

GENAI APPLICATIONS IN RETAIL TRANSACTION ANALYSIS: **INDUSTRY TRENDS AND INSIGHTS**

March 2025 Report

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GENAI APPLICATIONS IN RETAIL TRANSACTION ANALYSIS: INDUSTRY TRENDS AND INSIGHTS

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GenAI Applications in Retail Transaction Analysis: Industry Trends and Insights was produced in collaboration with Fiserv, and PYMNTS Intelligence is grateful for the company’s support and insight. [PYMNTS Intelligence](#) retains full editorial control over the following findings, methodology and data analysis.

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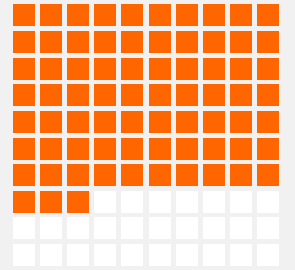
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WHAT'S AT STAKE

Retailers are racing to integrate generative artificial intelligence (AI), or GenAI, into their operations, recognizing its potential to transform everything from transaction security to personalized shopping experiences. The data is clear: Businesses that embrace GenAI more extensively are seeing tangible benefits in customer retention, forecasting accuracy and strategic decision making. Yet, while adoption is high — especially among data-driven firms — many retailers remain doubtful about their own analytics capabilities, exposing a critical gap between ambition and execution.

This divide raises pressing questions: Can businesses unlock the full potential of GenAI without first strengthening their data foundations? And as nearly three-quarters of retailers plan to increase their GenAI investments next year, will they be able to navigate the integration challenges that threaten to slow progress?

73%



of retailers expect to step up their use of GenAI to obtain and analyze transaction and payments data over the next year.

The technology could be make or break for retailers. Firms that fail to innovate risk falling behind as the industry rapidly evolves. With adoption accelerating, the question is not whether GenAI will shape the future of retail — it is which businesses will harness it most effectively to drive growth and innovation.

Less than **1/3**
of retailers are **highly confident**
in their data capabilities.

These are just some of the insights explored in GenAI Applications in Retail Transaction Analysis: Industry Trends and Insights, a PYMNTS Intelligence and Fiserv collaboration. This edition examines the role of GenAI in retail and draws on insights from a survey of 390 executives working at retailers that generated at least \$500 million in revenue in 2023. The survey was conducted from June 12, 2024, to Aug. 7, 2024.

This is what we learned.



KEY FINDINGS

More than 9 in 10 retailers now leverage GenAI to analyze transaction data, integrating it into key business operations — and the benefits are clear.

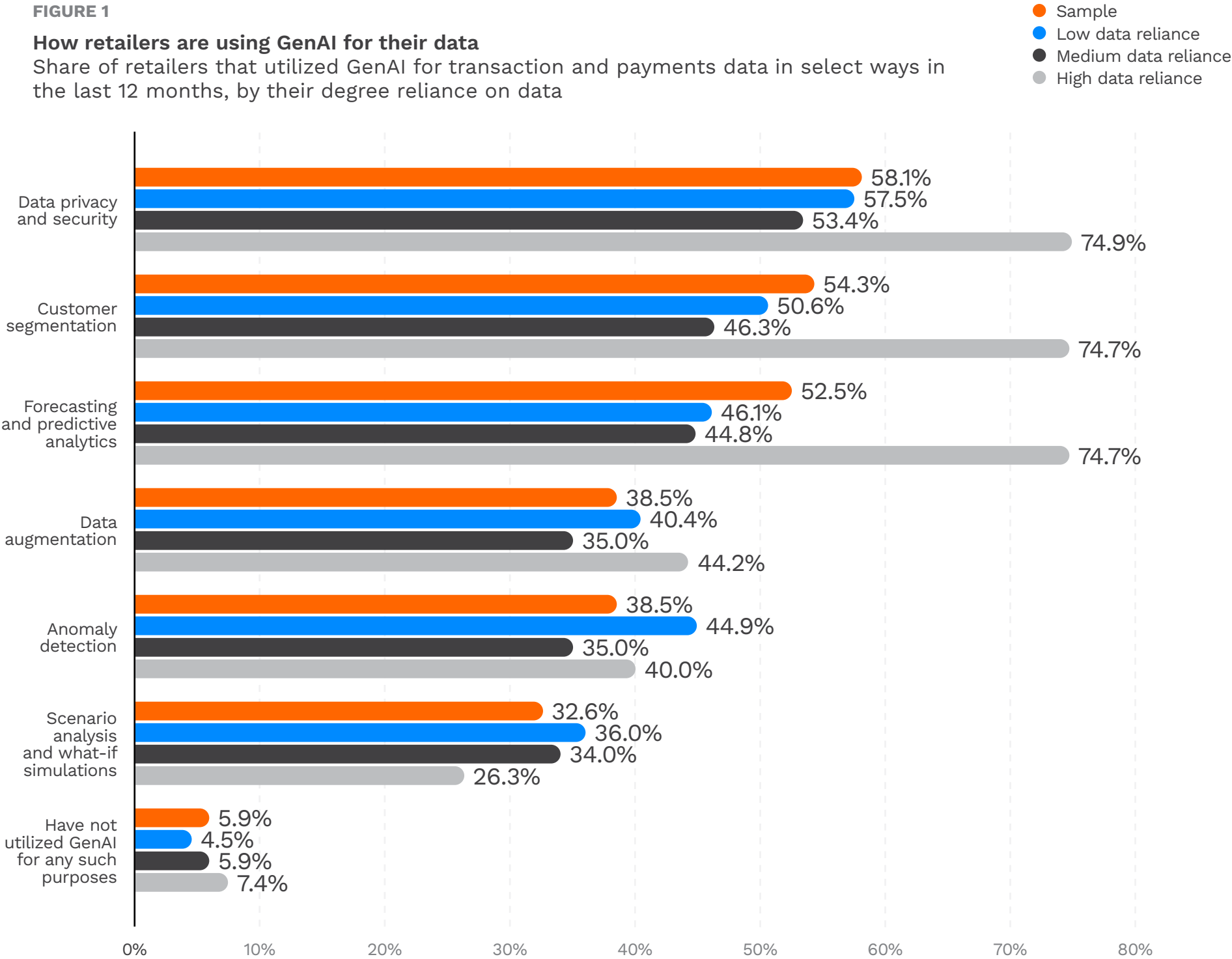
The most common applications include data privacy and security, with 58% of retail firms surveyed implementing the technology in this area. Additionally, 54% use it for customer segmentation and 53% for forecasting and predictive analytics. Companies that heavily depend on data for decision making use GenAI in an average of 3.3 out of six possible ways, with three-quarters applying it in the top three areas.

Adoption varies across retail sectors. Grocery retailers, for instance, are notably less likely to use GenAI with their transaction data, with most (52%) applying it in just two or fewer ways — compared to only 41% in non-grocery retail.

FIGURE 1

How retailers are using GenAI for their data

Share of retailers that utilized GenAI for transaction and payments data in select ways in the last 12 months, by their degree reliance on data



Source: PYMNTS Intelligence

GenAI Applications in Retail Transaction Analysis: Industry Trends and Insights, March 2025

N = 387: Retail companies that tracked payment data in the last 12 months, fielded June 12, 2024 – Aug. 7, 2024

Among businesses that use GenAI in several areas, the benefits are clear. More than 60% of firms with high adoption report improvements in personalized product recommendations, transaction security and customer retention, surpassing the 48% average across all retail firms.

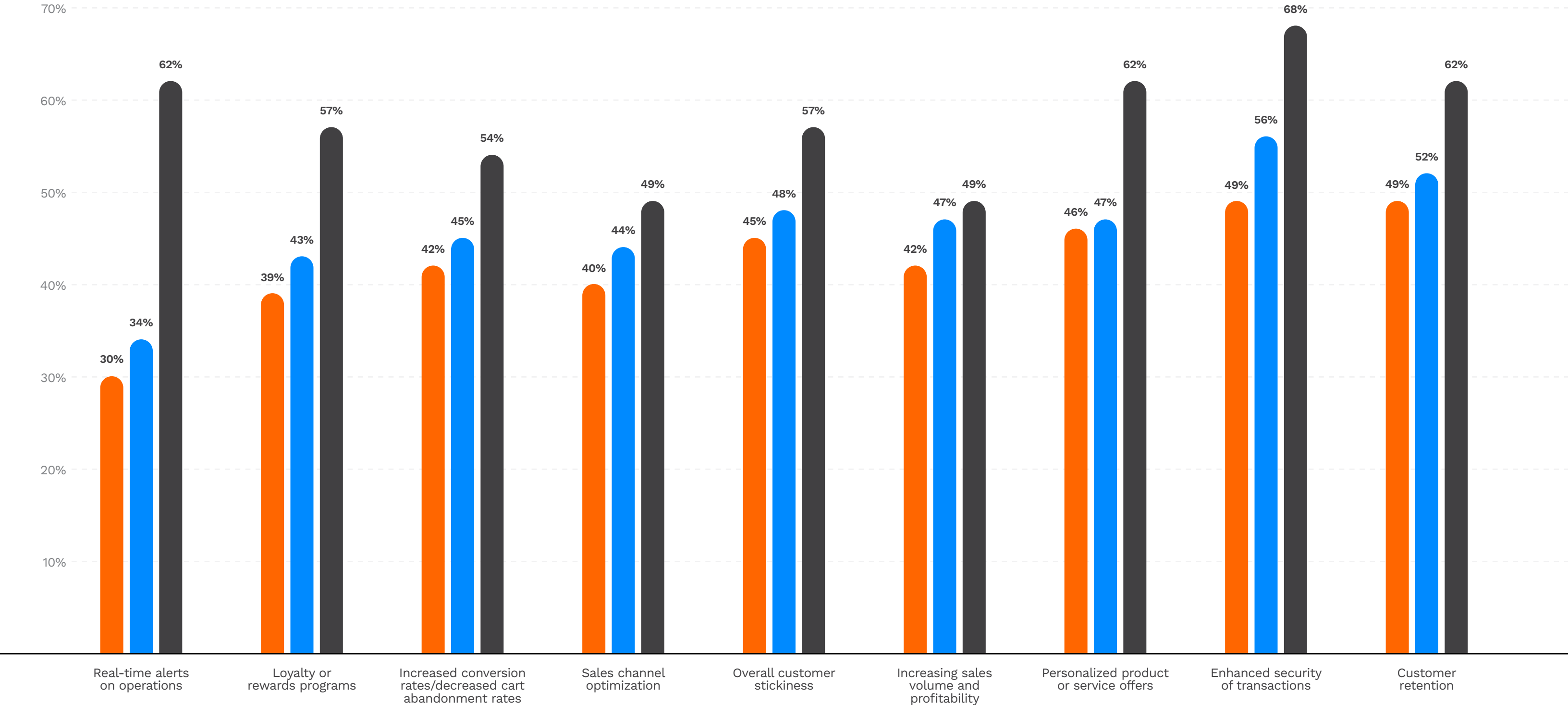
Greater reliance on GenAI also empowers businesses to increase the role that their transaction and payments data play in shaping business strategies, allowing them to make more informed choices. Retailers that use GenAI in five or six ways identify an average of 9.4 areas where this data influences their decision making, compared to 7.5 areas among all firms. As adoption continues to grow, businesses leveraging GenAI more extensively may gain a competitive edge in both operational efficiency and customer engagement.

FIGURE 2

How GenAI usage is linked to improvements in select areas

Share of retailers reporting that transaction and payments data have helped guide strategy development and decision making in select areas in the last 12 months, by number of ways the retailer is using GenAI for this data

- Sample
- Three or four
- Five or six



Source: PYMNTS Intelligence

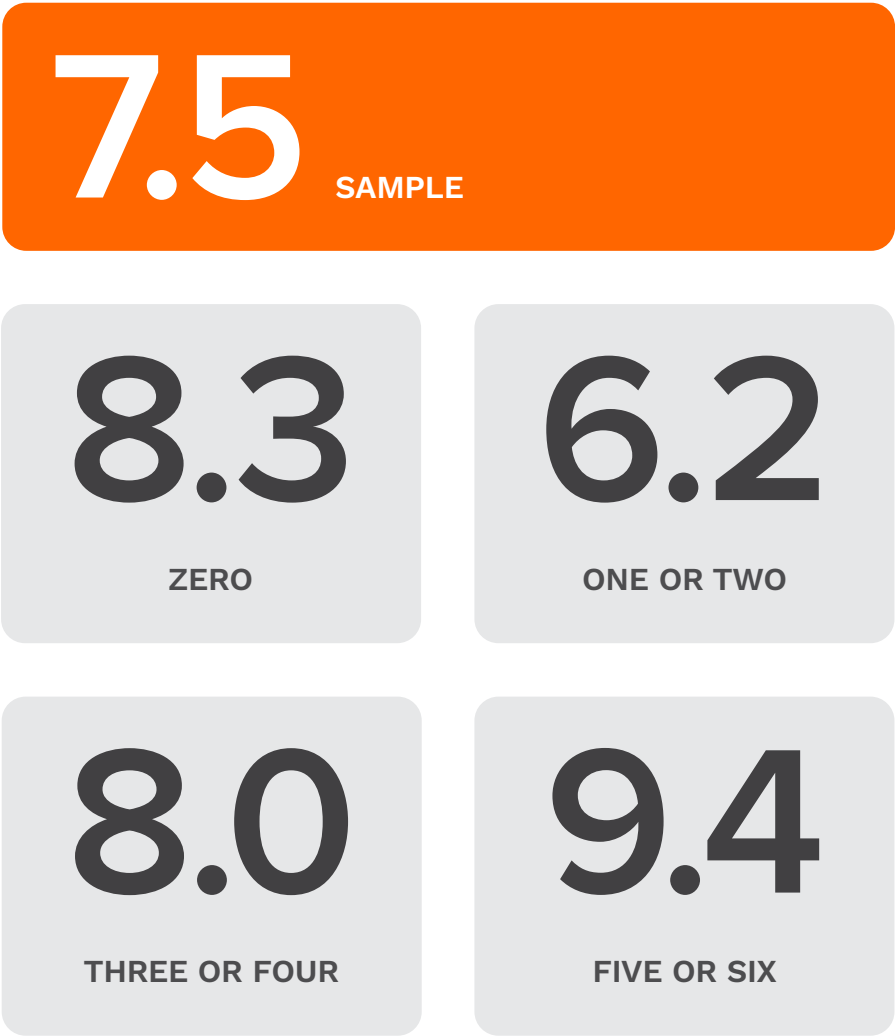
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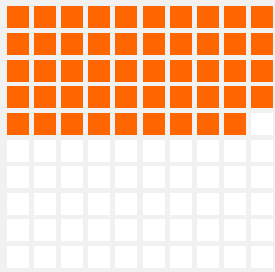
FIGURE 3

Number of areas of improvement, by degree of GenAI usage

Number of business performance areas in which retailers report that transaction and payments data have helped guide strategy development and decision-making processes, by number of ways the retailer is using GenAI for this data



Source: PYMNTS Intelligence
GenAI Applications in Retail Transaction Analysis: Industry Trends and Insights, March 2025
N = 387: Retail companies that tracked payment data in the last 12 months,
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49%

of retailers report that **transaction and payments data have helped guide their customer retention** strategy development and decision making in the last 12 months.

Despite the growing adoption of GenAI in retail, most retailers remain skeptical of their own analytics capabilities.

Fewer than one in three retailers rate themselves as having high capabilities in data collection and analysis, indicating a need for more up-to-date tools that empower them to use their data more effectively.

Thirty-one percent of firms say their data collection capabilities are strong, and an even smaller share (27%) say the same of their data analysis capabilities. Thirty percent, meanwhile, report a high degree of capability in data management and storage, and only 22% say the same of cross-functional collaboration and data sharing. About half of firms or fewer tend to report moderate capability across these functions.

“

While many retailers are still struggling with data readiness, **those that invest more deeply in GenAI are seeing tangible improvements** in their ability to collect, analyze and present data effectively.

”

Broader use of GenAI is linked to firms feeling more confident in several of these capabilities. Among retailers leveraging GenAI in five or more ways, 38% report strong data collection abilities — a 23% increase over the industry average. Similarly, visualization and reporting capabilities see a modest boost. Twenty-seven percent of retailers applying GenAI in at least four areas report strong visualization and reporting capabilities, compared to 24% across all firms.

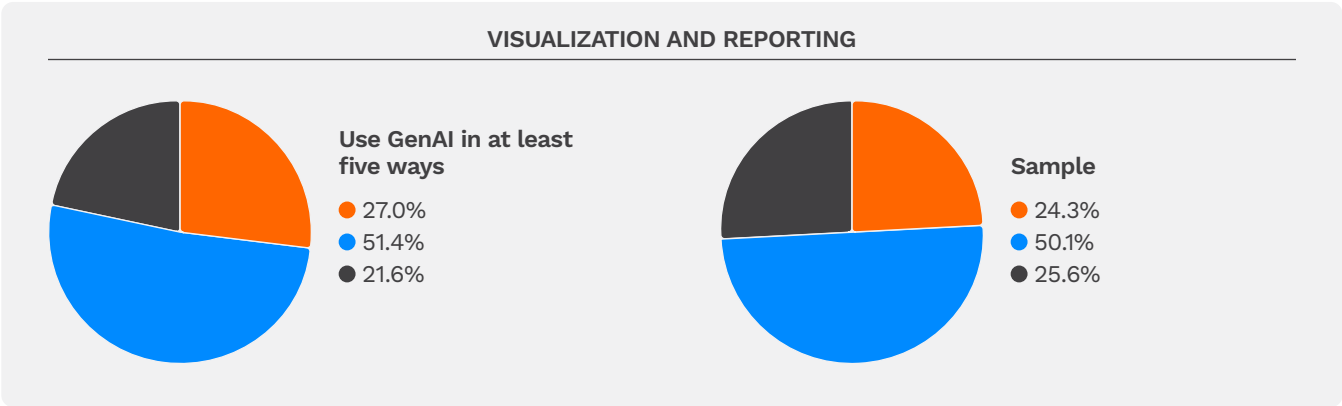
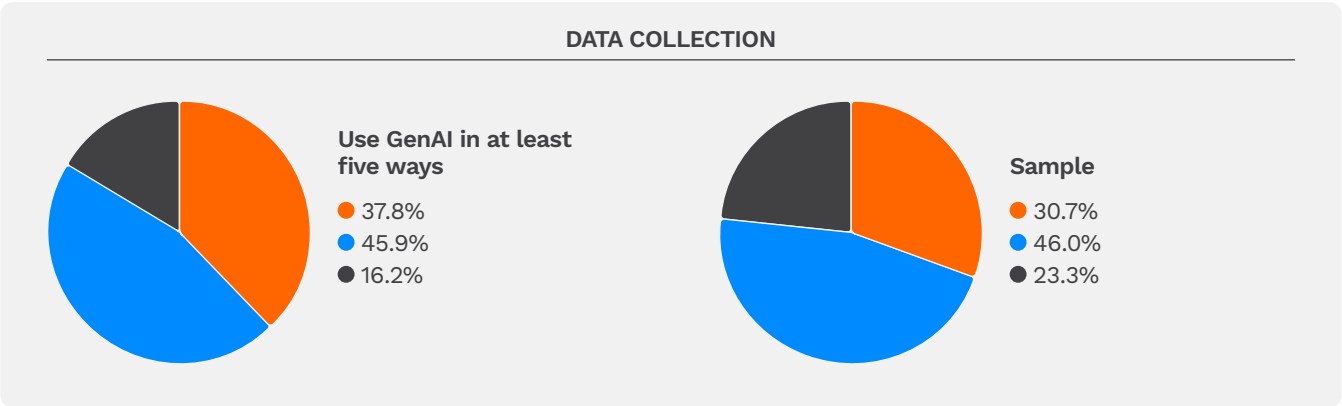
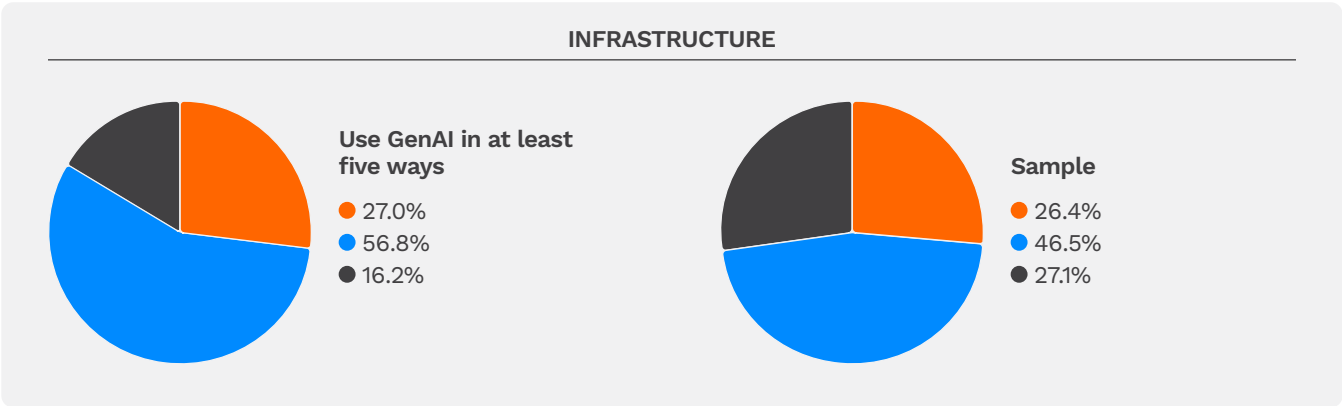
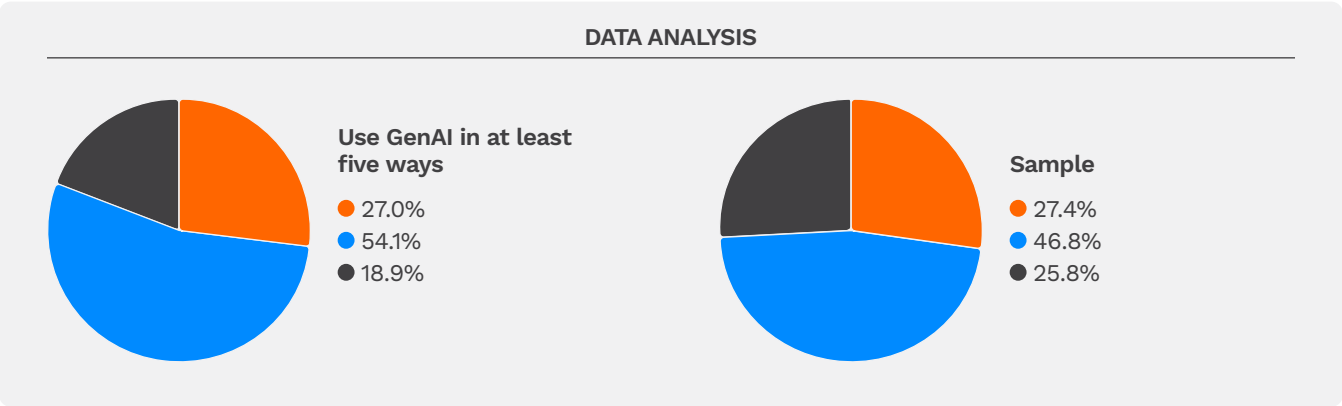
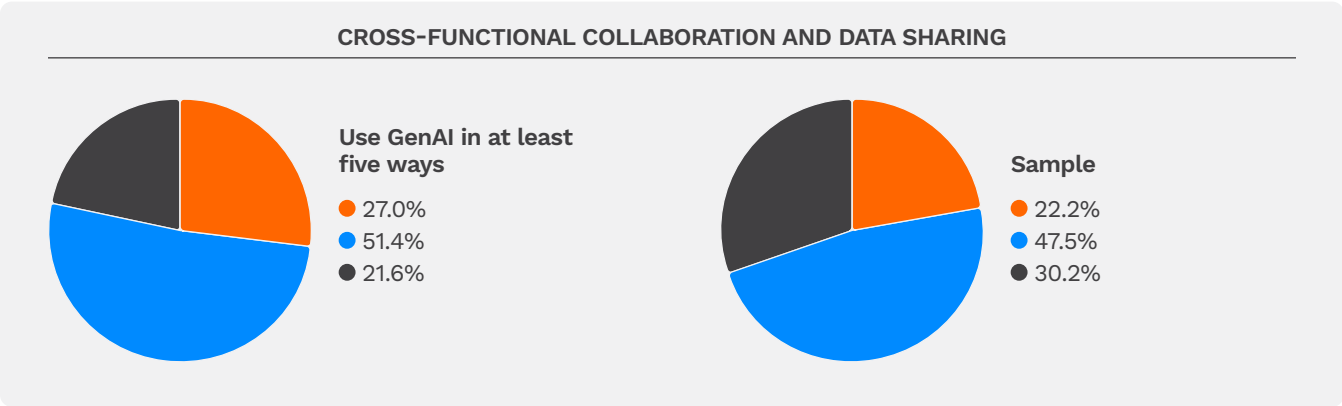
These findings suggest that while many retailers are still struggling with data readiness, those that invest more deeply in GenAI are seeing tangible improvements in their ability to collect, analyze and present data effectively.

FIGURE 4
Retailers' confidence in their data analytics capabilities
Share of retailers reporting select degrees of confidence in their internal analytics capabilities utilizing transaction and payments data for given usages related to strategy development and decision making

● High capability, with few weaknesses

● Moderate capability

● Low capability



Source: PYMNTS Intelligence

GenAI Applications in Retail Transaction Analysis: Industry Trends and Insights, March 2025

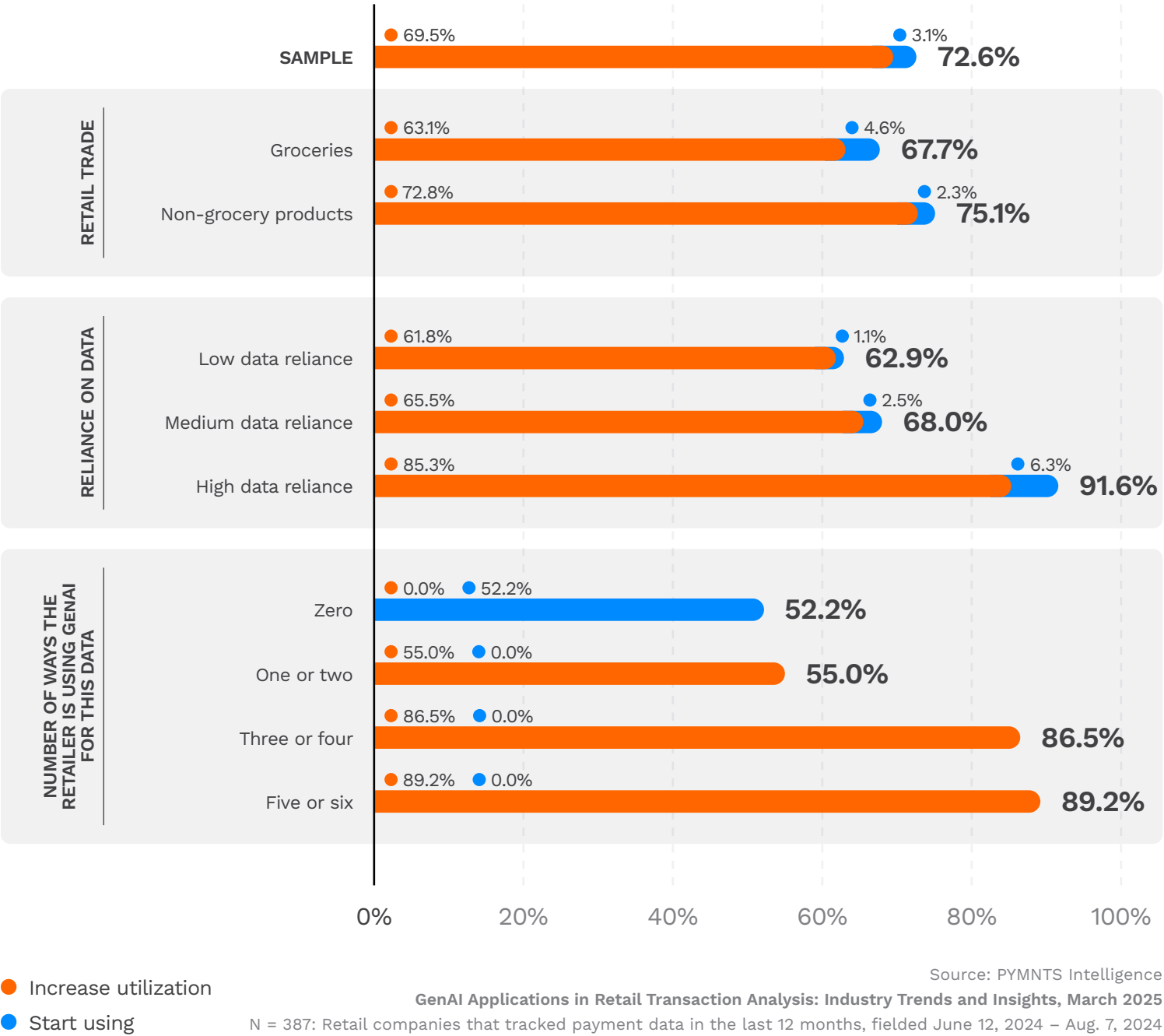
N = 387: Retail companies that tracked payment data in the last 12 months, fielded June 12, 2024 – Aug. 7, 2024

Nearly three-quarters of retailers plan to step up their investment in GenAI next year, underscoring its growing role as a long-term strategic asset.

The vast majority of retailers currently using GenAI plan to increase their utilization of the technology in 2025, with the most data-driven firms leading the charge. Among retailers that heavily rely on data for decision making, 92% intend to expand their use of GenAI for transaction data, compared to 63% of firms with low data reliance. This trend suggests that businesses with well-established data strategies view GenAI as a key competitive advantage.

Retailers’ current degree of GenAI usage also correlates with future investment. Among firms already leveraging GenAI in at least five different ways, 89% plan to increase their adoption of the technology. In contrast, just 55% of those using it in only one or two applications expect to expand. This pattern indicates that companies seeing measurable benefits from GenAI are the most committed to further integration.

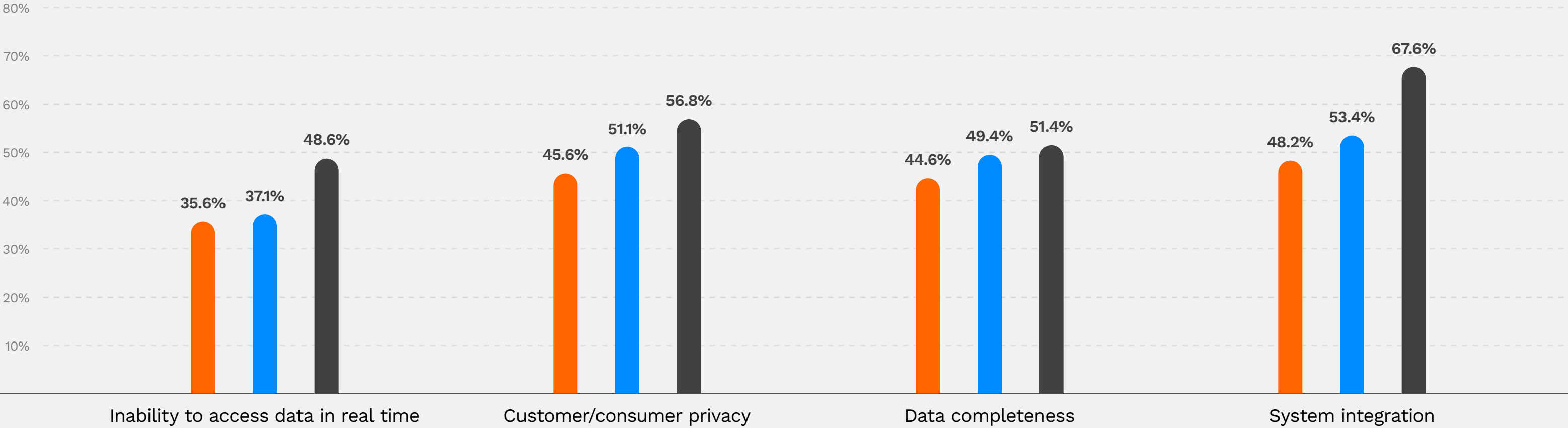
FIGURE 5
Retailers’ plans to increase GenAI usage for transaction data
Share of retailers indicating they are very or extremely likely to expand their use of or start utilizing GenAI in any way related to obtaining and analyzing transaction and payments data, by retail sector, degree of reliance on data and number of ways they are currently using GenAI



However, while enthusiasm for the technology is strong, retailers also face significant hurdles in adoption, particularly in system integration. Among firms using GenAI extensively, 68% report facing system integration challenges, compared to about 48% across all firms.

Additionally, 57% of firms that heavily rely on GenAI report challenges around customer privacy, compared to only a minority (46%) of the overall sample. Similarly, highly GenAI-reliant retailers are also more likely to cite difficulties accessing data in real time.

FIGURE 6
Data challenges retailers face
Share of retailers reporting they experienced challenges in select areas related to obtaining and using transaction and payments data to guide their companies’ strategy development and decision-making processes in the last 12 months, by number of ways they are using GenAI



● Sample ● Three of four ● Five or six

Source: PYMNTS Intelligence
GenAI Applications in Retail Transaction Analysis: Industry Trends and Insights, March 2025
N = 387: Retail companies that tracked payment data in the last 12 months, fielded June 12, 2024 – Aug. 7, 2024

CONCLUSION

The numbers speak for themselves: Retailers integrating GenAI across multiple areas are seeing a boost in everything from customer loyalty to security.

GenAI is reshaping how businesses analyze retail transactions. However, a significant gap remains between aspiration and implementation, as many firms still struggle with their foundational data capabilities.

The growing investment in GenAI underscores its role as a transformative force in retail. Nearly three-quarters of retailers plan to increase their implementation of the technology in the next year, with data-driven firms leading the charge. Yet, as enthusiasm for GenAI grows, so do the challenges — particularly in system integration. Businesses that proactively address these obstacles, strengthening their data management and analytical capabilities, will be best positioned to maximize GenAI’s impact. Those that hesitate risk being left behind as the industry races on.

The future of retail will not simply be defined by who adopts GenAI but by who uses it most effectively. Retailers that take a proactive approach — strengthening their data infrastructure, fostering collaboration and prioritizing GenAI-driven insights — will gain a lasting advantage. As the technology evolves, so too must the strategies used to implement it. The retailers that recognize this and act decisively will be the ones leading the industry in innovation and growth.

METHODOLOGY

GenAI Applications in Retail Transaction Analysis: Industry Trends and Insights, a PYMNTS Intelligence and Fiserv collaboration, explores how retailers are using GenAI to improve their analytics capabilities. Between June 12, 2024, and Aug. 7, 2024, we surveyed 390 executives working at retailers generating at least \$500 million in revenue in 2023 to determine how they use the technology and how it is impacting their businesses.

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