



Causes, Impacts, and Governance Paths of Dependence on AI Companions in the Era of Generative AI

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Abstract. The iterative advancement of generative artificial intelligence has driven AI (Artificial Intelligence) companions to extend deeply into the field of emotional companionship. While satisfying users' spiritual needs and creating diverse social values, it has also given rise to the phenomenon of dependence on AI companions, triggering a series of problems such as weakened real-world social interaction and blurred ethical boundaries. This paper systematically analyzes the formation mechanism of dependence on AI companions from internal and external dimensions. Internal factors include loneliness, high costs of real intimate relationships, emotional anxiety and psychological pressure, and the pursuit of emotional value; external factors involve the technical characteristics of AI companions, changes in marriage and love attitudes, and an imperfect social support system. On this basis, it comprehensively examines the dual positive and negative impacts on individuals and society. Finally, it constructs a systematic governance path from four levels: government, regulators, enterprises, and individuals, promoting the use of AI companions from "excessive dependence" to "human-machine symbiosis", and providing practical guidance for the sound development of human-machine relations in an intelligent society.

Keywords: Generative Artificial Intelligence, Dependence on AI Companions, Human-Machine Relationship, Formation Mechanism, Governance Path.

1 Introduction

With continuous improvements in generative AI's (Artificial Intelligence) creative capacity, large-scale learning, multimodal processing, context awareness, and personalization, deep interaction and even intimate bonding between AI and users have been realized. Its application in elderly care, mental health counseling, care for special groups, and other fields has effectively filled the supply gap of social-emotional services, created new business opportunities and social value, and pushed human-machine interaction into a new stage of symbiotic development. However, the widespread adoption of technology has also brought many practical problems. Issues such as data privacy leakage, virtual relationships replacing real social interaction, and blurred emotional and ethical boundaries have become increasingly prominent,

making dependence on AI companions an important topic that urgently needs to be addressed in the development of an intelligent society.

Dependence on AI companions is an irrational usage phenomenon resulting from an imbalanced human-machine emotional bond. Specifically, it refers to a psychological and behavioral state in which individuals form a non-reciprocal emotional connection through continuous interaction with AI companions, regard them as the primary or even sole source of emotional satisfaction, and consequently show reduced initiative in real social interaction, weakened social competence, and avoidance or rejection of real intimate relationships. Such dependence arises from the interaction between individuals' internal psychological needs and the external technological and social environment. Its development not only affects individual mental health and social abilities but also poses new challenges to social networks, mainstream values, and public governance systems.

Existing studies have preliminarily explored the technical characteristics and application risks of AI companions, yet a systematic analytical framework for the formation mechanism of dependence on AI companions remains absent, discussions on its multiple impacts lack comprehensiveness, and practice-oriented governance paths suffer from insufficient pertinence and unclear subject responsibilities. In response, this study takes dependence on AI companions in the context of generative AI as the research object, clarifies its internal and external influencing factors, comprehensively analyzes its dual impacts on individuals and society, and builds a multi-stakeholder collaborative governance path to provide guidance for resolving related practical problems.

This study carries important theoretical and practical significance. Theoretically, by systematically sorting out the formation mechanism of dependence on AI companions, it enriches research in human-machine communication, the sociology of emotion, and AI ethics, improves the research system of the social impacts of artificial intelligence, and offers a new analytical perspective for understanding the evolution of human-machine relations in the digital intelligence era. Practically, the governance path proposed in this study can provide references for the government in formulating industrial development and regulatory policies for artificial intelligence, offer insights for enterprises to optimize AI companion product design and avoid addiction risks, and guide individuals to establish rational attitudes toward technology use. This stresses the positive use of generative AI as emotional partners and the combined growth of interpersonal coherence and human-machine integration in an intelligent society.

2 Reasons Behind Reliance on AI Companions

People become reliant on AI companions because emotional needs and personality traits internally and externally (technology, frameworks, social systems) reinforce the integration of these models, leading to the emergence and evolution of the phenomenon.

2.1 Internal Factors

First, loneliness and emotional void creates need for virtual companions. In contemporary society, families often suffer from a lack of communication, and the generational gaps are widening. Mobility in society is faster than before. The living situation and social networks continue changing, and young people are the loneliest group. Commonly, people are in a situation of not having enough emotional support. “The older people grow, the lonelier they become” has become a striking feature of contemporary youth [1], reflecting the increasingly fragile connections of modern individuals within social networks. AI companions are easy to use, reply quickly, and interact steadily. They can meet people’s need for company at any time, so many users choose them to fill their emotional emptiness. Today’s young people often study or work far from home. Physical distance makes their emotional ties with family and old friends weaker. At the same time, building new social relationships takes a lot of time and effort, and may not succeed. The combination of persistent loneliness and the unavailability of real companionship leaves individuals unable to meet their emotional needs in a timely manner. The feature of AI companions requiring no physical contact and being free from temporal and spatial constraints precisely meets lonely individuals’ demand for “instant companionship” [2]. Long-term virtual interaction gradually makes individuals adapt to this low-threshold emotional connection, leading to psychological dependence. In addition, the development of social media has seemingly expanded individuals’ social scope, yet most interactions remain superficial in the form of likes and comments, lacking in-depth face-to-face emotional communication. Such “pseudo-sociality” fails to truly alleviate deep-seated loneliness and instead creates the psychological experience of “being lonely even in a crowd”. When shallow real social interaction cannot satisfy deep emotional needs, the personalized dialogue and empathetic responses of AI companions provide exclusive emotional attention, enabling individuals to gain strong emotional satisfaction in virtual interaction and thus develop dependence.

Second, the high costs of real intimate relationships, subjective avoidance shifts to virtual relationships. Real intimate relationships, whether romantic or deep friendship, require joint effort and continuous investment from both parties. As initial infatuation fades and both sides enter a stage of conflict and adjustment, quarrels, conflicts, and misunderstandings arising from divergent views and personality differences become common, and the ensuing psychological pressure easily leads to fatigue and withdrawal. In contrast, AI companions are always user-centric, hold no opposing views, and avoid conflicts. This “conflict-free” interaction relieves individuals of relationship maintenance costs and becomes a major way to escape the pressures of real intimate relationships. Establishing new, real, intimate relationships involves a long process of mutual understanding and adjustment, with the persistent risk of relationship breakdown. High trial-and-error costs make some individuals fearful of real intimate relationships, especially those who have experienced emotional setbacks and fear the negative experience of failed relationships again. As virtual companions, AI companions expose individuals to no risks of emotional betrayal or relationship breakdown. Individuals can enjoy emotional companionship in virtual relationships

while avoiding psychological harm from trial and error. This “risk-free” emotional experience gradually inclines individuals toward virtual relationships. Genuine, real intimate relationships entail mutual responsibility and commitment, requiring individuals to consider each other in daily life and emotions. Such responsibility creates a strong sense of constraint for contemporary youth who pursue individualism and freedom. In interactions with AI companions, individuals hold absolute dominance, bear no responsibility or commitment, and can start or end interactions at will. This “responsibility-free” virtual relationship aligns with some individuals’ “low-demand” pursuit of emotional companionship, making them gradually evade the responsibilities of real intimate relationships and turn to AI companions for support.

Third, high emotional anxiety and psychological pressure, virtual space as an outlet for emotional catharsis. Contemporary individuals face superimposed pressures from academic studies, work, life, and interpersonal relationships. Entrance examination competition, performance assessments, financial stress, and communication conflicts keep individuals in a prolonged state of emotional anxiety. Such pressures are persistent and complex, difficult to relieve in a short time, and the accumulation of negative emotions creates an urgent need for appropriate catharsis channels. AI companions provide instant responses, allowing individuals to express negative emotions anytime without worrying about the other party’s feelings or schedule. This instant emotional outlet rapidly releases anxiety, irritability, and other negative emotions, fostering psychological dependence. Some individuals suffer from social phobia due to introversion or a lack of social experience. They struggle with socializing in real life, fear making mistakes, avoid expressing true emotions, worry about being misunderstood or judged for inappropriate emotional expression, and ultimately close themselves off in real social situations. As non-human interaction partners, AI companions free individuals from the pressure of “being judged”. Individuals can fully express true feelings such as anxiety, grievance, and confusion, and receive tolerant and understanding responses. This safe emotional expression space gradually makes such groups rely on AI companions as their only emotional outlet. Under long-term high pressure and anxiety, some individuals’ psychological resilience declines, making them prone to escapism when facing real difficulties and setbacks. AI companions not only patiently listen to negative emotions but also provide psychological comfort through positive verbal guidance, offering individuals consolation and a sense of security in virtual space. This virtual psychological support gradually erodes individuals’ courage to face real pressures, making them accustomed to relieving stress through AI companions and thus forming dependence.

Fourth, the pursuit of emotional value, virtual responses align with individual psychological expectations. In real life, individuals’ efforts and dedication may not receive timely recognition, and their thoughts and feelings may not be understood by others. Such psychological gaps lead to strong frustration and intensify the demand for emotional value—being affirmed, understood, and tolerated. AI companions can accurately capture individuals’ psychological needs, always respond with affirmation and approval, and fully understand and tolerate all their thoughts and feelings. This highly matching response brings individuals strong emotional satisfaction and thus emotional dependence. Emotional needs are highly individualized, and it is difficult

for anyone in reality to consistently meet personalized emotional demands precisely; emotional expression often requires repeated communication to be understood. In contrast, AI companions provide customized emotional care based on individuals' dialogue content, language style, and emotional state, delivering targeted responses whether for encouragement, comfort, or simple companionship. This tailored provision of emotional value makes individuals feel exclusive attention, gradually leading them to rely on personalized virtual companionship. Real interpersonal relationships are highly uncertain. Others' moods and attitudes change across situations, making it difficult for individuals to obtain sustained and stable emotional value; they may even suffer new psychological distress from others' emotional fluctuations. Nevertheless, AI companions never fail to respond to satisfy the emotional desires of users. Their mood and attitude do not alter. They provide individuals with stable and regular emotional support and a feeling of security during online communication. Due to that, individuals gradually cease to seek emotional support in the real world and turn to AI companions instead.

2.2 External Factors

First, technical features of AI companions: accurate adaptation and development of customized companionship. AI companions operate on such advanced technologies as machine learning and natural language processing. They continue to learn how to express emotions and communicate in a human way by learning a lot of emotional conversation data. They are able to see the emotions of people correctly and respond in a manner that is emotionally natural. This gives users the feeling that they are understood whenever they are talking to them. This very human manner of engaging reduces the skepticism of people about virtual relationships. Users readily adopt and embrace conversing with AI friends, which conditions them to be addicted in the future. AI companions continue to gather and analyze information on users using big data and personalized algorithms. This involves their chatting behaviors, emotional fluctuations, and their needs. AI then adapts its responses to give a personal, tailored experience to each user. Compared with real social interactions that require repeated communication to achieve understanding, AI companions' precise adaptation fulfills emotional needs quickly and efficiently. This instant value supply gradually forms usage inertia and further develops into psychological dependence. Internet technology allows AI companions to ignore the limits of space and time. Whenever people need emotional support, no matter the time or situation, they can get a quick reply from AI companions. This unrestricted company fits modern people's scattered and immediate emotional needs very well. Especially when people feel lonely or worried, the timely support of AI becomes an important emotional support for them. Over time, this creates a strong psychological dependence that is hard to replace.

Second, changes in marriage and love attitudes: individualism weakens the demand for real intimacy. Today's attitudes toward marriage and dating have changed from group-oriented to individual-focused. Young people care more about their own feelings and emotional experiences in relationships. They want their personal needs to be satisfied and refuse to compromise or give in for others. Real romantic relationships usually require both sides to understand and give way. They cannot

focus only on one person, so personal needs are often limited. AI companions always center on users' feelings and fully meet their emotional expectations. This way of communication fits individual values, so young people prefer virtual relationships. Young people today want personalized and free lifestyles. They dislike the duties and limits that come with real relationships. They do not want to take on family responsibilities, financial pressure, or endless emotional compromise. They also do not want to lose their personal freedom because of love or marriage. Virtual relationships with AI need no real responsibilities and no restrictions. People can get emotional support while staying highly independent. This kind of trouble-free virtual relationship helps some young people avoid real-life relationship duties. Because society is more diverse, marriage risks are higher; life costs more; and young people are more careful about long-term relationships. They no longer see love and marriage as necessary parts of life. They are unwilling to spend a huge amount of time and energy building long-term bonds. Real long-term relationships need complex adjustments and long-term care. AI companions offer stable emotional support quickly, with no difficult process of building or maintaining a relationship. This low-cost, high-reward virtual company makes some young people care less about real relationships and start relying on AI companions instead.

Third, an imperfect social support system: supply gaps foster virtual alternatives. There is also a distribution of service resources unequally across regions. The majority of them are in first-tier cities and major cities, whereas second-tier and third-tier cities and distant places have them sorely lacking. When individuals are anxious, stressed, or emotionally distressed, they find it difficult to seek professional assistance in a timely manner. AI companions can be accessed at any time and by everyone. They seal this mental health care gap. They are a ready means for people to alleviate their mental issues. Practical access to professional mental health services can be very expensive economically, and psychological counseling typically takes several sessions to bring about the desired changes, and it is time-consuming. Numerous youths and poor individuals are unable to afford professional help. It is too expensive in terms of time and money. The majority of the AI companions are free or low-priced. They do not need to spend additional offline time. They provide inexpensive and efficient emotional assistance. This makes them more acceptable to people. Many slowly develop psychological dependence after long-term use. Family, relatives, and communities are the primary sources of traditional social support. In modern society, families are becoming smaller, the population is mobile, and community bonds are loose. The social support in real life is becoming even less credible. Mental or emotional conditions can result in the condition of people. They frequently are not able to receive effective and prompt assistance from their relatives or family. They may even suppress their emotions since they fear being misinterpreted. In case of unreal social support, to satisfy the emotional needs of people, AI companions will be viewed as another option to fill the vacuum. This slowly causes individuals to be reliant on virtual friends.

3 Multiple Impacts of Dependence on AI Companions

Traditional social support mainly comes from family, relatives, and communities. In modern society, families are becoming smaller, people move more frequently, and community bonds are growing weak. As a result, real-life social support is gradually declining. When people face psychological or emotional problems, they can hardly get timely and effective support from their family or relatives. They may even hide their feelings for fear of being misunderstood. When real social support cannot meet their emotional needs, AI companions, as a new form of emotional support, become an important choice for people to fill their emotional emptiness. This gradually leads them to depend on virtual companionship.

3.1 Positive Impacts

To begin with, providing instant emotional support and filling real emotional vacancies. With uninterrupted response, accurate emotion recognition, and empathetic responses, AI companions serve as instant outlets for emotional catharsis and emotional support for individuals. For negative emotions caused by academic pressure, workplace anxiety, interpersonal troubles, and other factors [3], individuals can confide in AI companions anytime without the psychological pressure of “being judged” or “rejected”. Instant comfort and guidance quickly alleviate emotional fluctuations and effectively reduce internal psychological friction and mental burden. Meanwhile, for those in emotional transition or recovery from emotional trauma, AI companions act as temporary emotional anchors, helping them through vulnerable periods, filling the immediate gap in real emotional companionship, and supporting the stability of individual mental states.

In the next place, assisting individual psychological adjustment and improving public mental health services. Through continuous personalized companionship, positive verbal guidance, and systematic emotional counseling, AI companions help individuals conduct self-psychological adjustment to a certain extent, guide them to form positive emotional cognition, and mitigate the lasting impact of negative emotions. Their low-threshold and universal characteristics extend psychological support to more ordinary groups, especially those unwilling or unable to seek professional mental health services, serving as an effective supplement to professional psychological counseling. More importantly, AI companions accurately serve special groups such as empty-nesters, left-behind children, and people with disabilities, providing stable emotional companionship and basic psychological care for those with limited real social interaction and insufficient social support. This compensates for the deficiencies of traditional mental health services in coverage and efficiency, improves social welfare and care systems, helps improve national mental health levels, and becomes an important supplementary force in the public mental health system.

In the end, reducing social conflicts and maintaining interpersonal harmony and social stability. For emotionally sensitive, socially anxious, or socially incompetent groups, AI companions provide a stress-free space for social practice and emotional expression, enabling them to gradually build social confidence and practice language

expression and emotional communication skills in virtual interaction, thereby reducing tension and anxiety in real social situations. Meanwhile, individuals' emotional dependence on AI companions can divert negative emotions from real social interaction to a certain extent, allowing bad emotions to be released in virtual space and reducing real interpersonal frictions and conflicts caused by emotional outbursts. This buffering effect of virtual socialization protects the social psychology of vulnerable groups, prevents them from self-isolation due to real social setbacks, maintains real interpersonal harmony to a certain extent, and supports the stable development of social relations.

3.2 Negative Impacts

First and foremost, causing atrophy of real social interaction and weakens social cohesion. Excessive dependence on AI companions makes individuals inert toward time-consuming and complex real interpersonal relationships, gradually losing the willingness to actively engage with real people and build real connections, thus reducing time and energy for offline communication, family interaction, and community participation, and gradually drifting away from real social networks [4]. Long-term virtual interaction weakens individuals' real social abilities [5], making it difficult for them to handle divergent views and emotional conflicts in real life, leading to social expression barriers, reduced empathy, and an inability to form deep emotional bonds with others. Meanwhile, excessive focus on virtual relationships loosens real social connections, highlighting alienated neighborhood relations, weakened family bonds, and declining social trust. Emotional ties between people become increasingly delicate. It ultimately reduces overall social cohesion, hindering the construction and development of real social networks.

What is more, data privacy concerns and threats to personal and societal security. AI companions provide personalized interaction and company by gathering and processing user data. When users subscribe, chat, and engage with the service, AI harvests their demographics, spending, social, emotional, and even intimate profiles. Data management and rules are still weak. Data leaks may happen technology and management negligence. Some companies collect data illicitly and distribute it bidirectionally for profit. Users can become victims of identity theft and phishing. Massive data leaks can threaten the safety of public data. It deteriorates the overall data security and social safety.

In addition, causing blurred responsibility boundaries and ethical lag, and restricts industrial development. Under the existing legal and regulatory framework, disputes involving AI companions involve obvious gray areas of responsibility [6]. When issues arise from digital interactions, developers, platform owners, and algorithm designers tend to diffuse responsibility, making it difficult to ensure proper user protection. The pace of AI companion technology development outstrips the speed of developing ethical guidelines. Relevant laws and regulations are clearly outdated. Crucial issues, such as virtual intimate relationships, the behavioral scope of AI companions, and the ethical standards of technology application, are yet to have a unified approach. The absence of ethical standards creates a social ethical dilemma and leaves the AI companion sector unregulated. Some enterprises break ethical

bottom lines for commercial gains, restricting the standardized and healthy development of the industry and laying hidden dangers for disorderly technology application.

Lastly, diluting real human eros and emotional experience and impacting mainstream values. Genuine human love and intimate relationships are based on mutual otherness, difference, and real interaction, achieving emotional deepening and sublimation through mutual adjustment and tolerance. As virtual entities, AI companions are essentially projections of users' own data and desires—a homogeneous “other”. The virtual intimate relationship between individuals and AI companions is essentially an embrace of the self in the mirror, an alienation of eros under consumerism [7]. This false emotional experience gradually dilutes human perception and pursuit of real love, making individuals lose the ability to experience genuine emotions. Meanwhile, the “zero-conflict” and “responsibility-free” nature of virtual intimacy distorts young people's views on marriage, love and family, reducing their expectations of real marriage, long-term commitment and family responsibility, weakening their willingness to maintain real intimate relationships, thereby affecting the stability of real family structures and social intergenerational inheritance, and challenging mainstream social values centered on real emotions and responsibility.

4 Governance Paths of Dependence on AI Companions

In response to the formation mechanism and dual impacts of dependence on AI companions, it is necessary to uphold the core concept of “technology for good, human-machine symbiosis” and build a collaborative governance system involving the government, regulators, enterprises, and individuals. Through targeted multi-stakeholder and multi-dimensional measures, practical problems caused by dependence on AI companions can be resolved, guiding the rational application of AI companion technology and promoting the shift from “excessive dependence” to “rational use”, so as to achieve benign interaction between technological and social development.

4.1 Government Level: Balancing Encouragement of Rational Application and Value Guidance

The government should play a core role in top-level design and policy guidance, clarifying the application boundaries and development direction of AI companion technology. On the one hand, it should actively encourage the innovative application of AI companions in education and training, medical care, elderly care, care for special groups, culture and entertainment, issue special support policies, support enterprises in developing AI companion products that meet social needs, and promote technology as a positive force in building a “warm and intelligent society”, giving full play to its positive value in improving social services and people's well-being. On the other hand, it should strengthen social value guidance, popularize the technical essence and usage boundaries of AI companions to the public through media publicity, public welfare science popularization, campus education and other forms, guide the public to establish a correct understanding of human-machine relations,

clarify the essential difference between virtual companionship and real emotions, avoid equating virtual relationships with real ones, and create a social atmosphere of rational viewing and appropriate use of AI companions. This will guide anthropomorphic interactive services to truly become a positive force in building a warm and intelligent society and push society steadily toward a bright future of harmonious human-machine coexistence and responsible technology [8].

4.2 Regulatory Level: Refining Rule Systems and Strengthening Responsibility Implementation

Regulators are asserting the need to formulate transparent and definitive parameters for the implementation of AI technologies pertaining to the legal and ethical standards that govern the use of AI companions, along with the improvement of the relevant legal frameworks and supervisory mechanisms. First, drawing on mature social platform governance experience, refine AI product supervision rules, clarify data collection standards, usage scope, and security protection requirements for AI companions, and formulate specific punishment standards for privacy leakage, algorithm abuse, excessive anthropomorphism, and other issues to ensure laws and regulations are enforceable. Second, strengthen the primary responsibilities of developers and operating platforms, establish a accountability mechanism of “who develops, who is responsible; who operates, who supervises”, strengthen whole-process supervision of AI companion products from Research and Experimental Development (R&D) and launch to operation through administrative law enforcement and judicial coordination, and severely punish entities that illegally collect data or break ethical boundaries. Third, establish an ethical review mechanism for AI companions, form a review committee composed of technical experts, ethical scholars, legal professionals, and public representatives to conduct ethical assessments of newly developed AI companion products, avoiding ethical risks from the source. Refine AI product supervision rules and, through administrative law enforcement and judicial coordination, safeguard the healthy growth of new technologies while building strong barriers for public morality and legal bottom lines [9].

4.3 Enterprise Level: Enhancing Design and Improving Focus on Real Life

Integrative building and operating AI companions are ethically and socially responsible stakeholders. To reduce over-dependence on AI and to stimulate face-to-face interactions, companies need to set limits on interactions and also provide time reminders to users while refining AI algorithms. Technology can be used to stop uncontrolled use and help people use AI rationally. Second, they should make products more connected to real life. Using big data, they can judge how dependent users are on AI. When high dependence is detected, recommend offline interest activities, community exchanges, and real social skill guidance via algorithms, guiding users to extend virtual emotional connections to real life and reduce the risk of social withdrawal [10]. Third, companies should better protect data security. They can use strong encryption to keep user information safe. They should set clear rules for managing data and decide what data can be used. It is necessary to ban the illegal collection and sharing of private user data. This will effectively protect users' data

security. Finally, positive emotions and good values should be added to product design. During conversations, AI companions can help users understand the importance of real relationships. They should guide people to tell the difference between a virtual company and real social life.

4.4 Individual Level: Improving Media Literacy and Real-World Communication Skills

As users of AI companions, individuals are the core actors in resolving excessive dependence. They should proactively improve their media literacy and real-world social abilities and establish rational attitudes toward technology use. First, enhance AI media literacy, actively learn relevant knowledge, clearly understand the technical essence and operating logic of AI companions, distinguish fundamentally between virtual companionship and real emotions, avoid treating AI companions as the sole source of emotional satisfaction, and establish a human-machine relationship cognition of “technology as a tool, reality as the core”. Second, actively cultivate good emotional management and real-world communication abilities, step out of the “comfort zone” of virtual socialization, participate in offline social activities, family communication, and community interaction, practice social expression, empathy, and conflict resolution in real interpersonal interactions, gradually rebuild real social confidence, and enrich real emotional experiences. Third, establish healthy views on emotions, marriage and love, correctly understand the adjustment, conflicts and responsibilities in real intimate relationships, recognize that the value of real emotions lies in mutual tolerance and common growth, actively maintain real family affection, friendship and love, refuse to overindulge in virtual relationships to escape real pressures, and face emotional relationships and social challenges in reality with a positive attitude.

5 Conclusion

Taking dependence on AI companions in the context of generative AI as the research object, this study systematically analyzes its internal and external influencing factors, comprehensively examines its dual impacts on individuals and society, and constructs a collaborative governance path involving the government, regulators, enterprises, and individuals. The study finds that dependence on AI companions results from the combined effect of internal and external factors: internal factors such as loneliness, high costs of real intimate relationships, emotional anxiety and psychological pressure, and the pursuit of emotional value generate strong demand for virtual emotional companionship; external factors such as the technical characteristics of AI companions, the individualistic shift in marriage and love attitudes, and supply gaps in the social support system provide practical conditions for the formation of dependence. These two dimensions align and jointly give rise to this phenomenon.

Dependence on AI companions has obvious dual impacts on individuals and society. It exerts positive social value by providing instant emotional support, assisting individual psychological adjustment, reducing real social conflicts, and improving the public mental health service system. Meanwhile, excessive dependence

leads to the atrophy of real social interaction, data privacy risks, blurred responsibility boundaries, and ethical lag, dilutes real emotional experience, and challenges mainstream values, bringing many practical hidden dangers. Accordingly, addressing dependence on AI companions requires top-level design and value guidance from the government, improved rule systems and strengthened accountability from regulators, optimized product design and real-world orientation from enterprises, and improved media literacy and real-world communication skills from individuals. Through multi-stakeholder collaboration, scientific governance of dependence on AI companions can be achieved, promoting the shift from “excessive dependence” to “human-machine symbiosis”.

Theoretically, this study systematically sorts out the formation mechanism of dependence on AI companions, enriches research in human-machine communication, the sociology of emotion, and AI ethics, and provides a new analytical framework for subsequent research. Meanwhile, the comprehensive analysis of the dual impacts improves the research system of the social impacts of artificial intelligence and offers theoretical support for understanding the evolution of human-machine relations in the digital intelligence era. Practically, the multi-stakeholder governance path provides specific practical guidance for the government in formulating AI industry regulatory policies, enterprises in optimizing AI companion product design, and individuals in using AI companion technology rationally, helping promote the responsible application of AI companion technology and facilitating the dual development of interpersonal harmony and human-machine symbiosis in an intelligent society.

This study explores the causes, impacts, and governance paths of dependence on AI companions based on textual analysis, with certain limitations in research perspective and content. Future research may conduct targeted investigations on the characteristics of dependence on AI companions among different age and demographic groups through empirical surveys and case studies to further verify the rationality of the conclusions. It may also explore new features and problems of dependence on AI companions amid iterative AI technological development, providing more targeted strategies for the precise governance of such dependence.

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