

Demographic Mediation in Institutional Legal Compliance and Occupational Health Governance: Evidence from Cooperative Sugar Mills in India

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Abstract

This study examined whether employee demographic characteristics mediate perceptions of institutional legal compliance and occupational health and safety (OHS) governance within a state-managed cooperative sugar mill in Tamil Nadu, India. Anchored in institutional theory and microfoundational perspectives, this study investigates the relationship between structural standardisation and perceptual interpretation in regulated industrial settings. Using survey data collected from 454 employees and analyzed through non-parametric statistical techniques (Mann–Whitney U and Kruskal–Wallis tests), appropriate for ordinal Likert-scale data and group comparisons, the findings demonstrate and support a structural–perceptual divergence. While operational safety practices exhibit perceptual stability across demographic categories, perceptions of overall legal compliance and monitoring effectiveness vary significantly by gender, age, education, and income level. The effect sizes indicated small-to-moderate practical significance. These results refine institutional theory by distinguishing structural isomorphism from perceptual convergence and highlighting demographic mediation as a critical dimension of compliance governance. This study has implications for designing inclusive, demographically responsive compliance frameworks within cooperative and state-regulated industrial enterprises.

Keywords: Institutional compliance, occupational health and safety governance, demographic mediation, safety climate, structural isomorphism, cooperative industrial management.

1. Introduction

In the global industrial world, occupational health and safety (OHS) governance is a major pillar of industrial regulation. Occupational injuries and work-related diseases continue to incur significant human and economic costs in industrial sectors, despite active regulatory changes and an increase in formal safety management systems (Hämäläinen et al., 2006; Takala et al., 2014). Governments react by deploying stratified regulatory frameworks comprising statutory requirements, formalised safety management frameworks, monitoring protocols, and audit regimes that seek to entrench compliance as an organizational convention.

Industrial regulation in an emerging economy such as India is working in a very complicated institutional environment. Cooperative sugar mills are transitional organizational structures that integrate the state, administrative control, and principles of cooperative governance. These businesses are required at the same time to adhere to the legal provisions of labour and safety laws, as they also conform to participatory governance systems. This is a multi-layered governance space and a complex compliance space that has not been well explored empirically.

Institutional theory is the theoretical basis for explaining the conformity of organisations to regulatory expectations. Coercive pressures that organisations face are issued due to legal pressures, normative pressures that are issued due to professional standards, and mimetic pressures that are issues due to environmental uncertainty (DiMaggio & Powell, 1983). These processes usually lead to structural isomorphism, whereby similar formal compliance arrangements are adopted by the organisation. Meyer and Rowan (1977) believe that these structures

are not only technically efficient but also maintain institutional legitimacy. Scott (2014) goes on to conceive institutions as functioning under the three pillars of regulative, normative, and cultural-cognitive to strengthen the notion that systems of compliance are entrenched in larger social expectations.

Nevertheless, institutional theory is strong in explaining structural convergence but is limited in that it does not provide much information as to whether structural convergence leads to the development of perceptual homogeneity among organizational members. The formal introduction of compliance systems does not always lead employees to perceive and internalise compliance systems in the same way. In comparison, the difference between structural implementation and cognitive interpretation has received relatively little empirical research.

The safety climate study also supplements institutional theory as it proves that perceptions of management commitment and the consistency of its enforcement are quite significant in determining safety behaviour and compliance results (Christian et al., 2009; Clarke, 2006; Zohar, 1980). The institutional legitimacy school also highlights that compliance structures play substantive and symbolic roles (Suchman, 1995). More recent perspectives on institutional work emphasise the active role of individuals in the enactment and reproduction of institutional arrangements (Lawrence et al., 2009), and microfoundational approaches are based on the idea of institutional processes working at the level of individual thinking and understanding (Powell and Colyvas, 2008).

Despite such theoretical advances, empirical studies seldom focus on the mediation of demographic factors on the perception of institutional compliance monitoring. This is a major lapse in governance research, especially in cooperative industrial firms in emerging economies. Regulatory literacy, knowledge of administrative systems, and judgmental attitudes toward the effectiveness of monitoring could be influenced by demographics (age, education, income).

Based on this, this study explores the existence of demographic differences in attitudes towards institutional legal adherence and OHS governance in a state-owned cooperative sugar mill in Tamil Nadu, India. This research addresses the following three questions:

- Is there perceptual stability in operational OHS practices across demographic categories?
- Are the perceptions of institutional legal compliance and monitoring effectiveness significantly different between demographic groups?
- What do such findings contribute to institutional theory and compliance governance scholarship?

This study is important for institutional analysis and relevant to the study of demographic mediation in regulated cooperative industrial relations by empirically differentiating structural standardisation and variation in perceptions.

2. Literature Review

2.1 Compliance Structures and Institutional Isomorphism.

Institutional theory has traditionally offered a hegemonic way of explaining conformity to organizational regulatory expectations. DiMaggio and Powell (1983) opine that because of coercive, normative, and mimetic forces, organizations in a similar line of field would tend to become more similar over time. Coercive pressures are based on legal requirements and enforcement by the government; normative pressures are based on professional standards and industry norms; and mimetic pressures are based on the imitation of perceived successful models by organisations in the face of uncertainty. A combination of these mechanisms creates structural isomorphism, resulting in the convergence of formal organizational structures and compliance systems.

Meyer and Rowan (1977) elaborate on this view by promoting the idea that formal structures are in most cases assumed by organisations not because of technical efficiency but in their quest to achieve a sense of legitimacy in the institutional settings in which they operate. Compliance, audit, and safety management systems thus serve as legitimacy-enhancing devices that are indicative of conformity to accepted socially acceptable norms. Scott (2014) also theorizes institutions in terms of regulative, normative and cultural-cognitive pillars, meaning that the

compliance systems are incorporated into the wider societal norms that define how the organization should conduct itself.

Within the sphere of occupational health and safety governance, institutional pressures are intense. Regulatory requirements necessitate organisations to develop documented procedures, hazard identification systems, reporting systems, and internal audit mechanisms. Consequently, companies in regulated sectors often follow standardised safety management frameworks that seem formally similar within organisations. However, institutional theory has mostly focused on the convergence of structures and has given relatively low attention to the interpretation of these formally similar systems by workers in organisations.

2.2 Safety Climate and Behavioural Compliance.

Safety climate research offers a complementary view, investigating employees' common perceptions of safety-related practices and policies. Zohar (1980) created the idea of safety climate, which is the attitude of workers towards the comparative significance of safety in their company. Further studies have shown that safety climate is a good predictor of safety actions, compliance levels, and accident reduction (Clarke, 2006; Christian et al., 2009).

Meta-analytic evidence confirms that when employees think that management is fully devoted to safety and the enforcement of regulations, they are more likely to adhere to safety practices and are less likely to take a risky approach (Christian et al., 2009). Clarke (2006) also indicated that safety climate works psychologically and affects safety participation and compliance behaviour. Vinodkumar and Bhasi (2010) demonstrated that compliant behaviours are boosted through participatory practices of safety management that improve worker participation and perceived commitment by the manager.

These results are important pointers to a crucial point: compliance systems are only as effective as they are perceived by employees. Formally adopted safety policies do not necessarily guarantee behavioural compliance unless workers believe they are credible, enforceable, and meaningful.

2.3 Micro foundations, Micro institutional legitimacy, and Employee Agency.

This analysis is further enhanced by institutional legitimacy theory which highlights that organisations have compliance systems which are partly established to ensure social approval and legitimacy (Suchman, 1995). Therefore, compliance mechanisms may be both substantive and symbolic. Whereas some systems lead to improved safety performance, others can serve as legitimacy cues.

The latest changes in institutional scholarship have brought about the concept of institutional work, which emphasises the active involvement of people in the construction, sustenance, and destabilisation of institutions (Lawrence et al., 2009). In this sense, employees are not passive functions of institutional mandates; they make sense of and practice compliance systems through their everyday practices. Microfoundational perspectives also imply that institutional activities are based on individual thinking and definitions (Powell & Colyvas, 2008). The mediating effects of institutional effects are thus reflected through the understanding, internalisation, and response of actors to institutional signals.

Such a change from structural determinism to cognitive mediation implies that perceptual variability can be associated with structural standardisation. Although compliance systems can be formally the same in any department or organisation, employees can perceive them to be more serious, fair, or effective depending on social and experience-based factors.

2.4 Symbolic and Substantive Compliance and Audit Cultures.

An increasing amount of literature has criticised modern audit regimes for promoting symbolic compliance - cases where organisations exhibit apparent compliance but no behavioural alterations. According to Hutchinson et al. (2024), audit cultures can generate an illusion of regulatory compliance and may not lead to an increase in safety outcomes. This criticism is consistent with previous apprehensions that formal documentation and compliance with procedures can become the end instead of the means to improve safety.

Legal compliance management research highlights the significance of systematic monitoring and transparency and consistency of enforcement in substantive compliance (Parker and Nielsen, 2009; Salguero-Caparros et al., 2020). Integrated governance models, such as ISO 45001, promote a systemic thinking approach to OHS management that includes risk assessment, worker involvement, and incorporation of continuous improvement (Karaniakas et al., 2022). These models acknowledge that compliance cannot be effectively realised without an organizational culture, communication, and an inclusive approach to engagement, as opposed to just formal structural adoption.

2.5 Compliance Perception Demographic Mediation.

Although it is theoretically known that institutional processes are mediated by cognition processes, there is usually no empirical study on the impact of demographic features on perceptions of compliance systems. In cooperative industrial situations, the heterogeneity of demographics is usually extreme. There can be a significant difference in the educational level of employees, socio-economic status, experience, and familiarity with administrative procedures. These variations can define regulatory literacy, belief in monitoring systems, and interpretations of compliance severity.

The older generation of workers might be more familiar with institutional processes, but young workers would have different interpretations of monitoring systems. Highly educated employees may have greater regulatory awareness, which may result in more successful perceptions of compliance effectiveness. Income level may be linked to organizational rank or experience in administrative decision-making procedures, which affects perceptions of institutional legitimacy.

Nevertheless, there is limited systematic empirical research on the role of demographic mediation in institutional compliance perception, especially in cooperative industrial firms in emerging economies. This difference is theoretically vital as it questions the unarticulated belief that structural standardisation creates a homogenous internalisation of cognition among organizational members.

3. Conceptual Framework

This study combines institutional theory and microfoundational approaches to examine the relationship between structural compliance systems and employee perceptions. Institutional theory assumes similarity in the formal structure of organisations under the same regulatory pressure based on coercive, normative, and mimetic processes (DiMaggio and Powell, 1983; Scott, 2014). Such pressure in controlled industrial environments generates uniform occupational health and safety (OHS) practices, surveillance schemes and audit systems.

However, structural convergence does not imply perceptual convergence. Microfoundational approaches clarify that institutional processes exist in the form of individual cognition and interpretation (Powell & Colyvas, 2008). Institutional work scholarship also indicates that employees are active in interpreting and enacting compliance systems, as opposed to internalising them (Lawrence et al., 2009). In line with this, demographic factors can also be interpretive filters which affect the perception of institutional signals.

Based on this difference between structural standardisation and perceptual interpretation, this study confirms two hypotheses:

Proposition of Standardisation: Structural

Perceptual stability among demographic groups will be demonstrated by operational safety practices (i.e. familiarity with OHS laws, safety measures, and incident management systems) which depict institutional isomorphism.

Proposition of Perceptual Variation

Overall, legal compliance and monitoring effectiveness are perceived differently among the different demographic categories due to the high cognitively mediated evaluative judgment.

The model weighs formal compliance adoption and cognitive internalisation and empirically determines whether demographic variables mediate compliance perception in a cooperative industrial context.

4. Methodology

4.1 Research Design and Setting

This study used a quantitative cross-sectional research design to determine the demographic variation of the perceptions of institutional compliance and occupational health and safety (OHS) governance. The information was gathered from a state-controlled cooperative sugar mill in Tamil Nadu, India. The chosen organisation is regulated by the legal environment of the industrial sphere, with statutory safety standards, monitoring systems, and non-authoritative governance forms.

The cooperative environment presents an appropriate empirical field to study structural standardisation and perceptual differences due to the presence of compliance systems that are formally applied to the workforce, while the percentage of demographic heterogeneity is significant. The company is also well organised in terms of safety measures, reporting, and surveillance which is applicable to all workers.

4.2 Sampling and Participants

The sample size of the study was 454 employees who were representatives of various age groups, education levels, income groups, and work experience. The use of purposive sampling was explained by the limitation of institutional access and the necessity to involve respondents who are directly involved in operational activities, such as working people on the production floor, maintenance staff, and supervisors who are directly engaged in OHS operations. The respondents voluntarily participated after being made aware of the academic purpose of the study.

The sample size was satisfactory for conducting a non-parametric comparison of the study across various demographic groups.

4.3 Measurement Instrument

Data were collected using a structured questionnaire with 24 Likert-scale items. The tool comprised five constructs.

- Knowledge and awareness of OHS laws.
- View of safety practices and legal compliance.
- Knowledge of reporting and incident management.
- Observable OHS practices evaluation.
- View of general institutional compliance and effectiveness of monitoring.

The ordered response categories were used to measure all items in terms of degrees of agreement.

Cronbach's alpha was used to test the internal consistency reliability. The constructs had coefficients between 0.662 and 0.790, which is acceptable in terms of the reliability of exploratory institutional research.

Each item was measured on a 5-point Likert scale (Strongly Disagree to Strongly Agree). Some of the sample items were: I know the occupational safety law governing this mill (awareness), The mill has regular safety inspections (Safety Measures), and The organisation has effective compliance monitoring systems (Overall Legal Compliance and Monitoring). The complete instrument is available upon request.

4.4 Data Analysis

Since the Likert-scale data were ordinal and most of the study population may not have a normal distribution, non-parametric statistical tests were used. Two-group comparisons (e.g. gender) were performed using the Mann-Whitney U test, and comparisons among two or more demographic groups (e.g. age, education, income, and work experience) were performed using the Kruskal-Wallis test.

In cases where massive group differences were found, post hoc paired-samples comparisons were made using Bonferroni-adjusted significance levels to contain the Type I error inflation. The effect size was also determined to determine the practical meaning of the statistically significant results.

4.5 Ethical Considerations

This study conforms to the recognised social science ethics principles. Before collecting data, institutional clearance was obtained. Involvement was voluntary, anonymity was ensured, and no identifiable information was recorded. The respondents were guaranteed that their involvement would not impact their job position.

5. Results

The following section provides the results of the study in determining whether demographic factors are correlated with the difference in perceptions of institutional compliance and occupational health and safety (OHS) governance. In line with the conceptual model, the analysis differentiates between operational safety constructs and perceptions of overall legal compliance and the effectiveness of overall law monitoring.

The non-parametric statistical tests of the comparative analysis showed that the demographic differences between the perceptions of the constructs of operational safety were not significant. There were no significant differences in the awareness and knowledge of OHS laws, perceptions of safety measures and legal compliance practices, knowledge of incident management and reporting procedures, and knowledge of observable OHS practices according to gender, age, level of education, income level, and years of work experience. Employees had widely similar perceptions of these regular safety structures across all demographic categories. This perceptual stability means that formally established safety systems are felt throughout the workforce, and it justifies the structural standardisation proposition of the isomorphism theory of institutions.

In contrast, statistically significant demographic differences were found in the overall perceptions of legal compliance and monitoring effectiveness. The Mann-Whitney U test showed that there was a statistically significant difference between male and female participants ($U = 8701.5, p = 002$), which shows that there is a gender difference in the monitoring perceptions. The Kruskal-Wallis test additionally showed a significant difference among age ($23.617, p = 0.001$), educational ($22.574, p = 0.001$), and income groups ($20.059, p = 0.001$). The mean comparisons show that older employees, those with higher education levels, and respondents with higher incomes had a stronger perception of compliance seriousness and monitoring effectiveness. The resulting effect sizes were between 0.15 and 0.22, indicating small to moderate practical significance.

The combination of these findings reveals a structural-perceptual disparity. The operational safety practices can be said to be stabilised in terms of demographics which is in line with structural standardisation; however, there are great disparities in institutional compliance monitoring perceptions across demographic lines. These findings confirm that both the structural standardisation and perceptual variation propositions are affected by demographic factors on evaluative judgments of compliance effectiveness despite the homogenous application of formal safety systems.

6. Discussion

This study investigated whether demographic factors mediate perceptions of institutional compliance and occupational health and safety (OHS) governance in a cooperative industrial environment. The results show an evident structural-perceptual deviation. Although there is perceptual stability in the optional safety practices in the demographic groups, there is a huge difference in the perceptions of overall legal compliance and monitoring efficacy, depending on gender, age, education, and income. These findings have significant theoretical and practical implications for the field.

First, the stability of the constructs of operational safety helps prove the idea of structural standardisation in the face of institutional pressure. Although these are hypothetical employees, irrespective of their demographic

provenance, they have the same perceptions of normal safety practices, incident management systems, and visible compliance practices. This implies that structural convergence in operational areas is successfully generated through coercive and normative regulatory mechanisms.

However, the large demographic difference in monitoring perceptions nullifies the notion that structural adoption is an automatic producer of perceptual convergence. The evaluation judgments regarding the severity of compliance and effectiveness of monitoring seem to be cognitively mediated. More up-to-date, more educated, and higher-income employees report a higher monitoring effectiveness which proves that socio-demographic positioning influences interpretative processes. This result is consistent with the views of microfoundational institutions that focus on the institutional effects of individual cognition and interpretation (Powell & Colyvas, 2008). It also represents the institutional work theory that acknowledges employees as active decoders of institutional structures and not passive receivers (Lawrence et al., 2009).

The fact that the stability of operations and monitoring variation are divergent implies that compliance effectiveness cannot be examined only with the help of structural implementation. Although procedures and formal systems can be standardised, the feeling of confidence and seriousness of institutions in enforcement is demographically different among employees. Evaluatory trust judgments are also involved in monitoring systems, and these judgments can be affected by regulatory literacy, exposure to administrative processes, and socio-economic positioning.

This divergence is particularly important in cooperative industrial environments. Cooperative enterprises focus on participatory governance and member involvement, but demographic heterogeneity can lead to differentiated experiences of institutional power. When some groups of people believe that monitoring mechanisms are more plausible or effective than others, it could affect the culture of compliance in the long term and institutional legitimacy.

The results show a narrowing of institutional theory, as structural isomorphism and perceptual convergence are differentiated empirically. They show that structural compliance in the face of regulation does not ensure homogeneous cognitive internalisation. Therefore, demographic mediation must be factored into institutional analysis as an influential factor in the interpretation and implementation of compliance systems in organisations.

7. Theoretical and Governance Contributions Theoretical and Governance Contributions

This study refines institutional theory by showing that structural isomorphism is not a sufficient condition for perceptual uniformity. It combines both macro-level regulatory theory and micro-level demographic contingency to address the field of governance scholarship in cooperative industrial settings.

8. Policy and Practice Implications

Compliance design should incorporate behavioural knowledge into these policy frameworks. Institutional legitimacy and minimized symbolic compliance tendencies may be promoted through demographically responsive safety training, transparent reporting systems, and participatory monitoring mechanisms.

9. Restrictions and Future Investigation

This study has several limitations. First, the data were only gathered from one cooperative sugar mill, and this might not be generalisable to other industries or institutional settings. Second, the cross-sectional design does not allow for causal inferences about the interconnection of demographic features and compliance perceptions. Third, depending on self-report survey results, there is a risk of perceptual bias and common method variance. Future research should use multi-site designs, longitudinal techniques, and mixed-method techniques to enhance the

validity of external validity and investigate the causal processes behind demographic mediation in compliance governance.

10. Conclusion

This study investigated the mediating effect of demographic variables on the perception of institutional legal compliance and occupational health and safety governance in a cooperative industrial environment. The results reveal a structural-perceptual divergence, as the operational safety systems are characterised by overall demographic stability in line with institutional standardisation, whereas perceptions of the effectiveness of monitoring differ across demographic groups.

These findings can be used to refine institutional theory to the extent that structural isomorphism is differentiated from perceptual convergence and that cognitive mediation plays a crucial role in compliance governance. According to the study, a successful regulatory design should not be reduced to formal structure adoption but should also be demographically responsive and inclusive of communication strategies. When dealing with cooperative industries, enhancing the compliance culture involves aligning homogeneous systems with the various interpretative systems of organizational members.

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