

Social Media's AI Ethics, Digital Literacy, and AI Trust: Could These Lead to Positive Health Behavior?

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Abstract

Aim/Purpose: This study investigated the mediating roles of Artificial Intelligence (AI) ethics and AI trust in the relationship between digital literacy and positive health behavior among Thai working-age individuals. The research sought to address a gap in existing literature by integrating these constructs within the context of social media use for health-related purposes.

Introduction/Background: Social media is now a primary source of health information in Thailand, with AI-driven recommendation algorithms tailoring content to user profiles and behaviors. While such personalization can improve relevance, it also raises concerns about misinformation, selective exposure, and over-reliance on automated systems. Digital literacy, defined as the ability to locate, evaluate, and use digital content effectively, enables users to navigate such environments more critically. Similarly, AI ethics, which includes accountability, transparency, fairness, and security, can influence how individuals engage with AI-mediated platforms. AI trust, which refers to the willingness to rely on AI recommendations, may encourage adoption but could also reduce active health decision-making when it is excessive or uncritical. Despite substantial research on these constructs in other contexts, there is limited empirical evidence in Thailand. This study addresses this gap by examining their direct and indirect relationships with positive health behavior among Thai working-age adults.

Methodology: A quantitative, cross-sectional research design was employed. Data were obtained from 420 Thai working-age individuals through a structured online questionnaire administered via Google Forms. A multi-stage sampling procedure combining cluster and quota sampling was applied. First, Bangkok districts were stratified into three zones: inner, middle, and outer. Four districts were then randomly selected from each zone, followed by the recruitment of 35 participants from each selected district through quota sampling. Inclusion criteria required Thai nationality, current residence in one of the selected districts, and active use of social media.

Four instruments were used for measurement. Digital literacy was assessed using a 14-item scale. Perceptions of AI ethics were measured using a 16-item scale, comprising four dimensions: accountability, responsibility, explainability, and security. AI trust was unidimensionally evaluated with an 11-item scale, covering functionality, benefits, and credibility. Positive health behavior was measured using a scale comprised four domains: nutrition, physical activity, relaxation, and preventive behavior. All items were rated on a five-point Likert scale ranging from 1 to 5. Content validity was established through expert evaluation by five domain specialists, using Item–Objective Congruence. Confirmatory factor analysis was conducted to validate the measurement model for the three latent constructs: AI ethics, AI trust, and positive health behavior. Construct validity was confirmed prior to hypothesis testing. Structural equation modeling was then employed to examine the direct and indirect relationships among digital literacy, AI ethics, AI trust, and positive health behavior.

Findings: The structural equation model showed an acceptable fit to the empirical data (RMSEA = .07, SRMR = .06, TLI = .96, CFI = .98, PNFI = .63), satisfactory internal consistency (CR = .92–.95), and convergent validity (AVE = .75–.82). The structural model showed meaningful explanatory power across the endogenous constructs ($R^2 = .64$ –.99). All hypothesized direct and indirect effects were statistically significant. Digital literacy and AI ethics both exhibited positive, statistically significant direct effects on positive health behavior. In contrast, AI trust had a statistically significant negative direct effect on positive health behavior ($\beta = -.49, p < .01$), indicating that excessive reliance on AI systems may discourage proactive health engagement. Digital literacy was positively associated with AI ethics and AI trust; AI ethics was strongly and positively associated with AI trust ($\beta = .84, p < .01$). Mediation analysis further revealed that AI trust significantly mediated the relationship between digital literacy and positive health behavior ($\beta = -.40, p < .01$), as well as between AI ethics and positive health behavior ($\beta = -.41, p < .01$), highlighting a paradoxical role of AI trust in health-related behaviors.

Contribution/Impact on Society: The findings highlight the importance of enhancing digital literacy and fostering perceptions of ethical AI in social media to support healthier behaviors in the workplace and beyond. The study suggests that over-reliance on AI systems, even when perceived as ethical, may lead to reduced active engagement in health-promoting behaviors. This underscores the need for balanced digital engagement and critical evaluation skills.

Recommendations: Governments and private organizations should collaborate to integrate digital literacy and AI ethics education into public health promotion initiatives. Health-related content on social media should be accompanied by transparency measures and user empowerment strategies to ensure informed decision-making.

Research Limitation: The study focused exclusively on Thai working-age individuals in the Bangkok Metropolitan Area, which may limit the generalizability of findings to other regions, age groups, or populations whose social, cultural, and digital environments differ substantially from those examined in this research.

Future Research: Future studies should examine additional mediators and moderators to better understand how trust in AI translates into positive health behavior, such as mindfulness, locus of control, and health literacy. Expanding the research to diverse populations and contexts would also enhance the applicability of findings.

Keywords: *AI ethics, digital literacy, AI trust, positive health behavior*

Introduction

With approximately 51 million active users and a 71% penetration rate, social media platforms such as Facebook, X, and TikTok are deeply embedded in the daily lives of Thai citizens, offering rapid access to information in a fast-paced society (Walderich, 2025). This high engagement provides valuable opportunities for health communication, as individuals frequently use social media to disseminate, exchange (Huo et al., 2019), and search for health-related content that aligns with their immediate needs (Brailovskaia et al., 2021). Access to such information plays a crucial role in encouraging health-promoting behaviors among Thailand's working-age population, contributing to the nation's overall economic development (Thampanichvong, 2022). While interventions utilizing social media and information technology have proven effective in promoting health behavior change across countries of varying income levels (Seiler et al., 2022), the role of Artificial Intelligence (AI) algorithms in shaping exposure to health content remains underexplored. AI-driven recommendation systems, which increasingly determine what users see, may subtly influence cognitive processes and behavioral outcomes by prioritizing certain information (Ariyachandra & Deokar, 2015).

To engage with social media effectively and meaningfully, individuals need a high level of digital literacy, which is a lifelong process. Digital literacy refers to the ability to find, assess, and apply information effectively, which is crucial for navigating diverse life contexts (Smith et al., 2020; Smith &

Storrs, 2023). Studies indicate that individuals with strong digital literacy are more likely to use social media for health purposes and develop health-related behavioral intentions (Niu et al., 2021), as they are better able to distinguish credible information from misinformation (Sirlin et al., 2021). Concerns have also emerged regarding the ethical implications of AI in social media. Inaccurate algorithm-generated content could lead Thai users to make poor health decisions. To mitigate risks, the Ministry of Digital Economy and Society (2021) introduced national AI ethics guidelines emphasizing principles such as transparency, accountability, fairness, security, and reliability. These principles aim to foster positive public perceptions toward ethical AI implementation. Research has demonstrated a link between users' perceptions of AI ethics on social media and their digital literacy (Yang, 2024). Moreover, high digital literacy is associated with greater trust in AI applications, particularly in healthcare contexts. Conversely, low digital literacy may prompt greater skepticism and distrust (Huang & Ball, 2024).

Despite the prominent role of social media in promoting health behaviors, research examining the interrelationships among digital literacy, AI trust, AI ethics, and positive health behavior in Thailand's working-age population remains limited. A recent scoping review by Poulsen et al. (2024) found only nine relevant studies in Southeast Asia. However, these studies focused on only one or two of the aforementioned variables, and just a single study was conducted in the Thai context. This highlights a substantial gap in the literature, particularly in understanding the integrative roles these variables may play in shaping positive health behavior. To address this gap, the present study explored the mediating roles of AI ethics and AI trust in the relationship between digital literacy and positive health behavior. Findings offer critical insights for policymakers aiming to design more effective digital health interventions grounded in psychological and behavioral mechanisms.

Literature Review

Digital Literacy

Digital literacy refers to the effective use of computers and digital tools, encompassing skills in Internet navigation, information retrieval, and the use of digital resources (Buckingham, 2010), as well as the ability to process and communicate information across various platforms, including social media (UNESCO Institute for Information Technologies in Education, 2011). Digital literacy applies to both roles, namely producers or information senders and message readers or receivers, both of whom must possess reading and writing skills to participate meaningfully in digital environments (Hartley, 2019). Misuse of digital tools due to insufficient digital literacy can lead to significant harm, loss of trust, public resentment, and unnecessary conflict, particularly in sensitive domains such as health and medicine (Véliz, 2019).

Empirical evidence from the past five years further indicates that digital literacy is linked to both AI ethics awareness and AI trust. For instance, Yang (2024)'s study of nursing students found that higher digital literacy was significantly correlated with greater AI ethics awareness ($r = .30, p < .001$), suggesting that digitally literate individuals are more attuned to AI's ethical implications, potentially due to a better understanding of its operations and societal impacts. Digital literacy also appears to shape trust in AI systems. Huang and Ball (2024) observed that individuals with advanced AI-related literacy consistently demonstrated higher trust in AI across diverse contexts. In contrast, those with moderate literacy expressed greater skepticism, particularly in high-stakes areas such as healthcare. This indicates that understanding AI's capabilities and limitations can either enhance trust or encourage critical scrutiny. However, some research reports only marginal effects. Švestková et al. (2025) found that general e-health literacy had a minimal positive association with trust in generative AI and no direct effect on willingness to use AI for health purposes, suggesting that digital skills alone may be insufficient and that factors such as personal needs and prior attitudes also play a role.

Overall, the literature suggests that higher digital literacy is associated with stronger perceptions of AI ethics and, in many cases, greater AI trust.

AI Ethics

AI ethics refers to the capability of AI systems to determine, through established evaluative criteria, whether a task is good and desirable or morally wrong and unacceptable (Vieweg, 2021). From an epistemic perspective, ethical evaluation is most meaningful after AI systems are implemented,

allowing ethical frameworks to define the attributes of good AI (Powers & Ganascia, 2020). While frameworks vary, recent scholarship highlights four widely recognized attributes shaping perceptions of AI ethicality: accountability (ability to explain and justify decisions), responsibility (use aligned with obligations to oneself, others, society), explainability (capacity to make decision-making processes understandable, transparent), and security (design to minimize risk/harm) (Dignum, 2019; Shin, 2020).

There is broad agreement that ethical AI practices enhance user trust. Demonstrating principles such as transparency, fairness, and privacy protection increases user confidence (Singhal et al., 2024). Evidence from healthcare AI has shown that proactive measures, including addressing bias and explaining algorithms, significantly improved trust and engagement compared to minimal ethics practices (Shu et al., 2025). Similarly, perceived personalization and task efficiency in AI chatbots have been linked to higher trust, highlighting the importance of ethical and user-centered design (Baek & Kim, 2023). The fairness, accountability, transparency, and explainability (FATE) framework remains a key guideline for developing trustworthy AI. Overall, stronger perceptions of AI ethics are associated with greater trust in AI systems.

In conclusion, the literature suggests that stronger perceptions of AI ethics are associated with higher trust in AI systems, reinforcing the view that ethical AI design is a prerequisite for building user confidence and encouraging engagement.

AI Trust

AI trust is a critical construct in human–AI interaction, rooted in general trust theory but distinct in its formation and development. Users may form initial trust before any direct interaction and build continuous trust through experience, performance evaluations, and perceived benefits (Siau & Wang, 2018). Continuous trust is shaped by cognitive processes in which users assess whether to accept AI recommendations based on reliability, past performance, and expected outcomes (Glikson & Woolley, 2020). Trust in AI is often conceptualized as a two-dimensional structure, where trust is linked to feelings of safety and confidence, and distrust is associated with fear and concern (Sethumadhavan, 2019).

Recent empirical studies demonstrate that AI trust is influenced by both design factors and user experiences. Okamura and Yamada (2020) showed that adaptive trust calibration improved trust alignment in a drone simulation. Aoki (2020) reported that public initial trust in government AI chatbots slightly decreased when deployment intentions were disclosed, although the effect was small. Chi et al. (2021) developed and validated the Social Service Robot Interaction Trust scale, providing a robust measure of trust in AI-enabled service robots. Shin (2021) found that AI systems capable of explaining their decision-making processes in a rational and transparent manner significantly increased user trust and acceptance.

However, a higher level of trust is associated with users' heuristic cognitive and affective processes. AI trust may be formed through internal factors, such as digital literacy and perceptions and ethical AI practices, as well as external cue-driven factors such as well-structured and easy-to-comprehend information presentation. These combined factors could induce an affective state of comfort and reduced vigilance. Given that AI-generated health content is often optimized for clarity and structure, such trust may become miscalibrated, leading users to overreliance on AI recommendations and to reduced proactive engagement in health-related decision-making (Sun et al., 2026).

Overall, AI trust emerges as both an outcome of user competence and ethical perceptions, and as a determinant of technology adoption and sustained engagement. At the same time, the literature emphasizes that excessive or misaligned trust may carry unintended health behavioral consequences. Transparency, explainability, and interaction quality remain central to building and maintaining an appropriate level of trust.

Positive Health Behavior

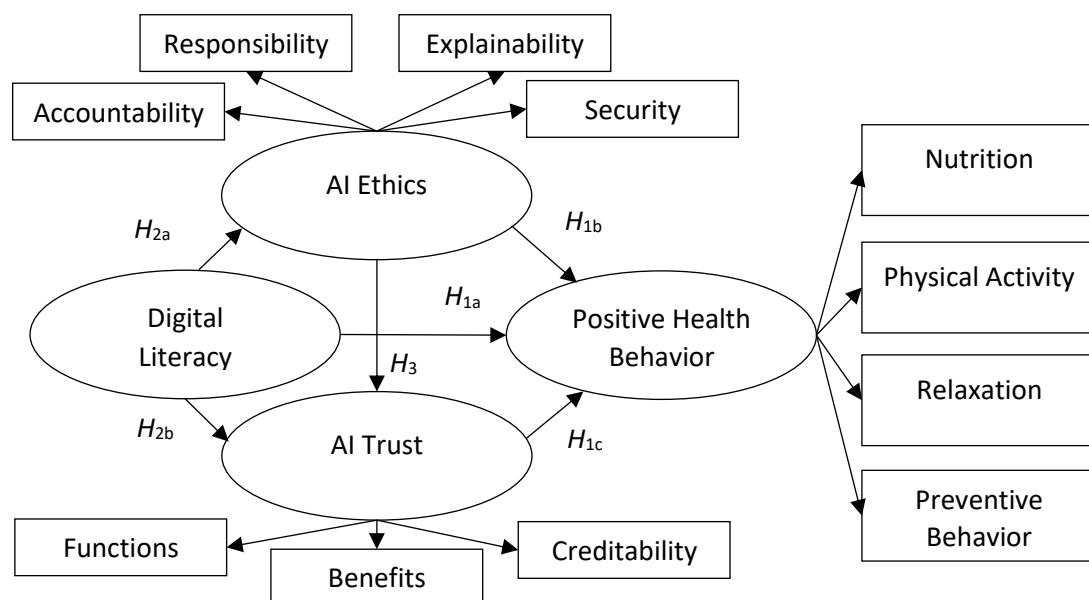
Positive health behavior refers to actions aimed at preventing disease, detecting illness at an early stage, maintaining health, and enhancing overall well-being (Conner & Norman, 1996; Gochman, 1997). Woynarowska-Soldan et al. (2019) identify four factors of positive health behavior: (a) Nutrition, or selecting food appropriate to bodily needs; (b) Physical activity, involving regular movement that

expends energy and promotes fitness; (c) Relaxation and mental health-related behaviors, including stress management, adequate sleep, and engagement in restorative activities; and (d) Preventive behavior, encompassing proactive measures to avoid illness and early detection practices.

The integration of AI technologies into healthcare has drawn attention to how these systems may support or influence positive health behaviors. LaRosa and Danks (2018) emphasize that AI in health settings should function as a facilitative technology that supports traditional medical tools while preserving trust between patients and healthcare providers. Gille et al. (2020) recommend developing comprehensive trust frameworks for health-related AI, emphasizing that a deep understanding of trust is critical for designing AI systems that are acceptable and effective in medical practice.

Together, the literature suggests that fostering positive health behavior in the context of AI requires promoting healthy lifestyle practices alongside implementing AI systems in a way that maintains trust, supports human clinical judgment, and aligns with ethical and patient-centered care principles. Based on prior literature, this study proposes a conceptual framework integrating digital literacy, AI ethics, and positive health behavior with the hypothesized relationships illustrated in Figure 1.

Figure 1 Conceptual Framework Alongside with Research Hypothesis



Research Hypothesis

Hypothesis 1: Digital literacy, AI ethics, and AI trust each have a direct effect on positive health behaviors among the Thai working-age population.

Hypothesis 2: Digital literacy has a direct effect on AI ethics and AI trust among the Thai working-age population.

Hypothesis 3: AI ethics has a direct effect on AI trust among the Thai working-age population.

Hypothesis 4: AI trust mediates the relationship between digital literacy and health behavior of the Thai working-age population.

Hypothesis 5: AI trust mediates the relationship between AI ethics and health behavior of the Thai working-age population.

Methodology

Participants and Procedure

In this quantitative study, 420 Thai working-age individuals residing in the Bangkok Metropolitan area were recruited based on data from the National Statistical Office of Thailand (2021), which identified Bangkok as the province with the largest concentration of working-age residents. The sample size followed Hair et al. (2019)'s guideline, which recommends a minimum of 400 participants for Structural

Equation Modeling (SEM). Consistent with Schumacker and Lomax (2015) 's suggestion of a 20:1 participant-to-observed-variable ratio, the sample size was adequate for the study's 12 observed variables. A multi-stage sampling method was applied to ensure representativeness. First, cluster random sampling was conducted by dividing Bangkok's districts into three zones: i.e., inner, middle, and outer; four districts were then randomly selected from each zone. Subsequently, quota sampling was used to select 35 participants from each of the 12 districts. The inclusion criteria were: (a) Thai nationality, (b) age between 15–60 years when completing the questionnaires, and (c) current residence (either owned/rented) in the selected districts. Individuals with cognitive impairments or those who did not use social media were excluded to avoid potential difficulties in completing the questionnaire.

Ethical principles were adhered to throughout the study. Participants received detailed information about research objectives and procedures via an online link before participation, ensuring transparency and informed consent. Participation was voluntary, with the right to withdraw at any point during the process. No personally identifiable information was collected, thus maintaining participant anonymity; all procedures complied with established ethical standards for research involving human subjects. The sample comprised 54.3% females ($n = 228$), aged 18 to over 55 years, with the largest proportion between 26 and 40 years (59.8%, $n = 251$). Regarding occupation, 30.7% ($n = 129$) were private-sector employees, 18.6% ($n = 78$) were business owners, 15.0% ($n = 63$). Work tenure varied: 36.9% reporting 1–5 years of experience, 22.1% reporting 6–10 years, 16.7% reporting 11–15 years ($n = 155, 93$, and 70, respectively).

Measures

Data collection was conducted using four instruments. Digital literacy was assessed using 15 items developed based on the framework of Ferrari et al. (2012). Perceptions of AI ethics were measured with a 16-item scale synthesized from the concepts of Dignum (2019) and Shin (2020), comprising four subscales: accountability, responsibility, explainability, and security. AI trust was evaluated using 11 items adapted from McKnight et al. (2011) and Thatcher et al. (2011), reflecting four subscales: functionality, benefits, and credibility. Positive health behavior was assessed with a scale based on the model by Woynarowska-Sołdan et al. (2019), which included four subscales: nutrition, physical activity, relaxation, and preventive behavior. Except for the demographic characteristics section, all instruments employed a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

To ensure content validity, five experts (4 subject-matter specialists and 1 senior-level professional) evaluated the questionnaire items. The index of item-objective congruence (IOC) was applied, and items with scores below .50 were revised or removed (Rovinelli & Hambleton, 1977). Reliability was tested through a pilot study with 50 participants. Cronbach's alpha coefficients indicated acceptable internal consistency for all scales: positive health behavior (.894), AI ethics (.880), AI trust (.790), and digital literacy (.774). One AI ethics item was removed due to a discriminant value below .20. Overall, the instruments demonstrated strong reliability and content validity for use in this study.

Findings/Results

Normality Data Testing

Table 1 presents descriptive statistics for the observed variables, which were used to assess preliminary assumptions for Structural Equation Modeling (SEM) analysis. Most mean scores were approximately 3.3, indicating moderate response tendencies, except for digital literacy and positive health behavior, which averaged close to 4.0. All variables displayed negative skewness and kurtosis, suggesting distributions concentrated toward higher scores. The values satisfied the assumptions for SEM, with standard deviations less than 1, skewness values between -2 and $+2$, and kurtosis values within the range of -7 to $+7$ (West et al., 1995). The correlation matrix revealed coefficients ranging from .098 to .786, all below the .85 threshold, confirming the absence of multicollinearity (Brown, 2015). These results indicated that the dataset was appropriate for subsequent SEM analysis.

Measurement Model Evaluation

To validate the study constructs, a two-step modeling approach was employed. First, Confirmatory Factor Analysis was conducted on 3 multidimensional latent variables, namely AI ethics, AI trust, and positive health behavior, to assess whether observed indicators adequately represented their respective constructs. Model fit was evaluated using multiple goodness-of-fit indices to provide a comprehensive assessment of the constructs, including Chi-square, Relative Chi-square, Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR), Tucker–Lewis Index (TLI), Comparative Fit Index (CFI), and Parsimony Normed Fit Index (PNFI). Furthermore, the construct's internal consistency was assessed via composite reliability (CR), followed by an examination of convergent validity through standardized factor loadings and Average Variance Extracted (AVE). Values of .70 or higher for CR and .50 or higher for factors and AVE were interpreted as acceptable. The explanatory power of the structural model was evaluated using the coefficient of determination (R^2) for the endogenous construct, with values of .25, .50, and .75 regarded as weak, moderate, and substantial explanatory power, respectively (Hair et al., 2019). As illustrated in Table 2, the final model achieved satisfactory fit levels, along with adequate convergent validity and meaningful explanatory power.

Table 1 Descriptive Statistics and Normality Test of Data

Variable	<i>M</i>	<i>SD</i>	Skewness	Kurtosis
Digital Literacy (D)	3.802	.473	-.083	.264
AI Ethics (E)	3.278	.678	.158	-.280
Accountability (E1)	3.409	.863	-.115	-.382
Responsibility (E2)	3.358	.831	-.050	-.190
Explainability (E3)	3.132	.520	-.214	.161
Security (E4)	3.213	.884	.008	-.342
AI Trust (T)	3.238	.793	.323	-.323
Functions (T1)	3.208	.937	-.018	-.466
Benefits (T2)	3.262	.827	.166	-.232
Creditability (T3)	3.225	.889	.089	-.253
Positive Health Behavior (P)	4.165	.557	-.526	.369
Nutrition (P1)	4.125	.650	-.440	-.138
Physical Activity (P2)	3.623	.843	-.145	-.421
Relaxation (P3)	4.195	.719	-.703	.026
Preventive Behavior (P4)	4.519	.579	-1.256	1.643

Note. *M* = Mean, *SD* = Standard Deviation; the letters are the reference codes used in Figure 2.

Table 2 Evaluation Criteria Results After Model Modification

Evaluation Criteria	Cut-Off Criterion	AI Ethics	AI Trust	Positive Health Behavior
Chi-square	<i>p</i> -value > .05	.07	.18	.00
Relative Chi-square	< 5	1.29	1.26	3.19
RMSEA	< .08	.02	.02	.07
SRMR	≤ .08	.02	.01	.05
TLI	≥ .95	1.00	1.00	.98
CFI	≥ .97	1.00	1.00	.99
PNFI	0 – 1	.55	.42	.67
Factor loading	≥ .50	.84 – .98	.85 – .99	.80 – .91
CR	≥ .70	.95	.93	.92
AVE	≥ .50	.82	.82	.75
R^2	≥ .25	.71 – .80	.72 – .99	.64 – .83

Structural Model Evaluation

The second phase involved SEM to examine the hypothesized relationships among AI ethics, digital literacy, AI trust, and positive health behaviors in Bangkok's working-age population. Initial model testing

Table 3 *The Result of SEM Part Coefficients and Their Significance Levels*

Note. * $p < .05$, ** $p < .01$

Figure 1 is a path diagram of a structural equation model. It shows four latent variables (ovals): D (Dietary Behavior), E (Exercise Behavior), T (Total Physical Activity), and P (Physical Activity). These are measured by observed variables (rectangles): D is measured by D (Dietary Behavior); E is measured by E1, E2, E3, and E4; T is measured by T1, T2, and T3; and P is measured by P1, P2, P3, and P4. Standardized path coefficients are shown on the arrows, with double asterisks (**) indicating statistical significance.

Path	Standardized Coefficient
D → D	.99**
D → E	.14**
D → T	.10**
D → P	.22**
E → E1	.85**
E → E2	.81**
E → E3	.86**
E → E4	.84**
E → T	.84**
E → P	.41**
T → T1	.79**
T → T2	.88**
T → T3	.86**
T → P	-.49**
P → P1	.81**
P → P2	.77**
P → P3	.87**
P → P4	.73**

Discussion

The findings identified both positive and negative factors influencing positive health behavior among Thai working-age individuals. Digital literacy showed a positive association ($\beta = .22, p < .01$), suggesting that individuals with stronger digital competencies were better able to access, evaluate, and apply health-related information, whether by observing online role models, verifying content credibility, or participating in digital health communities. Such activities appeared to strengthen self-

efficacy and facilitate informed decision-making, thereby promoting health-enhancing behavioral change. This result was consistent with the Health Belief Model (Rosenstock, 1974) and the self-efficacy framework (Becker & Janz, 1985) which emphasize that health behaviors are primarily influenced by: (a) perceived susceptibility, severity, and benefits; (b) perceived barriers; and (c) the beliefs in one's ability to enact change to prevent illness or promote health. Within a digitally connected work environment, Thai working adults increasingly rely on online sources, including health-related information. Therefore, when their digital literacy aligns with their motivational and cognitive readiness, Thai working-age individuals are more likely to mitigate the risks of misinformation by employing verification strategies such as factchecking, cross-referencing, and seeking second opinions, and to engage in health behaviors suited to their personal context. These findings align with previous evidence from other Asian contexts, including Japan (Mitsutake et al., 2016), South Korea (Kim & Son, 2017), and China (Li & Liu, 2020; Li et al., 2025), underscoring the regional relevance of digital literacy in shaping health-related outcomes.

The findings further indicate that perceptions of AI ethics in social media significantly and directly influence positive health behavior ($\beta = .41, p < .01$). Thai working-age individuals who viewed social media platforms as operating under ethical, transparent, and explainable AI systems, in which the logic behind health-related content dissemination is made explicit, were more inclined to engage in health-promoting behaviors. This perceived transparency enhances trust in the credibility and utility of shared health information, thereby increasing its influence at both the individual and collective levels. This outcome was consistent with the Theory of Planned Behavior (Bosnjak et al., 2020), particularly in contexts where individuals with lower perceived behavioral control may rely more on subjective norms, such as perceived social endorsement, to shape health-related intentions and actions. Within this framework, perceiving social media as ethically governed may cultivate a sense of normative safety and social approval, subsequently reinforcing engagement in positive health behavior. This finding was also consistent with prior research from South Korea (Kwak et al., 2022), which demonstrated that positive attitudes toward AI significantly influenced users' intentions to adopt AI-based technologies ($\beta = .58, p < .01$).

Intriguingly, this study revealed a significant negative direct effect of AI trust in social media on positive health behavior among Thai working-age individuals ($\beta = -.49, p < .01$), which contrasts with prior findings from Indonesia (Handayani et al., 2023). This counterintuitive result may be explained by the concept of complacency, in which over-reliance on automated systems stems from excessive, uncritical trust (Parasuraman & Manzey, 2010). In such cases, users may accept AI-curated health information without sufficient scrutiny, thereby undermining informed health decision-making. Previous studies (Hoff & Bashir, 2015; Benda et al., 2022) have suggested that trust in AI systems can deteriorate over time, particularly when system performance fails to meet user expectations. However, health-related behavioral outcomes often unfold gradually. As a result, users may not receive timely feedback to identify misinformation or poor outcomes, thereby maintaining misplaced and uncritical trust in AI systems and potentially reinforcing maladaptive health behaviors.

Digital Literacy Directly Affecting AI Ethics and AI Trust

This study demonstrated that digital literacy exerts a significant direct influence on both perceptions of AI ethics and AI trust in social media contexts. Regarding AI ethics, the results indicated that digital literacy had a direct effect on perceptions of AI ethics in social media ($\beta = .14, p < .01$). Among Thai working-age individuals, higher digital proficiency enables a clearer understanding of how AI systems curate, rank, and distribute content, even in the absence of formal technical training. Such competencies promote more informed and discerning interactions with AI-driven systems, thereby fostering more favorable ethical evaluations of AI use on social platforms.

This finding was consistent with theoretical frameworks that conceptualize digital literacy as a multidimensional construct encompassing not only functional skills but also reflective and ethical engagement with technology (Deuze & Beckett, 2022). Consistent with this view, Yang et al. (2025) conducted a bibliometric analysis revealing an increasing convergence between digital literacy and AI

ethics in scholarly discourse over the past decade. While situated in a different demographic context, the findings of Zhang et al. (2023), through their DAILY workshop, further underscored how interventions integrating AI literacy can enhance both technical understanding and ethical awareness. In the Thai digital landscape, where AI-mediated health content is prevalent, digital literacy may serve as a critical enabler for ethical discernment, ultimately shaping trust and responsible platform use. Furthermore, in the Thai cultural context, this relationship may also be interpreted through a Buddhist ethical lens. The principle of *sati* (mindfulness) mirrors the reflective nature of digital literacy, encouraging intentional awareness in engaging with AI-generated content. Similarly, *sammā-saṅkappa* (right intention) underlines moral discernment in digital interactions. These insights suggest that digital literacy in Thailand extends beyond technical capacity to encompass ethical mindfulness and responsible engagement with AI systems (Hongladarom, 2020).

In terms of AI trust, this study further demonstrated that digital literacy has a significant and direct influence on AI trust within social media environments among Thai working-age users ($\beta = .10$, $p < .01$). Individuals with higher digital literacy, reflected in their ability to search, assess, interpret, and apply health-related content, are more likely to trust AI-driven mechanisms that curate such information. This relationship is consistent with the Technology Acceptance Model (Davis, 1989), which posited that cognitive understanding of system functionalities enhances perceived usefulness and system acceptance. In the social media context, digital literacy enables users to comprehend the logic behind AI-generated recommendations, thereby fostering trust through improved perceptions of transparency and reliability. This finding also echoed Trust Transfer Theory (Stewart, 2003), wherein trust developed through user competence may extend to trust in AI-mediated processes. As users consistently encounter relevant and credible health information through algorithmic recommendations, these positive experiences reinforce their trust in the system (Shin, 2021). Within the Thai digital ecosystem, where AI-generated health content is frequently encountered, trust appears to be sustained through repeated exposure to content perceived as consistent, clear, and contextually relevant (Siau & Wang, 2018). Empirical support for these mechanisms is found in recent literature. For instance, Huang and Ball (2024) reported that individuals with high levels of digital literacy exhibit consistently stronger AI trust across diverse application contexts. Similarly, Wijaya et al. (2024) found a positive relationship between digital literacy and AI trust, highlighting the foundational role of digital competencies in fostering trust in AI technologies.

AI Ethics Directly Affecting AI Trust

The present study revealed a robust and statistically significant relationship between Thai working-age adults' perceptions of AI ethics in social media and their trust in AI systems ($\beta = .84$, $p < .01$). This high standardized coefficient suggests that ethical perceptions are a dominant predictor of AI trust in this context. In other words, the more users perceive AI operations, such as content curation, personalization, and recommendation, to be aligned with ethical principles, the more they tended to trust AI-mediated platforms. This finding aligns with the Heuristic–Systematic Model of information processing (Chaiken & Ledgerwood, 2012), which posits that in low-effort cognitive environments, such as among non-expert users, individuals rely on salient cues to make rapid judgments. When ethical standards such as fairness, transparency, and accountability are perceived, users are more likely to apply trust heuristics toward AI systems. Supporting this perspective, Shin (2020) demonstrated, through SEM analysis, that algorithmic fairness ($\beta = .117$), accountability ($\beta = .290$), transparency ($\beta = .314$), and explainability ($\beta = .379$) all significantly predicted user trust ($p < .001$). Additionally, Baek and Kim's (2023) study in South Korea, although focused on generative chatbot AI, found significant effects of perceived task efficiency ($\beta = .291$, $p < .10$) and personalization ($\beta = .522$, $p < .01$) on trust. These results are also consistent with Singhal et al. (2024)'s scoping review, which emphasized the importance of ethical AI design based on the FATE principles (fairness, accountability, transparency, and explainability) as foundational to building psychologically safe and trustworthy AI systems. Taken together, these findings suggest that the perceived ethical integrity of

AI functions plays a critical role in fostering user trust in AI-mediated social media environments, particularly among general users who rely on intuitive cues rather than technical comprehension.

AI Trust as a Mediator

The present study revealed that trust in AI significantly mediates the indirect effects of digital literacy ($\beta = -.40, p < .01$) and AI ethics ($\beta = -.41, p < .01$) on positive health behavior among Thai working-age users. These findings uncover a paradox: although higher levels of digital literacy and stronger perceptions of AI ethics were positively associated with trust in AI systems, this trust did not necessarily translate into more consistent engagement in positive health behavior.

In the context of digital literacy, this counterintuitive pattern may be interpreted through a cognitive-behavioral lens, particularly using the concepts of automation-induced passivity (Skitka et al., 2000) and cognitive offloading (Risko & Gilbert, 2016). As users develop greater trust in AI-driven social media platforms, they may begin to unconsciously delegate key cognitive and behavioral tasks, such as evaluating health information, cross-checking sources, or deciding on action steps, to the system. This reliance can erode self-regulation and diminish the perceived need for personal engagement in health behavior. The literature supports this interpretation: for example, Shin and Biocca (2017) found that users who perceived AI systems as fair, transparent, and intelligent tended to develop high trust, but did not always engage in reflective or proactive behaviors. Trust, particularly when built through system cues rather than experiential outcomes, can become evaluative rather than motivational, thereby limiting its influence on behavior in complex domains such as health. Furthermore, while digital literacy equips users with the skills to navigate digital systems, skills without corresponding behavioral intention or commitment can foster overconfidence in AI systems. This overconfidence may lead to passive consumption rather than active adoption of health information. Ameen et al. (2021) reported similar findings, showing that digital competence, when paired with high trust in automated systems, may paradoxically result in reduced user engagement and behavioral follow-through.

The present study also revealed that perceived AI ethics had a negative indirect effect on positive health behavior via AI trust. A plausible explanation lies in Thai users' heightened sensitivity to the risks of automated decision-making, where AI systems autonomously process personal data to generate health recommendations. While ethical design may enhance perceived trustworthiness, such trust does not always lead to proactive engagement, especially in high-stakes domains such as health. As Sagona et al. (2025) argue, trust in AI is not solely interpersonal but also inter-systemic, requiring transparency, contextual alignment, and user empowerment to influence behavior. Trust rooted in perceived ethics, rather than demonstrated utility, may encourage passive acceptance instead of active engagement. This aligns with algorithmic appreciation (Logg et al., 2019) and the machine heuristic (Sundar, 2008), which suggest that users may over-rely on AI due to its perceived objectivity, thereby reducing critical scrutiny. Consequently, even when AI systems are regarded as ethical, users may hesitate to act on their recommendations in health contexts where decisions are deeply personal. As Araujo et al. (2020) contended, ethical design alone is insufficient to drive behavior change; without safeguards, relevance, or adequate health literacy, users may default to passive consumption. This interpretation also reflects Riedl (2022)'s view that AI trust is context-dependent, with high-risk domains prompting more scrutiny. Supporting this, Levy et al. (2023) found that in health behavior change applications, trust alone did not predict action unless accompanied by demonstrable utility and transparency. These findings reinforce a key insight: trust derived from ethical perception, if not coupled with user empowerment, system transparency, and domain-specific competence, may inadvertently suppress agency and hinder the translation of trust into sustained health behavior.

Conclusion and Suggestions for Future Research

This study examined the causal relationships among digital literacy, AI ethics, AI trust, and positive health behavior within a Thai working-age population. The findings underscore the pivotal role of digital literacy in promoting positive health behavior, especially within digital ecosystems mediated by AI technologies. However, trust in ethically designed AI systems alone may not be sufficient to foster

active health-related behavior. While digital literacy facilitates access to and comprehension of AI-generated content, users may still lack the evaluative competence or motivation to translate trust into action, particularly in high-stakes domains such as personal health. This highlights the need to incorporate competencies such as health literacy or eHealth literacy to equip users with the skills needed to navigate, evaluate, and act upon AI-driven health information.

To develop a more comprehensive understanding of how AI trust influences behavior, future research should explore additional mediators and moderators. Psychological constructs such as mindfulness and locus of control may serve as cognitive–emotional bridges that facilitate the transition from trust to action. Moreover, demographic factors such as age and gender may shape perceptions of AI systems and receptiveness to AI-driven health interventions. These extensions are essential for advancing culturally responsive, ethically aligned, and effective AI interventions that support long-term health behavior change across diverse groups in Thailand.

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Author Contributions

Chanadda Petchprayoon: Conceptualization, methodology, validation, formal analysis, investigation, supervision, funding acquisition, and writing–review & editing; **Rati Maneengam:** Methodology, validation, and data curation; **Apichit Maneengam:** Methodology, validation, and data curation; **Porntep Chantarakamol:** Methodology, validation, investigation, funding acquisition, writing–original draft, and writing–review & editing.

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