

The Algorithmic Ally: AI as a Catalyst for Work–Life Balance Among Working Women

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Abstract-- Working women continue to shoulder a disproportionate share of unpaid domestic and care labour even as their participation in paid employment rises, a pattern long described in gender-economics literature as the “second shift.” This paper examines whether, and under what conditions, artificial intelligence tools can meaningfully ease this dual burden and improve work–life balance for working women. Drawing on nationally representative time-use data from India’s National Statistical Office, global labour statistics from the International Labour Organization, and recent workplace-AI adoption surveys from Deloitte and Microsoft, the paper develops a four-role conceptual framework – the *Timekeeper*, the *Ghostwriter*, the *Quiet Guardian*, and the *Household Strategist* – to describe how AI systems intervene at specific points of a working woman’s day. The analysis shows that while AI adoption is delivering measurable time and stress relief for a subset of users, its benefits are unevenly distributed and are undercut by emerging risks of algorithmic surveillance, biased automated decisionmaking, and an “infinite workday” effect in which reclaimed time is absorbed by additional tasks rather than rest. The paper concludes that AI can function as a genuine catalyst for balance only when paired with deliberate organisational policy and inclusive design, rather than being treated as a self-executing solution.

Keywords-- artificial intelligence, work–life balance, gender gap, unpaid care work, algorithmic management, working women

I. INTRODUCTION

The modern working woman rarely begins her professional day at her desk. For millions of women across the world, the day begins well before the first work email is opened – with childcare, household coordination, and caregiving responsibilities that are rarely counted as “work” in official productivity metrics, yet consume a substantial share of daily time and mental energy. This phenomenon, first popularised in Western sociology as the *second shift*, remains strikingly persistent in 2026: women worldwide still perform more than three times as much unpaid care work as men, and in India specifically, employed women spend nearly two and a half additional hours per day on combined paid and unpaid work compared to employed men [1].

At the same time, artificial intelligence has moved from an experimental workplace tool to a default feature of knowledge work.

Generative AI adoption in the workplace nearly doubled within a single year, making it, by some measures, the fastest-adopted workplace technology ever recorded [2]. This paper asks a focused question: can this rapid diffusion of AI tools act as a genuine *catalyst* for work–life balance among working women, or does it risk becoming another layer of demand stacked on top of an already unequal division of labour?

To answer this, the paper is structured as follows. Section 2 reviews the statistical evidence on the gender gap in unpaid labour and the pace of workplace AI adoption. Section 3 introduces a four-role conceptual framework describing how AI interventions map onto a working woman’s day. Section 4 presents a quantitative data analysis, including time-use and AI-adoption statistics. Section 5 offers a brief illustrative scenario. Section 6 examines the risks and limitations of relying on AI for this purpose, and Section 7 concludes with policy recommendations.

II. BACKGROUND AND LITERATURE REVIEW

2.1 The Persistent Gender Gap in Unpaid Labour

International Labour Organization estimates place the scale of unpaid care work at roughly 16 billion hours performed globally every single day, of which women contribute more than three-quarters [3]. At the current rate of change, the ILO has noted that closing this gap would take on the order of two centuries, since measured progress over the past two decades amounts to only a few minutes per day [3]. A related 2025 ILO assessment of thirty years since the Beijing Declaration found that women still work substantially fewer paid hours than men per week, yet spend more than three times as many hours on unpaid domestic and care work, a burden that keeps an estimated 708 million women worldwide outside the paid labour force altogether [4].

India’s own evidence, drawn from the National Statistical Office’s Time Use Survey conducted across 2024, tells a comparable story at the national level. Women spend close to five hours a day on unpaid domestic work and caregiving combined, compared to roughly two and a half hours for men, and participate in paid employment-related activities for only about one-fifth of the day, versus three-fifths for men [5, 6].

A 2026 peer-reviewed analysis of this same survey found that employed Indian women carry a combined paid-and-unpaid workload of approximately 9.5 hours per day, compared to about 7.2 hours for employed men [1]. This time squeeze is widely cited as a structural explanation for India's persistently low female labour-force participation rate, among the lowest in the G20 [1].

III. RESEARCH METHODOLOGY

This study is based on secondary data analysis. Data were collected from the National Statistical Office (NSO) Time Use Survey 2024, International Labour Organization (ILO) reports, Microsoft Work Trend Index reports, Deloitte Women @ Work reports, and other peer-reviewed academic sources. The study adopts a descriptive and analytical approach to examine the role of artificial intelligence in improving work-life balance among working women.

3.1 *The Rapid Rise Of Workplace AI*

Against this backdrop, workplace AI adoption has accelerated sharply. Microsoft's 2025 Work Trend Index, based on a survey of 31,000 knowledge workers across 31 countries, found that three-quarters of workers were already using AI tools at work, with nearly half of these users having adopted the tools within the preceding six months [8]. Among frequent "power users," the reported benefits are substantial: the large majority say AI helps them save time, focus on higher-value work, and manage their overall workload more effectively [8, 2]. At the same time, Deloitte's 2025 global survey of roughly 7,500 women across 15 countries found that flexibility and work-life balance remain among the top factors influencing whether women stay with an employer, even as burnout indicators and dissatisfaction with existing support systems remain high [9]. These two trends – accelerating AI adoption and a persistent, gendered work-life imbalance – set up the central question this paper investigates.

IV. CONCEPTUAL FRAMEWORK: THE ALGORITHMICALLY

To organise the analysis, this paper proposes a four-role framework describing where AI tools intervene across a working woman's day. Rather than treating "AI at work" as a single undifferentiated category, the framework separates interventions by the specific type of burden each one relieves: temporal, cognitive, physiological, and logistical.

- *The Timekeeper.* AI-driven calendar and scheduling assistants automatically protect deep-work blocks, reschedule non-urgent meetings, and buffer time around caregiving windows such as school pickup, addressing the *temporal* dimension of the burden.
- *The Ghostwriter.* AI copilots that draft emails, summarise meetings, and generate boilerplate code or reports reduce the volume of repetitive cognitive labour, directly targeting the hours historically lost to "catching up" after standard working hours.
- *The Quiet Guardian.* Wellness- and health-tracking AI that monitors sleep, stress, and activity patterns can flag early signs of overload, addressing the *physiological* dimension before it escalates into burnout.
- *The Household Strategist.* AI-enabled household management tools – automated grocery reordering, meal planning, medication reminders – absorb some of the *invisible logistical load* that time-use data consistently show falls disproportionately on women [5].

This framework is used in Section 4 to interpret the quantitative evidence, and in Section 6 to structure the discussion of where each type of intervention introduces new risks.

V. DATA AND STATISTICAL ANALYSIS

5.1 *The Scale of the Imbalance*

Figure 2 presents gendered time-allocation data from India's 2024 Time Use Survey. The gap is largest in unpaid domestic work, where women's daily time investment is more than three times that of men, and is mirrored by an inverse gap in paid employment time.

Table 1 situates the Indian data within global and regional benchmarks, showing that while the direction of the gap is universal, its magnitude varies considerably by region and income level.

5.2 *Self-Reported Impact of AI Tools*

Figure 3 turns to the other side of the equation: how workers who already use AI describe its effect on their day. Across the Microsoft Work Trend Index sample of 31,000 knowledge workers, the large majority of regular AI users report tangible time and focus benefits.

5.3 *Interpreting the Two Data Sets Together*

Read side by side, Figures 2 and 3 suggest a plausible but conditional mechanism: AI tools that reliably save 20–30% of task time on drafting, summarising, and scheduling could, in principle, claw back a meaningful fraction of the roughly two-hour daily workload gap documented in Section 2.

However, the same Microsoft data set also reports a countervailing trend – knowledge workers are sending 15% more after-hours messages year-over-year, and roughly half describe their work as “chaotic and fragmented” despite individual tool-level time savings [2].

This indicates that AI’s effect on *individual task efficiency* does not automatically translate into an improved *overall* work–life balance unless organisations deliberately redesign workloads around the time that AI frees up, rather than simply filling that time with additional tasks.

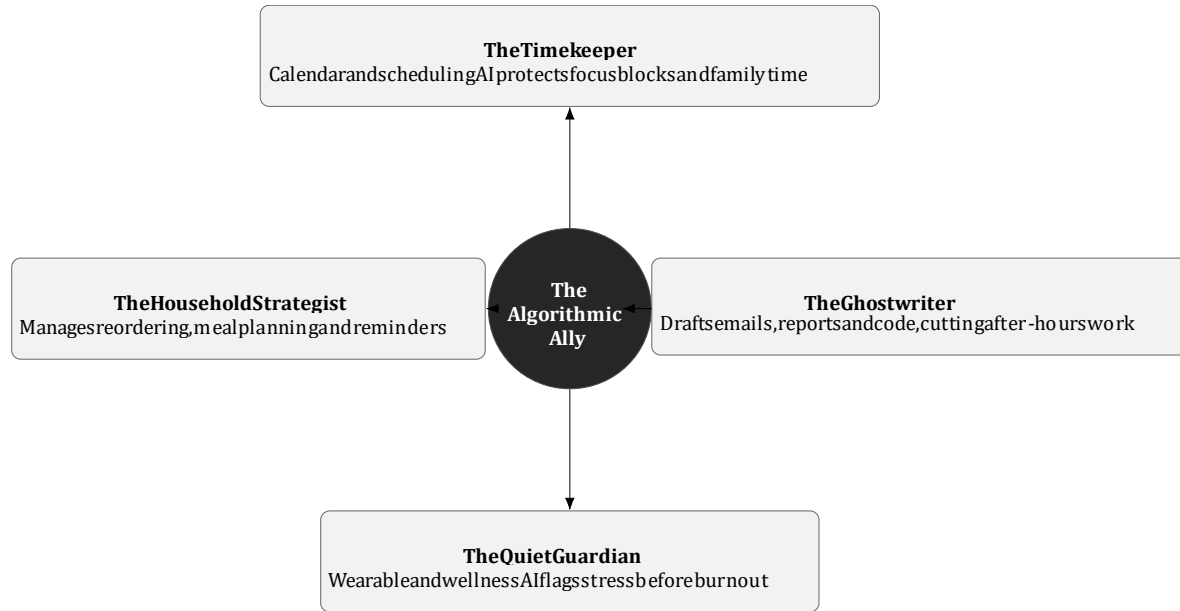


Figure 1: The four-role Algorithmic Ally framework.
Table 1: Gender Gap in Unpaid Care Work

Region	Women’s Share	Source
Global average	76.2% of total hours	ILO
Asia Pacific	80% of total hours	ILO
India (domestic work only)	81.5% of total time spent	NSO 2024
Barbados (regional example)	2.5–3× men’s hours	UN Women

Figure 1. Gendered Time Allocation in India, 2024
 (NSO Time Use Survey)

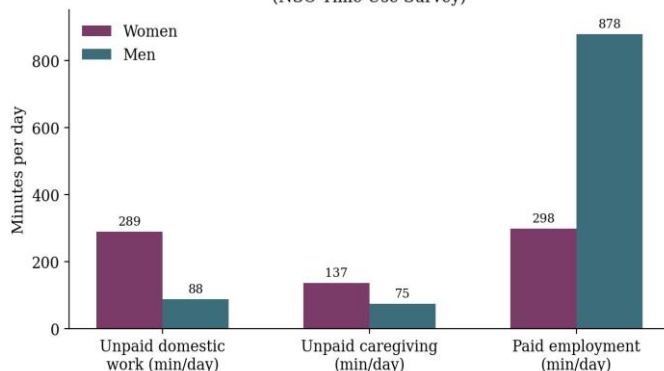


Figure 2: Gendered time allocation in India, 2024. Source: National Statistical Office, Time Use Survey 2024 [5, 6].

Figure 2. Self-Reported Benefits of Workplace AI Tools
 (Microsoft Work Trend Index, 31,000 knowledge workers, 31 countries)

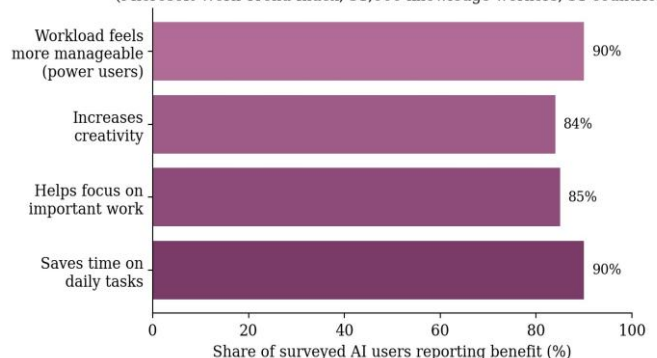


Figure 3: Self-reported benefits of workplace AI tools among surveyed knowledge workers. Source: Microsoft 2025 Work Trend Index [8, 2].



VI. ILLUSTRATIVE SCENARIO

Consider a composite, illustrative case – not an individual research subject but a scenario constructed from the patterns documented above. A software engineer at a mid-sized technology firm begins her day before 6 a.m. managing household logistics, attends early-morning meetings with international stakeholders, and returns home to a second round of domestic responsibilities. Applying the four-role framework: a scheduling assistant (Timekeeper) shields a two-hour focus block and reschedules a non-urgent meeting; a code and documentation copilot (Ghostwriter) reduces a two-hour reporting task to forty-five minutes; a household app (Household Strategist) automatically reorders groceries and sets medication reminders for an elderly relative; and a wellness wearable (Quiet Guardian) flags a poor sleep trend and suggests an earlier wind-down. Individually, each intervention is modest. Collectively, and *only if* the reclaimed time is not immediately reassigned to new tasks, such interventions could plausibly translate into meaningfully earlier evenings and reduced context-switching fatigue.

VII. RISKS AND LIMITATIONS

The optimistic reading above must be weighed against four documented risks.

Algorithmic surveillance and management. Research on algorithmic management finds that workplace monitoring tools disproportionately affect women and other marginalised groups, particularly where timetracking software penalises the reduced “productive time” associated with caregiving responsibilities [10, 12].

Biased automated decision-making. Studies of AI-enabled hiring, task-allocation, and rating systems show that algorithms trained on historical, biased data can reproduce and even amplify existing gender disparities in pay, scheduling, and evaluation [11, 10].

The “infinite workday” effect. As noted in Section 4.3, time saved through AI tools is frequently reabsorbed into an expanding workload rather than converted into rest or family time, a pattern Microsoft’s own research has termed the erosion of clear workday boundaries [2].

Unequal access. The benefits documented in Figure 3 accrue mainly to salaried, tech-literate, urban knowledge workers. Women in informal employment – which, per India’s own time-use data, constitutes the majority of the female workforce – have negligible exposure to these tools, meaning that AI-driven relief risks widening, rather than closing, existing inequalities between women unless deliberately extended to lower-resource contexts [12].

VIII. POLICY RECOMMENDATIONS AND CONCLUSION

The evidence assembled in this paper supports a conditional conclusion: AI can act as a genuine catalyst for work–life balance among working women, but only as a complement to, not a substitute for, structural and policy-level change. Three recommendations follow directly from the data.

1. *Pair AI adoption with workload redesign.* Organisations should treat time saved by AI tools as a resource to be deliberately reallocated to rest or focused work, rather than allowing it to be silently absorbed by additional tasks, directly addressing the “infinite workday” pattern identified in Section 6.
2. *Regulate algorithmic management with a gender lens.* Given the documented disproportionate impact of workplace surveillance and biased automated decisions on women, policy frameworks governing AI at work should explicitly assess gender-differentiated outcomes before deployment [12].
3. *Extend AI-enabled flexibility beyond salaried knowledge work.* Since current benefits concentrate among urban, tech-literate employees, closing the broader gender gap in unpaid labour will require deliberately designing affordable AI-enabled tools and policies for women in informal and gig employment, who represent the majority of the female workforce in countries such as India.

In sum, the data reviewed here indicate that an algorithm can hold a calendar, draft a report, or flag a stress signal – but it cannot, on its own, redistribute the unpaid labour that remains the single largest structural driver of gender imbalance in work and life. The Algorithmic Ally is best understood not as a solution, but as a tool whose value depends entirely on the human systems and policies built around it.

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