

“Where Is the Time?”: Time Poverty and Women’s Urban Mobility Narratives in Kochi, India

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Abstract

Time poverty disproportionately affects urban women due to the societal expectations of balancing their work and gender roles. In urban environments, women’s time use is significantly influenced by their daily mobility experiences. Despite a wealth of existing research on time use and mobility, mostly in developed countries, understanding gendered dimensions of mobility and time poverty in cities of developing nations remains unexplored. Using Tiznado Aitken et al.’s (2024) integrated time use framework, the study explores how necessary, committed, contracted, and travel time collectively shape the daily routines of low-income women workers in Kochi City, India. The method involves qualitative analysis of in-depth interviews conducted during December 2022–January 2023. Interview analysis highlights entrenched gender roles disproportionately burdening women with unpaid domestic and caregiving responsibilities, leading to severe time poverty among low-income working women. The study also identifies how time poverty is exacerbated by travel constraints and access to transport services. This study substantially strengthens the literature on time poverty and gendered time use, emphasising the necessity for institutional reforms to elevate the quality of life for urban women workers. The findings presented hold implications for urban planning, transportation policy, and social equity initiatives aimed at enhancing accessibility and inclusivity within cities of the Global South.

Keywords

gendered mobility; gendered time poverty; urban women; work–life balance

1. Introduction

What does it truly mean to “start the day early,” and why do some women find themselves compelled to do so perpetually? It may seem difficult to imagine the reality of waking before dawn daily juggling household duties, productive labour, and lengthy commutes to work. Yet, this is the lived experience of many working women in Kochi, Kerala, India. In this article, we use these women’s stories to unveil the often-overlooked gendered interplay of mobility and time poverty.

Time poverty refers to the condition of having more tasks than the time available to complete them (Rodgers, 2023). This phenomenon arises from a confluence of institutional, societal, organisational, and psychological factors, with gender playing a pivotal role (Giurge et al., 2020). Institutional factors include inefficient public service delivery and a lack of policy awareness regarding individuals’ time burdens. Organisational factors encompass time pressures imposed by employers, such as ideal worker norms, inflexible work hours, and administrative burdens. Societal factors emerge from cultural expectations that disproportionately allocate household duties to women, thereby exacerbating their time poverty (Rodgers, 2023).

In the transportation field, Lucas (2012) places time poverty as one of five interconnected dimensions of transport poverty, namely mobility poverty, accessibility poverty, transport affordability, and exposure to externalities. This can be called transport-related time poverty, which is influenced by factors such as housing location, transport availability, and activity locations, all of which can lead to social isolation or intensify poverty (Lucas, 2011, 2012; Schwanen et al., 2015). Although there have been studies on time poverty in the context of transport research, few have approached this from a gendered perspective. Turner and Grieco (2000) were one among them to study how women face time poverty through complex and poorly resourced trips compared to men. Their research pointed to the necessity of improved social policies and transport solutions to alleviate the burden on single mothers transitioning into the workforce. However, gendered time use is a widely researched area and has become a crucial aspect of transport planning research. In the transport domain, time use extends beyond mere travel duration (Chidambaram & Scheiner, 2023; Sweet & Kanaroglou, 2016). Time use or time allocation/budgeting studies provide insights into how individuals distribute their time among various activities, which is instrumental in designing efficient public transport schedules and systems (Kitamura et al., 1997). Unsurprisingly, research has consistently shown that men and women exhibit different time use patterns, which in turn influence their travel behaviours (Zhong et al., 2012). It is widely evident that women’s mobility patterns are shaped by their gender roles and socioeconomic factors, with safety concerns and societal norms leading to multiple, longer commutes for them (Jones, 1983; Macedo et al., 2022; Pooley, 2009). Women’s time poverty is often aggravated by barriers such as longer commute times, longer waiting periods, and unreliable services, impacting their overall well-being and daily routines (Sweet & Kanaroglou, 2016). Understanding these complex mobility patterns and their intersection with time is crucial for equitable urban transport planning and policymaking.

Time use, travel behaviour, and time poverty all exhibit distinct gendered differences (Bardasi & Wodon, 2010; Bittman, 2002). The interplay between these dimensions, and specifically how gendered time poverty intersects with gendered travel behaviour, requires further exploration. Few studies have examined time poverty in the context of travel behaviour, explicitly delving into transport-related time-poverty issues. Exploring the temporal aspect of transport poverty may provide new insights into both the time use and transportation fields of research. While developed countries have explored these dynamics, there is a

notable gap in research from the developing world, particularly in the Indian context. Thus, our study aims to address this gap by using the daily experiences of low-income working women in Kochi, a city in southern India, to examine time poverty in connection to travel behaviour through a gendered lens.

This article is part of a larger study investigating factors influencing women's mobility in urban environments of the developing world, with a specific focus on Kochi City. The broader study reveals critical aspects of gendered implications on everyday mobility, including safety concerns, infrastructural barriers, and caregiving roles. However, the current study only delves into how underprivileged women's time use and travel behaviour are mutually related and how their mobility experiences in the city aggravate their time poverty. The subsequent sections of this article will provide a review of the existing literature on "time and mobility" and "time poverty," followed by the conceptual framework adopted and a detailed description of the qualitative methodology employed in this study. The findings and discussion section will present key insights from participant interviews, illustrating their daily routines. We interpret these findings, linking them with existing research on the challenges women face in balancing time, work, and mobility, and will offer broader implications for planning and policy. The article concludes with a summary of the study's relevance and recommendations for future research.

2. Women and Time Poverty in the Developing World

Time, unlike income or consumption that can increase and improve well-being, is a finite resource (Lindskog & Brege, 2002). In capitalist societies, time is often equated with economic value, emphasising its importance in shaping transport behaviours (Urry, 2000). When more time is consumed by paid and unpaid activities, less remains for rest and leisure. This makes time crucial, as an individual's well-being depends not only on their income level but also on their available time and capability for recreation and rest (Bardasi & Wodon, 2010). In this context, the concept of time poverty emerged as a significant extension of time-use studies in the late 1990s. The gendered dimensions of time use have always been an interest to researchers. This should be understood in line with women's gender roles, care obligations, and division of labour. Across societies, women are assumed primary caregivers and responsible for reproductive labour, whilst men dominate paid labour and leisure activities (Berg & Woods, 2009; Guberman et al., 1992; Jenkins, 1997). This "care burden" often limits women's mobility, restricts their participation in the labour market, and exacerbates their time poverty. Studies have consistently shown gender disparities in experiencing time poverty as a result of this unequal and unpaid burden of household work owing to women's gender roles (Hyde et al., 2020). Chatzitheochari and Arber (2012) emphasise the importance of conducting class- and gender-based analyses of time use and point out that working women experience severe time poverty among British workers. While most of the research is based on developed countries' scenarios, a few also investigated women's time use poverty in developing countries where time poverty has been studied with a focus on rural settings. Arora (2015) found that women in rural Mozambique experience significant time poverty due to household responsibilities, despite equal labour market participation. Similar findings are reported from Pakistan (Najam-us-Saqib & Arif, 2012) and West Africa, including Nigeria and Senegal (Adeyeye et al., 2021; Marter-Kenyon et al., 2023). These studies highlight the extensive nature of women's activities, which span across farming, trading, cooking, and domestic work, contributing to their time poverty.

In India, research on gendered time poverty has gained prominence following the 2019 National Time Use Survey, revealing that 1 in 10 working Indians suffers from time poverty, with rural women being more

affected than their urban counterparts (Jaggi & Gupta, 2023). As per the National Sample Survey Office Time Use Survey 2020, women spend significantly more time on unpaid household work compared to men, underscoring the ongoing discourse on gendered division of labour and disparities in unpaid reproductive labour. The burden of unpaid work, particularly after marriage, exacerbates women's time poverty, impacting their well-being (Brahma, 2024; Sahu, 2024). Specifically in Kerala, Krishna (2024) identified the intensified burden on working mothers during the Covid-19 pandemic, leading to increased time poverty and deteriorated well-being. While quantitative studies on women's time poverty are available in India, there is a pressing need for qualitative research to provide a deeper understanding of women's experiences of time poverty within specific socio-cultural contexts. This article addresses this gap by examining the lived experiences of low-income working women in Kochi, India, offering insights into their time use characteristics and daily mobility and contributing to the broader discourse on gendered time use in the Global South.

3. Conceptual Framework: Time Poverty and Transportation

This article builds on the conceptual framework proposed by Tiznado Aitken et al. (2024), to explain how transportation contributes to time poverty. Time poverty in most research is commonly linked to the foundational time use theory of Becker (1965), which examines how individuals allocate limited time to competing activities. Tiznado Aitken et al. (2024) integrate the classical time use framework of Harvey and Pentland (2002) and Zacharias (2011) with the transport-related social exclusion framework of Lucas (2012) to understand time poverty in a mobility context. This framework, as illustrated in Figure 1, encompasses five categories of time to analyse an individual's weekly or daily free time availability. "Necessary time" is for essential activities like sleeping, eating, and hygiene. "Committed time" covers unpaid responsibilities such as housework and caring for dependents. "Contracted time" is allocated to paid work or education, which is usually time-bound and considered productive. "Travel time," the transport-related addition to the classic time use framework, accounts for commuting to and from activities, primarily work or education. Finally,

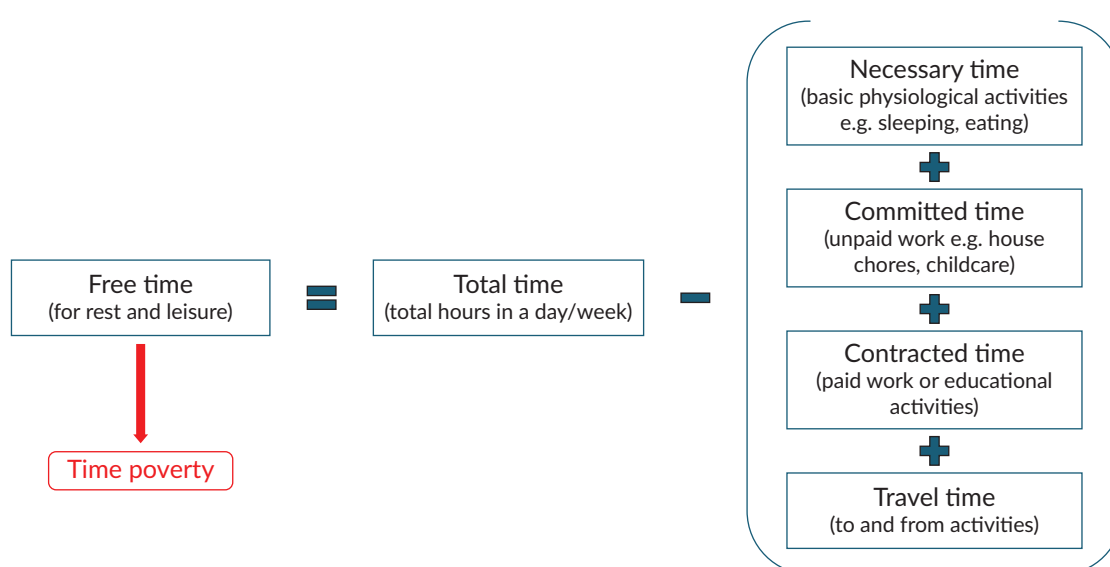


Figure 1. Conceptual framework explaining time poverty in a mobility context. Source: Adapted from Tiznado Aitken et al. (2024).

“free time” is what remains after these obligations, used for rest, leisure, or socialising. A lack of adequate free time is referred to as time poverty (Tiznado Aitken et al., 2024).

This combined framework incorporates time poverty, transport-related time poverty, social exclusion, and transport-related social exclusion to bridge existing theoretical models in time use and transportation research. However, in our study, we use the framework only to understand the overall time poverty of women and how it is affected by the other four dimensions of time, namely necessary time, committed time, contracted time, and travel time. By applying this framework through a gendered lens, we examine how transport challenges in Kochi exacerbate broader time poverty for low-income working women. This study contributes to the framework by offering insights into how socio-cultural factors and infrastructural inadequacies intensify these constraints, limiting women’s capabilities and well-being.

4. Critical Review of Gendered Time Use and Travel Behaviour

Research on the role of time in human mobility from a gender perspective has been done in multiple disciplines in the last two decades, including transportation planning, sociology, and geography, and has investigated dimensions of intersectionality and marginalization. As Urry (2000), in his pioneering book, highlights, social inequalities related to time exist, and access to time is not equal across different social strata. Urry also argues that mobilities are fundamentally about temporality, indicating that how people move and travel is deeply intertwined with their experiences and perceptions of time (Urry, 2000). In this regard, it is important to understand how gender plays a role in experiencing time and travel. We critically reviewed the literature linking time, gender, and mobility and broadly classified the literature into two main categories: (a) “time use” studies, focusing on gendered disparities in “committed” and “contracted” time in our conceptual framework, and (b) “travel time” studies.

4.1. Time Use

Early studies on time use have predominantly focused on women in developed nations, revealing significant insights into gendered patterns of time allocation. Goulias (2007) investigated time management and travel behaviours in Pennsylvania, the United States, highlighting that women’s travel patterns are reflective of their broader interests in engaging in various activities beyond the home. This study suggests that women’s travel behaviour is an outcome rather than a cause of their broader engagement in societal activities. This means that their travel behaviour is shaped by their roles and responsibilities in society, like work and caregiving, and it is not the reason they take on these activities. In a similar line, Cao and Chai (2007) applied structural equation modelling to analyse time allocation among household heads in Shenzhen, China. Their findings indicated that traditional gender roles were reflected in the dominance of males in out-of-home activities and females in in-home activities, underscoring the need for more research in non-Western contexts. In Western contexts, there is greater gender equality in the division of labour allowing women to be involved in more out-of-home income-generating activities.

Scheiner (2016) utilised data from the German Mobility Panel to demonstrate that events related to relationships and family exert a greater influence on women’s time use, whereas labour market events primarily impact men. This finding aligns with the broader narrative of gendered time use patterns but contrasts slightly with Sweet and Kanaroglou’s (2016) study of Canadian residents, which found no direct

correlation between travel time and subjective well-being for either gender. Instead, the study observed a strong positive correlation between women's participation in activities and their subjective well-being, suggesting that the quality and type of activities, rather than the mere duration of travel, might be more significant.

Chidambaram and Scheiner (2023) further expanded the discourse by highlighting that women's travel behaviour and activity patterns are influenced by gender roles and multitasking, which complicate their time use. Their research indicates that women's travel and activity patterns are shaped by societal expectations and their roles within the household, which adds layers of complexity to the study of gendered time use. Hu (2023) corroborates these findings by showing that household structure, including the presence of a partner or children, affects time use patterns, with women often allocating more time to activities in response to household needs. This observation underscores a critical aspect of gendered time use: how household responsibilities shape and constrain women's time management strategies.

Overall, the literature consistently demonstrates that there is a significant variation between the "committed" and "contracted" time for men and women. Women are more time-poor than men due to the disproportionate care burden of household responsibilities, compelling them to allocate more "committed" time. However, there is a notable gap in understanding these dynamics within the context of developing countries and the unique socio-cultural environments they encompass.

4.2. Travel Time

In transport planning research, time is a fundamental component studied across various dimensions, such as travel time, waiting time, and time use or budgeting. Travel time is greatly influenced by the mode of transport. Studies show that public transport users experience more travel time due to factors such as traffic congestion, waiting time at stops, and delays caused by system inefficiencies. Previous research highlights distinct gendered differences in travel patterns, particularly concerning women's propensity for short, multipurpose trips (Hanson, 2010). Early work established the significance of travel time in commuting decisions. Moses and Williamson (1963) argued that the value of travel time varies among commuters and that understanding the time costs associated with different commuting options is crucial for designing effective transport policies (Lyman & Bertini, 2008).

Recent studies focusing on gender disparities in travel time have illuminated how these differences manifest. For instance, McQuaid and Chen (2012) examined commuting patterns in the United Kingdom and found that men typically engage in longer and more distant commutes compared to women. Their research indicated that gender, the presence of children, and working hours significantly influence travel time. Similarly, research in the United States has shown that women's shorter commutes are linked to traditional gender roles, which in turn affects their earnings and access to benefits (Haley-Lock et al., 2013). Iwata and Tamada (2014) observed that married women's commuting patterns exhibit a backwards-bending trend: Women tend to commute longer when wages are lower and shorter when wages are higher, as a strategy to manage household responsibilities and secure leisure time. Whitehead-Frei and Kockelman (2010) explored the impact of time spent with children on activity and travel time allocation in the United States. Their study found that while time spent with children adversely affects work, recreation, and personal activities within the home, it does not significantly impact travel time. This highlights an area where gendered time use intersects with family responsibilities, affecting women's overall time management.

In a different context, Kwan and Kotsev (2015) applied time geography theory to study gender differences in travel time in Sofia, Bulgaria, finding that women experienced more travel time and less spatial access to opportunities compared to men, primarily due to their reliance on public transport. Fan et al. (2016) highlighted that women's perceived waiting time in public transport often exceeds the actual waiting time, especially in unsafe environments. Hu (2023) further explored the intricate relationship between household structure and travel time, revealing that while factors like spouse presence and parenthood affect work-related travel time, they do not influence household support travel time. Craig and van Tienoven (2019) conducted a large-scale study across Australia, the United Kingdom, Spain, and Finland, revealing that while total travel time was comparable for men and women, there were notable gender differences in travel purpose, mode, and company. Additionally, Kim et al. (2019) examined the health implications of travel time, finding that long commutes and extended work hours are associated with sleep disturbances, with gender-specific differences in the impact of work characteristics on sleep quality.

Literature predominantly focuses on “travel time” as a key variable in transportation and mobility research. It is evident that gender roles, cultural contexts, and socio-economic privileges significantly shape how time is utilised in travel, with implications for equitable access to opportunities (McQuaid & Chen, 2012; Scheiner, 2016; Turner & Grieco, 2000; Whitehead-Frei & Kockelman, 2010). However, much of this research is centred on Global North contexts, leaving a substantial gap in evidence from the Global South.

5. Context and Methodology

Kerala, situated at the southern tip of India, faces geographical constraints due to its narrow coastlines on the west and the mountainous Western Ghats on the east, which limit urban expansion. This has eventually resulted in a unique settlement pattern, of a rural-urban continuum blending urban and rural areas without clear boundaries, creating challenges for infrastructure development and urban planning (Paul, 2017; Zehba M. P. & Firoz C., 2024; Zehba M. P. et al., 2021). Known for its high Human Development Index and leading figures in female literacy and sex ratio, Kerala's achievements are attributed to the “Kerala Model” of development (Franke & Chasin, 1989; NITI Aayog, 2021; Tharakan, 2006). This model prioritised land reforms, public health, education, and efforts to reduce caste and gender inequalities. Historically, practices like matrilineal inheritance in some communities have also influenced women's social roles and visibility. However, Kerala still struggles with gender disparities in workforce participation and pay equity, with over 2.2 million women actively seeking employment (Chacko, 2003). These inequalities are also reflected in urban transport systems, where efforts to incorporate gender-sensitive measures are ongoing but insufficient to ensure truly inclusive infrastructure. Kerala's biggest and densest city, Kochi, is quite indicative of the state's geography, urbanisation, and economy.

This study is part of a larger investigation into factors influencing the daily mobility of low-income working women in Kochi City in Kerala. Kochi, covering 732 sq. km in the Ernakulam district, includes the core city, nine municipalities, and 29 panchayats (Figure 2). Known as Kerala's trade and commerce hub, Kochi features dense urbanisation, with the core city under the Kochi Municipal Corporation with a population density of 7,034 persons per sq. km. As a mid-sized Indian city, Kochi's moderate urban scale is representative of secondary cities in South Asia. Transportation occupies 12.52% of the municipal area, integrating buses, metro, railways, water transport, and para-transit modes like autorickshaws. Bus services dominate public transport, with private operators and Kerala State Road Transport Corporation providing

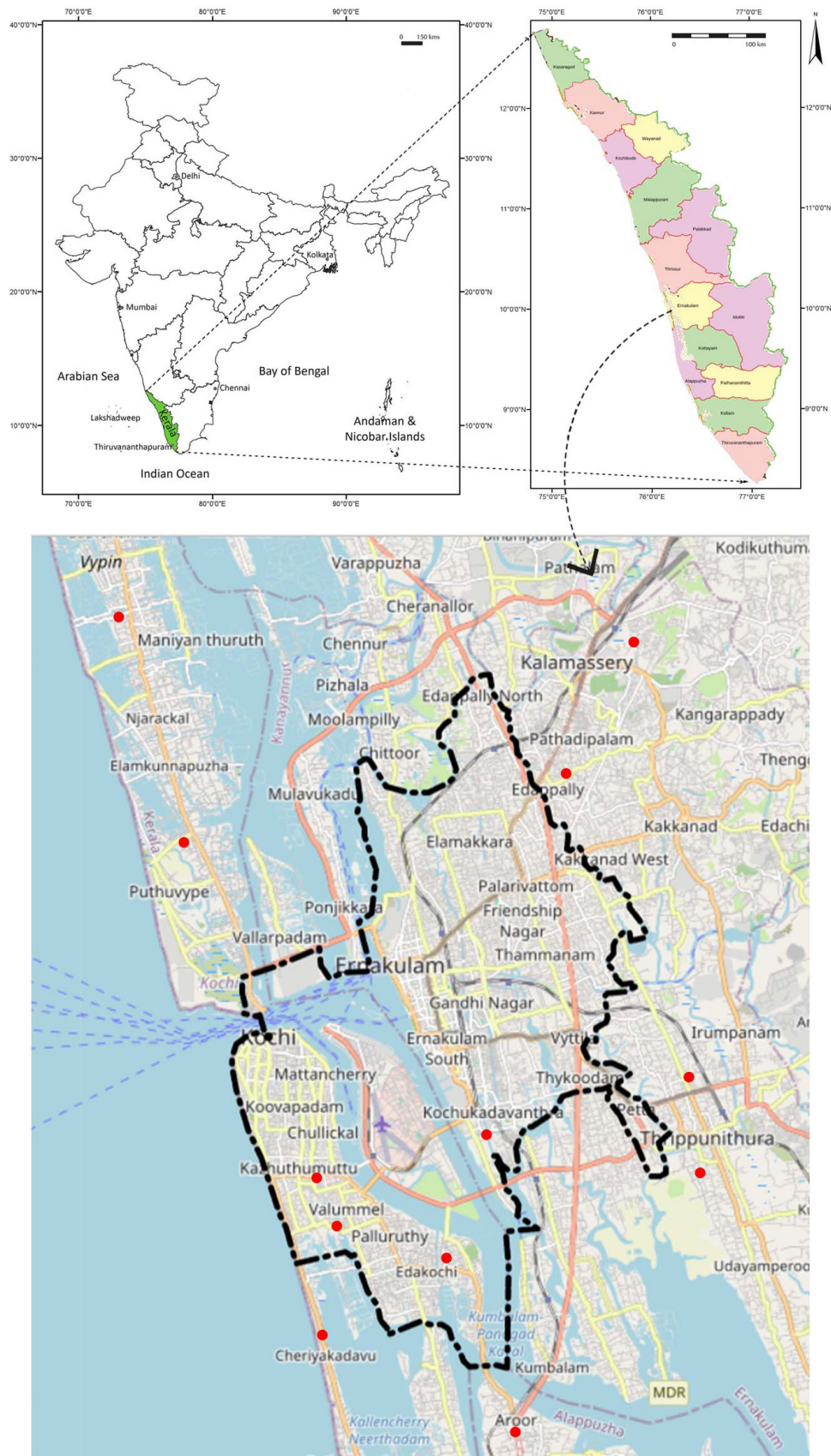


Figure 2. Study area—Kochi—with location of key study participants.

over 82% of daily trips. Buses account for 22% of the 25% public transport mode share, indicating their primary role over other modes like the metro. Furthermore, the dynamic development in the transport infrastructure in Kochi is evident in the Comprehensive Mobility Plan for Kochi, currently in its draft stage, and the transit-oriented development proposed in Kochi's Master Plan for 2040. However, while addressing the needs of the growing population in the city, it is essential to learn the emerging trends in transportation research such as time use in mobility to improve the travel experiences.

We employed phenomenology (Degen & Rose, 2012; van Manen, 2016) to gain an in-depth understanding of the lived experiences of working women in Kochi, shedding light on the socio-spatial, cultural, and psychological dimensions often overlooked by conventional approaches. Phenomenology, as a philosophical and methodological approach, offers a critical lens to study lived experiences by prioritising subjective experiences and embodied realities (Moser & Korstjens, 2018). This approach is particularly potent in addressing travel behaviour, which is deeply shaped by socio-cultural norms, spatial practices, and gendered power dynamics. Phenomenology is well-suited for capturing the nuanced realities of individuals' experiences and provides a framework for exploring the complexities of daily mobility (Degen & Rose, 2012; Roy & Bailey, 2021; Sargeant, 2012; van Manen, 2016). In this study, in-depth interviews were conducted with 25 women, specifically domestic workers and housekeeping staff, who reside on the periphery of Kochi and commute daily to the city. The profile of all the participants recruited and interviewed is listed in Table 1. To protect participant confidentiality, all names used in the table and throughout this study are pseudonyms. Interviews were conducted from December 2022–January 2023 at the participants' workplaces, as they were more comfortable for the participants, which allowed them to more freely express themselves, and they were also easily accessible for the researcher, enabling richer and more authentic responses. The selection of participants was purposive, aimed at identifying individuals with substantial experience in commuting within Kochi. This approach prioritises the richness of information over representativeness (Moser & Korstjens, 2018). Consent was obtained from all participants, who were interviewed for 45 minutes to one hour using an in-depth, open-ended interview guide. Interviews were recorded, transcribed in the participants' native language, Malayalam, and subsequently translated into English.

The lead author of this article, who conducted the primary research, was born and raised in Kerala and has lived in Kochi for three years, providing personal familiarity with many of the daily mobility challenges narrated by the participants. As a native woman, the author could contextualise and deeply understand the issues discussed by the participants. Furthermore, as a mother of two, the author could relate to the experiences of time poverty shared during the interviews stemming from gender roles. However, to ensure the integrity of the research, the author maintained a clear professional detachment from participants, avoiding any undue influence of personal experiences on their responses. Efforts were made to minimise power imbalances by adopting a friendly and conversational approach during interactions. Participants were fully informed about the purpose of the research, their rights to determine the depth of their responses, and their right to withdraw at any time. A neutral tone was maintained throughout the study, with active listening and acknowledgement of participants' values and opinions to ensure an ethical and respectful research process.

Table 1. Profile of all recruited participants.

Number	Participant	Age	Type of work	Years of work	Marital status and partner details
1	Mariya	36–40	Domestic help	10	Widowed
2	Reeba	36–40	Housekeeping—office	8	Married, husband working abroad
3	Thara	36–40	Housekeeping—office	15	Married, husband working
4	Samila	56–60	Housekeeping—office	10	Married, husband not working
5	Suma	56–60	Domestic help	12	Married, husband not working
6	Sindhu	46–50	Housekeeping—office	9	Married, husband working
7	Wahida	41–45	Housekeeping—office	6	Married, husband working
8	Sindhumol	51–55	Housekeeping—office	20	Married, husband working
9	Vasumathi	56–60	Housekeeping—office	10	Married, husband working
10	Naila	51–55	Housekeeping—institution	20	Married, husband working
11	Sharifa	51–55	Housekeeping—office	21	Widowed
12	Ann Mary	51–55	Housekeeping—office	17	Married, husband working
13	Fousiya	51–55	Housekeeping—office	16	Married, husband working
14	Remani	51–55	Housekeeping—office	10	Married, husband not working
15	Usha	46–50	Housekeeping—office	15	Married, husband not working
16	Neethi	41–45	Housekeeping—office	16	Married, husband working
17	Kaniha	41–45	Housekeeping—office	8	Married, husband working
18	Kamarunnisa	46–50	Housekeeping—retail	4	Married, husband not working
19	Sini	36–40	Housekeeping—retail	7	Married, husband working
20	Beena	51–55	Housekeeping, domestic help—apartment	14	Married, husband working
21	Jini	51–55	Cleaning—restaurant	1	Married, husband working
22	Kamala	61–65	Cleaning—restaurant	15	Married, husband not working
23	Angel	41–45	Housekeeping—institution	0.6	Married, husband working
24	Bindu	51–55	Housekeeping—institution	7	Married, husband working
25	Teresa	51–55	Housekeeping—institution	20	Married, husband working

Data were analysed using reflexive thematic analysis (Braun & Clarke, 2006, 2019), facilitated by MAXQDA software. The analysis involved two rounds of coding to identify emerging patterns and themes. This article focuses on the theme of time, which emerged distinctly from the broader thematic analysis providing an opportunity to examine time poverty within the time-use framework. The specific themes utilised in this analysis and the corresponding codes are shown in Table 2. An inductive approach was employed (Naeem et al., 2023) to explore the interplay between time and daily mobility, and the findings provide insights into the intricate dynamics of women's time management and commuting experiences. Results are presented narratively, offering a detailed and chronological depiction of participants' daily activities and challenges.

Table 2. Key themes and codes used.

Themes	Time	Care Attributed to Gender Roles	Work Conditions	Spatial Factors	Bus Service Efficiency	Physical Setting of Travel
Codes	Work timing	Acceptance of gender roles	Work flexibility	Home location	Bus timing	Seat availability
	Morning departure time	Care responsibilities	Work availability	Walking distance	Bus reliability	Early/peak hours
	Morning wake-up time	Morning household chores	Work arrangements	Work location	Bus availability	Road traffic
	Travel time		Years of work		Inconsistent bus stops	Crowding at bus stops
	Time poverty	Sunday additional chores	Preferences on work			Bus crowding
	Time for sleep					
	Time management skill	Household responsibilities	Work fulfilment			
		Evening household chores	Nature of work			

6. The Everyday Journey: Time-Centric Dynamics of Daily Mobility

Women from underprivileged backgrounds adhere to a daily activity cycle, as illustrated in Figure 3, beginning from the moment they wake up until they retire at the end of the day. The interviews highlights several key themes that emerged from the participants' lived experiences. In the following sections, these themes have been delineated and grounded in the social contexts and realities faced by the participants. Through a narrative of their daily routines, the intricate balance of work, family responsibilities, and the systemic constraints of their environments are examined to provide a deeper understanding of their experiences of time and mobility.

6.1. Morning Activities

The interviews revealed that nearly all participants began their day before dawn, completing household chores before leaving for work, highlighting their significant time constraints as they balance family responsibilities with employment. Many participants reported waking as early as 3:00 or 4:00 a.m. to manage tasks such as cooking and cleaning, leaving them physically exhausted even before their workday begins. For example, Sindhu, one of the participants, commutes daily to Thevara for work while residing in Perumbadappu with her spouse and children. She rises well before dawn to complete her household duties, often struggling to keep up with the demands of her morning routine. As a result, she occasionally skips breakfast or tea to avoid being late for work.

It's work from the moment you wake up at 4 a.m. You put everything in order. To be honest, you won't catch sight of how the clock flies by the time you are ready to leave. It's a race. Forget the food, sometimes we don't even have the time to take a sip of tea. It's after we come here, at around 10 a.m. that we make tea for ourselves. We don't have time for even that. (Sindhu, Perumbadappu)

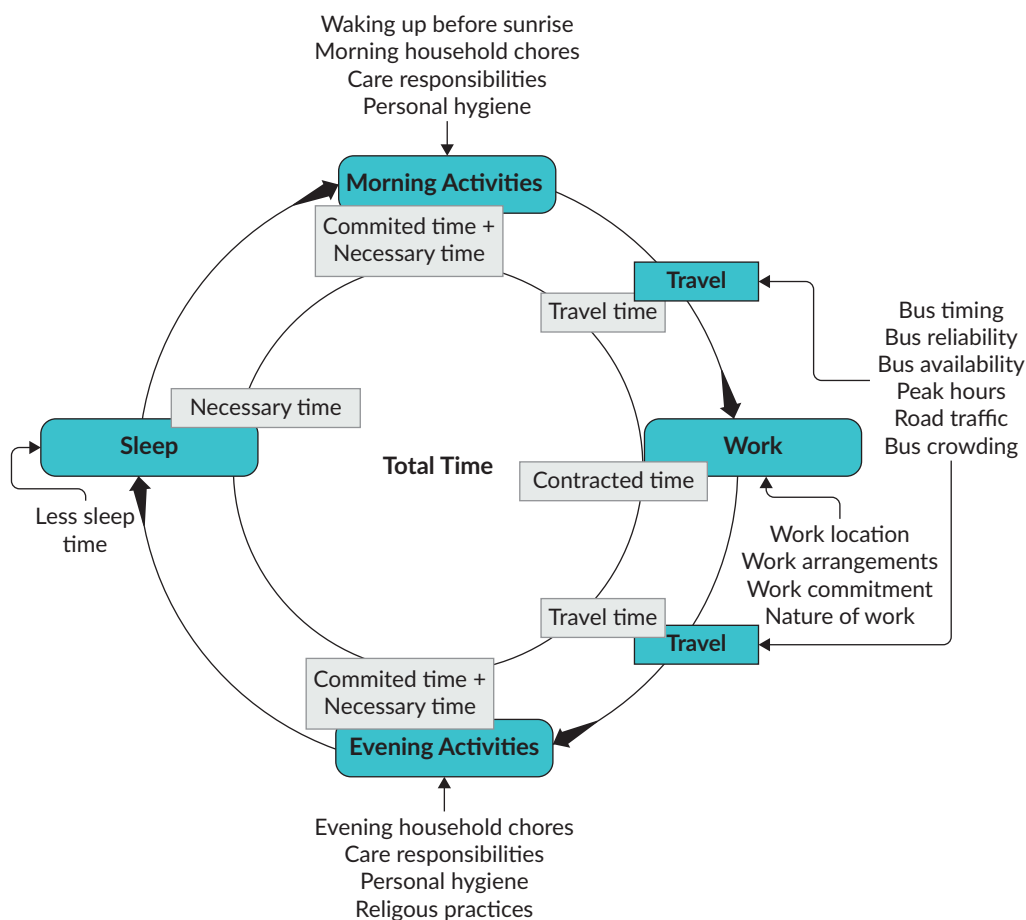


Figure 3. The daily activity cycle of participants.

Another participant, Beena, lives in Vyppin with her husband, a fisherman, their two grandchildren, her ageing mother-in-law, and her son. She rises as early as 3:00 a.m., completing nearly three-quarters of her household tasks before leaving for work. Similarly, Thara, who resides in Thuravur, wakes up at around 4:00 a.m., while Samila, from Palluruthy, typically begins her day at approximately 4:30 a.m. All three participants acknowledged the challenge of waking up so early, particularly when they were still in a deep sleep.

Only if I wake up at 3 can I manage to reach here on time under my current circumstances. Only if I finish my chores at home can I set out for work with satisfaction. (Beena, Vyppin)

For participants with larger households, particularly those with children and elderly family members, the morning routine becomes even more challenging. Each family member must be attended to before the participants can leave for work. As a result, some women skip breakfast to save time, opting instead to eat during one of their breaks at work. For instance, Jini, a mother of two from Idakkochi, begins her day at 4:00 a.m. to prepare breakfast, cook two curries and rice, clean up after herself, sweep, mop, and wash her son's uniform, all before her husband departs for work and her son leaves for school. Her Sundays are dedicated to completing the remaining household chores.

A similar routine is followed by Kamarunnisa, who resides in Kunnukara with her husband and son. She rises at 4:00 a.m. to prepare both breakfast and lunch before heading to work, acknowledging that waking up any earlier is not feasible. All household tasks must be completed by 7:10 a.m. when her bus arrives, leaving her with no time to clean the house during the week. Like Jini, she reserves Sundays for cleaning. Most mornings, Kamarunnisa has no time to eat breakfast at home, so she packs both breakfast and lunch to eat during her workday.

After waking up, I set out to cook rice. Then I get things for breakfast ready. And then for the rest of the meals. The bus is at 7:10, so, by then I have to finish everything. (Kamarunnisa, Kunnukara)

It is also noteworthy how the gender dynamics in the household affect women's care burden. Almost all the participants reported that any help from family members can significantly improve their daily routine. Many of the participants find themselves "lucky" enough to have their husbands or sons help with the house chores making the morning routine easier for them.

At times, they'll help me out. But I'll have to ask them to. At times if you say you are not well or something, and if he [husband] is in a good mood, then he'll do few things for me. (Thara, Thuravur)

While some participants mentioned limited support from partners or children, such contributions were often irregular or minimal, leaving the bulk of household responsibilities to women. The absence of substantial support not only limits women's agency within their households but also exacerbates their time poverty, as they must balance these tasks alongside their paid work. These findings are no different from the evidence of gendered division of labour and assumed care responsibilities imposed by the patriarchal culture predominant in South Asian regions (Brahma, 2024; Najam-us-Saqib & Arif, 2012; Sahu, 2024).

The morning routines of participants highlight how their time is divided between necessary and committed activities. Many participants struggle to complete all essential chores before leaving for work due to limited time. This demonstrates how committed time, such as household responsibilities, often dominates their mornings, leaving little or no time for necessary activities like having breakfast. It is clear that the participants experience time poverty during morning hours.

6.2. Morning Travel and Work

After completing most of their household chores early in the morning, participants often rush to their jobs. Public or private buses are the primary mode of transport for all participants, and they reported that even minor delays in leaving the house can result in higher transportation costs. Missing their regular bus can lead to longer, more expensive commutes, adding further strain to their travel. In addition, sometimes unreliable bus timings also worsen their already demanding schedules.

The type and nature of work heavily influence their time use during work hours. Most participants work as housekeeping staff or domestic workers, with their workdays starting early—typically at 7:30 a.m.—and ending at 4:30 p.m. For housekeeping staff, it is crucial to complete the bulk of cleaning duties before other employees arrive. Although domestic workers lack formal attendance systems, punctuality is essential for completing all tasks within the designated work hours. Many participants reported that adhering to these strict schedules, along with occasional changes in work shifts, often makes their routines highly stressful.

Mariya, a single mother of two, exemplifies these challenges. Residing in Kumbalangi with her in-laws, she leaves home at 7:30 a.m. to catch the bus. If delayed by even five minutes, she must take two buses, significantly increasing her commute time and costs. After an hour-long bus ride, she arrives at work by 8:30 a.m. Recently, her work hours have increased due to additional responsibilities, further complicating her already tight schedule.

If I set out from my house at 7:30 a.m. then I can walk there. If it gets 7:35 a.m., 7:40 a.m. and all, then I'll have to run till the market. If it gets late and I miss the bus, then I'll have to get a bus to Thoppumpadi first and catch two buses to get to the medical trust. If it's just one bus then I'll only have to pay 20 rupees. Or else 13, 15, altogether I'll have to pay 28 rupees. (Mariya, Kumbalangi)

In Beena's case, her routine has recently shifted following a month-long leave. Previously, she would leave home at 6:20 a.m. and reach her workplace by 7:00 a.m., allowing her to finish work by 3:00 p.m. However, her hours have now changed to 7:00 a.m. to 6:00 p.m., due to a change requested by a new staff and an additional job she has taken up along with the added responsibility of caring for her ill mother-in-law. Beena now juggles multiple jobs, leaving home before 7:00 a.m. to reach her first workplace by 7:30 a.m., where she works as a cook, before heading to her second job by 10:00 a.m. Despite the changes in her schedule, she continues to rush through her morning chores to catch the bus on time, ensuring she arrives at work promptly, as her employers expect.

I'm also going for a different job these days. So, if I get there to cook at 7 a.m., I can finish off the work by 10 a.m. To manage that I have to leave my house before 7. I'll reach here around 7:30 or 7:40. I'll just get on whatever bus is available. There is almost half an hour's journey to do. (Beena, Vyppin)

Participants working as housekeeping staff in offices often face stringent time constraints due to formal attendance systems and biometric punching, where delays can result in lost attendance and potential pay deductions. The narratives reveal that participants highly value their contracted time due to its productive nature and their strong commitment to work. The nature of their job and work arrangements significantly influence their travel time and departure schedules. In essence, contracted time plays a dominant role in shaping travel decisions, alongside factors like affordability and reliability. Moreover, instances like having to eat breakfast during work breaks due to lack of time in the morning show how their free time is sometimes traded off for necessary time.

The reliability and availability of buses, particularly during peak hours, are frequently problematic, leading some participants to start their journeys earlier than necessary to accommodate inconsistent bus schedules. For instance, Thara leaves her house by 6:30 a.m. to ensure timely arrival at her workplace, which operates from 7:30 a.m. to 4:30 p.m. She notes that while "limited-stop" buses, requiring an interchange at Thoppumpadi, take about 1 hour and 15 minutes, "fast passenger" buses reduce the travel time to 45 minutes. Similarly, Kamarunnisa faces a daily commute challenge, travelling three kilometres to the bus stop where her spouse drops her off. Given the distance and the 7:10 a.m. bus time, walking is not feasible. To catch the 7:05 a.m. bus, she must leave home by 6:45 a.m., and after an hour's journey, she transfers to a second bus in Aluva to reach her workplace. Occasionally, Bindu has had to resort to taking an autorickshaw, incurring costs of 150 to 200 rupees to ensure punctuality. This situation shows the participants' struggle to manage their time effectively amidst unreliable public transport and strict work schedules, leading to increased daily stress.

The above narratives underscore that daily travel time significantly affects time management. The study observed that participants typically face longer travel times than their male counterparts due to reliance on public transportation. This observation supports findings from Fan (2017), Hu (2023), and Kwan and Kotsev (2015) on gendered differences in travel times, where women often endure longer commutes. However, our study nuances the literature by revealing that, contrary to some claims (Chidambaram & Scheiner, 2023; Sweet & Kanaroglou, 2016), longer commutes can occasionally serve as a respite if the journey is comfortable, for example by seats being available and buses not being crowded. Nonetheless, the unpredictability of public transport remains a significant source of stress for women like Thara and Mariya, whose experiences underline the broader issue of time poverty exacerbated by unreliable transportation. This aligns with previous research indicating that long and inconsistent commutes adversely affect job satisfaction and overall well-being (Iwata & Tamada, 2014; Troncoso et al., 2021). Addressing these challenges may involve improvements in public transport reliability to mitigate the negative impacts on working women's time management and quality of life.

6.3. Evening Activities, Preparations for the Next Day, and Sleep

The interviews revealed that the workday for many women extends well beyond their official job hours, often continuing into the evening and sometimes late into the night. Most participants return home before sunset, contingent on road traffic conditions. Upon arriving home, they immediately resume their household chores, which include cooking dinner, performing evening prayers, sweeping the courtyard, doing laundry, and preparing for the following day.

The pressure to manage these tasks efficiently is heightened by the need to catch the earliest possible bus while returning from work to avoid additional waiting time for the next bus, which many participants view as unproductive. For instance, Sindhu typically arrives home by 5:10 p.m., depending on bus timing and traffic. Missing her bus means she faces an additional wait of 30 to 45 minutes, which she considers a waste of valuable time. Similarly, Mariya usually leaves work by 6:00 p.m., but if there are guests at her workplace, it makes her leave work late and she may not get home until as late as 7:00 p.m. Despite their exhaustion from long workdays and crowded bus rides, both Sindhu and Mariya continue to handle household chores until after 10:00 p.m., finally going to bed around 11:00 p.m. This ongoing cycle underscores the relentless demands placed on these women as they strive to manage their committed time and contracted time.

After you come back, then it's time for the afternoon chores. I do the laundry in the evening, also brooming the courtyard. Then lighting the lamp, putting together something for curry. However it goes, up until 10:00 p.m., 10:30 p.m. it's work for me again. When it's around 11:00 in the night, then I go to bed. (Sindhu, Perumbadappu)

The evening routines of participants reveal a continuation of their workday responsibilities well into the night. Beena, for instance, leaves her job at 6:00 p.m. and navigates through crowded buses during rush hour to reach home by 7:00 p.m. Similarly, Thara usually departs work around 6:00 p.m. and aims to catch a bus by 6:15 p.m. However, due to heavy traffic, she often arrives home later than expected.

Jini, whose workday ends at 5:00 p.m., requests permission to leave at 4:30 p.m. due to the infrequent bus service. She departs for home at 4:45 p.m., but if she needs to make additional stops to buy groceries, she

arrives later. Jini must also light the evening lamp, a religious custom, and complete her dinner preparations and cleaning before going to bed by 10:00 p.m. Her flexibility at work allows her to manage her bus schedule effectively and reach home earlier.

Kamarunnisa typically returns home around 5:30 p.m., though her arrival time can vary due to delays during her three bus changes. She aims to be home by 5:00 p.m., but additional stops or social interactions may push her arrival to 6:00 p.m. Kamarunnisa feels pressured to complete her chores by 8:00 p.m. to make time for the evening prayer. If she is still engaged in cooking, such as frying or preparing fish, she pauses her tasks for prayer and resumes them afterwards.

There's plenty of work that needs to be taken care of after returning home. Mainly cooking curry and all; I do it after getting back. In the morning, it's just a curry hastily whipped up. (Kamarunnisa, Kunnukara)

At first glance, the evening routines of participants may seem more relaxed, as there is no external time pressure beyond work commitments. However, evenings are primarily dedicated to committed activities, with some time allocated to necessary activities. Any free time available during this period is often spent on prayer and other religious practices. This further illustrates the relentless nature of their time schedules. Despite long workdays and arduous commutes, these women return home to find additional household chores awaiting them, contributing to chronic fatigue and impacting their overall well-being. Their experiences align with global research on caregiving and time constraints (Jenkins, 1997; Krishna, 2024), emphasising the continuous strain imposed by societal expectations and traditional gender roles.

A severe lack of adequate sleep is a common theme across the participants' narratives, significantly exacerbating their already demanding routines. The necessity to wake up early, regardless of how late they went to bed, is crucial for managing their extensive morning chores. For instance, Sindhu typically goes to bed around 11:00 p.m., yet she struggles to get sufficient rest due to the early start required the next day. Although she enjoys sleeping a bit more on Sundays, rising early to complete chores before sunrise remains essential for her. Waking up at 7:00 a.m. poses a significant challenge for Sindhu, disrupting her routine.

The detrimental impact of insufficient sleep is also reflected in participants' narratives of their health conditions. Beena suffers from health issues such as low blood pressure and manages only three hours of sleep per night. To manage her health condition, she increases her water intake and seeks medical attention only when her condition worsens. Her focus remains on finishing her tasks within tight time constraints, even at the expense of her health. Similarly, Kamarunnisa often goes to bed around 11:00 p.m. but struggles to achieve adequate rest due to her overloaded schedule. She frequently sacrifices sleep to address the numerous tasks she cannot complete during the day, illustrating the broader issue of balancing sleep with relentless work and domestic responsibilities.

It'll be very late. So then by the time I eat dinner, it'll be 11. After eating dinner, how long can you really sleep? You have to wake up at 4 to get to work, right? You have to wake up even before 4. (Kamarunnisa, Kunnukara)

The importance of adequate sleep is a recurring theme and our findings resonate with established research linking care work burdens to health issues among women (Berg & Woods, 2009). Participants like Bindu, Beena, and Thara have adjusted their routines to commence their day before sunrise. This adaptation,

however, intensifies their physical and mental exhaustion due to persistent sleep deprivation. Previous research underscores time poverty as a critical factor affecting women's health and well-being (Giurge et al., 2020; Turner & Grieco, 2000), a phenomenon that is particularly pronounced in urban settings where commuting further exacerbates hardship (Carmichael et al., 2024). This study contributes to the existing literature by providing additional context from Kerala, where traditional gender roles impose a double burden on women, limiting their opportunities for leisure, personal development, and recovery (Chatzitheochari & Arber, 2012; Jenkins, 1997). Addressing this issue may require systemic changes such as more flexible work schedules and enhanced community support for domestic responsibilities.

It is noteworthy that while participants share similar age, socio-cultural, and economic backgrounds, there are distinct differences in their experiences of time poverty. For instance, widowed women like Mariya, as the sole breadwinners, face added stress to maintain their income without compromising care responsibilities. Additionally, some older participants face age-related health issues, which increase their need for rest. These factors highlight how family status and age further shape women's time poverty experiences.

These narratives also reveal the profound value these women place on time, a resource that remains elusive despite their best efforts to manage it. Within the conceptual framework of time-use and travel used in this study, our analysis highlights the significant time poverty participants face as they balance necessary, committed, and contracted time within constrained daily routines. Long commutes (travel time), rigid work schedules (contracted time), and the overwhelming burden of morning and evening household chores (committed time) dominate their days, leaving little to no free time for rest or personal care. This imbalance between time categories results in persistent exhaustion, reflecting the adverse impact of time poverty on their physical and emotional well-being. The narratives demonstrate how limited free time, consumed by relentless demands, underscores the struggle to achieve well-being amidst overlapping and competing time demands. The stories illustrate how the participants' time is perpetually under demand, highlighting the urgent need for improved supporting infrastructure and more conducive household environments. These accounts also emphasise the severe consequences of sleep deprivation, demonstrating that the participants' demanding schedules often provide insufficient opportunities for rest and recovery.

7. Conclusions and Recommendations

This study provides a comprehensive examination of the daily time use and mobility challenges faced by women in Kochi, particularly those from lower socioeconomic backgrounds. Through qualitative methods, we have gained a detailed understanding of the complexities of their lived experiences, offering richer insights than those typically derived from quantitative analyses. Our findings highlight the profound impact of time constraints, lengthy commutes, early waking hours, and extensive household responsibilities on their quality of life. The prominent theme that emerged across participants' narratives is the prevalence of time poverty, particularly evident in the early morning hours. The findings corroborate Krishna's (2024) observation that women in Kerala experience greater time poverty compared to men, primarily due to the disproportionate burden of care work. Furthermore, our study reveals that these gendered disparities in time use are exacerbated in lower-income households, aligning with Urry (2000) and Rodgers (2023), who argue that economic disadvantage compounds time scarcity due to limited access to resources that could enhance the effective use of available time. These challenges reflect broader systemic inequities and result in significant physical and emotional fatigue.

Reiterating Tiznado Aitken et al.'s (2024) integrated time use framework, time poverty is the deprivation of free time when an individual's total time is allocated between committed, contracted and travel time. This study offers new insights into this framework through a gendered lens. The findings reveal that for women, committed time—dominated by unpaid domestic and caregiving responsibilities—overwhelms their daily schedules due to entrenched gender roles. Even when women allocate equal time to contracted activities (paid work) as men, the imbalance in their committed time leads to severe conditions of time poverty. While similar challenges are experienced by working-class women globally (Rodgers, 2023), the socio-cultural and infrastructural context in developing cities like Kochi adds a unique layer of complexity to their experiences. This article contributes to the growing scholarship on time poverty by emphasising intersections of time poverty and mobility in a Southern urban context, where transport-related barriers exacerbate existing gendered time poverty. The findings have important empirical and theoretical implications for future research on time poverty and mobility, particularly in the context of rapidly urbanising regions of the Global South.

The study's implications for transport policy are significant. Increased frequency and reliability of public transportation are essential to reduce travel time and enhance accessibility for women. Improvements such as increased bus frequency, especially during peak hours, and policies prioritising women's comfort and safety are crucial. These measures are vital for addressing the specific needs of female commuters and reducing their time-related stress. Current initiatives under Kerala's Gender Equality and Women Empowerment Policy 2014 and the formation of the Kochi Metropolitan Transport Authority are promising steps towards developing gender-inclusive transport solutions. However, Kerala's urban planning and transport policy must be better integrated to fully address time poverty associated with mobility. The collaboration between urban planners and transport authorities is necessary to ensure that transport infrastructure and services cater to the needs of low-income women. The Comprehensive Mobility Plan for Kochi, currently in its draft stage, does not adequately incorporate gender inclusivity. Our findings provide evidence for the already severe gendered issues in mobility experiences in Kochi, to support framing adequate measures for more inclusive transport systems. These insights should be used to advocate for policies that prioritise not just frequency and safety but also the accessibility and affordability of services, with a clear focus on how these systems can support women's participation in both the workforce and social activities.

While this study provides valuable insights into gendered time use and mobility, it is not without limitations. The research is confined to Kochi, and the findings may not be universally applicable to all Indian cities, although they are relevant to those with similar socio-cultural and infrastructural characteristics. The scope of this study is limited to gendered time poverty in travel behaviour research. Additionally, the focus on time and its impact on mobility does not encompass other dimensions of gendered travel behaviour, such as interactions with the environment during travel or safety strategies employed by women. Future research should address these aspects to further enrich our understanding and inform more targeted policy interventions.

In conclusion, this research contributes significantly to the literature on time poverty and gendered time use, highlighting the need for systemic reforms to improve the quality of life for urban women workers, particularly in a Global South context. The insights provided offer a basis for developing policies and practices aimed at enhancing equity and supporting women in managing their demanding routines.

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Conflict of Interests

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