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Revisiting Technology Acceptance in School Counseling Practice: Insights from TAM Literature

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Abstract: Technology integration in school counseling has grown, yet counselors' acceptance varies across studies and remains under-synthesized. This systematic review explores technology acceptance in school counseling through the Technology Acceptance Model (TAM). Using the PRISMA framework, we analyzed 13 empirical studies published from 2016 to 2026, selected from multiple academic databases. A thematic synthesis examined counselors' views on technology, factors influencing acceptance, and implementation hurdles. Results show that counselors generally view technology favorably, mainly for administrative tasks, communication, and ensuring service continuity. Nonetheless, positive perceptions did not always lead to wider adoption, particularly in direct counseling. Influencing factors include digital skills, self-efficacy, institutional support, and ethical issues, indicating that acceptance varies by task and context. This review affirms TAM's usefulness in understanding counselors' tech acceptance and highlights how professional, institutional, and ethical factors influence implementation—explaining why positive perceptions don't always lead to sustained use.

Key Words: Technology Acceptance; School Counselling; School Counsellors; Technology Acceptance Model; Digital Counselling

INTRODUCTION

The rapid development of digital technology has brought significant changes to various aspects of education, including the practice of guidance and counselling services in schools. These changes have expanded opportunities for the development of guidance and counselling services and have encouraged counselling practices to adapt to the continually evolving social and educational dynamics (Ilfana & Herdi, 2022). In the context of school counselling, the use of technology should be viewed as part of counsellors' efforts to carry out their increasingly complex professional roles.

ASCA (2019) explains that school counselling is a comprehensive program that includes the provision of direct and indirect services to students, program management and evaluation, and the use of evaluation results to support student outcomes. In line with this, Green and Lloyd (2021) emphasise that the role of school counsellors also includes consultation with students and school personnel, as well as providing emotional support in stressful and crisis situations. These roles require counsellors to stay connected and collaborate with various parties who influence students' development, including students, teachers, school leaders, and parents (Green & Lloyd, 2021; Geesa et al., 2024; Darmiany et al., 2022). As the role of school counsellors continues to expand, digital technology is considered helpful in

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supporting their work, particularly in managing information, communicating with stakeholders, documenting services, and evaluating counselling programs more efficiently.

The need for technology integration is also influenced by changes in students' lives. According to Opsenica Kostić et al. (2022), today's students grow up in an environment where digital communication, social media, and online information are part of their everyday experiences. This affects the way students communicate, learn, and seek support (Steele et al., 2020). Moreover, many adolescent issues today are closely related to online environments, such as cyberbullying, digital self-presentation, social comparison, and social media-related distress (Abi-Jaoude et al., 2020; Azem et al., 2023; Andersen et al., 2024). Therefore, the integration of technology in school counselling is not only about the use of online media but also about counsellors' ability to understand students' digital lives. With this understanding, counsellors can provide services that are more responsive to students' academic, social, and emotional needs, as well as to their everyday communication patterns.

In counselling practice, technology can be used to support access to broader information, electronic discussion forums, counselling sessions, and the storage of research data (Oraegbunam, 2009). Therefore, technology can be applied in various forms depending on the needs and objectives of counseling services. In the administrative aspect, several studies have shown that technology can support administrative functions in school counselling. The development of web-based guidance and counselling information systems has been proven to help counsellors manage student data, document services, prepare reports, organize counselling schedules, and monitor student development in a more structured and efficient manner (Mudhokhi & Sanyata, 2026; Nuramadanti et al., 2025). This is beneficial because it supports evidence- and outcome-based accountability in school counselling and helps counsellors manage service-related information and documentation more systematically (Isrofin et al., 2024).

Alongside its administrative role, technology can also support counselling-related work by expanding access, increasing communication flexibility, and maintaining continuity of student support. Digital technology enables counsellors to provide remote counselling services, allowing support for students to no longer depend solely on face-to-face meetings. Jaber and Al-Hroub (2023) emphasise that online counselling services can expand access to support because students can receive assistance more flexibly in terms of time, place, and service method. In addition, online counselling can serve as an alternative for students who face barriers to seeking help directly, such as distance constraints, limited time, privacy concerns, or reluctance to visit the school counselling room (Glasheen et al., 2016; Pretorius et al., 2019). This flexibility is relevant not only to the relationship between counsellors and students but also to counsellors' coordination with parents, teachers, school leaders, and other relevant parties. Through digital tools, counsellors can conduct follow-ups, share relevant information, and maintain communication between counselling sessions more efficiently (Boniel-Nissim, 2026). The role of technology in counselling became increasingly important during crisis periods such as the pandemic, when counsellors needed to remain connected with students even though services had to be delivered remotely (Alexander et al., 2022; Roberts et al., 2023).

In the Technology Acceptance Model (TAM), technology acceptance is explained by two main constructs: perceived usefulness and perceived ease of use (Davis, 1989; Davis et al., 1989). In the context of school counselling, perceived usefulness refers to the belief that technology can improve work efficiency, while perceived ease of use refers to the extent to which technology can be learned, used, and integrated into counsellors' work routines without adding technical burdens, disrupting the counselling relationship, or creating ethical uncertainty. In other words, within the TAM framework, counsellors' perceptions of the usefulness and ease of use of technology form the initial foundation that shapes their attitudes and intentions to implement technology in the services they provide.

However, counsellors' perceptions of technology use are not always uniform. Technology tends to be more readily accepted when used for administrative tasks or programme management, as its benefits are more immediately visible, for example in organising services, managing information, or supporting programme planning (Mason et al., 2019). In contrast, the use of technology in direct counselling services is often considered more complex because it relates to confidentiality, student privacy, professional boundaries, and the quality of the counselling relationship. Steele et al. (2014) found that only 28% of school counsellors perceived technology as useful for supporting the core school counselling curriculum. This finding is consistent with Steele et al. (2020), who found that although

technology is increasingly used in student planning, its use in responsive services such as individual counselling, group counselling, and crisis services remains limited. Such hesitation is understandable, as counsellors need to consider ethical, legal, and professional readiness when using technology for services that involve direct counselling relationships (Glasheen et al., 2013; Steele et al., 2020).

An extended TAM perspective is therefore useful for explaining technology acceptance in school counselling more fully. The extended TAM model holds that personal and environmental factors, such as digital literacy, computer self-efficacy, digital competence, experience, training, facility conditions, institutional support, and ethical clarity, can influence how counsellors evaluate technology as useful and easy to use (Venkatesh & Davis, 2000; Venkatesh & Bala, 2008). Counsellors with stronger digital self-efficacy tend to have more positive attitudes towards online counselling because they feel more capable of managing technology-mediated interactions and services (Akgül & Ergin, 2022). In addition, e-counselling skills can support counselling self-efficacy, indicating that counsellors' confidence in digital practice is influenced by their ability to apply counselling skills in online settings (Zainudin et al., 2022). However, individual confidence does not automatically lead to meaningful and sustainable technology use. Digital competence can strengthen counsellors' intention to use technology, but this intention still needs to be supported by a clear understanding of how digital tools can be integrated into counselling tasks and services (Hasanah et al., 2024). Furthermore, training, technical guidance, and institutional support are equally important, as these factors make technology use feel more feasible, directed, and professionally manageable in counselling practice (Srijundaree et al., 2024). Thus, the gap between positive perceptions and actual technology use does not only reflect counsellors' personal readiness but also indicates the extent to which schools provide the infrastructure, ethical guidance, and professional conditions needed to support the safe, ethical, and meaningful use of technology.

Although research on technology use in school counselling has continued to grow, the literature has not yet provided a clear synthesis of technology acceptance among school counsellors. Existing studies often examine separate aspects of the issue, such as counsellors' perceptions, attitudes, readiness, intention to use technology, digital competence, or barriers to implementation. These studies are useful, but they do not fully explain how these aspects are connected. As a result, it remains unclear how perceptions of technology develop into intention, why intention does not always lead to actual use, and why technology is often accepted more readily for administrative tasks than for direct counselling services. This gap is important because technology acceptance in school counselling cannot be understood solely by asking whether counsellors view technology positively.

Addressing this gap, the present study reviews empirical studies on technology acceptance in school counselling practice from a TAM perspective. This review focuses on how school counsellors perceive technology, the factors that shape their acceptance and intention to use it, and the challenges that affect its implementation. By connecting these aspects, the review offers a more integrated explanation of technology acceptance in school counselling, particularly by showing how acceptance may differ between administrative use and direct counselling practice. It also clarifies why technology acceptance among school counsellors does not always translate into actual counselling practice. In line with this aim, the study is guided by the following research questions: (1) What are school counsellors' perceptions toward technology in school counselling practice? (2) What factors predict technology acceptance among school counsellors based on the TAM perspective? (3) What challenges are reported in the use of technology in school counselling practice?

METHOD

Review Design and Framework

This study employed a systematic literature review (SLR) to synthesise empirical studies on technology acceptance in school counselling practice from the perspective of the Technology Acceptance Model (TAM). An SLR approach was selected because existing studies on school counsellors' technology use remain fragmented across issues such as perceptions, intention to use, digital competence, and implementation barriers. Therefore, a systematic review was considered

appropriate to provide a more integrated understanding of technology acceptance in school counselling practice.

To improve transparency and consistency, this review was guided by the *Preferred Reporting Items for Systematic Reviews and Meta-Analyses* (PRISMA) framework (Page et al., 2021). In this study, PRISMA was used as an operational guide for study identification, screening, eligibility assessment, and inclusion. The framework informed the process of identifying studies from selected databases, screening titles and abstracts, assessing full-text eligibility, and documenting article inclusion through a PRISMA flow diagram. The screening and selection process was conducted by the first author using predefined eligibility criteria, and decisions regarding methodological consistency and study eligibility were discussed with the co-author during the review process to improve transparency and reduce potential bias.

Search Strategy and Data Sources

The literature search was conducted across several academic databases, including ProQuest, Emerald Insight, Taylor & Francis, SAGE Journals, ScienceDirect, and Google Scholar, to identify empirical studies on technology acceptance in school counselling practice. These databases were selected for their broad coverage of literature in education, counselling, psychology, and educational technology, which are relevant to the focus of this review. Google Scholar was also included to broaden coverage and reduce the risk of overlooking relevant studies not consistently indexed across commercial databases.

The search strategy combined keywords related to school counsellors, technology acceptance, and digital counselling using Boolean operators (*AND*, *OR*). The search terms included combinations such as: (“school counsellor” OR “school counsellors” OR “konselor sekolah”) AND (“technology acceptance” OR “technology adoption” OR “technology use” OR “digital technology” OR “ICT” OR “e-counselling” OR “online counselling”) AND (“Technology Acceptance Model” OR “TAM” OR “extended TAM” OR “perceived usefulness” OR “perceived ease of use”). Keyword combinations were adjusted to suit the indexing system and search features of each database. The review included studies published between 2016 and 2026 to capture recent developments in digital technology and technology-mediated counselling practices in schools, particularly during the period of rapid digital transformation in education. Given the broad scope of Google Scholar, additional screening was applied to improve relevance and reduce search bias. Only studies meeting the predefined eligibility criteria and directly relevant to school counsellors and technology acceptance were retained for further review.

Eligibility Criteria and Study Selection

Predefined inclusion and exclusion criteria were applied to improve consistency during study selection. Studies were included if they: (1) reported empirical or primary research findings; (2) focused on technology acceptance, technology use, perceptions, attitudes, intention to use, or factors influencing technology adoption among school counselors; (3) involved school counselors as participants; (4) reflected the Technology Acceptance Model (TAM) or extended TAM perspectives; (5) were published in journals and available in full text; and (6) were published in English or Indonesian between 2016 and 2026. Studies were excluded if they focused on non-school counsellor populations, were conceptual or non-empirical in nature, lacked sufficient relevance to technology acceptance in counselling practice, or were unavailable in full text.

Study selection followed the PRISMA stages of identification, screening, eligibility, and inclusion. During the identification stage, records retrieved from the selected databases were compiled, and duplicate articles were removed. In the screening stage, titles and abstracts were reviewed to assess relevance to the study objectives and predefined criteria. Articles passing the initial screening were subsequently assessed in full text during the eligibility stage to determine conceptual and methodological suitability. Studies that met all criteria were retained for inclusion in the final synthesis, while excluded studies were documented with the reasons for exclusion as presented in the PRISMA flow diagram. The screening and selection process was conducted by the first author. To improve

consistency and transparency, decisions related to study eligibility and methodological alignment were discussed with the co-author throughout the review process.

Data Extraction and Analysis

After retrieving studies from the selected databases, the first author conducted the study selection process using the *Preferred Reporting Items for Systematic Reviews and Meta-Analyses* (PRISMA) framework (Page et al., 2021), which comprises four stages: identification, screening, eligibility, and inclusion. A total of 3,546 records were initially identified through database searches and imported into the *Rayyan* platform to facilitate duplicate removal and screening. After title screening and duplicate removal, 946 articles proceeded to the eligibility stage following title and abstract review. At this stage, studies were excluded if they were non-empirical, involved populations outside school counsellors, or were not available in full text. The remaining articles were then assessed through full-text screening to determine their relevance and credibility. Following this process, 13 studies met all eligibility criteria and were retained for inclusion in the final review. The complete selection process is presented in Figure 1.

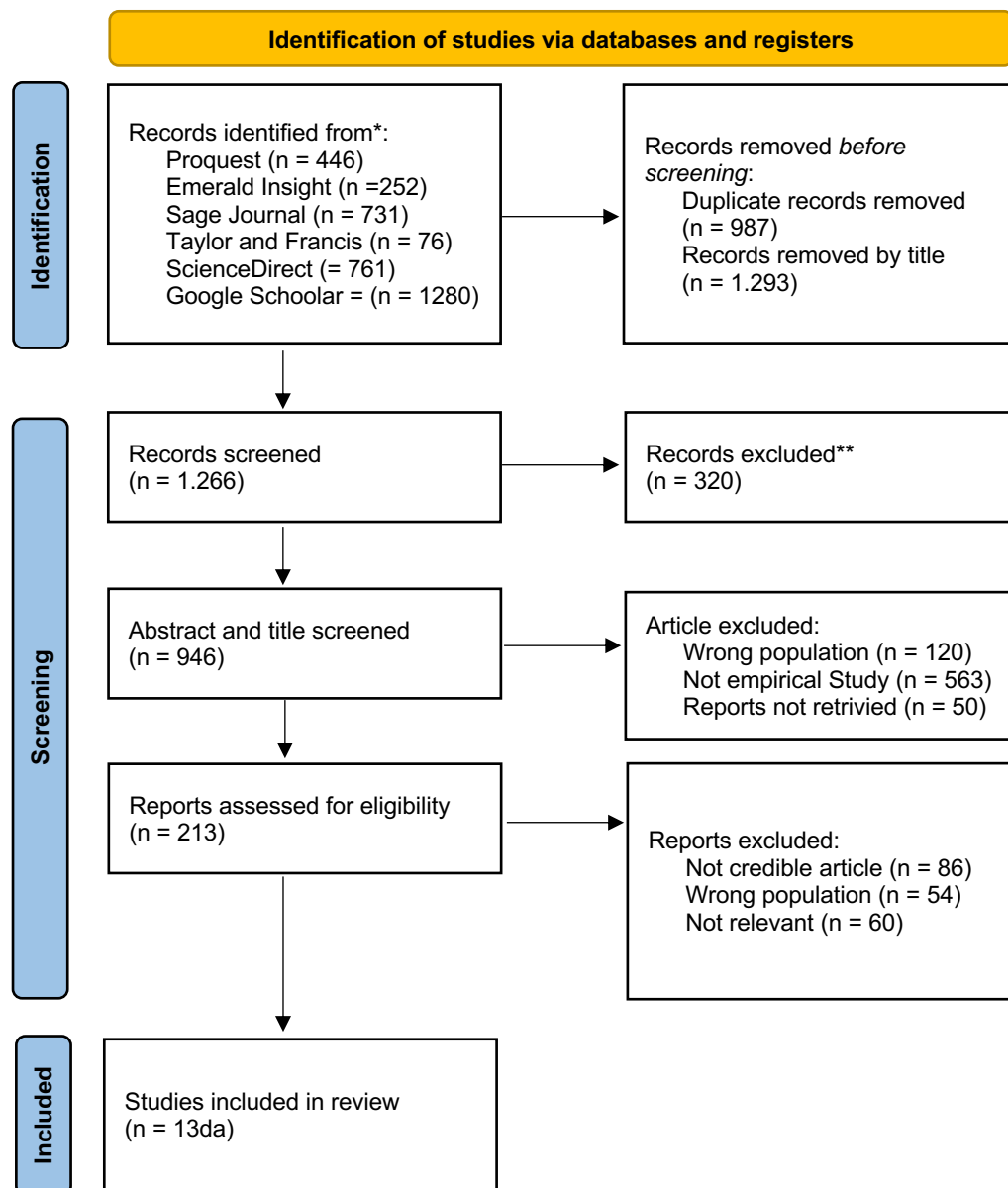


Figure 1. Flowchart PRISMA in Article Selection

The selected studies were analysed using a thematic synthesis approach to identify recurring patterns and broader interpretations across the literature (Thomas & Harden, 2008). Following guidance from Purssell and Gould (2021), the analysis was conducted in three stages. First, a narrative synthesis was used to summarise and compare key findings across studies (Boland et al., 2017). Second, thematic coding employed a hybrid deductive–inductive approach (Fereday & Muir-Cochrane, 2006). Deductive coding was guided by key TAM constructs, including *perceived usefulness*, *perceived ease of use*, attitudes, intention to use, and actual technology use (Davis, 1989; Davis et al., 1989), while inductive coding remained open to emerging themes such as self-efficacy, institutional support, and ethical concerns. Finally, codes were refined into broader themes aligned with the study objectives. The coding and analysis were conducted by the first author and discussed with the co-author to enhance analytical consistency.

RESULTS

Across the 13 reviewed studies, several recurring patterns were identified in how school counsellors accept and use technology. The synthesis was conducted using a hybrid coding approach. In the first stage, the analysis was guided by the review objectives and key concepts from the Technology Acceptance Model (TAM), particularly perceived usefulness, perceived ease of use, attitude, intention to use, and actual use. At the same time, the coding process remained open to themes that emerged from the studies themselves. This allowed the review to capture not only TAM-related patterns but also contextual issues especially relevant to school counselling, such as counsellors' self-efficacy, institutional support, ethical concerns, privacy, and the counselling relationship. The findings were then compared across studies to identify similarities, differences, and variations across contexts. Rather than presenting the results study by study, the synthesis focused on broader patterns in the literature. These patterns were organised around how counsellors perceived technology, the factors that influenced their acceptance, and the barriers that limited its use in practice.

Overall, this synthesis indicates that technology acceptance among school counsellors appears more complex than the basic TAM model suggests. Counsellors generally perceive technology as useful and easy to use, particularly when it supports administrative efficiency, communication, and access to services. However, acceptance becomes more cautious when technology is used in direct counselling practice. In this context, technology is evaluated not only on usefulness and ease of use, but also on ethical, relational, and institutional considerations, such as confidentiality, privacy, professional boundaries, counsellor readiness, and school support.

Table 1. Summary of articles included

No.	Author(s)	Sample	Findings	Relevancy to Topic
1.	Anni et al. (2018)	125 Indonesian school counselors	Perceived ease of use predicted perceived usefulness and attitudes toward ICT, while perceived usefulness influenced attitudes, which subsequently predicted intention to use technology.	Supports core TAM relationships by demonstrating the pathway between perceived ease of use, perceived usefulness, attitude, and intention to use technology among school counselors.
2.	Abdillah et al. (2020)	214 Indonesian school counselors	Counselors reported high perceived usefulness, ease of use, and self-efficacy toward ICT. Technology was mainly used for administrative purposes rather than direct counseling.	TAM perspective through self-efficacy and collegial support. Also informs functional usefulness and conditional acceptance by showing stronger technology use for administrative

No.	Author(s)	Sample	Findings	Relevancy to Topic
			Computer self-efficacy, collegial collaboration, facilities, and TAM constructs significantly predicted ICT use.	functions than direct counseling.
3.	Atmarno (2021)	50 Indonesian high school counselors	Counselors demonstrated positive perceptions and attitudes toward e-counseling, with perceptions significantly influencing attitudes and implementation potential.	Highlights perception-attitude relationship and reinforces the gap between positive perceptions and practical implementation readiness.
4.	Akgül & Ergin (2022)	149 school counselors	Digital self-efficacy was associated with more favorable attitudes toward online counseling. Counselors also reported concerns regarding privacy, communication quality, and preparedness.	This study supports extended TAM through digital self-efficacy. It also highlights relational barriers affecting acceptance in direct counseling contexts.
5.	Mason et al. (2019)	38 school counselors	Technology was underutilized and primarily used for organizational and program management tasks rather than communication or counseling interactions. Ethical concerns and limited training affected broader use.	Discusses about functional usefulness and conditional acceptance while highlighting competence and relational barriers that constrain technology integration.
6.	Deslonde & Becerra (2018)	38 school counselors	Counselors viewed technology positively for productivity and efficiency, although training, connectivity, and technological discomfort influenced actual use.	This study illustrates core TAM and demonstrates functional usefulness. It also identifies infrastructure and competence barriers affecting implementation.
7.	Golden et al. (2023)	School counselors in the United States	Confidence in using technology and prior educational exposure significantly predicted intention to use online counseling, while age and school format were not significant predictors.	Indicates extended TAM by emphasizing individual capacity (confidence/self-efficacy) and experiential background (training/exposure) as predictors of acceptance.
8.	Hasanah et al. (2024)	90 junior high school counselors	Readiness for change and digital mindset significantly influenced digital competence, which mediated intention to use technology.	Digital competence mediates acceptance, emphasizing counselors' readiness and mindset as key predictors.
9.	Lee et al. (2025)	348 Malaysian school counselors	Computer self-efficacy positively influenced attitudes toward tele-mental health, with counseling self-efficacy partially mediating this relationship.	Demonstrating how technological and counseling confidence jointly shape acceptance of technology-mediated counseling.
10.	Crandall et al. (2025)	83 K-12 School Counselors	Counselors were more likely to adopt AI-supported technology when it reduced workload,	Supports functional usefulness and core TAM assumptions by emphasizing perceived practical value and

No.	Author(s)	Sample	Findings	Relevancy to Topic
			simplified tasks, and supported decision-making.	ease in supporting counseling-related work.
11.	Ahmad et al. (2025)	148 secondary school counselors	Counselors showed readiness toward e-counseling but reported barriers including limited infrastructure, inadequate training, policy gaps, and cultural skepticism.	It illustrates the relational/service-related usefulness while identifying environmental and institutional barriers that limit implementation.
12.	Jaber & Al-Hroub (2023)	7 school counselors and 1 focus group from private schools in Lebanon	Counselors perceived virtual counseling as flexible and accessible, although privacy concerns, workplace changes, and lack of preparation constrained implementation.	Supports relational/service-related usefulness and conditional acceptance while highlighting relational and competence barriers in technology-mediated counseling.
13.	Boniell-Nissim (2026)	20 school counselors	Counselors viewed technology-mediated counseling as a complement to face-to-face counseling, supporting communication and continuity while raising concerns about ethics, confidentiality, and boundaries.	Demonstrates relational usefulness and conditional acceptance and highlights relational barriers associated with ethics, trust, and counseling boundaries.

School Counsellors' Perception of Technology Use

Across the 13 reviewed studies, school counsellors generally held positive views of technology use. However, this perception varied across areas of counselling practice. Technology was viewed more positively when it supported practical tasks that were easier to manage, such as documentation, communication, data management, and programme organisation. In contrast, counsellors were more cautious when technology was used in areas that directly affected the counselling relationship. Taken together, perceived usefulness appeared in three main ways: usefulness for functional work, usefulness for communication and service continuity, and more conditional acceptance in direct counselling practice.

At the functional level, technology was often seen as useful because it helped counsellors manage the practical demands of their role. Mason et al. (2019) found that school counsellors used technology more frequently for organisational tasks, such as storing files, managing data, sharing documents, and collaborating with colleagues. Similar patterns were reported by Abdillah et al. (2020) and Deslonde and Becerra (2018), with technology valued for supporting administrative work, student information management, academic planning, reporting, and programme accountability. Crandall et al. (2025) further suggested that technology could help counsellors simplify complex tasks and manage competing responsibilities more effectively. These findings indicate that counsellors were more likely to perceive technology as useful when its benefits were directly linked to efficiency, productivity, and workload management. However, positive perceptions did not always translate into wider use across all counselling functions. Although counsellors recognised the practical value of technology, its use remained more concentrated in programme management and organisational tasks than in direct counselling services. This pattern was especially visible in Mason et al. (2019) and Abdillah et al. (2020), which showed that technology use remained more limited in individual counselling, group counselling, and group guidance. Therefore, usefulness in this context seemed easier to accept when technology supported administrative work, while its role in direct counselling practice remained more limited.

Technology was also perceived as useful when it helped counsellors improve access, maintain communication, and continue providing support to students. For example, Jaber and Al-Hroub (2023) found that virtual counselling was seen as beneficial because it gave counsellors greater flexibility in communicating with students, especially during the pandemic. Boniel-Nissim (2026) also reported that digital tools were viewed as helpful in maintaining student engagement, building trust, and enabling communication beyond regular school hours. Similarly, Ahmad et al. (2025) showed that technology could support access to counselling services, particularly when face-to-face interaction was difficult. These findings suggest that perceived usefulness was not only related to speed or convenience. In school counselling, usefulness also involved the ability to remain responsive, maintain contact, and support continuity of care.

Even so, the reviewed studies also showed that counsellors became more cautious when technology was used in direct counselling interactions. Akgül and Ergin (2022), for instance, found that counsellors' attitudes towards online counselling were influenced by concerns about privacy, confidentiality, and competence in managing online interactions. Jaber and Al-Hroub (2023) also reported that counsellors faced challenges in maintaining student engagement, interpreting non-verbal cues, and replicating the immediacy of face-to-face counselling. Similar concerns appeared in Boniel-Nissim's (2026) study, where digital tools were seen as useful but also raised issues related to professional boundaries and confidentiality. These findings show that counsellors did not simply accept or reject technology. Their acceptance depended on whether technology could fit the ethical, relational, and professional expectations of counselling practice.

Taken together, the synthesis shows that school counsellors' perceptions of technology were generally positive but context-dependent. Technology was more readily accepted when it improved efficiency, expanded access, maintained communication, and supported service continuity. However, perceptions became more cautious when technology entered direct counselling processes that required trust, emotional sensitivity, confidentiality, and professional judgement. This suggests that perceived usefulness in school counselling is not fixed. Instead, it varies depending on the role of technology within different parts of counselling work.

Factors Predicting Technology Acceptance

Across the reviewed studies, the core constructs of TAM were consistently supported, though their influence was shaped by additional personal and contextual factors. Perceived usefulness and perceived ease of use remained important in explaining school counsellors' acceptance of technology. However, the findings also show that these constructs did not operate in isolation. Counsellors were more likely to accept technology when they had the capacity, experience, and institutional support needed to use it confidently in counselling practice. This suggests that technology acceptance among school counsellors is best understood through three connected layers: core TAM relationships, individual capacity, and contextual conditions.

The first layer concerns the core relationships within TAM. Studies that explicitly used TAM found that perceived ease of use contributed to perceived usefulness, which in turn shaped counsellors' attitudes and intentions to use technology. In other words, when counsellors perceived digital tools as manageable, they were more likely to view them as useful for counselling-related work. This pattern was evident across the reviewed studies. Anni et al. (2018) and Abdillah et al. (2020) found that perceived usefulness and perceived ease of use were associated with more positive attitudes and stronger intention to use ICT. Likewise, counsellors tended to show greater willingness to adopt technology when digital tools were perceived as practical, relevant, and supportive of counselling responsibilities (Deslonde & Becerra, 2018; Crandall et al., 2025). In school counselling contexts, technology was perceived as useful when it supported counsellors' professional tasks, such as managing workload, facilitating communication, improving service delivery, and responding to student needs.

The second layer concerns counsellors' individual capacity. Across the reviewed studies, self-efficacy, confidence, and digital competence were key factors shaping counsellors' evaluations of technology. Counsellors who felt more confident in their ability to use digital tools were more likely to view technology as easy to use and more useful for their work. For example, Golden et al. (2023) and

Lee et al. (2025) found that greater technological confidence was associated with more favourable attitudes and a greater willingness to use technology. Akgül and Ergin (2022) also showed that digital self-efficacy influenced counsellors' comfort with online counselling. These findings suggest that self-efficacy strengthens the relationship between perceived ease of use and technology acceptance. When counsellors believe they can use technology effectively, digital tools become less intimidating and more professionally meaningful.

Individual capacity was not limited to technical ability. Some studies also showed that counsellors needed to feel professionally prepared to deliver counselling through digital formats. Lee et al. (2025), for instance, found that counselling self-efficacy partly explained the relationship between technological confidence and attitudes towards tele-mental health. This means that counsellors' acceptance depended not only on whether they could operate the technology, but also on whether they felt capable of maintaining counselling quality through it. Hasanah et al. (2024) similarly showed that digital competence, openness to change, and readiness for adaptation were linked to a stronger intention to adopt technology. Therefore, individual capacity influenced TAM relationships by making perceived ease of use and perceived usefulness more concrete in practice.

The third layer concerns experiential background and the institutional environment. Training, prior exposure, and professional learning opportunities helped counsellors become more familiar with technology and reduced uncertainty about its use. Golden et al. (2023) found that counsellors with prior exposure to digital or blended learning environments were more willing to adopt technology. Ahmad et al. (2025) and Hasanah et al. (2024) likewise emphasised the importance of training and professional development in strengthening counsellors' readiness. These findings suggest that experience and training can indirectly improve technology acceptance by increasing confidence, familiarity, and perceived ease of use.

Institutional conditions also shaped whether positive perceptions translated into actual use. Supportive school environments, access to facilities, collegial collaboration, and clear organisational support made technology integration more feasible. In contrast, limited infrastructure, lack of training, insufficient support, and unclear institutional policies constrained implementation. Abdillah et al. (2020), Ahmad et al. (2025), and Mason et al. (2019) showed that technology use was affected by the availability of resources and support within the school context. These factors are important because counsellors may perceive technology as useful yet still struggle to use it consistently when facilities, guidance, or institutional support are lacking. In this sense, the institutional environment shapes the link between intention and actual use.

In general, the synthesis shows that TAM provides a useful foundation for understanding school counsellors' technology acceptance, but it should be read alongside personal and contextual factors. Perceived usefulness and perceived ease of use were consistently important, yet their effects depended on counsellors' self-efficacy, professional confidence, prior exposure, training, and institutional support. When these conditions were strong, counsellors were more likely to view technology as manageable, relevant, and appropriate for counselling practice. When these conditions were weak, positive attitudes did not always translate into sustained or broader technology use.

Challenges in the Use of Technology for School Counselors

Although school counsellors generally held positive views of technology, the reviewed studies suggest that acceptance did not always translate into sustained use. The main challenges were not isolated problems but interrelated barriers that influenced one another. Across the studies, three major challenges emerged: infrastructure and access limitations, competence and training gaps, and relational concerns in counselling practice. Among these, competence and training appeared to be the most central, as they directly shaped counsellors' confidence, readiness, and willingness to use technology. Infrastructure problems constrained what counsellors could do in practice, while relational and ethical concerns limited how far technology could be used in direct counselling.

Infrastructure and access limitations were the most visible barriers. Several studies reported problems with unstable internet connections, limited devices, inadequate facilities, and unequal access to technological support across schools (Ahmad et al., 2025; Deslonde & Becerra, 2018). Mason et al. (2019) also showed that unclear institutional direction and limited organisational support could create

uncertainty about the acceptable use of technology. These issues clearly affected implementation, as counsellors could not use technology consistently without reliable facilities and institutional support. However, infrastructure alone did not fully explain low or uneven use of technology. Some counsellors still held positive attitudes towards technology even when facilities were limited (Abdillah et al., 2020; Ahmad et al., 2025). This suggests that infrastructure was important, but it became more critical when combined with low readiness, lack of training, or weak institutional guidance.

Competence and training gaps appeared to be a deeper and more persistent challenge. Across the reviewed studies, counsellors often reported limited preparation, insufficient training, and uncertainty about how to use technology appropriately in counselling practice (Mason et al., 2019; Ahmad et al., 2025; Atmarno, 2021). These barriers affected more than technical ability. When counsellors were not trained, they were less likely to feel confident using digital tools, which could weaken their perceived ease of use. In this sense, a lack of training at the institutional level could lead to lower self-efficacy at the individual level, which in turn reduced counsellors' willingness to use technology in practice. This pattern is supported by studies showing that counsellors with higher technological confidence and digital self-efficacy tended to have more positive attitudes and greater comfort with online counselling (Akgül & Ergin, 2022; Lee et al., 2025). This relationship shows why competence and training may be more foundational than infrastructure. Even when technology is available, counsellors may hesitate to use it if they do not feel capable of managing it professionally. For school counsellors, this capability is not only about operating digital tools. It also involves knowing how to maintain counselling quality, manage ethical issues, protect confidentiality, and respond appropriately to students through digital media. Therefore, training influences technology acceptance by strengthening both perceived ease of use and perceived usefulness. When counsellors feel prepared, technology becomes easier to use and more relevant to their professional role.

Relational and ethical concerns formed another important layer of challenge, particularly in direct counselling contexts. Studies consistently reported concerns about confidentiality, privacy, professional boundaries, emotional connection, and the quality of counsellor–student interaction in online settings (Akgül & Ergin, 2022; Boniel-Nissim, 2026; Jaber & Al-Hroub, 2023). Counselors also found it difficult to interpret non-verbal cues and to maintain therapeutic closeness when counselling was mediated by technology. These concerns did not always prevent the use of technology, but they shaped its limits. Counselors were generally more comfortable using technology for administration, communication, and service continuity than for deeper counselling interactions that required emotional sensitivity and strong therapeutic rapport (Abdillah et al., 2020; Mason et al., 2019).

Overall, the challenges in technology use should be understood as a chain of interconnected barriers. Institutional limitations, particularly limited training and weak organisational support, can reduce counsellors' confidence and digital self-efficacy. Lower self-efficacy then affects whether counsellors perceive technology as easy to use and professionally useful. Infrastructure problems further restrict implementation, while ethical and relational concerns determine whether technology is considered appropriate for direct counselling practice. Therefore, the most important barrier is not simply the lack of devices or internet access, but the lack of preparation and support that enables counsellors to use technology confidently, ethically, and meaningfully.

DISCUSSION

The central insight of this review is that school counsellors' acceptance of technology is marked by a gap between generally positive perceptions and limited implementation in practice. Across the reviewed studies, counsellors often recognised the usefulness of technology for improving efficiency, communication, access, and continuity of services (Mason et al., 2019; Abdillah et al., 2020; Jaber & Al-Hroub, 2023; Boniel-Nissim, 2026). However, positive perceptions did not consistently translate into broader or sustained use, particularly in direct counselling contexts. This finding suggests that TAM remains useful for understanding technology acceptance in school counselling, yet it cannot fully explain counsellors' technology use on its own. Acceptance appears to depend not only on perceived usefulness and ease of use, but also on counsellors' readiness, institutional support, and ethical confidence in using technology professionally (Mason et al., 2019; Akgül & Ergin, 2022; Lee et al., 2025).

This review further shows that technology acceptance among school counsellors is both task-specific and context-dependent. The reviewed studies supported the relevance of TAM constructs, mainly perceived usefulness and perceived ease of use (Anni et al., 2018; Abdillah et al., 2020). Counsellors responded more positively to technology when it supported administrative work, communication, and service continuity. These findings align with TAM, which proposes that technology is more likely to be accepted when it improves performance and is easy to use (Davis, 1989). Yet usefulness in school counselling seems to carry a broader meaning. Counsellors evaluated technology not only on efficiency but also on whether it aligned with counselling goals, student needs, ethical standards, and the quality of counsellor–student relationships.

The function of technology also shaped how counsellors perceived its usefulness. Technology was generally viewed positively when used for administrative or supportive purposes, as its benefits were immediate and visible, such as organising data, documenting services, sharing information, and reducing workload (Abdillah et al., 2020; Deslonde & Becerra, 2018). In contrast, counsellors became more cautious when technology entered direct counselling practice. Rather than rejecting technology, they appeared to question whether digital platforms could support counselling without compromising confidentiality, professional boundaries, emotional responsiveness, and therapeutic connection.

This finding highlights an important limitation of applying TAM too narrowly. In general technology acceptance research, perceived usefulness often refers to task efficiency. In school counselling, effectiveness cannot be separated from ethical and relational quality. A tool may be efficient, yet counsellors may still hesitate to use it when privacy, student safety, confidentiality, or crisis response remain uncertain (O’Dea et al., 2017; Akgül & Ergin, 2022; Jaber & Al-Hroub, 2023). These concerns are closely connected because technology changes the conditions of counselling itself. Face-to-face counselling allows counsellors to observe non-verbal responses, maintain greater control of the counselling environment, and respond immediately to risks (Srijundaree et al., 2024). In digital settings, privacy may be harder to ensure, and counsellors may have limited ability to assess students’ safety or emotional condition (Du Preez et al., 2024). As emphasised by ASCA (2022), virtual or hybrid counselling therefore requires clear procedures to address confidentiality and emergency situations. For this reason, ethical concerns should not be treated as separate from service quality. They directly shape whether technology is considered appropriate for counselling practice. If confidentiality cannot be assured, or counsellors feel uncertain about managing risk online, technology may weaken the trust and safety that counselling depends on. Hence, usefulness extends beyond efficiency and includes the ability to support safe, confidential, and ethically responsible care.

This review also suggests that self-efficacy strengthens the relationship between perceived ease of use and technology acceptance. Counselors who felt more confident in their digital skills were more likely to view technology as manageable and professionally useful (Akgül & Ergin, 2022; Golden et al., 2023; Lee et al., 2025). Confidence in using digital tools may reduce perceptions of difficulty and foster more positive attitudes towards technology integration in counselling practice. However, confidence alone appears insufficient without actual digital competence. Hasanah et al. (2024) found that digital competence positively influenced counsellors’ intention to use technology and mediated the relationship between readiness for change, digital mindset, and intention to use technology. Similarly, Antonietti et al. (2022) reported that digital competence was positively associated with perceived ease of use, perceived usefulness, and intention to use technology in educational settings. In counselling contexts, competence is especially important because technology use involves more than technical operation. Counsellors must also manage ethical boundaries, communication, and student wellbeing in digital environments. Supporting this view, Zainudin et al. (2022) found that e-counselling skills were positively related to counselling self-efficacy among e-counsellors. Therefore, these findings suggest that digital competence functions as a bridge between self-efficacy and actual technology acceptance.

In contrast, limited digital competence may trigger anxiety and discourage technology use. Dönmez-Turan and Kır (2019) argue that technology-related anxiety shapes users’ perceptions of ease of use and usefulness. When counsellors feel unprepared, technology may be experienced as stressful rather than supportive. This interpretation is reinforced by Antonietti et al. (2022), who found that competence determines whether technology is perceived as manageable and meaningful. Putriani et al. (2023) explain that digital self-efficacy and technostress influence users’ intention to continue using digital systems. This indicates that technology alone is not enough. In the context of school counselling,

counsellors may recognise that digital tools can be useful, yet still avoid using them when they feel unfamiliar, unprepared, or anxious about possible mistakes during counselling practice (Jiang et al., 2021).

This phenomenon explains why training is needed and why institutional support is essential. Counselors' willingness alone may not be enough to encourage broader technology use, especially when positive perceptions are not supported by guidance, encouragement, and opportunities to build competence. Even when counselors recognise the benefits of technology, implementation may remain limited if they feel unprepared or unsupported. Dingel et al. (2024) explain that facilitating conditions include the organisational and technical support, resources, and knowledge needed for users to adopt and use technology. This means that support helps bridge the gap between intention and actual use.

However, training should not be treated as a simple technical fix. If training only teaches counsellors how to operate digital platforms, it may improve basic familiarity but still fail to address the deeper reasons for their hesitation to use technology in practice. Antonietti et al. (2022) show that digital competence is linked to perceived ease of use, perceived usefulness, and intention to use technology, suggesting that competence shapes how users judge the value and manageability of digital tools. In school counselling, this competence must include ethical and relational dimensions, such as protecting confidentiality, managing boundaries, maintaining student engagement, and responding to risk. Professional support is also important, as Richter et al. (2024) show that educators often rely on professional communities to seek resources and solve problems, although such support is not always equally available. Therefore, effective training should combine technical skills, ethical guidance, and institutional support so that counsellors are not only willing to use technology but also prepared to use it safely and meaningfully in counselling practice.

Overall, this review shows that technology acceptance among school counsellors cannot be understood solely in terms of positive perceptions. Although counsellors generally recognise the usefulness of technology, its implementation remains shaped by their competence, confidence, institutional support, and ethical readiness. This finding challenges a narrow application of TAM by showing that perceived usefulness and perceived ease of use are necessary but not sufficient to explain technology use in school counselling. In this professional context, technology is accepted not only when it is efficient and accessible, but also when it is safe, ethical, and compatible with the relational nature of counselling. Therefore, the gap between positive perceptions and limited implementation should be understood as a sign that technology integration requires more than individual willingness; it requires training, supportive institutions, and clear professional guidance that enable counsellors to use technology confidently and responsibly.

Implications of the Study

The findings of this review suggest that integrating technology into school counselling cannot be achieved simply by increasing access to digital tools or by encouraging counsellors to adopt technology. Since counsellors appeared more willing to use technology for administrative and organisational functions than for direct counselling services, schools may need to recognise that acceptance of technology varies with the nature of counselling tasks. This suggests that digital tools may be more readily integrated into functions such as documentation, communication, scheduling, and programme management, whereas their use in direct counselling requires greater professional consideration.

The review further indicates that reluctance towards technology in direct counselling contexts reflects concerns that extend beyond technical difficulty. Counselors' hesitation was closely linked to uncertainty about confidentiality, student privacy, professional boundaries, emotional responsiveness, and the ability to maintain counsellor–student relationships in digital environments. These findings imply that professional preparation for school counsellors should move beyond technical training and include guidance on ethical decision-making, boundary management in online communication, and responding to student risk in technology-mediated settings. Without such preparation, counsellors may continue to view technology as useful in principle while remaining cautious about using it in actual counselling interactions.

The findings also suggest that institutional support is crucial to translating positive perceptions into sustained practice. Because positive attitudes did not consistently translate into broader implementation, schools and professional organisations may need clearer expectations, ethical protocols, and practical guidance for digital counselling. Rather than positioning technology as a substitute for face-to-face counselling, the findings indicate that it may be most meaningful when used to support continuity of care, improve accessibility, and strengthen communication while preserving the relational nature of counselling practice.

Limitation of the Study and Future Research

Several limitations should be considered when interpreting the findings of this review. First, although the initial search identified a large number of records, only 13 studies met the inclusion criteria. This suggests that empirical research specifically examining technology acceptance among school counsellors using TAM or extended TAM perspectives remains relatively limited. At the same time, the review's inclusion criteria may have narrowed the scope of the evidence and influenced the patterns identified. By focusing only on empirical studies involving school counsellors and explicitly related to TAM perspectives, potentially relevant studies discussing technology use, ethical challenges, or digital counselling practices without direct reference to TAM may have been excluded. As a result, the findings should be interpreted as a synthesis of a particular segment of the literature rather than a complete representation of technology use in school counselling. Second, the included studies varied considerably in research design, educational context, participant characteristics, and the forms of technology examined. Some studies focused on ICT use, while others explored e-counselling, online counselling, tele-mental health, or AI-supported tools. Although this variation provided a broader understanding of technology acceptance across contexts, it also limited direct comparison between studies and may have shaped the interpretation of recurring patterns. Third, this review primarily reflected school counsellors' perspectives. Other stakeholders who influence technology integration in school counselling, such as students, parents, school leaders, and policymakers, were not examined in depth. Future research may benefit from incorporating multiple perspectives to better understand how technology acceptance is shaped not only by counsellors' perceptions but also by school systems, family contexts, and students' digital readiness. In addition, future studies may further examine how technology acceptance differs between administrative functions and direct counselling services, particularly regarding confidentiality, professional boundaries, and relational processes in digital counselling contexts.

CONCLUSION

This review suggests that school counsellors generally view technology positively, particularly when it supports communication, organisation, and continuity of services. However, positive perceptions do not consistently translate into broader implementation, especially in direct counselling contexts, where concerns about confidentiality, professional boundaries, emotional responsiveness, and counsellor–student relationships become more salient. Technology acceptance in school counselling therefore appears to be task-specific and context-dependent rather than uniformly positive.

The findings also indicate that while the Technology Acceptance Model (TAM) remains useful for understanding counsellors' perceptions of usefulness and ease of use, these factors alone are insufficient to explain actual technology integration in counselling practice. School counsellors' acceptance of technology is shaped not only by personal readiness and digital competence, but also by institutional support and ethical confidence in using technology responsibly within the relational nature of counselling work.

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