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The Role of Digital Trust and Cash on Delivery in Shaping E-Commerce Buying Behaviour: A Study of Muzaffarpur and Darbhanga Districts

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Abstract
India's e-commerce sector has grown into one of the largest and fastest-expanding in the world, but the whole growth narrative in semi-urban and rural pockets is still kind of underexplored, and not everyone pays attention to it the same way. This article looks at how digital trust and the cash-on-delivery, or COD, payment set-up work together to influence online buying behaviour in Muzaffarpur and Darbhanga, two well-known semi-urban districts in Bihar. It leans on national evidence from IBEF, Bain & Company, ET Prime Research, PwC India, EY, and the Reserve Bank of India to place these districts alongside broader consumer trends in Tier-2 and Tier-3 areas across India. More specifically, the discussion unpacks the mental side plus the "on the ground" structure behind why COD stays preferred, what stops people from using digital payments consistently, and how platform trust is actually built through reviews, return policies, and neighbour or peer suggestions. That trust then affects both the very first purchase decision and the repeat one, depending on what people have experienced before. The study basically finds that COD is not merely a payment option here, it becomes an trust-building instrument in places like Muzaffarpur and Darbhanga, where worries about online fraud still feel quite real, and digital literacy is still slowly catching up. The article ends with practical recommendations for platform operators, logistics providers, and policymakers who want to push more inclusive digital commerce in Bihar, even as constraints remain on the ground.
Keywords: *cash on delivery, Muzaffarpur, Darbhanga, Bihar, online shopping, digital payments, digital trust, consumer behaviour, Tier-2 cities, e-commerce*

I. Introduction

Walk into any mid-sized market in Muzaffarpur or Darbhanga and you'll notice something kind of interesting people are placing orders on their phones, but a lot of them will quickly say they went with "cash on delivery" at checkout. This isn't some blanket refusal of technology. It's a deliberate call, shaped by real worries about product quality, payment security and what happens if something goes off, or doesn't match the picture.

India's e-commerce market was about US$ 125 billion in 2024, and it is expected to climb to roughly US$ 345 billion by 2030, largely because Tier-2 and Tier-3 cities are adopting faster, per IBEF. IBEF also estimates a CAGR of 18.4% which sounds impressive by itself. Still, the more useful story is underneath that headline figure, especially in semi-urban pockets across places like Bihar, where the adoption pattern looks noticeably different from the rhythm you'd see in Bengaluru or Pune.

Muzaffarpur and Darbhanga are not really obscure towns. Muzaffarpur is one of Bihar's bigger commercial hubs, it has a dense market ecosystem, an agricultural economy linked to lychee cultivation, and a growing youth population. Darbhanga is more of a cultural plus educational centre, historically significant, and it is slowly but surely getting better through road networks and mobile internet. Both districts are sitting right in the middle of what analysts call the "next wave" of Indian e-commerce customers, the ones with smartphones, moderate incomes, and growing hopes, yet there is also a pretty human caution about spending money they can't immediately confirm as genuinely well spent.

This piece digs into how that caution works, like what triggers it, how it shows up in COD choices, what slowly builds digital trust, and what e-commerce platforms along with policymakers should take in mind if they want to serve these areas well.

II. The National Context: India's Uneven E-Commerce Map

2.1 Tier-2 and Tier-3 Cities as the New Growth Engine

For a long time, Indian e-commerce was kind of a Delhi–Mumbai–Bengaluru narrative. But that, too, has changed fast , really fast. Bain & Company estimates that nearly three out of every five new online shoppers since 2020 have come from Tier-3 or even smaller towns and that, in the meantime, over 60% of e-commerce transactions now originate from Tier-2 and Tier-3 markets, based on Deloitte analysis. The shift is real, and it seems to be picking up speed.

So, what's pushing it? It's a mix of cheap data, low-cost smartphones, and the plain fact that local physical retail in smaller places can't always provide the same range that's visible online. Imagine someone in Muzaffarpur looking for a certain running shoe size or a particular branded kitchen appliance, and discovering there's no decent option nearby. The internet bridges that gap, but only if trust is there , in the seller, in the payments, and in the delivery.

In March 2024, India had over 954 million internet subscribers, and it had already surpassed the United States to become the second-largest e-retail market, with more than 270 million online shoppers. Still, those shoppers aren't spread out evenly. Rural internet subscribers reached 398 million by March 2024, up from 285 million in March 2020, fueled by affordable mobile data plus government-backed initiatives such as BharatNet and Digital India.

Bihar fits inside this wider national picture, but it has its own texture. Over the past five years, internet infrastructure has improved, substantially. However, in peri-urban and semi-rural pockets across districts like Darbhanga and Muzaffarpur, coverage remains patchy. Network reliability during peak hours is a recurring complaint. Digital literacy, meaning the ability to navigate apps, manage accounts, and handle troubleshooting without panic, is still building. None of this completely halts online shopping, but it definitely shapes how people shop, and what they expect.

2.2 Payment Behaviour: Cash Still Talks

Despite the celebrated rise of UPI, India's payment culture hasn't moved in a uniform way online. Based on figures from the Reserve Bank of India, roughly 60% of India's consumer spending is still done in cash, mainly across semi-urban and rural pockets, which points to a hybrid model where real time mobile payments sit alongside notes and coins.

This isn't exactly resistance to modernity. It's more like deeply practical, because people adapt. An EY and CII survey indicated that UPI is the most preferred way to transact for about 38% of respondents in rural and semi-urban India, while 19% still go with cash only. In Bihar, in particular, research has noted that the urban areas show a much higher level of UPI uptake than the rural counterparts, and the rate of digital transactions in urban Bihar is outpacing rural Bihar by a noticeable margin.

III. Understanding COD: More Than a Payment Method

3.1 Why COD Dominates in India

Cash on delivery is, in a way, technically pretty simple: you place an order, the product lands, and then you pay the delivery person. But its psychological role is kinda way more complex, than the actual transaction itself, if you think about it for a second.

As per ET Prime Research, around 60–65% of e-commerce orders in India are handled through COD. In Tier-2, Tier-3, and the smaller towns COD is still the favored payment route in 2024, largely because digital payment adoption is not as widespread there, and those areas contribute a bigger chunk to total sales.

Now the real question is why it keeps going, even while UPI is becoming mainstream. A few reasons overlap and keep reinforcing each other. First, there's the concern around product quality, and the quiet anxiety that what shows up may not be the same as what was displayed on the screen. Second, people also fear fraud. A lot of semi-urban customers have heard stories about UPI transfers failing, phishing attempts, or websites that look real but are actually fake. Using cash at the door removes both worries in one go.

Then there's the part that gets talked about the least, meaning the structural limits of bank account access and formal credit. With COD, people can still shop online even without a bank card, or without a linked digital wallet.

In general, trust issues, worries about product quality, and protection from online scams are some of the most stated drivers behind COD preference. Many shoppers pick COD so they can inspect, reject, or return items right there at the doorstep, without any money already getting locked in.

As shown in Figure 1, the relationship between COD preference, digital trust levels, and return rates forms a feedback loop that shapes platform strategy across different city tiers.

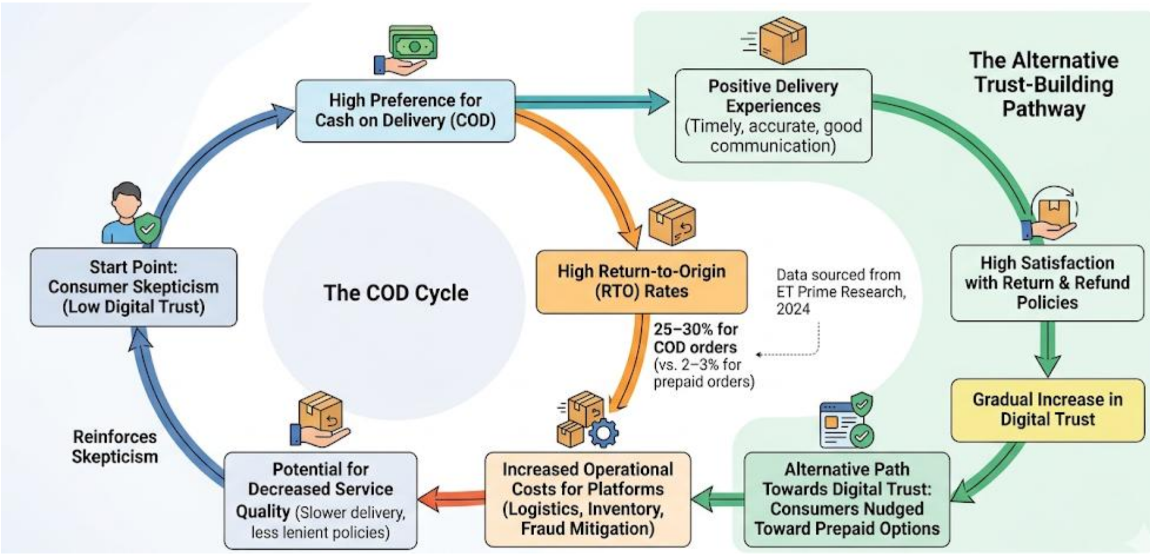

Figure 1: The COD–Digital Trust Feedback Loop in Indian E-Commerce

This conceptual flowchart kinda shows the looped link between consumer trust levels, COD adoption, and RTO rates, across India's Tier-2 and Tier-3 markets. It kind of implies, when digital trust starts out low, people naturally pick COD, and that choice then drives up return-to-origin rates (roughly 25–30% for COD orders, vs 2–3% for prepaid orders, as per ET Prime Research, 2024), and because of that the platforms take on bigger operational costs. Those higher costs can later affect service quality, which then feeds consumer scepticism, and yeah it becomes a back-and-forth cycle. The chart also points to a different track, where good delivery experiences plus satisfaction with return policies slowly grow digital trust, which then nudges users toward prepaid payments. Data pulled from ET Prime Research (2024) and RedSeer Consulting.

3.2 The RTO Problem and Its Real Cost

COD isn't free for anyone, really. For a big slice, like 25–30% of COD orders , they don't make it all the way— they become RTOs, return to origin, while prepaid orders mostly sit around just 2–3% failure. Looking at industry data from 142 Indian direct-to-consumer brands followed through 2024, COD is sitting at about 58–64% of all orders in Tier-2 and Tier-3 markets but then somehow it drives 76–83% of the total RTO volume. And the average RTO rate is hovering near 28–35% for COD transactions, so yeah the mismatch is kind of brutal.

There's also the RedSeer side of it. They estimate Indian e-commerce businesses lose more than ₹20,000 crore every year because of the high RTO levels and failed deliveries. That's a huge figure, and it doesn't land evenly across everyone. Smaller D2C brands and regional sellers take the heavier hit, so the very merchants trying to push into places like Muzaffarpur and Darbhanga end up paying higher cost per order.

For the customer though, none of this feels real. They just see COD as the most secure way to shop. So closing that gap between what consumers believe is risky, and what the operations actually face, is basically one of the big bottlenecks for e-commerce growth in semi-urban India.

IV. Digital Trust: How It Forms (and Fails) in Semi-Urban Markets

4.1 What Makes a Consumer Trust an Online Platform?

Trust in e-commerce is not one single thing, more like a mix of several perceptions that pile up little by little over time. Like , does the platform look proper and established? Do the reviews seem genuine or kind of "too perfect"? Has someone from the buyer's family or social circle already bought from this place before? And if something goes sideways, what actually happens then. Who steps in, and how fast?

A PwC India report, released in February 2024, found that GenZ consumers in non-metro India still lean toward COD as their preferred payment method. It also says fake reviews of health and wellness products keep over 42% of rest-of-India shoppers away from buying in that category. That last part really stands out, it basically implies trust is fragile, and also depends on the category. A person can trust Amazon enough to pay via UPI for electronics, but still shift to COD for clothing from a lesser-known label.

In Muzaffarpur and Darbhanga, the trust-building pathway tends to be social and local. A nod from a neighbour, a college friend's WhatsApp message with screenshots or a haul from Meesho, or a local shopkeeper who explains he re-sells items he sources online… these informal channels have huge influence. The Walmart Retail Rewired India 2025 report also mentions that 47% of Indian consumers use social media for shopping discovery, and it climbs to 52% among Millennials and Tier-2 city consumers. In the real world, platforms like YouTube and Instagram are doing the job of informal trust signals. Unboxing videos , influencer reviews, and community posts all add up to whether a shopper feels a platform or product is dependable.

4.2 The Literacy and Infrastructure Gap

Trust also hangs on competence, you know, the ability to navigate a platform, grasp return policies, and finish a transaction without getting stuck. Research on consumer behaviour in Bihar points to lack of digital literacy as a major obstacle, and it says many potential shoppers in semi urban and rural pockets are not really aware of how online shopping platforms work, they also may not understand digital payment methods, or basic cybersecurity best practices.

So this becomes a dual challenge. First, platforms need to feel easier, more intuitive, with stronger vernacular support, cleaner interfaces, and fewer steps during checkout. Second, people need exposure plus practice. But neither thing arrives overnight. The BharatNet project and a range of state level digital skilling initiatives have done some good work, still the progress looks uneven across districts in Bihar.

There is also the reliability of internet. Darbhanga, even though it keeps growing, still sees inconsistent mobile data speeds in several wards. A weak connection at checkout is more than just irritating, it can trigger worry about whether the payment actually went through. And that kind of doubt discourages digital payments later on, kind of like it sets a negative loop in motion.

V. Buying Behaviour Patterns in Muzaffarpur and Darbhanga

5.1 What People Buy and Why

The product categories driving e-commerce adoption in these districts broadly look like what's being seen across Tier 2 India, apparel, mobile accessories, personal care products, and household goods kind of follow the same pattern. Electronics, especially mobile phones, are still major pull factors for purchasing, partly because they're easier to judge using specifications, and partly because established platforms already have enough reviews to calm down perceived risk.

Fashion is a little more confusing to handle. Size uncertainty, colour mismatch between screen and real life, and the fact that returns can be hard from semi-urban addresses all stack up into hesitation. COD is, in fact, strongly favoured for fashion buys—because it makes doorstep inspection possible. A lot of consumers in Muzaffarpur mention a common situation, ordering two sizes of the same product and paying only for the one that fits, which only really works when COD is in play.

The festive shopping season is an especially revealing time for how people buy things. In Tier 3 cities, there was a 77% jump in digital payments for watches and jewellery, and a 59% rise in grocery and supermarket spending during festive periods. Tier 2 cities, meanwhile, posted 64% growth in watches and jewellery, per Bain & Company's Festive Spending Insights 2025 report. Taken together, it points to the idea that even in markets that are normally cautious, aspirational spending starts taking the lead during festivals, and when the deal feels good enough consumers will try out new platforms and categories.

5.2 The First-Time Buyer Moment

One thing that keeps coming up, in research about non-metro e-commerce adoption is how critical the first purchase is. It seems like payment flexibility, like cash-on-delivery, stays a must have for building trust with first time rural and semi urban users. A smooth first moment, the correct product showing up on schedule, a delivery agent who is polite, the return process working without drama, all of that becomes a base layer that later helps digital payment adoption move forward.

But the failure story is just as strong. Like when something arrives damaged, a refund never actually shows up, or a COD situation where the delivery agent asked for exact change and then walked off, because the buyer couldn't produce it. Those accounts travel fast in places where communities are close knit. One bad experience can push back adoption not only for one consumer, but also for their entire social circle.

This is why customer experience investment in markets like Muzaffarpur and Darbhanga isn't only about satisfaction scores. It's more about trust, spreading across the community level, kind of like word of mouth but with commerce at the center.

VI. The UPI Gradual Shift: Promise and Reality

6.1 Digital Payments Are Growing, But Slowly

UPI has been kind of a genuine revolution in India, for real. As of December 2024, 16,730 million transactions were processed through UPI monthly, compared to only 1.99 million in December 2016, and there were 641 banks live on the platform too, while digital payments topped INR 130.19 trillion in value just in the second half of 2024 alone. So yeah, overall trajectory is extraordinary.

But still, these aggregates can hide local realities a bit. UPI adoption in semi-urban Bihar is rising, though the growth is coming from a lower starting point and it looks pretty concentrated among younger, better-educated consumers. In an EY survey, among rural and semi-urban respondents, 38% said they preferred UPI as their primary transaction mode. Yet, 19% still preferred cash only, and you can see younger people 18–35 have a much higher preference for UPI.

The implication is basically generational. In Muzaffarpur and Darbhanga, the demographic profile of online shoppers is skewing younger. Students, early-career young professionals, and married women in their 20s and 30s make up a big chunk of the buyer base. This group tends to be more comfortable with apps and digital interfaces, and they're being moved little by little from COD to UPI through discounts, cashback offers, plus the overall positive experience that accumulates over time.

And there's also research from D2C brands that supports the pattern. It suggests absolute discounts of ₹50–100 can convert roughly 31–38% of customers who prefer COD into prepaid options, while percentage discounts only manage about 18–24% conversion. It's a helpful operational insight, price incentives do work, but how you package the offer matters, the framing matters too, even when the numbers look similar.

As shown in Figure 2, the evolution from COD to digital payment adoption tends to follow a phased trust-building model across different consumer segments in Tier-2 districts.

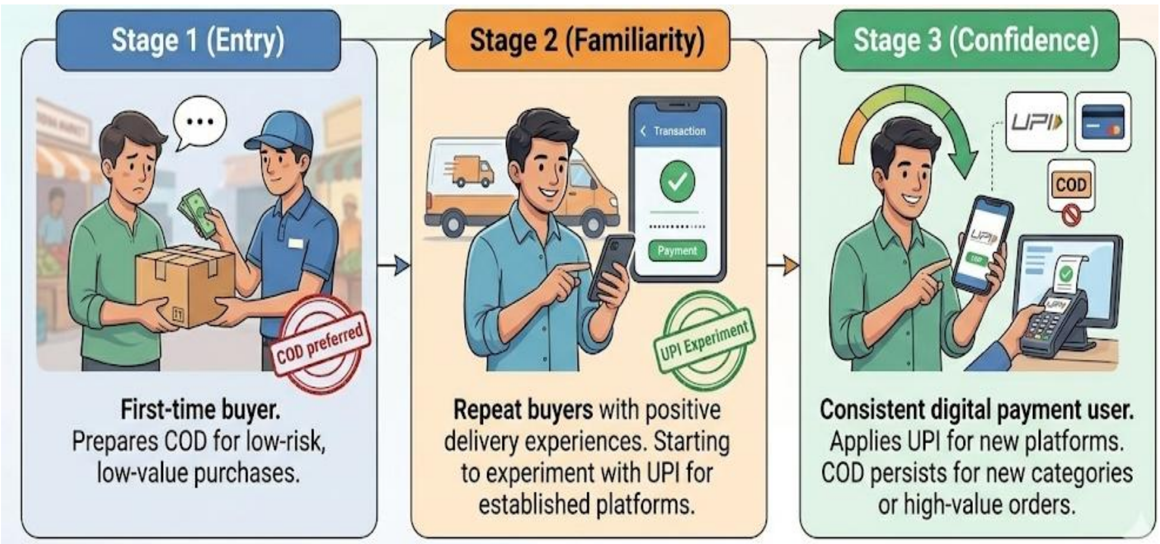

Figure 2: Phased Digital Payment Adoption Model for Tier-2 Semi-Urban Consumers in India

This kind of staged model shows a pretty typical consumer journey, from first time COD use to more steady digital payment adoption, kinda step by step. Stage 1, the Entry bit, is where new buyers still go for COD because it feels like low-risk, low-value stuff , so they don't worry as much. Stage 2, the Familiarity stage, is when repeat buyers have had good delivery experiences and they start to mess around with UPI, mostly on platforms they already know. Stage 3, Confidence, is where people become habitual digital payment users and they'll even use UPI on brand new platforms but COD can still stick around for totally new categories, or when the order is high value or unusually big. This model draws on behavioral patterns mentioned by PwC India (2024), Bain & Company (2025), and ET Prime Research (2024), and it also mirrors the on ground experience in Tier-2 areas like Bihar, plus similar Hindi-belt districts.

VII. Platform Strategies: What Works in These Markets

7.1 Logistics as a Trust Signal

Before trust can be digital, it kinda has to be physical, right. In Muzaffarpur and Darbhanga, the quality of last mile delivery works like a trust signal, as significant as any app feature. A delivery agent who comes on time , handles the parcel carefully, and stays polite communicates, in a real way , something to the buyer about the platform's reliability. On the other hand, each returned COD order costs brands ₹180–240 in forward shipping, reverse logistics ,and processing overhead while producing zero revenue, so it's not exactly small loss. Platforms like Flipkart and Amazon have been expanding their logistics reach into smaller cities. In August 2025, Flipkart had created over 2.2 lakh seasonal jobs and also planned 650 more festive delivery hubs in Tier-2 and Tier-3 cities, while Amazon India planned 1.5 lakh festive hires. These expansions matter, not only for speed, but because local delivery infrastructure reduces that constant anxiety of "will it actually reach me" even if the order number looks fine on screen.

Meesho deserves a special mention here. Its model, built around social commerce, vernacular interfaces, and heavy COD accommodation, has gotten real traction in markets just like Muzaffarpur and Darbhanga. By designing for low digital literacy rather than fighting it, Meesho managed to bring onboard consumers that some other platforms basically left behind.

7.2 Return Policies as Confidence Builders

A clear, easy return policy does more psychological work than a flashy UI. Like it kind of does the heavy lifting in your head, then any pretty interface. So, if a buyer in Darbhanga is thinking about a ₹800 kurta from an unfamiliar seller, knowing that returns are free and hassle free reduces the perceived risk enough to push the purchase. This becomes even more important in fashion and footwear, because fit, and overall quality, can only be checked in person, not just by photos.

Platforms that communicate return policies clearly, in Hindi, using simple language, without any annoying fine print, usually build more trust in semi urban markets than sophisticated personalisation algorithms can. Also, local language customer support, through chat, WhatsApp, or phone, matters a lot for holding on to buyers who had problems earlier. One support call solved in Hindi, within a reasonable time, turns into a sort of relationship building moment, and it can convert a one-time COD buyer into a repeat UPI user.

VIII. Conclusion

Muzaffarpur and Darbhanga are not outliers, they're more like a slice of something bigger, millions of Indian consumers who are cautiously and kind of deliberately moving into digital commerce on their own timetable. By 2025, over 55% of new online shoppers in India are expected to come from Tier-2 and Tier-3 places, and it's markets like these two Bihar districts that will, honestly, steer the next chapter of e-commerce growth in the country.

Digital trust isn't a light switch, it's more a relationship that grows, step by step, through reliable deliveries, real looking product images, simple returns, and responsive support. COD still stays the dominant path that helps that trust get built in Muzaffarpur and Darbhanga, and it will probably stay important for quite a few years. If platforms try to get rid of COD too fast, before the whole trust foundation is ready, they might lose these shoppers to nearby retail or to other players who still offer the option without much friction.

The way ahead needs collaboration. Platforms should put money into more vernacular content, local language support, and last mile logistics that can manage that kind of density and the geography across these districts. Government also has to speed up dependable internet connectivity and digital literacy, both at the school level and within the community. At the same time logistics providers have to build stronger COD to digital conversion incentives, not just talk about it. And researchers should keep studying these markets closely, because what works in Bengaluru might not work in Darbhanga, and the assumptions stitched from metro data can mislead policy, either way.

India's e-commerce future isn't only urban. It lives in the lychee markets of Muzaffarpur and the cultural bylanes of Darbhanga, where young people place orders through their phones, selecting cash on delivery not out of distrust in progress, but simply because they are still learning to trust it.

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