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Artificial Intelligence in Family Life and Malaysian Parents' Perceptions of Risks and Opportunities

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ABSTRACT

Artificial intelligence (AI) is increasingly embedded in everyday digital environments, shaping how families access information, learn, and communicate. As children encounter AI-powered tools and generative technologies in educational and online contexts, parents play a critical role in guiding their engagement with these systems. This study examines Malaysian parents' knowledge of artificial intelligence and their perceptions of AI-related risks and opportunities in family life. Using a survey of 302 parents conducted between December 2025 and January 2026 through stratified sampling to approximate the demographic composition of the Malaysian population, the study investigates whether knowledge about AI and generative AI predicts parents' perceptions of AI. Descriptive findings indicate that Malaysian parents demonstrate moderate to relatively high levels of AI knowledge, particularly regarding the presence of AI in everyday applications and its ability to generate digital content. At the same time, parents express concerns about risks such as technology dependency, misinformation, privacy issues, and potential impacts on children's well-being. Despite these concerns, parents also recognise significant opportunities associated with AI, especially in supporting learning, creativity, and future career preparation. Regression analysis further reveals that AI knowledge significantly predicts both risk perception and opportunity perception, suggesting that parents with greater AI literacy develop more nuanced evaluations of artificial intelligence. The findings highlight the importance of strengthening AI literacy and digital parenting initiatives to help families navigate the evolving role of artificial intelligence in children's digital environments.

Keywords: *Artificial intelligence, digital parenting, AI literacy, parental perceptions, Malaysian families.*

INTRODUCTION

Artificial intelligence (AI) is increasingly embedded in everyday digital environments, transforming how individuals access information, communicate, and perform routine tasks. Recent advances in generative artificial intelligence, including large language models and AI-powered content generation tools, have accelerated the integration of AI into daily life. These technologies are now widely incorporated into educational platforms, productivity applications, and social media systems, making artificial intelligence an emerging component of contemporary family life. As children interact with AI-mediated systems through learning platforms, recommendation algorithms, and generative content tools, parents are increasingly required to navigate unfamiliar technological environments while guiding their children's digital experiences (Stoilova et al., 2025; Zhang et al., 2026).

The growing presence of AI technologies presents both opportunities and risks for children and families. On the one hand, artificial intelligence can enhance learning, creativity, and access to information through personalised educational tools and AI-driven digital

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platforms (Ruijia et al., 2025; Esmaeil et al., 2023). AI-based educational interventions have been shown to improve learning engagement and outcomes when used appropriately in structured environments (Aldakhil, 2024). As such, AI technologies are increasingly viewed as tools that may support children's educational development and digital competencies in a rapidly evolving knowledge economy.

On the other hand, the expansion of artificial intelligence has raised significant concerns regarding its potential risks. Scholars have highlighted issues related to misinformation, privacy violations, algorithmic bias, and the possible negative effects of AI on children's cognitive and social development (Wang et al., 2024; Szondy & Magyary, 2025). The capacity of generative AI tools to produce convincing yet inaccurate information further complicates children's engagement with digital media, as young users may struggle to distinguish between reliable and AI-generated content. Consequently, researchers have emphasised the importance of understanding how families interpret and respond to the growing presence of AI in children's digital environments (Stoilova et al., 2025).

Within this evolving technological landscape, parents play a central role in mediating children's engagement with digital technologies. Digital parenting research consistently highlights that parents act as gatekeepers who regulate children's technology use, interpret online information, and guide children's understanding of digital environments (Livingstone & Blum-Ross, 2020). However, the effectiveness of parental mediation is closely linked to parents' own knowledge and understanding of digital technologies. When parents lack familiarity with emerging technologies, they may experience uncertainty when evaluating their benefits and risks (Hamid et al., 2023). In the context of artificial intelligence, the complexity of algorithmic systems may further complicate parents' ability to make informed decisions about how these technologies should be integrated into family life.

Recent research suggests that technological literacy plays an important role in shaping individuals' perceptions of emerging technologies. AI literacy refers to the ability to understand how AI systems function, recognise where AI is embedded in digital platforms, and critically evaluate AI-generated outputs. Studies have shown that parents with higher levels of AI literacy demonstrate greater confidence in supporting their children's educational activities and interacting with AI-based learning tools (Guo et al., 2025). In addition, families themselves may serve as important environments in which both parents and children develop understanding of AI technologies through shared digital experiences (Druga et al., 2022). These findings suggest that parents' knowledge about artificial intelligence may influence how they evaluate both the risks and opportunities associated with AI technologies.

In Malaysia, the rapid adoption of digital technologies further underscores the importance of understanding how parents interpret AI technologies. Previous research has shown that Malaysian parents recognise both the opportunities and risks associated with children's digital media use, reflecting a balancing process between technological benefits and potential harms (Mohamed et al., 2024). At the same time, studies examining issues such as cyberbullying indicate that parents' awareness and perceptions of digital risks play an important role in shaping how they guide and monitor children's online activities (Ghazali et al., 2025). As artificial intelligence becomes increasingly embedded within digital platforms and educational environments, understanding how parents perceive these technologies is therefore critical.

Therefore, this study investigates parents' perceptions of AI-related risks and opportunities and examines whether knowledge about artificial intelligence and generative AI predicts these perceptions. By analysing survey data collected from Malaysian parents, this

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study seeks to provide empirical insights into how families interpret artificial intelligence within everyday digital contexts.

Understanding these perceptions is important not only for academic research but also for policy and practice. As artificial intelligence continues to influence education, communication, and digital media environments, parents will remain key actors in guiding children's engagement with these technologies. Insights into parental perceptions can therefore inform initiatives aimed at strengthening AI literacy, digital parenting practices, and responsible AI use within families.

LITERATURE REVIEW

Artificial Intelligence in Children's Digital Environments

Artificial intelligence is increasingly embedded in the digital environments that children and families interact with daily. AI-driven applications are now integrated into educational technologies, recommendation systems, chatbots, and generative content tools, shaping how children learn, communicate, and access information. Emerging studies highlight that AI can support personalised learning, creativity, and cognitive development when appropriately designed and implemented (Ruijia et al., 2025; Zhang et al., 2026). For example, AI-based educational interventions have been shown to enhance learning outcomes and quality of life among children with developmental conditions when used in structured environments (Aldakhil, 2024). Similarly, generative AI chatbots and learning assistants are increasingly being incorporated into educational settings to facilitate student engagement and knowledge acquisition (Li et al., 2025).

However, the integration of AI into children's digital ecosystems also raises important ethical and developmental concerns. Scholars have warned that AI technologies may introduce risks related to misinformation, privacy violations, algorithmic bias, and inappropriate content exposure (Wang et al., 2024). As generative AI tools become more widely accessible, children may encounter AI-generated information without fully understanding its origins or credibility. This development highlights the importance of parental guidance and digital literacy in helping children navigate AI-mediated environments.

AI in Family Life and Parenting Contexts

Within family contexts, AI technologies are increasingly influencing parenting practices, family communication, and children's digital experiences. Studies examining AI within family systems suggest that the technology may reshape how families interact with digital media, potentially affecting parenting styles, communication patterns, and household decision-making processes (Szondy & Magyary, 2025). AI-powered tools, such as educational assistants and conversational chatbots, may provide parents with new resources to support their children's learning and development (Entenberg et al., 2021). For instance, AI-based chatbots have been used to deliver parent training interventions, demonstrating the potential of AI to support parenting education and behavioural guidance.

At the same time, the adoption of AI technologies in families introduces complex challenges for parents who must assess the safety and appropriateness of these tools for their children. Research indicates that parents often experience uncertainty when evaluating emerging digital technologies due to limited knowledge about how these systems function (Hamid et al., 2023). Parents may therefore rely on perceptions of potential benefits and risks when making decisions about children's technology use.

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The family environment also plays an important role in shaping how children develop understanding of artificial intelligence. Druga et al. (2022) describe the family as a "third space" for AI literacy, where parents and children collectively explore and learn about AI technologies through everyday interactions. This perspective highlights the importance of parental knowledge and engagement in facilitating children's understanding of AI.

Parental Perceptions of Digital Risks and Opportunities

Parents' perceptions of digital technologies often involve a balancing of perceived risks and benefits. Research on digital parenting consistently shows that parents simultaneously recognise the potential advantages of digital technologies for learning and development while expressing concerns about possible harms (Livingstone & Blum-Ross, 2020). These concerns frequently include issues such as cyberbullying, exposure to harmful content, and privacy threats.

Studies conducted in the Malaysian context have similarly found that parents navigate digital media through a risk–benefit framework. Mohamed et al. (2024) reported that Malaysian parents acknowledge both the educational advantages of digital media and the potential risks associated with excessive use and exposure to harmful online content. Related research on adolescent cyberbullying in Malaysia further demonstrates that parents' awareness and perceptions of digital risks are influenced by their knowledge of online environments and children's digital behaviours (Ghazali et al., 2025, Johari et al., 2022).

International studies also highlight the role of parental control and monitoring in mediating children's use of digital technologies. For example, research in Saudi Arabia found that parental awareness and supervision significantly influence children's behaviour when using AI-enabled applications (Alrusaini & Beyari, 2022). These findings suggest that parents' perceptions of risk may shape how they regulate children's interactions with digital technologies.

Beyond risk concerns, parents also recognise the opportunities that emerging technologies provide for children's education and development. AI-based learning tools, digital tutoring systems, and educational applications have been shown to support academic engagement and personalised learning experiences (Ruijia et al., 2025; Zhang et al., 2026). Such opportunities may lead parents to view AI as a valuable resource when integrated responsibly into children's digital environments.

AI Knowledge and Technology Perception

A growing body of research highlights the importance of technological knowledge and literacy in shaping how individuals interpret emerging technologies. AI literacy refers to the ability to understand, evaluate, and interact critically with AI systems. In family contexts, parents' AI literacy may influence their confidence in guiding children's technology use and supporting digital learning activities (Adzmi et al., 2021).

Recent studies demonstrate that parents' knowledge about AI can positively influence their parenting self-efficacy and engagement with children's education. Guo et al. (2025) found that parents with higher levels of AI literacy were more confident in supporting their children's educational activities and navigating AI-based learning tools. Similarly, research examining parental acceptance of AI technologies suggests that familiarity with AI systems can influence parents' attitudes toward their use in children's activities (Lin et al., 2021).

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However, knowledge does not necessarily eliminate concerns about technological risks. Greater awareness of AI systems may also increase recognition of ethical issues, such as algorithmic bias, privacy concerns, and potential misuse of AI-generated content (Wang et al., 2024). As a result, parents with higher AI literacy may develop more nuanced perceptions of AI, recognising both its potential benefits and associated risks.

AI, Children, and Emerging Social Concerns

As children increasingly interact with AI-enabled systems, scholars have emphasised the need to examine how these technologies influence children's social, cognitive, and emotional development. Recent research highlights concern regarding children's ability to critically evaluate AI-generated content and the potential impact of AI on learning behaviours and social interactions (Stoilova et al., 2025). Studies examining adolescents' engagement with AI technologies have also explored how psychological factors, such as emotional intelligence, may shape young people's interactions with AI tools (Piombo et al., 2025).

In addition, emerging research in Southeast Asia suggests that AI may influence family communication patterns and intergenerational relationships within households. Syahril et al. (2024) note that the increasing presence of AI-mediated technologies in family life may alter communication dynamics and expectations between parents and children. These changes underscore the importance of understanding how families interpret and respond to the growing presence of AI in everyday life.

Research Gap and Study Focus

Although the literature highlights the growing influence of artificial intelligence in children's digital environments and family contexts, empirical research examining parents' perceptions of AI remains limited, particularly in Southeast Asian settings. Existing studies often focus on technological adoption, educational applications, or ethical governance of AI, while fewer studies investigate how parents interpret the risks and opportunities associated with AI in family life.

Furthermore, while previous research has explored digital parenting and online risk awareness, relatively little attention has been given to the role of AI knowledge in shaping parental perceptions of emerging AI technologies. Understanding how knowledge influences parents' evaluation of AI risks and opportunities is particularly important as generative AI tools become increasingly accessible to children and families.

THEORETICAL FRAMEWORK

Understanding how parents evaluate emerging technologies requires attention to the cognitive processes through which individuals interpret technological developments. In the context of artificial intelligence, parents increasingly encounter AI-enabled applications in educational tools, digital platforms, and everyday online services used by their children. As a result, parents must assess both the potential benefits and risks associated with these technologies when making decisions about their children's digital engagement.

One useful perspective for examining these evaluations is the risk–benefit appraisal framework, which suggests that individuals interpret technologies by weighing perceived risks against perceived benefits. In digital environments, perceived risks may include concerns related to privacy, misinformation, exposure to harmful content, and excessive reliance on technology (Maliki et al., 2024). At the same time, perceived benefits may include improved

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access to information, enhanced educational support, and increased opportunities for creativity and learning. Research on digital parenting suggests that parents often negotiate these competing considerations when guiding children's use of digital media (Livingstone & Blum-Ross, 2020; Mohamed et al., 2024).

Artificial intelligence introduces new complexities to this evaluation process. AI-powered tools can assist children with learning activities, creative expression, and problem-solving tasks (Aldakhil, 2024; Ruijia et al., 2025). At the same time, scholars have raised concerns about the ethical and developmental implications of AI systems, including algorithmic bias, misinformation, and privacy issues (Wang et al., 2024). As AI technologies become increasingly integrated into children's digital environments, parents must interpret these opportunities and risks in order to guide their children's engagement with such technologies.

A key factor influencing this evaluation process is knowledge about artificial intelligence. Individuals who possess greater knowledge and familiarity with a technology are generally better able to understand its capabilities and limitations. Within family contexts, AI literacy may influence parents' confidence in guiding children's interactions with AI-powered tools and digital learning environments. Research suggests that parents with higher levels of AI literacy demonstrate greater confidence in supporting their children's educational activities and navigating AI-enabled technologies (Guo et al., 2025). Similarly, studies examining AI learning in family contexts indicate that parents and children often develop understanding of AI together through everyday interactions with digital technologies (Druga et al., 2022).

However, greater knowledge may also increase awareness of potential technological risks. Individuals who better understand how AI systems operate may become more conscious of concerns related to misinformation, privacy, or algorithmic bias (Wang et al., 2024). Consequently, AI knowledge may shape both parents' perception of risks and their recognition of opportunities associated with artificial intelligence.

Drawing on this perspective, the present study proposes that parents' knowledge about AI and generative AI influences how they evaluate artificial intelligence in family life. Specifically, AI knowledge is expected to shape parents' perceptions of both AI-related risks and AI-related opportunities. Demographic characteristics are included as control variables because prior research has shown that factors such as education, income, and parental age may influence technology perception and digital literacy levels.

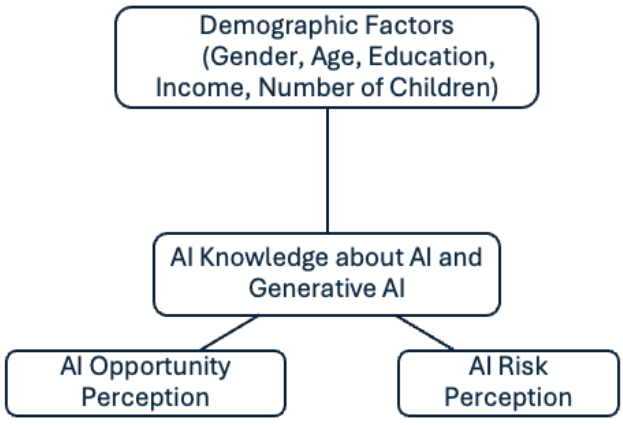

Figure 1: Theoretical framework illustrating the relationship between AI knowledge and Malaysian parents' perceptions of AI risks and opportunities.

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Based on this framework, parents' knowledge about artificial intelligence is expected to influence their perceptions of both the risks and opportunities associated with AI technologies. In particular, greater AI knowledge may enable parents to better recognise the potential benefits of AI while also developing a clearer understanding of its potential risks. Guided by this framework, the present study asks:

RQ1: What is the level of Malaysian parents' knowledge about artificial intelligence and generative AI?
RQ2: What are Malaysian parents' perceptions of AI-related risks in family life?
RQ3: What are Malaysian parents' perceptions of AI-related opportunities in family life?
In addition, the study tests the following hypotheses:
H1: AI knowledge is significantly associated with Malaysian parents' perceptions of AI-related risks.
H2: Higher levels of AI knowledge are associated with stronger perceptions of AI-related opportunities.

These research questions and hypotheses guide the empirical analysis examining how AI knowledge predicts Malaysian parents' perceptions of artificial intelligence in family contexts.

METHODOLOGY

A structured questionnaire was used to collect data from parents across the 13 states in Malaysia, including Sabah and Sarawak, allowing for the analysis of relationships between AI knowledge and parental perceptions of AI within family contexts.

Data Collection

Data were collected over a one-month period from 15 December 2025 to 15 January 2026. The survey was administered in person by trained research assistants to ensure that respondents clearly understood the questions and to minimise incomplete responses. Conducting the survey in person also allowed researchers to reach respondents from diverse demographic backgrounds, including individuals who may have limited access to online survey platforms. Participation in the study was voluntary, and respondents were informed about the purpose of the research prior to completing the questionnaire. All responses were anonymised to protect participants' privacy.

Sampling Strategy

The study employed a stratified sampling approach to approximate the demographic distribution of the Malaysian population. Stratification was conducted based on key demographic characteristics such as gender, age group, and ethnicity, with the aim of ensuring that the sample reflected the diversity of Malaysia's population. This approach helps to improve the representativeness of the dataset and reduces the likelihood of sampling bias in studies examining national-level perceptions.

A total of 302 parents participated in the survey. This sample size was considered statistically adequate for regression analysis and comparable quantitative studies examining technology perceptions among parents. In addition, the dataset forms part of a broader research project examining artificial intelligence in family contexts, which collected two parallel datasets consisting of 300 parents and 300 children. The paired design allows for

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future comparative analysis of AI perceptions between parents and children. However, the present paper focuses exclusively on the parent dataset in order to examine parental perceptions of AI-related risks and opportunities.

Instrumentation

Data were collected using a structured questionnaire consisting of several sections designed to measure parents' knowledge of artificial intelligence as well as their perceptions of AI-related risks and opportunities. The questionnaire was developed based on existing literature on digital parenting (Mohamed et al., 2022), technology perception (Livingstone & Blum-Ross, 2020), and artificial intelligence literacy (Guo et al., 2025). The questionnaire contained the following key sections relevant to the present study:

i. Section B: Knowledge about Artificial Intelligence and Generative AI

This section measured parents' self-reported knowledge and familiarity with artificial intelligence technologies. Respondents were asked to indicate their level of agreement with several statements assessing their understanding of AI concepts and generative AI applications. The items in this section were combined to form an AI Knowledge Index used as the main predictor variable in the analysis.

ii. Section E: Perceived Risks of Artificial Intelligence

This section assessed parents' perceptions of potential risks associated with AI technologies in family and children's digital environments. Items captured concerns related to issues such as misinformation, privacy, exposure to harmful content, and the potential negative effects of AI on children's development. Responses were measured using a five-point Likert scale and aggregated into a Risk Perception Index.

iii. Section F: Perceived Opportunities of Artificial Intelligence

This section measured parents' perceptions of the potential benefits and opportunities associated with AI technologies. Items addressed the perceived usefulness of AI in supporting children's learning, creativity, information access, and everyday family tasks. Responses were measured using a five-point Likert scale and combined into an Opportunity Perception Index.

The questionnaire also included demographic questions capturing respondents' gender, age, education level, household income, and number of children. These variables were included as control variables in the regression analysis.

Data Analysis

Data were analysed using statistical software to examine the relationship between AI knowledge and parents' perceptions of AI risks and opportunities. The analysis involved three stages: descriptive statistics were first used to summarise respondents' demographic characteristics and the mean and standard deviation of key variables; reliability analysis was then conducted to assess the internal consistency of the AI knowledge, AI risk perception, and AI opportunity perception scales; finally, multiple regression analysis was performed to determine whether parents' AI knowledge predicts perceptions of AI risks and opportunities while controlling for demographic variables, with two separate models estimating AI risk perception and AI opportunity perception as the dependent variables.

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FINDINGS

This section presents the empirical findings of the study in relation to the research questions and hypotheses. The analysis begins with parents' level of knowledge about artificial intelligence, followed by perceptions of AI-related risks and opportunities, and concludes with regression analysis examining the relationship between AI knowledge and these perceptions.

RQ1: Level of Malaysian Parents' Knowledge about Artificial Intelligence and Generative AI

The first research question examines Malaysian parents' level of knowledge about artificial intelligence (AI) and generative AI. Respondents were asked to evaluate several statements related to AI concepts and applications.

As shown in Table 1, the majority of parents demonstrated a relatively good understanding of basic AI concepts. A large proportion of respondents correctly recognised that generative AI can produce new content such as images, stories, or videos (93.0%) and that AI tools such as ChatGPT can generate content from user prompts (88.7%). Additionally, most respondents were aware that AI is embedded in everyday applications such as YouTube, TikTok, and Google Maps (77.2%).

Importantly, 73.5% of respondents correctly rejected the statement that all AI-generated information is always accurate, indicating that many parents possess a critical awareness of AI limitations. However, knowledge appears weaker regarding the environmental impact of AI technologies, with only 46.4% answering correctly, suggesting that awareness of broader systemic implications of AI remains limited. Overall, the findings suggest that Malaysian parents demonstrate moderate to relatively high levels of knowledge about AI, particularly regarding its everyday applications and basic functionalities.

Table 1: Parents' knowledge about Artificial Intelligence (AI) and Generative AI (N = 302)

Knowledge Statement	True n (%)	False n (%)	Not Sure n (%)
AI means computer programs that can think and learn like humans	256 (84.8)	32 (10.6)	13 (4.3)
Generative AI can create new content	281 (93.0)	10 (3.3)	11 (3.6)
AI outputs are always correct	50 (16.6)	222 (73.5)	29 (9.6)
AI exists in apps like YouTube and Google Maps	233 (77.2)	32 (10.6)	37 (12.3)
ChatGPT and Gemini generate content from prompts	268 (88.7)	11 (3.6)	23 (7.6)
AI systems collect user data online	251 (83.1)	22 (7.3)	29 (9.6)
AI affects the environment due to energy use	140 (46.4)	99 (32.8)	62 (20.5)

RQ2: Malaysian Parents' Perceptions of AI-Related Risks in Family Life

The second research question examines parents' perceptions of potential risks associated with artificial intelligence. The results indicate that parents generally perceive AI as presenting notable risks for children.

As presented in Table 2, the highest level of concern relates to technology dependency resulting from excessive AI use (M = 4.02, SD = 0.88). Parents also expressed strong concern about mental and physical health impacts (M = 3.94, SD = 0.91) and data privacy risks (M = 3.91, SD = 0.93).

Additionally, parents indicated concerns about exposure to inaccurate or biased information (M = 3.88) and culturally inappropriate content (M = 3.85). All risk perception items recorded mean values significantly above the neutral midpoint ($p < 0.001$), suggesting

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strong agreement among parents that AI presents various risks for children. These findings suggest that Malaysian parents are generally cautious about the growing influence of artificial intelligence in children's digital environments.

Table 2: Parents' perceptions of AI risks (N = 302)

Risk Statement	Mean	SD	p
AI may expose my child to inaccurate information	3.88	0.92	<0.001
AI could affect my child's future job opportunities	3.72	0.97	<0.001
Excessive AI use may create technology dependency	4.02	0.88	<0.001
AI may expose children to inappropriate content	3.85	0.95	<0.001
AI may contradict religious values	3.68	1.02	<0.001
AI may affect mental and physical health	3.94	0.91	<0.001
AI may not respect local cultural traditions	3.63	0.99	<0.001
AI may misuse children's personal information	3.91	0.93	<0.001

RQ3: Malaysian Parents' Perceptions of AI-Related Opportunities in Family Life

The third research question examines parents' perceptions of opportunities associated with artificial intelligence. The findings reveal generally positive perceptions of AI's potential benefits for children.

As shown in Table 3, the strongest agreement was recorded for AI helping children prepare for future careers (M = 3.97, SD = 0.89) and AI supporting faster and easier learning (M = 3.94, SD = 0.88). Parents also recognised AI's potential to enhance creativity (M = 3.88) and increase children's technological confidence (M = 3.86).

AI's role in stimulating interest in STEM fields also received relatively strong support (M = 3.79). Although still positive, the lowest mean score was recorded for AI teaching religion and values in new ways (M = 3.52), suggesting a more cautious view toward AI's role in value-based education. In sum, the results indicate that parents recognise the educational, creative, and future-oriented opportunities offered by artificial intelligence.

Table 3: Parents' perceptions of AI opportunities (N = 302)

Opportunity Statement	Mean	SD	p
AI helps children learn faster	3.94	0.88	<0.001
AI supports creativity and new ideas	3.88	0.91	<0.001
AI sparks interest in arts and design	3.74	0.95	<0.001
AI helps children understand global cultures	3.81	0.92	<0.001
AI increases interest in STEM	3.79	0.94	<0.001
AI builds technological confidence	3.86	0.90	<0.001
AI can teach religion and values	3.52	1.01	<0.001
AI helps prepare children for future careers	3.97	0.89	<0.001

Hypothesis Testing

To test the hypotheses, multiple regression analysis was conducted to examine whether AI knowledge predicts parents' perceptions of AI risks and opportunities, controlling for demographic variables.

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H1: AI Knowledge and AI Risk Perception

The regression analysis indicates that AI knowledge is significantly associated with AI risk perception ($\beta = 0.18$, $p < 0.01$). Parents with higher knowledge about AI tend to report stronger awareness of potential risks associated with AI technologies. This suggests that greater familiarity with AI may increase parents' recognition of ethical, social, and technological risks related to artificial intelligence.

Table 4: Regression analysis predicting AI risk perception

Predictor	Beta	p
Gender	-0.03	.57
Age	0.04	.39
Education	0.17	.004
Income	0.07	.21
Number of Children	0.04	.48
AI Knowledge	0.18	.002

H2: AI Knowledge and AI Opportunity Perception

The results also show that AI knowledge significantly predicts AI opportunity perception ($\beta = 0.34$, $p < 0.001$). Parents who possess higher levels of knowledge about artificial intelligence are more likely to recognise the educational and developmental opportunities associated with AI technologies.

Table 5: Regression analysis predicting AI opportunity perception

Predictor	Beta	p
Gender	0.02	.68
Age	-0.02	.61
Education	0.12	.06
Income	0.08	.18
Number of Children	0.03	.63
AI Knowledge	0.34	<.001

The findings reveal that Malaysian parents demonstrate moderate to high levels of knowledge about artificial intelligence, particularly regarding its everyday applications and generative capabilities. At the same time, parents express substantial concerns about the potential risks of AI, especially in relation to technology dependency, misinformation, and privacy issues.

Despite these concerns, parents also recognise the significant opportunities offered by AI, particularly in supporting learning, creativity, and future career preparation. Regression analysis further indicates that AI knowledge plays a significant role in shaping both risk and opportunity perceptions, suggesting that parents with greater understanding of AI are more likely to develop balanced and nuanced views of artificial intelligence in family contexts.

DISCUSSION

The study examined Malaysian parents' knowledge of artificial intelligence and their perceptions of AI-related risks and opportunities in family life. Drawing on the risk–benefit appraisal perspective, the study explored how parents interpret the growing presence of AI technologies within children's digital environments. The findings indicate that Malaysian parents demonstrate moderate to relatively high levels of knowledge about artificial intelligence, while simultaneously recognising both the potential risks and opportunities

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associated with these technologies. Furthermore, the results show that AI knowledge plays a significant role in shaping parents' perceptions of AI, supporting the argument that technological literacy influences how individuals interpret emerging technologies.

AI Knowledge among Malaysian Parents

The results addressing RQ1 indicate that Malaysian parents generally possess a reasonable understanding of basic AI concepts. Most respondents correctly recognised that generative AI systems can produce new content and that AI technologies are embedded in widely used digital platforms such as YouTube, TikTok, and Google Maps. These findings suggest that awareness of artificial intelligence has become increasingly widespread among parents as AI technologies become integrated into everyday digital tools.

This pattern is consistent with recent research highlighting the growing visibility of AI in daily life and the increasing need for public AI literacy. Guo et al. (2025) argue that parents' familiarity with AI technologies can enhance their confidence in guiding their children's engagement with AI-enabled educational tools. Similarly, Druga et al. (2022) conceptualise the family as a "third space" where parents and children collectively learn about emerging technologies through everyday interactions. In this context, Malaysian parents' moderate to high knowledge levels may reflect the increasing exposure of families to AI tools in digital media, productivity applications, and learning environments.

However, the findings also reveal that knowledge remains uneven across different aspects of artificial intelligence. In particular, parents demonstrated lower awareness of broader issues such as the environmental impact of AI systems. This suggests that while parents may understand the functional aspects of AI technologies, their awareness of systemic implications remains limited. Thus, the study agrees with Szondy and Magyary (2025) and Farisal (2025) who stated that such knowledge gaps highlight the importance of strengthening AI literacy initiatives aimed at helping parents understand not only how AI works but also its broader ethical and societal implications.

Parents' Perceptions of AI Risks

The results addressing RQ2 show that Malaysian parents generally perceive artificial intelligence as presenting several potential risks for children. The strongest concerns relate to technology dependency, mental and physical health effects, and data privacy issues. Parents also expressed concern about children's exposure to inaccurate information and culturally inappropriate content generated by AI systems.

These concerns reflect broader debates surrounding the ethical and developmental implications of artificial intelligence. Scholars have highlighted that AI systems may produce biased or inaccurate information and that generative AI tools can generate content that is difficult for users, particularly children, to critically evaluate (Wang et al., 2024). In the context of digital parenting, such concerns may lead parents to adopt more cautious attitudes toward AI technologies.

The findings also align with previous research showing that parents often approach digital technologies through a risk–benefit balancing process. Livingstone and Blum-Ross (2020) note that parents frequently recognise both the opportunities and potential harms associated with digital media, leading to ongoing negotiations about how technologies should be integrated into family life. Similarly, Malaysian studies have shown that parents are increasingly aware of digital risks such as cyberbullying, misinformation, and excessive technology use among children (Ghazali et al., 2025; Mohamed et al., 2024). The current

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findings extend this literature by demonstrating that similar concerns are now emerging in relation to artificial intelligence technologies.

Parents' Perceptions of AI Opportunities

Despite these concerns, the results addressing RQ3 indicate that Malaysian parents also recognise substantial opportunities associated with artificial intelligence. Parents strongly agreed that AI can support faster learning, enhance creativity, and help children prepare for future careers. AI was also viewed as potentially increasing children's confidence in using technology and stimulating interest in science, technology, engineering, and mathematics (STEM) fields.

These findings suggest that parents do not perceive AI solely as a source of risk but rather as a technology that can provide meaningful educational and developmental benefits when used appropriately. Previous research has shown that AI-based learning tools can enhance educational engagement and provide personalised learning support for students (Ruijia et al., 2025; Zhang et al., 2026). Similarly, Aldakhil (2024) demonstrates that AI-driven learning interventions can improve learning outcomes and quality of life among children when implemented in structured educational contexts.

Parents' recognition of these opportunities may reflect a growing awareness that artificial intelligence is likely to play a significant role in future education and employment landscapes. Consequently, parents may view AI not only as a technology that requires regulation but also as a tool that children must learn to use effectively in order to succeed in future digital economies.

The Role of AI Knowledge in Shaping Perceptions

The regression analysis provides further insights into the relationship between AI knowledge and parental perceptions of artificial intelligence. The findings support H1, indicating that AI knowledge is significantly associated with parents' perception of AI-related risks. Parents with greater knowledge about AI tend to demonstrate higher awareness of potential risks associated with these technologies. This suggests that knowledge may increase parents' ability to critically evaluate the ethical and social implications of AI systems.

At the same time, the results also support H2, showing that higher levels of AI knowledge are associated with stronger perceptions of AI opportunities. Parents who possess greater knowledge about artificial intelligence are more likely to recognise the educational and developmental benefits that AI technologies can provide for children.

Taken together, these findings support studies by Guo et al. (2025) and Wang et al. (2024) that suggest AI knowledge contributes to more balanced and nuanced perceptions of artificial intelligence. Rather than simply reducing concerns about technological risks, greater knowledge appears to enhance parents' understanding of both the potential advantages and potential challenges associated with AI technologies. This outcome exemplifies the theoretical argument that technological literacy influences how individuals interpret emerging technologies and evaluate their implications (Hamid et al.,2023).

Implications for Digital Parenting and AI Literacy

The findings of this study carry several important implications for digital parenting and AI literacy initiatives. First, the results suggest that parents require not only basic knowledge of AI tools but also a deeper understanding of how AI systems operate and how they may

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influence children's digital experiences. Like Szondy and Magyary (2025), this study found that strengthening parents' AI literacy could therefore improve their ability to guide children's responsible and critical engagement with AI technologies.

Second, the coexistence of strong risk awareness and recognition of opportunities suggests that parents are seeking ways to integrate AI into family life in a balanced manner. Thus, this study concurs with Mohamed et al. (2025) that educational programmes aimed at parents may therefore benefit from focusing on responsible AI use, helping parents understand how AI can support learning while also mitigating potential risks.

Finally, the findings highlight the importance of institutional support in helping families navigate the rapidly evolving AI landscape. Schools, policymakers, and technology developers may play a key role in providing guidance and safeguards to ensure that children's engagement with AI technologies remains safe and beneficial.

CONCLUSION

This study examined Malaysian parents' knowledge of artificial intelligence and their perceptions of the risks and opportunities associated with AI in family life. The findings indicate that Malaysian parents generally possess moderate to relatively high levels of knowledge about artificial intelligence and generative AI, particularly regarding its everyday applications and ability to generate digital content.

At the same time, parents express considerable concern about potential risks, including technology dependency, misinformation, privacy issues, and possible impacts on children's well-being. Despite these concerns, parents also recognise significant opportunities associated with AI, particularly in supporting children's learning, creativity, technological confidence, and preparation for future careers. The regression analysis further demonstrates that AI knowledge significantly predicts both risk and opportunity perceptions, suggesting that parents with greater AI literacy tend to develop more balanced and nuanced evaluations of artificial intelligence.

These findings contribute to the literature on digital parenting and emerging technologies by highlighting the role of AI literacy in shaping parental perceptions, while also underscoring the importance of strengthening AI literacy initiatives and digital parenting programmes to help families navigate the opportunities and challenges associated with artificial intelligence.

However, this research is subject to several limitations inherent in cross-sectional survey designs, notably the reliance on participants' self-reported information and the static nature of the data, which precludes the analysis of longitudinal shifts in parental perceptions over time. As such, future research should adopt comparative and longitudinal approaches to better understand how perceptions of AI evolve over time and across generations. In particular, future studies should examine parent–child differences in AI knowledge, usage, and perceptions, drawing on parallel datasets collected from both groups in the present project. Such efforts would contribute to a more comprehensive understanding of how families negotiate the growing presence of AI in everyday life and how digital readiness can be strengthened in the age of artificial intelligence.

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REFERENCES

Adzmi, A. M., Ramly, L. M., Nazri, S. M., Farid, N. F., & Rahman, M. A. (2021). Social media and new norms impact: "Oh! My grandparents (OMG)!" as an administrator in family WhatsApp group. *Jurnal Komunikasi: Malaysian Journal of Communication*, *37*(4), 254–272. https://doi.org/10.17576/JKMJC-2021-3704-15

Aldakhil, A. F. (2024). Investigating the impact of an AI-based play activities intervention on the quality of life of school-aged children with ADHD. *Research in Developmental Disabilities*, *154*, Article 104858. https://doi.org/10.1016/j.ridd.2024.104858

Alrusaini, O., & Beyari, H. (2022). The sustainable effect of artificial intelligence and parental control on children's behavior while using smart devices' apps: The case of Saudi Arabia. *Sustainability*, *14*(15), Article 9388. https://doi.org/10.3390/su14159388

Druga, S., Christoph, F. L., & Ko, A. J. (2022). Family as a third space for AI literacies: How do children and parents learn about AI together? In *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems* (Article 225, pp. 1–17). Association for Computing Machinery. https://doi.org/10.1145/3491102.3502031

Entenberg, G. A., Areas, M., Roussos, A. J., Maglio, A. L., Thrall, J., Escoredo, M., & Bunge, E. L. (2021). Using an artificial intelligence-based chatbot to provide parent training: Results from a feasibility study. *Social Sciences*, *10*(11), Article 426. https://doi.org/10.3390/socsci10110426

Esmaeil, A. A. A., Kiflee @ Dzulkifli, D. N. A., Maakip, I., Matanluk, O. O., & Marshall, S. (2023). Understanding student perception regarding the use of ChatGPT in their argumentative writing: A qualitative inquiry. *Jurnal Komunikasi: Malaysian Journal of Communication*, *39*(4), 150–165. https://doi.org/10.17576/JKMJC-2023-3904-08

Farisal, U. (2025). The impact of AI on family communication: A narrative review on children's respect for parents in developing Southeast Asia. *Jurnal Parenting dan Anak*, *2*(2), 4–15. https://doi.org/10.47134/jpa.v2i2.1472

Ghazali, S. A., Bakar, R. S., Berahim @ Ab. Rahman, A., & Sulaiman, Z. (2025). Factors related to parental perceptions and awareness of adolescent cyberbullying in Selangor, Malaysia. *IIUM Medical Journal Malaysia*, *24*(2), 85–94. https://doi.org/rcjt

Guo, J., Law, T. S. T., Qiao, S., & Yeung, S. S. (2025). AI literacy, educational level, and parenting self-efficacy of children's education among parents of primary school students. *Computers and Education Open*, *8*, Article 100318. https://doi.org/rcjv

Hamid, N. A., Rashid, S. M., Yazan, M. F., & Amin, N. A. (2023). Gadgets, parents and children: Navigating the digital landscape in families. *International Journal of Education, Psychology and Counseling*, *8*(52), 531–542. https://doi.org/10.35631/IJEPC.852041

Johari, S., Noordin, W. N. W., & Mahamad, T. E. T. (2022). WhatsApp conversations and relationships: A focus on digital communication between parent–teacher engagement in a secondary school in Putrajaya. *Jurnal Komunikasi: Malaysian Journal of Communication*, *38*(2), 280–296. https://doi.org/10.17576/JKMJC-2022-3802-17

Li, Y., Wu, Y., & Chiu, T. K. F. (2025). How teacher presence affects student engagement with a generative artificial intelligence chatbot in learning designed with first principles of instruction. *Journal of Research on Technology in Education*, 1–17. Advance online publication. https://doi.org/10.1080/15391523.2025.2493942

Lin, C., Šabanović, S., Dombrowski, L., Miller, A. D., Brady, E., & MacDorman, K. F. (2021). Parental acceptance of children's storytelling robots: A projection of the uncanny valley of AI. *Frontiers in Robotics and AI*, *8*, Article 579993. https://doi.org/gs3m5n

E-ISSN: 2289-1528
https://doi.org/10.17576/JKMJC-2026-4202-28

Livingstone, S., & Blum-Ross, A. (2020). *Parenting for a digital future: How hopes and fears about technology shape children's lives*. Oxford University Press. https://doi.org/10.1093/oso/9780190874698.001.0001

Maliki, J., Tuah, K. M., Taibi, M., Govindaraju, V., & Osman, N. A. (2024). Self-expression and mental wellbeing of Malaysian youths on social media. *Jurnal Komunikasi: Malaysian Journal of Communication*, *40*(3), 312–329. https://doi.org/ntmv

Mohamed, S., Ghazali, W. N. W., & Nasir, N. S. M. (2024). Navigating digital risks and benefits: Malaysian parents' perceptions of their children's digital media usage. *e-Bangi*, *21*(1), 135–146.

Mohamed, S., Janon, N. S. I., Yusoh, M. H., Salleh, N., Nasir, N. S. M., & Ghazali, W. N. W. M. (2025). Designing and evaluating a culturally grounded digital parenting initiative in Malaysia. *Intellectual Discourse*, *33*(3), 415–438. https://doi.org/rcjw

Mohamed, S., Wok, S., Ghazali, W. N. W. M., & Nasir, N. S. M. (2022). Maternal digital competencies as a prerequisite for effective digital parenting among Malaysian mothers. *International Journal of Social Policy and Society*, *14*(2), 115–135.

Piombo, M. A., La Grutta, S., Epifanio, M. S., Di Napoli, G., & Novara, C. (2025). Emotional intelligence and adolescents' use of artificial intelligence: A parent–adolescent study. *Behavioral Sciences*, *15*(8), Article 1142. https://doi.org/10.3390/bs15081142

Ruijia, Z., Wenling, L., & Xuemei, Z. (2025). The impact of information and communication technology (ICT) on learning outcomes in early childhood and primary education: A meta-analysis of moderating factors. *Frontiers in Psychology*, *16*, Article 1540169. https://doi.org/10.3389/fpsyg.2025.1540169

Stoilova, M., Livingstone, S., & Sylwander, K. R. (2025). *Researching children's experiences of generative artificial intelligence: A child rights approach*. Digital Futures for Children Centre, London School of Economics and Political Science. https://eprints.lse.ac.uk/129141

Syahril, R., Priatna, P., Hutomo, A., & Wulandari, S. (2024). The impact of technology on family communication. *Golden Ratio of Data in Summary*, *4*(2), 1001–1009. https://doi.org/10.52970/grdis.v4i2.754

Szondy, M. B., & Magyary, Á. (2025). Artificial intelligence (AI) in the family system: Possible positive and detrimental effects on parenting, communication and family dynamics. *European Journal of Mental Health*, *20*, 1–15. https://doi.org/rcjx

Wang, G., Zhao, J., Van Kleek, M., Shadbolt, N., & Howard, E. (2024). Challenges and opportunities in translating ethical AI principles into practice for children. *Nature Machine Intelligence*, *6*(3), 265–270. https://doi.org/10.1038/s42256-024-00805-x

Zhang, Y., Halili, S. H., & Zainuddin, Z. (2026). Generative AI in preschool education: A systematic review with SWOT analysis. *Contemporary Educational Technology*, *18*(1), Article 626. https://doi.org/10.30935/cedtech/17866

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https://doi.org/10.17576/JKMJC-2026-4202-28