative correlation between technological adoption and resistance ($r = -0.274, p = .022$), implying that as users' acceptance and positive experience with the system increase, their resistance decreases. Noting that when the system is perceived as useful, easy to use, and aligned with daily tasks, users are less likely to feel anxious or threatened by the change. These highlighted the significance of focusing on user-centered design and implementation—where simplifying the interface, ensuring workflow compatibility, and reinforcing continued usage can effectively minimize resistance. Such insights are vital for guiding inclusive and sustainable digitalization at St. Michael's College of Iligan, Inc.

VI. CONCLUSION

Based on the results of this study, it is evident that the digital transformation through the School Management System (SMS) at St. Michael's College has been met with generally positive reception across all demographic groups. Respondents demonstrated a high level of technological adoption, especially in terms of perceived usefulness, ease of use, and behavioral intention to continue using the system. At the same time, the overall level of resistance was low, with minimal concerns around technological anxiety, fear of job loss, or system complexity. These findings reflect an effective system roll-out that was well-aligned with the workflows and expectations of the college's personnel, indicating a supportive institutional environment and growing user confidence.

However, the study also highlighted areas that require further attention. While adoption was evenly distributed, a statistically significant difference in resistance was found among job roles, particularly among non-teaching personnel who exhibited higher levels of hesitation. Additionally, correlation results showed that resistance behaviors were closely linked to perceived ease of use, system compatibility, and intention to continue use. This suggests that sustained digital integration depends not only on the technology itself but on tailored support strategies that address varying levels of experience, access, and job relevance. Therefore, to ensure a fully inclusive digital shift, the college must continue strengthening training programs, promoting user-friendly design, and offering targeted assistance—especially to groups with higher resistance tendencies. These steps are critical in fostering long-term success in the institution's digital transformation journey.

VII. RECOMMENDATION

Based on the findings, it is recommended that St. Michael's College continue to build on its strong foundation of technological adoption by providing ongoing training and capacity-building programs, especially for personnel who may experience greater resistance, such as non-teaching staff. Tailored workshops focusing on hands-on practice, role-specific system applications, and peer mentoring can help increase comfort and competence among users. Additionally, maintaining responsive technical support and clear communication channels will reinforce organizational support, which plays a key role in encouraging adoption and easing concerns related to complexity or change.

Furthermore, the college should consider conducting periodic evaluations of user experiences with the School Management System to identify new challenges, user feedback, and emerging needs. These assessments can guide updates to the system, ensuring it remains compatible with evolving work practices and aligned with the institution's values and goals. Promoting a culture of openness to digital innovation—through recognition of user adaptability, inclusive decision-making, and integration of technology into everyday practices—will ensure that the transition remains sustainable and continues to serve both academic and administrative functions effectively.

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