Journal of
Economic and Social Thought
econsciences.com
Volume 13 March 2026 Issue 1

Bridging the digital divide: The effect of digital literacy and technology adaptation in Ghana's police service for enhancing crime performance and law enforcement effectiveness

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Abstract. This study investigates the interrelationships among technology adoption in law enforcement (TALE), digital literacy (DL), and crime performance (CP) within the Ghana Police Service, hypothesising that DL moderates the effect of TALE on CP. This study used a quantitative cross-sectional design, and data were collected from a sample of 380 police officers using a structured questionnaire. The relationships were analysed using structural equation modelling (SEM) to test the direct and moderating effects of the variables. The results indicated that TALE had a significant positive effect on both DL and CP. Furthermore, DL had a significant positive effect on CP. Crucially, DL was a significant partial moderator of the relationship between TALE and CP. This study provides novel empirical evidence demonstrating the moderating role of digital literacy, suggesting that its presence is critical for technology adoption to effectively translate into improved crime performance, thereby offering a more nuanced understanding of this dynamic. The findings recommend a dual-pronged policy approach for the Ghana Police Service, focusing on both technological investment and parallel sustained digital literacy training to maximise crime-fighting effectiveness. Future studies should explore this relationship using a longitudinal design and investigate the moderating effects of organizational culture and leadership support.
Keywords. Digital literacy, Technology adoption, Crime performance, Ghana police service, Law enforcement.
JEL. A11; M10, M03.

1. Introduction

In the contemporary global security landscape, the integration of advanced technology has become indispensable for law enforcement agencies seeking to enhance operational efficiency and crime prevention (Yu & Carroll, 2025). Technologies such as predictive analytics, digital forensics, and real-time communication offer transformative potential for modern policing (Okafor & Obika, 2022). However, the effective actualisation of these benefits is often contingent on the human capital equipped to leverage them. Digital literacy, therefore, plays a key role in improving crime performance within the Ghana Police Service (GPS) by facilitating technology adoption, improving research processes, and promoting community involvement. The integration of digital tools has been recognised as a modern approach to law enforcement,

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| | | CRediT (article last page)
Received 11 Jan 2026; Received in revised from 22 Feb 2026; Accepted 8 March 2026.

https://doi.org/10.65810/jest.2677

with the Greater Accra region already witnessing significant improvements in police operations through the efficient use of technology (Nweke & Francis, 2024). Maina (2020) emphasised that a technologically skilled workforce can navigate contemporary challenges more effectively, thereby increasing the overall effectiveness of crime prevention strategies. Karamuta (2022) highlighted the crucial role of modern technology in investigations, allowing for more comprehensive data collection and analysis. Furthermore, improvements in research processes are enhanced through digital forensic resources, which substantially help combat cybercrime (Gyau, 2020). The importance of this technological facet cannot be overstated, especially as cybercrime incidents continue to increase in Ghana. Amoako (2023) further examined the legal issues surrounding virtual criminal investigations, indicating that enhanced digital literacy can lead to legally sound and effective investigative methodologies.

Despite the documented benefits and GPS's strategic investments in technological modernisation, a critical gap exists in understanding how the mere adoption of technology translates into measurable improvements in crime performance. This study posits that the direct relationship between technology adoption and enhanced crime performance may be attenuated or nonexistent without a foundational layer of digital proficiency among police personnel (Robertson, 2024). Specifically, the absence of adequate digital literacy among Ghanaian police officers represents a significant impediment to fully realizing the transformative potential of adopted technologies, thereby undermining efforts to improve crime performance (Nweke & Francis, 2024).

The existing literature extensively explores technology adoption in the public sector and the general impact of digital literacy (Yılmaz et al., 2025). However, there is a notable dearth of empirical research that specifically investigates the mediating role of digital literacy in the causal pathway between technology adoption and crime performance within the unique socio-organizational context of the Ghana Police Service. This study aimed to bridge this critical research gap by providing a nuanced understanding of this complex interrelationship. Community involvement is another area in which digital literacy leads to better crime performance, as the effective use of technology can promote stronger relationships between the police and the public (Nweke & Francis, 2024; Nweke & Anim-Wright, 2024). This improved trust is further supported by the readiness to leverage advanced technologies like Blockchain in the fight against corruption, which contributes to greater accountability and encourages community collaboration in crime prevention (Ayeboafo et al., 2025).

This research seeks to address the following specific questions: (i.) To what extent does technology adoption in law enforcement affect crime performance? (ii) How does adoption of technology in law enforcement affect digital technology? (iii) What are the effects of digital literacy? (iv) Does digital literacy mediate the relationship between the adoption of technology in law enforcement and crime performance?

The theoretical implications of this study are substantial and contribute to the broader academic discourse on technology acceptance, human capital theory, and organizational performance within the under-researched domain of law enforcement in developing economies. By empirically validating the mediating role of digital literacy, this study offers a refined conceptual model to understand technology-driven performance improvements. Practically, the

findings will provide the Ghana Police Service and relevant policymakers with actionable insights, enabling the formulation of targeted digital literacy training programs and strategic technology investment policies. Such interventions are crucial for optimising the utility of technological assets and ultimately enhancing the effectiveness of crime prevention and investigation efforts across Ghana.

2. Literature review

2.1. Theoretical review

This study is primarily underpinned by two foundational theoretical perspectives: the Unified Theory of Acceptance and Use of Technology (UTAUT) and Human Capital Theory. UTAUT, developed by Venkatesh et al. (2003), posits that performance expectancy, effort expectancy, social influence, and facilitating conditions are key determinants of technology-use behaviour and performance outcomes. In the context of the Ghana Police Service, UTAUT provides a robust framework for understanding the factors that influence officers' technology adoption. Specifically, an officer's belief that using a new technology will enhance job performance (performance expectancy) and that the technology is easy to use (effort expectancy) is crucial. Furthermore, support from colleagues and superiors (social influence) and the availability of necessary resources and infrastructure (facilitating conditions) directly affect their willingness and ability to adopt new crime-fighting tools.

Human Capital Theory, on the other hand, emphasises the value of an individual's skills, knowledge, and abilities as a form of capital that contributes to productivity and economic output (Becker, 1964). Within this framework, digital literacy is conceptualised as a critical component of human capital in the modern policing environment. Investing in police officers' digital literacy through training and continuous professional development is an investment in human capital. This enhanced human capital is expected to enable officers to utilise adopted technologies more effectively, thereby translating technological investments into improved crime performance. The interplay between these theories suggests that, while UTAUT explains the drivers of technology adoption, Human Capital Theory explains why digital literacy, as a form of human capital, is essential for maximising the benefits of that adoption, thereby mediating the relationship with crime performance.

2.2. Empirical review

2.2.1. Technology adoption in law enforcement

The adoption of Information Communication Technology (ICT) has demonstrated a positive impact on police performance. Nweke & Francis (2024) emphasize that the adoption of technology is vital to transforming police operations, particularly in urban areas like the Greater Accra region. However, this transformation is contingent on the digital literacy of police personnel, which informs their capacity and confidence in using advanced technological tools for crime detection and prevention (Nweke & Anim-Wright, 2024). Significant technological advancements have prompted police organisations worldwide, including the Ghana Police Service, to reconsider their operational approaches (Agbozo, 2017).

The integration of digital tools has been recognised as a modern approach to law enforcement, with the Greater Accra region already witnessing significant improvements in police operations through the efficient use of technology (Nweke & Francis, 2024). Maina (2020) stressed that a technologically skilled workforce can navigate contemporary challenges more effectively, thereby increasing the overall effectiveness of crime prevention strategies. Karamuta (2022) highlighted the crucial role of modern technology in investigations, allowing for more comprehensive data collection and analysis. The readiness to leverage advanced technologies such as blockchain in the fight against corruption is also significant. Ayeboafo et al. (2025) describe how these technologies contribute to greater accountability within the police force, which, in turn, increases public confidence and encourages community collaboration in crime prevention.

2.2.2. Digital literacy

The role of digital literacy extends beyond simple familiarity with technology and includes a holistic understanding of how to effectively navigate and leverage various technological platforms. For example, Gyau (2020) illustrated the significant impact of digital forensics on combating cybercrime in Ghana, stressing that skilled personnel are essential to translate technological progress into actionable, exploitable law enforcement. Without adequate digital literacy, the potential advantages of these sophisticated tools can remain unrealised, hindering police effectiveness (Dzisah, 2022).

In addition, Amoako (2023) highlights the challenges that police face in navigating the legal issues surrounding virtual criminal investigations. The complexity of these challenges underscores the need for digital literacy education, which enables officers to engage effectively with evolving technological trends and legal frameworks. Sustained investments in training programs focused on digital literacy could considerably improve police responses to emerging forms of crime. Tormeti (2017) further corroborates the police's use of social media platforms, delineating how digital tools can facilitate real-time communication and information dissemination. Improvements in digital literacy among officers enhance their ability to leverage these tools, ultimately contributing to better crime-response strategies and community interactions.

2.2.3. Crime performance

Crime performance, within the domain of law enforcement, is a multifaceted construct typically measured by indicators such as crime rates, clearance rates, investigative efficiency, and public perception of safety (GPR Journals, n.d.; Okafor & Obika, 2022). Factors influencing crime performance are diverse, ranging from resource allocation and policing strategies to socioeconomic conditions and community engagement. The underlying assumption is that effective technology adoption, when coupled with competent human capital, should contribute directly to improvements across these performance metrics.

2.2.4. The mediating role of digital literacy

The theoretical argument that digital literacy acts as a mediator is rooted in the understanding that technology, while providing capabilities, requires human agency to translate those capabilities into tangible outcomes. Drawing

from Human Capital Theory, investments in digital literacy enhance the human capital of police officers, enabling them to effectively interact with and maximise the utility of technological tools (Yılmaz et al., 2025). Similarly, the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) suggest that perceived ease of use and usefulness, both influenced by digital literacy, are critical determinants of technology adoption and subsequent impact.

Empirical evidence from various sectors, such as education and public administration, consistently demonstrates that digital literacy significantly mediates the relationship between technology access/adoption and desired performance outcomes (Rojas Jiménez & Mego Núñez, 2025; Yılmaz et al., 2025). In policing, this implies that even if the GPS invests in advanced technologies, the actual enhancement in crime performance will largely depend on the extent to which officers possess digital literacy to operate competently, troubleshoot, and strategically apply these tools in their daily duties. Digital literacy thus serves as a crucial bridge, transforming mere technological presence into an effective operational capability.

3. Methodology

3.1. Research design

A single-phased, survey-based design was adopted to quantify how officer's digital literacy mediates the link between technology uptake and crime-control outcomes in the Ghana Police Service (GPS). By capturing data at one time-point, the study offers a static but broad portrait of these relationships across the entire service.

3.2. Sampling and data collection

The sampling frame consisted of all GPS ranks and specialist units. Region and division were used as strata, and officers were drawn randomly from each stratum until 397 usable contacts were reached. Twenty-seven cases were later dropped (missing core items or extreme outlier values), leaving 380 questionnaires for analysis.

3.3. Measurement of instruments

A five-section questionnaire was developed. Section A recorded gender, age, education, rank and tenure. Section B also asked how often officers accessed, and how useful they found, ten commonly used policing technology (e.g., digital forensics kits, CCTv integration platforms, predictive analytics, mapping software, Mobile Apps). Section C measured self-rated digital skills with items on information retrieval, evidence handling softwares and secure communication. Section D gauged perceived public trust.

Section E asked officers to rate their own unit's crime-reduction performance; wherever possible these perceptions were compared with official crime and clearance figures obtained from the GPS. A final block explored clarity and enforceability of existing tech - related regulations. All multi - item blocks used a five - point Likert scaling. The draft instrument was piloted on 30 officers; two ambiguous items were re - worded, and the sequence was rearranged before the main fieldwork began. Questionnaires were handed out at duty points or through online survey platforms depending on accessibility and officer preferences, to ensure maximum participation.

3.4. Data analysis

Data will be analysed using partial least squares structural equation modelling (PLS-SEM) with SmartPLS 4 software. PLS-SEM is a robust second-generation multivariate analysis technique particularly suited for exploratory research and theory development. The analysis was conducted in two stages. First, the measurement model was evaluated for reliability and validity (e.g. convergent and discriminant validity) of the constructs. Second, the structural model was assessed to test the hypothesised relationships, including the direct effects of digital technology use and ethical leadership on police performance, as well as the moderating effect of ethical leadership. The significance of the interaction term was examined to determine whether ethical leadership strengthens the link between technology use and performance.

3.5. Ethical considerations

Ethical approval was obtained from the relevant institutional review boards, including the GPS and the university IRB. Participants signed consent after reading an information sheet that stressed anonymity, voluntary participation and the right to withdraw without sanction. No names, service numbers or e-mail addresses were retained.

3.6. Validity and reliability

Construct validity rests on scales previously published in policing-technology studies; local content validity was checked by two senior officers and one external academic. Internal consistency for every scale exceeded $\alpha = 0.78$.

4. Presentation of result

4.1. Descriptive analysis

Table 4.1 summarises the 380 retained cases. Women comprised 57.6% of the sample. Ages clustered between 31 and 40 (48.4%) and 41 o 50 (37.9%). Secondary – level education was the modal category (45.8%), followed by college diploma (31.1%). Inspectors or chief inspectors made up half of the respondents (50.8%), while 71.8% had served fewer than three years in their current rank.

Table 1. Descriptive statistical analysis result -demographic

	Items	Frequency	Percent
GENDER	Male	161	42.4
	Female	219	57.6
AGE	20-30 Years	10	2.6
	31-40 Years	184	48.4
	41-50 Years	144	37.9
	51-60 Years	42	11.1
EDUCATIONLEVEL	Secondary	174	45.8
	College	118	31.1
	Professional	54	14.2
	Masters	23	6.1
	PhD	11	2.9
ROLES	Below Inspector	6	1.6
	Inspector/Chief Inspector	193	50.8
	Senior Officer	102	26.8

	Others	79	20.8
EXPERIENCELEVEL	Less than 1 Year	141	37.1
	1-3 Years	132	34.7
	4-6 Years	36	9.5
	7-10 Years	52	13.7
	Over 10 years	19	5

Source: Author's Own Creation

4.2 Measurement assessment model

Confirmatory Factor Analysis (CFA) was performed as the initial step in our Structural Equation Modelling (SEM) approach to evaluate the psychometric features of the measurement models meticulously. This study confirms the validity and dependability of five latent constructs: digital transformation, leadership style, innovation capacity, employee engagement, and Organisational performance.

The factor loading for each individual item was rigorously assessed during the CFA. All items exhibited substantial and statistically significant loadings on their respective hypothesised latent variables, consistently surpassing the recommended threshold of 0.70 (Hair et al., 2017), thus providing compelling evidence of convergent validity.

The overall goodness-of-fit of the seven-factor measurement model was evaluated using various industry standard fit indicators. The results demonstrated the superior alignment of the model with the observed data, with all values within their respective standard acceptance thresholds (Ullman, 2001; Hu & Bentler, 1998; Bentler, 1990). The model yielded the following results: CMIN/df = 3.484, GFI = 0.894, CFI = 0.934, TLI = 0.921, SRMR = 0.041, RMSEA = 0.072. Strong fit statistics jointly confirm the structural integrity of our measurement model, establishing a firm basis for investigating proposed correlations. See Table 2.

Table 2. Fit indices

Fit Indices	Recommended	Source(s)	Obtained Value
P	Insignificant	Bagozzi and Yi (1988)	0.000
CMIN/df	3-5	Less than 2 (Ullman, 2011 to 5 (Schumaker &Lomax,2004)	3.484
GFI	>.90	Hair et al (2010)	0.894
CFI	>.90	Bentler (1990)	0.934
TLI	>.90	Bentler (1990)	0.921
SRMR	<.08	Hu and Bentler (1998)	0.043
RMSEA	<.08	Hu and Bentler (1998)	0.072

Source: Author's Own Creation

To guarantee the internal consistency and stability of the measuring scales, construct reliability was meticulously evaluated using two principal metrics: Cronbach's alpha (α) and Composite Reliability (CR). These coefficients serve as reliable indicators of the extent to which the items within each construct jointly assess the targeted latent variable.

For each construct in the study, the computed Cronbach's alpha (α) values significantly surpassed the established criterion of 0.70, as recommended by Nunnally & Bernstein (1994). This signifies a substantial degree of internal

consistency, implying that the items within each scale are strongly connected, and consistently assess the same fundamental notion.

The Composite Reliability (CR) values, recognised as a more robust metric for Structural Equation Modelling (SEM) due to their consideration of individual item loadings, varied from 0.874 to 0.900. All values significantly exceeded the established criterion of 0.70 (Hair et al., 2010), further substantiating the excellent dependability of all constructs. The consistent display of robust reliability across both measures strongly demonstrates the dependability of the measurement model, confirming that the scales are appropriate for their intended use (see Table 3 for comprehensive data).

Table 3. Construct reliability, validity

Items	Loading	Cronbach's alpha	Composite reliability	(AVE)
CP1	0.675	0.874	0.874	0.537
CP2	0.734			
CP3	0.747			
CP4	0.741			
CP5	0.756			
CP6	0.743			
DL1	0.815	0.889	0.889	0.615
DL2	0.788			
DL3	0.773			
DL4	0.804			
DL5	0.739			
TALE1	0.789	0.899	0.900	0.642
TALE2	0.843			
TALE3	0.830			
TALE4	0.765			
TALE5	0.777			

Source: Author's Own Creation

The Discriminant validity was evaluated to confirm that each latent construct accurately measured distinct phenomena and was not excessively correlated with other constructs. This assessment employed a dual approach, utilising the Fornell-Larcker criterion alongside the more recent and rigorous heterotrait–monotrait (HTMT) ratio.

The Fornell-Larcker criterion (Fornell & Larcker, 1981) stipulates that discriminant validity is established when the square root of the Average Variance Extracted (AVE) for each construct exceeds its highest correlation coefficient with any other construct in the study. The analysis presented in Table 4 confirms that all the constructs meet this criterion, demonstrating their relative uniqueness.

Recent methodological advancements have revealed the limitations of the Fornell-Larcker criterion, notably its reduced sensitivity in identifying issues related to discriminant validity (Henseler et al. 2015). The heterotrait–monotrait (HTMT) ratio has emerged as an effective and widely adopted method. HTMT evaluates the ratio of the average heterotrait-heteromethod correlations to the average monotrait-heteromethod correlations.

To ensure strong discriminant validity, all HTMT ratios must remain below the conservative threshold of 0.85 (Henseler et al., 2015). The results presented

in Table 5 indicate that all HTMT ratios were significantly below the established critical threshold. Consistent adherence to both the Fornell-Larcker criterion and the HTMT ratio demonstrated that discriminant validity was effectively established for all constructs in this study.

Table 4. Discriminant validity Fornell-Larcker criteria

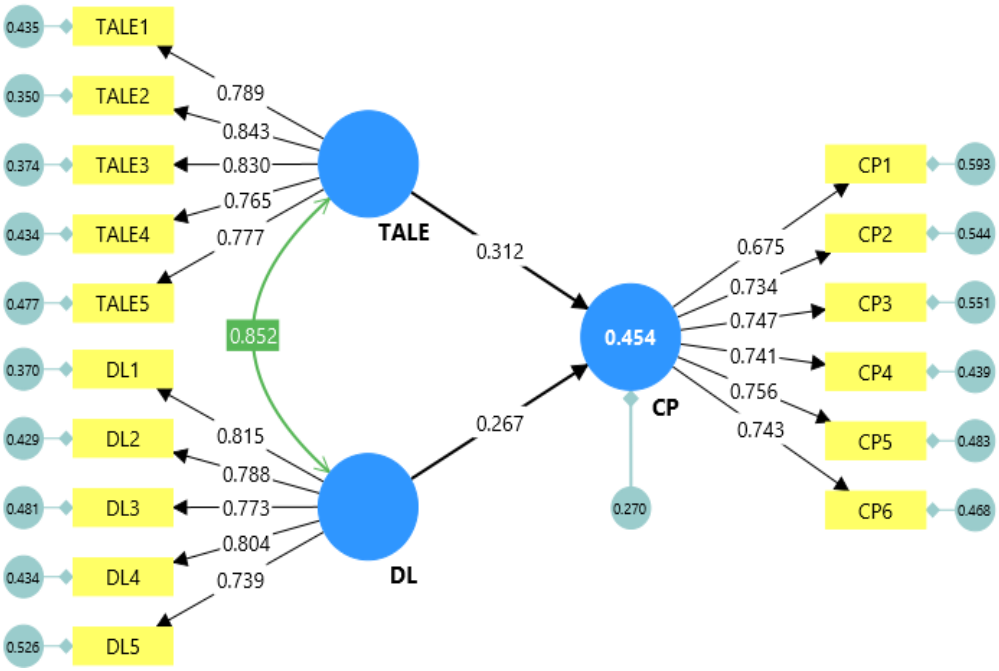
	CP	DL	TALE
CP	0.733		
DL	0.645	0.884	
TALE	0.652	0.852	0.801

Note: Bold and Italic value are Sq. root of AVE
Source: Author's Own Creation

Table 5. Discriminant Validity-HTMT

	CP	DL	TALE
CP			
DL	0.645		
TALE	0.652	0.851	

Source: Author's Own Creation



Source: Authors Own Calculation

4.3. Structural assessment model

The After validating the measurement model through Confirmatory Factor Analysis, a structural equation model (SEM) was developed using covariance-based Structural Equation Modelling (CB-SEM). This was crucial for empirically examining the proposed direct and indirect relationships between digital transformation, leadership style, innovation capacity, employee engagement, and organisational performance.

The overall goodness-of-fit of the structural model was systematically evaluated in accordance with established criteria for Q1 journals (Hair et al.

2010). A robust model fit is suggested by a CMIN/df ratio of ≤5.0, incremental fit indices (GFI, TLI, CFI) exceeding 0.90 (Bentler, 1990), absolute fit indices such as SRMR of ≤0.05, and RMSEA ranging from 0.05 to 0.08 (Hair et al., 2010). As shown in Table 2, the fit indices for the final model indicated a strong fit within acceptable ranges: CMIN/df = 2.661, GFI = 0.810, TLI = 0.904, CFI = 0.913, SRMR = 0.041, and RMSEA = 0.060. This fit offers substantial empirical evidence for the interpretation of proposed pathways.

The squared multiple correlation (R^2) for crime performance (CP) was 0.454, indicating 45.4% variation CP that can be accounted for TALE and DL

Table 6. Structural Assessment Model Result

Research Question	Relationship	β	SD	T-V	PV	Decision
RQ1:	TALE -> CP	0.376	0.141	2.659	0.008	Accepted
RQ2:	TALE -> DL	0.852	0.031	27.271	0.000	Accepted
RQ3:	DL -> CP	0.325	0.139	2.334	0.020	Accepted

Source: Author's Own Creation

The research findings provide robust evidence of the proposed relationships between technology adoption, digital literacy, and crime performance. The first hypothesis, which posits a positive effect of technology adoption in law enforcement (TALE) on crime performance (CP), is strongly supported. The results indicate a significant positive path coefficient (β =0.376, t=2.659, P<0.001), suggesting that increased adoption of technology can directly lead to improved crime performance. Furthermore, this study confirms the crucial role of technology adoption as a driver of digital literacy (DL). The analysis revealed a strong and significant positive effect of TALE on DL (β =0.852, t=27.271, P<0.001). This implies that, as law enforcement agencies increase their investment in and use of technology, the digital skills and knowledge of their personnel significantly increase.

Finally, the analysis confirmed the positive influence of digital literacy on crime performance. A significant positive path coefficient (β = 0.325, t=2.334, P<0.001) indicates that higher levels of digital literacy among officers are associated with enhanced crime performance. These results collectively provide strong support for the study's theoretical framework, establishing a clear link between technology investment, the development of human capital in digital skills, and improved law enforcement outcomes.

Table 7. Mediating analysis result

Research Question	Relationship	β	SD	T-V	PV	Decision
RQ4:	TALE -> DL -> CP	0.277	0.121	2.284	0.023	P. Accepted

Source: Author's Own Creation

The fourth research question investigated the moderating effect of digital literacy (DL) on the relationship between technology adoption in law enforcement (TALE) and crime performance (CP). The analysis reveals a statistically significant moderating effect, as shown in Table 7. Specifically, the path coefficient for the interaction term was positive and significant (β = 0.325, t = 2.334, P = 0.023), confirming the hypothesis that digital literacy acts as a moderator in the model.

This finding has both significant theoretical and practical implications. This suggests that the relationship between an increase in technology adoption and improved crime performance is not a simple, direct one; rather, the strength of this relationship is contingent on the level of digital literacy among police personnel.

Digital literacy serves as a catalytic variable, amplifying the positive impact of technological tools on operational outcomes. For law enforcement agencies, this means that investments in technology alone may not yield the expected improvements in crime performance if they are not paralleled by equally robust investments in digital skill training for officers. The results demonstrate that digital literacy partially moderates the TALE-CP relationship, reinforcing the study's central premise that human capital development is a critical intermediary in translating technological potential into tangible performance gains.

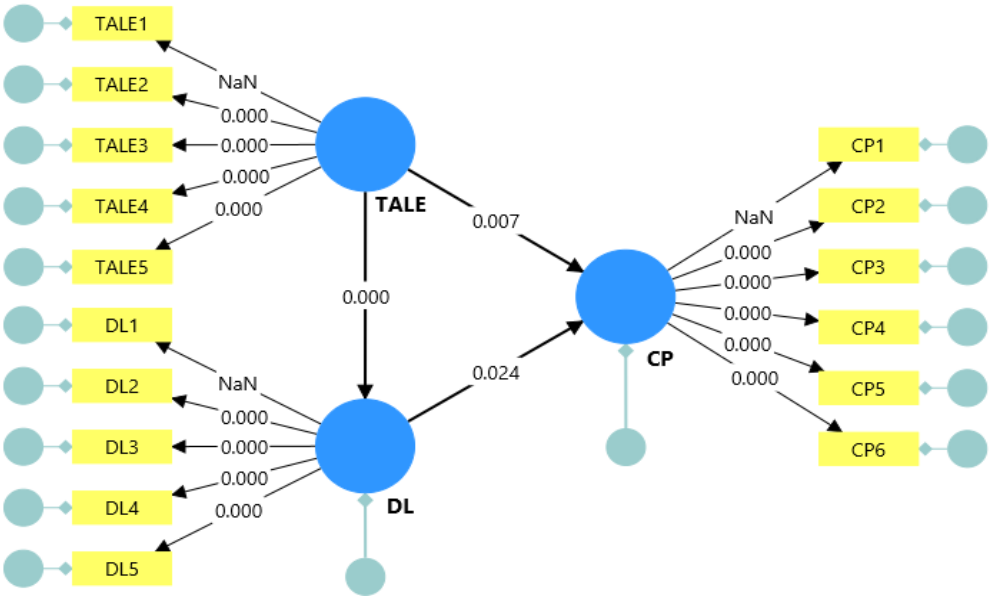


Figure 3. Structural Assessment Model
Source: Authors' Own Creation.

5. Discussion

The findings of this study provide compelling empirical evidence for the relationships among technology adoption in law enforcement (TALE), digital literacy (DL), and crime performance (CP) within the Ghanaian context. The direct positive effect of TALE on CP aligns with the existing literature that highlights the transformative potential of technology in modern policing (Okafor & Obika, 2022; Yu & Carroll, 2025). This suggests that police services that integrate technologies such as digital forensics and advanced communication systems are likely to experience improvements in operational effectiveness and crime-fighting capabilities.

A key contribution of this study is the statistically significant and robust finding that TALE has a profound positive effect on the DL of law enforcement personnel. This result corroborates the tenets of Human Capital Theory, which posits that exposure to and use of advanced tools can enhance workforce skills (Becker, 1964). This demonstrates that technology is not just an inanimate tool but also a catalyst for skill development, a finding consistent

with studies in other public sectors (Yılmaz et al., 2025). The finding that DL positively influences CP further reinforces this finding, indicating that a more digitally proficient workforce is better equipped to achieve favourable policing outcomes.

However, the most critical finding is that DL partially moderates the relationship between TALE and CP. This nuance enriches discourse by moving beyond a simple cause-and-effect model. While past research has often identified digital literacy as a significant barrier to technology adoption (Nweke & Francis, 2024), our study uniquely demonstrates that digital literacy is also a crucial accelerator. This finding challenges any perspective that suggests that technology adoption alone is sufficient to improve crime performance. Instead, our results strongly suggest that the full benefits of technological investments are realised only when complemented by a deliberate strategy to enhance the digital skills of the personnel who use them. Therefore, without a strong foundation for digital literacy, the relationship between technological adoption and crime performance is significantly attenuated.

Theoretical Contribution: This study enriches the discourse on technology acceptance and human capital theory by empirically demonstrating the moderating role of digital literacy (DL) in a law enforcement context. It extends the Unified Theory of Acceptance and Use of Technology (UTAUT) by showing that the relationship between technology adoption and performance is not direct but is significantly amplified by the user's DL. This provides a refined conceptual model for technology-driven performance improvement.

Practical and Policy Implications: For the Ghana Police Service, these findings underscore the necessity of a dual-pronged strategy: not only investing in new technology, but also in robust, continuous digital literacy training for officers. Policies should prioritise comprehensive upskilling programs to ensure that personnel can effectively leverage technological assets, thereby maximising return on investment. This will prepare the police force to address the challenges of modern policing and enhance their overall effectiveness and responsiveness.

Originality: The originality of this study lies in its empirical validation of digital literacy as a moderator in the relationship between technology adoption and crime performance. While previous research has identified digital literacy as a challenge, this study's quantitative analysis explicitly demonstrates how digital literacy strengthens the positive impact of technology on operational outcomes. This study provides a novel, evidence-based perspective for improving policing strategies in developing economies.

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Author(s) Statements:
Acknowledgements: The Author is thankful to Dr. Emmanuel Kodom for all the effort and dedication during the supervision period of my academic work. I would again thank Matilda Boakye, Aseda and Nana Yaw for their continuous support.
Author contributions: The contribution of the authors is equal.
Funding: No funding was received for this study.
Availability of data and materials: Not applicable.
Ethics Declarations:
Ethics approval and consent to participate: Ethical approval was obtained from the relevant institutional review boards, including the Ghana Police Service and researcher-affiliated university. Informed consent was obtained from all participants, clearly outlining the study's purpose, procedures, confidentiality measures, and right to withdraw at any time without penalty. Anonymity was ensured by collecting the data without personal identifiers. All the collected data were stored securely and accessed only by the research team.
Consent for publication: Not applicable.
Consent to participate: Not applicable.
Competing interests: The authors declare that they have no competing interests.
Informed consent: Not applicable.
Consent for publication: All authors agreed with the content and gave explicit consent to submit the manuscript to *Journal of Economic and Social Thought*.
Data Availability Statement: Data and Materials will be provided upon the request of the Editor or Referees).

CRediT Author(s) Statements:

Contribution	A Boahene			
Conceptualization	X			
Methodology	X			
Software	X			
Validation	X			
Formal analysis	X			
Investigation	X			
Resources	X			
Data curation	X			
Writing –original draft	X			
Writing –review & editing	X			
Visualization	X			
Supervision	X			
Project administration	X			
Funding acquisition	X			

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