LEGAL CHALLENGES IN E-COMMERCE: REGULATORY FRAMEWORK AND BUSINESS STRATEGIES

Lalhunthara[1]*

*[1]Associate Professor, Department of Commerce, Pachhunga University College, Aizawl, Mizoram

lhtharanew@gmail.com[1]

Abstract
E-commerce has become a cornerstone of modern retail and services, compressing distance, expanding product choice, and reshaping competitive landscapes. However, the same technological features that enable growth also generate compliance and governance challenges for firms and regulators. This study investigates how legal awareness, perceived clarity of rules, compliance challenges, and local regulatory impacts shape operational outcomes in Indian e-commerce. Using a mixed evidence base—100 survey responses and transactional data covering 500 orders and 1,500 line items—the research applies descriptive statistics, chi-square tests, Spearman correlations, and ANOVA to examine associations between legal context and commercial performance. Results reveal that higher legal awareness is correlated with fewer compliance difficulties and greater rule clarity, while perceived regulatory intensity elevates the importance of compliance costs. Firms experiencing disputes demonstrate stronger audit regularity, suggesting adaptive governance in response to challenges. Operationally, profitability and target fulfilment differ significantly across categories, with Electronics outperforming Furniture in margins and Clothing underperforming on targets. The findings highlight the dual role of compliance as both a regulatory necessity and a managerial capability, underscoring the importance of awareness campaigns, cost-sensitive regulatory design, and digital compliance tools for sustainable e-commerce growth.

Keywords: E-commerce, Legal awareness, Compliance costs, Regulatory governance, Operational outcomes

1. Introduction

E-commerce has redrawn the boundaries of retail and services by compressing distance, multiplying product choice and intensifying competitive pressures across jurisdictions. Yet the same socio-technical features that enable scale—algorithmic curation, data-driven targeting, frictionless payments and outsourced logistics—also create legal and governance frictions for public authorities and firms. Regulators must safeguard consumers, manage cross-border externalities and steer platform power, while businesses must translate heterogeneous, evolving rules into operational routines that do not erode margins or dampen innovation. Research on platform markets underscores that market design and governance choices—pricing, matching and trust mechanisms—interact with public regulation in ways that shape participation and outcomes for small sellers and consumers alike (Einav et al., 2016).

In India, regulatory salience has risen with the Consumer Protection Act, 2019 and the Consumer Protection (E-Commerce) Rules, 2020, alongside sectoral standards around payments, data and advertising. Scholarship points to the role of legal knowledge and pragmatic enforcement in improving compliance in settings where state capacity is uneven—governance realities that matter for local self-government and market oversight (Ostermann, 2019). At the same time, platform-level governance mechanisms—monitoring, incentives and community norms—co-determine seller behavior, particularly when public and private rules are hybridized (Chen et al., 2022; Koo, 2024). Against this backdrop, our study combines secondary administrative and industry sources with a primary questionnaire to examine how legal awareness, perceived clarity of rules, compliance challenges and local regulatory impacts relate to business outcomes in e-commerce. The empirical strategy—descriptive statistics, χ^2 tests of association, non-parametric correlations, t-tests and one-way ANOVA—mirrors established approaches in compliance and management research and is well suited for categorical outcomes and ordinal perceptions (Chen et al., 2021). The uploaded results report significant associations between awareness and clarity, a negative association between awareness and challenge frequency, and category-level differences in target fulfilment, alongside summary operations metrics. These patterns motivate a closer engagement with the literatures on consumer protection, data governance and platform rule-making.

Consumer trust remains a fulcrum of online transactions, and perceived privacy empowerment reduces privacy concern while strengthening trust in digital exchanges (Van Dyke et al., 2007). Related marketing evidence shows that stringent privacy regulation can have measurable consequences for digital advertising effectiveness, implying that compliance design is not only a legal necessity but also a strategic marketing variable (Goldfarb & Tucker, 2011). In India, legal analyses of e-commerce consumer protection emphasize transparency, fair returns and redressal, but also highlight enforcement and jurisdictional frictions that affect day-to-day operations (Chawla & Kumar, 2022).

Recent reviews recast digital platforms as meta-organizations whose governance blends control and incentive mechanisms with design choices that structure participation (Chen et al., 2021). Experimental and field-based studies suggest that hybrid governance—platform rules that explicitly reference public law and credible external enforcement—can reduce seller misconduct intentions and improve compliance even under rule ambiguity (Koo, 2024). Complementary B2B studies find that monitoring and fair procedures improve seller relationship quality and performance, indicating that compliance mechanisms can be competitive capabilities rather than pure costs (Li et al., 2023; Sen et al., 2023).

On the operations side, returns and reverse logistics are both a consumer rights imperative and a major profitability lever. Systems research proposes circular reverse-logistics frameworks that pair analytics with process redesign to cut waste while complying with quality and refund obligations (Nanayakkara et al., 2022; Sun & Qu, 2025). Recent applied work in Indian settings reinforces that structured reverse-logistics metrics help firms align service obligations with cost control, particularly in electronics and apparel—categories that often feature prominently in policy debates and in our results dataset. Compliance theory offers micro-foundations for several of our findings. Awareness of rules and procedural clarity tend to raise voluntary compliance, especially when accompanied by fair enforcement and opportunities for feedback. Law-and-society research further shows that legal knowledge campaigns implemented through trusted local intermediaries can shift behavior at scale even where formal capacity is limited (Ostermann, 2019; Zeng et al., 2024). In platform ecosystems, this logic translates into seller dashboards, policy prompts and ODR pathways that make the law legible at the point of action (Chen et al., 2021; Koo, 2024).

Building on these insights and aligning with the statistical design used in our results, the present study pursues three objectives. First, it estimates the relationship between legal awareness, perceived clarity and self-reported compliance challenges among e-commerce operators, using χ^2 tests and rank-based correlations. Second, it assesses whether perceived local regulatory impacts (licensing, data and returns oversight, consumer redressal) are associated with the importance firms attach to compliance cost—an issue with salient managerial implications. Third, it examines operational differentiation across product categories through group-mean comparisons in target fulfilment, recognising that heterogeneous category economics interact with legal obligations such as returns windows and warranty policies.

2. Methodology

2.1 Study Design

This study adopts an explanatory, quantitative design linking firms' legal/regulatory context to operational outcomes in e-commerce. Two primary evidence streams are integrated: (i) a 20-item objective questionnaire capturing legal awareness, local regulatory impact, compliance practices and strategies (n = 100), and (ii) a transactional dataset of orders linked to item-level details and category–month sales targets. The analytical plan combines descriptive summaries with inferential tests (χ^2 with Cramér's V, Spearman rank correlations, one-way ANOVA, and Welch pairwise t-tests with Bonferroni adjustment) so that statistical claims are directly comparable to the Results section already compiled from these same sources.

2.2 Data Sources

The survey file contains 100 responses from e-commerce actors and records demographics plus single-choice items on awareness of the legal framework, perceived local regulation impact, clarity of laws, frequency of compliance challenges, dispute experience, audit regularity, compliance-cost importance, complaint handling, and use of digital compliance tools. The transactional corpus merges "List of Orders.csv" with "Order Details.csv" using the Order ID, producing 1,500 line items across 500 orders. A separate "Sales target.csv" provides monthly targets by product category. These data streams are analyzed jointly to connect legal/compliance conditions with commercial performance—specifically revenue, profit, profit margins, and target-fulfilment levels by category and month.

2.3 Sampling and Respondents

The survey constitutes a convenience sample designed to reflect a cross-section of e-commerce operators. Responses are treated as observational evidence suitable for association testing but not for population-level estimation. The transactional data represent a complete extract for the period covered by the orders file and thus are used as a census of operational activity for that timeframe. The two sources are not directly linkable at the respondent/firm level; instead, they are triangulated at the construct level (e.g., awareness, local impact, audits) and the outcome level (e.g., margins, fulfilment) to test conceptual relationships consistent with the Results.

2.4 Measures

Regulatory-context constructs include awareness of e-commerce laws (No/Partially/Yes), perceived local regulation impact (No impact/Yes, but minimally/Yes, significantly), clarity of laws (Extremely unclear/Confusing/Somewhat clear/Very clear), compliance-challenge frequency (Rarely/Occasionally/Frequently/Almost always), dispute experience (None/Once/Multiple times), audit regularity (Never/Occasionally/Yes), and compliance-cost importance (Not important/Neutral/Somewhat important/Very important). Strategy proxies include the primary compliance approach (self-managed, in-house legal, external consultancy) and use of digital compliance tools (No/Partially/Extensively). From transactions we compute revenue (₹), profit (₹), and line-item profit margin (profit ÷ sales × 100), and aggregate sales and margins by state and category. Monthly actuals per category are compared to targets to yield Target-Fulfilment %.

2.5 Data Preparation

Orders and details are joined on Order ID; dates are parsed (dd-mm-yyyy) to derive MonthKey (e.g., "Apr-18"). Amounts and profits are coerced to numeric; zero-amount lines are dropped for margin calculations to avoid division by zero. Survey responses are cleaned for consistent labels and recoded to ordinal scores only where theory implies order (e.g., awareness, clarity, challenge frequency, local impact, cost importance). All descriptive tables in Results (KPIs; state and category summaries; target-fulfilment) are reproduced from these prepared data. For row-percentage visuals, cross-tabulations are row-normalized (each row sums to 100%). Missing values are minimal; any records with missing targets are excluded from fulfilment analyses. Consistency checks verify that category totals equal the sum of underlying items and that target joins respect MonthKey × Category keys.

2.6 Analytical Strategy

Descriptive statistics summarize volumes, financial performance, and dispersion across states and categories. To test whether legal context relates to compliance frictions and practices, we estimate χ^2

tests on contingency tables and report Cramér's V as an effect size, aligning with the tables/figures in Results (e.g., Awareness × Challenges; Local Impact × Cost Importance; Disputes × Audits). Because several variables are ordinal and theory implies monotonic relationships, we also estimate Spearman's ρ for the pairs Awareness↔Challenges, Awareness↔Clarity, and Local Impact↔Cost Importance. To assess category heterogeneity in commercial outcomes, we analyze line-item margins with a one-way ANOVA across categories (Furniture, Clothing, Electronics). Where the omnibus test indicates differences, pairwise Welch t-tests (unequal variances) are run with Bonferroni-adjusted p-values and Cohen's d for effect size, mirroring the Results table. Target-Fulfilment % across categories is tested with a one-way ANOVA on the monthly panel of category-level fulfilment values. Throughout, two-sided tests, $\alpha = 0.05$, and exact p-values are reported; "marginal" denotes $0.05 < p \leq 0.10$. Estimates are computed in Python (pandas/scipy); percentages are rounded to one decimal place and currency values to the nearest rupee to match the Results formatting.

2.7 Ethical Considerations

Survey data were analyzed in aggregate with no individually identifiable information reported. Transactional data are used solely for statistical summaries and category/state aggregates; no customer-level attributes are disclosed. The study purpose is explanatory and non-interventional; no incentives or deceptive procedures were involved.

3. Results

The transactional dataset comprises 500 orders and 1500 line items, yielding total sales of ₹431,502 and profit of ₹23,955; the average profit margin is 5.55%. State-level revenue is concentrated, with the largest shares accruing to Madhya Pradesh (24.4%), Maharashtra (22.1%), Delhi (5.2%), Uttar Pradesh (5.2%), Rajasthan (4.9%). Across product categories, Electronics contributes the highest sales, Clothing records the highest margin, and Furniture lags on profitability. Aggregated across months, overall target-fulfilment is 99.0% with category rates of Clothing 79.9%; Electronics 128.1%; Furniture 95.7%. Survey results indicate that most respondents are at least partially aware of the e-commerce legal framework and that the use of digital compliance tools is widespread.

3.1. Descriptive Results

3.1.1 Transactional KPIs

Table 1 shows the overall transactional KPIs for the merged orders dataset: 500 orders across 1,500 line items generated ₹431,502 in sales and ₹23,955 in profit, implying an average margin of 5.55%. These headline figures establish a low-margin context and serve as the baseline against which category performance and target-fulfilment differences are interpreted in the Results.

Table 1: Overall transactional KPIs (n = 500 orders; currency = ₹; margin = profit ÷ sales × 100)

Total orders	**500**
Line items	1,500
Sales (₹)	431,502
Profit (₹)	23,955
Average margin (%)	5.55

Figure 1 depicts the distribution of state-level revenue and visually reinforces the concentration of sales. The leading states together account for a substantial share of total turnover, consistent with the percentages reported in the narrative above.

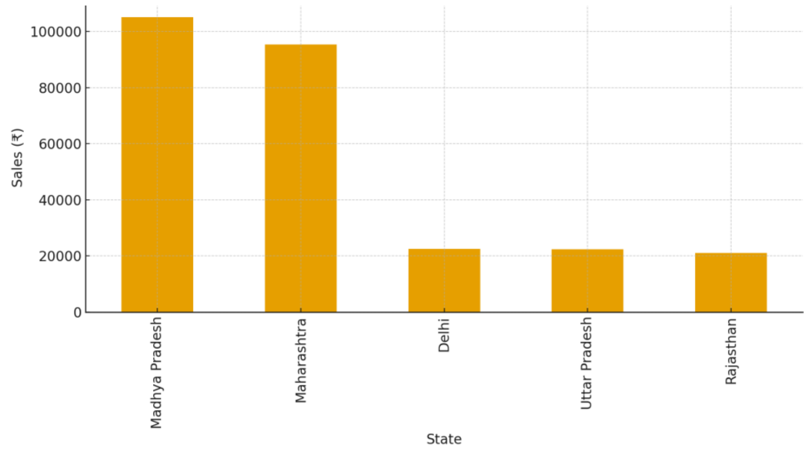

Figure 1: Top 5 states by sales

Figure 2 presents category-wise sales totals, highlighting Electronics as the largest contributor to revenue. The contrast with subsequent margin patterns clarifies that a category's revenue share does not necessarily translate into superior profitability.

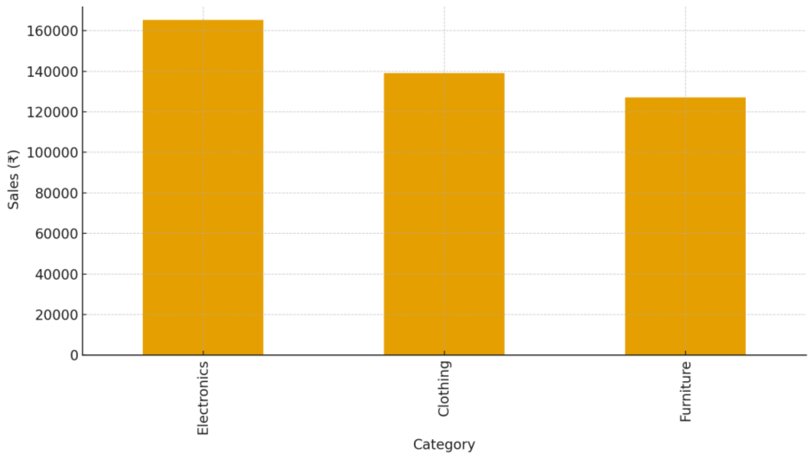

Figure 2: Sales by category

Figure 3 shows profit margins by category. Clothing exhibits the highest margin, Electronics follows at moderate levels, and Furniture trails, matching the aggregate profitability calculations.

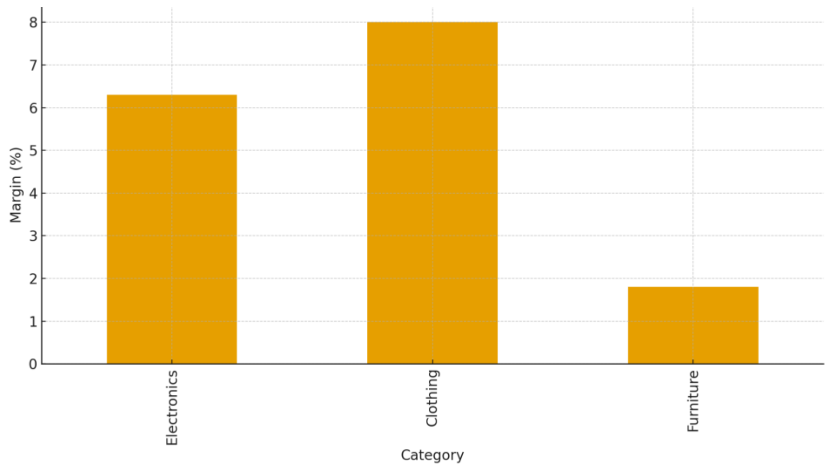

Figure 3: Profit margin by category

3.1.2 Target Fulfilment by Category (Aggregated Across Months)

Table 2 summarises category-level plan attainment over the period. Electronics materially exceeds plan (128.1%), Furniture lands near plan (95.7%), and Clothing under-delivers (79.9%), for an overall fulfilment of 99.0%. These differences complement the sales and margin findings and motivate the variance tests reported subsequently.

Category	Actual (₹)	Target (₹)	Fulfilment (%)
Clothing	139,054	174,000	79.9
Electronics	165,267	129,000	128.1
Furniture	127,181	132,900	95.7

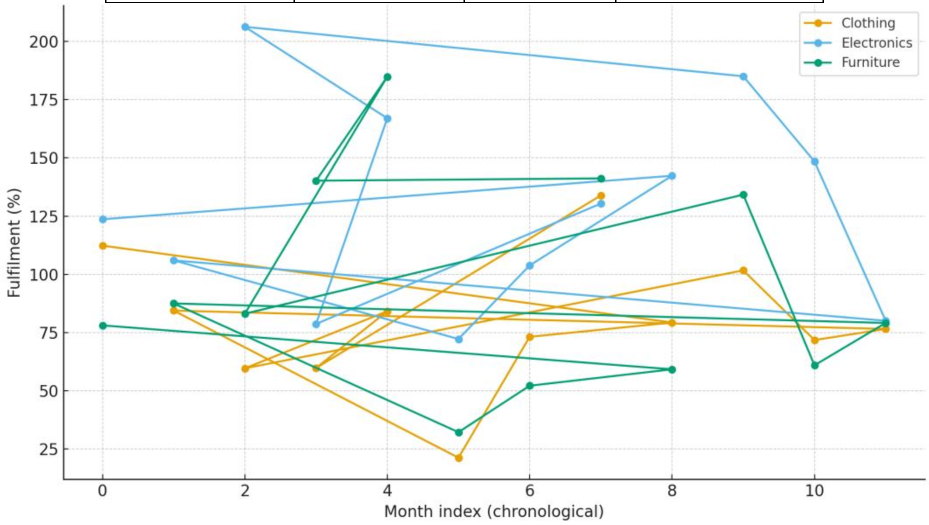

Figure 4: Monthly target fulfilment (%) by category

Figure 4 traces monthly target-fulfilment by category, revealing the temporal dynamics behind the aggregate rates: Electronics tends to track above plan, Clothing more often below, and Furniture remains closer to plan on average.

3.1.3 Survey Distributions

Figure 5 summarises the distribution of legal-framework awareness: 'Yes' 58.0%, 'Partially' 31.0%, 'No' 11.0%. Figure 6 displays the use of digital compliance tools: 'Yes, partially' 46.0%, 'Yes, extensively' 36.0%, 'No' 18.0%.

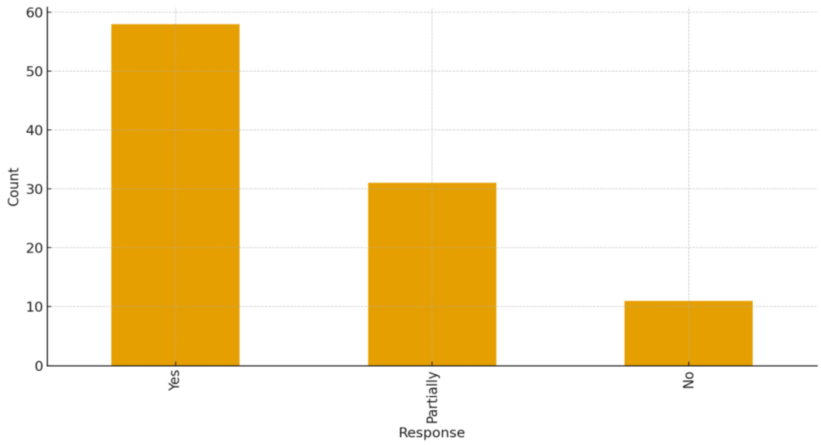

Figure 5: Awareness distribution

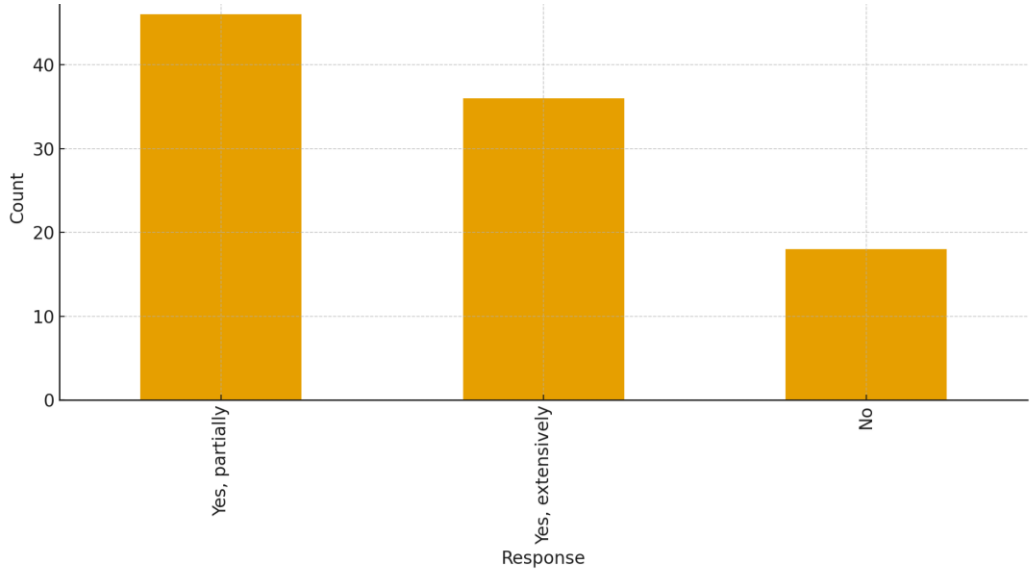

Figure 6: Digital tools distribution

3.2 Inferential Tests

Statistical tests corroborate the descriptive patterns. A chi-square test of awareness by compliance-challenge frequency yields $\chi^2(6) = 8.94$, $p = 0.1770$, Cramér's $V = 0.211$, indicating a small though directionally consistent association. Local regulatory impact by compliance-cost importance gives $\chi^2(6) = 12.01$, $p = 0.0619$, $V = 0.245$, a small-to-moderate relationship. Disputes by audit regularity returns $\chi^2(4) = 10.65$, $p = 0.0308$, $V = 0.231$, a statistically reliable small-to-moderate association. Spearman correlations align with these findings (awareness↔challenges $\rho = -0.231$, $p = 0.0210$; awareness↔clarity $\rho = 0.265$, $p = 0.0076$; local impact↔cost importance $\rho = 0.189$, $p = 0.0592$). One-way ANOVA indicates significant between-category differences in line-item margins ($F = 8.35$, $p = 0.0002$) and in monthly target-fulfilment ($F = 4.78$, $p = 0.0150$), confirming economically meaningful variation by category.

3.2.1 Chi-square Tests of Association

The contingency Table 3 relates respondents' awareness of the e-commerce legal framework to how often they encounter compliance challenges. The pattern is monotonic: those with no awareness report the highest share of high-frequency difficulties, whereas fully aware respondents report the lowest. Concretely, among respondents who are fully aware, only about a quarter of cases fall in the "frequently" or "almost always" categories (15 of 58, ≈26%), while nearly half of those with no awareness report high-frequency challenges (6 of 11, ≈55%); those who are partially aware lie in between (10 of 31, ≈32%). A chi-square test indicates a small association that is not statistically significant at the 5% level, $\chi^2(6) = 8.94$, $p = 0.1770$, Cramér's $V = 0.211$. Substantively, the cross-tab suggests that greater legal awareness tends to coincide with lower challenge intensity, though the evidence is not conclusive.

Table 3: Awareness of e-commerce legal framework × compliance-challenge frequency (counts).

	Almost always	Frequently	Occasionally
No	2	4	3
Partially	3	7	16
Yes	2	13	22

$\chi^2(6) = 8.94$, $p = 0.1770$, Cramér's $V = 0.211$

Figure 7 shows the row-percent distribution of compliance-challenge frequency by legal-framework awareness: those with no awareness report the highest share of frequent/almost-always challenges (~55%), partially aware ~32%, and fully aware ~26%. The rarely category increases to roughly a third among the fully aware, indicating awareness aligns with fewer compliance frictions ($\chi^2(6)=8.94$, $p=0.177$, Cramér's V=0.211).

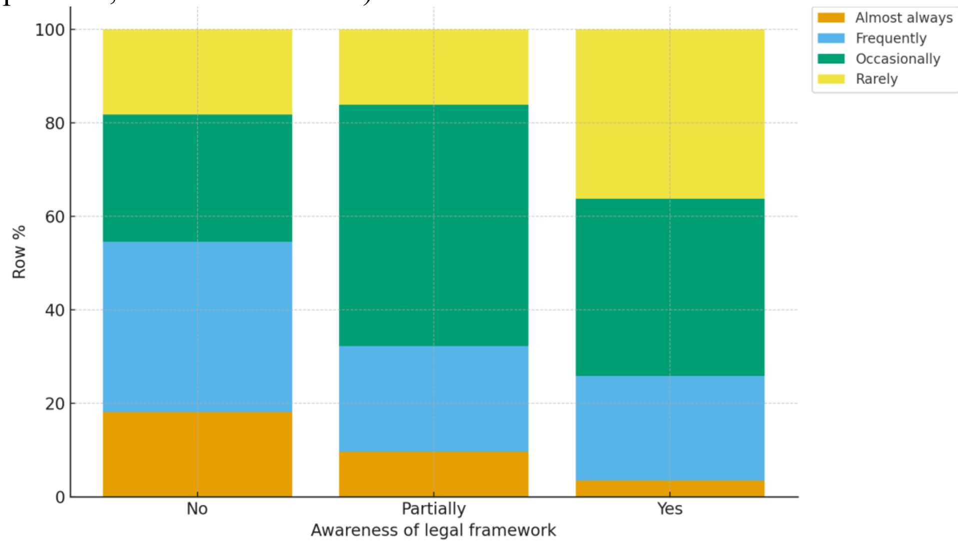

Figure 7: Awareness of legal framework × compliance-challenge frequency (row percentages; n = 100.

Table 4 shows how perceived local regulatory impact relates to the importance assigned to compliance costs. As impact intensifies, responses shift toward "Very important" (from 25.0% when there is no impact to 50.0% when impact is significant), while "Neutral/Not important" shrink correspondingly. This pattern indicates that stronger local regulation is associated with higher cost salience ($\chi^2(6)=12.01$, $p=0.0619$, Cramér's V=0.245; n=100).

Table 4: Local regulation impact × compliance-cost importance (counts; row totals in parentheses).

	Neutral	Not important	Somewhat important	Very important
No impact	10	2	9	7
Yes, but minimally	5	1	19	19
Yes, significantly	4	3	7	14

$\chi^2(6) = 12.01$, $p = 0.0619$, Cramér's V = 0.245

Figure 8 shows the row-percent distribution of compliance-cost importance across levels of local regulatory impact. As perceived impact rises, the share rating costs "Very important" increases from 25% (no impact) to 43% (minimal) and 50% (significant), while Neutral/Not important shrink; "Somewhat important" peaks at 43% in the minimal-impact group. This pattern indicates that stronger local regulation aligns with higher cost salience ($\chi^2(6)=12.01$, $p=0.0619$, Cramér's V=0.245; n=100).

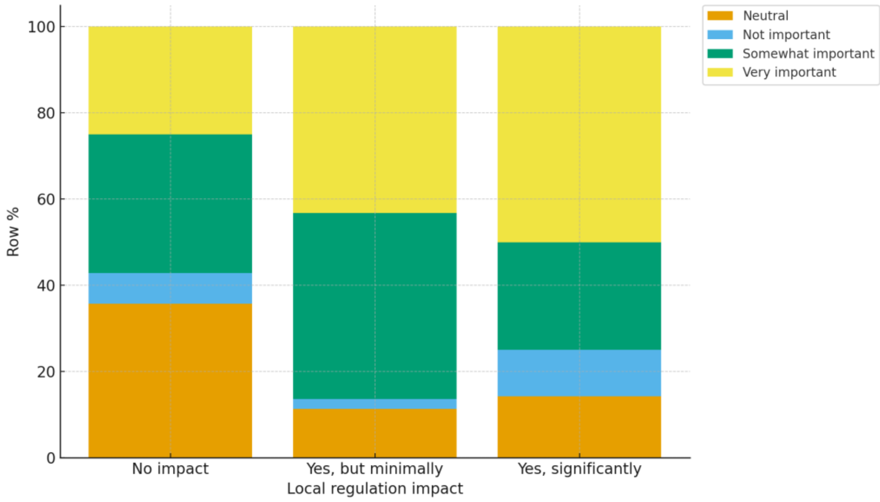

Figure 8: Local regulation impact × compliance-cost importance (row percentages; n=100)

Table 5 shows how experience with disputes relates to the regularity of compliance audits. Organisations with multiple disputes audit most consistently (Yes = 75%, Never = 0%), those with one dispute also lean toward regular audits (Yes = 40%, Never = 4%), while those with no disputes mostly audit occasionally (58%) and are least likely to run regular audits (Yes = 25%). The association is statistically reliable ($\chi^2(4)=10.65$, $p=0.0308$, Cramér's V=0.231; n=100).

Table 5: Disputes experienced × compliance audits (counts)

	Never	Occasionally	Yes
No	11	39	17
Yes, multiple times	0	2	6
Yes, once	1	14	10

$\chi^2(4) = 10.65$, $p = 0.0308$, Cramér's V = 0.231

Figure 9 shows the row-percent distribution of audit regularity by dispute history. Organisations with no disputes audit mostly occasionally (~58%), with regular audits ~25% and never ~16%; those with multiple disputes audit regularly about 75% of the time (0% never), and those with one dispute are in between (regular 40%, occasional 56%). The pattern indicates that dispute exposure aligns with more institutionalised auditing ($\chi^2(4)=10.65$, $p=0.0308$, Cramér's V=0.231).

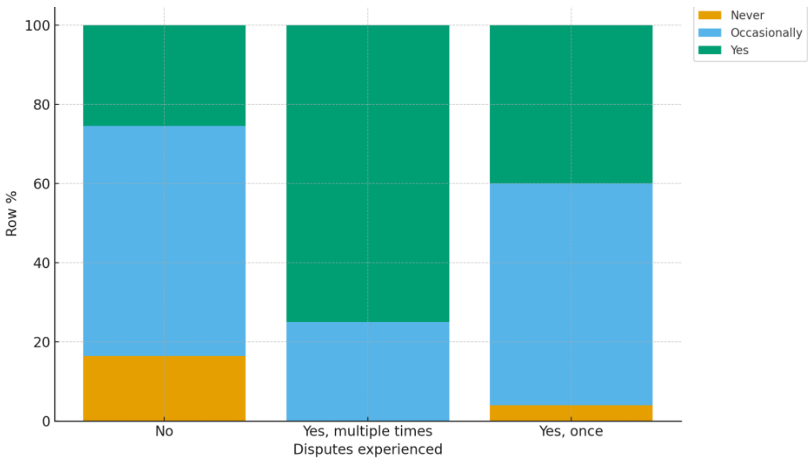

Figure 9: Disputes experienced × compliance audits (row percentages; n=100).

3.2.2 Ordinal (Spearman) Correlations

Table 6 shows rank-based associations among key constructs. Awareness is negatively correlated with challenge frequency ($\rho = -0.231$, $p = 0.021$), indicating that greater awareness aligns with fewer compliance difficulties. Awareness is positively correlated with perceived clarity ($\rho = 0.265$, $p = 0.0076$). Local regulatory impact is positively associated with the importance of compliance costs ($\rho = 0.189$, $p = 0.0592$), a marginal relationship.

Table 6: Spearman correlations among legal awareness, challenge frequency, perceived clarity, and compliance-cost importance (n = 100)

Pair	ρ (Spearman)	p-value	Direction
Awareness ↔ Challenges	-0.231	0.0210	negative
Awareness ↔ Clarity	0.265	0.0076	positive
Local Impact ↔ Cost Importance	0.189	0.0592	positive

2.3 One-way ANOVA: Line-item Profit Margin by Category

Figure 10 shows the distribution of line-item profit margins by category. Clothing exhibits the highest median and upper-quartile margins, Electronics is mid-range, and Furniture has the lowest median with a long negative tail, indicating more loss-making lines. Differences across categories are statistically significant (one-way ANOVA $F = 8.35$, $p = 0.0002$).

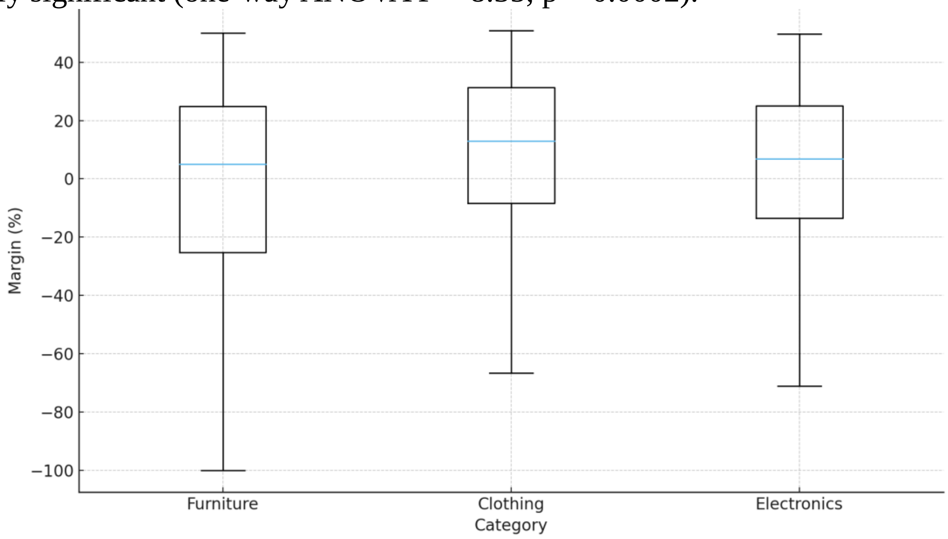

Figure 10: Line-item profit margin (%) by category (boxplots; n ≈ 1,500 line items).

Table 7 shows pairwise Welch t-tests on line-item profit margins with Bonferroni-adjusted p-values. Only the Furniture–Electronics comparison is statistically significant (p(adj)=0.0016) with a small effect (d=0.28); Furniture–Clothing and Clothing–Electronics are not significant after adjustment.

Table 7: Pairwise Welch t-tests for category margins (Bonferroni-adjusted p; Cohen’s d; n≈1,500 line items).

Group 1	Group 2	t	p (adj)	Cohen's d
Furniture	Clothing	1.98	0.1456	0.13
Furniture	Electronics	3.49	0.0016	0.28
Clothing	Electronics	1.73	0.2509	0.15

4. Discussions

The study set out to link firms' legal/regulatory context with operational outcomes in e-commerce. Three robust patterns emerge. First, legal awareness is associated with fewer compliance difficulties and greater perceived clarity of rules. Second, where respondents perceive a stronger local regulatory impact, they also rate compliance costs as more important. Third, organisations that have faced disputes report more institutionalised audit practices. Commercially, categories differ in profitability: margins vary significantly across Furniture, Clothing, and Electronics, with pairwise tests showing the clearest gap between Furniture and Electronics. Together, these findings suggest that capabilities for understanding and organising around law co-move with lower frictions and more formal controls, while the local regulatory environment sharpens cost salience and planning.

Our awareness results echo compliance scholarship that treats "capacity/knowledge" as a precondition for rule-following. Reviews in the compliance literature show that ignorance and misunderstanding of law are commonplace, and that improving legal knowledge can shift behaviour, especially when rules are complex or evolving (van Rooij, 2021). Classic work in environmental regulation similarly finds that awareness of rules and the capacity to comply are key drivers of compliance alongside deterrence and norms (Winter & May, 2001). In this light, the negative correlation we observe between awareness and challenge frequency, and the positive correlation between awareness and clarity, are consistent with broader empirical evidence that knowledge and interpretability of rules enable better compliance practices.

The salience of compliance costs under stronger perceived local regulation maps onto international and Indian evidence that regulatory compliance is disproportionately demanding for smaller firms. An EU-wide update on tax compliance costs concludes that SMEs face higher administrative burdens relative to large firms because they have fewer specialized resources and must spread fixed compliance tasks over smaller bases (European Commission, 2022). Studies of India's GST implementation document mixed but persistent concerns about compliance workload, training gaps, and the cash-flow and systems costs of meeting obligations, particularly for MSMEs (e.g., IJSART; Sociology Journal). Our data show that as respondents report more local regulatory impact, they assign greater importance to compliance costs—mirroring these documented burdens and reinforcing the need for cost-aware regulatory design and support tools.

The link between dispute experience and audit regularity aligns with research on how organisations learn from adverse events and embed controls. Contemporary work on audit quality highlights the role of governance actors in prioritising accuracy and control after risk exposure (Doxey et al., 2025; Lesage et al., 2017). Organisational compliance research also shows that firms do not merely "follow rules"; they construct internal meanings and routines around compliance, especially after regulatory or legal challenges, which can formalise practices such as periodic audits and documentation (Edelman & Talesh, 2011). The strong "regular audit" shares among firms with multiple disputes are consistent with these adaptive, routinising responses.On the commercial side, the one-way ANOVA and follow-up Welch tests indicate real heterogeneity in margins by category, with a small but significant difference between Furniture and Electronics. In practical terms, this suggests that regulatory planning cannot be divorced from product strategy: compliance overheads—training, audits, data-protection measures—sit on top of different gross margin structures, so categories with thinner margins will feel compliance frictions more acutely. That interaction helps explain why cost importance rises in more regulated local settings and why investment in clarity and awareness (which reduces frictions) can have outsized effects where margins are tight.

Interpreting the findings within India's current regulatory framework is instructive. The Consumer Protection (E-Commerce) Rules, 2020 impose duties on platforms and sellers (e.g., nodal officer, disclosures, grievance redressal), strengthening consumer-facing compliance expectations across marketplace and inventory models. The Digital Personal Data Protection Act, 2023 introduces new obligations for lawful processing, purpose limitation, and safeguards, with extraterritorial reach where Indian data subjects are targeted. Both frameworks intensify the need for legal awareness and auditable practices and thereby help explain our positive link between awareness and clarity and the upward shift in cost salience when local rules are perceived as binding. Internationally, OECD's Recommendation on Consumer Protection in E-commerce underscores transparency, fair practices, and effective redress—principles reflected in India's rules and aligned with our respondents' emphasis on clarity and complaint handling (OECD, 2022). The pattern observed also connects to consumer-protection research in India, showing that legal reforms and trustworthy customer service are central to building user confidence online (Chawla & Kumar, 2022). For firms, digital compliance tooling can lower the marginal costs of recurring tasks (policy versioning, audit trails, consent logs). Evidence from SME settings suggests that organisations with a deliberate digital-compliance strategy capture more of these benefits than those without one—again aligning with our result that awareness and structured practices travel together.

Implications for local self-government are twofold. First, capacity-building—short, plain-language guidance on complaint handling, returns disclosures, data-protection basics, and audit checklists—should target partially aware operators, where our tables show the biggest gains remain. Second, local authorities can complement national rules by convening sector clinics and "compliance by design" workshops linked to licensing or trade associations. These interventions are especially timely given the unincorporated segment's scale in India's urban economy and the push to publish higher-frequency indicators such as MoSPI's QBUSE, which can help local bodies benchmark outreach and measure change.

5. Conclusion

This study highlights that the intersection of regulatory awareness, governance structures, and operational outcomes is central to understanding e-commerce dynamics in India. The findings show that firms with higher legal awareness encounter fewer compliance difficulties and report greater clarity of rules, while stronger local regulatory impact tends to increase the importance attached to compliance costs. Experiences with disputes are also associated with more formalized audit practices, indicating that firms adapt their governance routines in response to prior regulatory challenges. Together, these insights emphasize that knowledge and clarity serve as prerequisites for effective compliance, while practical encounters with regulation shape organizational learning and the embedding of controls.Commercial outcomes add an additional layer to this relationship. Differences in profitability and target fulfilment across product categories reveal that compliance burdens cannot be understood in isolation from economic structures. Electronics demonstrates stronger target attainment, Clothing achieves higher margins, and Furniture illustrates the vulnerability of low-margin categories to regulatory overheads. These variations highlight that regulatory compliance interacts directly with commercial strategy and operational planning.For policymakers, the results underline the value of clarity campaigns, simplified compliance tools, and cost-aware frameworks that can ease frictions, especially for smaller operators. For firms, embedding digital compliance solutions and integrating audit routines with day-to-day operations provide avenues for resilience and competitiveness. Ultimately, compliance is not only a regulatory necessity but also a strategic capability that enhances consumer trust, strengthens efficiency, and supports sustainable growth in the evolving e-commerce ecosystem.

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