INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY: APPLIED BUSINESS AND EDUCATION RESEARCH

2024, Vol. 5, No. 5, 1758 – 1775 http://dx.doi.org/10.11594/ijmaber.05.05.23

Research Article

Evaluation of the use of Court Video Conference Hearings in Angeles City, Philippines

Mark John M. Pangan^{1*}, Alrien F. Dausan²

¹Student, Doctor of Philosophy in Criminal Justice with specialization in Criminology, *De La Salle University – Dasmariñas, Dasmariñas, Cavite, Philippines*

²Professor, College of Criminal Justice Education, De La Salle University – Dasmariñas, Dasmariñas, Cavite, Philippines

Article history: Submission May 2024 Revised May 2024 Accepted May 2024

*Corresponding author: E-mail:

pmm2632@dlsud.edu.ph

ABSTRACT

The COVID-19 pandemic prompted courts worldwide to swiftly transition to online operations, including virtual hearings, to maintain continuity amid health concerns. This shift signifies a lasting impact on the justice system. Despite this, research on the effectiveness and challenges of court videoconferencing, particularly in the Philippines, remains limited. This study aimed to address this gap by employing a descriptive-evaluative approach and surveying 213 respondents, including court officers, prosecutors, lawyers, jail officers, and police officers, in Angeles City. The study assessed challenges such as procedural integrity and technical glitches, as well as perspectives on judicial efficiency and cost effectiveness. Findings revealed significant hurdles in videoconference hearings, yet respondents recognized their benefits in expediting case resolutions and enhancing security. Interestingly, there was no significant difference in evaluations across respondent groups. Interviews corroborated survey results, highlighting concerns and benefits of videoconference hearings. Addressing challenges while leveraging benefits is crucial, requiring investment in technological literacy, internet connectivity, and procedural integrity safeguards. Policymakers should also explore solutions to infrastructure limitations, fostering widespread adoption of videoconference hearings for a more effective and fair legal system.

Keywords: Challenges, Effectiveness, Perceived ease of use, Perceived usefulness, Video conference hearings

Introduction

In recent years, technology has been increasingly integrated into the criminal justice system, allowing for remote participation in

court proceedings, especially amid the COVID-19 pandemic. With courts worldwide adopting virtual hearings, there's a need to understand their effectiveness and challenges, particularly

How to cite:

Pangan, M. J. M. & Dausan, A. F. (2024). Evaluation of the use of Court Video Conference Hearings in Angeles City, Philippines. *International Journal of Multidisciplinary: Applied Business and Education Research*. *5*(5), 1758 – 1775. doi: 10.11594/ijmaber.05.05.23

in the Philippines where research in this area is limited. While virtual hearings offer benefits like reduced costs and improved accessibility, studies also highlight challenges such as technical limitations and concerns about due process. The adoption of virtual hearings by the Philippine Supreme Court signifies a significant

shift in the country's justice system, with positive outcomes seen in case resolutions and prisoner releases. However, challenges persist, including case backlogs and concerns about the feasibility of virtual proceedings in ensuring fair trials.

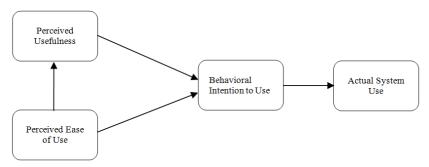


Figure 1: Technology Acceptance Model (TAM) Theory

The research is grounded in the Technology Acceptance Model (TAM), a theoretical framework developed by Davis in 1989, which investigates the factors influencing the adoption and acceptance of technology. TAM posits that an individual's intention to use a system is determined by their perceived ease of use and perceived usefulness of that system. In this study, TAM is utilized to explore the factors influencing the acceptance of videoconference hearings among court officers, lawyers, prosecutors, police officers, and jail officers in Angeles City. The two primary factors assessed are perceived ease of use (PEOU) and perceived usefulness (PU), with major variables such as pro-

cedural integrity, technical glitches, and technology readiness falling under PEOU, while factors like judicial efficiency, security, and cost efficiency fall under PU. The study focuses on testing these factors to understand their impact on the adoption and utilization of videoconference technology in court proceedings. Higher levels of perceived ease of use and perceived usefulness are expected to positively influence adoption rates among the respondents. Overall, TAM provides a structured framework to analyze perceptions and intentions regarding the technology, contributing to a comprehensive understanding of its acceptance and effectiveness in the legal context.

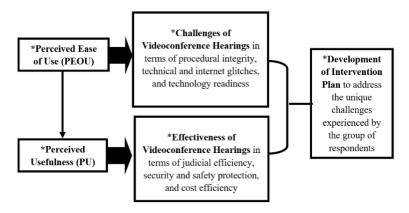


Figure 2: Research Simulacrum

Figure 2 shows the research simulacrum of the study. This figure represents the central

idea of the study and the concepts influenced by it. Furthermore, it illustrates the relationship between perceived ease of use and perceived usefulness of videoconferencing platforms. These factors will be influenced by the challenges and effectiveness of video conference hearings resulting from the development of an intervention plan.

This study aims to evaluate the perspectives of court officers, lawyers, and other stakeholders in Angeles City, Pampanga, regarding the effectiveness and challenges of virtual hearings. Specifically, the study sought to answer specific questions regarding the challenges experienced in the conduct of videoconference hearings such as procedural integrity, technical and internet glitches and technology preparedness and the perspectives of the five group of respondents regarding the effectiveness of videoconference hearings in Angeles City in terms of judicial efficiency, security and safety protection, and cost efficiency were evaluated. By addressing these issues, the study hopes to contribute to solutions for alleviating court congestion and expediting the judicial process in the Philippines.

Methods

The research employed a descriptive-evaluative research design, which combines both describing and evaluating a phenomenon. In this case, it aimed to evaluate the impact of court videoconference hearings on judicial proceedings in Angeles City, Pampanga. Purposive sampling was used to select participants, including court officers, lawyers, prosecutors, police officers, and jail officers, who were considered key stakeholders in assessing the impact of virtual court proceedings. The sample size was determined using the Raosoft software, resulting in a total of 213 respondents distributed across the five groups. To collect data, a triangulation method was employed. This method involves the use of multiple data collection tools commonly used in research, such as selfmade questionnaires, interview checklists, and observation checklists. In the present study, a self-made survey questionnaire was used and validated through a pilot test and expert validation. Unstructured interviews were also conducted with selected respondents to validate the survey results. Ethical considerations

were paramount, with informed consent obtained from all participants, ensuring their voluntary participation and confidentiality. Withdrawal criteria were established, and statistical tools like Cronbach's Alpha and Two-way ANOVA (Analysis of Variance) were used for statistical treatment of data. In this case, Cronbach's Alpha score is 0.96, which is considered very reliable. This asserts that the responses are consistent between items (reliabil-In terms of internal consistency, Cronbach's Alpha is under the score of Alpha > or = 0.90. This means that the instrument is excellent in terms of its internal consistency. Additionally, the five-point Likert Scale measured challenges encountered and perspectives on effectiveness, providing a structured approach to data interpretation. Overall, the research design and methods were robust and comprehensive, aiming to provide a thorough evaluation of the impact of court videoconference hearings in Angeles City.

Population and Inclusion Criteria

The study evaluated the implementation of court videoconference hearings in Angeles City, focusing on five key groups: court officers, lawyers, prosecutors, police officers, and jail officers. These groups were chosen for their direct involvement in remote teleconferencing processes, making them valuable stakeholders in evaluating the effectiveness and challenges of virtual court proceedings. Their firsthand experience and expertise in the legal domain positioned them to provide reliable evaluations. The majority of respondents in the study were aged between 31 to 35 years old, accounting for 23.00% of the total sample. The next largest age group was 26 to 30 years old, constituting 18.31% of the sample, followed closely by respondents aged 41 to 45 years old at 18.78%. In terms of sex, males comprised the majority at 62.44%, while females made up 37.56% of the sample. Regarding occupation, police officers constituted the largest group at 46.95%, followed by jail officers at 24.41%. Court officers ranked third, comprising 23.47% of the sample, while lawyers accounted for 3.29% and prosecutors for 1.88%.

Table I. Summary of the profile of the respondents

Profile Variables	Frequency(N=213)	Percentage	Rank
Age			
31 years old to 35 years old	49	23.00%	1
26 years old to 30 years old	39	18.31%	2
41 years old to 45 years old	40	18.78%	3
36 years old to 40 years old	33	15.49%	4
46 years old to 50 years old	21	9.86%	5
21 years old to 25 years old	19	8.92%	6
51 years old to 55 years old	5	2.35%	7
56 years old to 60 years old	4	1.88%	8
61 years old and above	3	1.41%	9
Sex			
Male	133	62.44%	1
Female	80	37.56%	2
Category			
Police Officer	100	46.95%	1
Jail Officer	52	24.41%	2
Court Officer (Judge, Clerk of Court, Ste-	50	23.47%	3
nographer, Interpreter, Process Server)			
Lawyer	7	3.29%	4
Prosecutor	4	1.88%	5

Results and Discussion

Problem number 1. Challenges experienced in the conduct of court videoconference hearings. *Table II. Procedural Integrity*

Indicators	Mean	Standard Deviation	Verbal Interpretation	Rank
The challenge of examining the credibility and	4.38	0.82	Very concerned	1
competency of evidence presented is a concern during remote judicial hearings.				
The challenge of presenting evidence virtually	4.36	0.83	Very concerned	2
is a concern during remote judicial hearings.	4.20	0.91	Vory gongonnod	3
Evaluating the credibility, truthfulness, and accuracy of the testimony provided by the ac-	4.30	0.91	Very concerned	3
cused, witness, and private offended party, is				
a matter of concern in the conduct of video				
conference hearings. Assessing the credibility of the accused, wit-	4.29	0.86	Very concerned	4
nesses, and private offended party, including	7.27	0.00	very concerned	Т
factors like demeanor, which involves their fa-				
cial appearance, behavior, body language, and				
tone of voice, is a matter of concern in the conduct of video conference hearings.				
The challenge of ensuring private communica-	4.25	0.89	Very concerned	5
tions between litigants and counsel in the con-			Ž	
duct of videoconference hearings is a matter				
of concern.				

Indicators	Mean	Standard Deviation	Verbal Interpretation	Rank
The right of a party to confront and cross-examine opposing witnesses in judicial litigation, be it criminal or civil in nature, is a matter of concern in conducting videoconference hearings.	4.21	0.93	Very concerned	6
Overall mean, standard deviation, and verbal interpretation	4.29	0.87	Very con- cerned	

The study's findings, presented in Table II, reveal significant concerns regarding procedural integrity in video conference hearings. The foremost challenge identified is the difficulty in examining the credibility and competency of evidence presented, which received the highest mean score of 4.38, indicating a "Very concerned" level of apprehension among participants. This underscores the critical need to ensure the integrity and reliability of evidence in remote judicial proceedings. The low standard deviation of 0.82 associated with this challenge suggests a high degree of agreement among participants regarding its severity.

This study's findings align with prior research on the challenges of virtual court proceedings, particularly concerning witness testimony and credibility assessment. Jamila et al. (2021) and Bailey (2021) highlighted difficulties in evaluating witness credibility, echoed by The Florida Bar Video Conferencing Survey (2020) and QMUL International Arbitration Survey (2021), which indicated concerns about managing witnesses in virtual settings. Conversely, Nangia et al. (2020) and Philp (2022) suggested virtual hearings may enhance credibility evaluation due to prolonged eye contact, contrasting with Odhiambo and Mugenyu's (2021) concerns about effective evidence challenge and witness demeanor assessment. Legg and Song (2021) raised issues about cross-examination efficacy, while Judge Dacanay-Grimares's (2023) study in the Philippines revealed biases against witnesses in virtual court proceedings, indicating a need to address challenges in communication and credibility assessment.

Additionally, the right of parties to confront and cross-examine opposing witnesses in judicial litigation during videoconference hearings emerged as a major concern, with a mean score of 4.21, also denoting a "Very concerned" level. This highlights the fundamental importance of preserving procedural rights, adversarial processes, and principles of fairness and due process in virtual courtroom environments.

This study's findings are reinforced by Baker and McKenzie's (2021) research in the UK, which highlighted that a significant portion of respondents expressed concerns about the impact of virtual hearings on witness cross-examination, with 55.6% indicating a diminished effect. Similarly, Dacanay-Grimares (2023) identified challenges in maintaining attorneyclient confidentiality in the online environment, echoing concerns raised in The Florida Bar Video Conferencing Survey (2020) about examination/cross-examination and evidence presentation processes. Furthermore, Jamila et al. (2021) noted limitations in judges' ability to thoroughly view and examine evidence during virtual hearings, echoing concerns raised by Rocha et al. (2022) in Brazil regarding technological and societal issues that could undermine fundamental rights and the justice system's legitimacy. Sung (2020) noted that transitioning courts to online platforms presents challenges, particularly in investigating and presenting solid evidence. One significant issue is the difficulty of questioning witnesses or expert witnesses over the Internet, which can compromise the effectiveness of online court proceedings. Consequently, online courts may be more suitable for cases that do not require witness testimonies. Despite these challenges, Jamila et al. (2021) concluded that defendants' rights, such as the right to cross-examine witnesses, are generally upheld during virtual trials, albeit with some inefficiencies compared to traditional trials.

Unstructured interviews conducted during the survey further reinforced these findings, with respondents expressing difficulties in evaluating witness testimonies and making timely objections during cross-examination due to technical issues like intermittent internet connection. Overall, the study underscores widespread concerns among participants

regarding procedural integrity in videoconference hearings, as indicated by an overall mean score of 4.29 and a low standard deviation of 0.87. These findings highlight the urgent need to address challenges associated with virtual proceedings to uphold standards of fairness and justice effectively.

Table III. Technical and Internet Glitches

Indicators	Mean	Standard Deviation	Verbal Interpretation	Rank
Limited access to technology and poor internet	4.45	0.85	Very concerned	1
connectivity among certain participants includ-				
ing the court itself during video conference				
hearings is a matter of concern.				
The conduct of video conference hearings gives	4.40	0.80	Very concerned	2
rise to concerns about technical problems and				
issues impacting the quality of audio and video				
during remote hearings of judicial cases.				
The conduct of videoconference hearings can	4.32	0.84	Very concerned	3
be used as a tool to delay the proceedings as in-				
ternet connection may be interfered with by				
merely unplugging the Wi-Fi.				
The issue of confidentiality and cybersecurity	4.23	0.89	Very concerned	4
concerns during the remote hearing of judicial				
cases is a cause for concern in video conference				
proceedings.				
Overall mean, standard deviation, and	4.35	0.84	Very con-	
verbal interpretation			cerned	

Table III offers a comprehensive analysis of challenges encountered in video conference hearings, particularly focusing on technical and internet glitches. "Limited access to technology and poor internet connectivity among certain participants" emerged as a primary concern, with a mean score of 4.45, indicating deepseated worry over technological accessibility and connectivity reliability. The standard deviation of 0.85 suggests a notable level of agreement among participants regarding this issue.

The research on remote hearings via online videoconferencing highlights significant challenges stemming from limited access to technology and poor internet connectivity among certain participants. Studies, including those by the California Commission on Access to Justice (2020) and Jamila et al. (2021), emphasize the critical role of internet connectivity in

facilitating virtual proceedings. Baker & McKenzie's (2021) survey in the UK and the 2021 International Arbitration Survey also underscore the need for substantial investments in technology due to technical malfunctions. Anand (2021) discusses challenges faced in India, risking citizens' exclusion from the justice delivery process. Bannon and Keith (2021) note how technological challenges exacerbate the digital divide, hindering engagement in legal proceedings. Bradley and Farber (2022) discuss transmission problems and technological glitches impacting both attorneys and respondents during video teleconference hearings. Judge Dacanay-Grimares (2023) identifies limited access and familiarity with technology as primary drawbacks, alongside equipment failure. The Florida Bar's 2020 survey highlights internet connectivity issues, impacting communication between attorneys and defendants and the quality of legal representation.

Conversely, "The issue of confidentiality and cybersecurity concerns" received a mean score of 4.23, still denoted as "Very concerned," indicating widespread acknowledgment of its significance. The standard deviation of 0.89 indicates consistency in participants' views on the severity of this issue.

The research supports the study's findings by addressing cybersecurity concerns in virtual hearings. Jurva (2021) stresses the importance of technology accessibility and cybersecurity measures for sharing case materials. Baker and McKenzie's (2021) UK survey and the International Arbitration Survey 2021 highlight respondents' concerns about security and confidentiality in virtual hearings. Legg and Song (2021) warn of risks associated with virtual hearing designs, especially with platforms like Zoom known for security vulnerabilities. Anand (2021) emphasizes cybersecurity as a significant concern despite government initiatives. The Florida Bar's 2020 survey raises issues about filing exhibits and potential

exposure of confidential information due to glitches. Gerry et. al. (2018) highlights significant concerns regarding privacy and data protection in the context of online court processes. They argue that these issues could impede the identification of human trafficking victims. Dacanay-Grimares's (2023) study in Metro Manila underscores concerns about proceedings' integrity and the risk of illegal recording and disclosure of sensitive information in the online setting.

Respondents' concerns from unstructured interviews align with the survey results, highlighting issues such as inadequate internet connections, privacy breaches, and cybersecurity threats. The overall mean score of 4.35 underscores the consensus among participants regarding the significance of technical and internet-related challenges during videoconference hearings. The low standard deviation of 0.84 indicates a high level of agreement among respondents, emphasizing the widespread recognition of these challenges and the need for effective solutions to ensure the fairness and efficiency of remote judicial proceedings.

Table IV. Technology Readiness

Indicators	Mean	Standard Deviation	Verbal Interpretation	Rank
The lack of knowledge of some litigants and witnesses about the use of computers, technology and videoconferencing platforms is a matter of concern.	4.28	0.89	Very concerned	1
Limited equipment such as availability of computers, laptops, video cameras, microphones, speakers, high-definition monitors, printer-scanners, etc., used for video conference hearings is a matter of concern.	4.22	0.97	Very concerned	2
Difficulty of some parties involved in adopting the modern way in attending court hearings is a matter of concern.	4.21	0.84	Very concerned	3
The availability of technical personnel is a concern during videoconference hearings.	4.18	1.00	Moderately concerned	4
The sufficiency of technical training among participants in videoconference hearings is a matter of concern.	4.15	0.97	Moderately concerned	5
Limited facilities and infrastructures in courts e.g., RTC, MTC and MTCC, PAO dis- trict office, City Prosecutor's Office, PNP custodial facilities, and Angeles District Jail	4.14	0.95	Moderately concerned	6

Indicators	Mean	Standard Deviation	Verbal Interpretation	Rank
used for video conference hearings is a				
matter of concern.				
Overall mean, standard deviation, and	4.19	0.93	Concerned	
verbal interpretation				

The research delves into significant challenges associated with video conference hearings, particularly focusing on technological readiness. Concerns about litigants' and witnesses' lack of knowledge about computers, technology, and videoconferencing platforms, reflected in a mean score of 4.28, indicate a high level of concern. The low standard deviation of 0.89 underscores the consistency in participants' perceptions of this issue.

Previous research, including Philp (2022), Anand (2021), and Dacanay-Grimares (2023), supports the findings of this study regarding challenges in virtual court proceedings. Philp underscores the complexity of transitioning to virtual courts, especially for those unfamiliar with legal processes, a sentiment echoed by Anand, who highlights issues like unreliable internet connections and inadequate technical proficiency among lawyers in India. The Florida Bar's 2020 survey also reveals user errors and lack of technological familiarity among participants in virtual hearings, aligning with observed difficulties. Dacanay-Grimares further emphasizes challenges faced by marginalized groups, such as indigent and disabled defendants, in accessing technology for online proceedings, reflecting broader issues of user proficiency and accessibility. These studies collectively reinforce the significance of addressing technological challenges and ensuring accessibility in virtual court settings. Sururie and Susanto (2020) noted that the COVID-19 pandemic has presented significant challenges for judicial administrators, particularly in managing technological issues. This is especially true in countries like Indonesia, where lockdowns have been enforced to curb the virus's spread, necessitating the use of remote court proceedings.

The study also emphasizes the need for adequate facilities and infrastructure in courts for conducting video conference hearings. While

the indicator focusing on limited facilities and infrastructure garnered a mean score of 4.18, indicating moderate concern, the low standard deviation of 0.95 suggests consistent perceptions among participants.

Previous research has highlighted significant challenges related to the limited facilities and infrastructure for conducting virtual court proceedings. Akhihiero (2020) stressed the necessity of adequate facilities and infrastructure to effectively support remote hearings, alongside training legal professionals in utilizing technology. Philp (2022) identified challenges in Canada, including the lack of technological proficiency among senior legal professionals and insufficient infrastructure in prisons, leading to logistical issues for incarcerated individuals participating in hearings. Similarly, Jamila et al. (2021) found similar issues in Indonesia, where courts lacked sufficient teleconference rooms, necessitating judges to rotate their use during trials. Anand (2021) discussed the importance of infrastructure considerations, including bandwidth and data privacy concerns, proposing universal standards for court technology. Dacanay-Grimares (2023) outlined recommendations for videoconference hearings in Metro Manila, advocating for standardizing procedures and enhancing hardware equipment, such as implementing a multiple-camera setup to improve audiovisual quality. These findings collectively underscore the critical necessity for adequate facilities and infrastructure to ensure the smooth conduct of virtual court proceedings.

Recommendations from the unstructured interview align with these findings, emphasizing the need to improve internet infrastructure, conduct training sessions, and enhance IT support for effective video conference hearings. The overall mean of 4.19 reflects significant concern about technology readiness, with a low

standard deviation of 0.93 indicating consistent perceptions among participants. Addressing these challenges is crucial for

ensuring the efficiency and reliability of remote judicial proceedings and maintaining the integrity of the justice system in the digital age.

Problem Number 2. Perspectives of the five groups of respondents regarding the effectiveness of court videoconference hearings. *Table V. Judicial Efficiency*

Indicators	Mean	SD	Verbal Interpretation	Rank
The adoption of video conference hearings has been instrumental tool in achieving high percentages of disposition rates of cases and has served as an approach for alleviating court congestion in Angeles City.	4.24	0.85	Extremely effective	1
The conduct of bail hearings through video conference has been a valuable tool in ensuring that qualified Persons Deprived of Liberty (PDLs) are immediately released from detention and placed on provisional release.	4.24	0.78	Extremely effective	1
The conduct of video conference hearings has contributed to the reduction of congestion rates at Angeles District Jail through the grant of community-based treatment programs like probation, parole, conditional pardon, etc.	4.21	0.85	Extremely effective	2
The implementation of video conference hearings has been advantageous compared to traditional in-court hearings, especially for non-confrontational proceedings such as arraignment, pre-trial, judgment, motion for reconsideration, motion for new trial, and appeal, where there is no need to have the witness identify the accused or the evidence submitted by the parties.	4.19	0.90	Very effective	3
The implementation of video conference hearings has contributed to streamlining court systems and operations in Angeles City.	4.17	0.86	Very effective	4
Overall mean, standard deviation, and verbal interpretation	4.21	0.84	Extremely effective	

The findings from Table V underscore the pivotal role of video conference hearings in expediting case resolutions and addressing court congestion, particularly in Angeles City. The highest mean score of 4.24, interpreted as Extremely effective, with a standard deviation of 0.85, highlights the effectiveness of video conference hearings in achieving high percentages of disposition rates of cases. These results emphasize the significant impact of leveraging technology to streamline legal proceedings and enhance the efficiency of the judicial system.

Previous research has demonstrated the significant impact of technology integration, particularly videoconferencing and e-court systems, on judicial efficiency. In Malaysia, the introduction of electronic records management systems into Shari'a courts led to a notable improvement in case disposal rates, with 58% of cases resolved within one month (Caniban, 2020). Similarly, in the Philippines, authorized courts conducted over 47,000 videoconferencing hearings, achieving an 85% success rate. Additionally, the Supreme Court reported that in 2020, over 200,000 criminal cases and

11,000 civil cases were conducted via videoconference hearings, with an average success rate of 88.11% (Judiciary Annual Report, 2020). In essence, digital courts can streamline trials by automating repetitive tasks, reducing the time needed. They also enhance accuracy, minimizing errors that waste judicial resources, allowing judges to focus more on complex cases (Li & Peng, 2023).

Focusing on Angeles City, the e-court system demonstrated effectiveness in resolving cases, with drug courts resolving 83.37% of criminal cases and small claims cases seeing a resolution rate of 96.88%. Civil cases handled by first-level courts showed a resolution rate of 89.13%. Similarly, in 2021, family courts resolved 63.19% of criminal cases, and second-level regular courts resolved 74.96% of civil cases (Judiciary Annual Report, 2020).

The data from the Supreme Court's 2022 report further highlighted the efficiency of videoconference hearings, with over 450,000 cases heard and an average success rate of 92.00%. These findings collectively indicate that the adoption of technology, including videoconferencing and e-court systems, has significantly contributed to judicial efficiency by expediting case resolution and reducing court congestion (Judiciary Annual Report, 2022). Focusing specifically on Angeles City, the ecourt system demonstrated its effectiveness in resolving cases. Notably, drug courts resolved 83.37% of criminal cases, while small claims cases saw an impressive resolution rate of 96.88%. Civil cases handled by first-level courts showed a resolution rate of 89.13%. Furthermore, in 2021, family courts resolved 63.19% of criminal cases, and second-level regular courts resolved 74.96% of civil cases. The data from the Supreme Court's 2022 report underscored the efficiency of videoconference hearings, with over 450,000 cases heard, resulting in an average success rate of 92.00%. These findings collectively highlight the significant contribution of technology adoption, including videoconferencing and e-court systems, to judicial efficiency by expediting case resolution and reducing court congestion.

Similarly, the findings highlight the significant impact of video conference technology in expediting legal processes related to bail hearings and reducing jail overcrowding. The mean score of 4.24, interpreted as Extremely effective, with a standard deviation of 0.78, underscores the effectiveness of conducting bail hearings through video conference. These results emphasize the valuable role of remote communication platforms in promptly reviewing bail applications, assessing eligibility criteria, and ensuring the immediate release of qualified Persons Deprived of Liberty (PDLs) from detention.

Research by Diamond and coauthors in Cook County, Illinois, examined the impact of closed-circuit television on bail hearings, revealing that judges tended to impose higher bond amounts during video proceedings (Bannon & Adelstein, 2020). Conversely, studies, including those highlighted by Dacanay-Grimares (2023), have shown the effectiveness of bail hearings via video conference in reducing detention durations for defendants. Notably, criminal bail hearings conducted through video were associated with higher bond amounts compared to in-person hearings. Similarly, immigration courts found that detained individuals were more likely to face deportation when their hearings were conducted via video.

According to the 2021 Judiciary Annual Report from the Supreme Court of the Philippines, videoconferencing hearings facilitated the release of 111,893 persons deprived of liberty, including 1,704 children in conflict with the law. Subsequently, the 2022 report showed that 27,401 persons deprived of liberty were released through videoconference hearings, highlighting the role of video proceedings in expediting the release process. Dacanay-Grimares (2023) further emphasized the benefits of videoconference hearings in reducing defendants' detention duration by eliminating the need for physical transportation and securing defendants, thus accelerating pretrial proceedings.

Conversely, the findings indicate a positive perception among respondents regarding the effectiveness of video conference hearings in improving court operations in Angeles City. Despite having the lowest mean score of 4.17, interpreted as Very effective, with a standard deviation of 0.86, it reflects a recognition of the

contribution of video conference hearings to streamlining court systems and operations.

Previous research, including studies by Dacanay-Grimares (2023), Caniban (2020), and the ET Group (2024), highlights the transformative impact of technology, particularly videoconferencing and e-court systems, on legal processes and access to justice. Dacanay-Grimares emphasizes the growing adoption of videoconferencing in federal and state court systems, spanning various stages of legal proceedings. Caniban underscores the cost-saving benefits of e-court systems, including reduced paper usage and streamlined proceedings. Additionally, the ET Group emphasizes the revolutionary role of video conferencing in

simplifying case processing and providing essential services to incarcerated individuals. Overall, these findings emphasize the increasing integration of technology in legal systems, leading to enhanced efficiency and accessibility to justice for all parties involved.

The correlation between survey results and unstructured interview findings underscores the consensus among respondents, particularly police officers, regarding the value of video conferencing in optimizing manpower utilization and expediting case resolutions. Overall, these findings highlight the positive impact of video conference hearings on judicial efficiency, promoting timely access to justice and smoother legal proceedings.

Table VI. Security and Safety Protection

Indicators	Mean	Standard Deviation	Verbal Interpretation	Rank
The utilization of video conference hearings	4.47	0.70	Extremely	1
has been a valuable tool in cases involving	1.17	0.70	effective	1
high-risk Persons Deprived of Liberty (PDL),			CHECUVE	
taking into consideration factors like security				
risks and the safety of court personnel, prose-				
cutors, lawyers, police officers, and jail officers				
that would be involved in an in-person hearing.				
Video conference hearings have been a valua-	4.46	0.74	Extremely	2
ble tool in situations where the physical ap-	4.40	0.74	effective	2
pearance of a litigant, witness, or counsel is			enective	
•				
hindered due to security risks, including real				
and apparent danger to their life.	4.20	0.70	Evetuana alve	2
The use of video conference hearings during ty-	4.39	0.70	Extremely	3
phoons, floods, earthquakes, pandemics, and			effective	
human-induced events (e.g., fires, strikes, lock-				
downs) has proven to be valuable in overcom-				
ing physical access limitations to the courts				
and addressing threats to the security and				
safety of the courts and/or personnel.				
Overall mean, standard deviation, and ver-	4.44	0.71	Extremely ef-	
bal interpretation			fective	

Table VI presents an evaluation of respondents' perspectives on the effectiveness of video conference hearings concerning security and safety protection. The indicator with the highest mean score of 4.47, interpreted as Very effective, underscores the belief that virtual hearings are efficient in mitigating security risks

and ensuring safety, particularly for high-risk Persons Deprived of Liberty (PDL).

Research by Sanders (2020) highlights the utilization of videoconference technology during Mafia trials in 1990s Italy, aiming to safeguard witnesses and prevent the transfer of dangerous criminals from secure prisons to

courtrooms. This strategy minimized risks associated with detainee transport, logistical complexities, and delays in legal proceedings. Similarly, Dacanay-Grimares (2023) underscores the safety benefits of videoconference hearings, enabling remote participation and eliminating the need to transport defendants from correctional facilities. This reduces risks to various stakeholders, including court personnel, corrections staff, victims, witnesses, and the public, while also mitigating trauma for victims by allowing testimony without physical confrontation. Furthermore, video conferencing eliminates the danger faced by officers during detainee transport and enables defendants to maintain dignity by avoiding courtroom appearances in restraints. Overall, the research emphasizes the security and safety advantages of videoconferencing technology, consistently acknowledged by judges, lawyers, court staff, and litigants.

Conversely, the indicator with the lowest mean score of 4.39, still interpreted as Extremely Effective, highlights the efficacy of video conference hearings in overcoming physical access limitations to courts and addressing threats to security and safety, even during extreme circumstances.

Research by Jamila et al. (2021) suggests that virtual criminal trials, particularly during the COVID-19 pandemic in Indonesia, are effective in curbing the spread of the virus. The research indicates a significant reduction in the influx of daily visitors to general courts, as virtual proceedings minimize direct interactions among involved parties, aligning with physical distancing measures recommended by health

authorities. Additionally, Batongbacal et al. (2020) propose policy measures for transitioning court operations to electronic systems gradually, prioritizing public health and safety. Legg and Song (2021) emphasize the importance of remote hearings as a reasonable compromise to ensure the continued delivery of justice while protecting the lives of court participants, suggesting that conducting complete hearings via Audio-Visual Links (AVLs) serves as a satisfactory alternative during crises. Overall, the research highlights the role of technology in maintaining security and safety in legal proceedings, particularly during challenging circumstances such as the COVID-19 pandemic.

The overall mean score of 4.44, also interpreted as extremely effective, indicates strong support for the effectiveness of videoconference hearings in enhancing security and safety protection. Furthermore, the low overall standard deviation of 0.71 suggests a high level of consensus among respondents regarding the security and safety benefits offered by videoconferencing technology. These findings align with sentiments expressed in unstructured interviews, emphasizing the advantages of video conferencing for transporting highly dangerous criminals to court hearings and acknowledging its utility during pandemics and limited non-confrontational hearings like arraignments, while noting reservations about its suitability during trials and testimonies. Overall, the results highlight the perceived effectiveness of video conference hearings in enhancing security and safety protection in legal proceedings.

Table VII. Cost Efficiency

Indicators	Mean	Standard Deviation	Verbal Interpretation	Rank
Video conference hearings have been a valuable tool, allowing involved parties, including government officials and employees, to save considerable travel time, costs, and avoid traffic congestion.	4.43	0.77	Extremely effective	1
Video conference hearings have been a val- uable tool in decreasing the considerable expenses related to the detention of	4.39	0.82	Extremely effective	2

Indicators	Mean	Standard Deviation	Verbal Interpretation	Rank
Persons Deprived of Liberty (PDL) at Ange-				
les District Jail.				
Video conference hearings have been a val-	4.33	0.80	Extremely	3
uable tool in reducing the substantial costs			effective	
associated with litigation in courts.				
Overall mean, standard deviation, and	4.38	0.79	Extremely	
verbal interpretation	4.30	0.79	effective	

Table VII evaluates the effectiveness of videoconference hearings in terms of cost efficiency, revealing significant consensus among respondents on the benefits of virtual proceedings. The indicator emphasizing savings in travel time, costs, and avoidance of traffic congestion received the highest mean score of 4.43, indicating virtual hearings are perceived as extremely effective in reducing expenses associated with traditional in-person proceedings. This underscores their transformative impact in streamlining judicial processes and promoting fiscal responsibility. The low standard deviation of 0.77 suggests a high level of agreement among respondents regarding the costsaving benefits of virtual hearings, with opinions clustered closely around the mean.

Previous research underscores the costsaving advantages of videoconference hearings, highlighting benefits such as reduced travel expenses, time savings, and increased convenience for all parties involved. Nangia et al. (2020) emphasized the convenience of virtual hearings, allowing participants to join from various locations without the need for travel, parking, or waiting in security lines. Similarly, Bailey (2021) noted how virtual hearings alleviate concerns related to booking courthouse space, security, parking, and queues. Caniban (2020) discussed the use of videoconferencing in Malaysian courts, particularly in remote areas, to minimize travel expenses for trial proceedings while enabling real-time access to court files. Dacanay-Grimares (2023) found that participants in Metro Manila perceived videoconference hearings as convenient, sparing them from the hassles of traveling to court and dealing with logistical challenges. This consensus among lawyers, court staff, and litigants emphasizes the cost-saving aspect

videoconference hearings, reinforcing their value in optimizing resource allocation and promoting efficiency in legal proceedings. Additionally, Rocha et. al. (2022), noted the primary advantage of videoconferencing is increased efficiency. It eliminates the need for travel, thus reducing travel expenses, and offers greater scheduling flexibility, which helps save time.

Conversely, the indicator focusing on reducing costs associated with litigation received a slightly lower mean score of 4.33 but was still interpreted as extremely effective, with a standard deviation of 0.80. Despite the slight variance, there was consensus among respondents on the significant cost-saving potential of virtual hearings in legal proceedings, emphasizing their value in optimizing resource allocation.

Previous research by Dacanay-Grimares (2023) and Caniban (2020) highlights the multifaceted benefits of videoconference hearings and e-Courts systems in terms of cost efficiency within the legal system. Dacanay-Grimares identifies cost reductions associated with transporting defendants and offenders, minimized medical service needs due to reduced exposure of sick inmates, and decreased travel expenses for attorneys, correctional staff, and other stakeholders. Caniban underscores the potential advantages of e-Courts and e-Filing systems, emphasizing long-term efficiency gains through reduced paper usage, time spent in court, and storage needs, alongside easier document archiving. Moreover, the integration of technology into jail and prison management, as noted in the 2022 Judiciary Annual Report, offers cost-effective alternatives like electronic visitation (E-Dalaw), benefiting Persons Deprived of Liberty (PDLs) and alleviating

financial constraints for their families. Additionally, respondents in Dacanay-Grimares's study perceive videoconference hearings as saving time and resources for various stakeholders, while Anand (2021) suggests that a fully implemented electronic courts system could lead to substantial cost savings by eliminating the need for in-person appearances. Rocha et al. (2022) further emphasize the efficiency improvements achieved through videoconferencing, citing the elimination of travel expenses and scheduling flexibility as key contributors to time and cost savings. Overall, these studies collectively demonstrate how technology integration in legal proceedings offers significant opportunities for cost reduction and efficiency enhancement across various aspects of the justice system.

The overall mean score of 4.38 indicates a strong consensus among participants regarding the effectiveness of virtual hearings in

achieving cost efficiency in legal proceedings, with the low standard deviation of 0.79 reinforcing this notion. During unstructured interviews, respondents emphasized the financial benefits of remote hearings, particularly in saving time and resources for both parties involved. They highlighted the significant cost savings, especially for police officers required to attend hearings far from their stations, where transportation allowances are not provided. These responses align with the survey findings, emphasizing the widespread recognition of videoconference hearings as a cost-effective solution in legal proceedings.

Problem Number 3. Test of significant differences in the evaluation made by the groups of respondents relevant to the challenges encountered and respondent's perspective regarding the effectiveness of court videoconference hearings in Angeles City, Pampanga.

Table VIII. Test of Hypotheses

Sources of Variation	SS	df	MS	F	p	n ²
Factor A	0.2461	1	0.2461	0.7002 (1,416)	0.4032	0.0017
Factor B	14.2422	4	3.5605	10.1283 (4,416)	7.839×10-8	0.089
Interaction A x B	1.8423	4	0.4606	1.3102 (4,416)	0.2654	0.012
Error	146.2424	416	0.3515			
Total	162.5731	425	0.3825			

Note: *N*=213

Table VIII shows the analysis of hypothesis which aims to test the significant differences in how five groups of respondents evaluate the challenges and effectiveness of videoconference hearings in terms of perceived ease of use and usefulness. The test utilizes two-way ANOVA and includes post hoc testing for pairwise comparisons among groups. The effect size, Eta squared (η^2), is also calculated to determine the magnitude of these differences.

Two-Way ANOVA Results

Main Effects

1. Factor A:

- Null Hypothesis (H0): The averages of all groups are equal.
- Since p = $0.4032 > \alpha$ (0.05), H0 cannot be rejected, indicating no significant difference among groups.

2. Factor B:

- Null Hypothesis (H0): Some group averages are equal.
- With p = $7.839 \times 10^{-8} < \alpha$ (0.05), H0 is rejected, indicating significant differences among groups.

Interaction Effect (AB)

- The interaction between Factor A and Factor B is not significant (p = $0.2654 > \alpha$ (0.05)), suggesting no combined effect beyond the main effects of each factor.

Interpretation:

Factor B has the most significant impact, which means the differences among the groups are primarily due to this factor. Given that *B*-court officers have the highest responses, this could be attributed to several reasons:

- Higher Engagement and Involvement: Court officers such as judges, clerks of court, stenographers, interpreters, and process servers are more directly involved in the day-to-day operations of videoconference hearings. Their roles necessitate a higher engagement with the technology, making them more likely to provide detailed and higher responses.
- Technical Dependence: The effectiveness and challenges of videoconference hearings are likely to impact court officers more significantly, as their work relies heavily on the seamless operation of these systems. Therefore, they may have more insights and stronger opinions on the perceived ease of use and usefulness of the technology.
- Sample Size Consideration: As indicated, court officers may constitute a larger sample size compared to lawyers, enhancing the strength of their responses.

Conversely, *B-lawyers* may have the lowest responses:

- Lower Direct Interaction: Lawyers might not interact with the videoconferencing systems as extensively as court officers do. Their engagement might be limited to specific hearings or client meetings, resulting in fewer insights or opinions on the challenges and effectiveness of the technology.
- Sample Size Influence: Lawyers being the second smallest group in terms of sample size can also impact the statistical significance of their responses. A smaller sample size can lead to less variability and fewer significant findings.
- Different Priorities: Lawyers might prioritize other aspects of their work over the technicalities of videoconference hearings, such as case preparation and client interaction, leading to less detailed responses.

The analysis revealed that the most significant differences in responses are due to Factor B, with court officers providing the highest responses and lawyers the lowest. This is likely due to the extent of their involvement with videoconference hearings, the impact of the

technology on their roles, and the relative sizes of their respondent groups.

In summary, Factor B shows significant differences between some group averages, while Factors A and the interaction AB do not. The effect sizes for all factors are relatively small, indicating minor differences between the group averages. This suggests that there is no significant difference in the evaluations made by the five groups of respondents regarding the challenges encountered and the effectiveness of court videoconference hearings in Angeles City, Pampanga.

Conclusion and Recommendations

The research findings shed light on both the challenges and benefits associated with court videoconference hearings in Angeles City, Pampanga. While significant hurdles exist, such as concerns about procedural integrity, technical issues, and technology readiness, there are notable advantages to leveraging virtual court proceedings. Respondents expressed concerns about the credibility and competency of evidence presented during videoconference hearings, alongside technical challenges, and poor internet connectivity, which were identified as primary concerns potentially affecting the reliability of proceedings. Additionally, a lack of technological knowledge among litigants and inadequate facilities were cited as barriers to the effective use of technology in legal proceedings.

However, videoconference hearings were recognized for expediting case resolutions, alleviating court congestion, and addressing backlog cases, while also ensuring safety, especially in cases involving high-risk individuals, and significant savings in travel time and expenses, as well as reductions in litigation costs, were acknowledged.

While Factor B showed significant differences between some group averages, Factors A and the interaction AB did not provide sufficient evidence to reject the null hypothesis. The observed effect sizes for all factors were relatively small, indicating minor differences between group averages.

The unstructured interviews conducted as part of the research provide valuable insights

into the effectiveness of videoconference hearings in legal settings, with respondents overwhelmingly recognizing the significant benefits of video conferencing. These findings underscore the pivotal role of virtual technologies in enhancing efficiency and cost-effectiveness, ultimately contributing to the evolution of modern judicial processes.

The relevance of the Technology Acceptance Model (TAM) theory in understanding and enhancing the acceptance of videoconference hearings is affirmed by the findings, emphasizing the ongoing need for improvements in remote judicial proceedings.

Recommendations include implementing comprehensive training programs, investing in technological infrastructure, expanding access to technology and digital literacy programs, and exploring additional variables of the TAM theory in future research endeavors. Overall, these conclusions and recommendations highlight the importance of addressing challenges while leveraging the benefits of videoconference hearings to enhance efficiency and fairness in the legal system.

Acknowledgement

We would like to express our deepest gratitude to our families for their unwavering moral support, which served as a beacon of strength throughout the completion of this research. Your encouragement and belief in our endeavors propelled us forward and helped us achieve this milestone. We also extend our heartfelt appreciation to all the respondents who generously shared their insights and expertise for this study. A special acknowledgment goes to the court officers, including judges, clerks of court, stenographers, interpreters, and process servers, as well as lawyers from both the Public Attorney's Office and the private sector, prosecutors, police officers, and jail officers in Angeles City, Philippines. Your invaluable contributions significantly enriched the depth and scope of our research. Lastly, we recognize and appreciate the guidance and blessings bestowed upon us by the Almighty, which have guided our journey and enabled us to accomplish this endeavor.

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