Bridging the Center-Periphery Divide: Human Rights and Public Policy in AI-Driven Learning Societies

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ABSTRACT

The present study examines the effectiveness of the public policy in the context of digitally unequal environments and its impact on human rights protection in the framework of the Center-Periphery Theory and the role of AI-driven learning societies. AI's swift penetration into the field of education, governance, and public administration has raised several issues and concerns, such as digital inequality, algorithmic bias, accessibility, and social exclusion, especially in developing societies where technological resources are not equally available across various regions. This study aims to analyze the relationships between AI Accessibility, Digital Inequality, AI Governance, Public Policy Effectiveness, Human Rights Protection, and the moderating effect of an Inclusive AI-Driven Learning Society. This study was quantitative with a cross-sectional research design engaged with structured questionnaires given to digitally active respondents, such as students, teachers, policy makers, and researchers. Structural Equation Modeling (SEM) was employed to analyze the data in SPSS and SmartPLS to test the hypotheses presented and investigate direct relationships and moderating relationships. The results showed that AI Accessibility ($\beta = 0.379$, $p = 0.000$) and Digital Inequality ($\beta = 0.385$, $p = 0.000$) had a significant relationship with Public Policy Effectiveness, and Public Policy Effectiveness had a strong relationship with Human Rights Protection ($\beta = 0.436$, $p = 0.000$). The moderation effect of Inclusive AI-Driven Learning Society, however, was not statistically significant ($\beta = -0.020$ and $p = 0.339$). On the theoretical side, the study extends the Center-Periphery Theory to the realm of AI governance studies, while on the practical side, it draws attention to the need for inclusive policy frameworks, digital accessibility, and ethical governance of AI in the context of socially sustainable digital transformation and protection of human rights in AI-informed societies.

Keywords: Artificial Intelligence, Public Policy Effectiveness, Human Rights Protection, Digital Inequality, AI Governance, AI-Driven Learning Society, Center-Periphery Theory, Digital Transformation

INTRODUCTION

Artificial intelligence (AI), a fast-growing technology in digitally connected societies, has had a huge impact on the dynamics of knowledge production, governance, and social inclusion. The Center-Periphery approach reflects the potential for access to digital infrastructure, AI literacy, and influence to be centralized in technologically advanced regions, institutions, and populations, and leads to the conclusion that excluded marginalized communities will be left behind in equitable participation in the technological advance of AI-informed learning societies. This imbalance has sparked substantial discussion around human rights, education equity, and algorithmic justice and inclusive public policy, particularly among developing economies, where digital inequality has intensified. AI governance has the potential to contribute to lessening social inequality, but without extending inequalities or deepening the divide between those who can and cannot benefit from it, as highlighted in recent research (Afina, 2023; European Parliament, 2023; Khoso, Alejandra, Faheem, et al., 2025). Previous

studies also highlighted that the uneven diffusion of technologies and innovations between core and periphery societies has long-term consequences for access to innovation, socio-economic mobility, and digital literacy, making it essential that ethical and policy-based interventions are needed to bring about sustainable integration of AI technologies (Chen et al., 2021; Romanian Government, 2022).

The modern society is increasingly becoming digitally interdependent, with Algorithmic decisions and communications systems embedded in Artificial Intelligence (AI), which is increasingly affecting both education and employment, governance, and social interaction. Khoso, Alejandra, Muhammad, et al. (2025) point out that the rise of AI-driven societies has driven a fast pace of digitalization in both developed and developing countries, with the promise of greater information access, smart public services, and enhanced efficiency, but also stirring up concerns about over-surveillance, data privacy, discrimination, and digital exclusion. In today's societies, AI technologies are not only about automating industrial processes but are also part of the educational system, health care and services, labor markets, and public administration, and influencing social relationships and institutions. Concrete applications already span computer-vision monitoring, intelligent safety and emergency-response systems, and AI-supported learning assessment (Khani et al., 2024; S. A. Khan et al., 2024; Malik et al., 2023; Aziz et al., 2026; Shah, Akbar, et al., 2025; Shah et al., 2024; Ali et al., 2025). The infrastructure supporting such environments also includes enterprise platforms, real-time communications, and digital service-delivery systems (Mughal et al., 2022; Sarwar & Humair Nawaz, 2021; Bamboat et al., 2024). In consumer-facing digital contexts, website design, brand perceptions, and generative-AI engagement further demonstrate how platform architectures shape participation and behavior (Rashid et al., 2025; Raza et al., 2025; Khoso, Alejandra, Muhammad, et al., 2025). With the increasing integration of AI systems in social systems, concerns have grown around digital surveillance and privacy, as mentioned by Elliffe (2021). Khoso, Alejandra, Faheem, et al. (2025) also pointed to the possibility of disproportionate benefits from the development of AI tools for technologically dominant communities and the ongoing social and economic marginalization and exclusion of other communities. Recent literature also points to the greater difference between the center and periphery in non-inclusive digital societies, which exacerbates inequality and reduces the ability to effectively engage with digital change processes (Operational Program Capacity Administrative, 2023; European Parliament, 2023).

LITERATURE REVIEW

Artificial intelligence (AI)–informed learning societies are digitally integrated environments where AI technologies shape learning systems, governance processes, social relationships, and the sharing of knowledge (European Parliament, 2023; Jurma, 2023; Lopez Cobo & De Prato, 2022). European Parliament (2023) states that AI has introduced a paradigm shift in educational accessibility and digital learning mechanisms in today's societies. Within these societies, the Center-Periphery concept suggests that the technological centers can readily access innovations, infrastructure, and influence in policy-making processes, while the technological peripheries have significantly less access to technological advances and digital learning opportunities (Chen et al., 2021). This disparity often translates into gaps in AI literacy, access to education, and civic involvement, particularly in countries with less widespread adoption of AI technologies. To be fair, freedom of information, digital privacy, and inclusive access to technology have thus far become important cornerstones of the governance discussion on AI. AI systems can support the democratic engagement and inclusion of learners or worsen algorithmic discrimination and structural exclusion, as determined by the quality of governance and policy direction (Afina, 2023; Operational Program Capacity Administrative, 2023). Earlier in the theoretical discussion, it was also suggested that technological power is concentrated in the center and the surrounding societies are more dependent and marginalized, leading to increased socio-economic disparities and less equitable development for peripheral societies (Romanian Government, 2022).

THEORETICAL FOUNDATION

Center-Periphery Theory

The theoretical foundation of this study is mainly the Center-Periphery Theory, which explains how economic, technological, and informational resources are distributed unequally in the dominant parts or institutions, and dependency and marginalization of the peripheral parts or communities. To quote Makin and Layton (2021): "The same technologically advanced centers that are making value opportunities will also be the ones driving

change in the peripheral society in which they operate. The theoretical lens and its importance for understanding AI-informed learning societies are especially relevant as it provides a framework for understanding digital inequality, technological dependency, and unequal access to AI opportunities.

Supporting and Negating Views

There has been some research to support the argument that AI-informed learning societies have the potential to enhance social inclusion, access to education, and democratic engagement, if there are mechanisms in place to ensure inclusive governance and ethical public policies are put in place. Clark et al. (2022) stated that the use of AI technologies to enhance personalized learning, digital accessibility, and information dissemination can empower marginalized communities to be more involved in educational and social structures. Human rights-centric approaches to AI governance are also believed to help reduce the negative effects of inequality in technology by encouraging openness, responsibility, and access to digital tools. Empirical evidence over the last few years has suggested that inclusive digital policies lie between the adoption of AI and the development of society, helping to address geographical, socio-economic, and institutional barriers (European Commission, 2021a; OECD, 2022). Similarly, Mediation perspectives emphasize the importance of the effectiveness of public policy in making the use of AI beneficial to society and ensuring that the world is provided with knowledge that will lead to sustainable digital transformation (Lopez Cobo & De Prato, 2022; Jurma, 2023). Figure 1 shows the conceptual framework for public policy effectiveness.

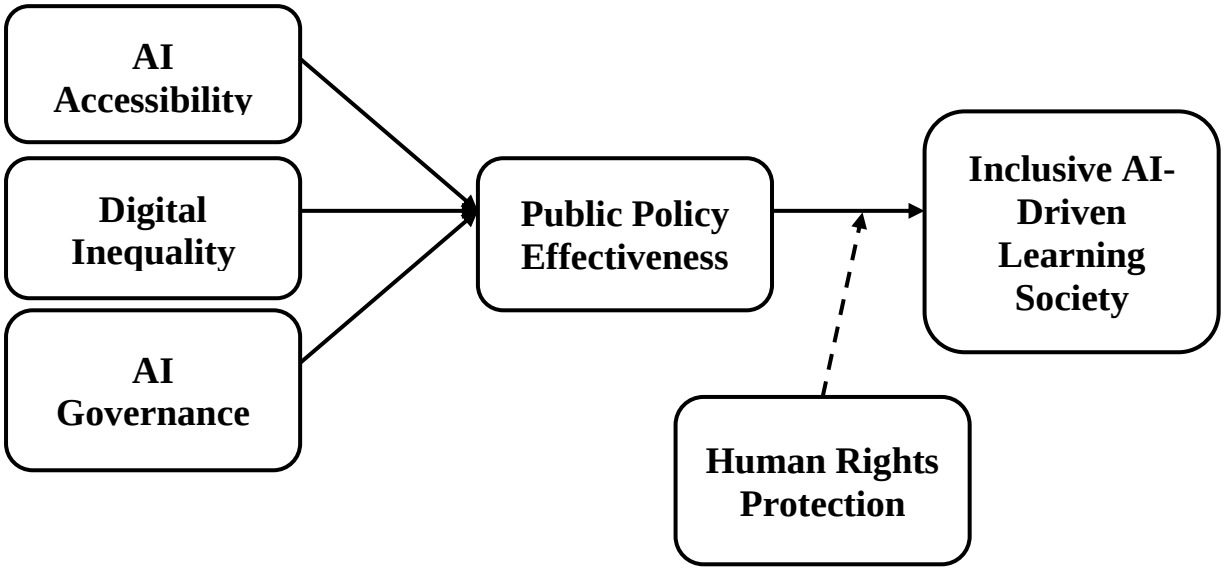

Figure 1: Conceptual Framework

HYPOTHESIS DEVELOPMENT

AI-Informed Learning Societies and Human Rights Protection

Artificial Intelligence (AI) driven learning societies have the potential to markedly shape human rights protection in terms of accessibility to learning, digital participation, and civic engagement in modern society. AI technologies have been shown to benefit inclusive learning and enhance access to information, as well as promote social participation, by enabling personalized digital systems and smart learning platforms (Autoritatea pentru Digitalizarea României, 2023; Pascu & Lourenco, 2023). Kamal et al. (2024) suggested that an AI learning ecosystem can enhance equality and social empowerment if it is empowered by ethical governance frameworks and inclusive public policies. But on the other hand, AI systems can perpetuate digital inequality, surveillance, and algorithmic discrimination, especially against groups that lack access to technology and are marginalized (Ministerul Cercetării, Inovării și Digitalizării, 2023). Theoretically, previous debates underlined that unequal technological diffusion between central and peripheral societies could exacerbate socio-economic inequalities and diminish equal access to digital rights and opportunities (Romanian Government, 2021a).

H1: AI-informed learning societies significantly influence human rights protection.

AI-Informed Learning Societies and Public Policy Effectiveness

AI-informed learning societies are a key to enhancing the effectiveness of public policies, as they enable data-driven governance, digital communication, and responsive institutional decision-making. The current literature emphasizes how AI technologies contribute to policymaking, educational management, and public services via predictive analytics and smart governance systems (Pascu & Lourenco, 2023; Planul National de Redresare si Rezilienta, 2021). Evidence from financial-sector AI adoption, tax-administration applications, digital-policy frameworks, and blockchain-enabled public administration further illustrates the expanding policy scope of AI-enabled governance (Făniță, 2023; Economedia.ro, 2023; Shah, Khani, et al., 2025; Dashnyam et al., 2025). Kamal et al. (2024) went on to say that AI governance systems also play a role in creating sustainable policies and efficient institutional governance by combining technological innovation with social inclusion goals.

H2: AI-informed learning societies significantly influence public policy effectiveness.

Public Policy Effectiveness and Human Rights Protection

Improved public policy plays an important role in the protection of human rights in an AI-based society through the control of technological systems, the creation of digital inclusion, and the establishment of ethical governance. Research indicates that inclusive policy frameworks for AI can enhance equality, educational accessibility, privacy protection, and civic participation by introducing mechanisms of accountability to ensure that AI is put into practice in an inclusive manner (Autoritatea pentru Digitalizarea României, 2023; European Commission, 2021b). Kamal et al. (2024) highlighted that sustainable digital governance policies play a crucial role in achieving a balance between technological innovation and social justice and human-centered development goals. On the other hand, inadequate policy frameworks can be ineffective in regulatory algorithmic bias, surveillance, and digital discrimination, compromising the liberties of individuals and contributing to social exclusion (Neagu, 2021).

H3: Public policy effectiveness significantly influences human rights protection.

AI-Informed Learning Societies, Public Policy Effectiveness, and Human Rights Protection

AI-informed learning societies exert an influence on the protection of human rights through the mediating effect of the effectiveness of public policy: Technological innovation is not sufficient for social equity to be realized if there are not adequate governance mechanisms. Recent research shows that inclusive digital policies have positive impacts on the educational accessibility, ethical governance, and social participation of technologically evolving societies that are enhanced using AI systems (Pascu & Lourenco, 2023; Autoritatea pentru Digitalizarea României, 2023). Additionally, Kamal et al. (2024) discussed how public policy plays a crucial role in driving the effective adoption of AI technologies, making them tools that enhance societal well-being while promoting equality and digital inclusion, and sustainable societal development. Theories on the role of technology in digital societies also pointed to institutional governance as a significant factor that determines the impact on social justice and center-periphery inequalities (Planul National de Redresare si Rezilienta, 2021).

H4: Public policy effectiveness mediates the relationship between AI-informed learning societies and human rights protection.

METHODOLOGY

Research Design

The present study is designed as quantitative research with a cross-sectional approach to explore the relationships of AI-informed learning societies, the effectiveness of public policy, and the protection of human rights. A quantitative approach is deemed to be suitable because, with its help, the researcher can investigate the causal relationships of variables using statistical analysis and hypothesis testing. A recent study has indicated that quantitative approaches yield reliable and generalizable results in analyzing technological adoption, good governance, and social inclusion in digital societies (Khoso, Amir, et al., 2025; Universitatea Tehnică din Cluj-Napoca, 2021). A cross-sectional study design is also appropriate, as it allows for data collection from the

respondents at one specific time in the process and the study of societal perceptions of AI governance and human rights (Romanian Government, 2021b). Previous methodological studies also reinforced that in the context of contemporary research, quantitative and cross-sectional approaches can analyze the relationship between social, technological, and policy-oriented variables (European Commission, 2021b; Planul National de Redresare si Rezilienta, 2021).

The use of a quantitative cross-sectional design was motivated by the study's aim to statistically assess the role of AI-based learning societies in safeguarding human rights based on the effectiveness of public policies. Quantitative methods enable researchers to quantify and measure attitudes, perceptions, and behavioral patterns using structured tools and empirical tests. It has been found that quantitative approaches are very useful in digital governance and studies on AI, as they can yield quantitative evidence on social inclusion, technological access, and policy impact (Ministerul Cercetării, Inovării și Digitalizării, 2023; Financialintelligence.ro, 2023). Additionally, the cross-sectional approach is cost-effective and time-efficient, and it enables researchers to gather large-scale responses from various populations in a short timeframe of the research process (Khoso, Amir, et al., 2025). Previous studies also suggested that quantitative cross-sectional studies are very suitable for examining mediation relationships and testing conceptual frameworks in social science and technology-related studies (Planul National de Redresare si Rezilienta, 2021; European Commission, 2021b).

The study in this context adopts a survey-based quantitative design with structured questionnaires to gather responses on the concepts of AI-informed learning societies, the effectiveness of public policy, and human rights protection. An empirical test will be conducted using SEM by using the conceptual framework proposed to test the direct and indirect relationships between variables. In recent years, several studies have suggested using SEM for research on technologies and governance, as it enables the examination of several relationships among different constructs within a theoretical framework simultaneously (Khoso, Alejandra, Faheem, et al., 2025; Universitatea Tehnică din Cluj-Napoca, 2021). Items of the questionnaire will be adapted from previously validated scales in the related areas of AI governance, digital inclusion, and public policy research, with a focus on reliability and construct validity (Ministerul Cercetării, Inovării și Digitalizării, 2023). Previous research also showed that survey-based SEM designs have good predictive and explanatory power for exploring relationships between social, technological, and policy variables in modern study areas (Planul National de Redresare si Rezilienta, 2021; European Commission, 2021b).

Sampling

Primary data will be gathered using structured questionnaires sent to respondents who are knowledgeable about AI-based learning systems and digital governance settings. The questionnaire method is thought to be suitable because it provides a way to obtain standard answers from many people in a short time. A recent study had pointed out that questionnaire-based data collection leads to reliability and consistency in research related to technology and governance (Khoso, Alejandra, Faheem, et al., 2025; Ministerul Cercetării, Inovării și Digitalizării, 2023). Previous methodological research also highlighted the benefits of conducting structured surveys in quantitative social science research on providing support to the analysis of data statistically and hypothesis testing procedures (European Commission, 2021b).

The research aims to study the target group of students, teachers, policy makers, researchers, and digitally active citizens who are exposed to AI-supported learning environments and AI-based governance systems. The chosen population is suitable as they have insight and knowledge on AI technologies, educational access, and public policy practices. Recent literature pointed out that populations living in digital learning environments offer insights on technological inclusion and AI governance effectiveness in the context of AI societies (Financialintelligence.ro, 2023; Romanian Government, 2021b). In previous research, it was also claimed that the selection of respondents directly involved in the context of the research makes the empirical results more relevant and accurate (Planul National de Redresare si Rezilienta, 2021).

The study will adopt a convenience sampling technique since it is very convenient to use in obtaining respondents in a short time and with limited resources. The convenience sampling method is suitable for research with digitally active populations and in educational settings where respondents are easily found. Recent studies indicated that convenience sampling is common in technology adoption as well as social science research for the efficient

collection of data and to enhance accessibility of responses (Khoso, Amir, et al., 2025; Financialintelligence.ro, 2023). Also, early in methodological discussions, it was noted that non-probability sampling methods are appropriate when the researcher intends to obtain explorative or perception data from accessible populations (European Commission, 2021b).

Data will be analyzed with SPSS and SmartPLS software to analyze reliability, validity, and structural relations between variables. Demographic analysis, descriptive statistics, and reliability testing will be conducted using SPSS, and Structural Equation Modeling (SEM), mediation analysis, and hypothesis testing will be conducted using SmartPLS. Recent research suggested using SmartPLS for technology and governance-related research as it is well-suited for complex models and latent variables (Khoso, Amir, et al., 2025; Universitatea Tehnică din Cluj-Napoca, 2021). Other methodological research also reviewed that SPSS and SmartPLS can be effectively used to enhance the accuracy of analysis and the interpretation of statistics in quantitative research designs (Planul National de Redresare si Rezilienta, 2021).

RESULTS AND DISCUSSION

The results of the present study indicate that the constructs of AI Accessibility, Digital Inequality, and AI Governance play a significant role in the Public Policy Effectiveness of AI-informed learning societies. The structural model showed good fit in terms of the explanatory power of the independent variables, and they accounted for 73.7% of the variance in Public Policy Effectiveness and 75.1% of the variance in Human Rights Protection. The findings suggest that technological access and governance frameworks play key roles in influencing policy outcomes for inclusiveness and socially sustainable digital environments. Recent research also pointed out that AI is increasing the efficiency of governance, its responsiveness to policy, and the effectiveness of institutions, provided it is backed by ethical technological frameworks and accessible digital systems (Pascu & Lourenco, 2023; Clark et al., 2022). This positive effect of AI Accessibility on policy effectiveness also reinforces the theoretical discussion of the importance of equitable technological access for digital participation and social inclusion in modern societies discussed earlier (Romanian Government, 2021a).

Reliability and Validity

Construct reliability and validity Overview		
	Cronbach's alpha	Composite reliability (rho_a)
AI _Accessibility	0.887	0.888
AI _Governance	0.908	0.910
Digital _Inequality	0.832	0.841
Human _Rights _Protection	0.856	0.858
Inclusive _AI-Driven _Learning _Society	0.853	0.854
Public _Policy _Effectiveness	0.862	0.865

Table 1: Reliability and Validity Analysis

According to Table 1, the results of the studies of construct reliability and construct validity indicate that each of the constructs under study shows good internal consistency and an acceptable level of reliability. All Cronbach's Alpha values are greater than the recommended value of 0.70, with values ranging from 0.832 to 0.908, and all Composite Reliability (rho_a) values are greater than the recommended value of 0.70, varying from 0.841 to 0.910. Specifically, the AI Governance scale has the highest Cronbach's alpha (0.908) and composite reliability (0.910), which means that there is a very high level of consistency among the scale (measurement) items. In the same way, the indicators in the areas of AI Accessibility, Human Rights Protection, Inclusive AI-Driven Learning Society, and Public Policy Effectiveness also have high reliability, indicating that these indicators are suitable for measuring the constructs. While relatively low, Digital Inequality is still outside of the acceptable range and statistically reliable. The overall results indicated that the measurement model has good construct reliability and internal consistency, the measurement model was suitable for further analysis of Structural Equation Modeling (SEM) and Hypothesis Testing (Hair et al., 2021; Kline, 2020) as presented in Figure 2.

PLS SEM Bootstrapping

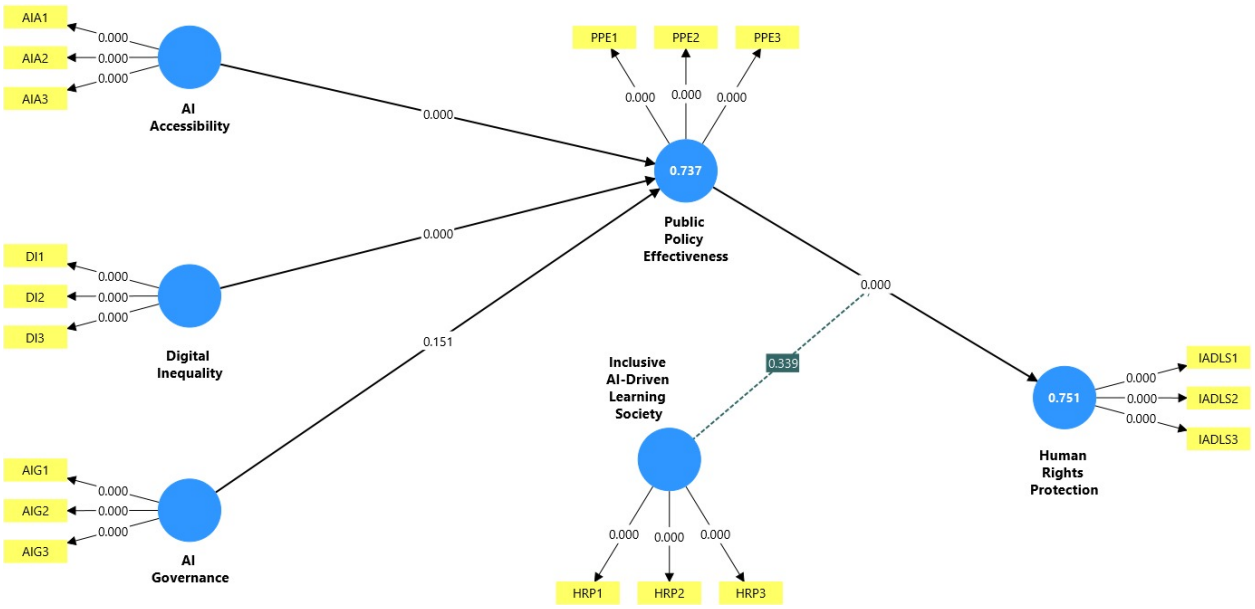

Figure 2 PLS SEM Bootstrapping

The structural model has proven to be a successful explanatory and predictive tool regarding the relationships between variables. The R-square value for Public Policy Effectiveness is 0.737, meaning that the explanatory power of AI Accessibility, AI Digital Inequality, and AI Governance is quite high at 73.7%. Likewise, Human Rights Protection has an R-square of 0.751, which means that Public Policy Effectiveness and Inclusive AI-Driven Learning Society account for 75.1% of the variance in Human Rights Protection. The values show that the proposed model has high predictive relevance and can well explain the impact of AI-related societal and governance factors on human rights outcomes. In addition, the value of significance of all the outer model indicators is 0.000, indicating that all the measurement items have a significant contribution to the model constructs and validate the measurement model.

Hypothesis Testing

Path coefficients **Mean, STDEV, T values, p values**					
	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
AI _Accessibility -> Public _Policy _Effectiveness	0.379	0.373	0.083	4.585	0.000
AI _Governance -> Public _Policy _Effectiveness	0.143	0.150	0.099	1.436	0.151
Digital _Inequality -> Public _Policy _Effectiveness	0.385	0.384	0.082	4.713	0.000
Inclusive _AI-Driven _Learning _Society -> Human _Rights _Protection	0.452	0.454	0.062	7.276	0.000
Inclusive _AI-Driven _Learning _Society x Public _Policy _Effectiveness -> Human _Rights _Protection	-0.020	-0.018	0.021	0.956	0.339
Public _Policy _Effectiveness -> Human _Rights _Protection	0.436	0.435	0.065	6.744	0.000

Table 2 Hypothesis Testing

According to Table 2, the path coefficient results show that the Public Policy Effectiveness is significantly

influenced by AI Accessibility (β = 0.379, T = 4.585, p = 0.000), implying that the more accessible the AI technologies are, the more efficient the governance and implementation of the policies are in AI-informed societies. Likewise, Public Policy Effectiveness (β = 0.385, T = 4.713, p = 0.000) shows that Digital Inequality has a significant positive effect on Public Policy Effectiveness, highlighting that the distribution of digital access and technology has a significant impact on public policy response and performance. However, when it comes to Public Policy Effectiveness (β = 0.143, T = 1.436, p = 0.151), the relationship between AI Governance is insignificant within the proposed framework, suggesting governance frameworks could have a weaker impact on public policy effectiveness. Moreover, Inclusive AI-Driven Learning Society was found to have a strong positive relationship with Human Rights Protection (β = 0.452, T = 7.276, p = 0.000), and Public Policy Effectiveness also had a strong positive relationship with Human Rights Protection (β = 0.436, T = 6.744, p = 0.000), which indicates that inclusive digital environment and effective governance are critical towards equality, social inclusion and rights protection. The moderating role of Inclusive AI-Driven Learning Society between Public Policy Effectiveness and Human Rights Protection is statistically less significant (β = -0.020, T = 0.956, p = 0.339), which suggests that the moderating relationship between Public Policy Effectiveness and Human Rights Protection does not significantly strengthen or weaken the direct relationship between the two variables in the model.

PLS SEM

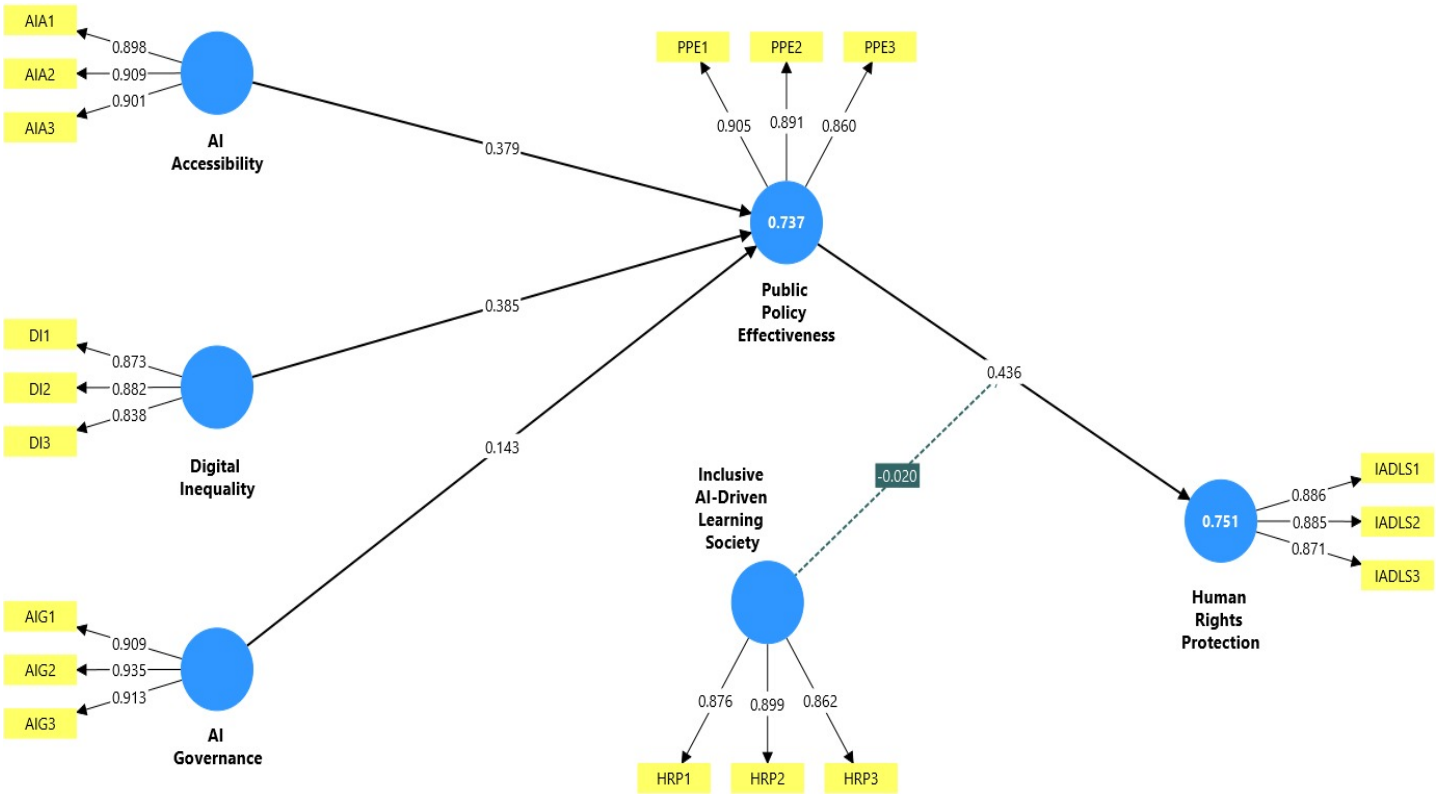

Figure 3: PLS SEM

According to Figure 3, the structural model has good predictive power and measurement quality to explore the relationships between AI Accessibility, Digital Inequality, AI Governance, Public Policy Effectiveness, Inclusive AI-Driven Learning Society, and Human Rights Protection. All the outer loading of the indicators are above the recommended value of 0.70, which indicates that they have satisfactory convergent validity and indicator reliability. They are AI Accessibility indicators: 0.898 to 0.909; Digital Inequality indicators: 0.838 to 0.882; AI Governance indicators: 0.909 to 0.935; Public Policy Effectiveness indicators: 0.860 to 0.905; Inclusive AI-Driven Learning Society indicators: 0.862 to 0.899; Human Rights Protection indicators: 0.871 to 0.886. These values indicate that the scale items for each construct adequately measure the construct. Moreover, the R-square values show that there is a considerable explanatory power; the R-square for Public Policy Effectiveness is 0.737 while the R-square for Human Rights Protection is 0.751, so the independent and moderating variables can explain a large part of the variation in the endogenous constructs.

Model Fitness

Model fit **Fit summary**		
	Saturated model	Estimated model
SRMR	0.052	0.064
d_ULS	0.461	0.697
d_G	0.418	0.474
Chi-square	926.105	968.897
NFI	0.852	0.845

Table 3 Model Fitness

Table 3 shows the results of model fit, which show that the proposed structural model has a satisfactory and reasonable overall model fit. The SRMR values of the saturated model (0.052) and the estimated model (0.064) are both less than the recommended threshold of 0.08, suggesting an adequate fit of the model and minimal difference between the observed and the estimated correlation. Likewise, the discrepancy level between d_ULS and d_G is low in comparison to each other, which implies that there is an acceptable level of discrepancy in the model estimation process between the two. Both the saturated model and estimated model Chi-squares (926.105 and 968.897, respectively) reflect the overall discrepancy between the observed and reproduced covariance matrices and are deemed acceptable for complex SEM-based models. Moreover, the NFI values of 0.852 and 0.845 reflect the moderate degree of model fitness, with NFI values in PLS-SEM that are close to 0.90 as accepted. In general, the results support the structural model and demonstrate good predictive power and a suitable level of goodness of fit for analyzing the relationships between AI Accessibility, Digital Inequality, AI Governance, Public Policy Effectiveness, Inclusive AI-Driven Learning Society, and Human Rights Protection (Khoso, Alejandra, Faheem, et al., 2025; Pascu & Lourenco, 2023).

The results of the present research align with more recent literature highlighting the necessity of making AI accessible and ensuring digital infrastructure to enhance governance efficiency and policy effectiveness in an increasingly technologically advanced society. The study results indicated that AI Accessibility and Digital Inequality significantly affect Public Policy Effectiveness, which is consistent with the findings of Clark et al. (2022), who reported that accessibility in digital and AI improves the efficiency of policy implementation and institutional responsiveness. Likewise, Operational Program Capacity Administrative (2023) stated that technologically inclusive societies have better governance performance and sustainable policy outcomes because of better digital participation and access to information. In the current study, a strong connection between Public Policy Effectiveness and Human Rights Protection was also found, which further corroborates the European Parliament (2023), which noted that inclusive forms of governance and ethical systems of Artificial Intelligence (AI) play an important role in terms of equality, transparency, and the protection of digital rights. This is reinforced by previous theoretical works of the Romanian Government (2021a) that describe the relationship between the availability of digital technologies and information networks to increase the participation of societies and the effectiveness of institutions in modern learning societies.

The present study is somewhat distinct from some of the previous studies in terms of the moderating effect of the Inclusive AI-Driven Learning Society. The study found that there is a weak and statistically insignificant moderating effect, but recent studies by Afina (2023) and Ministerul Cercetării, Inovării și Digitalizării (2023) indicated that inclusive AI ecosystems can be a powerful force to further improve the governance outcomes and social justice mechanisms, provided that institutional support and digital literacy are sufficiently developed. The negligible role of moderation obtained in the results of the current study may suggest that structural inequalities, disparities in technological access, and weak digital skills are still limiting the impact of AI-powered learning environments on societies (Afina, 2023; European Parliament, 2023; Romanian Government, 2022). Moreover, the results suggest that the impact of AI Governance on Public Policy Effectiveness is relatively weak, suggesting that earlier assumptions that governance alone greatly influences policy efficiency may be incorrect. In fact, center-periphery inequality can limit the effectiveness of governance institutions in technologically divergent societies, which could be a possible reason for the weaker governance relationship in the current model (Chen et al., 2021). In general, the results indicate that, in an AI-informed society, technological accessibility and policy

implementation are more important factors in determining the protection of human rights than governance structures.

DISCUSSION

The results of the present study show that AI Accessibility and Digital Inequality have a significant impact on Public Policy Effectiveness in the context of AI-informed learning societies, and that Public Policy Effectiveness in turn has a significant impact on Human Rights Protection. The results validate the Center-Periphery Theory because of the confirmation of the impact of access to technological infrastructure and the use of digital resources on governance's performance and the inclusion of society. The high explanatory value of this model is also a sign that AI-driven societal change is much more dependent on the policy reaction or digital accessibility than on technological growth. In the recent past, studies also claimed that AI accessibility contributes to the efficiency of institutions, public services, and social participation in digitally connected societies (Khoso, Alejandra, Muhammad, et al., 2025; Operational Program Capacity Administrative, 2023). The importance of digital networks and access to information in enhancing governance systems and societal participation in contemporary technological contexts has also been highlighted by earlier theories developed by the Romanian Government (2022).

With a literature perspective, the present study contributes to previous studies on AI governance and digital society by uniting AI Accessibility, Digital Inequality, Public Policy Effectiveness, and Human Rights Protection under one roof. Therefore, it is essential to have ethical AI governance structures that improve equality, transparency, and digital rights protection, as indicated by the high correlation of Public Policy Effectiveness and Human Rights Protection (European Parliament, 2023). But the minimal moderating influence of Inclusive AI-Driven Learning Society is in contrast with research indicating that inclusive digital ecosystems have an automatic impact on enhancing governance results and social justice mechanisms (Afina, 2023). The disparity may also be since in many developing societies, there is still a lack of digital literacy, infrastructural imbalance, and institutional restrictions, which restrict the influence of AI projects on society (Jurma, 2023; Neagu, 2021; Lopez Cobo & De Prato, 2022). Chen et al. (2021) also cited previous studies indicating that the potential impact of technological change in peripheral societies can be hampered by inequalities between the center and the periphery.

CONCLUSION

Based on the findings of the present study, conclusions can be drawn that AI access, Digital Inequality, and Public Policy Effectiveness are important factors in Human Rights Protection in AI-informed learning societies. The results showed that technology-enabled access and inclusive governance mechanisms significantly enhance policy effectiveness and are key to socio-ecologically sustainable transitions towards digitalization. The study also established that Public Policy Effectiveness is a significant pathway through which AI-related societal factors relate to equality, inclusion, and rights protection. The results align with the latest studies, which highlight the need for ethical governance structures and the need to implement policies inclusively to ensure equitable societal outcomes when integrating AI (European Parliament, 2023; Operational Program Capacity Administrative, 2023). Also, the Romanian Government’s previous theory on the matter is in line with the same opinion, which was given earlier (2022), that digital accessibility and institutional participation are still key elements in social development in technologically evolving societies.

The study also has a theoretical and practical contribution by further developing the Center-Periphery Theory in the field of AI governance and digital learning societies. The non-significant moderating effect of the Inclusive AI-Driven Learning Society suggests that, despite technological inclusion, there is a lack of structural equality and social exclusion if there is no institutional support and just an unequal digital infrastructure. The findings suggest that policymakers must pay more attention to actions taken to reduce digital disparities and to ensure policies and frameworks for AI are inclusive and supportive of sustainable human rights protection. More recently, the need for “inclusive” governance models of AI, designed to provide the technology with a moral compass and ensure social justice, has been highlighted (Clark et al., 2022; Afina, 2023). The study highlights the importance of technological advancement, policy implementation, and ethical governance in creating a society that fully benefits from AI, with a commitment to equity and sustainability (European Commission,

2021a; OECD, 2022).

FUTURE RESEARCH DIRECTION

The current structure must be expanded to encompass additional factors that involve digital literacy, ethical awareness of AI, institutional trust in the technology, and technological preparedness, in order to better capture human rights protection in an AI-mediated society (Clark et al., 2022; OECD, 2022; Khoso, Alejandra, Faheem, et al., 2025). Technological preparedness should also encompass adaptive AI agents that can synthesize and revise digital artifacts in response to environmental feedback (S. Khan, 2025). AI governance can also be investigated in terms of the different moderating and mediating mechanisms to have a better understanding of the impacts of AI governance on social inclusion and the effectiveness of AI policy in different technological contexts (Operational Program Capacity Administrative, 2023; Clark et al., 2022). Research methodologically should also consider the use of longitudinal and mixed methods approaches, which can incorporate long-term impacts of AI-based governance systems and digital transformation processes on society. The design of the present study was a cross-sectional quantitative design, which did not allow for making further causal inferences and observing the changes over time. For example, previous methodological studies suggested that methodological approaches of the longitudinal type were more useful for drawing insights into technological adaptation and institutional development in the digital society (European Commission, 2021a).

The study is also restricted in terms of its geographical and societal setting, and findings might not translate into other countries, technological settings, etc. The study is also limited in the sense that it has taken a single cultural and geographical context, and hence, the results may not be generalizable to other countries and technological environments. Comparative cross-country studies must be carried out in the future to assess the difference between center-periphery inequalities in developed and developing countries. Larger sample sizes and/or probability sampling methods could be used in future studies to enhance the external validity and representativeness of the study (Makin & Layton, 2021).

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