RESEARCH ARTICLE

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PEER REVIEWED

Kudumbashree's Lunch Bell project and digital solidarity economy in Kerala, India

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Abstract: The Lunch Bell project, a platform-based meal delivery initiative launched in March 2024 by Kudumbashree, a women-led community network in Kerala, India, exemplifies a state-assisted curation of the digital solidarity economy. Emerging against the gendered paradox – where women dominate unpaid domestic cooking yet remain excluded from commercial food entrepreneurship – the project redefines extractive logics of labour organisation within the digital economy. Through qualitative methods, including participant observation, interviews, analysis of policy documents, responses obtained via India's Right to Information Act, and a walkthrough method examining Kudumbashree's Pocket Mart mobile app, conducted between March and August 2024, our paper explores how state support for women-centred digital platforms fosters principles of feminist economics, gender justice, and sustainability in the digital solidarity economy. We argue that although the Lunch Bell project operates within an "invited space" for participation shaped by top-down design logics of the state, it nonetheless embodied a reflexive, non-gender-agnostic approach in addressing the concerns of gendered labour, demonstrating the potential of state support for a digital solidarity economy.

Introduction

Kudumbashree – a women-led community network mobilising over 4.8 million members – stands as a cornerstone of Kerala, a southern Indian state's solidarity economy. In March 2024, it launched the *Lunch Bell* project: a platform-based meal delivery system operating through the Pocket Mart app. This venture promotes a digital future that challenges corporate capitalistic platform logics in the food sector, instead embodying a model where meals prepared in centralised kitchens using locally sourced ingredients are delivered in reusable steel containers (in compliance with Kerala's green protocol) by women workers on wheels. The initiative spans food sourcing, preparation, delivery, and post-use cleaning processes in Kerala's capital, Thiruvananthapuram, with significant state support, including the top-down platform design, showcasing an approach to labour organisation that reflects the commitments of a digital solidarity economy.

Notably, this initiative emerges against a stark gendered paradox. While women are over-represented in unpaid domestic cooking labour – with only 6.1% of Indian men participating in such work (Government of India, 2020) – India's commercial food industry remains largely male-dominated in both ownership and workforce (Lalvani, 2019; Deshpande & Sharma, 2013). Although women participate in home-based food delivery, their work in preparing and delivering meals is often viewed as an extension of traditional feminine skills and typically operates within family-oriented ventures (Gooptu & Chakravarty, 2018). Even as the food business sector expands through digital labour platforms, such as Swiggy and Zomato, which mediate online ordering and delivery – from ghost kitchens optimised for rapid last-mile delivery or directly from restaurants – food delivery work remains heavily male-dominated, and the gender-agnostic designs of these digital labour platforms treat men's experiences as the norm, overlooking women's lived realities (e.g., rating-based work assignment mechanisms that undermine women workers' ability to resist gendered bias and harassment) (Ma et al., 2022; Kusk & Nouwens, 2022). In this context, examining the *Lunch Bell* project – an exemplary initiative within the digital solidarity economy – becomes critically relevant. It not only offers insights into the role of the state in addressing structural inequities but also complicates existing theorisations of the digital solidarity economy itself.

Methods

This qualitative case study, conducted between March and August 2024, examined the initial implementation phase of the *Lunch Bell* project, centred in Thiruvananthapuram, the capital of Kerala, India. The first and third authors conducted immersive participant observation to map the labour process within *Lunch Bell*, including the procurement of agricultural products, meal preparation in centralised kitchens managed by Kudumbashree, dispatch of deliveries, collection of lunch boxes, and post-consumption cleaning of reusable tiffin containers. This approach provided detailed insights into the everyday operations and challenges during the project's pilot phase. Additionally, eight semi-structured interviews were conducted with purposefully sampled participant categories, including women delivery riders, kitchen staff, managerial personnel overseeing the pilot phase from the Adhebha Institute of Food Research and Hospitality Management (AIFRHM) , and Kudumbashree bureaucrats. All the participants we interviewed were originally from Kerala.

TABLE 1: Participant demographics

PARTICIPANT ID	AGE	GENDER	ROLE	INTERVIEW DURATION
P1	35-40	Woman	Food delivery worker	60 minutes
P2	30-35	Man	Kudumbashree bureaucrat	60 minutes
P3	25-30	Woman	Food delivery worker	60 minutes
P4	40-45	Man	Kudumbashree bureaucrat	60 minutes
P5	40-45	Man	AIFRHM team member	120 minutes
P6	25-30	Woman	Food delivery worker	60 Minutes
P7	50-55	Woman	Kitchen staff member	120 minutes
P8	55–60	Woman	Kitchen staff member	120 minutes

Interviews were conducted in Malayalam, the native language of the first and third authors. All participants provided informed consent, and sessions were audio-recorded, transcribed verbatim, and translated into English for joint analysis by the first and second authors. Complementary data were obtained through India's Right to Information (RTI) Act, yielding official project updates and statements. Promotional materials and brochures related to the project were collected from the Kudumbashree State Mission Office in Thiruvananthapuram. The data analysis employed a reflexive thematic approach, systematically engaging with the data to it-

eratively develop themes (Braun & Clarke, 2019). The study also applied the walk-through method (Light, Burgess, & Duguay, 2018) to analyse the Pocket Mart app. Systematic notes were taken on interface design, user interactions, and ordering processes. Test orders were placed to map the app's workflow, facilitating the identification of women delivery workers. Ethical approval for the study was granted by the Research Ethics Board (REB) of the first and second authors' home institution.

Kerala: A social democracy

Despite its constitutional limitations as a subnational state lacking control over capital flows and market protections, Kerala - the southern Indian state - has emerged as a paradigmatic case in development studies for institutionalising social citizenship. This is exemplified through proactive state interventions aimed at reducing inequality, enhancing citizens' capabilities, and reconfiguring life chances based on rights rather than ascriptive identities (e.g. caste and creed) or market contingencies (Heller, 2001; Heller, 2013). Since 1957, when Communists were first democratically elected to power – a landmark moment in global political history, apart from the earlier case of San Marino principality in Italy (Desai, 2022) – Kerala's policy direction has been shaped primarily by parliamentary communist parties, notably the Communist Party of India (Marxist) and Communist Party of India. Through land reforms, advances in public health and education, and an effective public distribution system (Ramachandran, 1997), the provincial state's governance underscores the active "mobilisation of subordinate actors and the effective political translation of their material interests into state policies" (Heller, 2013, p. 271). These governance priorities also have had a measurable impact on the state's socio-economic indicators. In 2023–24, Kerala's per capita income was 1.4 times the national average, the state recorded highest overall literacy rate in India, and it had the lowest poverty rate in India, with only 0.55% of its population classified as multidimensionally poor (NITI Aayog, 2023; Government of Kerala, 2025). Wages are also significantly higher; for instance, the average daily wage for male agricultural labourers in Kerala is Rs 807.2 (€7.85), compared with the national average of Rs 372.7 (€3.62) (Reserve Bank of India, 2024).

Although the state has made significant gains in reducing gender disparities across socio-economic indicators – adult female literacy (ages 15–49) stands at 98.3% compared with the national average of 71.5%, 61.1% of women have ever used the Internet compared with 33.3% nationally, the maternal mortality ratio is the lowest at 19 per 100,000 live births (versus 97 nationally), and the infant mortality rate is 6 per 1,000 live births (versus 28 nationally) (Government of Kerala,

2025) – these advances have not fully translated into women's economic participation. Kerala's Worker Population Ratio (for those aged 15 and above, rural and urban combined) stands at just 36%, below the national average of 40.3% (Ibid). Similarly, the state records a high unemployment rate for women: in 2023–24, it was 14.6% for women compared with 7.4% for men (Ibid). Across sectors, women's wages also remain consistently lower, earning less than half of what men earn in the primary and manufacturing sectors (Ramachandran, 2025).

In this context, the solidarity economy – through cooperatives and self-help groups – has become critical to women's economic empowerment in Kerala. As of March 2025, 1,256 women's cooperatives existed, 74.8% of which were functional (Department of Co-operation, 2025). Building on a legacy of robust public action and proactive state support, initiatives such as the Kudumbashree, Self-Employed Women's Association (SEWA), women's Chit fund networks have become important in enhancing women's financial inclusion and agency (Christabell, 2022; Thuppilikkat, 2024). However, past studies note that many women-only cooperatives and women self-help groups are developed or supported within partisan political structures as well. For instance, the Communist Party's subcommittees oversee women's cooperatives, such as those in the Kannur district, Kerala (Nair & Moolakkattu, 2015), and similar initiatives include Janashree, a self-help organisation established by the Indian National Congress in Kerala (Williams et al., 2011). Even when financially viable and operating in protected environments, women members often lack autonomy in critical decision-making due to male leadership control (Nair & Moolakkattu, 2015).

Furthermore, the provincial state has also cultivated a remarkable digital ecology that actively promotes social citizenship and embodies political values of solidarity economy. Since the early 2000s, the Kerala state government has pioneered the Akshaya programme to bridge the digital divide through ensuring IT access via neighbourhood Akshaya Centres (within 3km of every household) and digital literacy training (Palackal et al., 2007). Later, the provincial state emerged as a pioneer in digital governance through its extensive adoption of free and open-source software across public administration and education sectors (Thomas, 2014). Kerala also became the first Indian state to recognise internet access as a human right (Varma, 2017), and to achieve universal digital literacy – a milestone reached through Local Self Government Department's initiatives that trained 257,000 grassroots volunteers, including Kudumbashree members, with the aim of enhancing the economic agency of women and the elderly (Dasgupta, 2025). The state also implemented free broadband connectivity for all below-poverty-line households (e.g.

KFON project) through a 2,600 km state-owned optical fibre network. Some of the notable digital infrastructure with explicit anti-capitalist politics includes state-owned digital platforms such as Kerala Savaari (a ride-sourcing alternative to corporate companies such as Uber/Ola), CSpace (state-owned OTT platform), and worker cooperative-owned Cyberpark (e.g. UL CyberPark).

We situate the Lunch Bell project – a women-led digital platform-based meal delivery system – as a continuity within Kerala's ecology of pre-existing and ongoing state-society interventions that advance social citizenship and solidarity, while confronting persistent gaps in women's economic participation.

Kudumbashree

On 17 May 1998, the Government of Kerala launched Kudumbashree, a women's community network, to address gender-based economic deprivations and inequalities. Although Kudumbashree was initially conceived by the state government as a ten-year poverty alleviation programme with a design involving a community-driven development initiative supported by microfinance provisions and collaboration with local self-government, it evolved into an institution mobilising poor women, finding a fine-tuned balance between state support and community initiative (Biju & Kumar, 2013; Asok & Cox, 2025). While its critical component – the Self-Help Group–Bank Linkage Programme – originated as a 1970s Bangladeshi microfinance model aligned with the neoliberal 'roll-back' of state agendas (Asok & Cox, 2025), Kerala's adaptation subverted this logic: Kudumbashree worked alongside the state to position poor women as active agents of economic, social, and political change, crafting an organisational design that fosters class-conscious feminism and the logic of social movements (Mukherjee-Reed, 2015; Biju & Kumar, 2013). Furthermore, Kudumbashree maintained a continuity with or served as an endogenous extension of the Left Democratic Front's 1996 People's Plan Campaign – a pioneering decentralised planning initiative that empowered local communities to identify and address their own developmental needs. Both the People's Plan Campaign and Kudumbashree embody the social logic of a movement (Heller, 2001), entrenching state-society linkages and synergy.

With 4.88 million women members, the organisation's decentralised structure involves 317,724 Neighbourhood Groups (NHGs) at the grassroots level (each comprising 15–25 women identified from below the poverty line) and democratically elected 19,470 ward-level Area Development Societies (ADS), and 1,070 panchayat-level Community Development Societies (CDS). Kudumbashree's democratic, federated structure ensures poor women's representation, with NHG volunteer of-

fice-holders forming the ADS general body, electing the ADS governing body, and serving as CDS members, while ADS units across panchayat wards elect their respective CDS office-holders (Williams et al., 2011, p. 1265). Notably, NHGs not only function as credit societies or facilitating thrift for economically disadvantaged women but also play a key role in participatory planning by shaping microplans. These microplans are refined or attended into mini plans by ADS and later consolidated into comprehensive village or municipal-level plans, which are implemented with state support (Mukherjee-Reed, 2015, p. 301). However, their activities are supported and overseen by 14 District Missions and a State Mission. As a government-led poverty eradication initiative, these missions play a pivotal role in strengthening grassroots institutions, with the State and District Missions implementing targeted policies to reinforce local planning and development. The State Mission is headed by an Indian Administrative Service (IAS) officer who serves as the Executive Director and receives executive direction for scheme formulation and execution from an Executive Committee, which is chaired by the Additional Chief Secretary of the Local Self-Government (LSG) Department. At the apex of the governance structure is the Governing Body. Chaired by the state Minister for LSG, this body includes mayors, municipal chairpersons, district panchayat presidents, block panchayat presidents, gram panchayat presidents, and other senior bureaucrats, and is responsible for making all policy-level decisions. This structure links autonomous self-help groups, which develop their own micro-plans and neighbourhood group enterprises, with the state, which coordinates anti-poverty programmes, development objectives, delivers women's entrepreneurship and capacity building training, and facilitates funding, subsidised credit and market access for Kudumbashree members' products (Williams et al., 2011, p. 1266). Thus, Kudumbashree integrates both bottom-up and top-down planning approaches, ensuring a dynamic synergy between women-members' local participation and state-led intervention.

Findings

On 14 March 2024, a centralised kitchen operated by a Kudumbashree women's collective in Thiruvananthapuram buzzed to life at 5:00 a.m. to fulfil Lunch Bell orders – Kudumbashree's meal delivery service run through their Pocket Mart mobile app, where orders are accepted daily until 7:00 a.m. The prior day, women members of the kitchen unit sourced vegetables from the local Krishi Bhavan, the agricultural department' grassroots unit procuring produce directly from farmers. They also collected fresh fish before driving their microvan back to a member's home, whose basement was repurposed as a central kitchen for the Lunch Bell project. By

dawn, the Lunch Bell office had relayed the day's tally of vegetarian and non-vegetarian meals. As a pilot project testing operational capacity, the team capped orders at 150, a cautious measure despite the kitchen's potential to scale to 1,000 meals daily. A 10-member women's team, clad in aprons and hairnets, worked in unison: scrubbing vegetables, seasoning fish, boiling rice and simmering curries such as *sambar*, *koottukari* and *pulissery*, along with homemade pickles.

Between 9:00 and 10:00 a.m., stainless steel lunch boxes were packed with hygienic meals, labelled as meat/fish-based or vegetarian, and readied for dispatch. A group of young women in green T-shirts and pink caps, hoisting large carry bags, gathered near the kitchen for their pre-delivery briefing from Lunch Bell officials. New women recruits, underexperienced in navigating Thiruvananthapuram's lanes and routes for food delivery, received printed sheets listing delivery addresses, contact details, and order IDs, data gathered from the Pocket Mart app. Officials patiently addressed their questions, alleviated anxieties, and described their labour process for the day. Women riders then headed directly to key hubs where a delivery van had dropped bulk tiffin orders. From there, they undertook last-mile distribution to offices, institutions and residences, within a 2 km radius. Between 10:30 a.m. and 12:00 noon, lunches reached customers. Later, empty lunch boxes were collected between 2:30 and 3:00 p.m., then sent for a rigorous three-stage hygiene wash, before being reused the next day. The entire process – from sourcing and preparation to packing, delivery, and tiffin collection – adheres to the state-mandated Green Protocol, prioritising plastic reduction and systematic food waste management. In the first six months, the Lunch Bell project served an average of 2,175 lunches per month. The customers were mostly concentrated in the capital city's working offices, with approximately 60 per cent being men and 40 per cent women (P5, interview participant, 2024). By February 2025, 9,552 customers had enrolled (RTI, 2025).

In the following sections, we will explore how Kudumbashree's Lunch Bell project, an emerging experiment in the digital solidarity economy, is strengthening community networks and women's collective resilience.

TABLE 2: The number of food units delivered per month. RTI response, Government of Kerala, 22 February 2025

MONTH, 2024	THE NUMBER OF FOOD UNITS DELIVERED
March	2,173
April	1,829

MONTH, 2024	THE NUMBER OF FOOD UNITS DELIVERED
May	2,546
June	2,208
July	2,492
August	1,802

Inspiration, vision and design

Launched as a pilot project on 5 March 2024, in Thiruvananthapuram (the capital of Kerala), the Lunch Bell initiative was inaugurated by the Minister of the Local Self Government Department. During the flag-off of the inaugural food delivery, the Minister emphasised its dual focus on economic and social empowerment for women, highlighting the use of a digital platform to increase Kudumbashree members' income, create digital market access for their products and services, and train women delivery riders in a traditionally male-dominated sector. The Executive Director of Kudumbashree, the civil servant leading the initiative, asserted that as Kudumbashree completes 25 years in Kerala, its governing body has outlined plans to modernise its initiatives to keep pace with the times. The Lunch Bell project, implemented through the Pocket Mart app, was highlighted as an effort to leverage mobile technology that enables customers to locate Kudumbashree products and services at the nearest distribution point. In doing so, the initiative seeks to enhance accessibility and embed technological mediation within community-based economic practices, while also establishing sustainable, ecologically grounded food distribution systems that strengthen the local economy and promote the health of the working population in the state by providing home-prepared food free of preservatives, offering a wholesome alternative to the prevailing fast-food culture.

Kudumbashree's Lunch Bell project drew immediate inspiration from the Mumbai Dabbawalas, a decentralised and low-tech delivery logistics system operational since 1890 in western India, which delivers home-cooked meals from kitchens to offices. The workforce is predominantly composed of male workers from the Varkari sect, and they are now organised under the Nutan Mumbai Tiffin Box Suppliers Charity Trust, a worker cooperative (Pathak, 2010; Roncaglia, 2013). Their logistics model involves dabbawalas collecting 30–35 dabbas (lunchboxes) from homes, a load calibrated to their physical capacity and spatial memory. The destination-coded crates are transported via local trains to nodal sorting points and delivered to office-based customers by noon. Post-lunch, empty dabbas are collected

and returned to their origins, completing a cyclical workflow that involves multiple handoffs (Roncaglia, 2013).

Similarly, the operational model of Lunch Bell was designed to focus on lunch delivery, specifically delivering meals to workers in Thiruvananthapuram's government offices, rather than functioning as an instant food delivery system like corporate digital labour platforms such as Swiggy and Zomato. With a long-term aim to expand, the project plans to serve Technopark, Kerala's premier IT hub, and other private institutions. However, the project also responds to growing concerns about the platformisation of urban life, where instant food delivery – dominated by fast-food chains and unaccountable "dark/ghost kitchens" and precarious labour conditions – is reshaping food consumption patterns (Basheer & Prasanna, 2023; Shapiro, 2023). In contrast, the Lunch Bell project is revitalising the local economy by creating infrastructure that reconnects urban communities to homegrown ingredients and the state's rich culinary heritage. Instead of condemning city dwellers and workers for opting for convenience amidst growing workplace pressures, the women collective invites them to reclaim cultural food practices, transforming meals into acts of resistance against industrialised diets, whose delivery chain involves disastrous ecological footprints (Matsuyuki et al., 2024; Basheer & Prasanna, 2023).

Building an ecology for Digital Solidarity Economy

Kudumbashree has emerged as a transformative force in fostering women-led micro-enterprises and promoting a sustainable entrepreneurial culture. As of 1 March 2025, Kudumbashree has nurtured 157,097 micro-enterprises, with 102,723 individual ventures and 51,788 group enterprises spread across production, service, and trade sectors (Kudumbashree, 2025). They represent a significant female workforce in Kerala's agrarian sector, particularly in promoting agricultural revitalisation efforts such as the Fallow-less Village Programme (Choudhury et al., 2021; Government of Kerala, 2024). Kudumbashree has mobilised 92,442 Joint Liability Groups, comprising 425,169 women farmers, who cultivate 19,635.24 hectares of land (Kudumbashree, 2025). Complementing this, the Nutrition Garden Campaign promotes organic farming and dietary diversity, enabling women to establish 309,256 household gardens cultivating crops such as tomato, bitter gourd, spinach, pumpkin, and fruits, thereby enhancing food security and sustainable practices.

Kudumbashree also has a significant impact in the food service sector, with 1,198 Janakeeya Hotels working (Kudumbashree, 2025) to ensure a hunger-free society by providing mid-day meals for less than Rs. 35 (€0.35), moderating food costs for

the poor and underprivileged. Additionally, they operate 288 branded cafés and thousands of women-led food enterprises (Ibid), democratising access to affordable and healthy nutrition. Furthermore, the Startup Village Entrepreneurship Programme has catalysed 40,187 women-led enterprises, supported by trained consultants to ensure scalability and innovation (Government of Kerala, Local Self Government Department, 2025). Financially, Kudumbashree's enterprises amassed a turnover of Rs 1,816 crores (€176,2 million) in the financial year 2023–24 (Mahroof, 2024), underscoring the economic viability of this vibrant solidarity economy.

To strengthen market linkages, Kudumbashree has been facilitating trade fairs, weekly markets, and the development of community-based networks. The initiative has collaborated with government agencies to get support for their micro-enterprises. In February 2018, Kudumbashree ventured into e-commerce by launching the web portal *Kudumbashree Bazaar*. Developed by Street Bell Private Limited, the portal aimed to provide a permanent platform for selling Kudumbashree products (Government of Kerala, Local Self Government Department, 2024). They experimented with a quasi-decentralised operating model: while Mission officials determined product selection and curated the items featured on the portal, warehousing and order fulfilment remained the responsibility of women entrepreneurs, who could choose which third-party logistics services to use to complete orders (Joy & Rajeev, 2022). Payments were routed to a central account and subsequently transferred to the respective micro-enterprise accounts. However, the COVID-19 pandemic caused significant economic disruption. This, combined with the lack of autonomy of Kudumbashree women micro-entrepreneurs in deciding which products to host or withdraw, delayed payments from the Kudumbashree Mission, delays in order fulfilment and negative experiences for customers with third-party couriers, and the need for intensive online promotional efforts, posed significant challenges and prevented the initiative from achieving the desired level of success (Valenti et al., 2020; Joy & Rajeev, 2022).

Subsequently, the organisation explored the online market by listing their products on the Open Network for Digital Commerce (ONDC), a union government-backed e-commerce initiative, and also on major corporate e-commerce platforms like Amazon and Flipkart. However, Kudumbashree's e-commerce sales revenue remained minimal, accounting for only 1% of its total sales revenue in 2020-21 (Joy & Rajeev, 2022), highlighting the challenges faced in transitioning from traditional market linkages to digital platforms.

In 2020, Kudumbashree also launched Annashree, a hyperlocal food delivery app

piloted in Thrissur and Ernakulam districts, connecting customers with meals prepared by its women micro-entrepreneurs. The app was developed by the AIFRHM, an initiative which is part of Kudumbashree ecology, who also trained the women workers for this initiative. This initiative was developed following the model of other corporate online food delivery apps like Zomato and Swiggy, and it addressed the challenge of low visibility faced by Kudumbashree restaurants on these platforms after being listed, where paid promotions are often required to gain prominence for most existing food delivery apps (Government of Kerala, Local Self Government Department, 2020). The Annashree app project followed a fully decentralised model, with payments between customers and micro-enterprises conducted directly and digitally mediated. Kudumbashree women, as primary stakeholders, handled cooking, order management, and deliveries, including from home kitchens, and received training from the Kudumbashree Mission to ensure safe and efficient service. However, a key challenge for Annashree was that micro-entrepreneurs required new digital skills (Joy & Rajeev, 2022), and despite efforts at capacity building, implementing a fully decentralised model proved difficult to stabilise financial viability (P4, Interview Participant, 2024).

The Lunch Bell project signifies Kudumbashree's ongoing experimentation to turn its existing solidarity economy initiatives digital, aiming to expand market opportunities for its women entrepreneurs. In interviews with Kudumbashree officials, they highlighted their vision to integrate the collective's existing initiatives – including agricultural products, handicrafts, restaurant chains, and services – into a unified digital platform. Kudumbashree bureaucrat P4 emphasised:

> "We did not name the app 'Lunch Bell.' Our app is called Pocket Mart. 'Lunch Bell' is a campaign to familiarise people with our digital initiatives. Once our women-led delivery system attains enough experience and capacity, we will then be able to feature our full range of products for customers. This pilot campaign is a test run for many future initiatives."

The Pocket Mart app's interface incorporates features such as Quick Serve, enabling users to access services like house cleaning, cooking, caretaking, deep washing, and vehicle washing. Additionally, it integrates social initiatives like Snehitha (a helpline for women and children in distress), Kudumbashree Construction Unit (promoting women's entry into male-dominated construction sectors), and e-Seva Kendras (digital hubs facilitating government services). The app also facilitates the delivery of fresh produce, meat, dairy, millets, and spices, alongside showcasing flagship initiatives such as Janakeeya Hotel (subsidised eateries), Pre-

mium Cafés, and Kerala Chicken (affordable broiler chicken outlets). Further categories include fashion, personal care, herbal products, eco-friendly goods, gems/jewellery, stationery, toys, and electronics. While most features, apart from Lunch Bell, were non-operational during our fieldwork, the app's design underscores Kudumbashree's broader vision and expected future use: fostering a women-led digital solidarity economy that prioritises social welfare over profit. By expanding market access for women micro-entrepreneurs, the initiative seeks to counteract the local producers' vulnerability under corporate e-commerce such as Amazon, and labour precarity of corporate platform economies, enabling women to retain control over productive resources and penetrate sectors traditionally dominated by men.

This vision is particularly significant in Kerala, where, despite the state's exceptional progress in reducing multidimensional poverty, women continue to face high unemployment and a low worker–population ratio due to persistent systemic barriers to economic participation. Kudumbashree's entry into the digital solidarity economy seeks to address this gendered inequality, leveraging state infrastructure to create inclusive market systems that support women's labour participation and entrepreneurial opportunities amid the platformisation of society.

Top-down designs in Digital Solidarity Economy

The Lunch Bell project, launched through the Pocket Mart app, is a state-driven initiative conceptualised by Kudumbashree's Governing Body and implemented by the State Mission along with its associated bureaucratic apparatus. As a top-down intervention, the state mission oversaw the project's ideation, critical design decisions, and resource mobilisation for app development and project execution. The district mission invited their best-performing cafe enterprise units and recruited Kudumbashree women members with valid two-wheeler licences for delivery operations and additional female members for cleaning staff positions. During the three-month pilot phase, the Kudumbashree State Mission fully financed all operational expenditures, including monthly salaries and fuel expenditure for their women delivery workers, with the expectation that the project would achieve economic sustainability by the conclusion of this period – a goal that has yet to be realised. They also provided infrastructural support to centralised kitchens, washing facilities, formed a customer care unit, standardised lunchbox delivery systems, and ensured training resources for their workers.

Kudumbashree State Mission, following feasibility studies and collective deliberations, prototyped the operational model, secured administrative approvals, and for-

malised a partnership with Amigosia Private Limited (est. 2022) – a Palakkad-based software firm incubated at the Kerala Start-up Mission, specialising in digital solutions for community empowerment. The implementation of the Lunch Bell project in Thiruvananthapuram district is jointly coordinated by the Kudumbashree State Mission and the Thiruvananthapuram District Mission. In addition, the Mission collaborated with AIFRHM, Kudumbashree's master training agency for the food and hospitality sectors, established in 2009 under the Yuvashree scheme (Johnson et al., 2020, p. 7). AIFRHM's mandate includes addressing operational and financial challenges faced by Kudumbashree's women entrepreneurs, particularly in foodservice sectors. AIFRAM also had prior experience in facilitating Kudumbashree's Annashree app in 2020, a food delivery pilot project in Thrissur and Ernakulam, which ultimately did not achieve the desired outcomes by the conclusion of the pilot.

Within the Lunch Bell project, AIFRHM plays a dual role: strengthening members' capacity to engage with digital solidarity economies and contributing to the initiative's conceptual-practical development. AIFRHM facilitated training women workers, otherwise unfamiliar with platform-based work, in operations, service delivery, and app-based workflow management. This is to enhance women workers' capabilities and foster collective action – a strategy aimed at ensuring the project's eventual autonomous operations.

As AIFRHM's team member P5 noted:

> "Our purpose is to streamline the current process. We are now doing facility management. We are taking the feedback every day from our workers and streamlining the operations. Kudumbashree units are the ones who do everything. They procure, they prepare food, deliver, and clean. But since in the market we are not the only players, our service should have high quality. Our women units have run food catering and canteens, but when it is through an app, things are different and we have new challenges. But eventually they will run this themselves, and the workflow will be through the app itself."

Despite its top-down origins, the Lunch Bell project adopted a flexible, participatory working model. The project implementation and its design decisions were tailored to the evolving capacities of women workers and their gendered needs. Workers were invited to, and participated in, multiple consultative meetings with Kudumbashree, through which their feedback and perspectives were elicited and incorporated into the project framework. Despite Kudumbashree's ostensibly

women-led structure, the presence of men in key decision-making roles at state and district missions remains notable. Nevertheless, the practice of reflexivity embedded in Kudumbashree's institutional ecosystem enables participatory reworking of its systems, projects, and models. Crucially, the state's role here diverges from critiques levelled financialisation schemes, where state interventions often reproduce neoliberal patriarchy by fostering dependence or co-opting women into predetermined systems (Brown, 1992; Purewal, 2018). Instead, this approach centres on organising women's labour and productive capacities in ways that align with their existing capabilities, while simultaneously investing in conditions to expand those capabilities – a dialectic of empowerment and agency rather than subordination.

Furthermore, Kudumbashree's institutional integration with the state ensures rigorous adherence to Kerala government's Green Protocol. In compliance with this policy, the project has implemented reusable steel lunchboxes and utensils, eliminating disposable plastic and non-biodegradable food packaging. The lunch pre-ordering system in Lunch Bell also invokes an objective of decreasing food waste generation.

As Kudumbashree bureaucrat P2 explained;

> "If your office or institution does not provide facilities like bio-compost, they will face a lot of difficulties in managing that food waste or the non-biodegradable waste from packaging. With us, we do not insist on washing that container or tiffin boxes. However, since it is part of our culture to clean it, when you use it, most of our customers clean the tiffin and return it to us. But, we still go through a three-stage cleaning process, before the tiffin box is reused."

Beyond eliminating disposable materials and reducing environmental footprints, the project has integrated centralised composting to sustainably manage food scraps and organic waste. However, this incurs significant operational costs, particularly due to the added logistical burden of collecting reusable tiffin boxes – a process that requires additional labour from delivery riders, as well as a three-stage hygiene wash process. As P6, a women food delivery worker for the Lunch Bell project, noted, "we are encouraging sustainability efforts, but we are doing it also as a campaign, we need customer participation and they are practising a new civic ethic through us."

Design of technology, work organisation and gender

The Lunch Bell project's technological and organisational architecture embodies a deliberate departure from conventional food delivery digital labour platforms and entrepreneurship models through its gender-conscious designs. While Kudumbashree also mobilises micro-entrepreneurship (e.g., the kitchen unit in Lunch Bell is a pre-existing micro-enterprise organised under Kudumbashree), unlike corporate digital labour platforms, which use the language of entrepreneurship to position workers as independent contractors in order to evade legal regulations or impose precarious pay, the attempt here is to provide support and resources that enable women workers to independently grow their businesses. Notably, with regard to labour protections, due to Kudumbashree's linkage with the state, enable women workers in the Lunch Bell ecosystem – including kitchen staff, delivery workers, and washing unit personnel – to access social security schemes (such as health insurance) (Government of Kerala, Local Self Government Department, 2025; TNN, 2014), secure loans, and benefit from the strict enforcement of state labour laws.

Through the Lunch Bell project, workers receive standardised fixed wages, rather than precarious pay or performance-based compensation tied to customer ratings. As P8, a woman kitchen staff member, elaborated: "my work begins between 5:30 and 6:00 a.m. and finishes by 10:00 a.m. I am earning Rs 600 (€5.83) per day." Women delivery workers received Rs 20 (€0.19) per delivery unit and were also provided with fuel allowances. Our women delivery workers who participated in the study reported completing 30–40 orders per day during the pilot phase, earning approximately ₹600–₹800 (€5.83 - €7.81), in addition to reimbursement for fuel expenses. This is particularly striking in Kerala's labour context within corporate food delivery platforms, where delivery workers earn barely Rs 400 (€3.89) for 12-hour days, often subject to platform wage cuts and lacking fuel incentives (Onmanorama, 2024). Furthermore, the Lunch Bell project's pre-order system not only eliminates surge demand but also ensures a labour process organised into planned shifts without last-minute pressures. For women delivery workers, there is no need to chase orders; instead, they operate within a preallocated 2 km zone for food delivery, involving approximately four to five hours of work. Notably, the production chain follows a segmented workflow, where centralised kitchen workers complete food preparation by 10:00 am, riders then manage deliveries and lunchbox collection until 3.00 pm, and washing operations commence thereafter. Consequently, by maintaining segmented work hours, the project enabled our women participants to simultaneously engage in other Kudumbashree's micro-entrepreneurial and labour activities. For example, our participant P7, who developed a micro-enterprise in

food catering through Kudumbashree, delivers additional customer orders with her NHG unit members after completing the Lunch Bell orders in the morning, while P1 was engaged with home-based pickle production.

The care-infused service design of Lunch Bell ensures that the platform is a rating-free interface, and hence prevents punitive customer evaluation systems, which have been shown to reflect gender biases and stereotypes that disproportionately affect women (Ma et al., 2022). The project implements a human-centred support system for customer grievances, staffed by trained personnel rather than automated services. Workers also have direct access to institutional resources for assistance and conflict resolution, ensuring gendered needs are addressed and enables safety nets for women workers. While inspired by Mumbai's dabbawala system, the project innovates by actively recruiting women riders and ensuring collectivised production, through centralised kitchens than individualised home cooks formats. In contrast to corporate digital labour platforms that spatially disperse and atomise workers to undermine collective power (Thuppilikkat et al., 2024), the Lunch Bell project cultivates an ecosystem designed to foster worker solidarity and greater human interaction across its production chains.

Moreover, while maintaining the option for algorithmic management within its system since the pilot phase, Kudumbashree has ensured that there is human managerial oversight to address worker concerns. The project adopts a phased approach to technology integration, scaling digital workflow components progressively in alignment with women's evolving capacity building.

As P5 explained;

> "There is a delivery app specifically designed for workers, they could see orders, routes and map in that. But our workers are ordinary women without prior experience using such technologies. They have to be gradually brought into this app-mediated work system. That is why we need to give them a briefing now. Every morning, we will give them a clear picture on workflow before they start. We answer their queries and explain the routes. Driving by looking at a map is not a very easy job, they need to familiarise themselves with the city routes first."

The Lunch Bell currently employs a semi-digital delivery system that integrates technological and human elements. Pre-orders are processed digitally through the Pocket Mart app, orders are aggregated by locality using backend analytics, after which supporting staff from AIFRHM gives daily briefing on workflow and distrib-

utes printed delivery sheets containing customer addresses, contact numbers and optimised delivery sequences to the riders. The process was introduced because several women delivery riders lacked digital literacy, and many, as first-time riders, found it challenging to ride the bike while simultaneously using digital navigation tools. It allowed riders to develop spatial familiarity with delivery territories before adopting digital navigation tools and transitioning to app-based workflow.

Furthermore, the Lunch Bell project incorporates a logistics model utilising vans to transport bulk tiffin loads from centralised kitchens to city collection points. Since women riders retrieve meals from designated city spots, they eliminate long-distance trips for attending orders, as well as carry only a comfortable weight load on each trip.

P5 explained,

> "We need this van because our riders cannot carry entire tiffin boxes on their bikes. These are steel boxes, they have substantial weight. It is dangerous for driving. So we do not want them to carry more than 8-9 tiffins at a time."

During our field research in Thiruvananthapuram's peak 2024 summer months, women riders consistently emphasised valuing the project's care-centred and gender-friendly design, particularly its rejection of the hyper-masculine performance expectations endemic to commercial food delivery platforms.

As women food delivery rider P1 said;

> "When they called me for this, I was initially a bit nervous. Though I have been riding scooty for a long time, I had never considered delivery work possible for someone like me. Now I work with confidence, if there is a problem, we can call (anonymised) sir at any time."

For women like P1 (delivery rider), P7 and P8 (both kitchen staff members) – once homemakers living below the poverty line – Kudumbashree's structured pathway, beginning with thrift societies and microfinance initiatives, has enabled transformative economic mobility. Through this journey, they have earned and owned assets such as bikes, kitchens with commercial capacity, developed digital literacy, and now participate in the digital solidarity economy, with state support to enhance their capabilities and social citizenship. However, women workers' engage-

ment with the state is not without challenges. Navigating state bureaucracy is time-consuming and at times slow, particularly when clearing financial bills. As P6 noted, they struggled for months with delayed payments for promotional incentives offered to customers, which the government later covered as rebates. Similarly, the turnaround time for processing payments – mediated through the Pocket Mart app, routed via Kudumbashree, and eventually disbursed to workers – can take up to one month, a delay that creates significant financial strain for kitchen units. However, participants such as P7 and P8 also recognised the government's role in creating a market for them through advertising and online promotions, as well as in encouraging the digital transformation of their operations. For women workers such as P7 and P8, who are not yet fully comfortable using mobile phones, and delivery workers such as P1, who are learning to navigate rides with the support of in-app maps, the Lunch Bell project is also a stepping stone to enhance their digital literacy.

Discussion & conclusion: Lunch Bell and Digital Solidarity Economy

Since its inception twenty-seven years ago, Kudumbashree has grown into one of the world's largest women's community networks, now navigating digital futures through state-supported policy interventions such as the Lunch Bell project, delivered via the Pocket Mart app. Originally launched as a developmentalist state initiative for poverty eradication and women's economic and social empowerment, Kudumbashree has since evolved into a thriving solidarity economy, harnessing the collective agency, autonomy, and social power of more than 4.8 million marginalised women (Mukherjee-Reed, 2015). With parliamentary communists as a strong political force and a provincial state embedded in a history of robust public action, Kerala – unlike other Indian states – presents a distinct case in which the state actively shapes a policy environment conducive to the flourishing of solidarity economies. As a result, the state has cultivated a dense ecosystem of cooperatives and solidarity enterprise (many emerging from labour and anti-caste movements) including capital-intensive interventions, while also enmeshed in strong linkages with producer markets, local governments, and public finance (Thuppilikkat, 2024; Kuruvilla, 2019). These efforts are geared toward resisting the hegemony of large corporate capital in the economy and prioritising "workers and societal welfare before profit" (Kuruvilla, 2019, p. 90), exemplifying a defensive struggle by a subnational state navigating the pressures of neoliberal economic order. In this context, Kudumbashree's Lunch Bell project, along with the state support it receives, provides evidence of an active effort to shape an alternative future rooted in a digital

solidarity economy.

Notably, the state's intervention through the Lunch Bell project to empower Kudumbashree's women entrepreneurs represents not an isolated initiative, but rather part of crafting a broader continuum of alternatives to corporate platforms. This includes Kerala Savaari, a state-owned ride-sourcing platform developed as a public alternative to Uber and Ola following the failure of a worker-owned experiment; CSpace, a state-operated Over-The-Top (OTT) media streaming platform challenging Amazon Prime and Netflix; and 2,600 km state-owned Kerala Fibre Optic Network (K-FON), providing free broadband internet access to below-poverty-line households. While resource constraints in infrastructure, technology, and capacity building pose significant challenges to developing a digital solidarity economy (Souza & Flor, 2025), in Kerala, the state plays a critical role in mitigating these limitations.

As Hossein (2024, p. 60) observes, public trust in political actors to shape policies - coupled with citizens' expectations of state support - constitutes a notable feature of Kerala's solidarity economies. Building upon Kudumbashree's established market presence and well-organised women member units, which have long waged survival struggles against structural economic barriers, through the Lunch Bell project, the state is playing an enabling role to enhance women members' capabilities, agency and collective voice in the platform economy. In line with feminist economics, the state is focusing on creating "conditions that make it possible for [women] to be effective in doing and being" in the digital economy (Agenjo-Calderón & Gálvez-Muñoz, 2019, p. 145). Critically, to attend gender-exclusionary market systems in food business/delivery, the emphasis is placed on integrating existing solidarity economy initiatives, but through a gender justice informed work organisation and platform design, relying on care, wellbeing and social citizenship.

Kudumbashree, with its inherited democratic governance structure and established history of cooperative engagement with both solidarity economy initiatives and local governments, is leveraging technology to optimise services and workflows, and explore new markets. Previous attempts to transition Kudumbashree into a digital economy, involving labour processes such as order management, warehousing, order fulfillment, customer complaints, and merchandising, included initiatives like Kudumbashree Bazaar, which deployed a quasi-decentralised operational model, leaving warehousing and order fulfillment tasks to micro-entrepreneurs; the Annasree app, which used a decentralised model to promote autonomy and capacity-building among women; and enrolment in corporate digital platforms, which required the state mission to implement a centralised operating model (Joy & Ra-

jeev, 2022; Valenti et al., 2020). All of these initiatives invited varying degrees of autonomy for Kudumbashree's women entrepreneurs to remain competitive in the digital economy but ultimately struggled to deliver the desired results. The Lunch Bell project draws insights from past experiments and pilot initiatives, developing its own delivery fleets for logistics, in-house customer care operations, and centralised kitchens through its catering units, while continuously optimising digital interfaces for both customers and workers, with a high degree of centralisation in the operating model, which limits worker autonomy. Lacking the capital resources of venture capitalists and corporate chains, community networks such as Kudumbashree cannot be expected to achieve a flawless launch in the digital economy, nor can they absorb prolonged losses, even with state support. However, by continuously learning from and refining their own experiences, they are attempting to craft an alternative economic model, working alongside the state to work against the dominance of neoliberal capital.

Digital solidarity economy initiatives such as the Lunch Bell project, which mobilise a community network primarily of poor and working-class women, are designed to work from the ground up. They address issues such as the gendered digital divide through a reflexive approach – rather than presuming digital literacy as a prerequisite, the project incorporates structured training and guided technological integration into women's work environments. For example, the project's phased approach – providing on-ground human assistance, training, meetings and briefings for production, delivery and cleaning workers before transitioning to algorithmically-mediated workflows – exemplifies this commitment. Moreover, Kudumbashree State Mission's digital initiatives for women workers also involve comprehensive digital literacy programmes, including the 2023 'Back to School' campaign and the 2024 'Digikkoottam' neighbourhood group meetings, which focus on smartphone-based skill development (RTI response, 2025).

By rejecting the algorithmic opacity and exploitative labour conditions associated with surge pricing and customer ratings – characteristic of corporate digital labour platforms – and paying attention to micro elements in the workflow, such as the weight load of lunchboxes, the Lunch Bell project cultivates a women worker–friendly ecosystem, where operations are improved through human feedback rather than rigid metrics. Hence, the initiative operationalises feminist economic principles by recentering human well-being and community wellbeing as a foundational metric of economic success (Perkins, 2021). Moreover, the Lunch Bell project's design, vision, and work organisation also actively cultivates women's collective self-worth, enhances consciousness regarding both the value of women's

labour and existing gendered work hierarchies, and renders visible their intersectional rights as workers, women, and citizens (Agenjo-Calderón & Gálvez-Muñoz, 2019; Kabeer, 2021). Additionally, by caring for nature through the adoption of Green Protocols, prioritising plastic reduction, and implementing systematic food waste management, environmental sustainability is prioritised, and options such as biodegradable packaging materials may enhance the scalability of such initiatives in other contexts.

Although Kudumbashree exemplifies engagement in support of a people-centric society and economy, critics argue that it reflects the developmentalist state's priorities – casting women as 'development workers' (Ajay, 2021), prioritising social entrepreneurship over labour bargaining (Velayudhan, 2020), and weakening alternative civil society initiatives (Devika & Thampi, 2007). At the same time, it has been conceptualised in diverse ways: as a cooperative, self-help group, community network, poverty alleviation programme, and a key component of the social and solidarity economy (Parvathy & Kumar, 2023; Asok & Cox, 2025; Mukherjee-Reed, 2015; Kuruvilla, 2019; Biju & Kumar, 2013; Ajay, 2021; Arun & Arun, 2021; Praveen & Suresh, 2015; Subash, 2025). While none of these categorisations are incorrect, they capture different facets of Kudumbashree's institutional vibrancy. It is neither strictly a cooperative nor merely a self-help group; rather, it is best understood as a vital component of Kerala's social solidarity economy, mobilising participatory citizenship (Bhoola et al., 2024) through collaboration with local governance and the state. This complexity is also mirrored in the ambiguous identity of the Lunch Bell project.

Is Kudumbashree's Pocket Mart app, which hosts the Lunch Bell project, best understood as a platform cooperative, a women workers' entrepreneurial platform, an instance of solidarity platformisation, or simply a community-owned platform? Drawing on Grohmann's (2023) analysis of ambivalent alternatives to corporate platforms in the majority world, we argue for interrogating the hybridities that define such alternative models. The Lunch Bell project highlights an attempt to navigate capitalist power structures within the expanding platform economy, but by engaging with state-society relations to advance participatory democracy, sustainability, and women empowerment – thereby prefiguring digital solidarity economies. As Barbosa et al. (2024) demonstrate, platform alternatives in the majority world embody 'institutional, local, and epistemic diversities' – a lens through which Lunch Bell's platform design and identity becomes legible.

Conceptualisations of the digital solidarity economy acknowledge its heterogeneous organisational models and underlying values, which encompass cooperative

ethics, democratic governance, transparency, self-management, collective owner-ship, community-oriented praxis, and the prioritisation of labour welfare over prof-it (Borzaga et al., 2019; Barbosa et al., 2024; Souza & Flor, 2025). Moreover, they analytically imply 'invented space' of economic participation in which community priorities are neither dictated by state actors nor corporate entities, but instead emerge from the collaborative efforts and shared aspirations of communities. Our case study of Kudumbashree's Lunch Bell project demonstrates that even 'invited spaces' of economic participation – designed through top-down approaches – re-tain the potential to constitute a digital solidarity economy. Although decision-making over the Lunch Bell project was largely undertaken by the Kudumbashree State Mission, with consultations held with workers, the state emerges as a critical institution that creates entry points for women from the margins to participate in the digital economy. By investing resources in both economic activities and capaci-ty building, the state helps transform gendered structural barriers and envisions a people-centric economy in which capital is not left unchecked, while promoting environmental sustainability and labour welfare. The state is not inherently an ad-versary of the digital solidarity economy; rather, its role is contingent on political context. In Kerala, where a strong history of grassroots public action has shaped state–society relations, digital solidarity economies emerge through a co-con-struction of state facilitation and community agency.

Acknowledgement

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