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INVISIBLE HOUSEHOLD LABOUR AND DIGITAL SOLUTIONS: GENDER DIVISIONS IN MENTAL LABOUR AND THE ROLE OF ARTIFICIAL INTELLIGENCE

Abstract: This study examines whether artificial intelligence (AI) tools can alleviate mental labour of employed mothers in Croatian society, predominantly traditional in terms of gender norms, and whether this technology reinforce or challenge existing gender inequalities. The research is anchored in multi-phase exploratory sequential mixed-methods design: phase one includes semi-structured interviews with AI experts to examine gendered assumptions in technology; phase two draws on a survey of 369 employed mothers to grasp perceptions and experiences with digital tools in household management; the final phase involves a qualitative quasi-experiment in which five highly educated employed mothers used ChatGPT for two weeks to assist with domestic tasks. Findings indicate that while AI supports organizing daily tasks, especially planning, scheduling, and tracking, it rarely redistributes mental labour within households. Participants use AI mainly to

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ease their own workload, not to shift task-sharing. Expert interviews revealed that AI design remains shaped by exclusionary, male-dominated structures, with some experts expressing biologically essentialist views that reinforce gender inequality. Survey results show that although most mothers were digitally literate and open to tech solutions, their usage has limited systemic impact. The quasi-experiment highlighted a gap between personal efficiency gains and persistent structural inequality, with AI seen more as a replicating tool than a genuinely transformative force. This study concludes that AI can support individual women in managing invisible domestic responsibilities, but without concurrent shifts in social norms and policy, its emancipatory potential remains constrained. It calls for feminist-informed, participatory design approaches that prioritize care, inclusion, and the redistribution of responsibility in both technological and social systems.

Keywords: artificial intelligence, mental labour, gender inequality, domestic work, feminist technology studies

Nevidljivi kućanski rad i digitalna rješenja: rodne podjele u mentalnom radu i uloga umjetne inteligencije

Apstrakt: Ovaj rad istražuje mogu li alati umjetne inteligencije (UI) ublažiti mentalni rad zaposlenih majki u hrvatskom društvu, koje je i dalje u velikoj mjeri obilježeno tradicionalnim rodnim normama, te pojačavaju li ove tehnologije postojeće rodne nejednakosti ili ih dovode u pitanje. Istraživanje se temelji na višefaznom eksplorativnom sekvencijalnom mješovitom metodološkom dizajnu: prva faza uključuje polustrukturirane intervju s UI stručnjacima s ciljem ispitivanja rodnih pretpostavki u razvoju tehnologije; druga faza obuhvaća anketu s 369 zaposlenih majki kako bi se utvrdile njihove percepcije i iskustva s digitalnim alatima u organizaciji kućanstva; završna faza uključuje kvalitativni kvazi-eksperiment u kojem je pet visokoobrazovanih zaposlenih majki koristilo ChatGPT tijekom dva tjedna za podršku u obavljanju mentalnih kućanskih poslova. Rezultati pokazuju da UI može olakšati organizaciju svakodnevnih poslova, posebno u planiranju, rasporedu i praćenju obveza, ali rijetko dolazi do preraspodjele mentalnog rada unutar kućanstva. Sudionice uglavnom koriste UI kako bi olakšale vlastiti rad, a ne kako bi promijenile obrasce dijeljenja zadataka. Intervjui s ekspertima otkrivaju da dizajn UI-ja i dalje oblikuju isključujuće, muškim iskustvima dominantne strukture, pri čemu neki stručnjaci izražavaju biologističke stavove koji dodatno učvršćuju rodne nejednakosti. Rezultati ankete pokazuju da su majke u velikoj mjeri digitalno pismene i otvorene prema tehnološkim rješenjima, no njihova upotreba digitalnih alata ima ograničen strukturni doseg. Kvazi-eksperiment dodatno ističe jaz između osobnog povećanja učinkovitosti i trajne strukturne nejednakosti: UI se percipira više kao sredstvo ponavljanja postojećih

obrazaca, nego kao istinski transformativan alat. Zaključno, iako UI može pružiti podršku pojedinačnim korisnicama u nošenju s nevidljivim obiteljskim obvezama, bez paralelnih promjena u društvenim normama i javnim politikama, njezin emancipacijski potencijal ostaje ograničen. Rad zagovara feministički informirano, participativno oblikovanje tehnologije koje stavlja u središte brigu, uključenost i pravednu raspodjelu odgovornosti u tehnološkim i društvenim sustavima.

Ključne reči: umjetna inteligencija, mentalni rad, rodne nejednakosti, kućanski rad, feminističke tehnološke studije

Introduction

Despite the promises of progress and convenience, digital technologies often replicate and reinforce existing inequalities, particularly in domains traditionally considered private or gendered. The rapid advancement of artificial intelligence (AI) and digital technologies has significantly transformed various spheres of social life, yet its impact on the domestic and private realm remains underexplored. In particular, questions about the effects of AI on the distribution of mental and emotional labour within households, especially for employed mothers, remain unfolded. These forms of labour (e.g. anticipating needs, organizing tasks, and managing family logistics) are often invisible, unpaid, and predominantly performed by women (Ciciolla & Luthar, 2019; Dean et al., 2022; Klasnić & Degač, 2024). The domestic sphere remains a critical spot for examining modalities in which artificial intelligence interacts with, sustains, or challenges gendered norms. Although there is a growing body of literature on the impact of AI and automation on employment and political systems (Acemoglu & Restrepo, 2020; Dong & Guo, 2025; Boyd & Holton, 2017; Schippers, 2020), including a few sociological accounts about this general topic in Croatian context (Švarc, 2021; Žažar et al., 2022), the domain of private life and unpaid household labour remains under-researched. This paper investigates whether AI can genuinely alleviate women's mental workload or whether it merely reinforce existing gender inequalities in the socio-cultural context of Croatian society, within which traditional gender norms remain deeply embedded in everyday life (Galić, 2011; Klasnić, 2017; Klasnić & Degač, 2024).

Theoretical Framework: Feminist Perspectives on Technology and AI

Technologies do not emerge in a vacuum, but are rather embedded within specific social structures that reflect and reproduce existing norms, power relations, and exclusions. Feminist theorists have long em-

phasized that technology is not a neutral tool, but an outcome of socio-political relations, as well as the cultural and institutional environments that form both its design and usage. Feminist critiques of technology have persistently called attention to the androcentric assumptions embedded in design processes and epistemologies of technological systems. Wajcman (2004) argues that technological artefacts are imbued with the values and social positions of persons creating them, often reproducing masculine norms of efficiency, control, and abstraction. This critique intersects with broader feminist standpoint epistemologies (Harding, 1991), pointing out to the lived experiences of marginalized users – such as employed mothers – to reveal the partiality of dominant technological narratives. In the context of AI, this means scrutinizing not only what problems technology is designed to solve, but whose problems are made visible in the first place.

Similarly, Noble (2018) highlights the modalities through which algorithmic systems perpetuate racial and gender stereotypes, coining the term “algorithms of oppression”. These algorithmic biases are not accidental, but are rooted in broader societal hierarchies, thereby reinforcing rather than disrupting discrimination. Noble’s work draws attention to a critical question for this study: Who designs AI tools, for what purpose, and from whose perspective?

In the domestic sphere artificial intelligence is increasingly presented as a potential solution to the burdens of household management. However, as Altman and Humberd (2023) argue, the promise of AI often remains superficial. Without genuine redistribution of household responsibilities, AI risks becoming a form of “technological cosmetic feminism”, a veneer of innovation that masks persistent gender inequalities. Their work underscores the techno-optimistic perspective that AI might reduce the mental burden of managing household tasks, especially among women in the U.S. context. They distinguish between first-order effects: direct benefits such as time-saving for users of these tools, and second-order effects, where other household members may indirectly benefit. Nevertheless, these benefits do not necessarily lead to a more just distribution of labour.

The notion of mental labour is central to understanding how household responsibilities are gendered. As shown by Dean et al. (2022), Daminger (2019), and Ciciolla and Luthar (2019), mental labour includes the cognitive aspects of managing household life, such as planning, organizing, anticipating needs, as well as the emotional labour that accompanies these tasks. Mental labour is typically invisible, continuous, and socially undervalued. The recent qualitative study by Klasnić and Degač (2024) in Croatian households shows that mental labour is not only largely performed by women but also deeply embedded in traditional gender expect-

tations and primary socialization. The emotional dimension, often tied to feelings of responsibility, worry, and exhaustion, is a core component of mental labour, yet frequently remains unacknowledged both in research and in domestic life (Hochschild & Machung 1989; Hochschild, 2003).

Different conceptualizations highlight various domains of mental labour. Daminger (2019) identifies four key cognitive processes: anticipating needs, identifying options, making decisions, and monitoring outcomes. Others, like Robertson et al. (2019), include long-term strategizing, meta-parenting, and managerial thinking. The study by Klasnić and Degač (2024) further differentiates between short-term and long-term mental tasks and introduces a distinction between mental labour as activity and mental load as its emotional consequence. Authors highlight that women often internalize mental labour as a normative obligation and source of maternal or household competence, even when it leads to overload and strain.

Although AI systems may assist with organisational components such as reminders, schedules, or lists, they neither address the fundamental issue of responsibility nor do they disrupt the symbolic and emotional structures that assign this responsibility to women. Feminist analyses conducted by Çırtlık and Coşar (2024) and Manasi et al. (2022) demonstrate that AI tools tend to reflect and reproduce gendered assumptions built into their design, data, and usage contexts. As such, they risk reinforcing rather than challenging unequal divisions of household labour.

Although there is a growing body of literature on the impact of AI and automation on employment and political systems (Acemoglu & Restrepo, 2020; Boyd & Holton, 2017; Dong & Guo, 2025; Schippers, 2020), and a very few sociological accounts about this general topic in Croatian context (Švarc, 2021; Žažar et al., 2022), the domain of private life and unpaid household labour remains under-researched. As Altman and Humbert (2023) note, the unequal burden of domestic responsibilities carried by women continues to be overlooked in mainstream technological discourse. The potential of AI to offer support in this domain is significant, but only if it is coupled with a critical understanding of its socio-cultural embeddedness. Vendramin (2024) argues for a feminist epistemology that recognizes the need for interdisciplinary and gender-aware approaches to AI development. Such an approach would challenge existing paradigms by ensuring that technological tools truly respond to the needs of diverse users, particularly those traditionally excluded from innovation processes. It also calls for greater attention to the social and relational dimensions of AI usage, particularly in the domain of unpaid domestic work.

Our theoretical framework integrates feminist critiques of technology and AI to explore how digital tools intersect with the gendered realities of household labour. It challenges techno-utopian narratives by highlighting the embeddedness of AI in existing structures of inequality and emphasises the importance of inclusive, reflexive, and justice-oriented approaches to technological design and implementation.

Methodology

This study inquires whether AI tools can alleviate mental labour, perpetuate *status quo* or rather reinforce gender inequalities in household work instead, with a focus on the Croatian context. Two research questions guide the analysis: (1) Can AI tools reduce the mental burden on women or do they reinforce existing inequalities? (2) How socio-cultural conditions of Croatian society shape the usage and impact of these tools?

A three-phase exploratory sequential mixed-methods design was employed. The first phase included five semi-structured interviews with Croatian AI experts (four women and one man), selected through purposive sampling. As this particular field is a male-dominated, women were intentionally prioritised to reflect underrepresented perspectives. Interviews were conducted from May 2024 to February 2025 with a focus on themes such as gender bias in AI design, exclusionary cultures, and barriers to inclusion.

In the second phase, an online survey was administered to a convenience sample of 369 employed mothers, collected via Facebook and WhatsApp in November and December 2024. The survey used a snowball sampling method, initiated through the researchers' networks and supported by influencers. The sample was largely urban, digitally literate, and socio-economically stable. Most respondents were highly educated (89%), lived with a partner (90%), had at least one child under the age of 18 (85%), were from larger urban areas (79%) and reported average or above-average income (94%). The average respondent age was 43 years ($SD = 7.1$), with an average age of the youngest child being 9.5 years ($SD = 7.4$).

The final phase was a qualitative quasi-experiment conducted in January and February 2025. Five employed mothers used ChatGPT for two weeks to support their own household organisation. All participants were highly educated, living with a partner and had at least one child under the age of 16. They were purposely selected to represent varying levels of digital literacy and openness to technology. A preliminary questionnaire helped in ensuring diversity of a household task division, from tradition-

al to egalitarian models. After a focus group session introducing Chat-GPT, participants used this tool on a daily basis, and follow-up interviews grasped their experiences, perceived benefits, challenges, and reflections on mental labour redistribution.

Results

The presentation of findings begins with the analysis of semi-structured interviews conducted with AI experts, which constituted the first phase of the research. These interviews aimed to explore how those directly involved in the development and application of artificial intelligence technologies perceive gender, inclusion, and responsibility within their field. Particular attention to the questions how experts interpret existing gender disparities, what assumptions inform their views on women's participation in AI, and how they understand the social implications of the technologies they help shape, was paid. The subsequent analysis of collected data identified several recurring themes, which mirror both structural dynamics within the tech sector and broader cultural narratives about gender, technology, and progress.

Structural barriers for women were a recurring theme in the interviews with AI experts, highlighting how the development of AI technologies in Croatia, as elsewhere, takes place within closed, male-dominated professional networks that restrict access and marginalize women. These networks are exclusive both in terms of representation and in the ways knowledge is shared and decisions are made, often relying on informal and closed channels that tend to exclude women. One female interviewee articulated this clearly: *"Gender biases in technology and access to power and information often place women at a disadvantage."* She emphasized that the core issue goes beyond numbers or representation, pointing instead to deeply rooted structural inequalities that restrict access to information, limit opportunities for advancement and generally participation in shaping technology. Another AI expert further specified: *"The problem lies in access to resources and information, especially through exclusive channels that are often inaccessible to women."* This points to the fact that professional progress and inclusion in the AI sector are often not solely based on formal qualifications, but on access to informal resources (such as mentoring, project invitations, and insider knowledge) circulating within privileged male-dominated circles. In this context, women in AI sector encounter both individual challenges and systemic exclusion, rooted in the structural features of professional communities. These structural barriers limit women's visibility and influence while also shaping the broader di-

rection of technological development in ways that often overlook women's specific needs and perspectives.

Biological determinism and the normalization of differences emerged as a concerning theme in the interviews, revealing how some AI experts justify gender inequalities by appealing to essentialist ideas about male and female nature. Such framing shifts the focus away from structural barriers and instead naturalizes inequality, presenting it as an inevitable outcome of biological differences rather than a product of social systems or institutional design. One female interviewee stated: *"Women simply have a different type of brain... They don't like risk – it's biology."* Such claims reduce complex patterns of underrepresentation to supposedly innate characteristics, thereby undermining the need for institutional change or inclusive practices. Attributing women's lower participation in AI or tech-related fields to risk aversion or brain structure reinforces gender stereotypes and removes social responsibility from institutions and individuals. Another participant remarked: *"Women are more oriented toward relationships and people, while men are oriented toward technology."* This binary logic reinforces traditional gender roles and helps sustain the idea that men are naturally better suited to technical domains, while women are inherently more attuned to caregiving or communicative roles. Such beliefs may seem benign or even complimentary, but in practice they justify existing imbalances in opportunity, participation, and recognition. By presenting gender inequalities as the result of biology rather than social inequality, these views contribute to the maintenance of the status quo in AI development. They shift responsibility away from systems of exclusion, ultimately hindering progress toward more inclusive and socially responsive technological design. This becomes particularly concerning when such views are expressed by AI experts themselves, individuals who directly influence the design, implementation and promotion of emerging technologies, since their assumptions shape the values embedded in technological systems and the priorities that guide future innovation.

The theme individualisation of barriers revealed a polarization in gender attitudes among experts. While some participants expressed gender-aware and constructivist views, acknowledging that inequalities are socially produced and require active intervention, others adopted more conservative or biologically essentialist positions. These views reinforced a narrative of personal responsibility and diminished the perceived legitimacy of structural critique. Some AI experts tended to overlook broader systemic inequalities and placed responsibility on women for their underrepresentation instead. Gender disparities were thus reframed as the result of individual failings, particularly women's supposed inability or unwill-

ingness to “seize opportunities” that are assumed to be equally available to all. One interviewee captured this shift in responsibility while reflecting on the economic potential of AI and the concentration of wealth it already begins to generate. Speaking about how the AI sector is rapidly becoming one of the most lucrative fields, with the prospect of creating a new class of super-wealthy individuals, he said: *“There still won’t be women. They’ll say: ‘we have lower pay, fewer rights...’ But now it’s your fault.”* His quote illustrates how the discourse moves from acknowledging systemic gender inequality to blaming women for their own marginalization, suggesting that even in emerging and transformative sectors such as AI, where financial stakes are high and early participation may shape future influence, women are held accountable for their underrepresentation, despite enduring structural obstacles. By framing the absence of women in AI as a matter of missed personal opportunity, the expert dismisses the cumulative effects of exclusion and inequality, reinforcing the idea that the system is now fair and that any failure to thrive within it lies on individual women. This rhetorical move obscures institutional responsibility and makes it more difficult to justify targeted interventions or affirmative measures to address inequality in the AI sector. This is especially concerning given that such views are held by individuals in expert and often influential positions within the development of emerging technologies. When those leading innovations lack awareness of structural gender barriers, or even worse, deny their existence, there is obviously a severe risk of reinforcement of existing inequalities. Entrusting technological leadership to actors who individualize inequality and normalize exclusion undermines the potential for AI to serve as a socially transformative force. Instead, it risks entrenching historical injustices in new, algorithmic forms.

This logic ignores the structural and cultural barriers previously discussed, such as exclusion from information networks or biased workplace norms, and it also serves to delegitimize feminist critiques by suggesting that the era of inequality has passed and that any remaining inequalities are the result of individual failure rather than structural conditions. The result is a double burden for women: they remain disadvantaged, yet are expected to navigate those disadvantages without organisational and institutional support or recognition of the broader context.

Scepticism toward technological optimism was expressed by several interviewees, who questioned the widely spread belief that AI will inevitably bring broad societal benefits. They emphasized that technological development is not inherently progressive or inclusive, but shaped by market logic which tends to prioritize profit over social needs, especially those of marginalized groups such as women. As one expert put it: *“Some think AI*

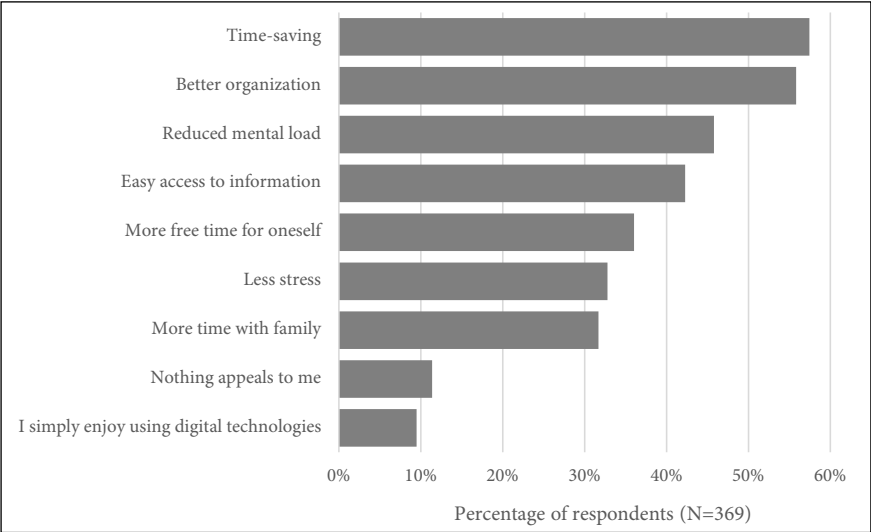
will solve everything – it won't. Technology has its limits." She thus expresses a cautious stance toward over-reliance on technological solutions, particularly when these are celebrated without addressing the structural issues they are meant to alleviate. Her critique is not directed at technology per se, but at the uncritical optimism that surrounds it – a narrative that often blurs whose problems are being solved and whose are ignored.

Another expert was even more direct in naming the economic logic that drives technological priorities: *"Problems that can be monetized are solved, not real problems."* She pointed to a systemic misalignment between the incentives that guide AI development and the lived realities of many women. Needs related to care work, domestic labour, mental load, or everyday lack of time often fall outside the scope of profitable innovation, leaving them unaddressed despite their social significance. Without deliberate social and ethical frameworks, technological advances are unlikely to improve gender equity or redistribute power. On the contrary, they may reinforce existing inequalities if developed in ways that ignore or commodify users' needs. The scepticism voiced by interviewees thus serves as an important counterpoint to dominant narratives of AI as a universal solution, and as a reminder that justice-oriented design of technology must begin with the needs of those who are most often excluded.

The second phase of the research draws on an online survey with employed mothers, focusing on their everyday use of digital tools and perceptions of their usefulness in balancing work and family life. Building on insights from the expert interviews, the survey provides a broader view of how women engage with technology in the context of care, domestic responsibilities, and time management. The majority of employed mothers in our sample rated their digital skills as high or very high, with 74% expressing confidence in their digital competence. A strong openness to innovation was also evident, as 85% of respondents reported being moderately to extremely inclined to try new digital technologies. Furthermore, 64% indicated a moderate to very high willingness to use AI tools to support them in managing household and family responsibilities, suggesting a generally positive attitude toward the integration of such technologies in their everyday lives.

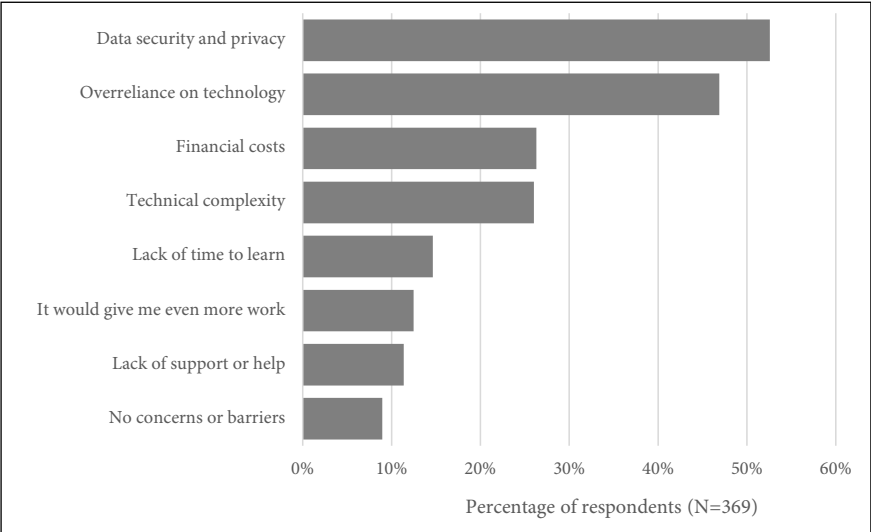
Since the survey focused specifically on tasks related to mental labour, respondents were asked about their current use of digital technologies in this domain. The three most common uses reported were tracking medical appointments (61.5%), planning travel (57.2%), and setting reminders for important upcoming events (52.3%). In terms of openness to adopting AI tools for similar purposes, participants expressed the highest readiness for using them to track household supply needs (58%), create shopping lists (54.2%), and plan travel (52.6%).

Figure 1. Perceived advantages of using AI tools in the private sphere



When asked about the perceived advantages of using AI tools in the private sphere (Figure 1), respondents most frequently cited time-saving (57.5%) and improved organization (55.8%) as key benefits. A substantial portion also mentioned reduced mental burden (45.8%) and easier access to relevant information (42.3%). Other notable responses included having more free time for oneself (36.0%), experiencing less stress (32.8%), and spending more time with family (31.7%).

Figure 2. Perceived barriers of using AI tools in the private sphere



In terms of perceived barriers (Figure 2), concerns about data security and privacy were most prominent, with 52.6% of participants identifying this as a major issue. Nearly half (46.9%) expressed worry about becoming overly reliant on technology. Additional obstacles included financial costs (26.3%), technical complexity (26.0%), and lack of time to learn how to use such tools (14.6%).

Among women in our sample, who were predominantly highly educated and digitally literate, the findings indicate that digital technologies currently offer some support in balancing work and family responsibilities, though the level of perceived benefit varies. While 29% of respondents stated that these tools help them a lot or very much, 35% found them moderately helpful, and 36% reported little to no support. A similar distribution appears in responses regarding the organization of household and family tasks: 29% reported that digital tools help quite a lot or very much, 28% said they help moderately, and 43% believed they help little or not at all.

When asked about the potential of AI tools specifically, employed mothers expressed a cautious optimism. While 29% believed AI could help significantly or very much in organizing household and family responsibilities, 38% thought it could help moderately, and 25% were sceptical, indicating it would help little or not at all. Despite these reservations, a majority (68%) either mostly or completely agreed that AI tools are likely to become an inevitable and integral part of digital technology use in the near future.

A notable finding is the significant correlation between perceived helpfulness of digital tools in managing family tasks and satisfaction with work-life balance. Women who found these tools useful reported slightly higher satisfaction ($r = 0.156$; $p = 0.003$), suggesting even limited tech support may enhance well-being.

To further explore the use of AI in everyday household management, a qualitative quasi-experiment was conducted focusing specifically on the use of ChatGPT. This particular AI tool was selected based on survey findings, which showed that although most surveyed employed mothers reported limited engagement with AI, ChatGPT was the only tool mentioned by name suggesting it was the most recognizable and accessible form of AI. From the interviews conducted after the two-week trial, two key themes were selected for this analysis because they most clearly reflect the tensions between technological potential and the persistence of traditional gendered dynamics that this study seeks to unpack.

AI as a tool for knowledge redistribution emerged as a recurring theme in participants' reflections, highlighting both the potential and the limitations of integrating AI into everyday household practices. Several mothers described how AI tools, such as ChatGPT, made practical knowl-

edge more accessible, not only to themselves but also to their partners. This shift reduced dependence on the traditional “knower” in the household, who is often the woman, by offering quick access to information about tasks that were previously gendered in their allocation. One participant noted humorously: *“Men now have access to some things they used to ask us about, like how to start the washing machine (laughs)... We have access to things like how to fix the toaster...”*. Her remark highlights how AI can neutralize informal knowledge asymmetries in the household, potentially encouraging more shared responsibility. Another added: *“A lot of the things we as women know could maybe become more accessible this way.”* Here, AI is framed as a tool for making often invisible or embodied “women’s knowledge”, ranging from routines to practical hacks more broadly available. However, participants were cautious about overstating the impact of this shift. While AI may facilitate access to knowledge, it does not guarantee behavioural change or actual redistribution of tasks. Many women used AI primarily to streamline their own responsibilities rather than to initiate a renegotiation of roles with their partners. In this sense, AI served more as a replicating mechanism than a transformative force, helping them manage the load rather than challenge its distribution.

Scepticism toward deeper transformation of gender relations characterized all of participants’ reflections on their two-week use of ChatGPT in the household. While mothers generally expressed high satisfaction with the tool, frequently noting that it saved them time and eased their daily planning, this increased efficiency did not translate into a redistribution of mental labour within the household. The responsibility for organizing and managing family life remained largely in their hands. Although participants recognized the potential of AI tools, they were equally aware of the persistence of traditional gender roles, which technology alone cannot undo. As one participant put it: *“Nothing has changed. I think it will be a long time before a man stops being a man, and a woman stops being a woman.”* Her quote captures a broader sense of resignation or realism: while AI may assist with tasks, it does not automatically lead to changes in the social norms, expectations, or power dynamics that shape who performs and manages domestic work.

Discussion

This study examined whether AI tools can reduce the burden of mental labour for women or instead reinforce existing inequalities, and how the socio-cultural context in Croatia shapes the adoption and effects of these technologies, particularly for highly educated employed mothers.

Findings from the expert interviews pointed to a technological field shaped by exclusionary practices and gender-blind assumptions. Development processes in AI are embedded within male-dominated networks, with little attention given to women's needs or care-related applications. Some experts adopted biologically essentialist views that normalize inequality, while others individualised structural problems by blaming women for not advancing. Overall, there was limited recognition of how technology might reinforce or transform social hierarchies. The survey with employed mothers showed that participants primarily used digital tools for routine organizational tasks like planning appointments, tracking shopping needs, or managing reminders. Many expressed openness to using AI for household management, and those already doing so reported slightly higher satisfaction with their work-life balance. However, the perceived impact remained low or in best case moderate. Most mothers saw AI as a way to better handle their own responsibilities rather than to allocate them across household members. The quasi-experiment with ChatGPT further confirmed this. While participants appreciated the tool's efficiency and found it useful for time-saving and task coordination, they did not report any redistribution of cognitive labour within their households. Two themes stood out: first, AI offered a mechanism for knowledge redistribution, giving both women and men access to information traditionally gendered, but this rarely led to deeper change. Second, participants were sceptical about AI's ability to transform entrenched gender norms, noting that real change would require broader cultural and institutional support.

In response to this study's first research question: *Can AI tools reduce the burden of mental labour for women, or do they reinforce existing inequalities?*, findings suggest that AI can ease the mental workload of employed mothers, especially through tools that support planning, scheduling, and daily organization. Many women were open to using such tools, and those already doing so reported slight improvements in work-life balance. AI provides practical, individual relief. However, redistribution of responsibility remains rare. Household roles and task division largely remained unchanged, indicating that AI supports coping rather than transformation. Without broader shifts in norms and expectations, AI risks reinforcing existing gender divisions by making women's invisible work more manageable, but still solely theirs.

In response to our second research question: *How socio-economic and cultural contexts in Croatia shape the adoption and impact of AI tools, particularly for employed mothers?* our data show that digitally literate and tech-open mothers primarily used AI as personal support. Broader sys-

temic effects were limited by persistent traditional gender norms that still assign caregiving and household tasks to women. As a result, AI served to streamline individual effort rather than renegotiate household dynamics. Expert interviews confirmed this, revealing that AI design and implementation rarely reflect gender-sensitive or care-oriented perspectives. These findings echo Wajcman's (2004) argument that technology often reinforces rather than disrupts existing hierarchies. Despite participants' openness, AI functioned mainly as a coping mechanism for the double burden of paid and unpaid work, supporting feminist critiques that without structural change, individual-level technological adaptation risks concealing rather than addressing inequality.

Taken together, our findings reveal a critical disconnect between technological innovation and the social realities of users. AI tools show potential to ease cognitive burdens, but their transformative impact is constrained by the structural and cultural conditions in which they are embedded. To move beyond mere efficiency gains, it is essential to promote inclusive and participatory design processes that take seriously the lived experiences and needs of women, especially those managing multiple roles in both paid and unpaid domains. Without such shifts, AI will likely continue to optimize inequality rather than disrupt it.

This study has several limitations that should be acknowledged. First, the survey was conducted on a convenience sample of employed mothers in Croatia who were predominantly highly educated and reported average or above-average material status. As such, the findings cannot be generalized to the broader population of mothers in Croatia, particularly those with lower levels of education, lower income, or those living in rural areas. Future research should aim to include a more diverse sample, incorporating women from different socio-economic backgrounds and geographic regions, in order to better capture the variety of experiences and needs related to digital and AI tool usage in the household.

Second, the quasi-experimental component involving the use of ChatGPT was relatively short in duration, spanning only two weeks. This limited time frame may have been insufficient to allow for meaningful changes in domestic routines or the redistribution of mental labour. Moreover, male partners were not actively involved in this part of the study, which likely constrained the potential for shifts in household dynamics. To address this, future experimental research should be designed to include both partners in a household and be conducted over a longer period of time, enabling more sustained engagement with AI tools and a more accurate assessment of their capacity to influence gendered divisions of labour.

In addition, the study focused primarily on self-reported perceptions and attitudes, which, while valuable, may not fully capture the complexity of actual behavioural changes. Longitudinal and ethnographic approaches could provide deeper insight into how AI tools are adopted and negotiated within everyday family life. Finally, as technological developments continue to evolve rapidly, future research should remain attentive to changes in both the design of AI tools and their sociotechnical context, particularly with regard to privacy, data ethics, and user agency.

Conclusion

Artificial intelligence has the capacity to support women in managing mental labour, offering practical tools for scheduling, planning, and household logistics. However, without corresponding changes in social norms and institutional practices, these tools function primarily as individual coping mechanisms rather than catalysts for structural change. The persistence of traditional gender roles, combined with the exclusion of women from technology development, limits the broader emancipatory potential of AI. In this study, AI was not experienced as a transformative force, but rather as a useful yet limited aid, more a support mechanism than a driver of meaningful change. Without wider societal shifts, including policy interventions and cultural redefinitions of care and responsibility, participants expressed little confidence that AI alone could significantly disrupt gendered divisions of labour.

To move beyond superficial solutions, it is essential to integrate feminist principles into AI design and policy. This includes promoting inclusive participation, ensuring algorithmic transparency, critically examining market-driven logic, and advocating for the redistribution of domestic labour. AI can contribute to gender equality, but only as part of a comprehensive strategy that addresses both technological and societal dimensions of inequality. If artificial intelligence is to contribute meaningfully to gender justice, it must move beyond optimizing women's adaptability and begin to transform the conditions that make such adaptation necessary.

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