

Selling Fortune, Bearing Risk: Socio-Economic, Occupational, and Institutional Vulnerabilities of Itinerant Lottery Vendors in Kerala

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Abstract

This study examines the socio-economic, occupational health, and institutional vulnerabilities of itinerant and street lottery vendors in Kerala, a workforce integral to the state's non-tax revenue apparatus yet largely absent from empirical labour research. Using a structured survey of 160 vendors across urban and semi-urban clusters, the study profiles vendor demographics, financial exposure to unsold-ticket losses, occupational health morbidity, and enrolment in the Kerala Lottery Workers' Welfare Fund Board. The sample skewed toward older age groups (71.9% above 50 years), with substantial representation of vendors reporting disability (36.3%) and heavy dependence on sub-agency credit and informal lenders. A statistically significant negative association was found between monthly unsold-ticket losses and a proxy measure of monthly net savings ($r = -.28$, $p < .001$), supporting the hypothesised financial-vulnerability pathway. However, disability status and age group did not significantly differentiate occupational health severity ($p > .10$), and welfare-fund membership was not significantly predicted by education, experience, or age (pseudo $R^2 = .001$, $p = .98$). These mixed findings suggest welfare exclusion is driven less by individual characteristics than by structural and administrative barriers, and the paper concludes with policy recommendations centred on a risk-buffering mechanism for unsold inventory and simplified enrolment procedures.

Keywords: informal economy, street vendors, occupational health, social security, Kerala lottery, financial vulnerability

1. Introduction and Theoretical Framework

The Kerala State Lottery, established in 1967 as India's first government-run lottery, occupies a distinctive position in the state's fiscal architecture, functioning simultaneously as a revenue-generating enterprise and as a nominal instrument of social welfare financing. Its retail distribution, however, depends almost entirely on an informal and undercapitalised workforce of itinerant and street vendors who purchase tickets on credit, walk extended routes under difficult climatic conditions, and absorb the full financial risk of unsold inventory. This arrangement places the lottery vending workforce squarely within the boundaries of what the National Commission for Enterprises in the Unorganised Sector (NCEUS, 2008) defines as informal employment: work characterised by the absence of employment security, social security, and legal protection, irrespective of whether it occurs within a formally registered enterprise.

Despite the scale of the lottery trade, the population sustaining its retail distribution has received negligible empirical attention relative to the macro-fiscal literature on lottery revenue. This asymmetry mirrors a broader pattern in Indian informal-economy scholarship, where sectoral output is studied far more extensively than the labour conditions of the workers who produce it (Sheikh & Gaurav, 2020). Street and itinerant vendors occupy a particularly precarious position: they bear inventory risk without the buffering mechanisms available to salaried or formal self-employed counterparts, and their income is frequently volatile enough to compromise both short-term liquidity and long-term social security enrolment (Odyuo & Thangkhiew, 2025).

This study addresses this gap through a structured, quantitative investigation of retail street lottery vendors in urban and semi-urban Kerala. Framed around a vulnerability lens treating financial precarity, occupational health morbidity, and institutional/welfare exclusion as interlinked dimensions of a single structural condition, the study pursues four objectives: (a) profiling the demographic and socio-economic characteristics of itinerant lottery vendors; (b) examining the relationship between unsold-ticket losses and vendors' net financial position; (c) assessing whether disability status and age group differentiate occupational health morbidity; and (d) evaluating whether Welfare Fund Board enrolment is systematically predicted by education, experience, and age. Three hypotheses follow: H1, a significant negative association between unsold-ticket proportion and monthly net savings; H2, that disability status and age group significantly differentiate severe occupational health ailments; and H3, that welfare-fund enrolment is significantly determined by education level and occupational experience.

2. Literature Review

Definitional and structural accounts of informality. The theoretical starting point is the definitional architecture developed by the NCEUS (2008), which situates informal workers as those lacking access to employer-provided social security regardless of the formal or informal status of the enterprise. Sheikh and Gaurav (2020) show that the two dominant Indian definitions of informal work — enterprise-based and employment-based — yield substantially different vulnerability estimates, and argue that employment-based definitions better capture the precarity of own-account workers such as street vendors. At a macroeconomic level, Colombo et al. (2019) show that the informal sector functions simultaneously as a shock absorber during downturns and as an amplifier of participation-rate volatility, a duality directly relevant to lottery vendors, whose entry into the trade is frequently a response to the absence of alternative formal employment for older, disabled, or low-education workers.

Financial precarity, credit dependency, and income volatility. Empirical work on informal vendors consistently identifies debt dependency and income instability as central determinants of vulnerability. In a multidimensional vulnerability index built from 393 informal vendors in Nagaland, Odyuo and Thangkhiew (2025) find that financial attributes — irregular savings, dependence on borrowed capital, and outstanding debt — form the second-largest contributor to overall vulnerability after housing and migration status, with debt burden and borrowed working capital both significant predictors in ordinal logistic regression. This is consistent with the present study's approach of treating unsold-ticket losses as an income-shock proxy correlated against net savings. Relatedly, Ahmad and Aggarwal (2017) show that health shocks

among informal-sector households in India produce catastrophic out-of-pocket expenditure precisely because income volatility leaves little buffer for unplanned costs — a mechanism with direct relevance to vendors who report absorbing losses by delaying payments, borrowing, or cutting household expenditure.

Occupational health and musculoskeletal morbidity. Prolonged standing, walking, and load-carrying are established hazards among street-based informal workers. A systematic review and meta-analysis of work-related musculoskeletal disorders across Indian occupational groups by Mishra et al. (2025) reports high pooled prevalence across nearly all unorganised-sector occupations examined, suggesting such morbidity is a near-universal hazard rather than one concentrated in specific high-risk subgroups. Cetthakrikul and Perngparn (2024), studying market vendors in Bangkok, similarly find widespread musculoskeletal disorder alongside health-risk behaviours, reinforcing that itinerant and stationary vending alike carry substantial physical morbidity independent of the commodity sold.

Disability, ageing, and employment in the informal economy. Persons with disability are disproportionately represented in low-productivity, informal, self-employed work in India. Naraharisetti and Castro (2016) find that employment correlates for persons with disability differ substantially between rural and urban areas and by disability type, while Pinilla-Roncancio et al. (2020) show, in a cross-national case-control study including India, that disability compounds multidimensional poverty risk beyond what either condition predicts alone. These findings motivate the hypothesis that disability status, combined with advancing age, might differentiate occupational health severity among vendors — an expectation the results below do not confirm.

Gendered precarity and institutional welfare gaps. Mondal and Chakraborty (2022) document compounding vulnerability among urban women informal workers in West Bengal during COVID-19, showing pre-existing informality amplified pandemic-induced income shocks. Kerala's own planning apparatus acknowledges persistent gaps between welfare fund board registration and actual benefit disbursal; the Kerala State Planning Board (2016) reports social security coverage reaching approximately 55.41 lakh workers as of 2015, while documenting an ageing workforce and administrative fragmentation across the 33 boards then operating. Read alongside this study's null finding for H3, this suggests welfare exclusion may be better explained by administrative and awareness-related friction than by individual differences in education or experience.

3. Methodology

Design and sample. This study employed a cross-sectional, quantitative survey design. Data were collected from 160 retail street and itinerant lottery vendors operating on foot, at bus stands, railway stations, and small public junctions across urban and semi-urban clusters in Kerala, exceeding the pilot target of 140 vendors specified in the original research proposal. A structured, digitised interview schedule was administered face-to-face using purposive and convenience sampling combined with spatial intercept survey methods, consistent with standard practice for hard-to-enumerate informal-sector populations for whom no complete sampling frame exists.

Instrument and variables. The questionnaire captured five domains: (a) demographic and personal profile (age, gender, disability, education, marital status, breadwinner status); (b) occupational and operating dynamics (experience, selling mode, working hours, daily tickets, working-capital source); (c) financial realities (daily net profit, monthly unsold-ticket loss, outstanding debt, loss-absorption mechanism); (d) occupational health and environmental hazards (health ailments, water/sanitation access, self-rated exhaustion on a five-point scale); and (e) institutional welfare status (Welfare Fund Board membership, reasons for non-enrolment, benefit receipt, policy priorities). No missing values were recorded on any item ($N = 160$).

Operationalisation. Because most substantive variables were collected as ordered categorical brackets (e.g., monthly loss recorded in four ₹-ranges), each bracket was recoded to its interval midpoint to permit parametric analysis, following standard survey-analysis convention for bracketed continuous measures. A monthly net-savings proxy was constructed as (daily net profit midpoint $\times 30$) minus the monthly unsold-ticket-loss midpoint. A composite health-ailment count (range 0–5) was derived from the multiple-response health-issue item, and age, education, and experience brackets were similarly recoded to ordinal or interval scores for regression purposes.

Analytical strategy. H1 was tested via Pearson correlation between unsold-ticket-loss midpoint and the net-savings proxy, followed by simple OLS regression. H2 was tested via a chi-square test of independence between disability status (three categories) and a binary severe-exhaustion indicator (self-rated 4–5 versus 1–3), and a one-way ANOVA comparing mean health-ailment count across the four age groups. H3 was tested via binary logistic regression, with active Welfare Fund Board membership (1) versus inactive/lapsed or never-enrolled (0) regressed on education (ordinal, 1–4), experience (interval midpoint), and age (interval midpoint). All analyses were conducted in Python 3 (pandas, SciPy, statsmodels), with significance evaluated at $\alpha = .05$.

4. Results and Findings

Sample profile. The sample ($N = 160$) skewed toward older vendors (71.9% above 50 years; Table 1), was 61.3% male, and 36.3% reported a disability (27.5% locomotor/physical, 8.8% visual/hearing). Educational attainment was concentrated at or below high-school level (83.1%), 76.2% were the primary household breadwinner, and 65.6% had six or more years of vending experience. Vendors purchased an average of 99.0 tickets daily ($SD = 33.2$).

Table 1

Demographic and Occupational Profile of Sample Vendors

Variable	Category breakdown (n, %)
Age group	18–35 y: 11 (6.9); 36–50 y: 34 (21.2); 51–60 y: 54 (33.8); Above 60 y: 61 (38.1)
Gender	Male: 98 (61.3); Female: 56 (35.0); Transgender: 6 (3.8)

Variable	Category breakdown (n, %)
Disability status	None: 102 (63.7); Locomotor/physical: 44 (27.5); Visual/hearing: 14 (8.8)
Education	Primary: 53 (33.1); High school: 80 (50.0); Higher secondary: 21 (13.1); Graduate/diploma: 6 (3.8)
Primary breadwinner	Yes: 122 (76.2); Equal contributor: 21 (13.1); No: 17 (10.6)
Vending experience	<1 y: 23 (14.4); 1–5 y: 48 (30.0); 6–10 y: 56 (35.0); >10 y: 33 (20.6)

Note. N = 160.

Financial and occupational profile. Table 2 summarises financial exposure: 87.5% reported monthly unsold-ticket loss exceeding ₹1,000, and 86.9% carried outstanding debt. Access to clean water and sanitation during work was rarely available or absent for 86.9% of vendors. Self-rated exhaustion was high ($M = 3.89$, $SD = 1.04$, 1–5 scale), with a mean of 2.91 ($SD = 1.15$) concurrent health ailments from a five-item checklist; the most common were varicose veins/backache (60.0%), foot/joint pain (58.8%), and hypertension (58.8%). Welfare Fund Board enrolment was low (26.2% active), and 74.4% had never received any welfare benefit or aid.

Table 2

Financial, Occupational-Health, and Institutional Profile of Sample Vendors

Variable	Category breakdown (n, %)
Daily net profit (₹)	<250: 33 (20.6); 250–400: 77 (48.1); 401–600: 44 (27.5); >600: 6 (3.8)
Monthly unsold-ticket loss (₹)	<1,000: 26 (16.2); 1,000–2,500: 62 (38.8); 2,501–5,000: 52 (32.5); >5,000: 20 (12.5)
Outstanding debt	None: 21 (13.1); <25,000: 57 (35.6); 25,000–75,000: 53 (33.1); >75,000: 29 (18.1)
Water/sanitation access	Readily available: 21 (13.1); Rarely available: 94 (58.8); Unavailable: 45 (28.1)
Welfare Fund Board status	Active: 42 (26.2); Inactive/lapsed: 48 (30.0); Never enrolled: 70 (43.8)

Note. N = 160.

H1: Unsold-ticket loss and net savings. Pearson correlation showed a significant negative association between monthly unsold-ticket loss and the net-savings proxy, $r(158) = -.28$, $p < .001$. OLS regression (Table 3) confirmed this: each additional rupee of monthly loss was associated with a ₹0.76 reduction in net savings ($b = -0.76$, $SE = 0.21$, $t = -3.70$, $p < .001$), $R^2 = .080$, $F(1, 158) = 13.67$, $p < .001$. H1 is supported, though the modest effect size indicates unsold-ticket loss is one contributor among several to vendors' overall financial position.

Table 3

OLS Regression of Monthly Net-Savings Proxy on Unsold-Ticket Loss

Predictor	b	SE	t	p
Constant	9737.16	662.65	14.69	< .001
Monthly unsold-ticket loss (₹)	-0.76	0.21	-3.70	< .001

Note. Dependent variable: monthly net-savings proxy (₹). $N = 160$.

H2: Disability, age, and occupational health severity. Disability status did not significantly differentiate severe self-rated exhaustion, $\chi^2(2, N = 160) = 4.58$, $p = .101$, Cramér's $V = .17$ (Table 4). One-way ANOVA found no significant difference in mean health-ailment count across age groups, $F(3, 156) = 0.70$, $p = .552$, $\eta^2 = .01$, and a supplementary chi-square test of disability against ailment-count severity was also non-significant, $\chi^2(2, N = 160) = 3.47$, $p = .176$. H2 is not supported.

Table 4

Tests of Association: Disability, Age, and Occupational-Health Severity

Test	Statistic	df	p	Effect size
Chi-square: Disability $\times$ Severe exhaustion	$\chi^2 = 4.58$	2	.101	$V = .17$
One-way ANOVA: Age group $\times$ Health-ailment count	$F = 0.70$	3, 156	.552	$\eta^2 = .01$
Chi-square: Disability $\times$ Ailment-count severity	$\chi^2 = 3.47$	2	.176	—

Note. Severe exhaustion coded as 4–5 on a 5-point scale; ailment-count severity coded as ≥ 3 versus < 3 ailments.

H3: Predictors of Welfare Fund Board membership. Binary logistic regression predicting active membership from education, experience, and age produced no significant predictors (Table 5). The overall model was not significant, likelihood-ratio $\chi^2(3, N = 160) = 0.17$, $p = .982$, McFadden pseudo $R^2 = .001$. A supplementary chi-square test of membership against education category was also non-significant, $\chi^2(6, N = 160) = 6.02$, $p = .421$. H3 is not supported.

Table 5

Binary Logistic Regression Predicting Active Welfare Fund Board Membership

Predictor	b	SE	z	p	OR	95% CI
Constant	-0.665	1.070	-0.62	.534	0.51	[0.06, 4.18]
Education (ordinal, 1–4)	0.008	0.236	0.04	.972	1.01	[0.64, 1.60]
Experience (years)	-0.011	0.046	-0.23	.816	0.99	[0.90, 1.08]
Age (years)	-0.006	0.016	-0.36	.716	0.99	[0.96, 1.03]

Note. Dependent variable: active membership (1) versus inactive/lapsed or never-enrolled (0). N = 160.

5. Discussion

The support obtained for H1 is consistent with the broader informal-economy literature linking income volatility to constrained savings capacity (Ahmad & Aggarwal, 2017; Odyuo & Thangkhiew, 2025). Unsold lottery tickets function as an uninsurable inventory risk that vendors absorb directly rather than through any formal loss-sharing mechanism with sub-agencies or the state lottery department; the present data confirm this risk translates into a measurable, statistically robust erosion of net financial position, even though unsold-ticket loss alone explains a modest share of variance in savings. Daily net profit, capital source, and debt-servicing obligations independently shape overall financial standing, and future modelling incorporating these predictors would likely explain considerably more variance than the bivariate relationship tested here.

The non-significant findings for H2 warrant a different interpretive frame than simple disconfirmation. Rather than disability and age failing to matter, the descriptive statistics suggest occupational hardship in this trade is close to uniformly severe across demographic strata: mean self-rated exhaustion (3.89 of 5) and mean ailment count (2.91 of 5) were both high, leaving limited variance for disability or age to explain. This echoes Mishra et al.'s (2025) finding that musculoskeletal morbidity is pervasive across Indian informal occupational categories, and Cetthakrikul and Perngparn's (2024) parallel finding among market vendors. Occupational health interventions — shaded rest points, hydration access, footwear support — would plausibly benefit the workforce as a whole rather than needing to be narrowly targeted, though this null result should not be read as evidence that disabled or older vendors face no elevated risk in absolute terms.

The null result for H3 is arguably the study's most policy-relevant finding. If welfare-fund enrolment were primarily a function of individual human capital — education enabling navigation of bureaucratic procedures, or experience building familiarity with the scheme — measurable gradients by education and tenure would be expected. None emerged. Instead, the sample's self-reported reasons for non-enrolment or lapse were dominated by lack of awareness

(30.0%) and complex documentation (25.0%), both structural rather than individual in nature. This is consistent with the Kerala State Planning Board's (2016) own acknowledgement of fragmentation across the state's welfare fund board architecture, and parallels Odyuo and Thangkhiew's (2025) finding that structural attributes dominate over individual human-capital attributes in explaining informal-worker vulnerability. Welfare exclusion among lottery vendors thus appears to be an institutional-design problem rather than a capability deficit residing in the vendors themselves, reinforcing the case for simplified, proactively administered enrolment rather than awareness campaigns alone.

The vendors' own stated policy priorities corroborate this structural reading: half the sample (50.6%) identified a mechanism to return unsold tickets or a risk-buffer fund as their top priority, ahead of increased commission rates (28.1%) and health insurance or pension enhancement (13.8%) — an ordering that aligns closely with the study's strongest statistical finding, the significant financial cost of unsold-ticket exposure.

6. Limitations and Future Research Directions

Several limitations qualify these findings. The cross-sectional design precludes causal inference; the observed association between unsold-ticket loss and net savings cannot establish directionality or rule out confounding by unmeasured variables such as route location or draw-cycle timing. The purposive and convenience sampling strategy, while appropriate given the absence of a complete sampling frame, limits generalisability beyond the clusters surveyed. Financial and health variables were self-reported and collected as ordered categorical brackets rather than exact continuous values; the midpoint-recoding procedure introduces measurement approximation that may attenuate true effect sizes, particularly for open-ended top brackets (e.g., "above ₹5,000"). The net-savings proxy is also a simplified construct that does not account for household income from other sources.

Future research should pursue longitudinal designs tracking vendors across multiple draw cycles and seasons, and mixed-methods designs incorporating qualitative interviews — following Odyuo and Thangkhiew (2025) — to surface administrative and experiential barriers to enrolment that survey items alone cannot capture. A full-state, probability-based sample would strengthen external validity, and linkage with Welfare Fund Board administrative records would allow verification of self-reported membership. A formal multidimensional vulnerability index combining financial, occupational-health, and institutional-exclusion dimensions would offer a more integrated basis for targeting interventions than the dimension-by-dimension testing conducted here.

7. Conclusion

This study provides one of the first empirical, quantitative profiles of Kerala's itinerant and street lottery vendors, a workforce whose retail labour sustains a major state revenue stream while remaining largely outside the ambit of formal labour protection. The evidence assembled here yields a nuanced rather than uniformly confirmatory picture: unsold-ticket losses are significantly and robustly associated with diminished net savings, supporting the core financial-vulnerability hypothesis, while disability status, age, education, and experience failed to significantly differentiate occupational health severity or welfare-fund enrolment. Read

together, these findings suggest that the vendor workforce faces occupational hardship that is broadly shared across demographic subgroups, and that institutional exclusion from welfare protection is better explained by administrative friction — inadequate awareness infrastructure and cumbersome documentation — than by differences in vendors' individual human capital. Policy responses should accordingly prioritise a risk-sharing or buy-back mechanism for unsold tickets, the reform vendors themselves rank as most urgent, alongside proactive, simplified welfare-fund enrolment procedures that do not rely on vendors' own initiative to navigate bureaucratic complexity. Such measures would address the specific structural vulnerabilities this study identifies, rather than the individual-level deficits that conventional welfare-targeting frameworks often presume.

8. References

- Ahmad, N., & Aggarwal, K. (2017). Health shock, catastrophic expenditure and its consequences on welfare of the household engaged in informal sector. *Journal of Public Health*, 25(6), 611–624. <https://doi.org/10.1007/s10389-017-0829-9>
- Cetthakrikul, S., & Perngarn, U. (2024). Work-related musculoskeletal disorder and health risk behaviors in market-vendors: A mixed-methods study. *PeerJ*, 12, Article e18079. <https://doi.org/10.7717/peerj.18079>
- Colombo, E., Menna, L., & Tirelli, P. (2019). Informality and the labor market effects of financial crises. *World Development*, 119, 1–22. <https://doi.org/10.1016/j.worlddev.2019.03.001>
- Kerala State Planning Board. (2016). Social security and welfare (Chapter 4.11, Economic Review 2016). Government of Kerala. https://spb.kerala.gov.in/economic-review/ER2016/chapter04_11.php
- Mishra, S., Avinash, G., Kundu, M. G., Verma, J., Sheth, A., & Dutta, A. (2025). Work-related musculoskeletal disorders among various occupational workers in India: A systematic review and meta-analysis. *Journal of Occupational Health*, 67(1), Article uiae077. <https://doi.org/10.1093/joccuh/uiae077>
- Mondal, M., & Chakraborty, C. (2022). The analysis of unparalleled struggle for existence of urban women informal workers in West Bengal, India for survival and resilience to COVID-19 pandemic risk. *GeoJournal*, 87(4), 607–630. <https://doi.org/10.1007/s10708-022-10620-9>
- Naraharisetti, R., & Castro, M. C. (2016). Factors associated with persons with disability employment in India: A cross-sectional study. *BMC Public Health*, 16, Article 1064. <https://doi.org/10.1186/s12889-016-3713-6>
- National Commission for Enterprises in the Unorganised Sector. (2008). Report on definitional and statistical issues relating to the informal economy. Government of India.
- Odyuo, M., & Thangkhiew, D. W. (2025). What determines the socio-economic vulnerability of women in the informal sector? Insights from a case study of vendors in Nagaland,



India. *The International Journal of Community and Social Development*, 7(1), 31–56.
<https://doi.org/10.1177/25166026251319162>

Pinilla-Roncancio, M., Mactaggart, I., Kuper, H., Naber, J., Murthy, G. V. S., & Polack, S. (2020). Multidimensional poverty and disability: A case control study in India, Cameroon, and Guatemala. *SSM - Population Health*, 11, Article 100591.
<https://doi.org/10.1016/j.ssmph.2020.100591>

Sheikh, R. A., & Gaurav, S. (2020). Informal work in India: A tale of two definitions. *The European Journal of Development Research*, 32, 1105–1127.
<https://doi.org/10.1057/s41287-020-00258-z>

