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ARTIFICIAL INTELLIGENCE IN HEALTH-RELATED INFORMATION USE:

A CONSUMER PERSPECTIVE FROM YOUNG ADULTS

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Table of content

1. Background and objectives of the research

Artificial intelligence (AI) has become a key driver of digital transformation, fundamentally reshaping how individuals access information, make decisions, and interact with expert knowledge. In healthcare contexts, AI-driven systems increasingly influence how users interpret symptoms, assess health status, and engage with medical information. Consequently, user attitudes, trust, and acceptance have emerged as central factors determining how these technologies are integrated into everyday health communication (Lim and Schmälzle, 2023; Pavaloiu and Ioanid, 2024).

From a broader socio-economic perspective, AI-based health applications contribute to the transformation of healthcare utilization and information-seeking behavior. Individuals are increasingly acting as active health consumers who interpret and evaluate AI-generated content rather than relying exclusively on traditional medical authority (World Health Organization, 2023; OECD, 2023). This shift reflects wider processes of digital

transformation, characterized by the expansion of data-driven systems and platform-based information access (Vial, 2019). Within this context, generational differences are particularly relevant, as younger cohorts tend to adopt and integrate digital technologies more rapidly into decision-making processes (Pew Research Center, 2019).

Artificial intelligence differs from earlier forms of automation through its adaptive and data-driven nature. AI systems are capable of learning from data, identifying patterns, and generating outputs without explicit programming, supported by machine learning, deep learning, and natural language processing technologies (Russell and Norvig, 2016; Dean et al., 2012; Litjens et al., 2017; Jurafsky and Martin, 2023). These capabilities have enabled the emergence of conversational AI systems, which allow users to interact with technology through natural language (Deng and Lin, 2023).

Among these systems, ChatGPT represents a particularly relevant case due to its widespread accessibility and general-purpose functionality. Unlike clinical decision-support systems, ChatGPT operates as a publicly available conversational interface that users can consult

independently, including for health-related information (Brown et al., 2020; Pavaloiu and Ioanid, 2024). This makes it a suitable subject for examining public attitudes toward AI in health-related contexts.

The rise of conversational AI coincides with changes in health information–seeking behavior. Individuals increasingly rely on online sources to obtain information about symptoms, treatments, and prevention, a phenomenon described as online health information seeking behavior (OHISB) (Jacobs et al., 2017). While digital platforms improve accessibility, they also introduce variability in information quality and interpretability (Diviani et al., 2015). In this context, AI systems are often viewed as tools that can enhance access, personalize information delivery, and support understanding through interactive communication (Lim and Schmälzle, 2023).

Conversational AI systems such as ChatGPT offer several advantages, including continuous availability, the ability to simplify complex medical information, and interactive dialogue through follow-up questions (Benke and Benke, 2018; Nutbeam, 2000; Oh et al., 2021; WHO, 2023). These features may contribute to improved health literacy

and user engagement. However, these benefits are accompanied by important limitations. A key concern is the accuracy of AI-generated content. Large language models generate responses based on statistical patterns rather than validated medical reasoning, which may lead to misinformation or "hallucinated" outputs (Howard et al., 2024). In addition, conversational AI lacks clinical judgment and cannot account for individual patient contexts, limiting its reliability as a decision-support tool (Sallam, 2023). Other risks include automation bias, overreliance, and potential behavioral or psychological effects of AI-generated health information (Lyell and Coiera, 2017; Blease et al., 2023).

These challenges highlight the importance of trust, perceived risk, and ethical considerations. Trust is commonly understood as the willingness to rely on a system despite uncertainty (Mayer et al., 1995), and in the context of AI, it is often influenced by perceived coherence, fluency, and expertise (Lee and See, 2004; Shin, 2021). Perceived risk, including concerns about misinformation, data privacy, and potential harm, further shapes user attitudes (Aven, 2016; Howard et al., 2024).

Ethical issues—such as transparency, accountability, and data protection—play a critical role in determining acceptance (Floridi et al., 2018; Jobin et al., 2019; Sallam, 2023). These factors interact dynamically: higher perceived risk reduces trust, while strong ethical safeguards may enhance it (Glikson and Woolley, 2020).

Empirical evidence shows that attitudes toward AI in healthcare are not uniform but vary across demographic groups. Age, gender, and educational attainment influence digital competence, trust formation, and risk perception (König and Neumayr, 2022; Chi et al., 2024; Kelly et al., 2023). Younger and more digitally experienced users tend to be more open to AI-based systems, whereas older users often express greater caution (Czaja et al., 2006; Longoni et al., 2019; Nadarzynski et al., 2019). Education further shapes acceptance through its impact on digital literacy and the ability to critically evaluate AI-generated information (Neter and Brainin, 2012; Bol et al., 2018; Edelman, 2020; Shin, 2021). In this context, eHealth literacy has emerged as a key determinant of effective engagement with AI-based health communication (Norman and Skinner, 2006; Kim and Xie, 2017).

Despite increasing research activity, important gaps remain. Existing studies often focus on clinical settings or specific user groups and frequently treat users as homogeneous populations. Population-level research on conversational AI is still limited, particularly in Central and Eastern Europe, where cultural and institutional factors may influence attitudes differently (Rodrigues et al., 2024; OECD, 2024). Furthermore, the relative importance of formal education compared to practical digital experience remains insufficiently explored.

Based on these gaps, the primary aim of this dissertation is to examine public attitudes toward the use of ChatGPT for health-related purposes in Hungary, with particular emphasis on the role of demographic characteristics in shaping acceptance, trust, and intention to use AI in healthcare contexts. The study also aims to situate both the literature review and the empirical findings within established technology acceptance frameworks, particularly the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003; Venkatesh et al., 2016).

Focusing on Hungary provides context-specific insights into AI acceptance in a setting characterized by relatively high uncertainty avoidance and strong reliance on institutional healthcare systems (OECD, 2024). In contrast to studies focusing on professionals or clinical applications, this research adopts a population-level perspective, examining how the general public engages with conversational AI tools in everyday health-related situations (Cecconi et al., 2025). Accordingly, the dissertation pursues the following objectives:

Objective 1: to review international literature on AI acceptance in healthcare, with a focus on generative AI and conversational systems.

Objective 2: to describe public attitudes toward ChatGPT in Hungary, including perceived usefulness, ease of use, and willingness to use.

Objective 3: to examine the role of demographic characteristics in shaping acceptance, trust, and behavioral intention.

Objective 4: to analyze trust as a key determinant of AI acceptance in healthcare contexts.

Objective 5: to evaluate the applicability of the UTAUT framework in explaining acceptance of ChatGPT.

Based on the theoretical framework, the study addresses the following research questions: how the general public evaluates the use of ChatGPT for health-related purposes; how demographic characteristics influence acceptance and trust; and to what extent established technology acceptance models explain user behavior in the context of generative AI.

The empirical analysis is guided by the following hypotheses:

H1: Younger individuals demonstrate higher levels of acceptance and trust toward ChatGPT for health-related use than older individuals (Prensky, 2001; Cecconi et al., 2025).

H2: Demographic characteristics significantly influence acceptance of ChatGPT (König and Neumayr, 2022).

H3: Trust is positively associated with perceived usefulness and intention to use (Rodrigues et al., 2024; Tan and Ong, 2024).

H4: Demographic characteristics moderate the relationship between perceived usefulness and behavioral intention, in line with UTAUT (Venkatesh et al., 2003).

H5: Higher educational attainment is associated with more informed and conditional acceptance of ChatGPT (Shin, 2021; Liao et al., 2020).

Overall, the dissertation contributes to the literature by providing empirical evidence on public attitudes toward conversational AI in healthcare and by offering a theoretically grounded analysis of how demographic factors, trust, and technology acceptance interact in shaping user behavior.

2. Research methods and summary of results

In addition to primary data collection, the dissertation applies a multi-source research design in order to interpret attitudes toward ChatGPT in health-related contexts within a broader empirical framework. Besides the main empirical survey, the analysis also incorporates secondary statistical data and a complementary dataset focusing on older age groups. The role of these additional sources is primarily contextual and interpretative. Secondary data collected from Eurostat, Eurobarometer, the Hungarian Central Statistical Office (KSH), and the OECD provide macro-level indicators on digital health information use, digital skills, trust, and age-related differences in digital engagement. Although these sources do not measure attitudes toward ChatGPT directly, they include closely related variables such as online health information seeking, digital literacy, and the use of digital health services, thereby offering a relevant background for interpreting the primary findings.

A complementary empirical dataset was also included in order to extend the analysis beyond the younger respondents dominating the primary sample. This additional survey was conducted in May 2024 among 200 Hungarian individuals aged 40 years and above. Quota sampling ensured representativeness by age, gender, and place of residence. The sample covered respondents between 40 and 82 years of age, with a balanced gender distribution and varied educational backgrounds. The survey focused on five items measuring attitudes toward the health-related use of ChatGPT, conceptually derived from the UTAUT framework and recorded on a four-point forced-choice scale. This complementary dataset is treated as a separate study and serves mainly to support age-related interpretation and triangulation rather than direct comparison with the primary sample.

The primary empirical study constitutes the central methodological component of the dissertation. It was designed to examine attitudes toward ChatGPT in healthcare among younger, digitally active respondents, with particular emphasis on trust, perceived usefulness, behavioral intention, and digital health literacy. Data were

collected through a cross-sectional online survey conducted between November 2024 and May 2025 using Google Forms. Participation was voluntary and anonymous, and all respondents provided informed consent prior to participation. A total of 172 fully completed questionnaires were included in the analysis.

The sample was strongly skewed toward younger respondents, which corresponds to the analytical focus of the study. Most participants belonged to Generation Z: 51.7% were aged 18–21 years and 39.0% were aged 22–28 years. Millennials accounted for 8.7% of the sample, while only one respondent belonged to Generation X. The gender distribution was relatively balanced, with 55.8% female and 44.2% male respondents. Although this sample does not allow population-level generalization, it provides analytically valuable insight into younger cohorts who are among the earliest and most intensive users of conversational AI technologies. This cohort-specific focus is particularly relevant in light of the dissertation's emphasis on age- and generation-related differences in AI acceptance.

The educational profile of the sample was also relatively high, reflecting the digitally active character of the respondent group. Most participants had completed secondary education, and a substantial proportion were already enrolled in or had completed higher education. At the time of data collection, the majority were bachelor's students, while smaller groups were enrolled in master's programmes or doctoral studies. This educational composition provides a suitable basis for examining how formal education and digital health literacy relate to attitudes toward ChatGPT in health-related contexts.

A central methodological strength of the study lies in the theoretically grounded structure of the questionnaire. The survey combined validated instruments with self-developed items explicitly derived from the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). This design ensured that key theoretical constructs such as perceived usefulness, effort expectancy, trust, and behavioral intention were translated into measurable variables.

Two validated scales were incorporated into the questionnaire. The first was the eHealth Literacy Scale (eHEALS), which measures respondents' perceived ability to find, evaluate, and apply online health information. The scale consists of eight items rated on a five-point Likert scale, resulting in total scores between 8 and 40, with higher scores indicating higher perceived digital health literacy. The inclusion of eHEALS made it possible to distinguish between acceptance based on informed evaluation and acceptance potentially shaped by overconfidence or limited critical understanding.

The second validated instrument was the Negative Attitudes toward Robots Scale (NARS), which captures emotional, cognitive, and social dimensions of resistance toward robots and AI. Scores range from 14 to 70, with higher values indicating more negative attitudes. Although no validated Hungarian version was available, a carefully translated version was applied consistently across the sample. This instrument complemented the utility-centered perspective of TAM and UTAUT by accounting for emotional resistance and anxiety that may shape

attitudes toward intelligent systems independently of perceived usefulness.

In addition to the validated scales, the questionnaire included two self-developed item blocks. The first consisted of eight items measuring attitudes toward AI and robotics in healthcare. These items were aligned with the main UTAUT constructs, including performance expectancy, effort expectancy, social influence, and facilitating conditions, while also reflecting selected dimensions captured by NARS. The second block comprised five ChatGPT-specific items designed to assess trust, health information–seeking behavior, and expectations regarding the future role of ChatGPT in healthcare. These items provided the most direct empirical basis for examining attitudes toward conversational AI in health-related contexts.

The analytical strategy combined descriptive statistics, analysis of variance (ANOVA), and linear regression. Descriptive statistics were used to summarize central tendencies and dispersion, while ANOVA tested group differences across selected sociodemographic variables with the significance level set at $p < 0.05$. Linear

regression analysis was applied to explore relationships between trust, perceived usefulness, and behavioral intention, with the coefficient of determination (R^2) used as an indicator of explanatory power. Statistical analyses were conducted using Microsoft Excel and SPSS 16.0.

Overall, the methodological design ensures a close connection between the theoretical framework, the empirical data, and the tested hypotheses. The central emphasis of the dissertation lies on the primary dataset, which provides detailed insight into the attitudes of younger, digitally experienced respondents toward ChatGPT in healthcare. The complementary 40+ sample and the secondary statistical sources primarily serve to contextualize these findings and to support a more nuanced interpretation of age-related and population-level patterns. Although the composition of the primary sample requires caution in generalization, the combined research design offers a coherent and empirically grounded basis for analyzing acceptance, trust, and intention to use conversational AI in health-related contexts.

The dissertation examined public acceptance of ChatGPT in healthcare contexts in Hungary, with particular

attention to demographic differences, trust formation, and the applicability of established technology acceptance models. By combining a primary student-based survey, a representative sample of adults aged 40 and above, and secondary statistical data, the research provided a triangulated interpretation of how conversational AI is perceived in a sensitive and high-stakes domain.

The results indicate that acceptance of ChatGPT in healthcare is not unconditional. Across all data sources, respondents clearly distinguished between ChatGPT as a supportive informational tool and ChatGPT as a substitute for healthcare professionals. While its use was evaluated more positively in explanatory, orienting, and low-risk informational roles, its substitution for doctors was consistently rejected. Acceptance is therefore shaped not only by technological openness, but also by the perceived legitimacy of the role assigned to AI in healthcare.

Trust emerged as a central determinant of acceptance. Respondents' willingness to rely on ChatGPT was more strongly related to trust-oriented evaluations than to competence alone. Although digital health literacy was relatively high in the younger sample, this did not

automatically translate into stronger trust in AI-generated health information. This finding indicates that competence in handling online health information and trust in conversational AI are related but analytically distinct dimensions.

The influence of demographic variables proved to be selective rather than uniform. Education significantly affected digital health literacy and general attitudes toward automation, while it did not directly increase trust in ChatGPT. Gender showed the strongest effect on ChatGPT-related attitudes in the primary dataset, whereas age-related differences appeared more clearly in the representative 40+ sample, particularly in relation to behavioral use and substitution-related questions. These findings suggest that demographic variables influence different dimensions of acceptance in different ways, rather than operating as a single general effect.

The assumption that younger users are inherently more open toward healthcare AI was only partially supported. While younger respondents demonstrated high levels of digital engagement, they did not consistently show higher levels of trust or acceptance. In contrast, respondents in

their early forties often displayed more stable and pragmatic attitudes toward the use of ChatGPT in health-related contexts. This suggests that digital nativity alone is insufficient to explain acceptance, and that life-stage relevance and prior healthcare-related experience play a more important role.

A consistent pattern across datasets is the distinction between perceived societal usefulness and personal trust. Respondents were more willing to acknowledge that ChatGPT could contribute to improving health literacy at a societal level than to rely on it in their own health-related decisions. This gap indicates that users recognize the broader potential of conversational AI while maintaining caution in situations involving personal responsibility and health-related risk.

Overall, the findings suggest that acceptance of ChatGPT in healthcare is conditional, context-dependent, and strongly shaped by trust and role perception. Rather than reflecting a simple positive or negative attitude toward technology, acceptance is structured by clearly defined boundaries regarding appropriate use.

Table 1: Overview of hypotheses and main results

Hypothesis	Focus	Main result	Conclusion
H1	Younger users show higher acceptance and trust	Partly confirmed; clearer age differences appeared mainly in the 40+ sample	Younger age alone does not guarantee stronger acceptance
H2	Demographic factors influence acceptance	Confirmed; effects were selective and differed by construct	Demographic influence is not uniform
H3	Trust is positively related to usefulness and intention to use	Confirmed with nuance; trust-related attitudes were more important than competence alone	Trust is a key mechanism of acceptance
H4	Demographics moderate the usefulness-intention relationship	Partly confirmed; moderation appeared mainly in ChatGPT-specific outcomes	UTAUT is relevant, but needs extension
H5	Higher education leads to more informed, conditional acceptance	Partly confirmed; education improved competence, but not direct trust in ChatGPT	Education supports critical openness, not automatic trust

Methodological note: Hypotheses were tested using group comparisons (t-tests, ANOVA), regression analyses, and triangulated comparison across the student sample, the 40+ representative sample, and secondary datasets (Eurostat; Eurobarometer; OECD).

3. New scientific results (theses)

The new scientific results of the dissertation can be summarized in the following theses:

T1. Acceptance of ChatGPT in healthcare is conditional and role-specific rather than unconditional. Users are more willing to accept ChatGPT as a supportive informational tool than as a substitute for healthcare professionals.

T2. Trust is an independent and central determinant of conversational AI acceptance in healthcare. Acceptance cannot be explained sufficiently by usefulness, digital competence, or technical accessibility alone.

T3. The effect of perceived usefulness on intention to use is constrained by trust and perceived risk. Even when ChatGPT is regarded as useful, low trust limits willingness to rely on it in health-related contexts.

T4. Digital health literacy and trust in ChatGPT are analytically distinct constructs. Higher competence in online health information seeking does not automatically imply greater trust in AI-generated health information.

T5. Demographic effects on AI acceptance are selective and construct-specific. Different demographic variables influence different dimensions of acceptance, rather than forming one uniform explanatory mechanism.

T6. Younger users do not automatically show the highest acceptance of healthcare AI. Digital nativity alone is insufficient to explain trust in ChatGPT; life-stage relevance and healthcare-related experience are more important.

T7. Acceptance of healthcare AI is structured by the distinction between personal trust and perceived societal usefulness. Respondents acknowledge the broader value of ChatGPT more readily than they trust it in their own health-related decision-making.

T8. Traditional technology acceptance models require a trust- and role-sensitive extension in the case of generative AI in healthcare. TAM and UTAUT remain relevant, but they provide a more adequate explanation only when complemented by trust, perceived risk, and role perception.

4. Utalization of results

The results of the dissertation can be utilized at practical, theoretical, and policy levels.

From a practical perspective, the findings support the integration of ChatGPT and similar conversational AI tools into healthcare primarily in supplementary roles, such as patient education, clarification of medical terminology, preparation for consultations, and general health information support. The results indicate that users are more willing to accept AI when it is positioned as an assistive rather than substitutive tool. This has direct relevance for healthcare providers, developers, and institutions designing AI-supported patient communication systems.

From a theoretical perspective, the dissertation contributes to the literature on technology acceptance by demonstrating that classical models such as TAM and UTAUT are not sufficient on their own to explain acceptance of generative AI in healthcare. The findings support a trust- and role-sensitive extension of these

frameworks, in which trust, perceived risk, and role perception are treated as central explanatory constructs.

From a policy perspective, the results underline the importance of clear regulation, transparency, and human oversight in the implementation of AI in healthcare. Since trust and perceived legitimacy emerged as central factors, policymakers should ensure that AI-supported health tools are introduced within clear ethical, legal, and professional boundaries.

The dissertation also has relevance for future research. The results suggest that further studies should examine AI acceptance in broader and more diverse population groups, apply more advanced multivariate models, and investigate how trust in conversational AI develops over time as both technology and regulatory environments evolve.

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Mariann Békésy – Academic Profile

Mariann Békésy is a doctoral candidate at Óbuda University, where her research focuses on innovation management, with particular emphasis on technology transfer and the socio-economic implications of emerging digital technologies. She completed her comprehensive doctoral examination in 2023 and is expected to obtain her PhD degree in 2026.

She holds an MSc degree in Economic Development from the University of Glasgow, as well as degrees in International Relations and in Economics and Politics, reflecting a multidisciplinary academic background.

She is actively involved in higher education as a lecturer at Óbuda University and Wekerle Sándor Inernational University, teaching courses in management, economics, and innovation in both Hungarian and English.

In addition to her academic activities, she is currently affiliated with the Hungarian Diplomatic Academy Ltd. (MDA), where she contributes to research, analysis, and communication activities related to international relations and training programmes. Her previous professional

experience includes positions in Hungarian public administration, with responsibilities in international economic relations, policy analysis, and project management.

Her scientific publications are indexed in the Hungarian Scientific Bibliography (MTMT). Selected publications include:

- Perception of AI-assisted health communication via ChatGPT in Hungary
- Attitude towards Health-related Usage of ChatGPT in Hungary