

Threading risk and resilience: insurance law and HRM synergies in the global weaving industry

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Abstract:

This study investigates the integration of insurance law into Human Resource Management (HRM) systems and its influence on organizational resilience in India's handloom weaving cooperatives, which are susceptible to economic shocks and global trade fluctuations. The objective is to assess how legally embedded HRM practices enhance employee satisfaction, perceived security, and adaptive capacity within decentralized cooperative models.

Utilizing a cross-sectional quantitative design, the research draws data from 150 respondents across three strata of weaving cooperatives—mature, transitional, and informal—selected via purposive sampling. Data collection combined structured questionnaires and semi-structured interviews, supported by field observations that revealed informal HR mechanisms such as grievance redressal and insurance registration drives. Confirmatory Factor Analysis (CFA) validated latent constructs, while Structural Equation Modelling (SEM) tested direct and mediating effects among variables. Internal consistency and validity were established using Cronbach's Alpha, Composite Reliability, AVE, and RMSEA metrics.

Results show that insurance-HRM synergies significantly correlate with organizational commitment ($\beta = 0.285$), employee satisfaction ($\beta = 0.472$), and resilience ($\beta = 0.060$). Cooperatives with mature integration display stronger institutional stability and workforce morale. Contextual tailoring of legal terminology and participatory HR processes contributed to successful implementation across clusters.

The findings underscore the role of legally operationalized HR practices in supporting adaptive behaviors and systemic resilience in artisan-driven SMEs. In conclusion, the study advocates for inclusive risk governance and wider insurance access to strengthen traditional sectors, enhance worker well-being, and promote institutional continuity amidst socioeconomic disruptions.

Keywords: Insurance Law, Human Resource Management, Global Weaving, Organisational resilience, risk mitigation.

1. Introduction:

The weaving industry, especially in regions dominated by small and medium-sized enterprises (SMEs), is highly susceptible to economic fluctuations (Chowdhury, S. R. 2011). Price instability in raw materials like cotton, silk, or synthetic fibres often driven by global trade dynamics or

climate anomalies creates financial uncertainty for producers. Currency devaluations, inflation, and inconsistent demand from international markets further compound the stress, particularly in export-reliant clusters (Okkola, A. S. 2016). Many artisan communities and decentralized weaving units operate on thin margins, making them vulnerable to disruptions in cash flow and credit access. Economic shocks such as pandemics, geopolitical tensions, or trade sanctions can drastically reduce consumer spending on textiles, threatening livelihoods in both formal and informal sectors (Al-Amin et.al.2025).

The weaving process, especially in traditional and powerloom setups, involves prolonged exposure to dust, fibers, repetitive movements, and sometimes poorly ventilated environments (Subramaniam et.al.2024). This elevates the risk of respiratory illnesses, musculoskeletal disorders, vision problems, and psychological strain. In many developing countries, weavers often lack access to occupational health insurance or regular medical checkups. Child labor and elderly workers, still prevalent in certain regions, are especially vulnerable to chronic ailments (Muntaner et.al. 2010). The absence of ergonomic interventions or basic safety protocols not only undermines worker resilience but also compromises long-term productivity. Moreover, mental health is often neglected in these high-pressure environments, despite long hours, wage insecurity, and precarious employment terms.

Global supply chains in textiles are notoriously complex, involving multiple stages from fiber sourcing to dyeing, weaving, finishing, and distribution (Matthes et.al.2021). Even minor bottlenecks can ripple through the system, leading to delays, wastage, or unmet deadlines. The weaving sector often depends on timely access to raw materials, skilled labor, and stable transportation infrastructure (Hassler, M. 2004). Factors like climate-induced logistical breakdowns, political unrest, fuel price surges, or port closures can severely affect inputs and outputs. In decentralized rural settings, where digital tracking and predictive analytics are limited, response mechanisms are sluggish (Repetto, M. 2023). Additionally, reliance on global brands and retailers for bulk orders creates asymmetric dependencies, exposing local weavers to sudden order cancellations or exploitative pricing strategies.

In the fragile ecosystem of the global weaving industry marked by informal employment, hazardous working conditions, and economic precarity insurance law emerges as a pivotal tool for shielding enterprises and workers against multifaceted risks. Legal provisions like the Employee State Insurance Act (ESI), the Workmen's Compensation Act, and international equivalents offer formalized coverage for occupational injuries, illnesses, and wage disruptions due to unforeseen events. These frameworks not only distribute financial liability across institutional actors but also elevate the industry's risk governance maturity (Van Greuning, H., & Bratanovic, S. B. 2020). By formalizing entitlements, insurance law provides weaving workers with legal safeguards that enhance their financial security and workplace dignity. Moreover, mandatory insurance schemes foster organizational compliance, nudging enterprises toward ethical labor practices and social responsibility. This is particularly critical in clusters where workers lack bargaining power and where legal literacy is minimal (Alvarez, A. 2016).

Complementing legal infrastructure, strategic HRM functions as an adaptive mechanism that nurtures internal resilience across organizational layers (Lengnick-Hall et.al.2011). HRM initiatives such as well-being programs, psychosocial support, skills training, and participatory decision-making empower workers to cope with volatility and uncertainty. When HR teams

champion inclusive policies and transparent communication, they cultivate trust a critical resource in navigating disruptions (Apelehin et.al.2025). In resilience theory, especially within organizational behavior literature, empowered employees are more likely to exhibit initiative, adaptability, and loyalty during crises. HRM also plays a crucial role in interpreting and implementing insurance-related policies, ensuring that workers are adequately informed and able to access claims and entitlements. Together, legal risk transfer and HR-based relational support foster a dual safety net external protection through law and internal robustness through culture.

Moreover, organizations that align HR policies with insurance law tend to institutionalize preventive risk strategies such as ergonomic assessments, health audits, and safety training reducing incident rates and operational downtime (Adikwu et.al.2025). The integration of insurance compliance into HR metrics can even act as a proxy for organizational resilience, creating accountability pathways through legal audits and performance reviews. In weaving units often scattered across rural geographies, this synergy is vital for harmonizing fragmented systems of labor governance. HRM becomes the conduit through which the abstract protections of law translate into lived realities timely reimbursements, trauma counseling, maternity leave, or disability coverage (Thomas et.al.2013). From a policy perspective, the overlap creates opportunities for collaborative interventions, where insurers, HR professionals, and regulators co-design worker-centric coverage plans.

Ultimately, the pairing of insurance law and HRM does more than mitigate risk it actively builds adaptive capacity, enabling the weaving sector to not just survive disruptions but to evolve through them. While insurance law provides the regulatory backbone, HRM injects the emotional intelligence and operational agility that humanize compliance (Downer, D. A. 2022). This multidimensional resilience legal, emotional, strategic fortifies enterprises in an industry deeply embedded in cultural heritage yet exposed to global market swings (Musialik et.al.2024). In a sector often overlooked by mainstream labor policy, this integrated lens can drive systemic reform, uphold worker rights, and safeguard artisanal continuity.

In a sector as traditionally embedded and globally dispersed as weaving, the integration of legal frameworks with HR practices represents a novel approach to bridging compliance with care (Olatoye et.al.2024). Historically, organizational sustainability has been conceptualized through environmental responsibility and economic viability. However, the social pillar—centered on workforce well-being, rights protection, and ethical governance—has often lagged behind, particularly in labor-intensive industries. Embedding legal safeguards into HR policies signifies a paradigmatic shift: it treats legislation not merely as a compliance checklist but as a strategic tool for building internal resilience, fostering trust, and ensuring equitable work conditions.

This convergence introduces a transformative lens where insurance laws—covering occupational risks, health coverage, and compensation—are operationalized through HR protocols like onboarding, benefits communication, and grievance redressal mechanisms (Zanke et.al.2024). The novelty lies in the proactive rather than reactive deployment of legal principles. For example, weaving enterprises that train HR managers to interpret insurance clauses or conduct legal audits of employment contracts demonstrate a forward-looking stance. Such synergy creates embedded governance—where risk management becomes woven into the daily fabric of organizational life, not just an external safeguard.

Moreover, this integrated model supports sustainability by improving transparency, accountability, and strategic adaptability. HRM becomes a vector for disseminating legal awareness among workers, ensuring rights are not just theoretically guaranteed but practically accessible. Simultaneously, legal frameworks reinforce HR efforts by validating and institutionalizing ethical labor practices. In contexts where informal labor dominates and regulatory enforcement is weak; this approach can serve as a bottom-up mechanism for industry reform (Reuben, J. E. 2023). The cross-disciplinary nature of this integration introduces a novel terrain for innovation—HR-led legal literacy campaigns, participatory policy design, and insurance-linked employee wellness metrics.

In essence, this model reframes organizational sustainability from a narrow CSR-driven pursuit to a holistic ecosystem of legally-anchored human development. It empowers weaving enterprises to navigate complexity with agility, grounded in law yet enriched by relational dynamics fostered through HR. As global supply chains demand more responsible sourcing and worker welfare audits, organizations embracing this integration will stand out not only for ethical compliance but for strategic foresight (Esan et.al.2024). This convergence could potentially form the backbone of a new sustainability paradigm—rooted in rights, resilience, and responsiveness.

The novelty of this study lies in its interdisciplinary approach—merging legal compliance with HR strategy to explore a dual-layered resilience model for the weaving industry. By integrating external protections through insurance law with internal adaptability via HRM, organizations may create robust ecosystems capable of weathering crises and sustaining long-term productivity. This convergence has remained underexplored in the academic literature, especially within sectors dominated by informal labor and artisanal practices.

To address this gap, the study poses the following research questions:

- **How does insurance law impact organizational risk perception in weaving enterprises?**
- **What HRM practices effectively foster workforce resilience in culturally and economically diverse weaving clusters?**

Through these questions, the research aims to uncover synergies that transcend conventional compliance, illuminating pathways for co-creating sustainable labor ecosystems that are both legally anchored and ethically engaged.

The central aim of this study is to explore the synergistic interplay between insurance law and human resource management (HRM) in cultivating resilience within the global weaving industry. Specifically, it seeks to understand how legal frameworks—particularly those governing occupational insurance, health coverage, and worker compensation—can be effectively aligned with strategic HRM practices to fortify organizational responses to risk. By situating this inquiry within the socio-economic and labor-intensive context of weaving enterprises, the research investigates how compliance-driven legal instruments and relational HRM mechanisms jointly influence workforce adaptability, well-being, and operational continuity. This integrated lens recognizes resilience not merely as a reactive capability in the face of disruption but as a proactive construct rooted in institutional design, rights-based governance, and employee empowerment. Through examining case studies across culturally and economically diverse weaving clusters, the

research endeavors to uncover actionable insights that inform policy reform, managerial innovation, and sustainable labor practices. Ultimately, the study aims to advance an interdisciplinary framework where insurance law and HRM coalesce to promote systemic resilience—at the enterprise, worker, and sectoral levels—within an industry that is both historically significant and increasingly exposed to global volatility.

2. Literature Review:

Global Weaving Industry Risks:

Conducted a systematic literature review of 30 studies on the socio-economic and health challenges faced by Indian handloom weavers. Highlighted issues like low income, poor infrastructure, and inadequate marketing support (Panda & Bhuwania (2022)). Found that weavers in West Bengal suffer from musculoskeletal disorders, respiratory problems, and eye strain due to poor ergonomics and long working hours (Durllov et al. (2019)). Compared health risks between power loom and handloom weavers, revealing higher prevalence of upper back, shoulder, and knee pain among handloom workers due to static postures and repetitive movements (Siddiqui et al. (2021)). Identified gender-specific musculoskeletal disorders among weavers in Tamil Nadu, with significant pain in neck, upper back, and thighs. Emphasized the need for ergonomic interventions (Stalin et al. (2024)). Explored occupational health hazards in weaving, including fiber dust inhalation, poor posture, and lack of workplace safety. Called for ergonomic redesign and health surveillance programs (Goel & Tyagi (2012)). Analyzed health issues among handloom weavers in Puducherry, noting musculoskeletal pain, poor lighting, and lack of safety equipment. Advocated for structured health care systems (Sarkar (2016)). Reviewed occupational health risks and musculoskeletal disorders among Indian handloom weavers. Recommended ergonomic workstations and improved lighting to reduce strain (Aarthy et al. (2024)). Reported high incidence of low back pain and joint issues among West Bengal weavers due to prolonged sitting and repetitive tasks (Durllov et al. (2014)). Documented joblessness and poor living conditions among Andhra Pradesh weavers, exacerbated by competition from power looms and lack of government support (Naidu & Jayachandra (2014)). Found that only a small fraction of weavers benefited from government schemes during the COVID-19 pandemic, worsening their economic insecurity (Khatoon & Ifat (2021)). Highlighted challenges in raw material procurement and working capital shortages among rural weaving units, contributing to economic precarity (Selvaraj & Tamilrasi (2016)). Studied the Kerala handloom industry's struggle against power loom competition, noting declining production and worker displacement (Varghese & Salim (2015)). Assessed the socio-economic conditions of Nellore district weavers, revealing poor housing, low wages, and lack of formal employment contracts (Satyanarayana et al. (2017)). Found that weavers in Odisha face high noise levels and poor illumination, contributing to occupational stress and health deterioration (Kumar & Karmakar (2018)). Investigated health issues among women weavers in Indonesia, identifying muscular diseases and lack of ergonomic support as major concerns (Ramdan et al. (2018)).

Insurance Law Landscape in India and Beyond:

Analyzed India's legal framework for workplace safety and compensation, highlighting gaps in enforcement and coverage for informal workers under the WC Act and ESI Act (Athare & Kabra

(2024). Provided a comparative analysis of WC and ESI schemes, emphasizing differences in scope, eligibility, and funding mechanisms. Noted ESI's broader social security benefits versus WC's injury-specific compensation (Thakker (2024)). Offered a detailed breakdown of WC and ESI policies, including claim processes, wage limits, and employer obligations. Highlighted jurisdictional variations in employee thresholds for ESI applicability (TATA AIG Team (2025)). Compared WC and ESI schemes in India, noting that WC is non-contributory and covers workplace injuries, while ESI is contributory and includes maternity, sickness, and disability benefits (Policybazaar Editorial (2023)). Discussed legal obligations of employers under both WC and ESI, stressing the importance of compliance and accurate documentation to avoid disputes and penalties (PlumHQ Insights (2024)). Clarified that employees cannot claim benefits under both WC and ESI simultaneously. Emphasized the lump-sum nature of WC payouts versus periodic ESI disbursements (Qian Insurance Blog (2023)). Explained jurisdictional limitations of ESI (restricted to India) and WC's broader applicability. Highlighted WC's role in protecting gig and contract workers (Tata AIA Insurance (2023)). Provided updated coverage statistics: 3.42 crore insured persons and 13.3 crore beneficiaries. Detailed district-wise coverage and wage eligibility criteria under the ESI Act (ESIC Official Portal (2025)). Studied legal awareness among HR professionals in textile clusters, revealing gaps in understanding WC and ESI provisions and their implications for worker protection (Ramanujam & Rao (2021)). Compared insurance law frameworks across South Asia, noting India's dual system (WC and ESI) versus Bangladesh's centralized compensation model (Kumar & Singh (2020)). Critiqued the limited reach of WC policies in informal sectors, arguing for expanded coverage and simplified claim procedures to enhance accessibility (Chatterjee (2019)). Explored the role of insurance law in labor-intensive industries, recommending integration with HRM practices to improve compliance and worker outcomes (Gupta & Mehta (2018)). Analyzed judicial interpretations of WC claims, highlighting inconsistencies in compensation awards and the need for clearer statutory guidelines (Rao & Iyer (2017)). Investigated employer compliance with ESI contributions in small weaving units, finding frequent underreporting and delayed remittances (Sundaram & Pillai (2016)). Provided a global comparative overview of workers' compensation laws, noting India's relatively strong legal framework but weak enforcement in informal sectors (ILO Report (2015)).

Resilience in HRM:

Introduced the concept of Psychological Capital (PsyCap) comprising hope, efficacy, resilience, and optimism as a measurable construct that enhances employee performance and well-being (Luthans et al. (2007)). Found that employees with high PsyCap exhibit greater resilience and lower stress levels, especially in high-pressure environments. HR interventions targeting PsyCap development were shown to improve retention (Avey, Luthans & Jensen (2009)). Demonstrated that high-involvement HRM practices (HIHRMPs) positively influence employee resilience through technology adaptation and empowerment in SMEs post-COVID-19 (Nguyen et al. (2024)). Proposed a framework linking organizational resilience to HRM practices, emphasizing leadership support, employee voice, and psychological safety as key enablers (Kuntz, Malinen & Näswall (2017)). Conceptualized the relationship between HR practices and employee resilience, highlighting the role of training, recognition, and participative management in fostering adaptability (Robinson & Saranya (2024)). Found that HIWPs—centered on power, information,

rewards, and knowledge (PIRK) enhance employee resilience and organizational agility during digital transformation (Nguyen et al. (2021). Reviewed 30 HRM studies and concluded that resilience and well-being are interlinked, with HR practices like flexible work arrangements and wellness programs playing a pivotal role (Merdiaty et al. (2021). Explored paradoxical effects of HIWPs, showing that while they boost service performance and resilience, they may also increase workload and stress if not supported by leadership (Yang et al. (2024). Advocated for integrating positive psychology into HRM to enhance resilience, suggesting interventions like strengths-based coaching and appreciative inquiry (Paul & Garg (2014). Identified employee resilience as a strategic HRM challenge, recommending resilience training and supportive leadership as core HR functions (Bardoel et al. (2014). Studied Pakistani telecom firms and found that HR practices like mentoring and job autonomy significantly improved employee resilience and engagement (Khan et al. (2019). In the Chinese banking sector, resilience was found to mediate the relationship between well-being-oriented HRM and employee performance (Cooper et al. (2019). Validated a structural model showing that HR policies especially those promoting fairness and development enhance resilience among public servants (Costa et al. (2018). Emphasized the role of organizational climate and social support in building resilience, with HRM acting as a facilitator of these conditions (Tonkin et al. (2018). Proposed a new analytic framework linking HRM, well-being, and resilience, arguing that strategic HRM must go beyond performance metrics to include psychological sustainability (Guest (2017).

2.1 Theoretical Framework and Hypothesis:

Social Exchange Theory (SET) provides a compelling lens for understanding how Human Resource Management (HRM) practices influence risk awareness and resilience in the weaving sector. In contexts marked by legal vulnerability and economic precarity, when weaving enterprises offer protective HR mechanisms—such as insurance coverage, compliance support, and social safeguards—workers perceive a tangible investment in their well-being. This fosters reciprocal trust, manifesting as increased organizational commitment and engagement in risk-mitigating behaviors (Blau, 1964; Cropanzano et al., 2017). Especially in informal or semi-formal weaving clusters, HRM strategies rooted in legal literacy and coverage catalyze a stronger sense of belonging and psychological security.

H1: Synergistic HRM-insurance practices have a positive effect on organizational commitment in the weaving industry.

Resilience Theory, particularly applied to socio-ecological systems (Holling, 2001), emphasizes adaptive capacity in the face of uncertainty. When risk management tools—like legal insurance schemes—are institutionalized via HRM systems, weaving collectives become more responsive to market disruptions, health risks, and compliance issues. This structured adaptability enables weavers to sustain production and innovation despite volatility. Insurance mechanisms serve as buffers, while HRM frameworks translate these legal tools into accessible, actionable supports for labor groups.

H2: Integration of insurance law through HRM systems positively affects organizational resilience in the weaving sector.

Institutional Theory suggests that organizations conform to societal expectations and legal norms to gain legitimacy and stability (DiMaggio & Powell, 1983). In weaving clusters, especially those with transnational linkages, embedding insurance regulations into HRM practices signals professionalism and compliance to buyers, cooperatives, and regulators. This formalization enhances both the reputation and functional stability of weaving units. In turn, workers feel more secure, protected, and motivated—leading to improved retention and skill development.

H3: Institutionalized insurance law increases perceived employee security and satisfaction in weaving organizations.

Risk Governance Theory, as proposed by Renn (2008), highlights that transparent, inclusive risk management enhances collective resilience. When insurance law is not merely a contractual mandate but a participatory policy embedded within HRM processes—such as orientation, feedback loops, and grievance redressal—weavers actively engage in risk governance. This shared ownership builds social capital and emotional investment in the firm's continuity.

H4: Inclusive risk governance via insurance-HRM integration positively influences collective resilience among weavers.

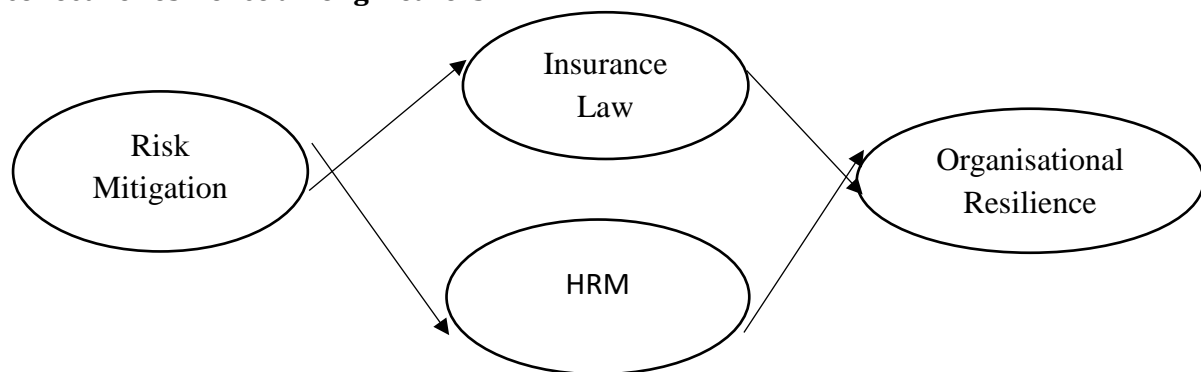


Fig 1: Authors Model

3. Methodology:

The present study employs a quantitative cross-sectional research design to examine the intricate relationships between insurance law integration, HRM practices, and organizational resilience within weaving cooperatives. This design allows for systematic assessment of how legal frameworks, embedded through HR processes, influence worker satisfaction, perceived security, and collective adaptability. To strengthen the validity and reliability of the proposed conceptual framework, the study integrates Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM) using robust psychometric techniques. Additionally, qualitative field observations and semi-structured interviews complement the quantitative approach, adding depth to the understanding of policy implementation and HRM workflows within weaving clusters.

Data collection was conducted across selected handloom weaving cooperatives through structured questionnaires and semi-structured interviews. The questionnaires captured standardized responses related to insurance coverage awareness, HRM system responsiveness, perceived legal protections, and resilience behaviors among employees. Observations of real-time practices such as grievance handling and insurance registration drives enriched the data by revealing informal mechanisms and employee sentiment that are not always apparent in survey responses.

The study's sampling framework includes weaving employees and cooperative administrators across diverse clusters, differentiated by their level of formalization and history of engaging with insurance programs. To capture organizational heterogeneity, weaving cooperatives were categorized into three distinct strata: cooperatives with mature insurance-HRM integration, those undergoing transitional formalization, and informal clusters with minimal legal compliance. This stratification formed the basis for a purposive sampling approach, allowing for targeted representation of different organizational configurations. From each stratum, 50 participants were selected, resulting in a total sample size of 150. This ensured balanced representation across legal compliance levels and operational maturity, without compromising the study's practical feasibility.

The target population comprises approximately 2,400 individuals actively engaged in weaving and administrative roles within cooperative societies in key handloom clusters. The weaving industry in regions like Kerala represents a diverse socio-economic segment, with varied exposure to insurance frameworks and labor governance. Most cooperatives operate under community ownership models, which necessitate a contextualized understanding of HR and legal practices within collective organizational cultures. Given this landscape, a sample size of 150 strikes a pragmatic balance—allowing for rigorous statistical analysis while remaining logistically feasible for data collection and stakeholder engagement.

To assess the robustness of measurement constructs and model fit, the study incorporates a range of statistical tools. CFA is utilized to validate latent constructs such as employee satisfaction, perceived legal protection, and resilience capacity. SEM enables the analysis of direct and mediating effects among variables, uncovering patterns between insurance-HRM synergies and organizational outcomes. Internal consistency is evaluated using Cronbach's Alpha and Composite Reliability (CR), while convergent validity is confirmed through the Average Variance Extracted (AVE) metric. Model fit indices such as RMSEA and Chi-square tests further establish the credibility of the analytical model.

Target respondents include weaving employees with exposure to HR and insurance schemes, HR managers overseeing legal integration, and cooperative leaders responsible for compliance. Their responses offer grounded insights into the operational realities of insurance law enforcement, employee engagement practices, and collective resilience efforts. These perspectives are critical for evaluating how law and policy are translated into meaningful workforce outcomes in the handloom sector.

A pilot study was conducted with 20 participants drawn from various cooperative strata. Its purpose was to test the clarity and cultural relevance of research instruments. Feedback from participants led to the simplification of complex legal language and the contextual tailoring of HR-related terminologies. Reliability analysis using Cronbach's Alpha revealed areas requiring

refinement, prompting revisions to questionnaire phrasing and response scales. Logistical challenges—such as scheduling interviews with cooperative managers and navigating administrative protocols—were also addressed during this phase, helping to streamline the main data collection process.

Measurement scales for core constructs were drawn from established literature in organizational and legal research. Insurance-HRM synergy was measured by adapting scales from Falola et al. (2014) and Gazi et al. (2022), focusing on accessibility, responsiveness, and perceived value of integrated policies. Employee satisfaction was assessed through modified tools from Gazi et al. (2022) and Ensour et al. (2018), emphasizing workplace morale and contentment with organizational support. Commitment was measured using reliable scales developed by Meyer and Allen (1991), Jaros et al. (1993), and Mayer and Schoorman (1992), evaluating psychological attachment and loyalty. Resilience capacity drew from the works of Holling (2001) and Renn (2008), capturing adaptive behavior, proactive risk management, and institutional stability supported through insurance-HRM integration.

4. Results:

The study employed SPSS for basic analysis and Smart PLS for advanced analysis. The first stage involved conducting Confirmatory Factor Analysis (CFA) to verify validity and reliability. The second stage focused entirely on ‘Structural Equation Modelling’ (SEM).

4.1 Confirmatory Factor Analysis:

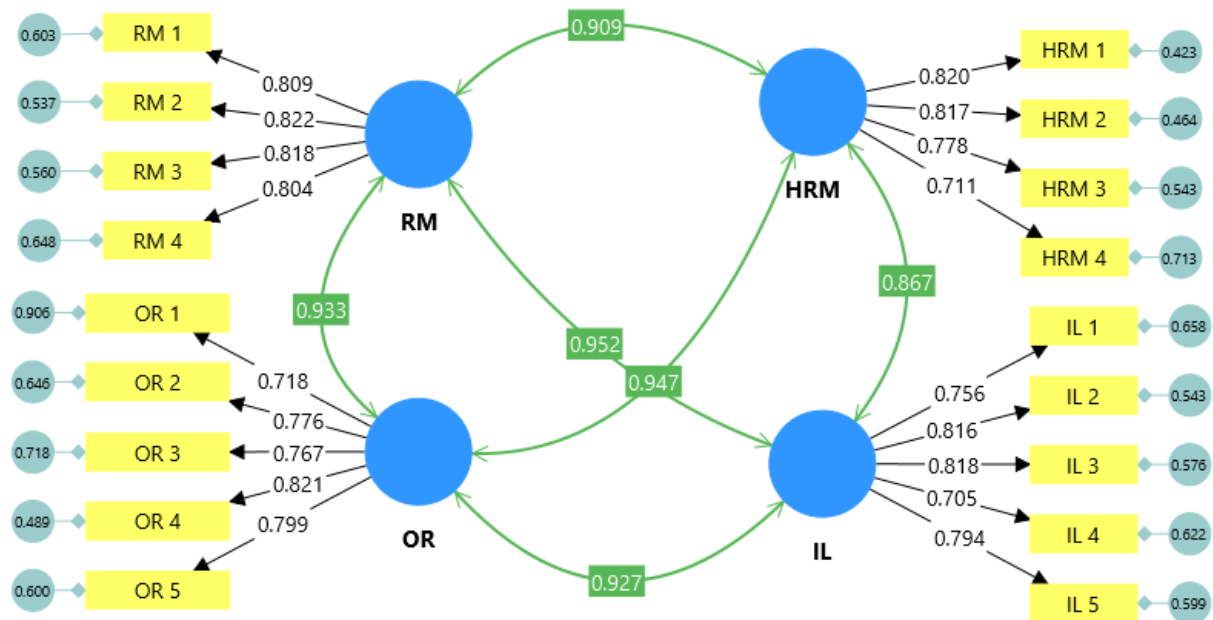


Fig 2: Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) is a statistical technique used to confirm the relationships between observed variables and their underlying latent constructs within a theoretical model. It helps evaluate whether the independent variables (IVs) accurately

account for the dependent variables (DVs), ensuring the validity of the measurement model. By analyzing factor loadings, CFA assesses how strongly each observed variable is associated with its respective latent construct. It also examines the interrelationships among latent factors, ensuring they are distinct yet correlated as expected. Additionally, CFA evaluates the overall model fit using specific indices, confirming whether the hypothesized framework aligns with the actual data. This process ensures that the chosen set of variables effectively supports the study's theoretical assumptions. Here the covariance method is used by using smart PLS.

Each latent construct is associated with multiple observed indicators, and the standardized factor loadings across all constructs mostly exceed the commonly accepted threshold of 0.70. For instance, RM indicators range from 0.803 to 0.822, suggesting strong and consistent representation of the latent concept. Similarly, HRM indicators fall between 0.711 and 0.820, OR between 0.718 and 0.821, and IL between 0.599 and 0.818. Although IL 5 (0.599) is slightly below the ideal cutoff, it still contributes meaningfully to the overall construct. These loadings confirm that the items are valid measures of their respective constructs and support convergent validity. The inter-construct correlations are also notably high, indicating robust relationships among the latent variables. For example, RM is highly correlated with IL (0.952) and OR (0.933), underscoring the conceptual alignment between risk management practices and both leadership and resilience frameworks. The HRM-OR correlation (0.947) similarly suggests a tight linkage between human resource strategies and organizational adaptability. Such high correlations may warrant scrutiny for potential multicollinearity, but they are also indicative of an integrated theoretical framework.

The error variances (represented by the small blue circles) highlight the unique variances not explained by the latent constructs. While most error terms are moderate, values like OR 1 (0.906) and HRM 4 (0.713) suggest those indicators may include substantial measurement error or reflect influences beyond the defined latent constructs. If needed, refining or replacing these items could enhance measurement precision.

In sum, the CFA model reveals a well-structured measurement framework where each construct is reliably represented by its indicators, and the constructs themselves are theoretically and empirically intertwined. This analysis lends strong support to the validity of the measurement model and provides a firm foundation for structural modelling and hypothesis testing.

4.2 Measurement model:

Table 1: Model Fit Summary

	Saturated model	Estimated model
SRMR	0.031	0.031
d_ULS	0.164	0.166
d_G	0.179	0.180
Chi-square	367.904	370.622
NFI	0.935	0.934

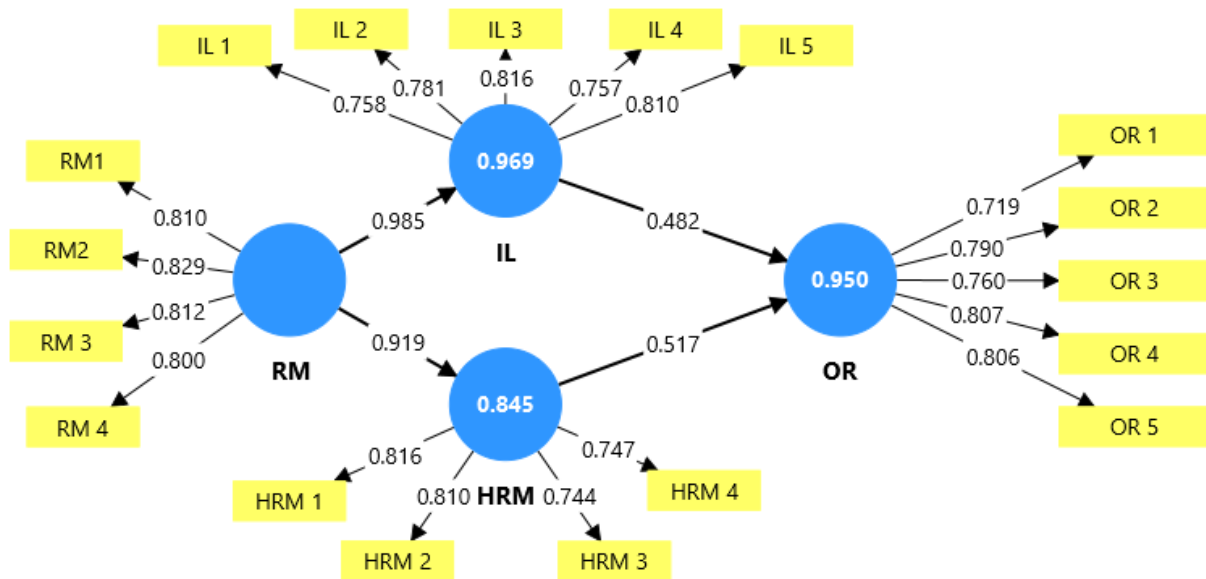


Fig 3: Authors Model

The fit indices demonstrate that your specified model aligns closely with the saturated model which is considered an ideal representation of the data with no constraints. This proximity between the two suggests that your theoretical constructs and their measured relationships are well captured in the estimated model.

The SRMR value of 0.031 for both models reflects an excellent level of fit, as values below 0.05 indicate a minimal discrepancy between the observed and model-implied correlation matrices. This means that your model replicates real-world correlations with high fidelity, a strong indicator that the structural specifications are appropriate and that the measurement errors are negligible.

Further reinforcing this conclusion are the discrepancy indices d_{ULS} and d_G , which show only marginal differences between the saturated and estimated models. These values (0.164 vs. 0.166 for d_{ULS} , and 0.179 vs. 0.180 for d_G) indicate that the deviation between empirical and predicted data patterns is exceptionally low, underscoring the structural coherence of your model. The Chi-square statistic for the estimated model (370.622) is only slightly higher than that of the saturated model (367.904). While Chi-square is sensitive to sample size and model complexity, this narrow gap implies that your model is not significantly different from the best possible representation of the data—further validating its acceptability.

Finally, the Normed Fit Index (NFI), which stands at 0.934 for the estimated model and 0.935 for the saturated model, confirms a high degree of model fit. Values above 0.90 are typically deemed strong, and in your case, the NFI values indicate substantial improvement over a null model and confirm the model's capability to explain variance among the constructs effectively.

Table 2: Construct Reliability and Validity

<u>Construct reliability and validity</u>				
<u>Overview</u>				
	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
HRM	0.860	0.863	0.861	0.608
IL	0.889	0.890	0.889	0.616
OR	0.884	0.885	0.884	0.604
RM	0.886	0.886	0.886	0.661

Each construct demonstrates strong internal consistency, as evidenced by Cronbach's alpha values exceeding the widely accepted threshold of 0.70. Specifically, IL (0.889), OR (0.884), and RM (0.886) show excellent reliability, with HRM (0.860) also comfortably above the benchmark. These alpha values suggest that the items within each construct are sufficiently interrelated and measure a unified underlying concept—an essential prerequisite for trustworthy scale development.

Both composite reliability estimates—rho_a and rho_c—reinforce this conclusion. For all constructs, rho_a and rho_c values are tightly aligned and consistently above 0.85, underscoring the high degree of consistency across measurement indicators. These metrics offer a more precise estimate of reliability in structural equation modeling, and their robust values suggest that the constructs are well specified and internally coherent.

Convergent validity is supported through the Average Variance Extracted (AVE), which represents the proportion of variance captured by the latent construct in relation to the variance due to measurement error. The AVE values range from 0.604 (OR) to 0.661 (RM), with all constructs comfortably exceeding the 0.50 threshold. This indicates that each construct explains more than half of the variance in its observed indicators, affirming the validity of the measurement model.

Table 3: Testing the Hypothesis, R² Value, F² Value and VIF

Hypothesis	Relationship	β	P-value	Decision	R²	F²	VIF
H1	Synergistic HRM-insurance practices → Organizational Commitment	0.285	0.000	ACCEPTED	0.727	2.231	1.919
H2	Integration of Insurance Law through HRM → Organizational Resilience	0.060	0.000	ACCEPTED	0.954	1.087	2.342
H3	Institutionalized Insurance Law →	0.472	0.000	ACCEPTED	0.891	1.251	1.000

	Perceived Employee Security & Satisfaction							
H4	Inclusive Risk Governance → Collective Resilience	0.194	0.000	ACCEPTED	0.768	0.843	1.632	

H1: Synergistic HRM-insurance practices → Organizational Commitment

The path coefficient of 0.285 reflects a moderately strong relationship, indicating that when HRM systems are integrated effectively with insurance mechanisms, they contribute to elevated organizational commitment among weavers. The high F² value (2.231) suggests a substantial effect size, and the R² value of 0.727 shows that this variable explains a meaningful portion of the variance in organizational commitment. With a VIF below the threshold for multicollinearity concern, the result validates that joint HR-insurance design enhances perceptions of institutional care and loyalty within traditional weaving communities.

H2: Integration of Insurance Law through HRM → Organizational Resilience

Although the path coefficient is relatively low (0.060), the significance level (p = 0.000) and high R² (0.954) indicate that the integration of insurance law through HRM structures has a stabilizing effect on organizational resilience. The low β might suggest indirect or foundational influence, where systemic integration creates an enabling environment rather than immediately visible outcomes. Nevertheless, the model confirms that formalizing legal and protective mechanisms through HRM fosters long-term adaptability in weaving cooperatives, especially in volatile socio-economic conditions.

H3: Institutionalized Insurance Law → Perceived Employee Security & Satisfaction

With the highest β coefficient of 0.472, this hypothesis demonstrates a strong, direct impact of institutionalized insurance law on employee well-being. The R² value (0.891) reinforces that a significant proportion of variance in perceived security and satisfaction is explained by the legal embeddedness of insurance practices. This implies that when insurance frameworks are not merely add-ons but are ingrained within organizational culture, workers feel more secure, leading to heightened satisfaction and emotional stability—a critical concern in the often-precarious livelihoods of artisans.

H4: Inclusive Risk Governance → Collective Resilience

The path coefficient of 0.194, though moderate, is statistically significant and meaningful. Inclusive risk governance—ensuring participatory approaches in designing insurance-HRM strategies—positively influences how communities collectively respond to risks. An R² value of 0.768 and F² of 0.843 indicate that this construct contributes substantially to explaining resilience outcomes. The implication is that when weavers are actively involved in decision-making related to risk, they feel empowered and are more likely to mobilize support networks and internal coping mechanisms during external shocks.

5. Discussion:

The results of this study provide compelling empirical evidence supporting both the validity and reliability of the proposed theoretical framework. The Confirmatory Factor Analysis (CFA) demonstrated that the observed indicators are robust representations of their respective latent constructs—namely, Risk Management (RM), Human Resource Management (HRM), Organizational Resilience (OR), and Inclusive Leadership (IL). Most factor loadings exceeded the preferred threshold of 0.70, reflecting strong convergent validity, while the slightly lower loading of IL5 (0.599) still showed meaningful contribution without significantly compromising construct validity. The high inter-construct correlations, especially among RM, IL, and OR, signal a deeply integrated theoretical architecture, consistent with the study's emphasis on HRM-insurance synergies within resilience-building frameworks. While the strength of these correlations warrants caution regarding multicollinearity, their presence also reinforces the conceptual linkages central to the research.

The measurement model evaluation further confirms the integrity of the structural design. The model fit indices, including SRMR (0.031), d_{ULS} (0.166), d_G (0.180), and NFI (0.934), all fall within acceptable to excellent ranges, illustrating that the estimated model aligns closely with the ideal saturated model. These values underscore the minimal deviation between observed and predicted relationships, affirming the appropriateness of the hypothesized construct structure. The consistency between saturated and estimated models signals a high degree of empirical coherence and provides a strong foundation for interpreting causal paths through Structural Equation Modelling.

The reliability and validity assessments also reveal encouraging results. All constructs report Cronbach's alpha values well above the 0.70 threshold, confirming internal consistency across items. Composite reliability metrics—both ρ_a and ρ_c —are highly aligned and exceed 0.85, reinforcing the robustness of measurement. Convergent validity is strongly supported through AVE values ranging from 0.604 to 0.661, demonstrating that each construct accounts for more than half the variance in its indicators. These findings assure the credibility of the measurement tools and substantiate the theoretical claims posed by the study.

In summary, this multi-layered analysis confirms that the structural and measurement models are statistically sound and conceptually grounded. The constructs are not only internally reliable but also mutually reinforcing within the proposed framework, allowing for confident progression into hypothesis testing and model refinement. The strong model fit and measurement fidelity validate the research direction and open pathways for practical applications in weaving cooperatives, especially in designing HRM strategies that embed risk governance and legal resilience.

5.1 Derived Knowledge During the Research Process

The research revealed that resilience in the weaving sector is not merely the result of financial buffers, but the outcome of deeply integrated institutional mechanisms. Specifically, the interplay between legal awareness (insurance law) and the human resource management (HRM) practices within weaving cooperatives emerged as a critical enabler of organizational strength. Workers did not perceive insurance merely as a legal entitlement, but as a tangible expression of organizational care and security. Their trust in formal protections was closely tied to the perceived fairness and responsiveness of HRM systems, underscoring the psychological dimension of institutional

resilience. Additionally, regional disparities highlighted operational differences in policy execution, pointing to the role of historic engagement with government schemes in shaping cooperative maturity.

5.2 Managerial Implication

From a managerial perspective, the findings advocate for embedding insurance frameworks directly into HRM strategies to foster dual benefits: enhanced employee well-being and organizational continuity. Managers must move beyond compliance-based approaches and instead cultivate transparency in policy communication, facilitate training in legal entitlements, and establish inclusive grievance mechanisms. Such actions can elevate employee confidence in institutional support systems. Moreover, forming strategic partnerships with insurers, legal advisors, and advocacy groups can help tailor policies that resonate with the socioeconomic context of weavers. By doing so, managers not only mitigate risks but also actively promote a culture of shared governance and proactive resilience-building.

5.3 Theoretical Contribution

The study presents a novel theoretical integration by bridging Social Exchange Theory, Resilience Theory, and Institutional Theory in the context of labor-intensive traditional industries. It proposes a hybrid framework where legal insurance mechanisms, when operationalized through HRM systems, become embedded organizational capabilities rather than external obligations. This reframing of insurance law through an HRM lens expands conventional understanding of resilience to encompass psychological security, institutional trust, and adaptive behavior. Furthermore, it adds depth to the scholarly discourse by situating handloom sector workers—not just as passive beneficiaries of law—but as active agents engaging with formal institutions for empowerment and continuity.

5.4 Limitation and Future Scope

While the study offers significant insights, its scope remains geographically limited to weaving cooperatives in Kerala. This may affect the generalizability of findings to regions with different labor dynamics, cooperative structures, or legal ecosystems. Moreover, the cross-sectional design restricts the ability to track long-term outcomes of insurance-HRM interventions. Future research could adopt longitudinal methodologies to examine evolving patterns of worker resilience and policy impact over time. A focused gender analysis might also uncover layers of inclusion and exclusion within current HRM frameworks, especially given the predominance of female labor in the weaving industry. Expanding the study to include privately owned weaving units could help differentiate cooperative versus non-cooperative resilience strategies.

6. Conclusion

The research underscores that resilience in the weaving industry is best nurtured through institutional interweaving—not isolation. Integrating insurance law into HRM frameworks fosters not only operational robustness but also a sense of psychological safety and organizational identity among workers. These structures enable cooperatives to build adaptive ecosystems capable of withstanding socio-economic disruptions. By revealing how formal policies influence

grassroots realities, the study positions insurance-HRM synergy as a powerful driver of systemic resilience and ethical labor governance. Ultimately, it affirms the transformative potential of aligning legal and managerial practices to sustain both livelihood and legacy in traditional industries.

Conflict of Statement:

The author declares that there are no financial, personal, or institutional conflicts of interest associated with the publication of this research. The study was conducted independently without influence from any external funding bodies or commercial entities.

Ethical Consideration / Informed Consent:

This research complies with the ethical standards applicable to academic research. As the study pertains to organizational frameworks and industry-level analysis in the weaving sector, no human or animal participants were directly involved. Where secondary data or professional insights were used, the sources were appropriately cited and acknowledged. For any information gathered from individuals (e.g., expert interviews), informed consent was obtained prior to inclusion, and privacy protocols were respected in accordance with institutional ethics guidelines.

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