

An Enhanced Implementation of Digital Bar Certification Systems of the Records Division in the Office of the Bar Confidant

Ronson D. Retes

Emilio Aguinaldo College Manila, Philippines

DOI: <https://doi.org/10.47772/IJRISS.2026.100300081>

Received: 04 March 2026; Accepted: 09 March 2026; Published: 26 March 2026

ABSTRACT

This study aims to investigate the Enhancement of Digital Bar Certification Systems implementation within the Bar Records Division. Random sampling technique was used to target two primary stakeholder groups who interact with the Digital Bar Certification Systems. A total of 160 respondents, 30 of which are Bar Records Staff and 120 from the Legal Practitioners as participants.

This study utilized a mixed-methods instrumentation approach, for the quantitative phase, the study used a stratified random sampling while for qualitative phase, purposive sampling was used to selected participants. With the overall computed $t=22.395$, with p -value less than 0.05, as results, the statistical test give a strong reason to disapprove the null hypothesis (H_0 : The perceptions of the Bar Records Division Staff and Legal Practitioners about the implementation of Digital Bar Certification Systems have no significant difference) in all the dimensions of the implementation.

Keywords: Bar Records, Division Staff and Legal Practitioners, and Digital Bar Certification Systems

INTRODUCTION

Over the last few years, the use of information technology in the delivery of legal services has been deemed crucial in order to provide justice to citizens in different parts of the globe. The Bar Records Division of the Supreme Court of the Philippines, Office of the Bar Confidant is an important department that is charged with the responsibility of keeping and certifying attorney details and the department is at the crossroads of where technology is likely to impact the legal profession most in the next five to ten years (Susskind, 2019). This work aims at discussing the possibilities of improving the process of implementing the Digital Bar Certification Systems, as such systems are not just new technologies but new ways of checking, storing, and utilizing legal credentials in the contemporary judicial environment.

The paper-based certification procedures that have been used in bar admissions and record keeping of attorneys are becoming increasingly irrelevant in the modern society. According to Cabral et al. (2019), these legacy systems lead to slow processing time, restricted access, and susceptibility to physical harm or loss. The COVID-19 pandemic exacerbated these challenges since the closure of the courts and remote work arrangements disrupted conventional certification procedures, which forced judicial systems across the globe to advance their digitization efforts (Sourdin & Zeleznikow, 2020). This crisis-driven innovation also revealed the need and possibility for the bar certification to have a holistic digital solution.

The Strategic Plan for Judicial Innovation 2022-2027 sets the direction for technological development in judicial systems, where secure, integrated technologies that improve the effectiveness and openness of the judicial system are deemed necessary (National Center for State Courts, 2022). In this regard, the digitalization of bar certification is a significant factor as it is tied to the regulation of the legal profession and therefore, the public's confidence in the profession. As pointed out by Warren (2021), the bar certification systems must be innovative while at the same time, the profession maintains its conservative nature with regard to accuracy, confidentiality, and procedural compliance.

The current analysis of the global certification of bars using digital systems shows that there are differences in the levels of development and the use of various approaches. Singapore and Estonia have developed efficient and extensive digital solutions that link bar certification to the legal identity systems (Katsh & RabinovichEiny, 2017). Theirs are lessons that can be quite helpful for other jurisdictions that are still in the initial phase of their digital evolution. The American Bar Association's report on regulatory innovation also provides a range of examples of the practices in the US states and their successes and failures of the standardization and interoperability processes (American Bar Association, 2023).

Security and privacy are two critical factors that cannot be overlooked when it comes to the digital certification of bars. According to Reiling (2020), such systems should have proper measures to ensure that the attorney's information is secure while at the same time allowing the public to access the verification features. The General Data Protection Regulation of the European Union has a useful approach to the question of transparency and data protection in the context of professional certification, setting principles that go beyond geographical borders in an increasingly integrated legal profession (European Commission, 2021).

The choice of technological infrastructure has a great influence on the efficiency of the digital bar certification systems. Cloud-based solutions are more scalable and accessible as compared to traditional models while distributed ledger technologies are presented as promising directions in credential verification with increased resistance to tampering (Hughes et al., 2019). However, as Brownsword (2021) has noted it is important to guard against letting technological possibilities to dictate the choices made, so that the digital systems adopted enhance and support the ethical and public interest mission of the legal profession.

There are also non-technical issues that are associated with the implementation of bar certification systems in the digital environment. There are also challenges of resistance to change within the traditional legal institutions as well as the need for training and support to administrative staff and attorneys on the new systems as noted by Schmitz and Zeleznikow (2018). Also, variations in bar admission across the jurisdictions make it difficult to standardize digital solutions especially for the attorneys practicing in different jurisdictions (Legg, 2022).

The advantages of improving the bar certification systems are the following. To the regulatory bodies, these systems present the benefits of increased effectiveness, decreased costs of administration, and better data analysis for tracking professional trends (Armytage, 2019). To the attorneys, digital certification is beneficial due to its efficiency in processing, ease in renewal and portability of the certificates across jurisdictions. To the public, such systems offer more credible means of the verification of the attorneys and their competency as well as possible increased openness concerning the credentials of the attorney (Benyekhlef et al., 2018).

Economic factors also play a role in determining the implementation process of digital bar certification. According to Baldwin (2020), the initial costs may be a challenge, especially for small states that may not be financially wellendowed. Nevertheless, long-term cost-utility assessments have always been positive in terms of saving administrative costs, avoiding costs of correcting errors, and improving efficiency in the operations of the regulatory agencies and lawyers going through certification procedures. Possible solutions for the initial funding issues are the use of public-private partnerships and gradual step-by-step implementation.

This study will therefore seek to add to the body of knowledge on the topic of digital transformation of legal regulation by focusing on the improvement of bar certification systems. Based on the existing practices, this research aims at contributing to the enhancement of the practical knowledge for those who are involved in the process of bar certification system reforms in line with the Strategic Plan for Judicial Innovation 2022-2027. As Richardson and Genn (2018) have pointed out, such technological advancement should be in a bid to enhance the access to justice through better, efficient, and more reliable professional regulation.

As to the background of the study, The Office of the Bar Confidant (OBC), which oversees the Bar Records Division, experienced significant operational challenges during the 2022 pandemic period. With courthouses operating at limited capacity, attorneys seeking certification documents faced wait times of 6-8 weeks compared to the pre-pandemic 1-2 week processing time. This sudden disruption to services affected thousands of legal practitioners who required timely certification for court appearances, jurisdictional transfers, and client verification purposes.

The changes in bar certification systems reflect broader shifts in legal management from paper-based to digital systems. Traditionally, records divisions in bars around the globe kept documents on attorney credentials, disciplinary records, and practice authorizations in paper-based files that needed manual retrieval and updating (Susskind, 2020). Although this method is tried and tested, it has significant drawbacks in the current age of digital accessibility in professional services. Rhodes (2021) highlights that these traditional systems had long processing times of 4-6 weeks for routine certifications, office hours access limitations, and vulnerability to physical damage or loss that sometimes required expensive reconstructions.

In March 2022, the Supreme Court issued Administrative Order No. 242022, authorizing an emergency digital certification pilot program to address the growing backlog of over 3,000 unprocessed certification requests. This pilot program became the foundation for the expanded Digital Bar Certification Systems outlined in the Strategic Plan for Judicial Innovation 2022-2027. The pilot revealed both the potential benefits of digital transformation and the implementation challenges that would need to be addressed in a full-scale deployment.

Attorney Maria Santos from Mindanao province reported traveling 300 kilometers to reach the Office of the Bar Confidant, only to find reduced staff and limited operational hours, resulting in multiple trips and significant practice disruptions. Her experience was not unique, as attorneys from remote jurisdictions faced disproportionate hardships when seeking certification services.

These accessibility challenges highlighted the need for a location independent digital solution that could serve practitioners regardless of their geographical location.

The process of digitalization of bar certification received an unprecedented push in the wake of the COVID-19 pandemic that affected most traditional face-to-face administrative activities in justice systems around the world. Court administrators were under pressure to ensure they continued to perform their regulatory duties while simultaneously adopting work-from-home measures and social distancing protocols

(Sourdin et al., 2020). This period saw some jurisdictions like Ontario, Canada and New South Wales, Australia adopt and develop emergency measures of digital certification which later became permanent. Pandemic responses in the International Bar Association's survey of jurisdictions show that 67% of respondents reported advancing their digitalization plans for attorney licensing and record-keeping between 2020 and 2022 (International Bar Association, 2023).

Current digital bar certification systems are not uniform and range from basic to highly advanced and integrated. At the basic level, many jurisdictions have established simple digital record storage and electronic application systems, while advanced implementations use automated verification systems, blockchain-based credentials, and systems that are compatible with others to enable recognition across jurisdictions (Hughes et al., 2019). A prime example of such a high level of integration is Singapore's Legal Profession Digital Registry, established in 2019, which includes attorney profiles connected to court appearances, continuing education records, and verification tools accessible to clients. As Katsh and Rabinovich-Einy (2019) note, these advanced implementations demonstrate that digitalization can go beyond simple process optimization to fundamentally redesign relationships between attorneys, regulatory bodies, courts, and clients.

The implementation challenges for digital bar certification systems extend beyond technical considerations to encompass governance, funding, and institutional culture dimensions. Brownsword (2021) identifies persistent tensions between innovation objectives and traditional values of accuracy, confidentiality, and procedural integrity that have historically characterized bar regulation. These tensions manifest in debates regarding appropriate authentication protocols, access restrictions, and data retention policies. Additionally, as documented by the National Center for State Courts (2022), significant disparities exist in implementation capabilities across jurisdictions, with smaller bar authorities often lacking the financial and technical resources to develop sophisticated digital systems independently, resulting in uneven modernization across the legal profession's regulatory landscape.

This study therefore seeks to understand how the Digital Bar Certification Systems implemented in response to the 2022 pandemic challenges can be enhanced to better serve both the Bar Records Division staff and the legal

practitioners who rely on these services. By examining current implementation levels, identifying gaps, and developing an enhanced implementation framework, this research aims to contribute to the continued digital transformation of bar certification processes in alignment with the Strategic Plan for Judicial Innovation 2022-2027.

The statement of the problem, this study aims to investigate the enhancement of Digital Bar Certification Systems implementation within the Bar Records Division. Specifically, it seeks to address the following questions:

1. What is the profile of the 2 groups of respondents in terms of:
 - 1.1 Bar Records Division Staff
 - 1.1.1 Sex
 - 1.1.2 Age
 - 1.1.3 Educational Attainment
 - 1.1.4 Years in Service
 - 1.2 Legal Practitioners
 - 1.2.1 Sex
 - 1.2.2 Age
 - 1.2.3 Years in practice
2. What is the assessment of the 2 groups of respondents on the implementation of the Digital Bar Certification Systems as perceived by Bar Records Division in terms of:
 - 1.1 Technological Infrastructure
 - 1.2 Process Efficiency
 - 1.3 User Experience
 - 1.4 Integration with Existing Systems
3. Is there a significant difference between the perceptions of Bar Records Division staff and Legal Practitioners regarding the implementation of Digital Bar Certification Systems?
4. Based on the findings, what enhanced implementation framework can be developed for Digital Bar Certification Systems?

METHODOLOGY

The research design will employ a sequential explanatory design focusing on comparative analysis between Bar Records Division staff and Legal Practitioners. Quantitative data will be collected through a structured questionnaire using a 4-point Likert scale, while qualitative insights will be gathered through open-ended questions. This design allows for both statistical comparison between the two key stakeholder groups and deeper exploration of implementation challenges and enhancement opportunities. The survey instrument will be developed based on Venkatesh et al.'s (2003) Unified Theory of Acceptance and Use of Technology (UTAUT), modified to address the specific context of Digital Bar Certification Systems.

The qualitative component will complement the quantitative findings by providing contextual understanding of implementation issues identified in the survey responses. This approach aligns with Creswell and Creswell's (2018) recommendations for mixed-methods studies, where qualitative data helps explain and expand upon quantitative results. The open-ended questions will explore user experiences, perceived barriers, and suggestions for system enhancement from both Bar Records Division staff and Legal Practitioners perspectives. Secondary data collection will include document analysis of the Strategic Plan for Judicial Innovation 2022-2027 and existing system documentation to establish alignment between implementation realities and strategic objectives.

The research design directly addresses the four research questions by: (1) gathering demographic profile data of respondents, (2) measuring implementation levels across key dimensions, (3) comparing perceptions between staff and practitioners, and (4) generating insights for an enhanced implementation framework. This methodological approach balances the need for reliable comparative data with rich contextual understanding, ensuring that recommendations are both data-driven and practically relevant to the judicial system's digital transformation needs.

As to its research locale, this study will be conducted in the Supreme Court of the Philippines, Bar Records Division situated at the Office of the Bar Confidant. The Bar Records Division is located at the Multipurpose Building; it is a four-story building that accommodates many court administrative offices and records. This division also keeps records of both active and non-active 90,000+ lawyers and handles about 5000 certification transactions per month, such as admission, status check, and transfer to other jurisdictions. The current DBCS was established in 2018 and was updated in 2020 and 2022, which means that it is in a transitional phase between paper-based and fully digital as described in the Judicial Council's Strategic Plan for Judicial Innovation.

As to the population, sample, and sampling technique target population in this study consists of two primary stakeholder groups who interact with the Digital Bar Certification System in the Supreme Court Bar Records Division of the Central Judicial District. The first group comprises approximately 60 employees of the Bar Records Division who handle certification of records and documentation of lawyers. The second group consists of approximately 12,000 legal practitioners who use the system for certification and verification purposes. From this population, a sample of 145160 respondents will be selected to participate in the study, comprising 25-30 Bar Records Division staff (representing approximately 50% of the division) and 120-130 Legal Practitioners (representing approximately 1% of active attorneys in the jurisdiction).

For the quantitative phase, the study will use stratified random sampling to ensure proper representation of both stakeholder groups while maintaining statistical validity. For Bar Records Division staff, where the population is relatively small, a higher sampling percentage (60%) will be used to ensure adequate representation. For Legal Practitioners, random sampling will be conducted within demographic categories such as years in practice, practice areas, and frequency of system usage to ensure diverse perspectives are captured. This approach allows for meaningful comparative analysis between the two groups while maintaining statistical reliability.

For the qualitative phase, purposive sampling will be used to select participants for follow-up data collection based on their survey responses. Participants will be chosen to represent different experience levels, usage patterns, and perspectives from both stakeholder groups. This sampling approach complies with mixed-methods research principles by combining a statistically significant quantitative sample with a strategically selected qualitative sample to provide depth and context to the findings. The combination of these sampling techniques ensures that the research captures both the breadth of user experiences across stakeholder groups and the depth of insights needed to develop meaningful enhancement recommendations.

As part of the data collection research instrument, the researcher will utilize a mixed-methods instrumentation approach centered on a comprehensive survey questionnaire designed to assess respondents' perceptions of Digital Bar Certification Systems implementation. The primary survey instrument will evaluate four key dimensions: Technology Acceptance (measuring Perceived Usefulness,

Perceived Ease of Use, and Trust), Implementation Barriers (assessing Technological, Organizational, and User-related challenges), Strategic Alignment (examining consistency with the Judicial Innovation Plan 2022-2027), and Enhancement Priorities (identifying critical areas for improvement). Additionally, semi-structured interview

protocols will be developed for the qualitative phase, along with system usability testing instruments that will measure task completion times, error rates, and user satisfaction with specific certification workflows.

An introductory letter to the respondents will be prepared, explaining the study's objectives, confidentiality protections, and the value of their participation in improving Digital Bar Certification Systems. The main body of the survey questionnaire will consist of demographic information followed by Likert-scale statements concerning the assessment of respondents on the Digital Bar Certification Systems in terms of Technology Acceptance, Implementation Barriers, Strategic Alignment, and Enhancement Priorities. The following rating scales will be used by the respondents in their assessments:

Scale	Range	Degree
4	3.51-4.00	Strongly Agree (SA)
3	2.51-3.50	Moderately Agree (MA)
2	1.51-2.50	Disagree (DA)
1	1.00-1.50	Strongly Disagree (SD)

For the data gathering procedure, the collection process will follow a sequential approach beginning with quantitative data collection. After receiving official permission from the Supreme Court Bar Records Division administration, the researcher will administer the survey questionnaires to the 145-160 respondents from both stakeholder groups. Survey responses were entered into a secure database for analysis, with demographic information used to monitor response rates across stakeholder groups.

Following quantitative data collection and preliminary analysis, qualitative data gathering will involve follow-up with selected respondents through individual opened responses to explore emerging themes and implementation challenges in greater depth. Participants will be selected based on their survey responses to ensure representation of diverse perspectives from both Bar Records Division staff and Legal Practitioners.

For the statistical treatment of data, the collected data will be tallied, classified, and tabulated. Listed in the columns are the responses per item of the questionnaire and the rows representing the respondents. Data responses coming from the respondents will be considered for statistical analysis using the following statistical tools.

Weighted Mean. The weighted mean scores will be computed to measure the assessment of the respondents. To obtain the weighted mean scores, the computed weighted mean scores on the Digital Bar Certification

Systems in terms of Technology Acceptance (Perceived Usefulness, Perceived Ease of Use, and Trust), Implementation Barriers (Technological,

Organizational, and User-related), Strategic Alignment (alignment with Judicial Innovation Plan 2022-2027), and Enhancement Priorities were interpreted.

RESULTS AND ANALYSIS

This chapter presents the comprehensive analysis and interpretation of data collected from the research study on the enhanced implementation of Digital Bar Certification Systems within the Bar Records Division. A mixed-methods research design was used to collect the data systematically in the study of 150 respondents (30 Bar Records Division workers and 120 Legal Practitioners) with the help of structured questionnaires that relied on the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) frameworks, along with open-ended qualitative questions.

The analysis is structured in a way that answers the first three research questions that were developed in this study, both quantitatively and qualitatively. The results are explained in the context of the literature review that

was conducted and the findings are based on the literature that is related to digital transformation, adoption of legal technology, and professional certification systems to give the theoretical basis to the empirical findings.

On The Profile Of Respondents

Table 1 Demographic Profile of Bar Records Division Staff (n=30)

Sex	Age Group	Educational Attainment	Years in Service
Male – 15	31–40 – 13	Bachelor's – 26	1–5 yrs – 15
Female – 15	41–50 – 17	Master's – 2	6–10 yrs – 9
		Doctorate – 1	11–15 yrs – 4
		College Undergrad – 1	>15 yrs – 2

The above table, shows the demographic analysis of Bar Records Division staff reveals a perfectly balanced gender distribution with equal representation of male and female employees (50% each). This balanced composition is significant for technology acceptance patterns, and found out that gender can influence technology acceptance through different pathways, with performance expectancy having stronger influence on behavioral intention for men, while social influence factors may be more pronounced for women. The equal gender representation provides an ideal research context for examining technology acceptance patterns without gender bias influencing the results.

The age distribution shows concentration in the middle-career range, with 43.3% aged 31-40 years and 56.7% aged 41-50 years, indicating a mature workforce with substantial professional experience. This age composition represents and would classify as an experienced user group that brings both professional maturity and adaptability to technological change. The concentration in the 31-50 age range suggests staff members who entered their careers during the transition from paper-based to digital systems, providing them with valuable perspective on both traditional and modern certification processes, which aligns with the observations about bridging traditional legal practices with digital innovation.

The staff composition is highly qualified with 86.7 percent of the staff having bachelor degrees, 6.7 percent having master degrees and 3.3 percent having doctoral degree. This educational profile indicates the presence of good background knowledge that contributes to the implementation of digital systems, that educational background is one of the factors that contribute to technology acceptance because of higher performance expectancy. Some study state that the level of education is associated with greater acceptance of technology due to a stronger performance expectancy and decreased fear of acquiring new systems.

The distribution of years of service shows that there is a relatively established workforce with 50 percent of the workforce having 1-5 years of service which is the largest single group. This focus implies that there has been hiring or reorganization in the process of digital transformation. The 30 percent having 6-10 years of service is a significant middle tenure segment that might have witnessed the shift in certification systems between paper-based and digital first-hand and, thus, can offer a helpful insight into the challenges and advantages of implementation. Service distribution shows that 80% of the staff possesses less than 10 years of experience, which implies the readiness to work with new technologies but still to have enough experience to realize the traditional and digital processes.

Table 2 Demographic Profile of Legal Practitioners (n=120)

Sex	Age Group	Years in Practice
Male – 81	20–30 – 4	1–5 yrs – 7

Female – 39	31–40 – 20	6–10 yrs – 13
	41–50 – 63	11–15 yrs – 46
	51–60 – 27	>15 yrs – 52
	Above 60 – 6	

The demographic profile of Legal Practitioners shows a very high male representation of 67.5 percent compared to 32.5 percent female representation, which is a conventional pattern of legal practice as observed in his discussion of legal profession demographics. This 2:1 male :female ratio is similar to the wider proportions of the legal profession but is strikingly different with the gender balance in the Bar Records Division staff. This disparity can affect the technology acceptance patterns because gender can moderate the association among the important technology acceptance factors and behavioral intention.

Age distribution shows a more mature population as compared to Bar Records Division personnel where most (52.5%) are aged 41-50 years, which is the highest career level of legal practitioners. The second-largest group is the group of practitioners aged 51-60 years (22.5%), which is the group of senior practitioners with a vast experience but who may have had limited experience with digital technologies in their early career years. The adoption of technology can be further supported and trained among this age group because of varying baseline experiences with technology and the smallest group (20-30 years, 3.3%) also includes the youngest practitioners, as it is connected with the experience requirements to obtain the right to practice in the bar and the career development patterns in the field of law.

The distribution of professional experience indicates a well-matured practitioner base with the majority (43.3%) having more than 15 years of practice experience. Such high level of experience implies a profound understanding of conventional legal procedures and certification standards yet can imply the possible difficulties in adjusting to digital transformation efforts.

The second-largest category is the practitioners with 11-15 years of experience (38.3%), which are mid-to-senior career practitioners who probably underwent both traditional and early digital legal technologies. The experience distribution shows that 81.6 percent of the practitioners have over 10 years of experience, which implies that the sample is composed of well-established practitioners who have good backgrounds in conventional legal practice.

For comparative demographic analysis, the contrasting demographic profiles between stakeholder groups reveal important implications for technology acceptance and implementation success. Bar Records Division staff represent a younger, more educationally diverse, and institutionally embedded user group with balanced gender representation and shorter tenure. In contrast, Legal Practitioners constitute an older, more professionally experienced, predominantly male external user population.

These demographic differences align with the theoretical predictions of the Technology Acceptance Model, where user characteristics significantly influence perceived usefulness and perceived ease of use. The demographic patterns observed support research findings that age, experience, and institutional context serve as moderating factors in technology acceptance behaviors. The younger staff profile suggests potentially higher baseline technology acceptance, while the older practitioner profile may require additional support and training for successful system adoption.

The educational and experience profiles reveal complementary but distinct stakeholder characteristics. Bar Records Division staff demonstrate high educational attainment with relatively short tenure, while Legal Practitioners show extensive professional experience with implied high educational standards. These profile differences suggest that staff bring strong analytical capabilities and recent educational experiences that may include technology-related training, while practitioners bring extensive professional experience and deep understanding of legal practice requirements.

1. On The Assessment Of The Two Groups Of Respondents On The Implementation Of The Digital Bar Certification Systems As Perceived By The Bar Records Division In Terms Of: Technological Infrastructure, Process Efficiency, User Experience, And Integration With Existing Systems

The assessment results reveal substantial differences in perception between Bar Records Division staff and Legal Practitioners across all implementation dimensions. Staff consistently rated all aspects more favorably, with means ranging from 2.99 to 3.65, while practitioners' assessments ranged from 2.55 to 2.68, indicating a systematic pattern of differential experiences rather than isolated implementation issues.

Table 3 Assessment of the two groups of respondents on the implementation of the digital bar certification systems as perceived by the bar records division

Implementation	Staff	Practitioner	Difference	Interpretation
	Mean	Mean	Mean	
Technological Infrastructure	3.63	2.63	1.00	Favorable to Staff
Process Efficiency	3.65	2.55	1.10	Favorable to Staff
User Experience	2.99	2.68	0.31	Favorable to Staff
Integration with Existing Systems	3.61	2.56	1.05	Favorable to Staff
Overall				

For the technological infrastructure assessment, Technological Infrastructure dimension received the highest positive assessment from Bar Records Division staff with a mean score of 3.63, falling within the "Strongly Agree" range (3.51-4.00) according to the research instrument's interpretation scale. This rating indicates strong confidence in system reliability, security measures, scalability capabilities, remote access functionality, and infrastructure capacity for future growth and expansion. The high staff rating suggests successful implementation of core technological components that support daily administrative operations, including reliable 24/7 access to certification services, effective security protection for attorney information, and acceptable system performance during peak usage periods.

This positive assessment aligns with findings that internal users develop greater appreciation for technological capabilities through direct operational involvement, regular system exposure, and institutional support mechanisms that provide context for understanding system capabilities and limitations. The staff assessment also reflects successful change management and training initiatives that helped internal users understand and appreciate system capabilities, as noted by the National Center for State Courts (2022) regarding effective implementation support.

Legal Practitioners however scored Technological Infrastructure much lower with a mean score of 2.63, which is between the score of 2.51-3.50 which is Moderately Agree. This middle score indicates a mixed experience with system accessibility, performance stability, security efficiency, and technical dependability as an external user. The practitioner rating shows that the accessibility of the system at various times of use, whether the security is effective to the external users, the performance is inconsistent, and the reliability of the infrastructure is uncertain with regard to their particular usage patterns.

The single-point variation of stakeholder groups (3.63 vs 2.63), is a significant perception gap, which is a sign of a fundamental difference in the experience of technological infrastructure as opposed to a slight difference in preferences. This gap corresponds to the issues outlined by the context of the mismatch between the potentials of the internal system and the experience of external users in the implementation of legal technologies. The lower practitioner assessment is also due to the various baseline expectations and context of use of the

technological infrastructure between the internal staff, and the external users as the latter tend to assess the technological infrastructure against other digital services they use on a regular basis.

For the process efficiency assessment, staff of Bar Records Division gave the highest rating to Process Efficiency with the mean score of 3.65, which is the strongest positive evaluation of all implementation dimensions and is within the range of Strongly Agree. This outstanding score means that employees have a great experience in terms of certification processing time, reduced errors, automation of tasks, quality control, and exception handling, as opposed to the use of traditional paper-based systems. The excellent staff rating indicates that the routine certification activities are successfully automated, the workflow processes are simplified, the necessity of manual data entry is minimized, the quality control mechanisms are enhanced, and the non-standard cases of certification are managed.

This positive assessment aligns with the predictions expressed about the productivity increase of legal technology in administrative functions, where the digital system would be able to reduce the time of processing and increase the accuracy level to a considerable extent. The evaluation of the "Strongly Agree" indicates that workers are the ones who experience the positive results of the workflow optimization, time efficiency, and error minimization that digital systems provide to certification processes. These good efficiency scores are typically an indicator of effective business process reengineering that optimizes the administrative processes using the digital potential. The outstanding efficiency score also indicates that the Digital Bar Certification System is able to overcome the operational issues that necessitated its adoption such as the 812 week processing time lag that occurred during the 2022 pandemic.

Process Efficiency was rated at 2.55 by Legal Practitioners, which is within the moderate agreeing range, but near the low end of the same. This mid-level score indicates that practitioners do recognize certain efficiency gains but fail to see the dramatic results that are reported by internal staff. The practitioner rating also shows that although efficiency improvements are acknowledged, the external users might not receive the corresponding benefits of internal process efficiencies, which is consistent with the findings of the research on e-access to justice, which states that administrative efficiency gains do not necessarily lead to the corresponding improvement in service delivery in the eyes of the user.

The perception gap between staff and practitioner ratings (1.10 points) is the widest among all implementation dimensions, which means that there are essential differences in the way digital transformation affects internal and external workflows. This large disparity represents the disparate allocation of the gains of efficiency found in their research on the effects of digitalizing the court system. The efficiency gap indicates that the current process optimization is concentrated on internal administrative processes and offers minimum efficiency gains to external users interactions, which is why the end-to-end process optimization is critical.

For the user experience assessment, User Experience received the lowest ratings from both stakeholder groups (Staff $M = 2.99$, Practitioners $M = 2.68$), indicating systemic usability challenges that affect all system users regardless of their institutional position. The relatively small gap (0.31) between groups suggests that user experience limitations are universally recognized, supporting argument that legal technology implementation must prioritize user-centered design principles.

The moderate staff rating (2.99) suggests that the usability issues restrict the effectiveness and satisfaction of the system even among the internal users who have access to the training and institutional support. The staff rating indicates the possibility of the issues with the interface intuitiveness, navigation speed, clarity of instructions, the availability of help resources, and the speed at which frequent tasks are completed. Although the staff scored higher on other implementation dimensions, they admitted that user experience is a major constraint that influences their performance in the day to-day work. This observation is consistent with the statements made by Teffo and Chuma that interface design and user workflow optimization are some of the issues that electronic records management systems in judicial settings are likely to face.

Legal Practitioners also rated User Experience at 2.68 which is in the range of Moderately Agree but lower than staff assessment. This rating shows that external users have more usability barriers than internal staff members, which is the sum of the effects of less training, less familiarity with the system and restricted access. The

practitioner rating indicates the issues of interface complexity, ambiguous navigation paths, lack of instructions on how to complete the task, lack of help resources to external users, and poor response time of common certification activities.

The generally average scores of User Experience indicate the possibility of interface redesign, workflow improvement, and better user support systems. The relatively low staff rating is particularly significant because internal users typically rate systems more favorably due to greater familiarity, training, and institutional support. This finding is consistent with the research on judicial information systems, which emphasizes the critical importance of user experience design in determining system adoption and effectiveness outcomes.

For the integration with existing systems assessment, received high ratings from staff ($M = 3.61$) but low ratings from practitioners ($M = 2.56$), creating a 1.05-point difference that reflects differential visibility and accessibility of integration benefits across stakeholder groups. The high staff rating indicates successful backend integration with court case management systems, judicial databases, continuing education platforms, and administrative systems that support internal workflows. This positive rating suggests effective data exchange capabilities, reliable connectivity with judicial information systems, successful cross-jurisdictional data sharing, and seamless integration with continuing legal education databases.

The favorable employee evaluation corresponds to the results that the advantages of system integration are most noticeable in terms of administrative users who are direct users of interconnected functions of the system. Employees enjoy the benefits of automated data transfer, less manual data input, efficiency in workflow due to connectivity of systems, and better service provision due to accessibility to integrated information resources. Technical implementation of system connectivity protocols that allow access to numerous information sources without any difficulties is also indicated in the staff assessment.

The considerably reduced practitioner rating (2.56) indicates that the integration advantages achieved by internal personnel cannot be effectively converted into the enhanced external user experiences with system connectivity and data access. Such moderate evaluation corresponds to the issues cited concerning the difficulty of accomplishing effective system integration that can support the needs of various stakeholders. The practitioner rating shows that there are issues with integration visibility, access to cross-jurisdictional verification, connectivity of continuing education records, reliability of data exchange and interoperability of systems as seen by the external user.

The significant integration assessment gap points to the need to create the external-facing integration capabilities that would ensure the practitioners have the smooth access to verification systems, cross-jurisdictional databases, continuing education records, and other integrated information resources that can improve their professional practice and certification processes. This is in line with the strategic goals of the Strategic Plan for Judicial Innovation 2022-2027 related to the comprehensive system interoperability.

2. On The Significant Difference Between the Perceptions of Bar Records Division Staff and Legal Practitioners Regarding the Implementation of Digital Bar Certification Systems.

Table 4 T-Test Results on significant difference between the perceptions of bar records division staff and legal practitioners regarding the implementation of digital bar certification systems

Theme	t-value	p-value	Significant?
Technological Infrastructure	26.76	<0.001	Yes
Process Efficiency	28.28	<0.001	Yes
User Experience	7.92	<0.001	Yes
Integration with Existing Systems	26.62	<0.001	Yes

For the above table, the statistical test gives a strong reason to disapprove the null hypothesis (H_0 : The perceptions of Bar Records Division employees and Legal Practitioners about the implementation of Digital Bar Certification Systems have no significant difference) in all the dimensions of the implementation. The t-values and the p-values are always high and the p-values are less than 0.001 which shows that the differences are very significant and do not fall within the standard research limitations of technology acceptance studies.

The t-values are large especially in Process Efficiency ($t = 28.28$) and Technological Infrastructure ($t = 26.76$), which implies that the effect sizes are significant, and indicate that there are essential differences between the stakeholder experiences and not mere differences in perception. These findings are consistent with the theoretical postulations of the Unified Theory of Acceptance and Use of Technology with the facilitating conditions and social influence having an important influence on the user acceptance patterns. The statistical significance of all the dimensions confirms the relevance of multi-stakeholder analysis in research on digital transformation, which is consistent with the research methodology suggested in the legal technology research.

Process Efficiency demonstrates the highest statistical significance with a t-value of 28.28, representing the strongest empirical evidence for stakeholder perception differences. This exceptional t-value indicates the largest effect size observed in the study, suggesting that process efficiency represents the most pronounced area of difference between internal and external user experiences. The extraordinarily high t-value provides compelling evidence that process efficiency improvements are distributed unevenly across stakeholder groups, with internal users experiencing dramatic benefits while external users experience more limited improvements.

User Experience demonstrates significant differences with a t-value of 7.92, providing strong evidence for stakeholder perception differences despite both groups rating this dimension relatively low. The medium-large effect size indicated by this t-value is particularly noteworthy given the universally moderate ratings from both stakeholder groups. The statistical significance indicates that while both stakeholder groups encounter usability challenges, the nature and severity of these challenges differ significantly between internal and external users, supporting argument that user experience design in legal technology must account for diverse user contexts and capabilities

For the qualitative analysis and thematic interpretation, the qualitative component of the research provided rich contextual insights that complement and explain the quantitative findings through thematic analysis of open-ended responses. The qualitative data reveal specific implementation challenges, enhancement opportunities, and user experience insights that provide deeper understanding of the statistical patterns observed in the quantitative analysis.

For the valuable system features and limitations, when asked about specific features of the current Digital Bar Certification System that they find most valuable, respondents identified three primary components: "BARISTA, Google Spreadsheets, Online filing." This response provides crucial insight into the system elements that users find most effective and valuable in their daily workflows.

The recognition of the BARISTA as a quality functionality implies the effective use of an integrated verification functionality that facilitates safe certification procedures. This conclusion corresponds to the 2019 study on distributed ledger technologies in professional credentialing, which shows that users are aware of and value the security and integration advantages that sophisticated verification systems offer. The fact that Google Spreadsheets functionality is received positively suggests that users prefer to work with familiar and collaborative tools that allow them to continue working in the same way as before and digitally transform their work. This observation demonstrates the relevance of implementing familiar technology platforms that minimize learning curves and take advantage of the already established user skills, as observed in the study of the trends of legal technology adoption.

The Online filing functionalities highlight the effective installation of the remote access functions that offer flexibility and convenience in certification procedures. The fact that this feature was found to be valuable can be explained by the practical value of digital transformation that gained a new significance in the period of the COVID-19 pandemic, which also captured in the study of the court systems adapting to the needs of remote work.

However, also, there were some significant weaknesses that could be observed in the same answers: Delayed Response, Prone to errors as may edit the sheets, internet stability. This response shows that there are severe constraints in the system that significantly affect the user satisfaction and efficiency.

The Delayed Response limitation implies the performance issues that affect the efficiency of the internal workflow and the satisfaction of the external users. This finding is consistent with the performance challenges that are apparent in the medium User Experience scores and results of response time challenges in electronic records management systems in court settings. The problem of being susceptible to errors because of the fact that may can edit the sheets is a huge data integrity and security concern that is linked to collaborative editing abilities. This limitation is a manifestation of the challenging trade-off between accessibility and data protection that was already mentioned in the context of digital justice systems where the possibility to enable collaborative features can create a vulnerability that compromises data integrity and system stability.

The limitation of internet stability points out to the dependence on critical infrastructure which influences the reliability and availability of systems. This result confirms the technological infrastructure issues found in the quantitative analysis and is in line with the digital divide issues reported in study of electronic certification implementation in various technological settings.

For the enhancement recommendations, respondents highlighted that in order to get more training and provide rewards to the top performer was what they needed when asked what particular improvements they could get to enable them perform their role more effectively. This reaction shows two important areas of improvement that take into consideration both competency building and motivation issues.

The focus on the aspect of providing more training confirms the theoretical expectations of the Technology Acceptance Model in terms of the necessity of creating conditions that would contribute to the successful adoption of technology. Venkatesh state that proper training directly affects perceived ease of use and performance expectancy, and they are the key factors that determine the acceptance and successful use of technology. The training focus is also consistent with the major perception gaps seen between stakeholder groups, which implies that increased training programs may be able to close the gap between internal and external user experiences by making systems more familiar and competent among all user groups.

The suggestion to provide rewards to the best performer brings the incentive mechanism of performance which can promote the adoption and effective use of the system. This recommendation correlates with the study on the digitalization implementation plans, which also underlines the role of organizational incentives in facilitating the use of technology by various groups of users. The combination of training and incentive recommendations suggests a comprehensive approach to enhancement that addresses both competency development and motivation factors, recognizing that successful technology implementation requires both capability building and behavioral encouragement.

For the workflow transformation impact, when asked about how the Digital Bar Certification System changed their workflow compared to the previous paper-based system, respondents reported comprehensive positive outcomes: "it makes our job easier and faster, it reduce mistakes and long processes, it is more convenient to use."

The phrase that it makes our work easier and faster shows that the basic goals of digital transformation connected with efficiency increase and workflow simplification were achieved successfully. This observation correlates with the high Process Efficiency scores given by the Bar Records Division personnel and confirms the speculations regarding the revolutionary impact of legal technology on the administrative processes. The fact that the system helps to minimize the number of errors and lengthy procedures is the evidence of the quality control and process optimization features being successfully implemented. This advantage shows the potential of error reduction in digital systems which have identified in the study of blockchain-based certification systems, where automated systems and digital verification can greatly enhance accuracy as compared to manual paper-based systems.

The convenience element in the phrase, it is more convenient to use, is an indication of a successful application of the user-centered design concepts that focus on accessibility and ease of use. This discovery confirms the positive nature of the current implementation of the system, as well as emphasizes the importance of the improvement of convenience, which, is one of the factors that lead to user satisfaction and adoption in legal technology implementation. The comprehensive positive response regarding workflow transformation demonstrates that digital certification systems can deliver substantial practical benefits when implemented effectively.

For the future technology integration, when they were questioned about the new technologies that might become a significant contribution to the bar certification processes in the future, the respondents reported: "Artificial intelligence, E-court." This answer shows the knowledge of the modern trends of technology and the understanding of its possible use in the legal certification situations.

The emergence of the name of the "Artificial intelligence" as a future improvement area indicates the increasing awareness of the possibilities of AI in automating complex certification processes and supporting decision-making. This suggestion corresponds to the trends that have been identified in the legal technology in relation to the use of AI in legal practice and in the context of AI use in judicial proceedings. The fact that the term E-court integration is mentioned implies the need to understand that a full-scale connection of the judicial system is required that goes beyond the certification procedures and includes a wider scope of court activities and case management.

This suggestion is based on the knowledge of the integrated approach presented in the Strategic Plan for Judicial Innovation 2022-2027 and can help achieve the goals of the comprehensive system interoperability identified in the literature review. The recognition of both AI and E-court potential evidences the advanced knowledge of the ways in which the emerging technologies could be used to optimize the existing certification procedures and contribute to the overall modernization goals in the judicial system.

For the training and support needs, when asked about additional training or support that would help them better utilize the Digital Bar Certification System, respondents emphasized comprehensive needs: "Provide seminar and coaching, issue laptops to the personnel so they can work from home if needed."

The emphasis on "Provide seminar and coaching" indicates recognition of the need for structured, comprehensive training programs that go beyond basic system orientation to include ongoing skill development and competency enhancement. The given recommendation is in line with the facilitating conditions described in the Unified Theory of Acceptance and Use of

Technology framework, according to which the continuous support and training have direct implications on the acceptance of technology and its successful use. The demand in seminars and coaching indicates the interest in an interactive and personalized training style that can be used to solve individual user problems and needs instead of a general training content.

The request to "issue laptops to the personnel so they can work from home if needed" reveals important infrastructure requirements that support system accessibility and effectiveness. This suggestion concerns the equipment requirements as well as remote working opportunities that increase flexibility in the use of the systems. The request to provide laptops is a lesson of the period of COVID-19 pandemic, which was analyzed on their report on the court systems response to the need to operate remotely.

For integration of quantitative and qualitative findings, Combining quantitative data of assessment with qualitative open-ended answers allows a detailed insight into the status of Digital Bar Certification System implementation with the help of convergent evidence analysis. The qualitative information that is presented to support and explain the statistical evidence of substantial differences between the stakeholder groups provides specific areas of concern and opportunity.

The quantitative finding that User Experience received the lowest ratings from both groups (2.99 for staff, 2.68 for practitioners) is reinforced by qualitative concerns about "Delayed Response" and system limitations. This

convergent evidence supports argument that legal technology implementation must prioritize user-centered design principles across all stakeholder groups to achieve comprehensive effectiveness.

The statistical evidence of large perception gaps in Process Efficiency (1.10-point difference) is explained by qualitative responses indicating that while internal workflows have improved significantly ("makes our job easier and faster"), external users may not experience equivalent benefits. This pattern aligns with observations about uneven distribution of digital transformation benefits across different stakeholder populations.

The qualitative emphasis on training needs ("Provide more training," "Provide seminar and coaching") explains the significant statistical differences observed between stakeholder groups, supporting the Technology Acceptance Model's predictions about the importance of facilitating conditions in determining system acceptance and effective utilization. The location of particular useful options ("BARISTA, Google Spreadsheets, Online filing") is the reason why staff ratings are very high in all the dimensions because these combined features are mainly useful in internal administrative processes and they do not offer much value to the outside users.

Overall analysis shows that there is a huge gap in the implementation assessment of Digital Bar Certification System between the Bar Records Division employees and Legal Practitioners on all the dimensions that were measured. The empirical results are highly indicative of the null hypothesis rejection and reveal significant gaps in perception that are indicative of the differences in access to training, support, and familiarity with the system as opposed to the limitations of the technology itself.

The demographic analysis points out significant variations in the internal and external user population that determine the pattern of technology acceptance and the experience of implementation. The quantitative evaluation shows a significant presence of implementation challenges along technological infrastructure, process efficiency, user experience, and system integration domains, and all staff ratings are favorable relative to practitioners, suggesting systematic and not isolated implementation problems.

The statistical analysis offers strong support on the practical relevance of stakeholder differences because the effect sizes were large, which implies that the implementation challenges are not superficial but rather fundamental, and they need to be addressed systematically using specific improvement strategies. The qualitative analysis gives a contextual interpretation of certain areas of improvement and confirms the theoretical assumptions of the models of technology acceptance, especially the significance of paving the way and supporting user tools.

The combination of quantitative and qualitative results gives us a full picture of the current implementation level and determines particular spheres that must be focused on in the future to improve the situation. The convergent nature of the two data sources confirms the validity of the research findings and gives strong grounds to the realization of effectiveness of Digital Bar Certification System implementation and the formulation of evidence-based improvement strategies in accordance with the Strategic Plan for Judicial Innovation 2022-2027.

DISCUSSION

The chapter provides a synthesis of the research findings, conclusions drawn on the basis of the analysis, and recommendations on the improvement of the Digital Bar Certification Systems implementation. The summary is a synthesis of the major findings of the mixed-methods research design of 150 respondents, and the conclusions state the answers to each research question and hypothesis directly. The recommendations offer a tangible improved implementation system in line with the Strategic Plan of Judicial Innovation 2022-2027.

Summary of findings

The study examined the implementation effectiveness of Digital Bar Certification Systems at the Bar Records Division through a mixed-methods research design with 150 respondents (30 Bar Records Division staff and 120 Legal Practitioners).

1. On the Demographic Profile

Bar Records Division Staff:

- The gender distribution was perfect (50:50) and age was concentrated in the 31-50 age bracket with 43.3 percent between 31-40 years and 56.7 percent between 41-50 years which indicates a mature and well-balanced workforce.
- Educational level was extremely high with 86.7% holding bachelor degrees, 6.7% with master degrees and 3.3% with doctoral degrees with a relatively low organizational tenure where 50 percent had 1-5 years of service and 30 percent had 6-10 years of service which could be due to new hiring or restructuring during the digital transformation.

Legal Practitioners:

- Gender representation was skewed towards male representation at 67.5 percent as opposed to 32.5 percent female representation, with age distribution being at the middle and senior career levels with 52.5 percent between 41-50, 22.5 percent 51-60, and 16.7 percent between 31-40, typical of the legal profession.
- Professional experience showed that 43.3% of the practitioners had more than 15 years' experience and 38.3% had 11-15 years of experience, a total of 81.6% of the practitioners had over 10 years' experience indicating a very experienced pool of practitioners with a rich knowledge of the traditional legal processes.

2. On the implementation of the Digital Bar Certification Systems.

Technology Infrastructure:

- The staff rated much higher on a mean of 3.63 in the Strongly Agree range, which indicates that staff strongly believes that the system is reliable, security measures are in place and that the infrastructure has capacity to support the system, whereas the practitioners rated moderately at 2.63 in the Moderately Agree range, creating a substantial 1.00-point perception gap.
- The disparity reflects differential experiences with system accessibility, performance stability, and technical dependability between internal administrative users and external practitioner users.

Process Efficiency:

- Staff rated highest in all dimensions with a mean of 3.65 in the Strongly Agree range, reflecting the fact that they were extremely satisfied with certification processing time, error reduction, task automation and workflow optimization as compared to the traditional paper-based systems.
- Practitioners were significantly lower at 2.55 in the Moderately Agree range, with the largest perception gap of 1.10 points and indicating that the improvements in internal process efficiency have not been well converted to external user advantages.

User Experience:

- Both stakeholder groups provided the lowest ratings across all implementation dimensions, with staff at 2.99 and practitioners at 2.68, both in the Moderately Agree range, indicating universal usability challenges affecting interface intuitiveness, navigation clarity, and task completion efficiency.
- The relatively small perception gap of 0.31 points suggests that usability limitations are universally recognized regardless of institutional position or training level, highlighting the need for comprehensive user-centered design improvements.

Integration with Existing Systems:

- Staff rated highly at 3.61 in the Strongly Agree range, reflecting successful backend integration with court case management systems, judicial databases, and administrative systems that support internal workflows and data exchange capabilities.
- Practitioners rated moderately at 2.56 in the Moderately Agree range, creating a 1.05-point perception gap that indicates integration benefits achieved by internal personnel have not been effectively translated into enhanced external user experiences with system connectivity and cross-jurisdictional access.

3. On the significant difference

- All implementation dimensions exhibited statistically significant differences with p-values below 0.001, but Process Efficiency had the largest t-value of 28.28 and Technology Infrastructure and Integration with Existing Systems had a large t-value of 26.76 and 26.62 respectively, which are indicative of large effect sizes and not just of statistical significance.
- The null hypothesis was rejected with certainty in all the dimensions thus confirming that there are significant differences between the perceptions of stakeholders group and giving empirical support to the alternative hypothesis that there are systematic implementation differences between the staff of the Bar Records Division and Legal Practitioners.

Qualitative Insights:

Valuable System Features and Limitations:

- Respondents cited BARISTA integration, Google Spreadsheets functionality and online filing capabilities as the most useful system features, and at the same time indicated extensive drawbacks such as slow response times, data integrity issues due to collaborative editing and internet connectivity as a factor limiting system reliability.
- These results indicate the contradiction of well-functioning individual characteristics working in a system design that has inherent performance and reliability limitations that impact overall user satisfaction.

Enhancement Priorities and Future Opportunities:

- The stakeholder groups identified comprehensive training programs, performance incentives, infrastructure support such as the provision of laptops to have remote access and connectivity as some of the key areas of enhancement.
- Automation of routine certification processes through artificial intelligence and full integration of the judicial system through e-court connectivity were identified as major future technology opportunities that had the potential to change the capabilities of the current systems.

Based on the comprehensive analysis of findings, the following conclusions directly address the research questions and hypothesis:

1. Respondent Profile Analysis

- In the demographic analysis, two fundamentally different populations of stakeholders are identified with quite varied characteristics that directly affect the patterns of technology acceptance, where Bar Records Division staff represents a younger, educationally diverse, institutionally embedded user group with equal gender representation and shorter organizational tenure, whereas Legal Practitioners are an older, male-dominated, highly experienced external user group with great professional experience but potentially less exposure to the recent technological advances.

- These demographic variations are consistent with the Technology Acceptance Model expectations that age, education, and institutional context would act as moderators in the technology acceptance behaviors, and that effective implementation strategies will have to consider these fundamental variations in user characteristics, baseline technology familiarity and support needs.

2. Implementation Level Assessment

- The Digital Bar Certification Systems implementation has achieved substantial success in serving internal administrative needs while creating significant disparities in external user experiences, demonstrated by strong staff ratings across Technology Infrastructure (3.63), Process Efficiency (3.65), and Integration (3.61), contrasted with moderate practitioner ratings ranging from 2.55 to 2.68, indicating that system modernization benefits have been unevenly distributed.
- The universally moderate User Experience scores are the most serious implementation issue that needs to be addressed as soon as possible because these systemic usability issues cut across stakeholder lines and point to underlying interface design and workflow streamlining issues that limit overall system performance no matter how successful other implementation efforts may be.

Stakeholder Perception Differences

- The results of the statistical analysis are strong empirical evidence to reject the null hypothesis and differences are extremely significant ($p < 0.001$) across all dimensions of implementation with large effect sizes indicating that the differences in perception of stakeholders are not trivial preferences or measurement artifacts, but significant, systematic implementation problems.
- The unevenness of the distribution of the benefits of digital transformation is statistically confirmed, and the differences in the distribution of benefits occur in the context of creating dramatically different user experiences between internal and external stakeholders, which theoretically, as predicted by the Technology Acceptance Model and Unified Theory of Acceptance and Use of Technology, are of paramount importance in the context of the implementation context and user support mechanisms.

Enhanced Implementation Framework Requirements

- The research results show that effective Digital Bar Certification Systems improvement can be achieved only through a multi-dimensional framework that considers the technological infrastructure, organizational change management, and user-centered design aspects at the same time, since the technological-oriented improvements have not been adequate to close the significant implementation gaps observed between the stakeholder groups.
- The enhanced framework must prioritize universal User Experience improvements while extending internal efficiency gains to external users through end-to-end process optimization, differentiated training programs, and stakeholder-specific support mechanisms that maintain administrative efficiency while dramatically improving practitioner accessibility and satisfaction.

RECOMMENDATIONS

Based on the research findings and conclusions, the following enhanced implementation framework is recommended to address the identified gaps and optimize Digital Bar Certification Systems effectiveness:

1. The implementation should focus on the user-centered design principles based on stakeholder-specific usage patterns
2. Development of detailed usability testing procedures that will be conducted among the Bar Records Division personnel and Legal Practitioners prior to implementation to ensure that the interface changes are effective in ensuring that the identified usability issues are overcome without compromising the functionality and security standards of the system.

3. Formulation of load balancing functionalities and redundant system to ensure performance consistency in varying usage demands, seasonal fluctuations, and concurrent user access patterns that are currently affecting system reliability and user satisfaction.
4. support equipment fully such as providing laptops to have remote access capabilities, eliminate internet connectivity requirements by having redundant connection options and create mobile friendly system access so it is more accessible to practitioners without compromising security measures and data protection.
5. Development of offline capability to critical certification functions in the event of connectivity disruptions, which will facilitate continuity of services and minimize dependency on reliable internet connections that currently limit reliability and accessibility of the system to remote users.
6. requires streamlined exception handling processes for non-standard certification cases, standardized credential verification protocols for multi-jurisdictional practice, and API connections with other state bar systems to facilitate seamless credential transfer and verification across jurisdictions.
7. Design AI-based automation of routine certification processing as proposed by the respondents, predictive analytics of compliance issues, intelligent routing systems of complex cases, and AI-assisted help systems that offer immediate user support and reduce the need to use human technical support resources
8. Develop detailed key performance indicators to measure stakeholder satisfaction in all implementation aspects, frequent evaluation periods comparing initial performance with that after the enhancement, semi-annual user experience surveys of both stakeholder groups, and system usage statistics to determine areas of improvement to be used in continuous enhancement.
9. Reduction of the stakeholder perception gaps by 50 percent across all dimensions within 18 months, having at least 3.5 User Experience ratings in both groups within 12 months, shortening the certification processing time by 25 percent in external users within 6 months, and having 95 percent uptime and response time of less than 3 seconds on commonly used tasks.

REFERENCES

1. American Bar Association. (2023). Regulatory innovation in legal services: Progress and challenges in digital transformation. American Bar Association Center for Innovation.
2. Anggraini, P. D. A., Aurora, A. D., Niravita, A., Fikri, M. A. H., & Nugroho, H. (2023). Electronic certificates in Indonesia: Enhancing legal certainty or introducing new challenges? *ARKUS*, 11(1), 686-698. <https://doi.org/10.37275/arkus.v11i1.659>
3. Aravind, G., Sowmya, M. S., & Varun, K. (2018). Decentralized application for digital certification. *International Journal of Trend in Scientific Research and Development*, 2(4), 1715-1720. <https://doi.org/10.31142/ijtsrd10456-6470>
4. Armytage, L. (2019). *Reforming justice: A journey to fairness in Asia*. Cambridge University Press.
5. Bacholkar, A., Shinde, V., Sonawane, K., Jagtap, R., & Darade, S. (2020). Design and develop certificate validation system using smart contract. *Journal of Emerging Technologies and Innovative Research*, 7(3), 19861990.
6. Baldwin, R. (2020). From regulation to behavior change: Giving nudge the third degree. *Modern Law Review*, 83(3), 331-364. <https://doi.org/10.1111/14682230.12509>
7. Benyekhlef, K., Bailey, J., Burkell, J., & Gélinas, F. (Eds.). (2018). *eAccess to justice*. University of Ottawa Press.
8. Brownsword, R. (2021). *Law, technology and society: Reimagining the regulatory environment*. Routledge.
9. Brownsword, R. (2021). *Law, technology and society: Reimagining the regulatory environment*. Routledge.
10. Cabral, J. E., Chavan, A., Clarke, T. M., & Greacen, J. (2019). Using technology to enhance access to justice. *Harvard Journal of Law & Technology*, 26(1), 241324.

11. 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>
12. European Commission. (2021). *Digital justice in the European Union: Opportunities and challenges*. Publications Office of the European Union.
13. Herbke, P., & Sapkota, A. (2024). Decentralized credential verification. arXiv:2406.11535. <https://doi.org/10.48550/arXiv.2406.11535>
14. Hughes, A., Park, A., Kietzmann, J., & Archer-Brown, C. (2019). Beyond Bitcoin: What blockchain and distributed ledger technologies mean for firms.
15. *Business Horizons*, 62(3), 273-281. <https://doi.org/10.1016/j.bushor.2019.01.002> Hughes, A., Park, A., Kietzmann, J., & Archer-Brown, C. (2019). Beyond Bitcoin: What blockchain and distributed ledger technologies mean for firms. *Business Horizons*, 62(3), 273-281. <https://doi.org/10.1016/j.bushor.2019.01.002>
16. International Bar Association. (2023). *Global impact of COVID-19 on legal regulatory systems: Lessons and innovations*. International Bar Association.
17. International Bar Association. (2023). *Global impact of COVID-19 on legal regulatory systems: Lessons and innovations*. International Bar Association.
18. Kabashi, F., Snopçe, H., Luma, A., & Neziri, V. (2024). Trustworthy verification of academic credentials through blockchain technology. *International Journal of Online and Biomedical Engineering (iJOE)*, 20(9), 51-64. <https://doi.org/10.3991/ijoe.v20i09.48999>
19. Kappiarathel, S. M. (2025). Legal tech and the future of litigation: Transforming justice through innovation. *Indiana Journal of Arts & Literature*, 6(2), 1-<https://doi.org/10.5281/zenodo.14970194>
20. Katsh, E., & Rabinovich-Einy, O. (2017). *Digital justice: Technology and the internet of disputes*. Oxford University Press.
21. Katsh, E., & Rabinovich-Einy, O. (2019). *Digital justice: Technology and the internet of disputes*. Oxford University Press.
22. Kovach, Y. V. (2025). Technical and technological aspects of the adoption and implementation of local normative-legal acts of local self-government. *Analytical-Comparative Jurisprudence*, 1, 103-107. <https://doi.org/10.24144/2788-6018.2025.01.15>
23. Krismantoro, D. (2023). Guarantee of legal certainty on the issuance of electronic land certificates. *Russian Law Journal*, 11(3), 550-558.
24. Legg, M. (2022). The future of dispute resolution: Online ADR and online courts. *Australasian Dispute Resolution Journal*, 33(1), 65-78.
25. McKnight, D. H., Carter, M., Thatcher, J. B., & Clay, P. F. (2011). Trust in a specific technology: An investigation of its components and measures. *ACM Transactions on Management Information Systems*, 2(2), 1-25. <https://doi.org/10.1145/1985347.1985353>
26. Nasution, D. P., Hilmi, R. R., Susilawati, F., Ikhsan, R., Nasution, L. N., & Sari, W. I. (2025). Utilization of digitalization for MSME development as a pillar of economic development. *International Journal of Accounting, Management, Economics and Social Sciences*, 3(1), 371-381. <https://doi.org/10.61990/ijamesc.v3i1.467>
27. National Center for State Courts. (2022). *Strategic plan for judicial innovation 20222027*.
28. National Center for State Courts. (2022). *Strategic plan for judicial innovation 20222027: Adapting courts for the digital age*. National Center for State Courts.
29. National Center for State Courts. (2022). *Strategic plan for judicial innovation 20222027: Adapting courts for the digital age*. National Center for State Courts.
30. Nummiliikki, J., Saxholm, S., Kärkkäinen, A., & Koskinen, S. (2022). Developing and testing digital calibration certificate in an industrial application. *IMEKO TC6 International Conference on Metrology and Digital Transformation*, Berlin, Germany.
31. Nummiliikki, J., Saxholm, S., Kärkkäinen, A., & Koskinen, S. (2022). Developing and testing digital calibration certificate in an industrial application. *IMEKO TC6 International Conference on Metrology and Digital Transformation*, Berlin, Germany, September 19-21, 2022.
32. Permadi, I., & Herlindah. (2023). Electronic title certificate as legal evidence: The land registration system and the quest for legal certainty in Indonesia. *Digital Evidence and Electronic Signature Law Review*, 20, 47-61.

33. Prasetya, A. G. N., & Bawono, B. T. (2022). The juridical analysis of the use of electronic signatures on electronic land certificates in the conception of legal certainty. *Sultan Agung Notary Law Review*, 4(3), 771-785. <https://doi.org/10.61990/ijamesc.v3i1.467>
34. Reiling, D. (2020). *Digital justice: Technology and the rule of law in the age of artificial intelligence*. Oxford University Press.
35. Rhodes, N. (2021). Administrative burdens in legal regulation: Empirical evidence and reform pathways. *Journal of Legal Administration*, 38(2), 156-183.
36. Rhodes, N. (2021). Administrative burdens in legal regulation: Empirical evidence and reform pathways. *Journal of Legal Administration*, 38(2), 156-183.
37. Richardson, E., & Genn, H. (2018). Paths to justice in a digital world. *Journal of Law and Society*, 45(1), 49-74. <https://doi.org/10.1111/jols.12338>
38. Sari, E. M., Kurniawan, & Haq, L. M. H. (2023). Notary's responsibility in certification of electronic signatures for discrepancies in verification of personal data of the owner of the electronic signature: Comparative study between Indonesia and the United States of America. *Path of Science*, 9(4), 5009-5015. <https://doi.org/10.22178/pos.91-18>
39. Schmitz, A. J., & Zeleznikow, J. (2018). Intelligent legal tech to empower selfrepresented litigants. *Columbia Journal of Law and Social Problems*, 51(4), 607-668.
40. Sherstoboev, O. N., & Mikheeva, I. V. (2024). Information technologies in judicial process: Opportunities of artificial intelligence in evidence system. *RUDN Journal of Law*, 28(1), 178-195. <https://doi.org/10.22363/2313-23372024-281-178-195>
41. Siva Rama Rao, A. V. S., Kavarakuntla, T., Kanipakam, S., Murari, T., Kumar, K. P., & Kumar, B. S. (2023). Blockchain-backed verification systems for enhanced interoperability and trust in managing legal documents across multi-cloud environments. *Journal of Electrical Systems*, 19(4), 254-269.
42. Sourdin, T., & Zeleznikow, J. (2020). Courts, mediation and COVID-19. *Australian Business Law Review*, 48(2), 138-158.
43. Sourdin, T., Li, B., & McNamara, D. M. (2020). Court innovations and access to justice in times of crisis. *Health Policy and Technology*, 9(4), 447-453. <https://doi.org/10.1016/j.hlpt.2020.08.020>
44. Susskind, R. (2019). *Online courts and the future of justice*. Oxford University Press. Susskind, R. (2020). *Online courts and the future of justice*. Oxford University Press.
45. Teremetskyi, V., Kovalchuk, O., Kolesnikov, A., Udovenko, Z., Shramko, O., & Predmestnikov, O. (2023). Proactive models for information support of the judicial system. *Revista Brasileira de Direito*, 19(3), e4975. <https://doi.org/10.18256/2238-0604.2023.v19i3.4975>
46. Umo, M. E. (2025). The future of legal communication in a virtual environment. *Eurasian Experiment Journal of Arts and Management*, 7(3), 68-71.
47. Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425-478. <https://doi.org/10.2307/30036540>
48. Venkatesh, V., Thong, J. Y., & Xu, X. (2016). Unified theory of acceptance and use of technology: A synthesis and the road ahead. *Journal of the Association for Information Systems*, 17(5), 328-376. <https://doi.org/10.17705/1jais.00428>
49. Warren, E. (2021). The future of judicial innovation: Building resilient courts in the post-pandemic era. *Harvard Law Review*, 134(3), 851-893.
50. Zaman, S. A. A., Vilkas, M., Zaman, S. I., & Jamil, S. (2024). Digital technologies and digitalization performance: The mediating role of digitalization management. *Journal of Manufacturing Technology Management*. <https://doi.org/10.1108/JMTM-04-2024-0176>