Artificial Intelligence in the South African Financial Sector Databook

November 2025

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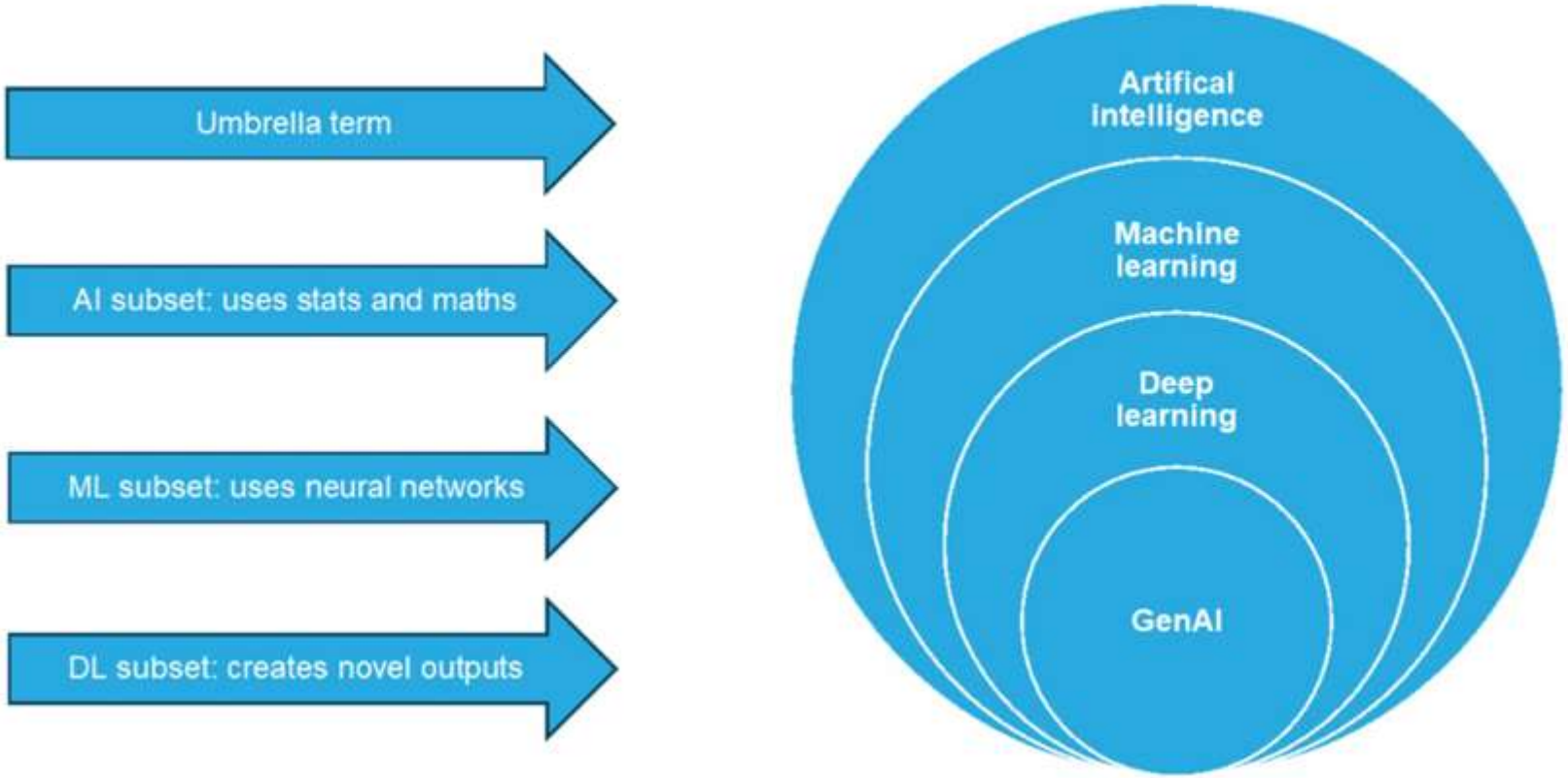
What is an artificial intelligence (AI) system?

Artificial intelligence and its different elements



An AI system is a machine-based system that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments. Different AI systems vary in their levels of autonomy and adaptiveness after deployment.

Source: IAIS (2024), OECD (2024)

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Financial Sector Analysis

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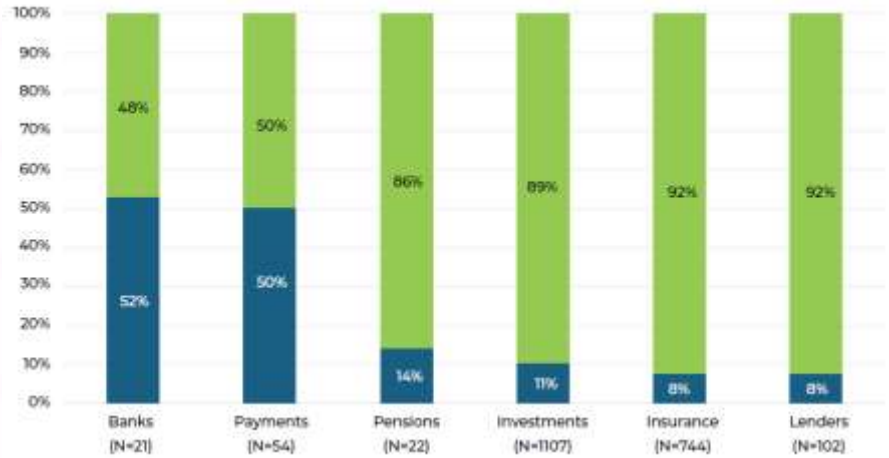
About the data



- Approximately **2050 responses** to the survey.
- **Surveyed sectors**: Banking, Insurance (insurers and brokers), Investments (CIS and Hedge Funds), Payments, Pensions, and Lending.
- **220 respondents use AI across the financial sector** of South Africa (10.6%)

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Summary of the findings



- Majority of financial institutions intend to invest less than R1 million in AI.
- Operations and IT is the leading business area for AI/ML application by materiality. Sales and marketing is the leading business area for GenAI application by materiality.
- Data and analytical insights is the highest benefit of AI/ML usage. It is followed by productivity.
- The highest use/planned use of ML applications is the optimisation of internal process. The highest use of GenAI applications is for productivity.
- Data privacy and protection is largest risk. Cybersecurity is the second largest risk.
- Largest regulatory constraint is data privacy and protection law. Other constraints include Insufficient talent citated and appropriate transparency and explainability.
- Data governance is the leading established governance framework; it is followed by risk management frameworks.
- Effective ML data management and governance prioritize data quality, accuracy, and representativeness.

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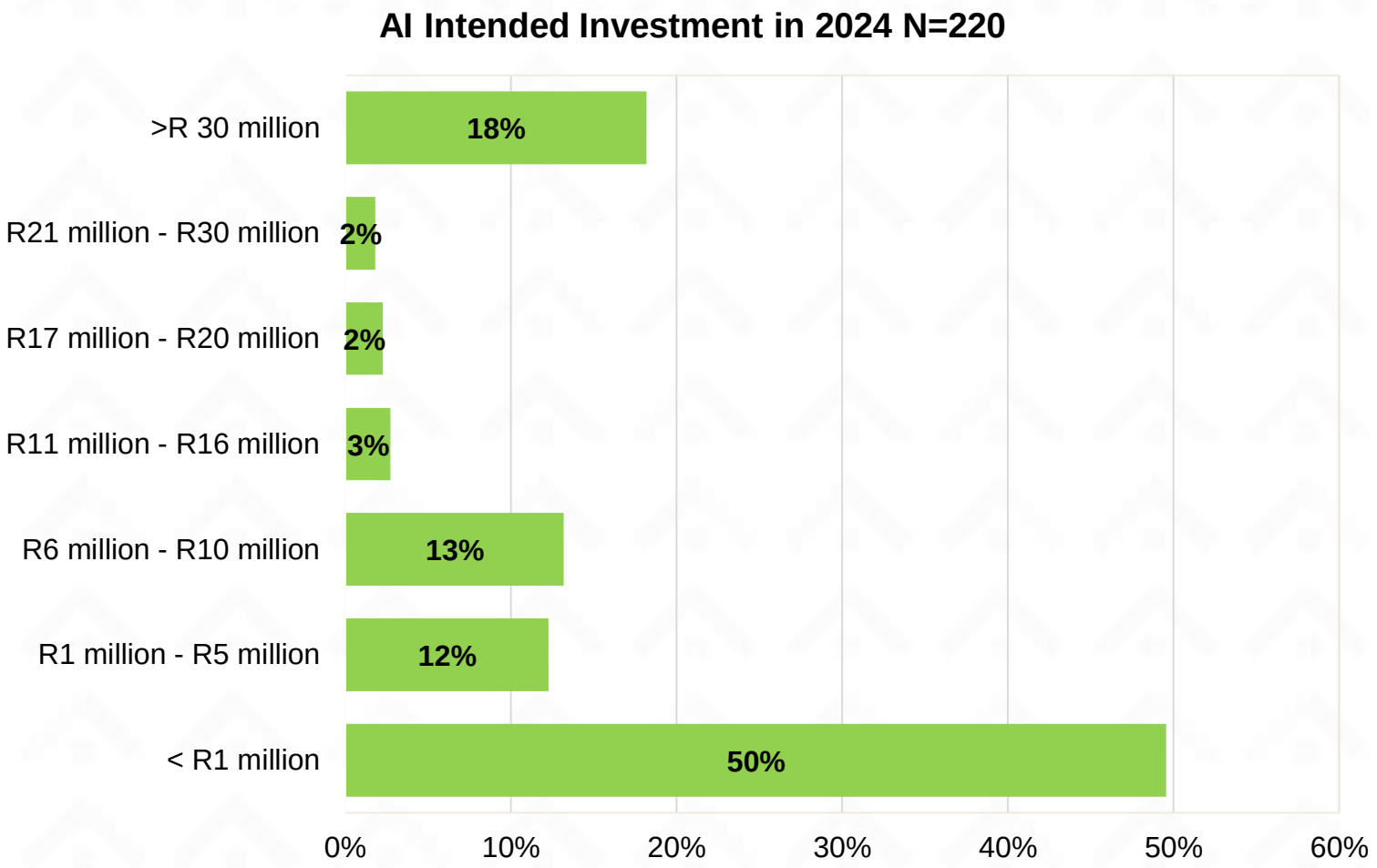
Summary of the findings



- Accountability for AI usage mainly sits with the executive leadership, followed by business area users.
- The most important ethical consideration is data privacy.
- Feature importance is the most widely used method of explainability

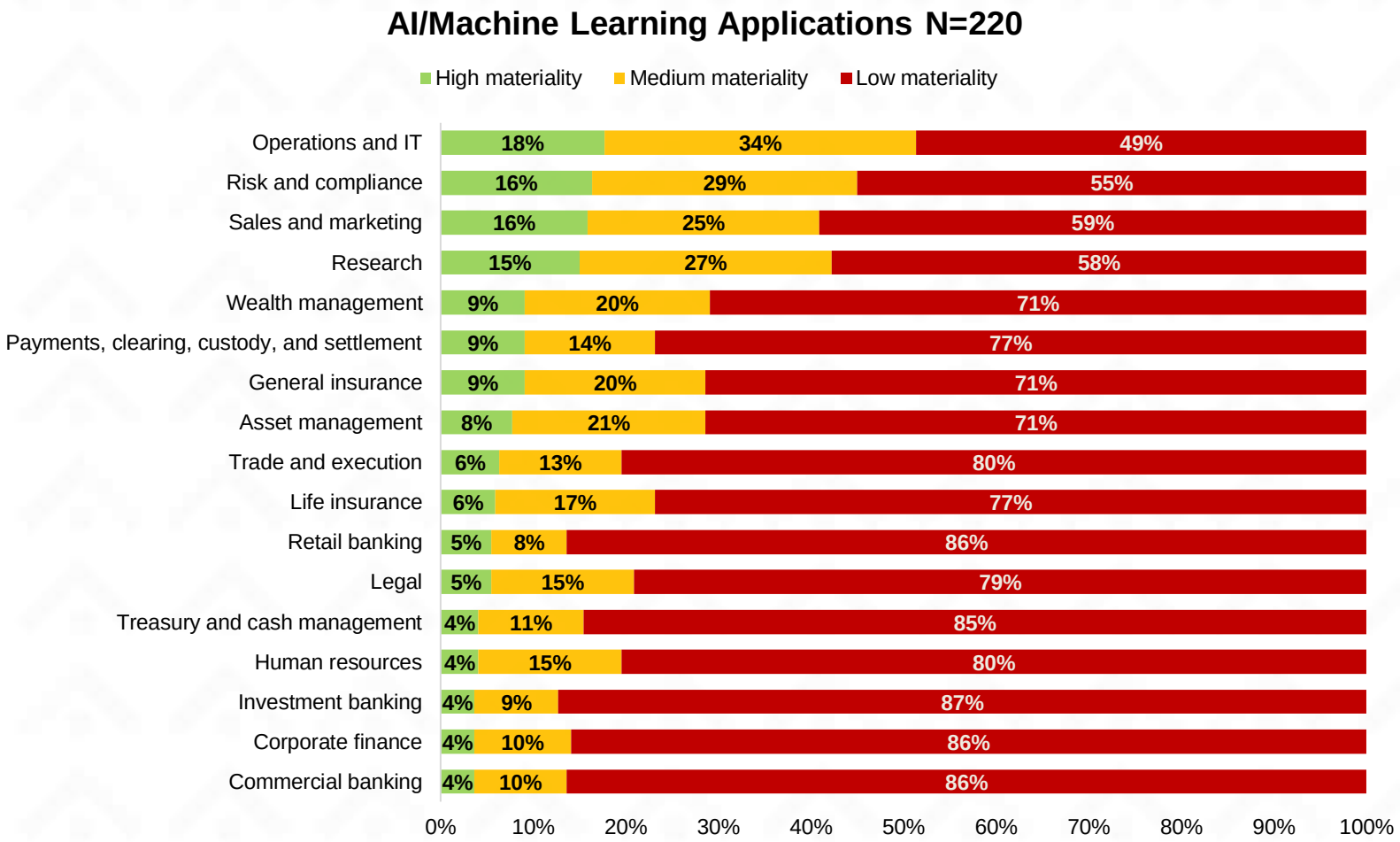
Investment in AI is varied



- Approximately 50% of respondents said that they are intending to invest less than R1 million in AI in 2024.

Source:

Operations and IT is the leading business area for AI/ML application by materiality



Operations and IT benefit most from AI/ML applications, enhancing efficiency and reducing costs. AI/ML automates routine tasks, optimizes resource allocation, and improves system reliability. This leads to streamlined operations, faster issue resolution, and better overall performance, making it a critical area for AI/ML investment.

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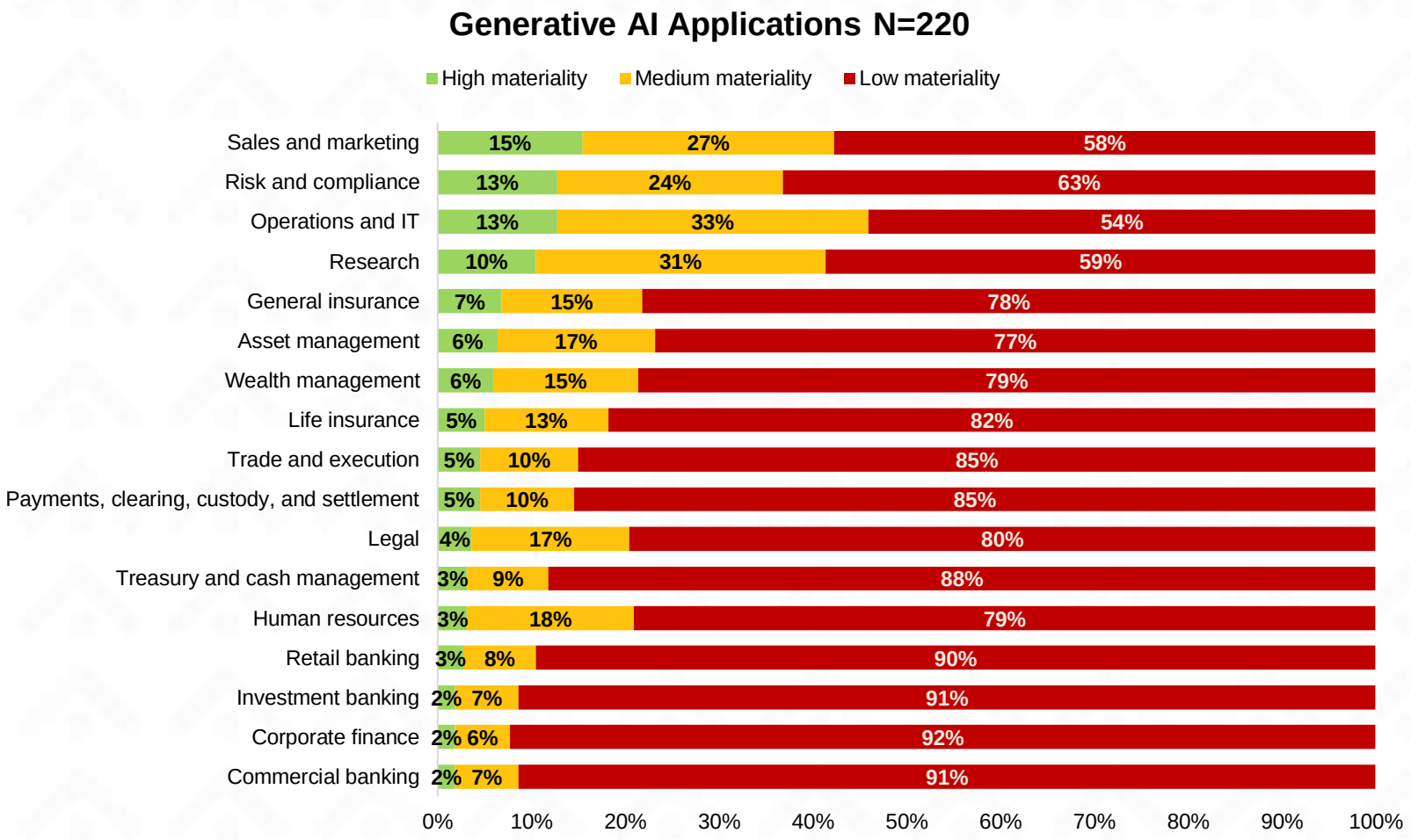
Sales and marketing is the leading business area for GenAI application by materiality



GenAI significantly impacts sales and marketing by personalizing customer interactions, optimizing campaigns, and generating insights. It enhances lead generation, customer segmentation, and content creation. In risk and compliance, GenAI automates monitoring, detects anomalies, and ensures regulatory adherence, improving efficiency and reducing risks.

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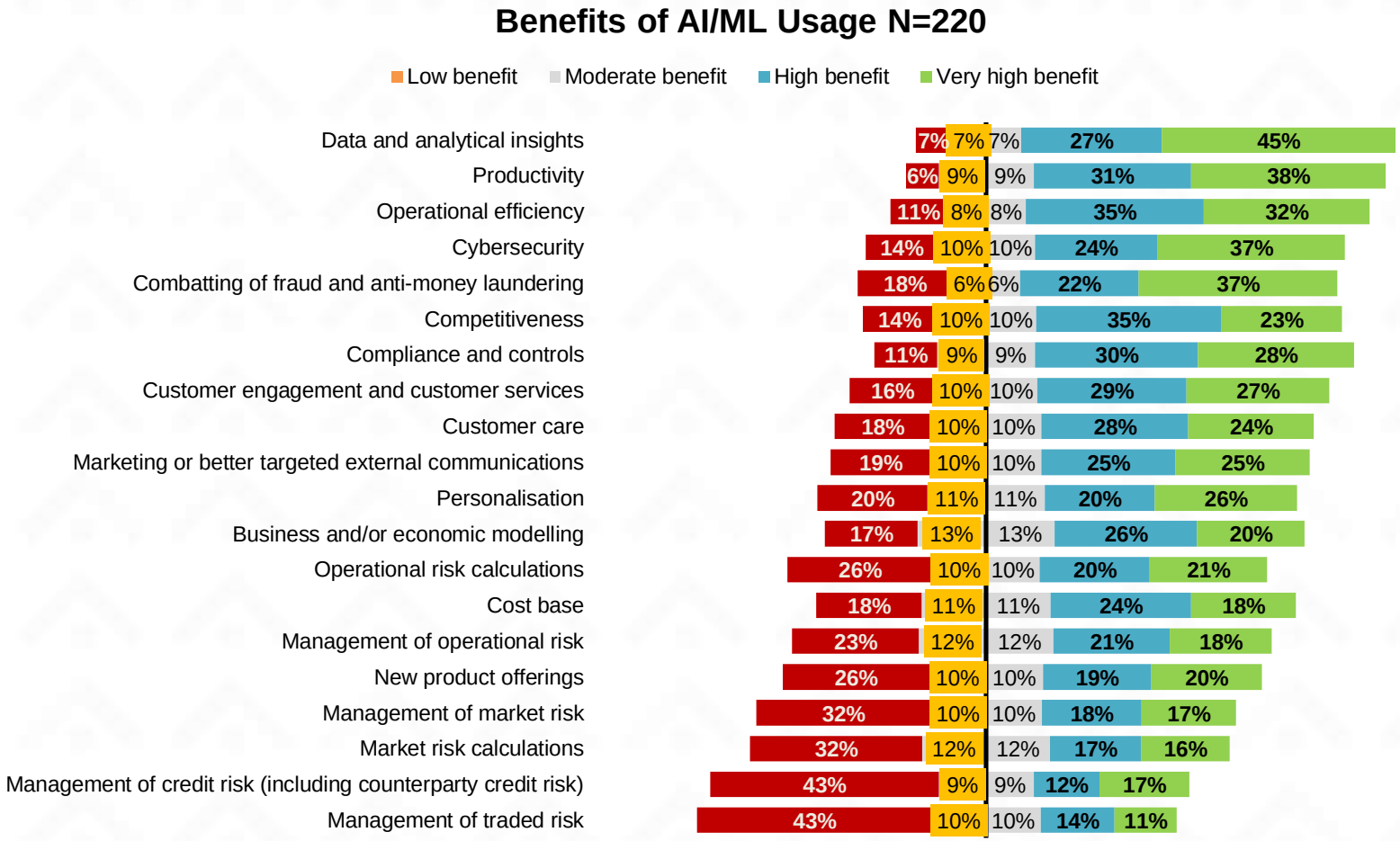
Data and analytical insights is the highest benefit of AI/ML usage



AI/ML technologies can analyze vast datasets to uncover patterns, predict trends, and optimize decision-making. This leads to more accurate risk assessments, personalized services, and strategic investments, ultimately enhancing efficiency and profitability for financial institutions.

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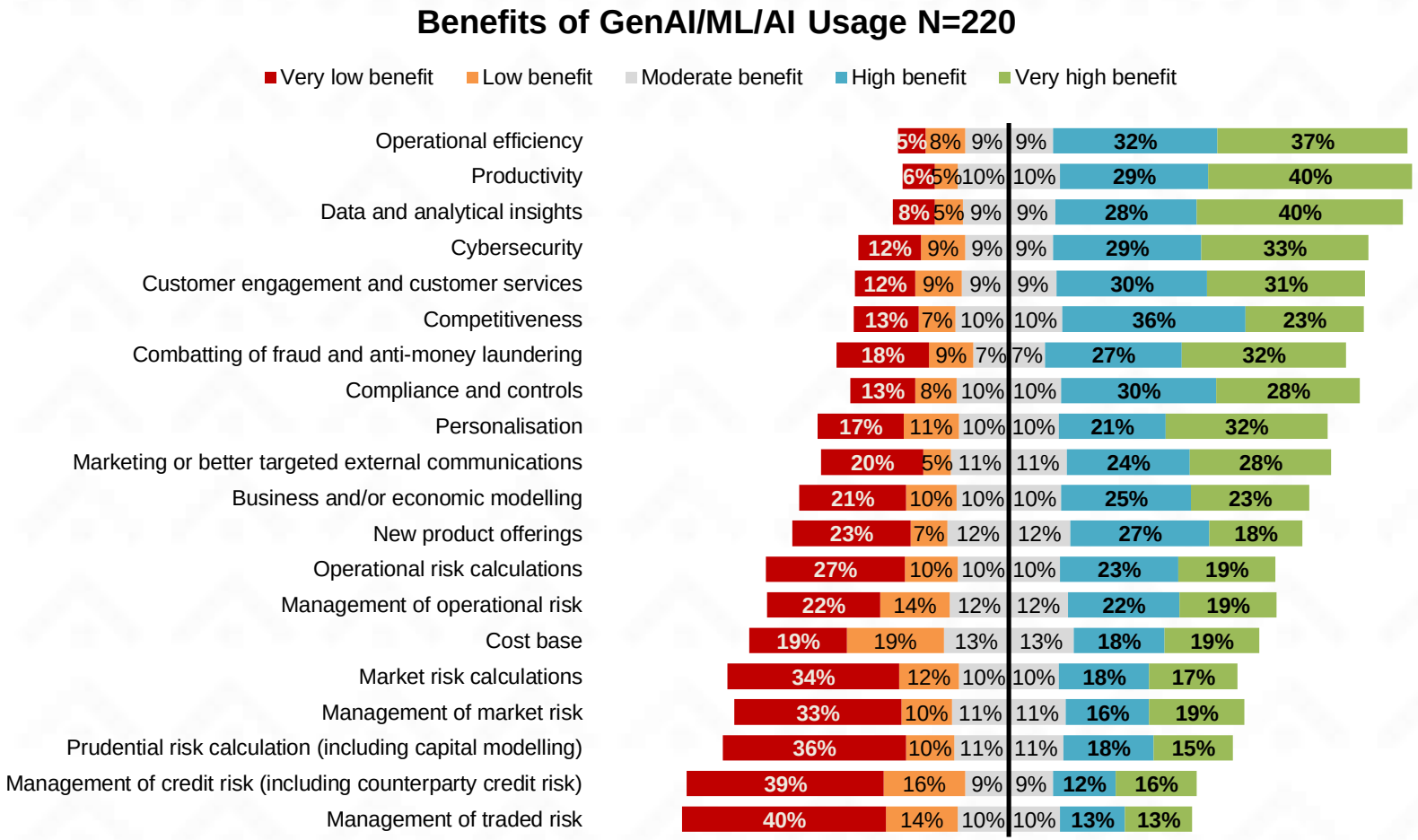
It is followed by productivity



Automation of routine tasks, such as customer service and regulatory compliance, reduces operational costs and speeds up processes. These benefits translate into a more secure, efficient, and customer-centric financial system. They help financial institutions stay competitive, reduce costs, and provide better services to their customers.

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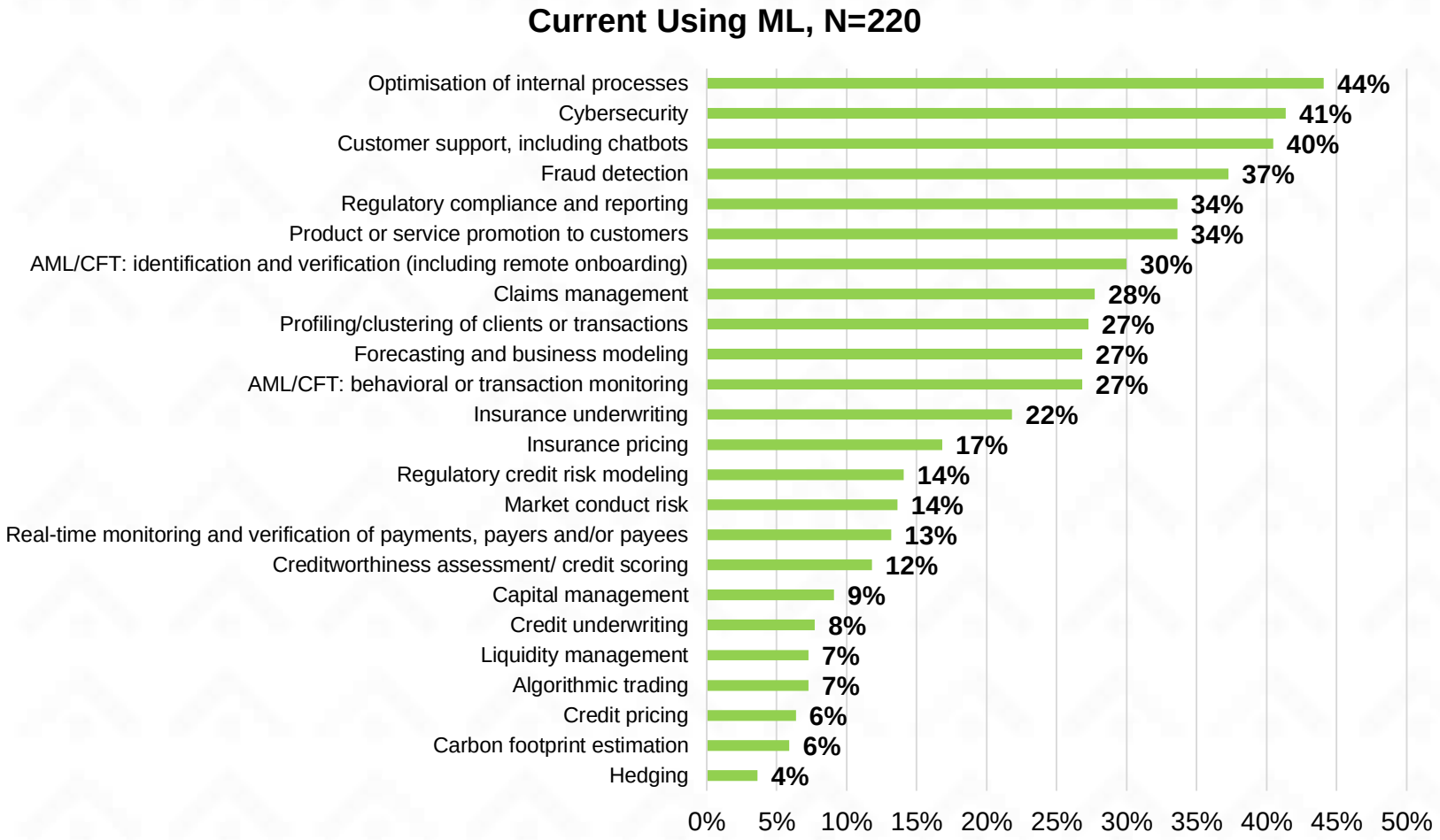
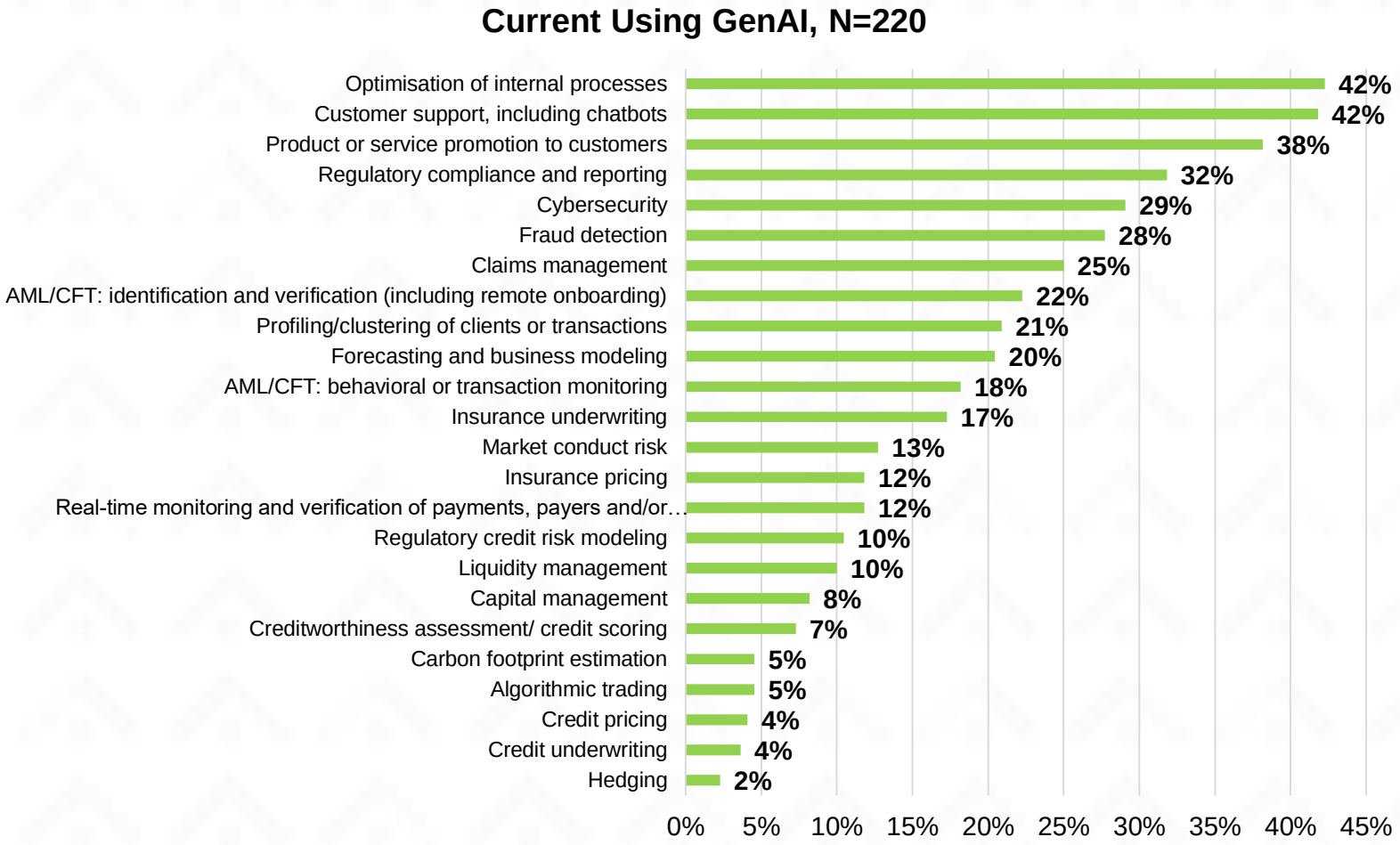
The highest use/planned use of ML applications is the optimisation of internal process



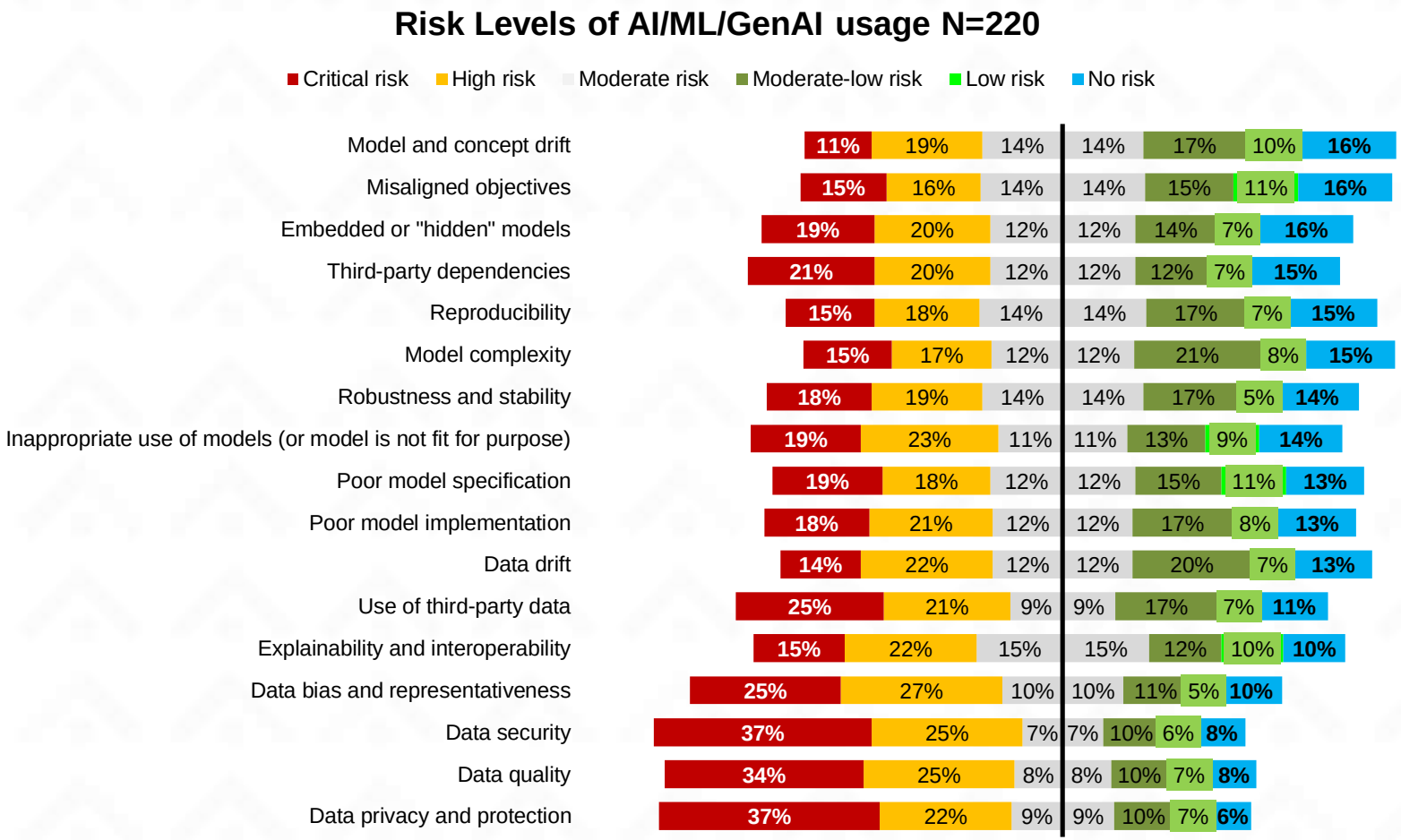
Optimizing internal processes is the top use of ML applications in finance. **ML enhances efficiency** by automating tasks, improving workflow management, and reducing operational costs. It streamlines processes like data analysis, compliance checks, and customer service, leading to faster, more accurate outcomes and better resource allocation.

The highest use of GenAI applications is for optimization of internal process



GenAI applications enhance optimization of internal process by automating data analysis, generating reports, and streamlining customer interactions. They reduce manual workloads, improve accuracy, and speed up decision-making processes. This allows financial professionals to focus on strategic tasks, ultimately boosting efficiency and organizational performance.

Data privacy and protection is largest risk



Data protection in AI systems involves safeguarding the model and its training data from exposure. Effective data governance mechanisms are essential to maintain the quality and integrity of the training data, ensure its relevance to the deployment context, manage access protocols, and enable the model to process data while protecting privacy and sensitive information.

Source: OECD (2023)

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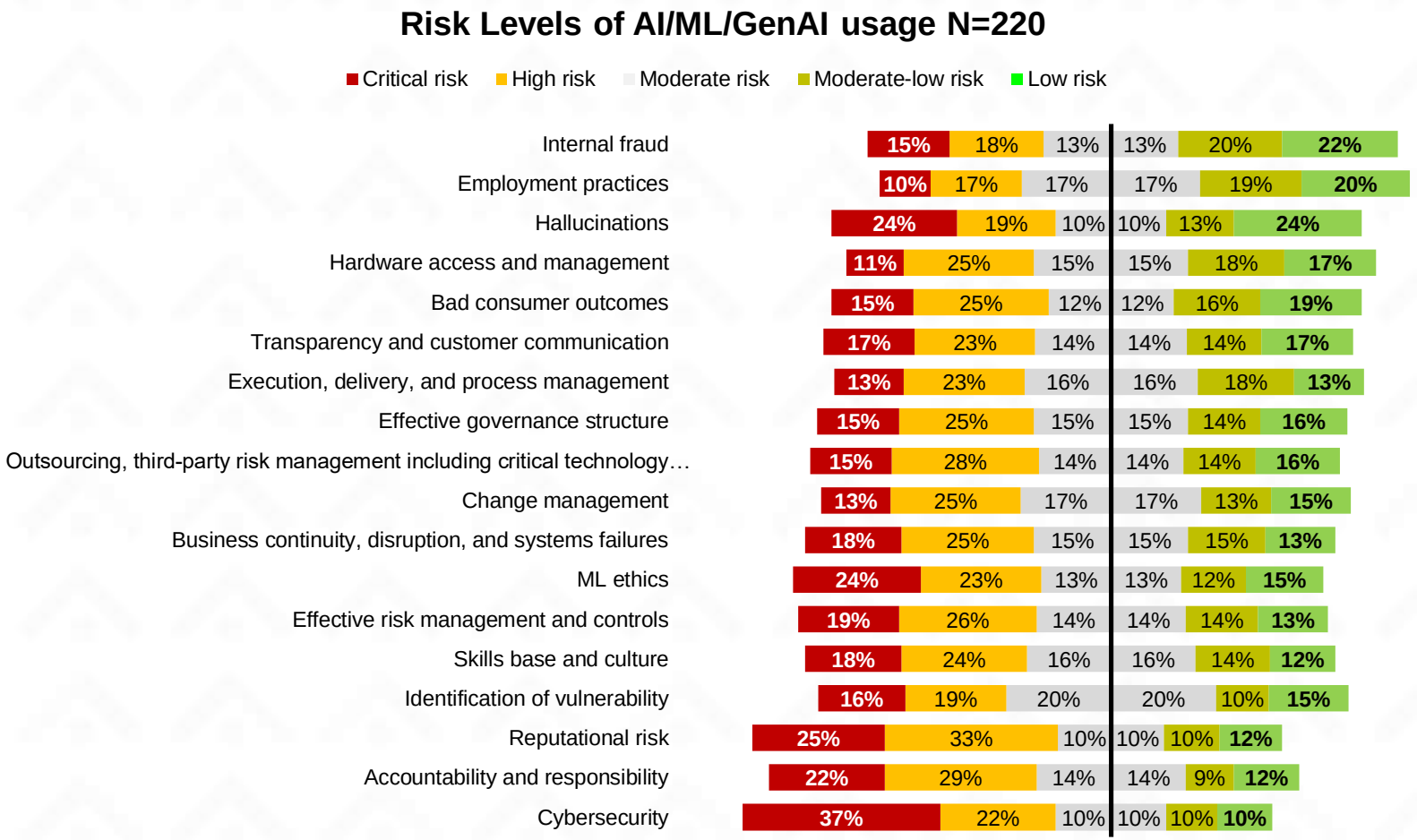
Cybersecurity is the second largest risk



Cybersecurity is a major risk in finance due to increasing digital transactions and sophisticated cyber-attacks. AI enhances security by detecting anomalies and preventing fraud. However, the reliance on AI also introduces vulnerabilities, making robust cybersecurity measures essential to protect sensitive financial data and maintain trust.

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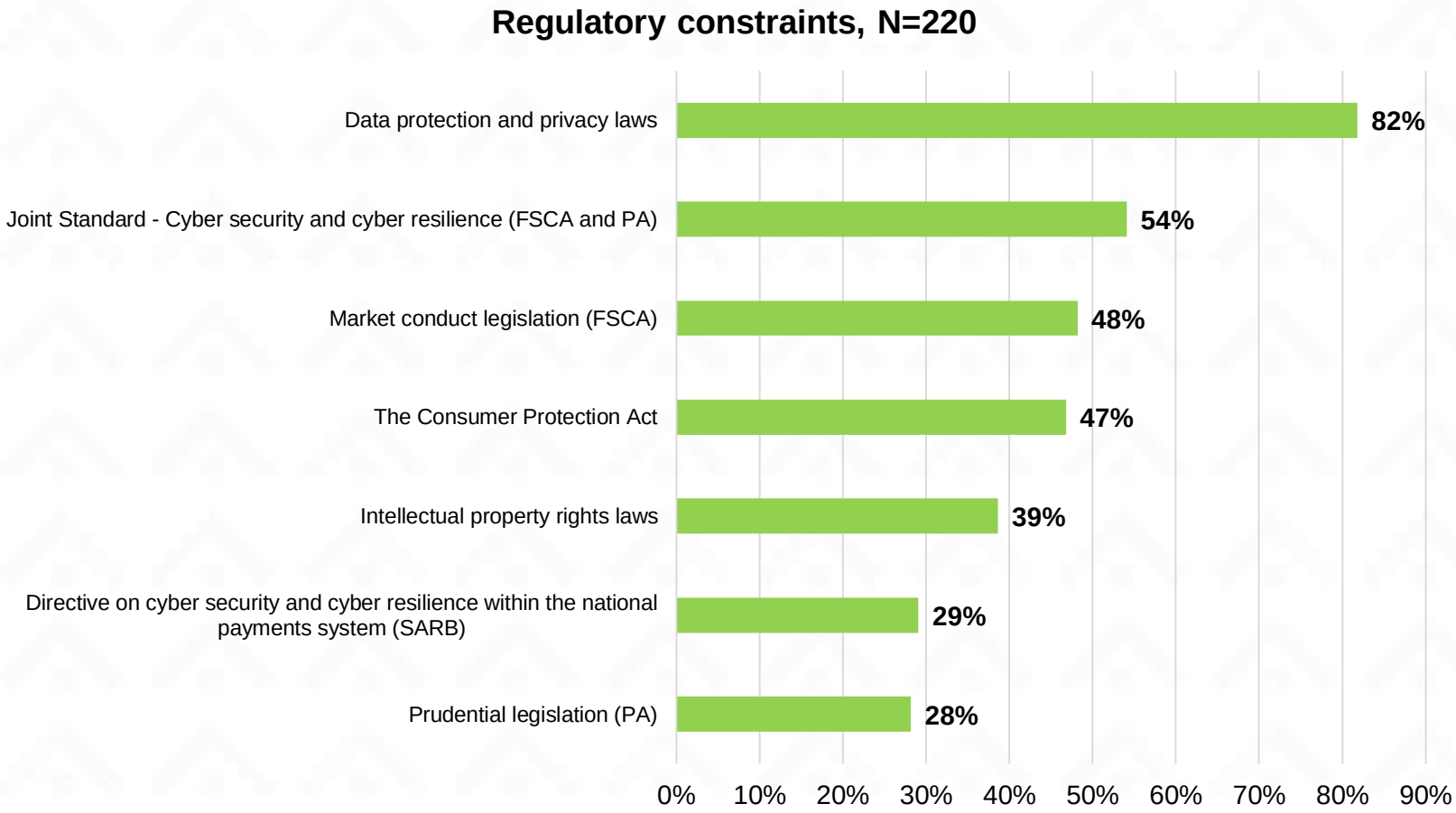
Largest regulatory constraint is data privacy and protection law

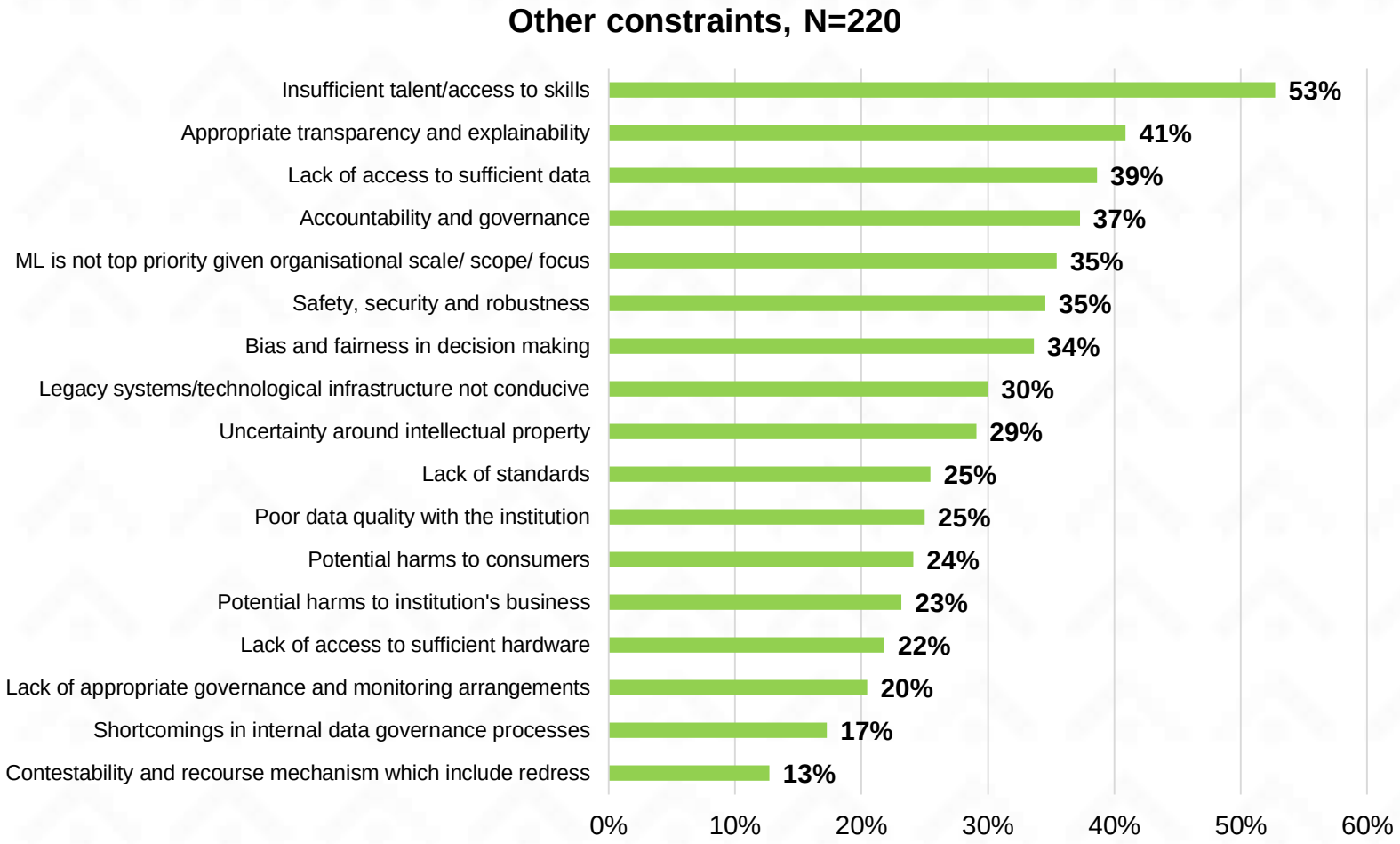


The deployment of AI in finance brings forth several compliance issues that financial institutions must navigate to harness AI's potential responsibly and legally.

Some challenges include the following: **Data Privacy and Protection Laws**, Bias and Fairness in AI Algorithms, Transparency and Explainability of AI Systems.

Source: Redress Compliance (2025)

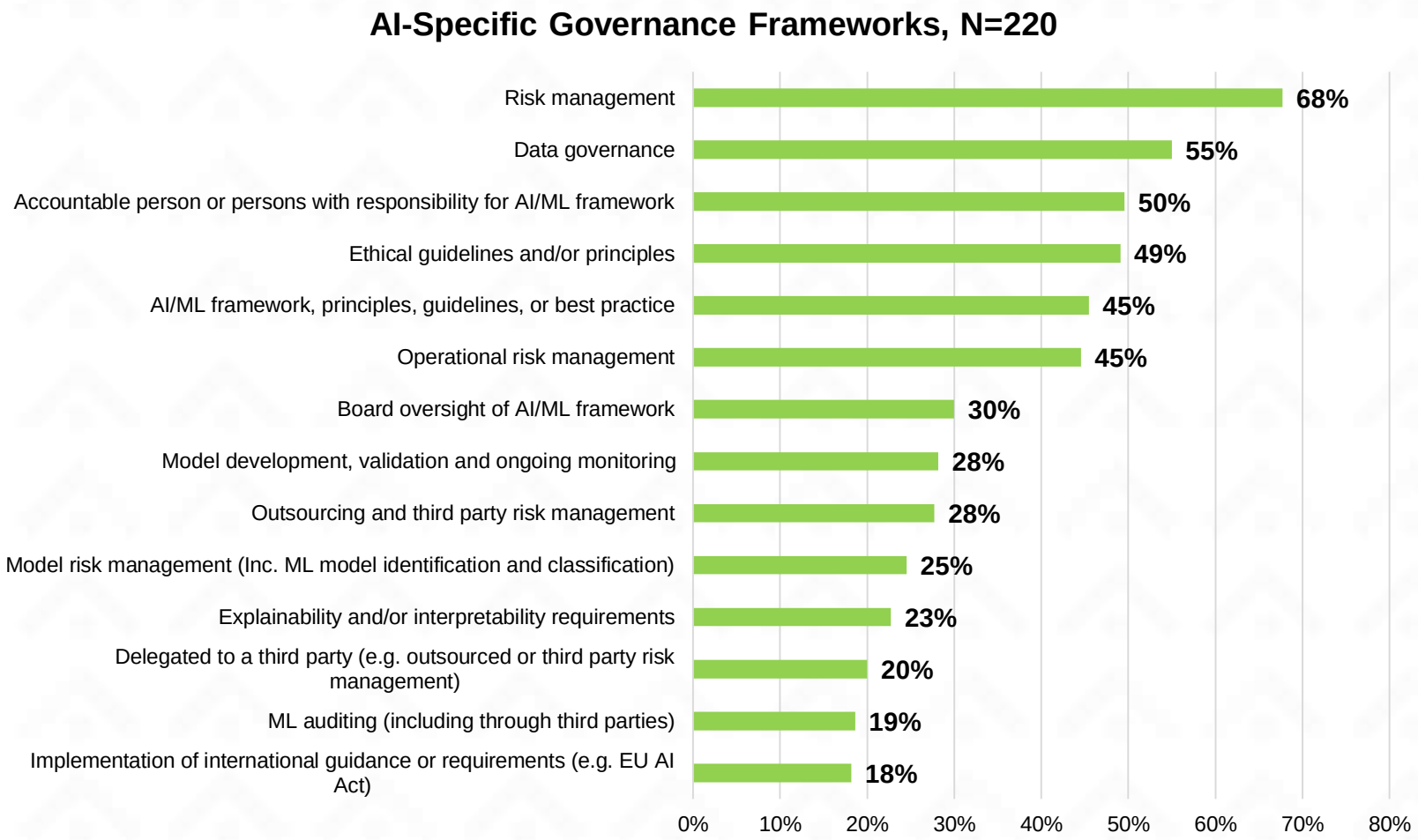
Insufficient talent citated as the biggest constraint to AI adoption



The effective implementation of AI **requires a workforce with the necessary skills** to leverage its potential. However, there is a notable shortage of professionals with expertise in AI technologies, machine learning, and data analytics. Addressing this challenge requires strategic investments in comprehensive upskilling and reskilling programs. Collaborations with reputable academic institutions are essential to bridge the talent gap. Promoting a culture of continuous learning and innovation is crucial to overcoming this obstacle.

Source: Investment Banking Council of America (2023)

Risk management is the leading established governance framework, it is followed by data governance



Privacy and data governance risks can emerge at both the data and model levels, at their intersection, and during interactions between humans and AI systems.

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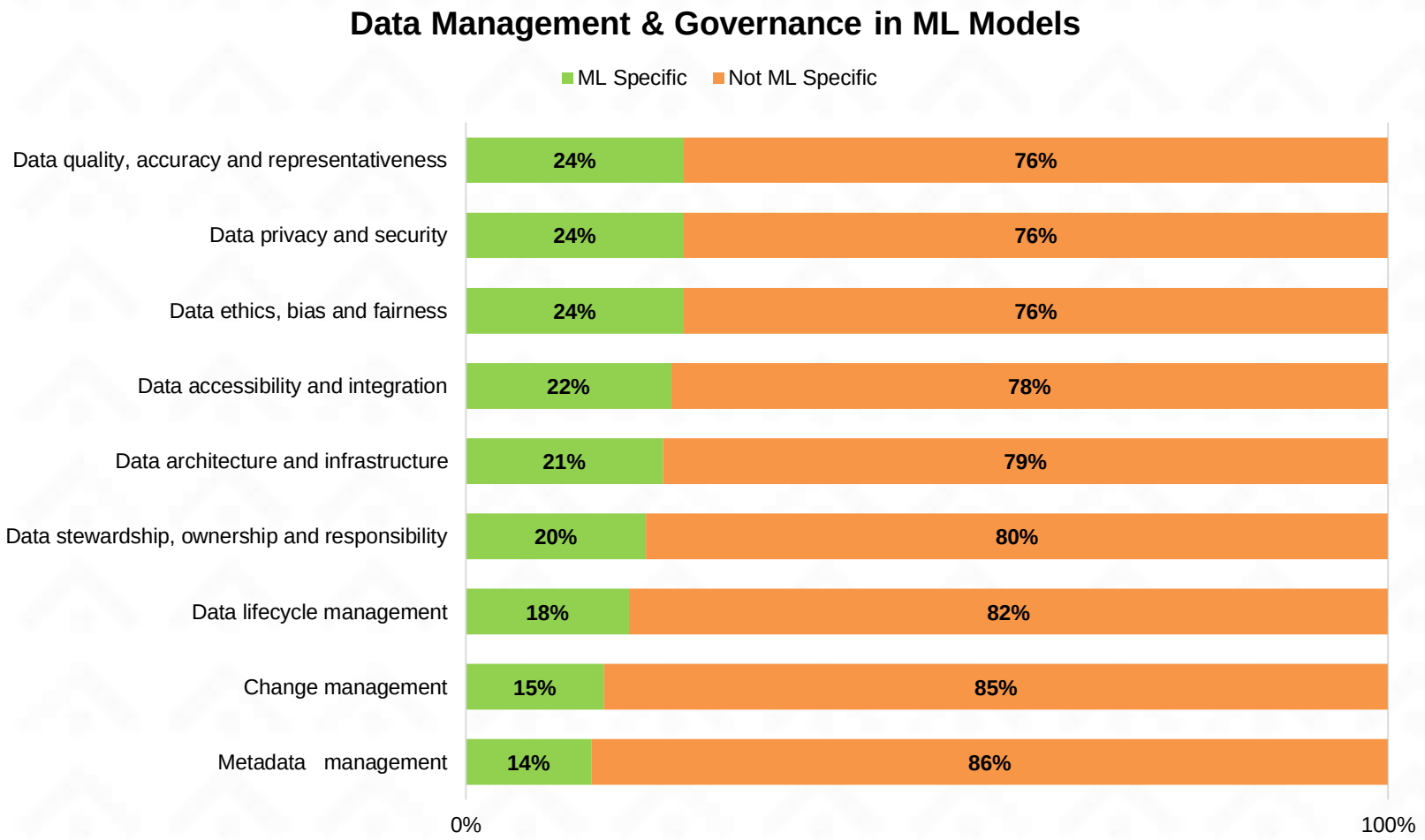
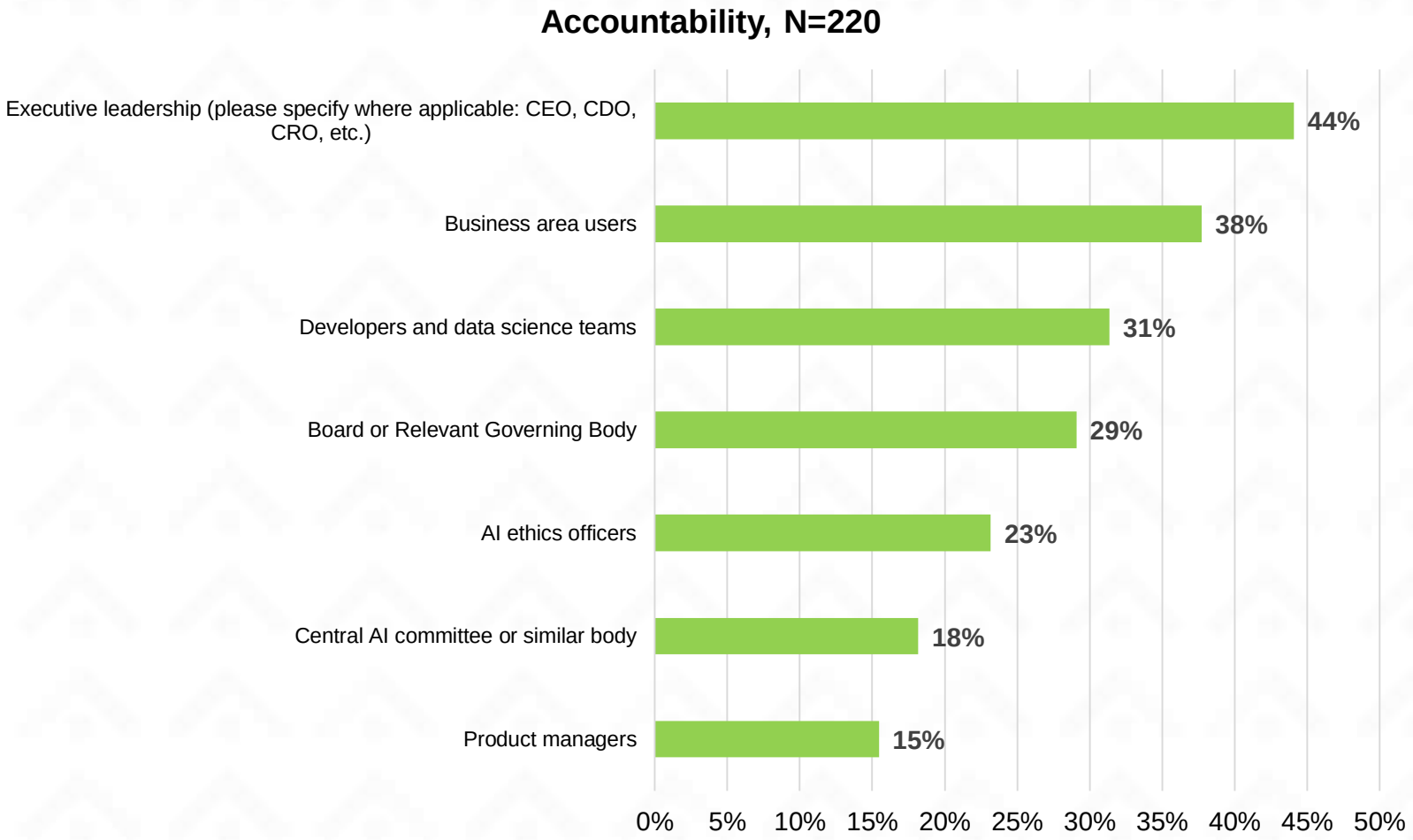
Effective ML data management and governance prioritize data quality, accuracy, and representativeness



Ensuring high-quality, accurate data prevents biases and errors, while representativeness guarantees diverse, comprehensive datasets. These principles are crucial for reliable ML models, enhancing decision-making and maintaining ethical standards in AI applications.

Accountability for AI usage mainly sits with the executive leadership



Executive leadership holds primary accountability for AI usage, ensuring ethical practices, regulatory compliance, and strategic alignment. They must oversee AI implementation, address risks, and foster a culture of transparency and responsibility. This leadership is crucial for maintaining trust and maximizing AI's benefits while mitigating potential harms.

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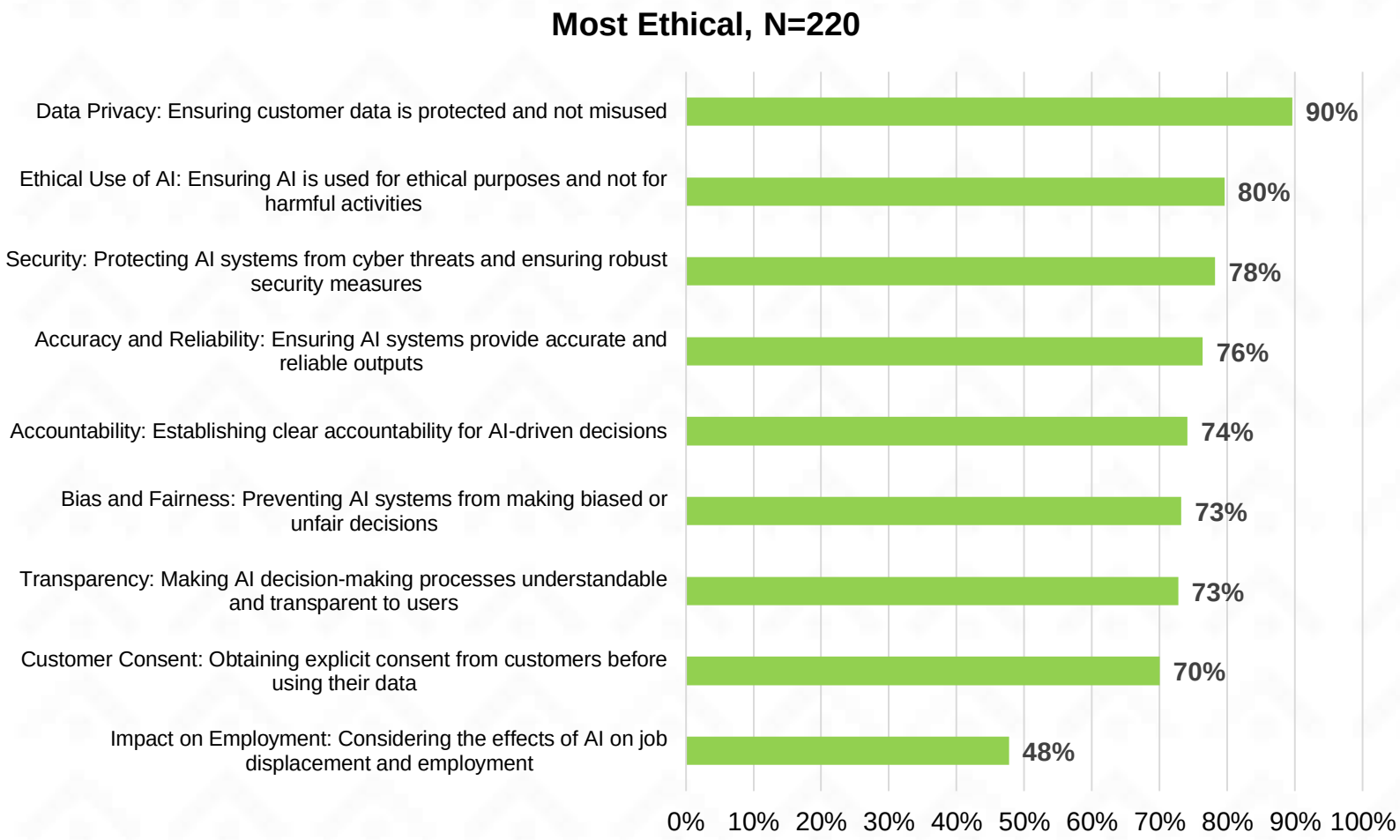
The most important ethical consideration is data privacy



Data privacy is crucial in AI, as it involves handling sensitive financial information. Ensuring data protection, obtaining user consent, and maintaining transparency about data usage are essential. Ethical AI practices must prioritize safeguarding personal data to build trust and comply with regulations.

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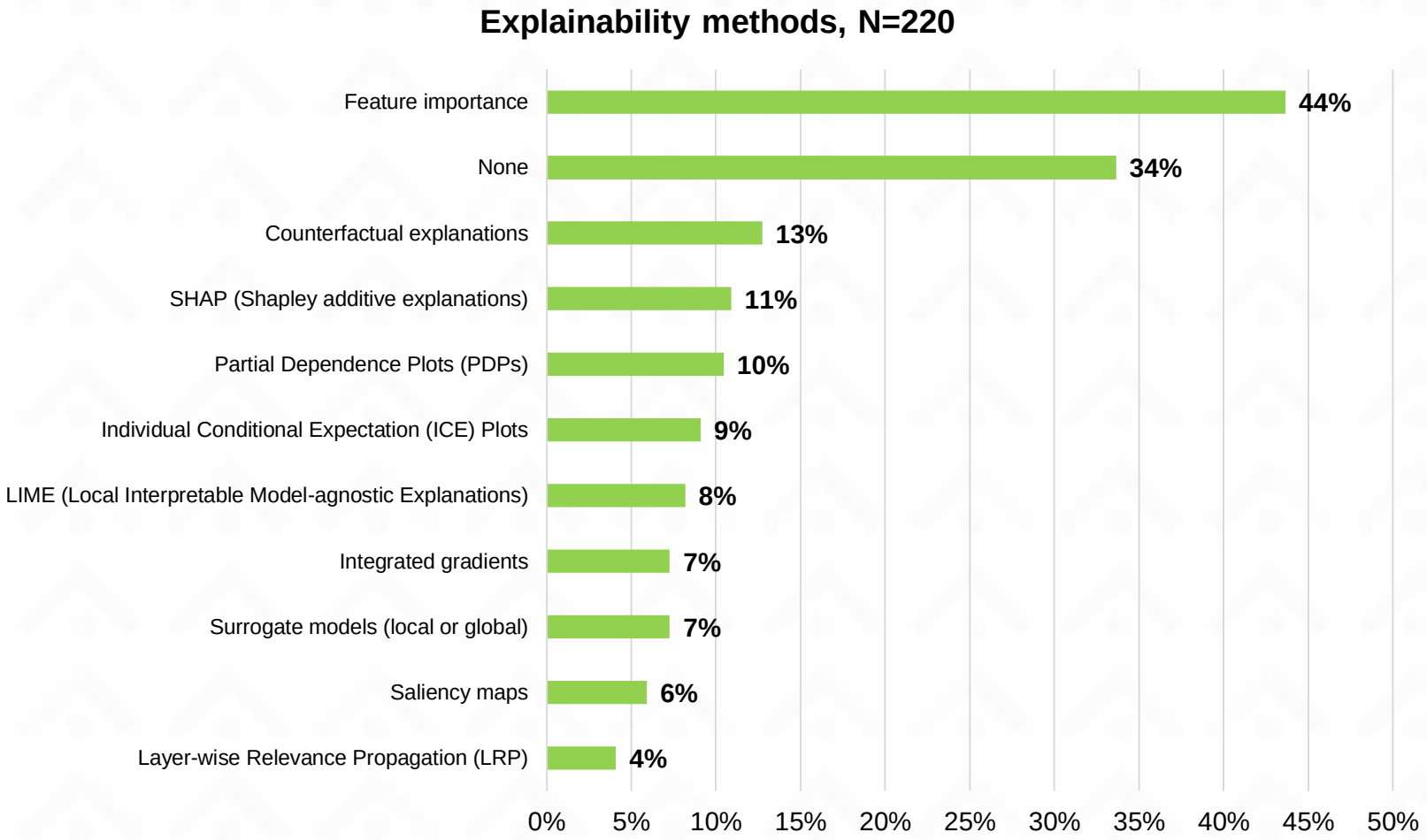
Feature importance is the most widely used method of explainability



- **Feature Importance**: This method helps in understanding which features (input variables) are most influential in the model's predictions. By analyzing feature importance, banks can gain insights into how different factors contribute to the decision-making process. This is crucial for ensuring transparency and trust in AI-driven decisions.
- 44% of all respondents use feature importance for AI explainability. However, this is followed by 34% of the respondents who don’t use any form of explainability methods.

Banking Sector

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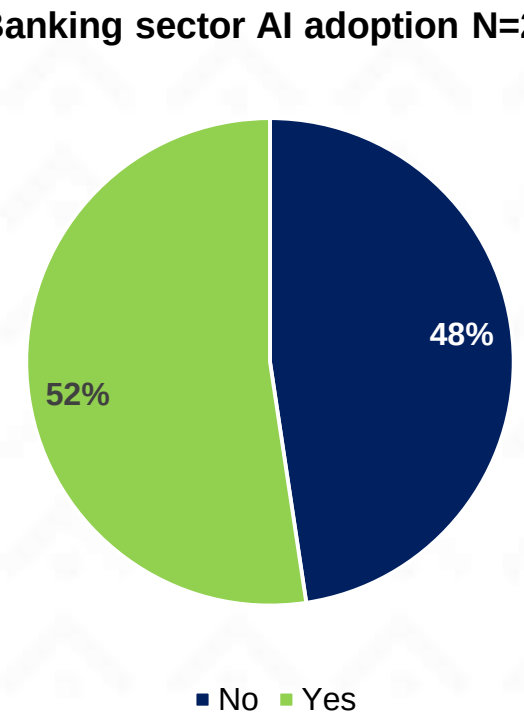
About the data



- 22 banks responded to the survey.
- The big four banks have adopted AI.
- Responses include the digital banks in South Africa.

Summary of the findings



- 45% of banks intend to invest more than R30 million in AI—this is the largest overall investment per sector.
- Sales and marketing are the leading AI/ML/GenAI business area application.
- Combatting of fraud and anti-money laundering is the highest benefit of AI/ML.
- The leading genAI benefit is for customer engagement and customer services. The second highest benefit is the ability to combat fraud and AML of AI/ML/GenAI overall.
- Fraud detection is the leading planned or current use case for ML.
- Product or service promotion to customers is the leading planned or current use case for GenAI.
- Data security, privacy and protection, and data bias and representativeness are key risks in the use of AI/ML/GenAI. Additionally, hallucinations is another significant risk.
- Data privacy and protection law is the leading regulatory constraint to the usage of AI/ML/GenAI. Appropriate transparency and explainability is the other leading constraint to the usage of AI/ML/GenAI.
- Model development, validation and ongoing monitoring as well as AI/ML framework, principles, guidelines, or best practice are the most established governance frameworks. ML specific data management & governance is mainly focused on data ethics, bias, and fairness.
- Accountability for AI usage mainly sits with business area users and bias and fairness is the leading ethical consideration.

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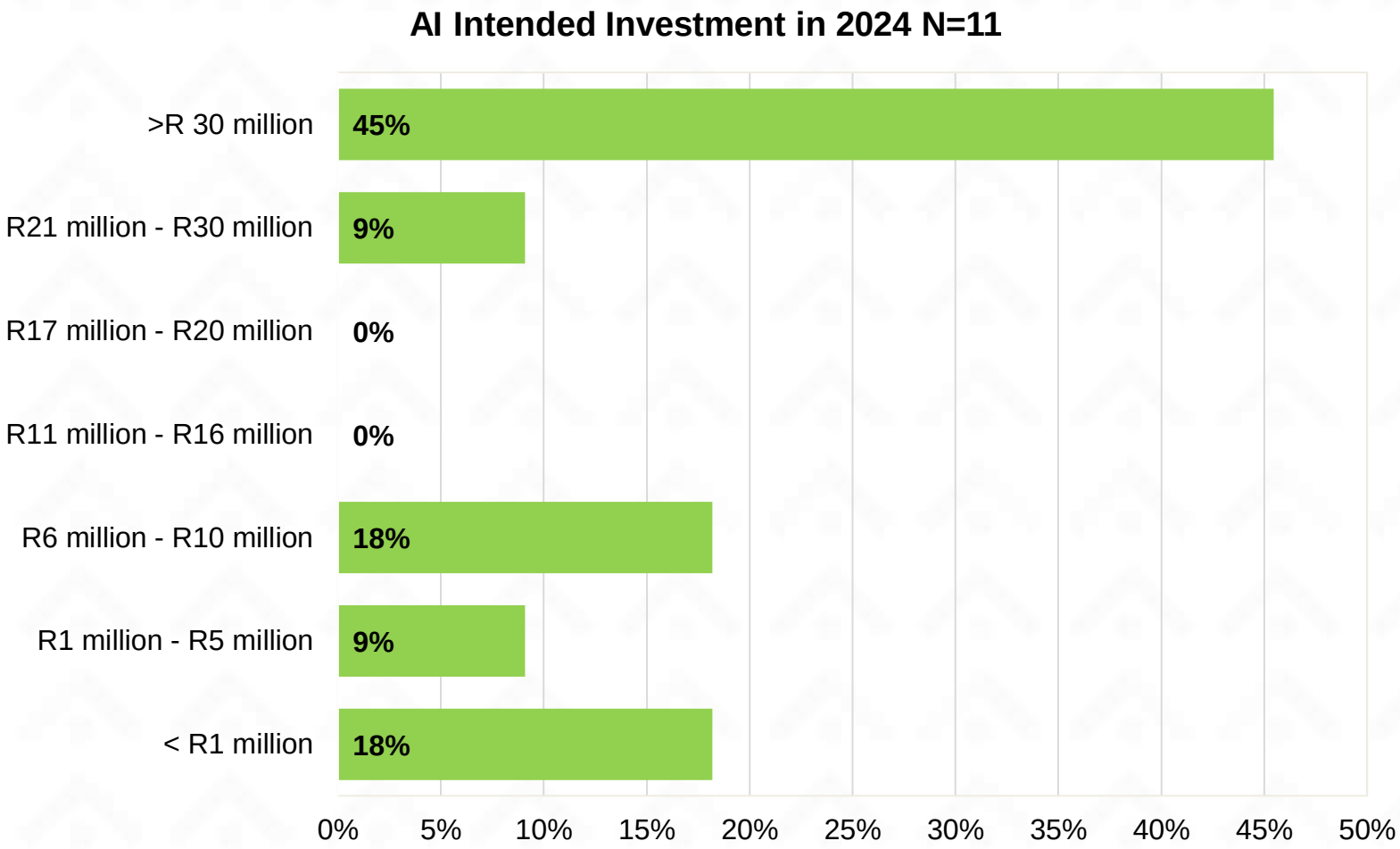
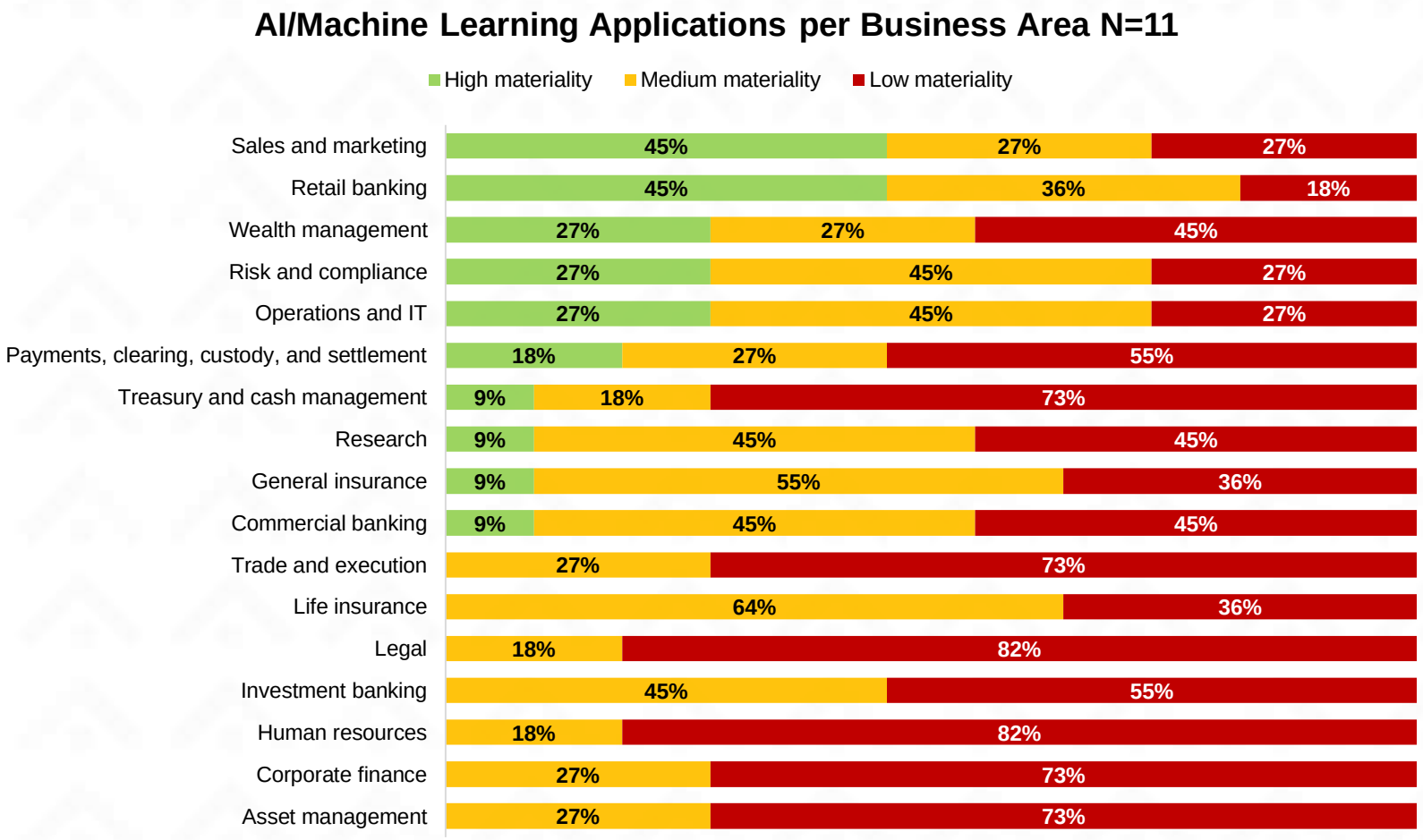
Approximately 45% of banks intend to invest more than R30 million



With around 45% of banks planning to invest over R30 million, they lead financial sector investments. **This significant funding boosts technological advancements, enhances customer services, and strengthens competitive positioning.** However, it also raises concerns about resource allocation and risk management.

Sales and marketing is the leading AI/ML business area application by materiality



Sales and marketing are the top AI/ML applications in banks, **driving personalized customer experiences and targeted campaigns**. This focus enhances customer engagement, boosts revenue, and improves competitive edge. However, it also raises concerns about data privacy and ethical use of AI.

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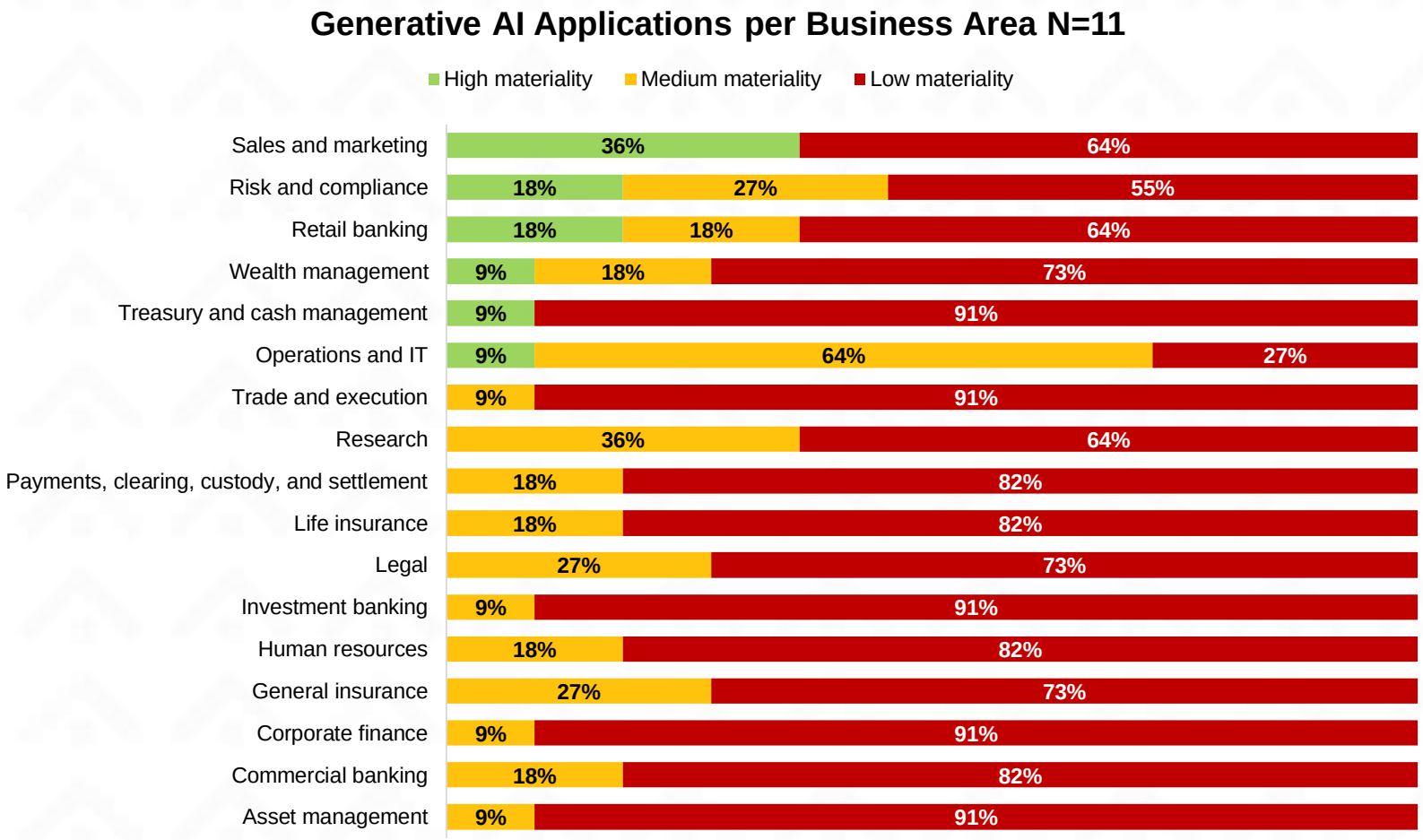
Sales and marketing is the leading GenAI business area application by materiality



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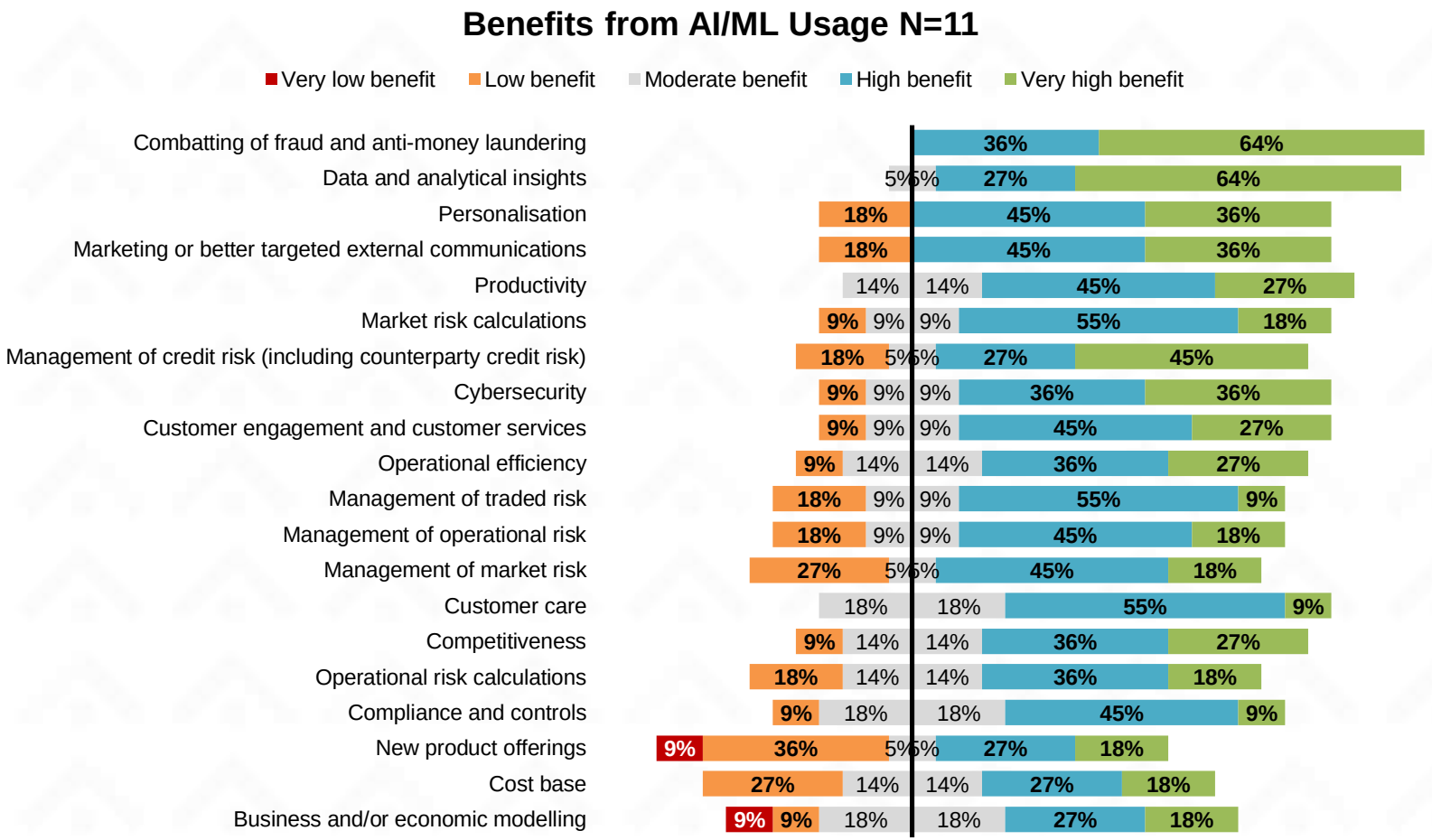
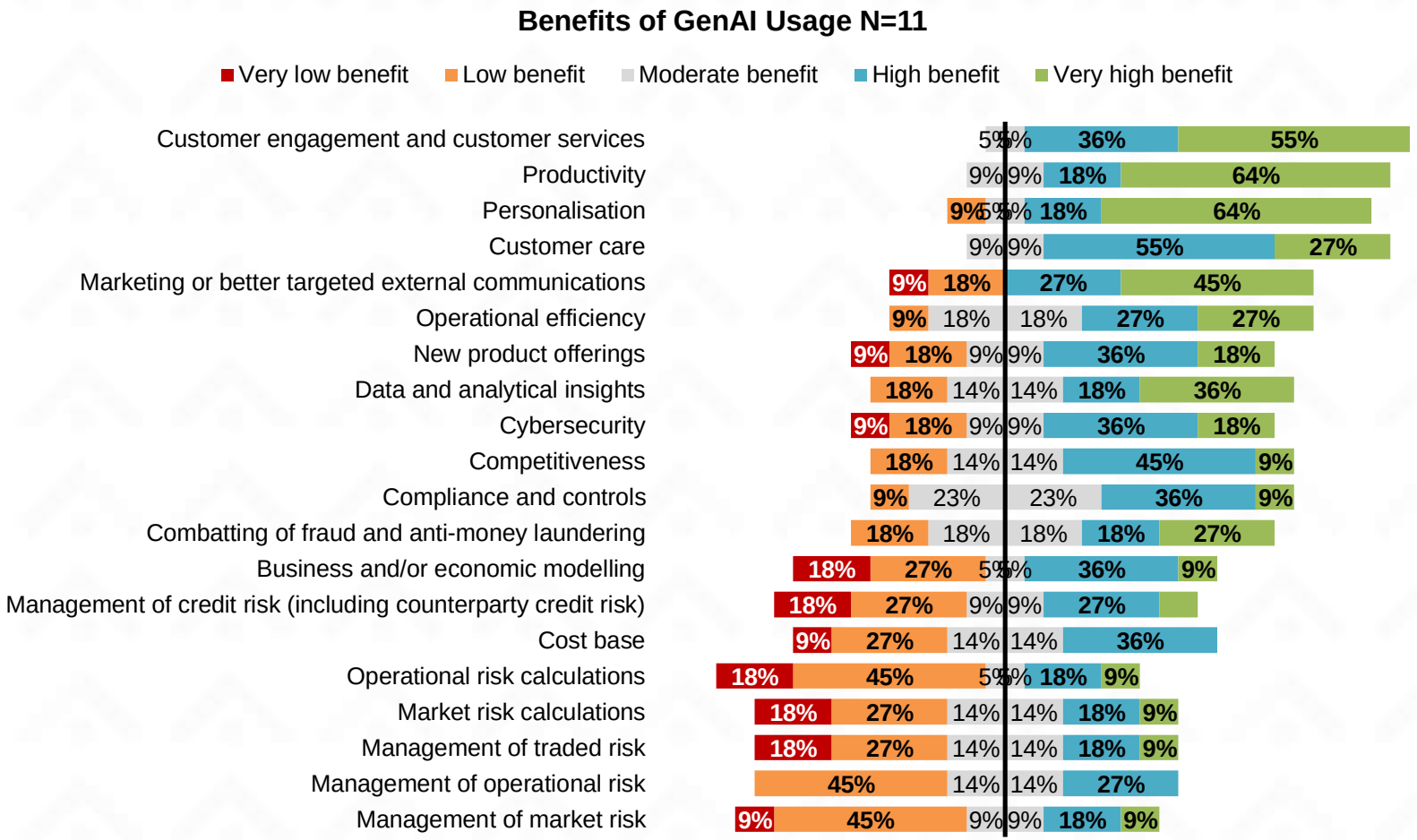
Combatting of fraud and anti-money laundering is the highest benefit of AI/ML



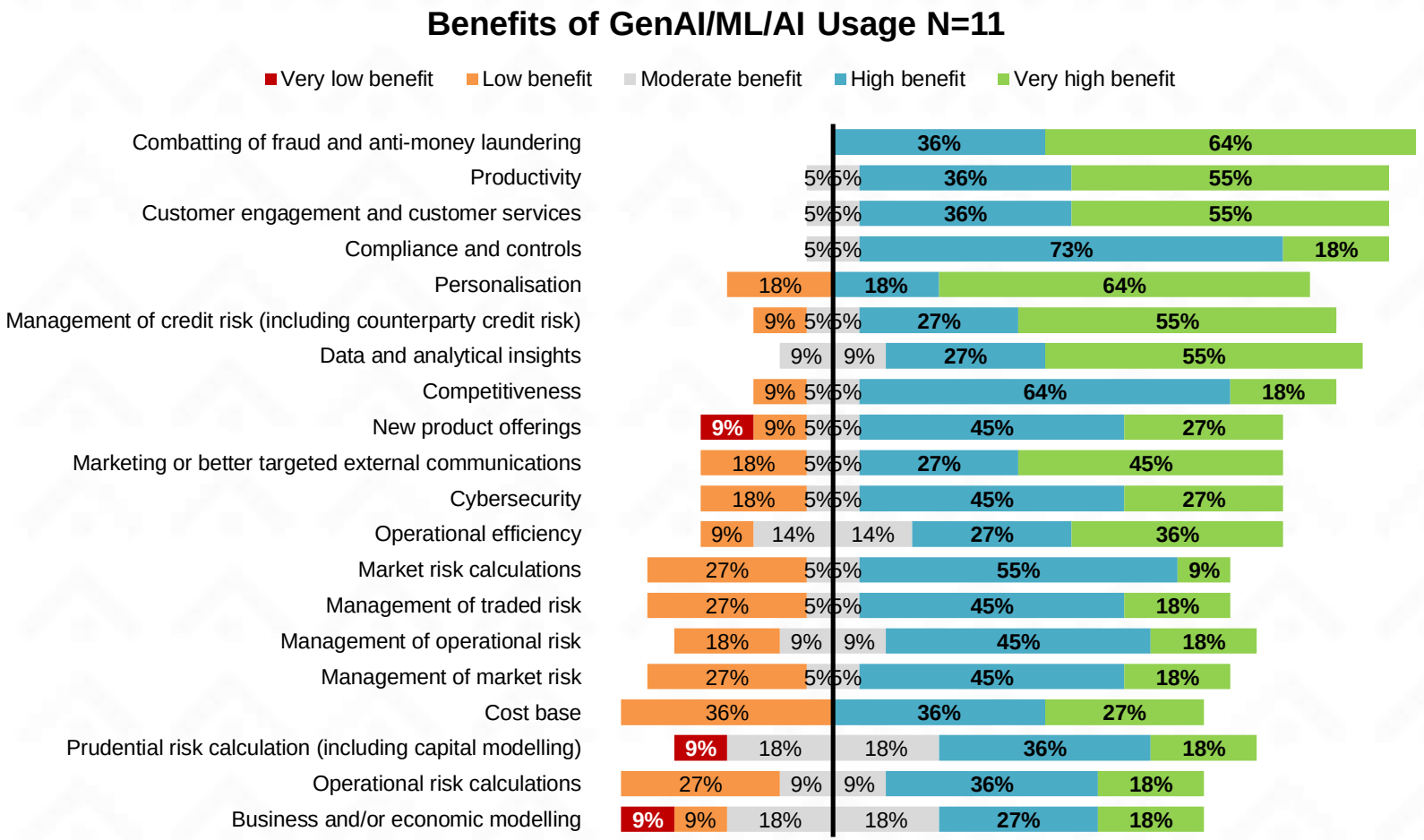
AI/ML significantly enhances fraud detection and anti-money laundering efforts in banks, **offering real-time monitoring and predictive analytics**. These technologies improve accuracy, reduce false positives, and strengthen regulatory compliance. The benefits include increased security, customer trust, and operational efficiency.

The leading genAI benefit is for customer engagement and customer services



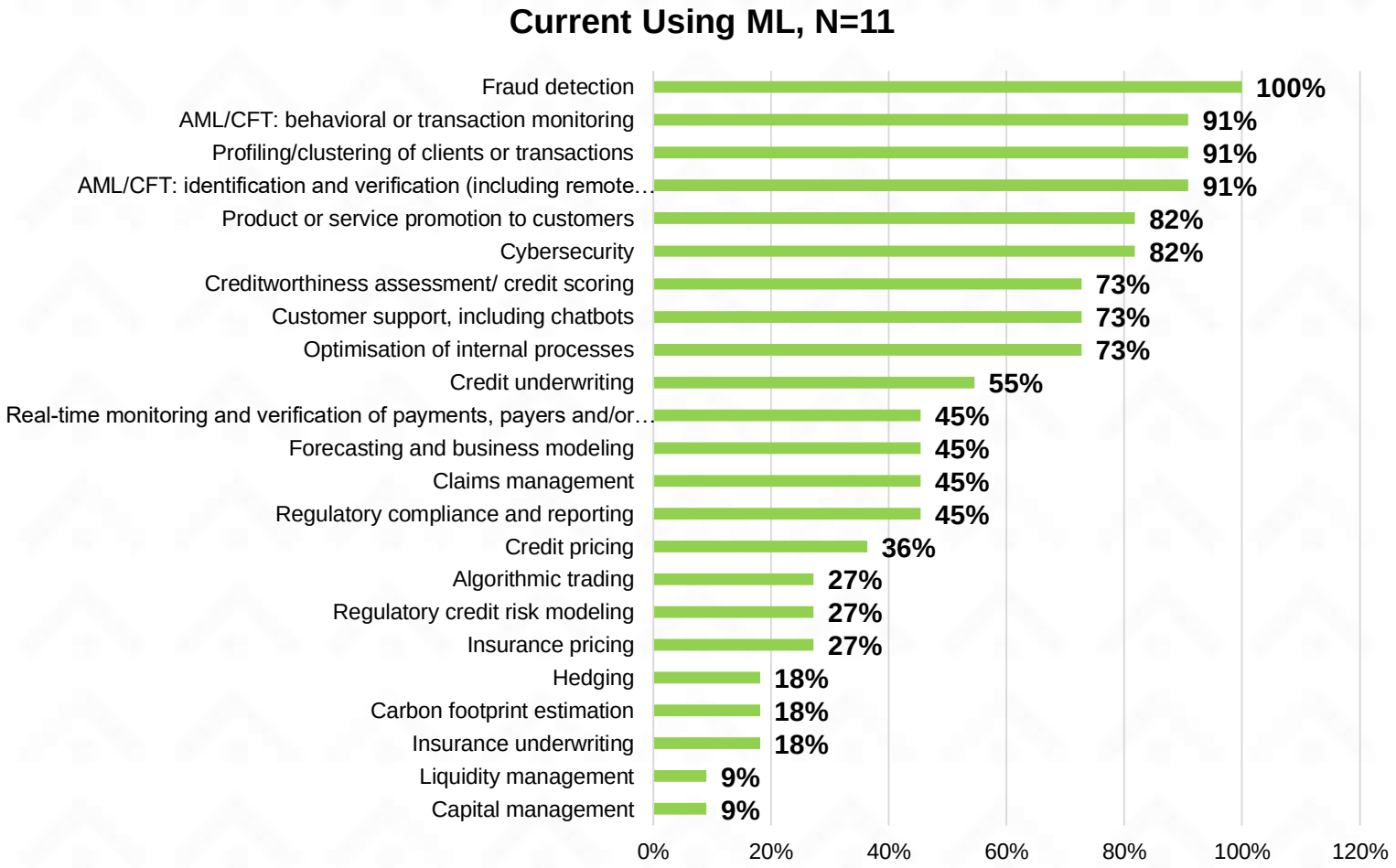
GenAI significantly enhances customer engagement and services in banks by **providing personalized interactions, 24/7 support, and predictive insights**. This leads to improved customer satisfaction, loyalty, and operational efficiency. However, it also raises concerns about data privacy and the need for robust ethical guidelines.

Overall, the highest benefit is the ability to combat fraud and AML using AI/ML and GenAI

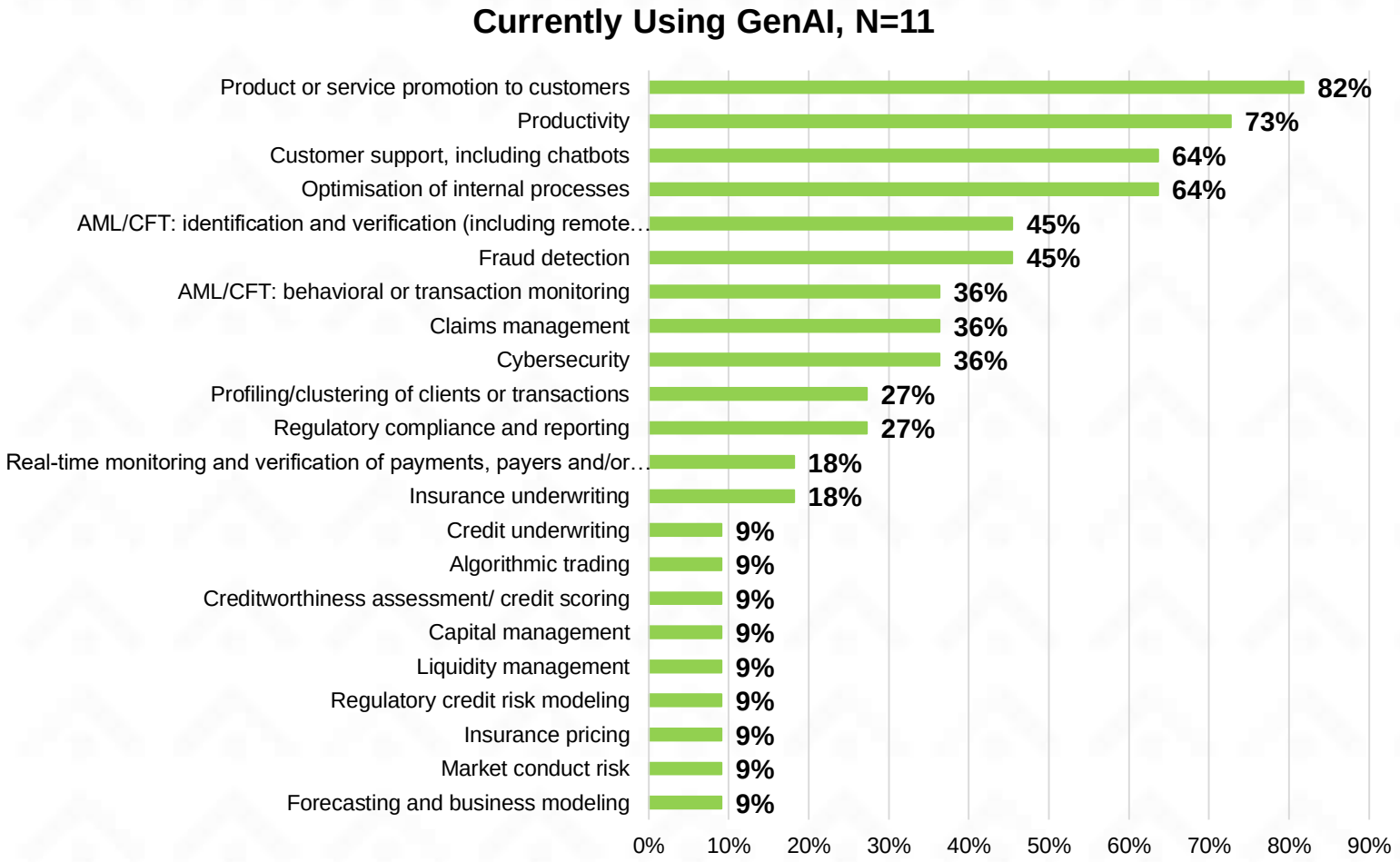


AI/ML and GenAI offer banks powerful tools to combat fraud and AML, enhancing detection accuracy and efficiency. **These technologies enable real-time analysis, predictive modeling, and adaptive responses to emerging threats**. The implications include improved security, regulatory compliance, and customer trust.

Fraud detection is the leading planned or current use case for ML

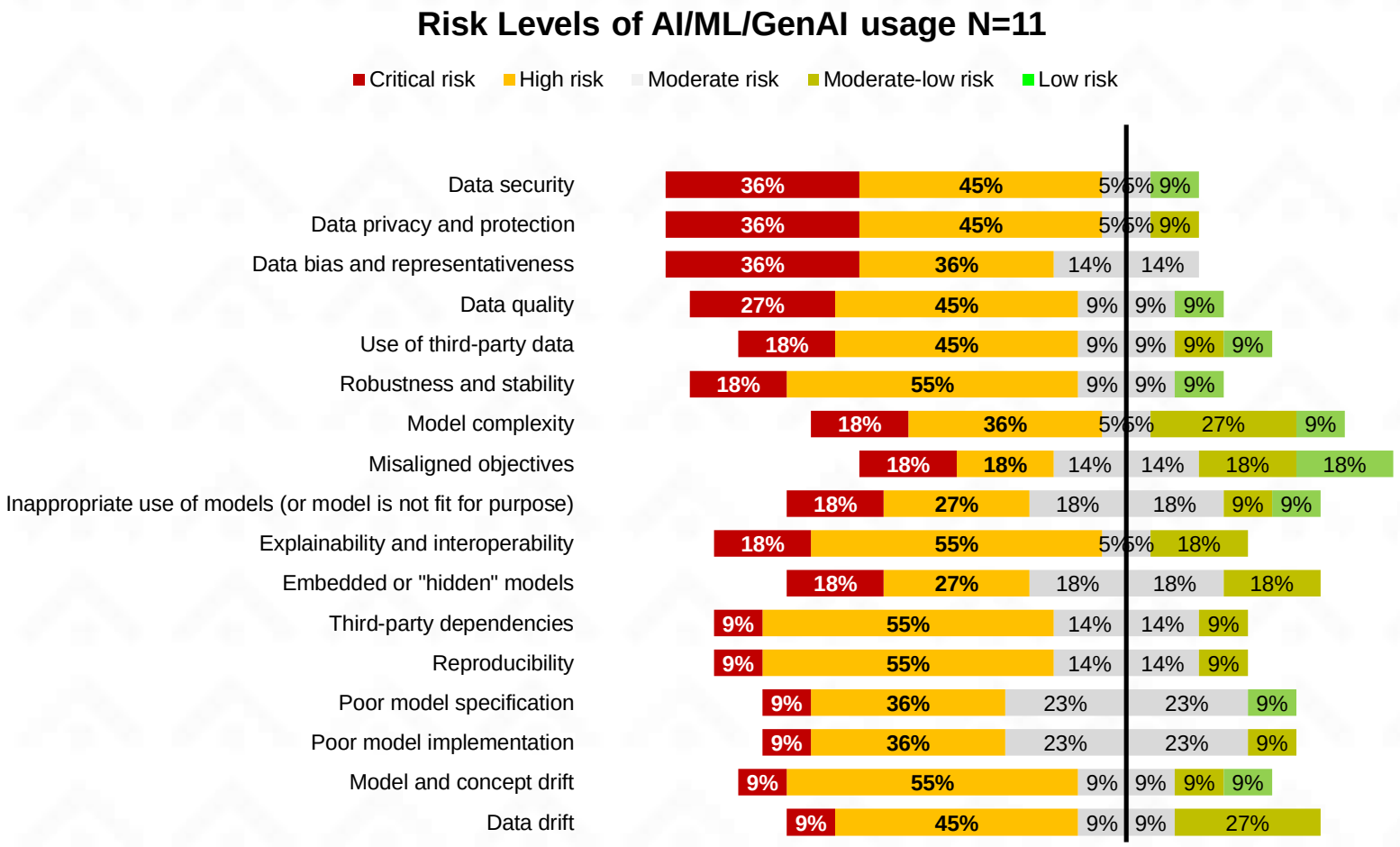


Product or service promotion to customers is the leading planned or current use case for GenAI



GenAI is primarily used by banks for product and service promotion, **offering personalized recommendations and targeted marketing**. This enhances customer engagement, boosts sales, and improves competitive positioning. However, it also raises concerns about data privacy and ethical use of AI.

Data security is the highest risk of AI/ML/GenAI



Key risks in using AI/ML/GenAI for banks include data security, privacy, and bias. Ensuring robust data protection **prevents breaches and maintains customer trust**. Addressing data bias and representativeness ensures fair and accurate outcomes, avoiding discriminatory practices. **These measures are crucial for regulatory compliance and ethical AI use**.

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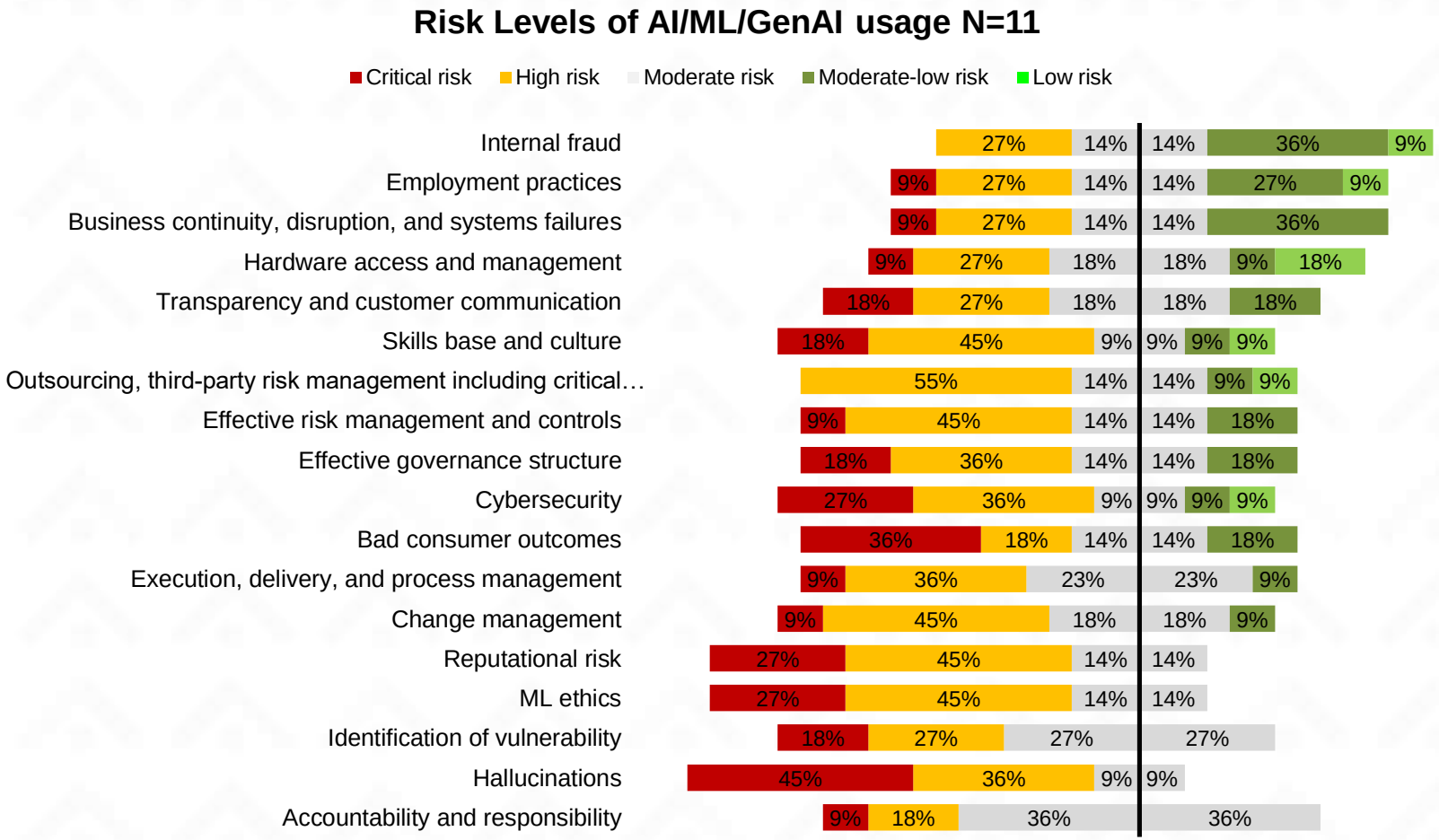
GenAI hallucinations are a significant risk



GenAI hallucinations pose a significant risk for banks, **potentially leading to inaccurate information and misguided decisions**. These errors can undermine customer trust, regulatory compliance, and operational integrity. Mitigating this risk requires robust validation processes, continuous monitoring, and ethical guidelines to ensure reliable and accurate AI outputs.

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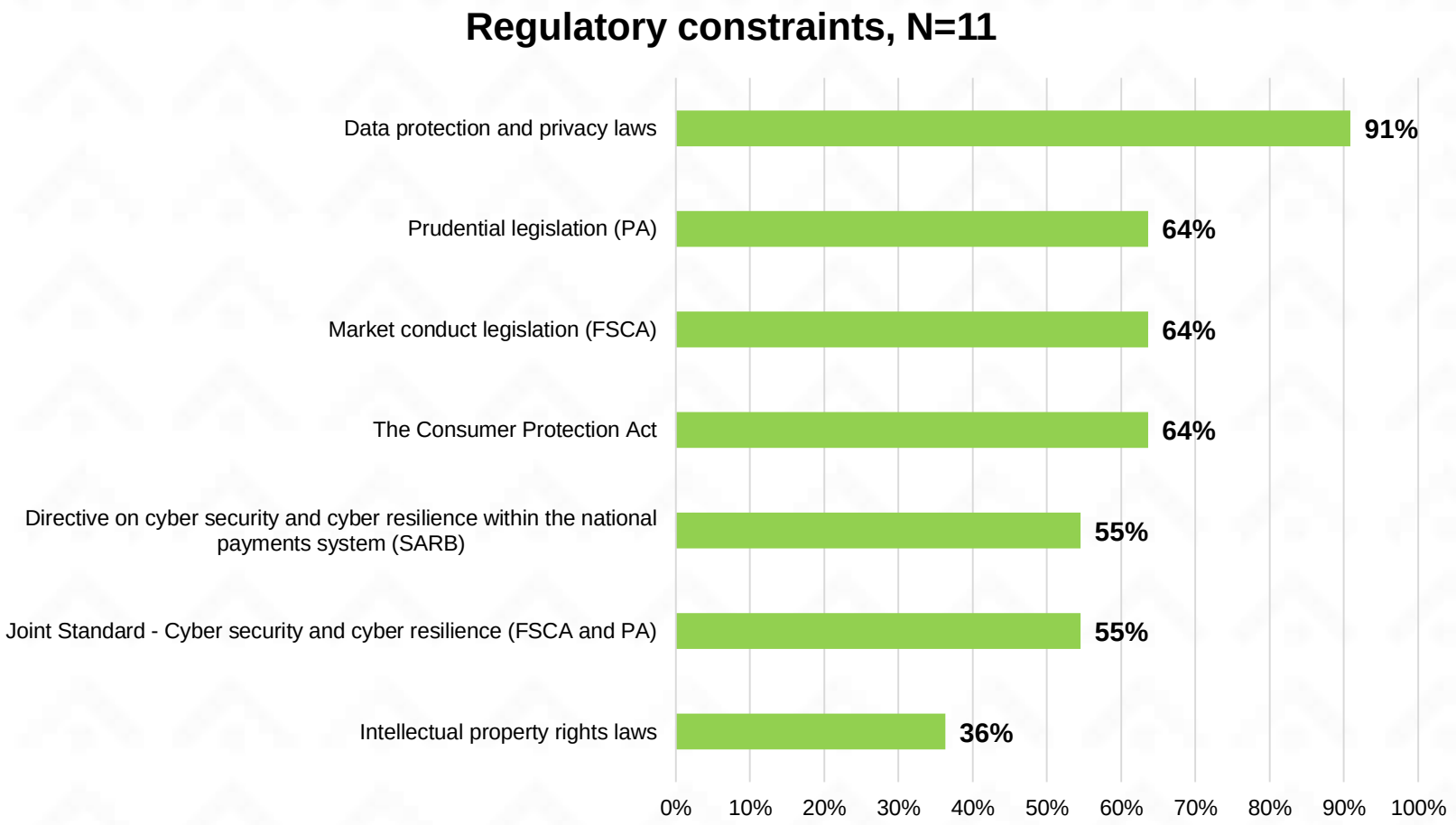
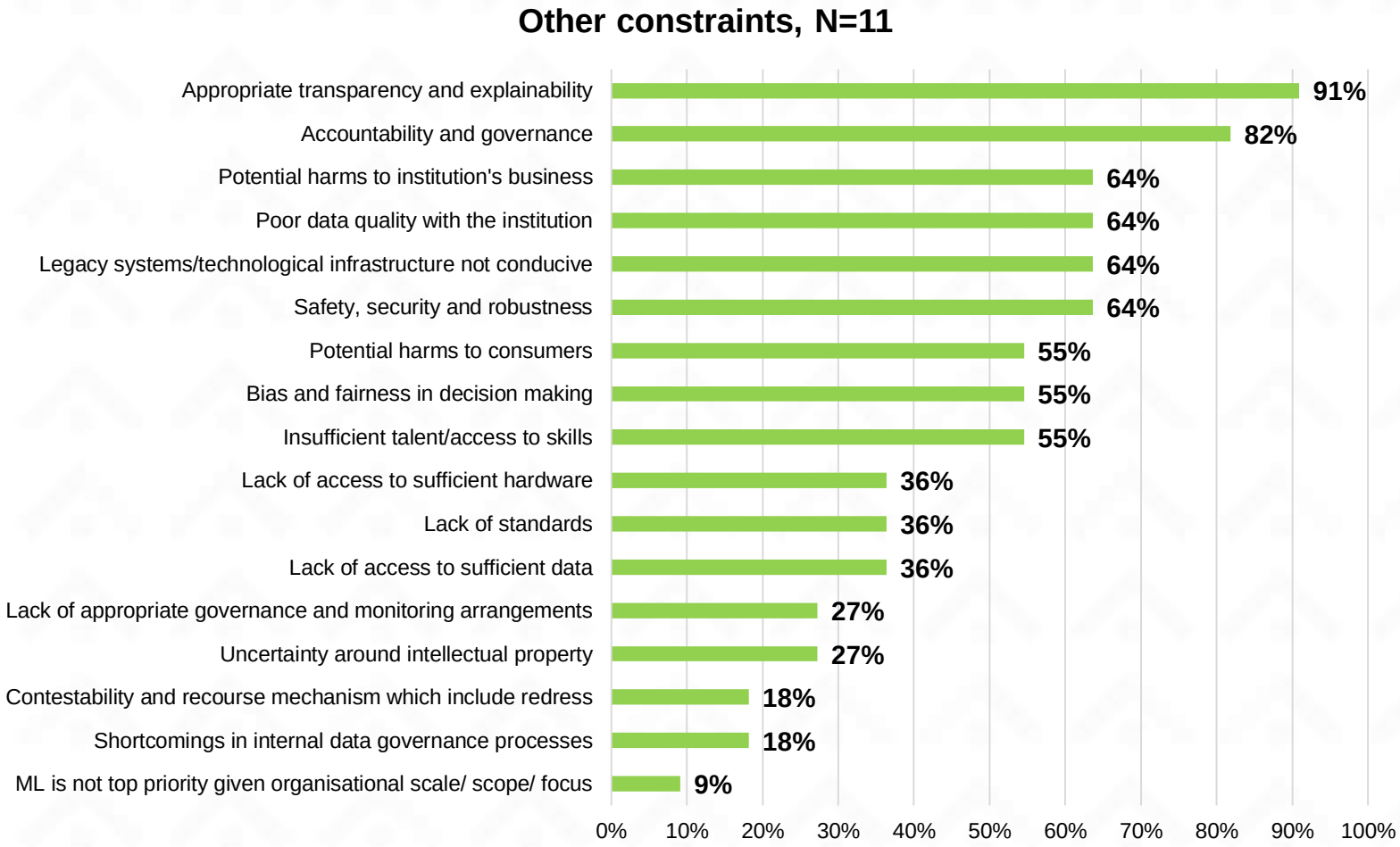
Data privacy and protection law is the leading regulatory constraint to the usage of AI/ML/GenAI



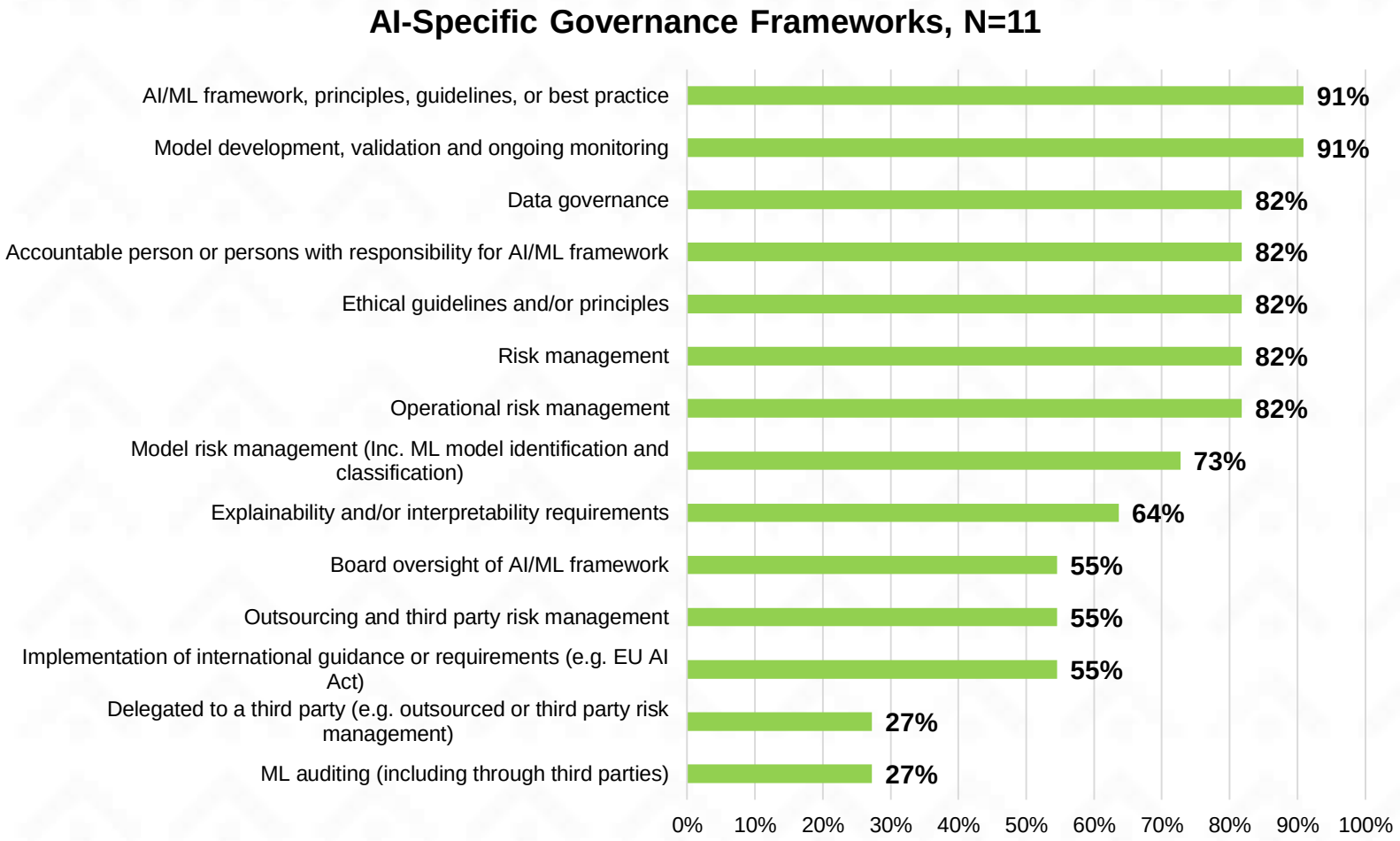
Data privacy and protection laws are major regulatory constraints for banks using AI/ML/GenAI. **These laws ensure customer data is securely handled, preventing breaches and misuse**. Compliance is crucial to maintain trust and avoid legal penalties. However, stringent regulations can limit innovation and data utilization.

Appropriate transparency and explainability is a leading constraint to the usage of AI/ML/GenAI



Transparency and explainability are crucial constraints for banks using AI/ML/GenAI. **Ensuring models are understandable and decisions are clear fosters trust and regulatory compliance**. However, achieving this can be challenging due to complex algorithms and proprietary technologies. Balancing transparency with innovation is essential to maintain customer trust and meet ethical standards.

There are two leading established governance frameworks being AI/ML framework, principle, guidelines, or best practice and model development , validation and ongoing monitoring



Banks rely on robust governance frameworks for AI/ML, including model development, validation, and ongoing monitoring. These frameworks ensure accuracy, compliance, and ethical standards. Implementing principles, guidelines, and best practices mitigates risks, enhances transparency, and fosters trust in AI systems. Effective governance supports responsible innovation and aligns with regulatory requirements.

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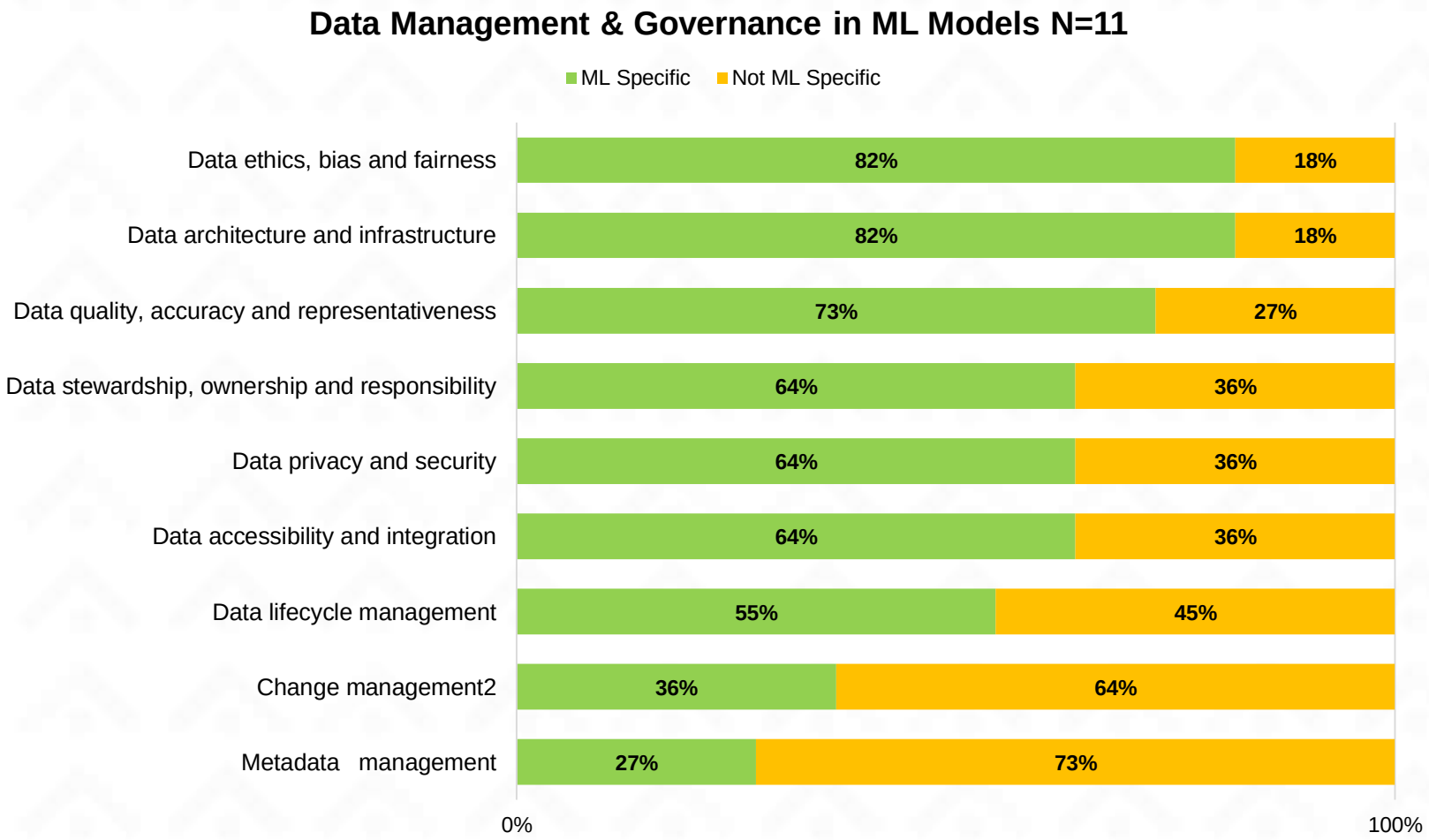
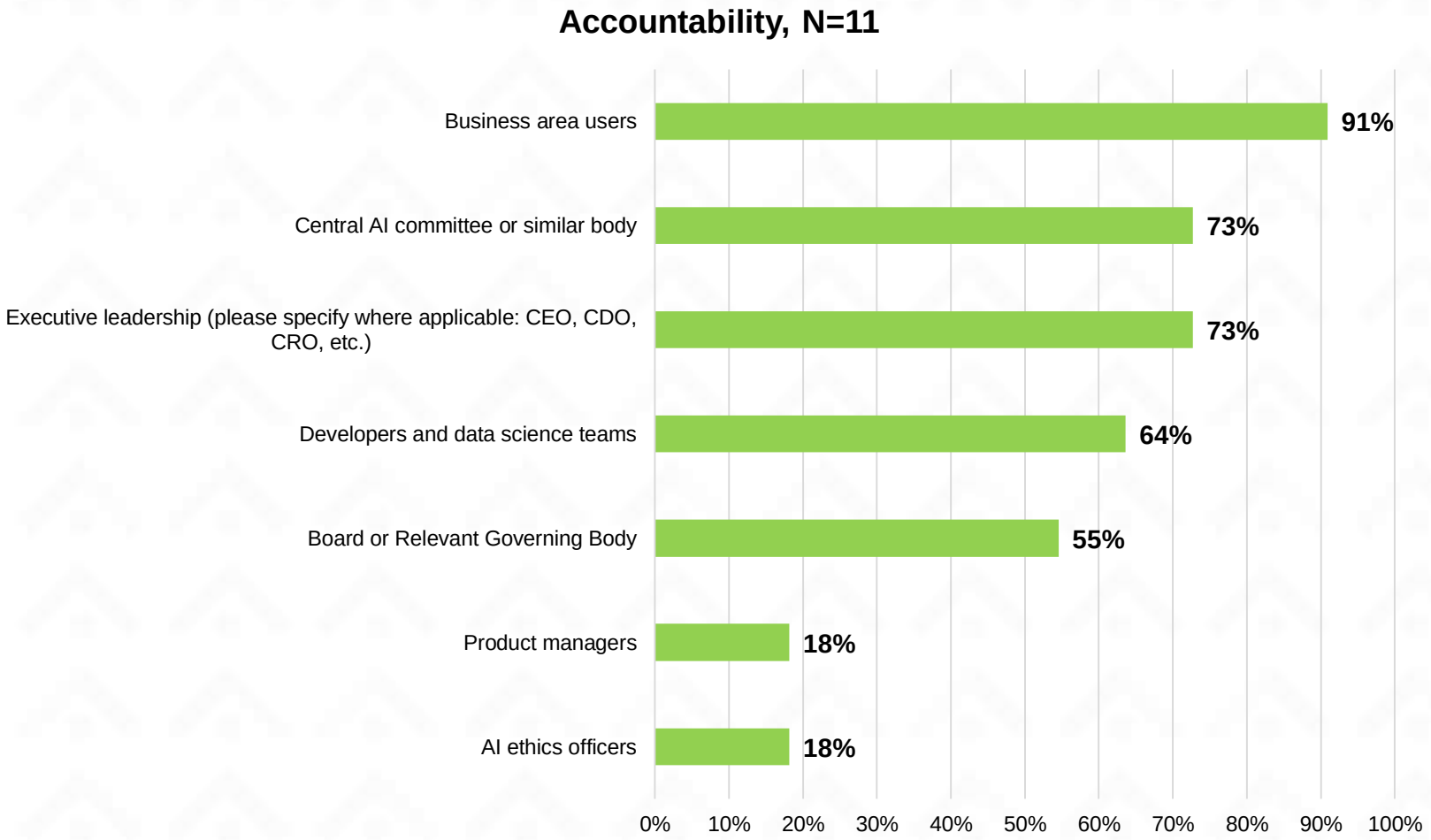
ML specific data management & governance is mainly focused on data ethics, bias, and fairness



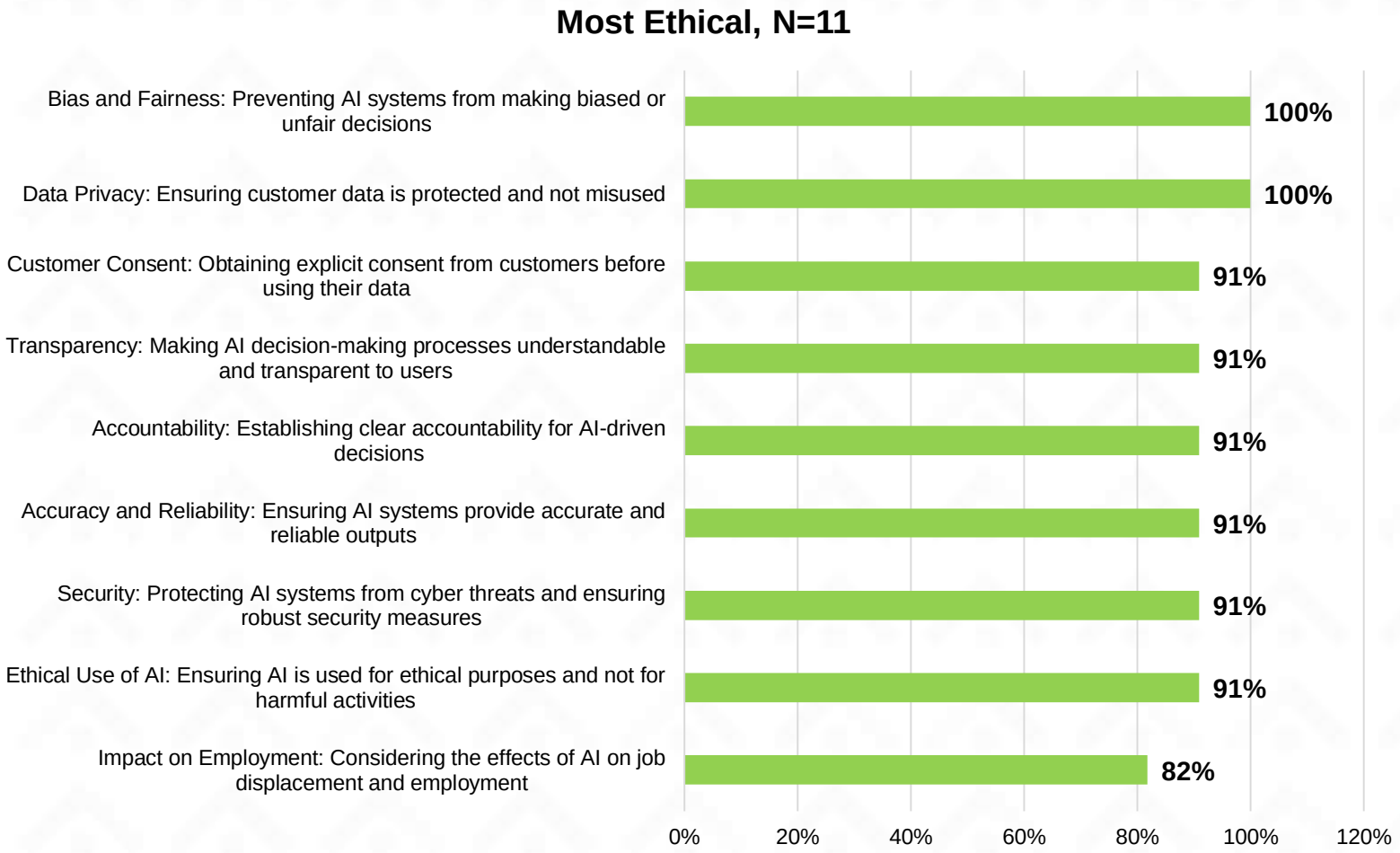
For banks, ML-specific data management and governance prioritize data ethics, bias, and fairness to ensure responsible AI use. This focus helps prevent discriminatory practices, enhances transparency, and aligns with regulatory requirements. Effective governance fosters trust, improves decision-making, and promotes social responsibility.

Accountability for AI usage mainly sits with business area users



When business area users hold primary accountability for AI usage in banks, it ensures domain-specific oversight and relevance. However, risks include potential lack of technical expertise, inconsistent application of ethical standards, and insufficient cross-functional collaboration. This can lead to biased outcomes, regulatory non-compliance, and reduced trust in AI systems.

Bias and fairness is the leading ethical consideration



Bias and fairness are crucial ethical considerations for banks, ensuring equitable treatment across diverse customer groups. Addressing these issues helps prevent discriminatory practices, fosters trust, and aligns with regulatory standards. Implementing fair AI models enhances customer satisfaction and promotes social responsibility.

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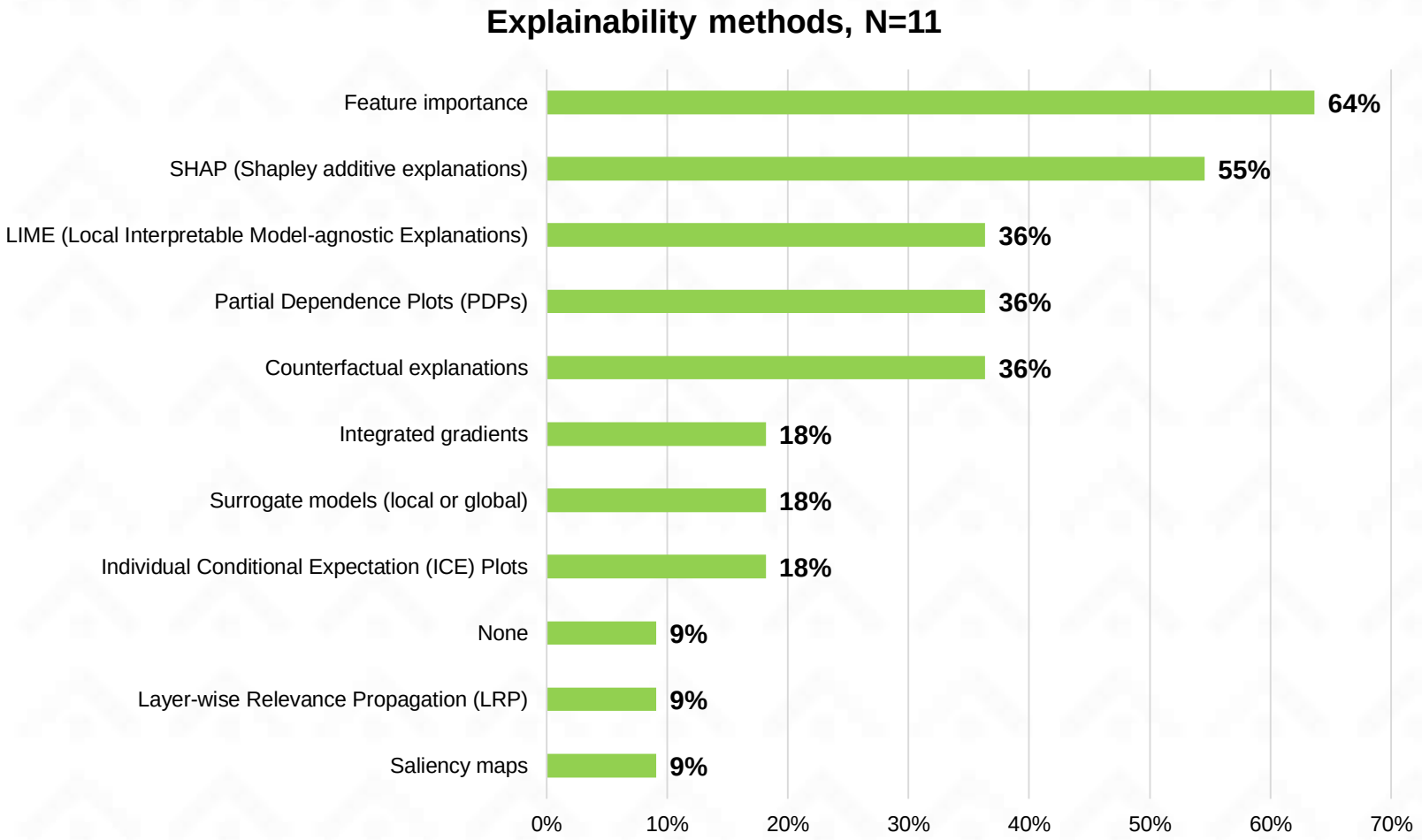
Feature importance is the leading explainability method, it is followed by SHAP



Feature importance is a primary explainability method in banking, highlighting key factors influencing model predictions. **SHAP (SHapley Additive exPlanations)** follows, offering detailed insights into individual predictions. These methods enhance transparency, aiding regulatory compliance and fostering trust in AI-driven decisions.

What type of disclosures are there for customer-facing AI applications? For example, do you disclose that the application uses AI?



- **Data Quality Metrics**: Some responses mention that data quality metrics are contracted with third parties, indicating a reliance on external validation for data integrity.
- **Transparency**: Transparency is highlighted as critical, with an emphasis on referencing trusted sources to allow testing of AI-generated answers. This suggests a commitment to openness and accountability in AI applications.
- **Data Confidentiality and Compliance**: Ensuring non-public data is kept confidential and complying with data privacy regulations is a priority. This reflects a strong focus on data protection and regulatory adherence.
- **No Current Customer-Facing AI Applications**: One response indicates that there are currently no customer-facing AI applications, and therefore, no disclosures are required at this stage.
- **Group Responsible Framework**: The framework requires the declaration of AI use to customers, allowing them to contest and seek redress against decisions made by AI systems. This underscores the importance of customer rights and transparency.
- **Responsible AI Policy**: Transparency on the use of AI is a key principle, with disclosures included in the privacy notice or terms & conditions. This shows a structured approach to informing customers about AI usage.
- **Development Stage**: Some customer-facing AI applications are still in development, and the type of disclosure has not yet been finalized. This indicates ongoing work and future plans for AI integration.

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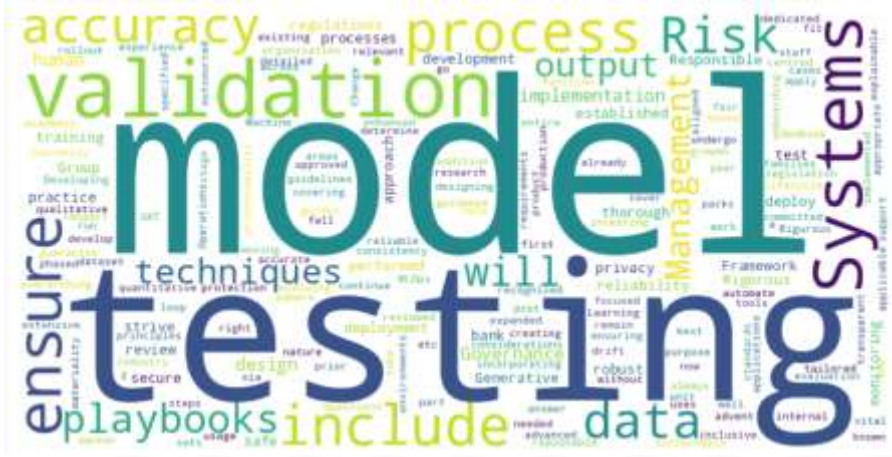
How does your organisation ensure that testing and validation of AI models is performed to guarantee the accuracy and reliability of their outputs?



Testing Environments: Institutions establish dedicated environments for development, testing, and user acceptance testing (UAT) to ensure thorough validation of AI models.

Outsourced Testing: Some institutions outsource testing as part of product onboarding, indicating reliance on external expertise for validation.

Rigorous MLOps Processes: Implementing rigorous Machine Learning Operations (MLOps) processes during training and after deployment, including monitoring for data drift and managing model risk, is crucial for maintaining model accuracy and reliability.

Model Development and Deployment: A thorough process for model development and deployment includes validation and testing of model outputs to ensure they meet accuracy standards.

Test Packs: Utilizing test packs with known questions and answer sets, internal testing, and phased rollouts with staff first helps in validating AI models before wider deployment.

Detailed Playbooks: Established areas of AI have detailed playbooks for testing and validation, tailored to specific AI techniques and use cases. These playbooks are being expanded to address enhanced risks and techniques associated with Generative AI.

Group Responsible AI Framework: Institutions follow a Group Responsible AI Framework that guides the creation of safe, robust, and secure AI applications. This framework includes principles such as inclusive growth, privacy, data governance, human accountability, and transparency.

Change Risk Management Governance: All AI uses undergo a governance process that includes considerations of model risk and validation, implementation testing, and post-model monitoring.

AI Governance Process: A dedicated AI governance process reviews all AI use-cases and models before implementation, ensuring extensive validation by specialized units for certain model families.

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Are there effective approaches/methods to support the safe, sound, and responsible adoption of AI? If so, what are they and which approaches are most suitable for the financial sector?



Governance and Risk Management:

- Establish clear guidelines and industry-specific regulations for AI adoption. Apply existing governance processes to AI, with strong controls for data ethics, bias, fairness, privacy, and security.
- Have a dedicated AI Risk Committee for use case assessments. Continuously update governance frameworks to keep pace with technological advancements.

Technical Approaches:

- Focus on monitoring, operationalization, and ongoing evaluation of AI models through MLOps and technical ownership. Implement architecture design authority approval with a focus on data controls and performance monitoring.
- Ensure models are accurate and have necessary guardrails before implementation.

Frameworks and Principles:

- Use established frameworks like OECD principles and NIST Risk Management Framework. Adopt a phased approach for Generative AI, involving basic training, functional-specific applications, and custom AI development.

People-Oriented Aspects and technical safeguards:

- Promote responsible AI development, workforce training, diversity, and human-AI collaboration.
- Create AI ethics boards, foster a culture of transparency and accountability, perform internal audits, and manage AI vendor reliability. Ensure model interpretability, robustness, security testing, data quality, and continuous monitoring.

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How could the regulation be simplified, strengthened and/or extended to better encompass AI and address potential risks and harms?


regulation
standard
potential
model
based
existing
ensure
disclosure
risks
extended
Guidance
sector
regulators
Ensuring
customer
rules
principle
simplified
already
specific
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Rather
stage
approach
useful
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disadvantage
societal
Guidelines
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education
following
introduced
may
algorithmic
harness
balance
struck
lagging
South
stakeholder
statements
beginning
essence
innovation
reviews
machine

How are you using AI/ML across your value chain? Please give one example of your banking institution's application of AI across your institution's value chain and explain how AI and machine learning are used.



- **Fraud Detection and customer support**: AI and ML are used for proactive fraud detection and prevention by analyzing transactional behavior and detecting anomalies. AI enhances customer support capabilities through chatbots and intelligent auto-suggestions, reducing response times.
- **AML Transaction Monitoring**: AI/ML is used for efficient management of alerts in AML transaction monitoring systems.
- **Productivity and Efficiency**: Generative AI is used to introduce productivity across functions, enhance marketing, customer support, and operational efficiencies.
- **Recommendation Engines**: AI is used in recommendation engines to predict customer preferences and inform product offerings.
- **Credit Decisioning**: Traditional ML models are used in credit decisioning processes to assess customer risk and determine credit eligibility.
- **Document Summarization, internal self-service and knowledge retrieval**: Generative AI is used for summarizing long documents without losing context. AI chatbots are used in Human Resources functions for better internal self-service. Generative AI is used to enhance knowledge retrieval and responses via customer service channels.
- **Responsible AI Framework**: Institutions follow a Group Responsible AI Framework to ensure safe, robust, and secure AI applications with principles such as privacy, data governance, human accountability, and transparency.

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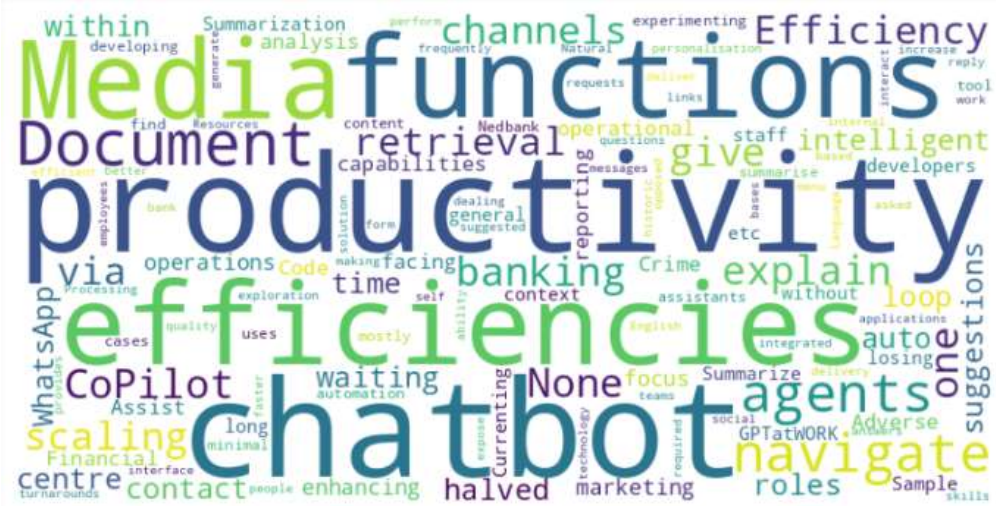
How are you using GenAI across your value chain? Please give one example of your banking institution's application of AI across your institution's value chain and explain how GenAI is used.



- **Efficiency and Scaling**: Generative AI is used to enhance efficiency and scale knowledge retrieval and responses via customer service channels, reducing waiting times.
- **Productivity**: Generative AI is predominantly used to introduce productivity across functions and roles within operations, enhancing marketing, customer support, IT, and operational efficiencies.
- **Customer-Facing Applications**: Generative AI is used in customer-facing AI chatbots, financial crime reporting, adverse media analysis, code assistance for developers, and general knowledge agents for staff.
- **Document Summarization and Experimentation**: Generative AI is used to summarize very long documents without losing context. Institutions are experimenting with generative AI to develop assistants for navigating and summarizing content or finding efficiencies through automation.
- **Employee Skills**: Generative AI is used to help increase the skills of employees in dealing with client requests by delivering a knowledge base to assist teams.
- **Internal Self-Service**: AI chatbots are used in Human Resources functions for better internal self-service.
- **Suggested Responses:** Generative AI is used to generate suggested responses for customer service agents who reply to social media messages, linking to a knowledge base of frequently asked questions and answers.

Insurance Sector

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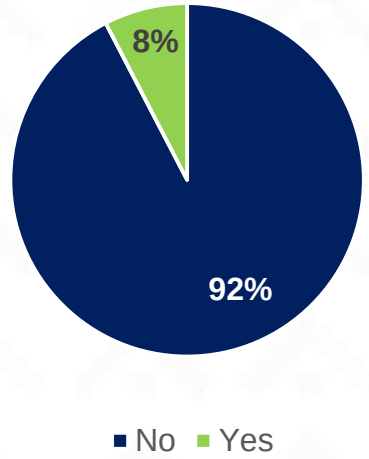
About the data

AI adoption in insurance N=774



- 774 insurers and insurance brokers responded to the survey.
- 59 institutions have adopted AI (8%).

Summary of the findings



- Most insurers intended to invest less than R1 million on AI in 2024.
- The leading application of AI/ML is in general insurance. The leading application of genAI is in risk and compliance.
- Data and analytical insights is the largest benefit of AI/ML. Productivity is the largest benefit of genAI usage.
- Insurance underwriting and claims management are the current/planned to use ML applications. Claims management and productivity are the current/planned to use genAI applications.
- The biggest risk to the usage of AI is cybersecurity. It is followed by data security and data privacy and protection.
- The leading regulatory constraint is data protection and privacy law. Other constraints include lack of access to sufficient data and insufficient talent/access to skills.
- Data governance and ethical guidelines and/or principles are the leading established governance frameworks.
- ML specific data management & governance is mainly focused on change management.
- Accountability for AI usage mainly sits with the Board or the relevant governing body.
- Data privacy is the leading ethical consideration.
- Feature importance is the leading explainability method employed.

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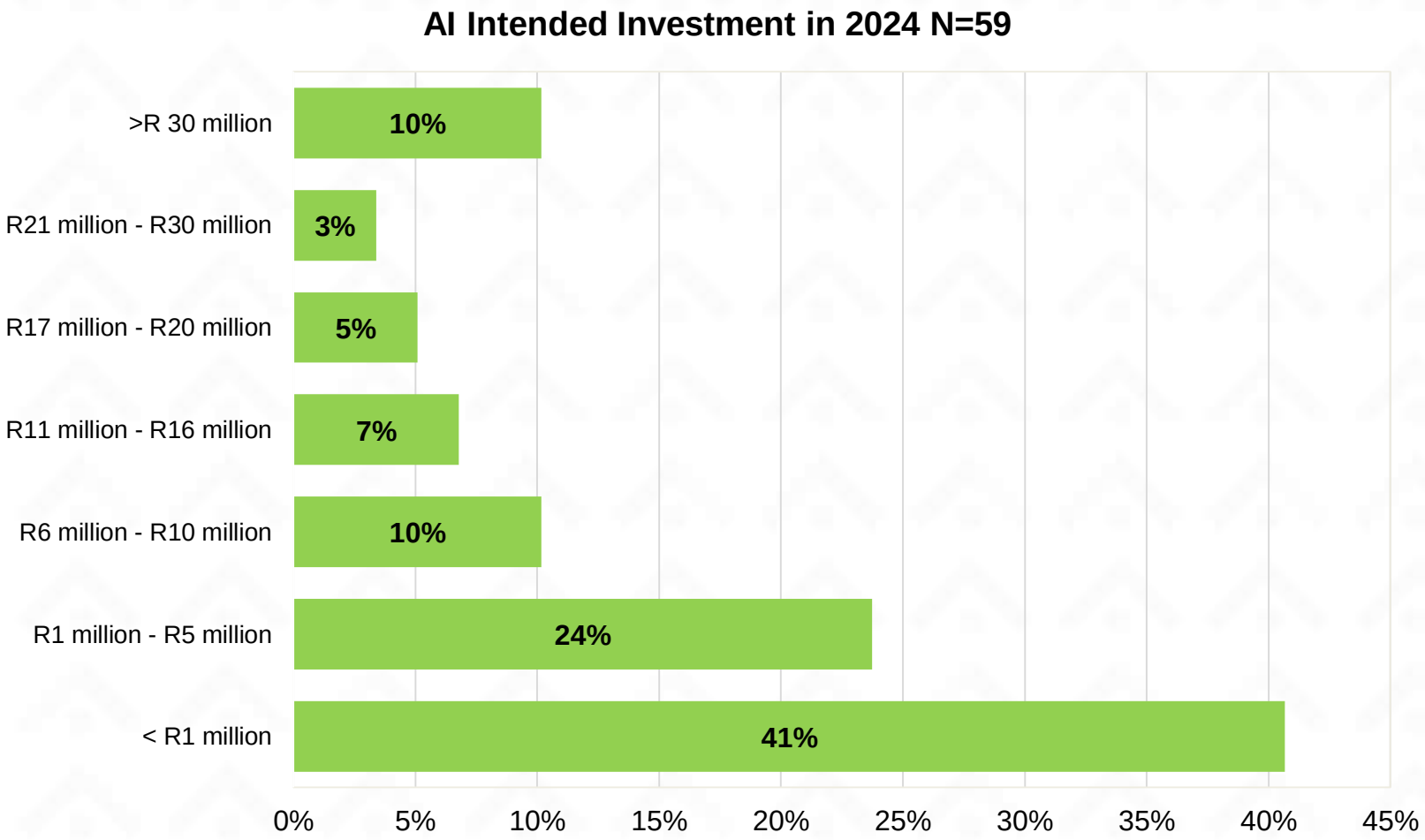
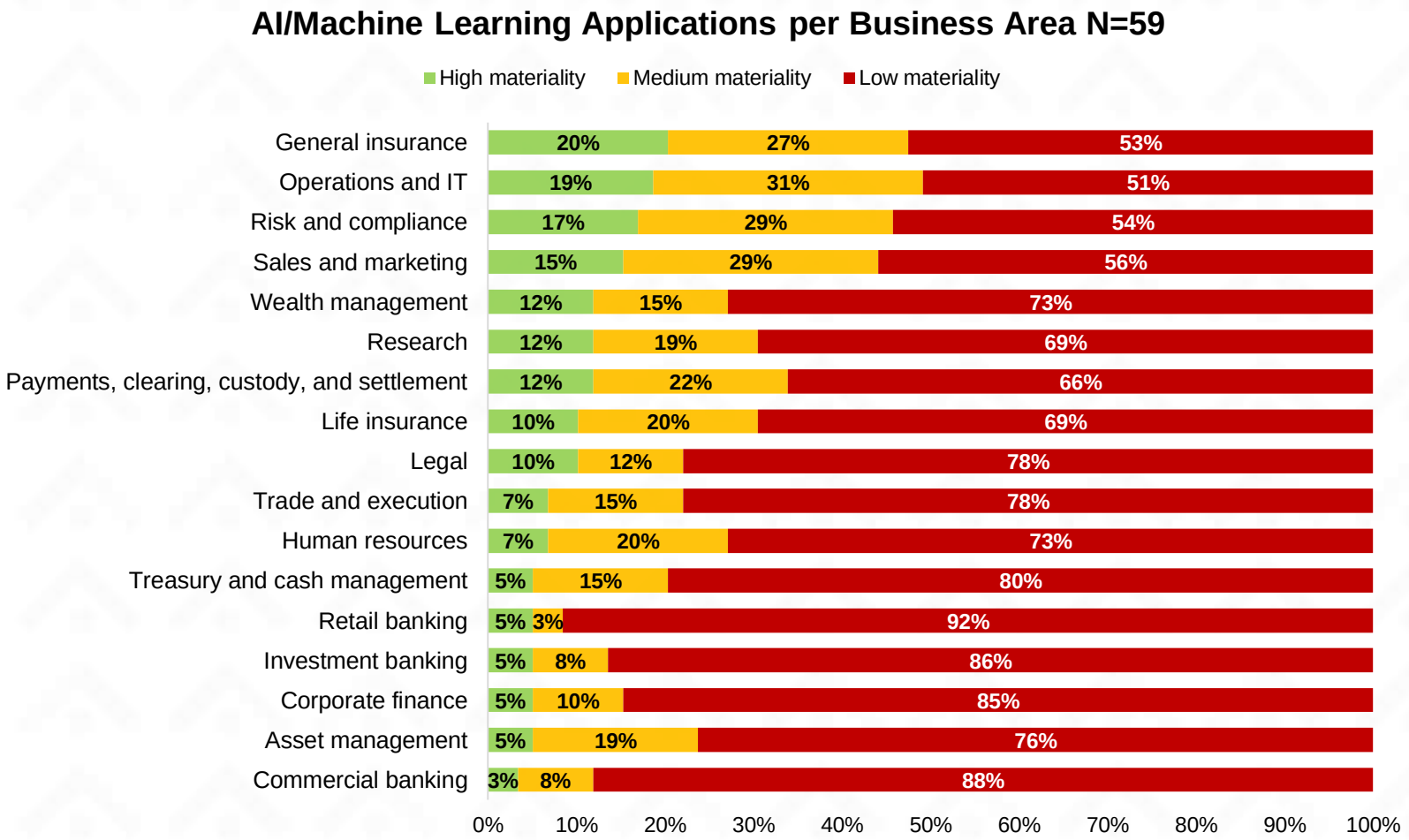
Most insurers intend to invest less than R1 million in AI



Most insurers plan to invest under R1 million in AI, **indicating a cautious approach**. This conservative investment may hinder innovation and competitive edge, potentially affecting customer service and efficiency. However**, it also reduces financial risk and allows for gradual adoption**.

The leading application of AI/ML is in general insurance by materiality



AI/ML's primary application in general insurance **enhances risk assessment, underwriting, and claims management**. These technologies streamline operations, improve accuracy, and reduce costs. The implications include better customer service, increased efficiency, and competitive advantage. However, it also raises concerns about data privacy and ethical use.

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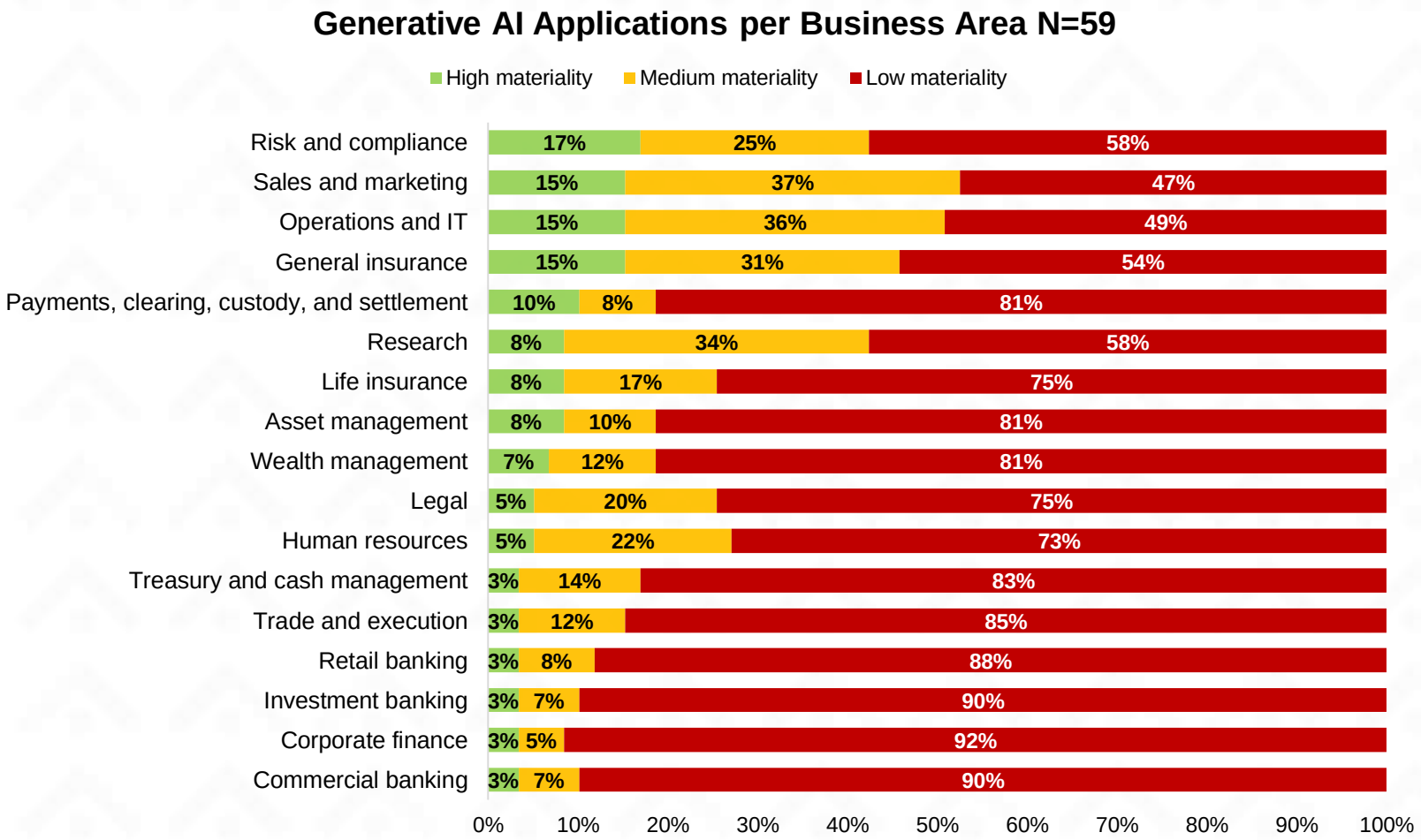
The leading application of genAI is in risk and compliance



GenAI's primary application in risk and compliance for insurers **enhances regulatory adherence and risk management**. It streamlines data analysis, identifies potential threats, and ensures compliance with evolving regulations. This leads to improved operational efficiency, reduced fraud, and enhanced trust. However, it also necessitates robust oversight to mitigate risks of bias and inaccuracies.

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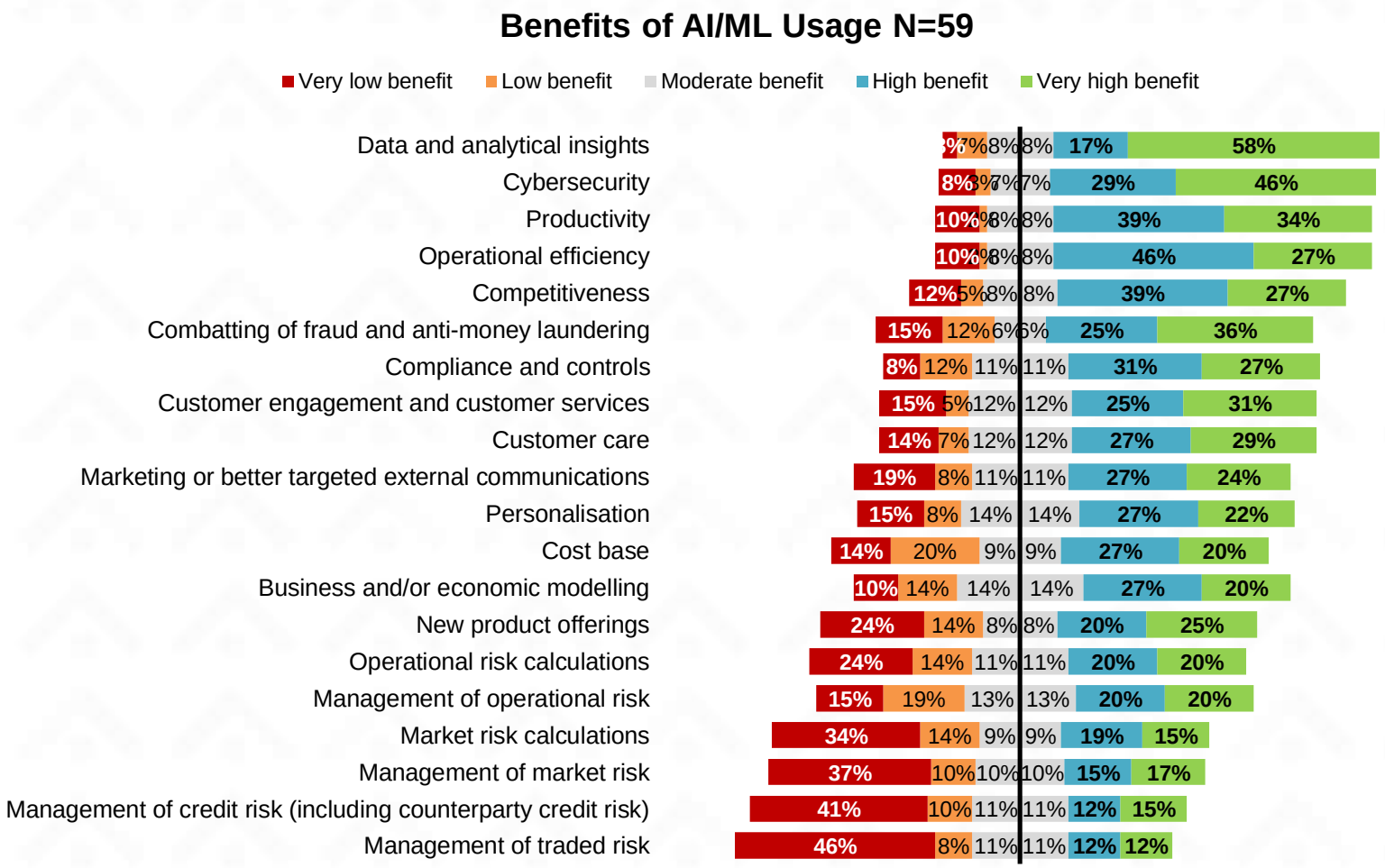
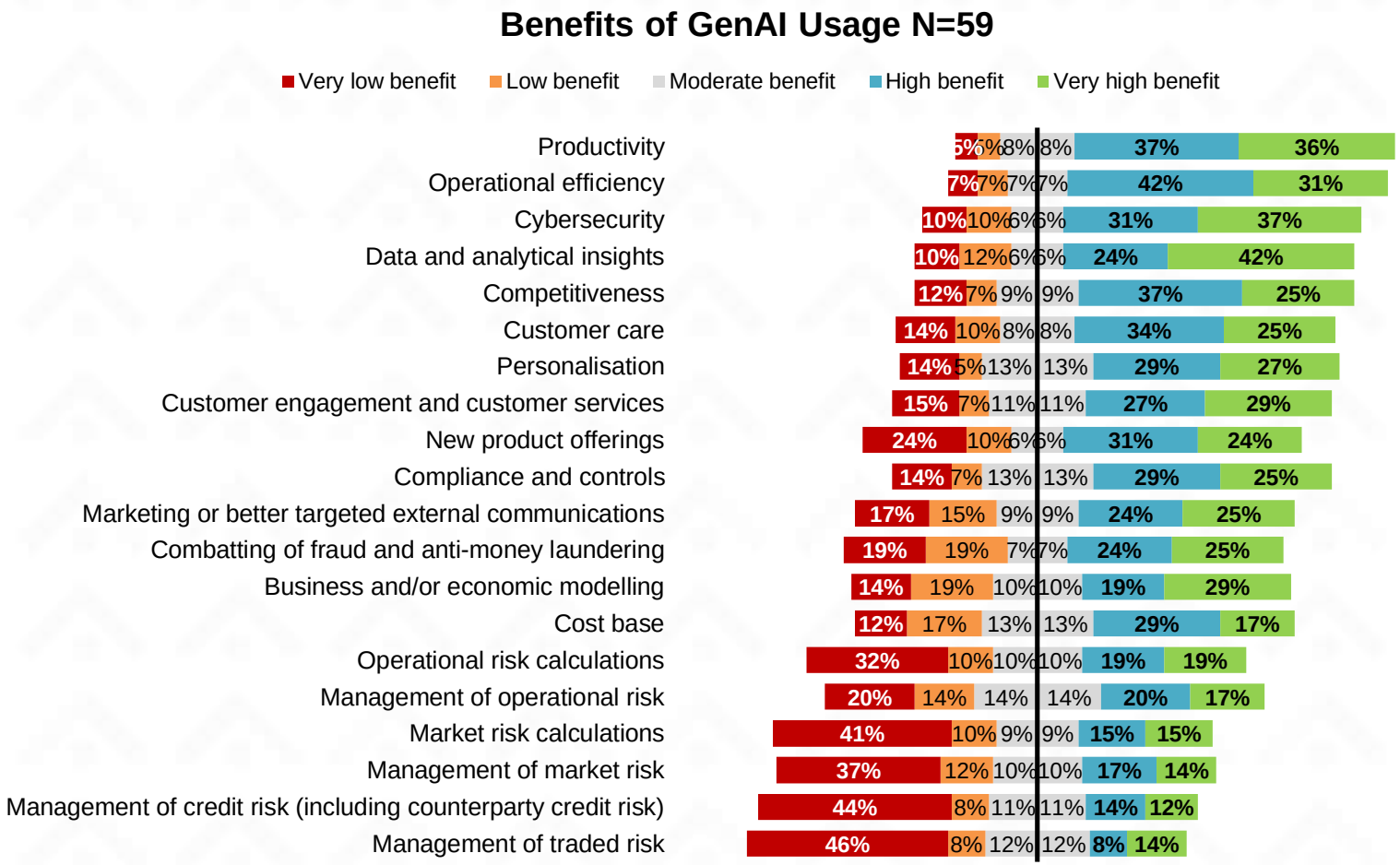
Data and analytical insights is the largest benefit of AI/ML usage



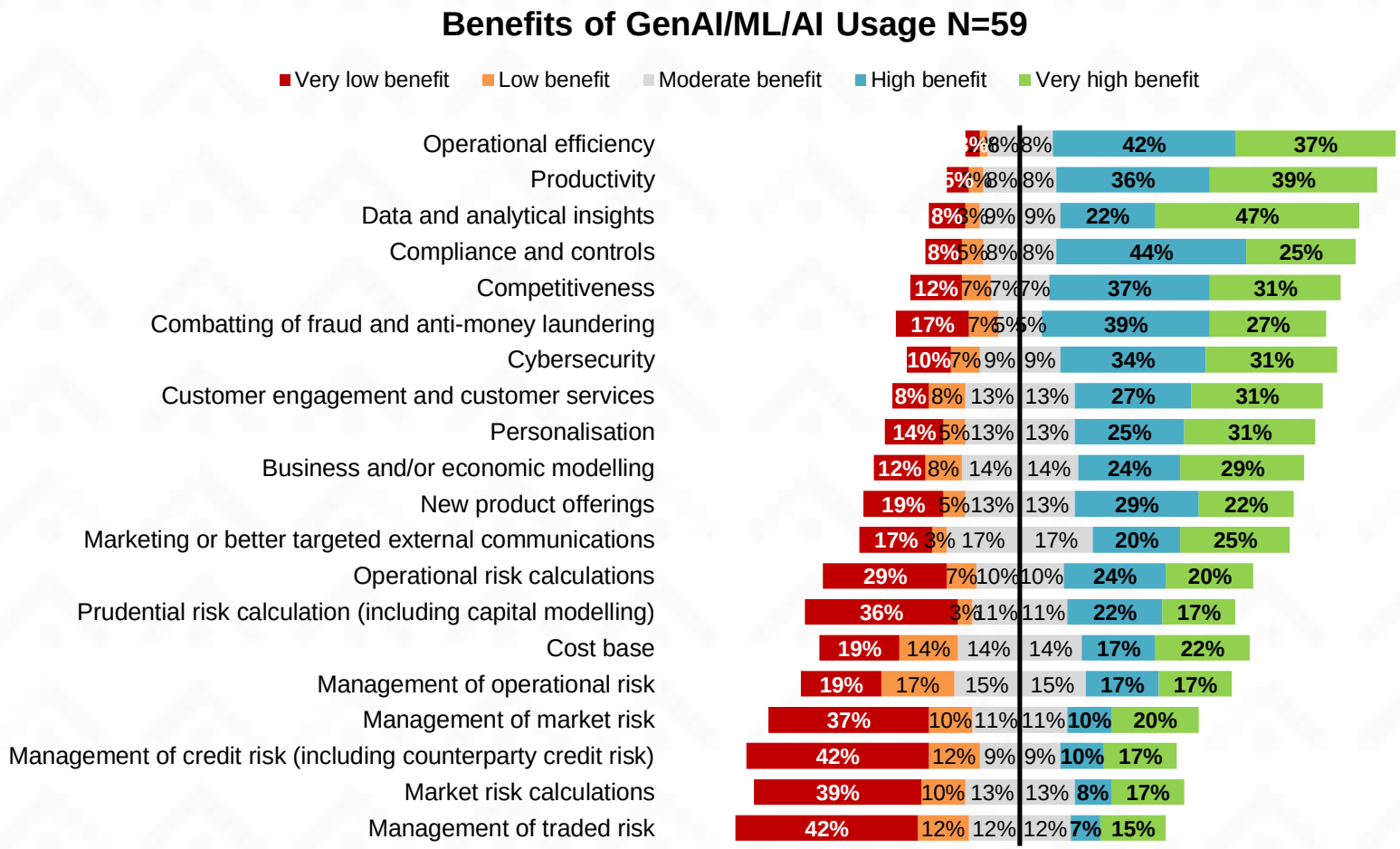
AI/ML provides insurers with significant data and analytical insights, **enhancing risk assessment, underwriting, and claims processing**. These insights enable more accurate predictions, personalized services, and operational efficiency. The implications include improved customer satisfaction, reduced costs, and competitive advantage. However, it also necessitates robust data governance to ensure privacy and ethical use

Productivity is the largest benefit of genAI usage

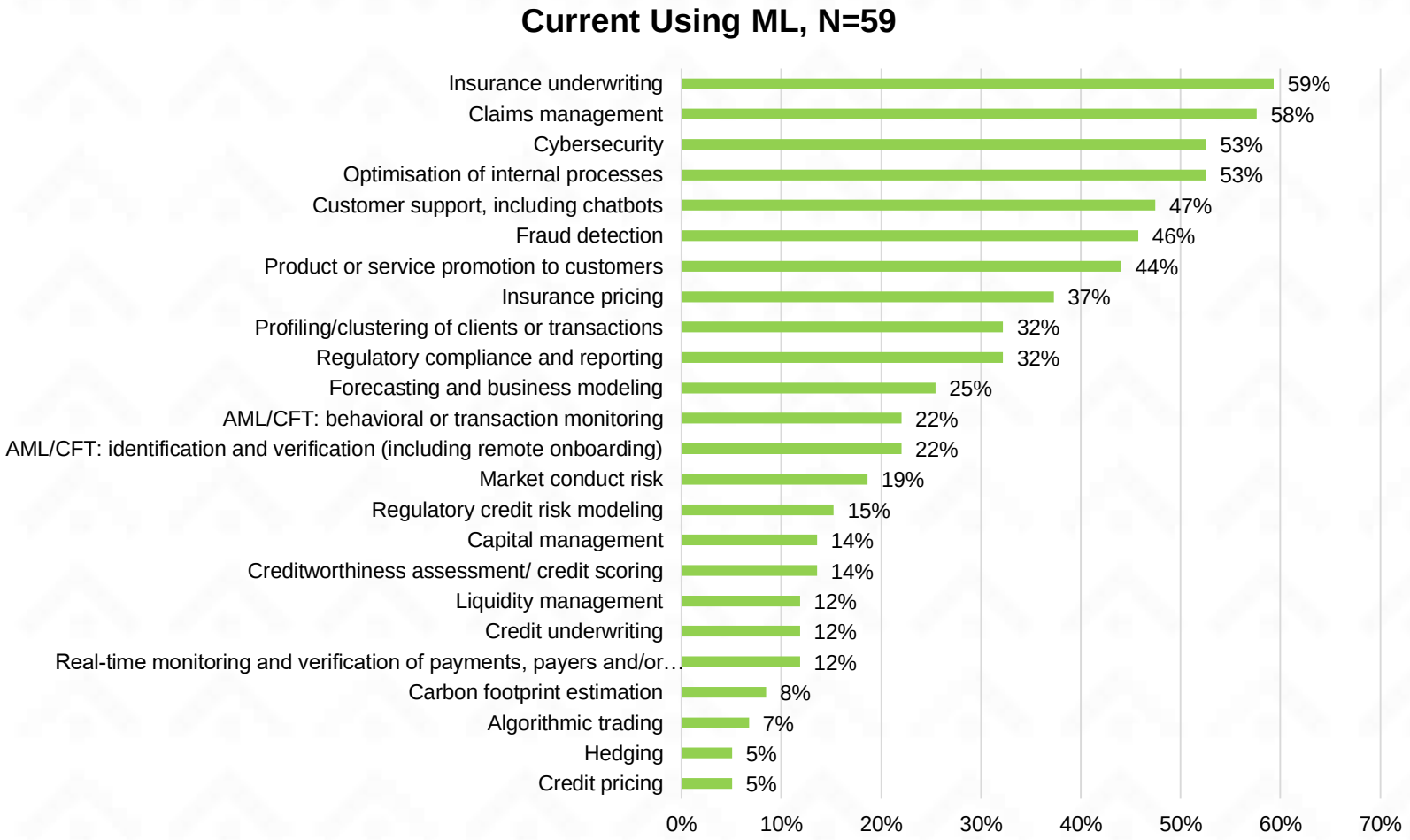


GenAI significantly boosts productivity for insurers by **automating routine tasks, enhancing data analysis, and streamlining workflows**. This leads to faster decision-making, reduced operational costs, and improved service delivery. The implications include increased efficiency, competitive advantage, and better resource allocation. However, it also requires careful management to avoid over-reliance and ensure ethical use

Overall leading benefit of AI/ML/GenAI is operational efficiency and productivity

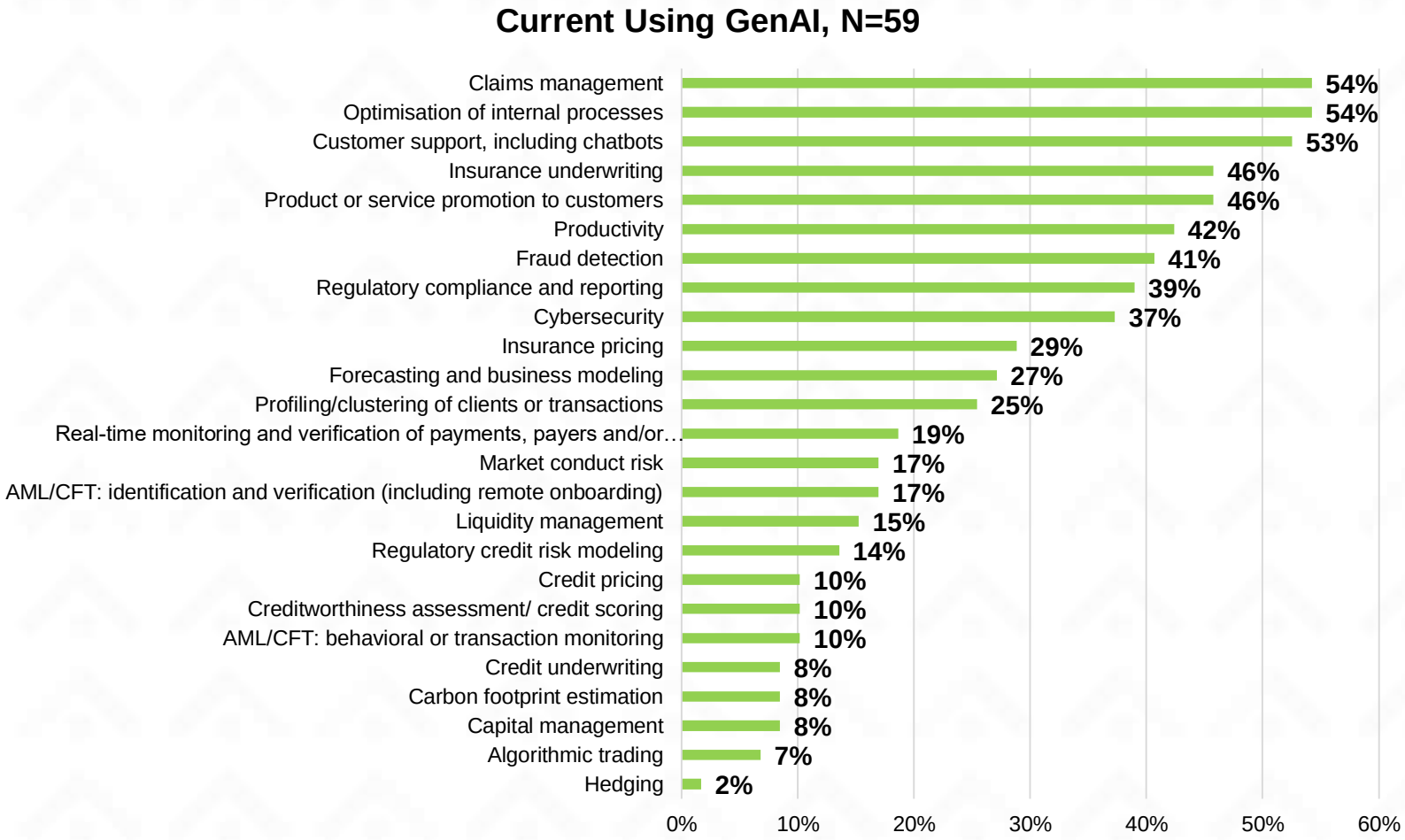


Insurance underwriting and claims management are the current/planned to use ML applications



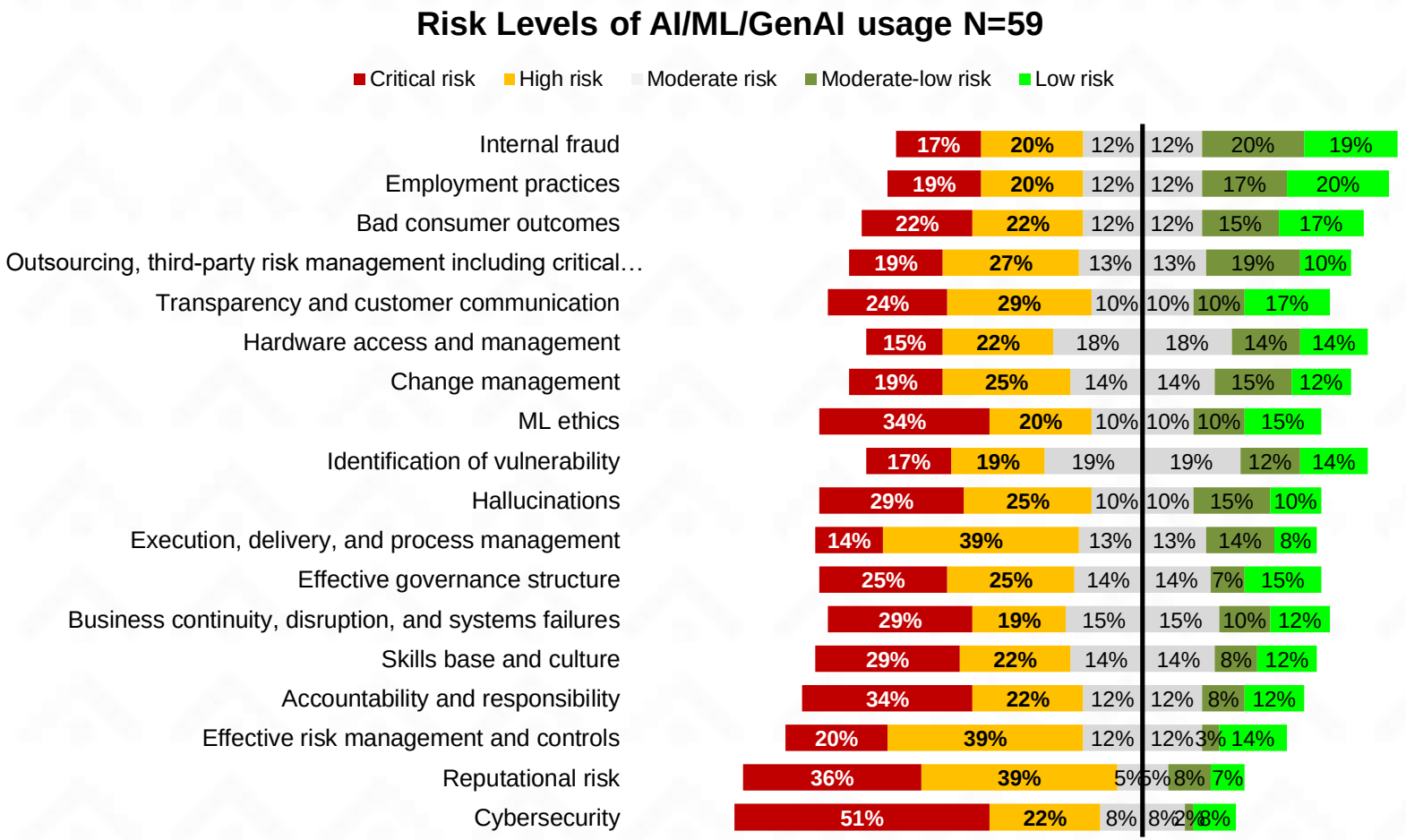
Insurers use ML in underwriting and claims management to enhance risk assessment, streamline processes, and improve accuracy. **These applications reduce manual labor, speed up decision-making, and lower costs**. The implications include better customer service, increased efficiency, and competitive advantage. However, they also require robust data governance to ensure privacy and ethical use

Claims management and productivity are the current/planned to use genAI applications



Insurers are leveraging GenAI for claims management and productivity, streamlining processes and enhancing efficiency. **GenAI automates routine tasks, accelerates claim resolutions, and reduces operational costs**. The implications include improved customer satisfaction, faster decision-making, and competitive advantage. However, it also requires robust oversight to ensure accuracy and mitigate risks

The top risk to the usage of AI is cybersecurity



Cybersecurity is the top risk for insurers using AI. **Threats like data breaches and model attacks** can lead to significant financial losses, compromised customer data, and reputational damage. Insurers may consider implementing robust cybersecurity measures and adaptive risk management frameworks to mitigate these risks and ensure safe AI adoption.

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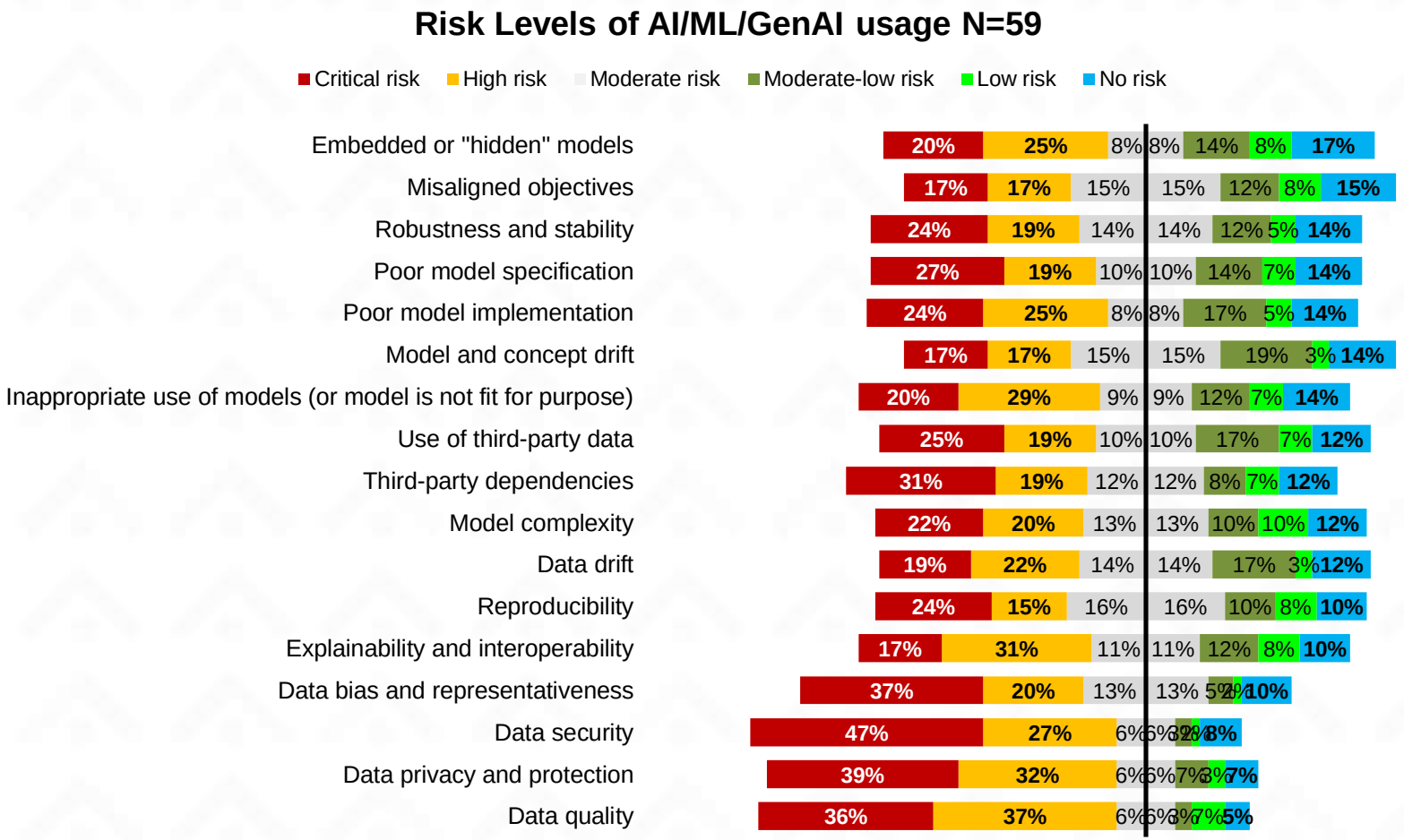
It is followed by data security and data privacy and protection



For insurers, prioritizing cybersecurity, data security, and privacy is crucial. **These measures protect sensitive customer data, ensure regulatory compliance, and maintain trust**. Effective risk management enhances operational efficiency, supports ethical AI usage, and strengthens competitive advantage across the value chain, from underwriting to claims processing, fostering a secure and trustworthy insurance ecosystem.

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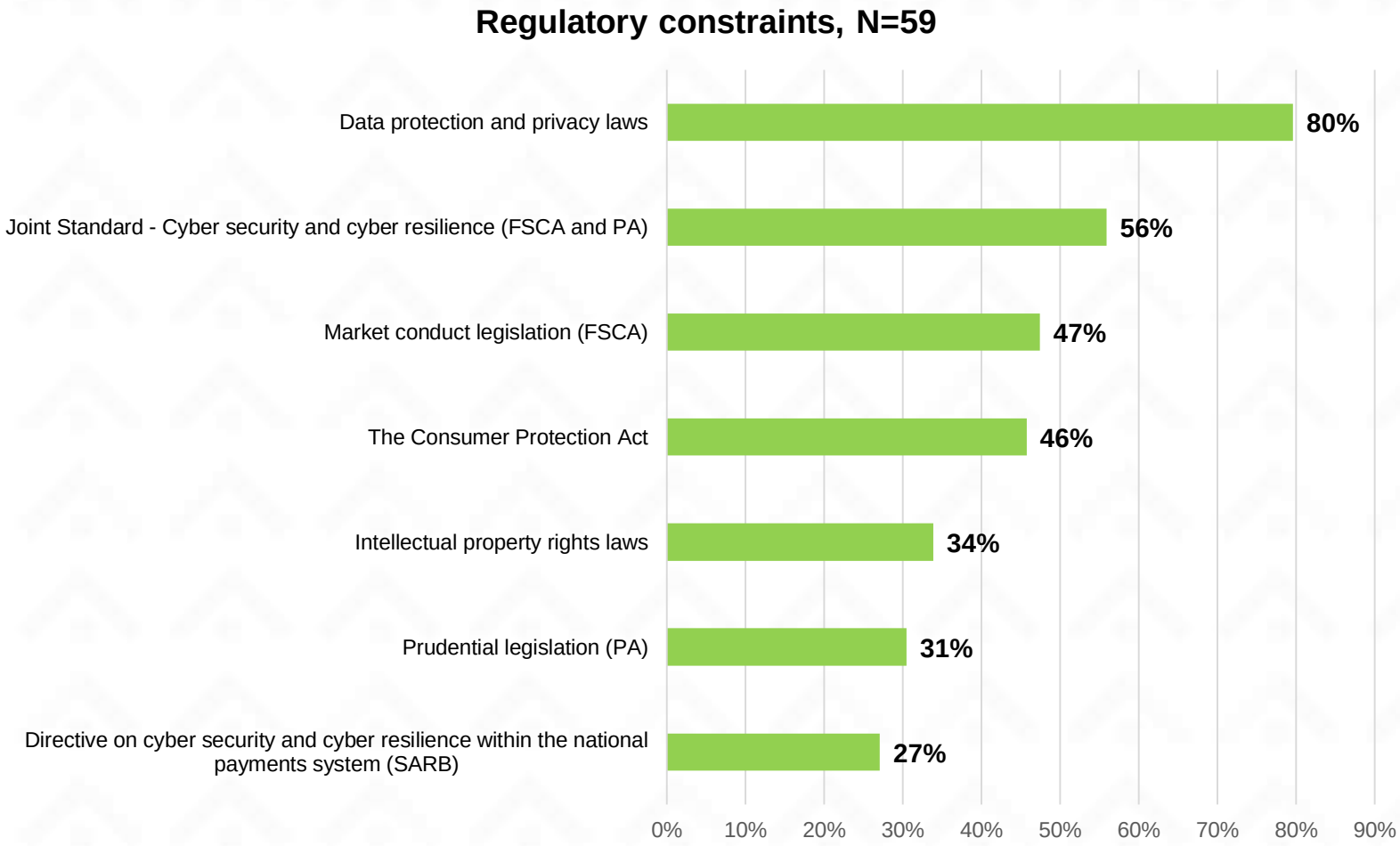
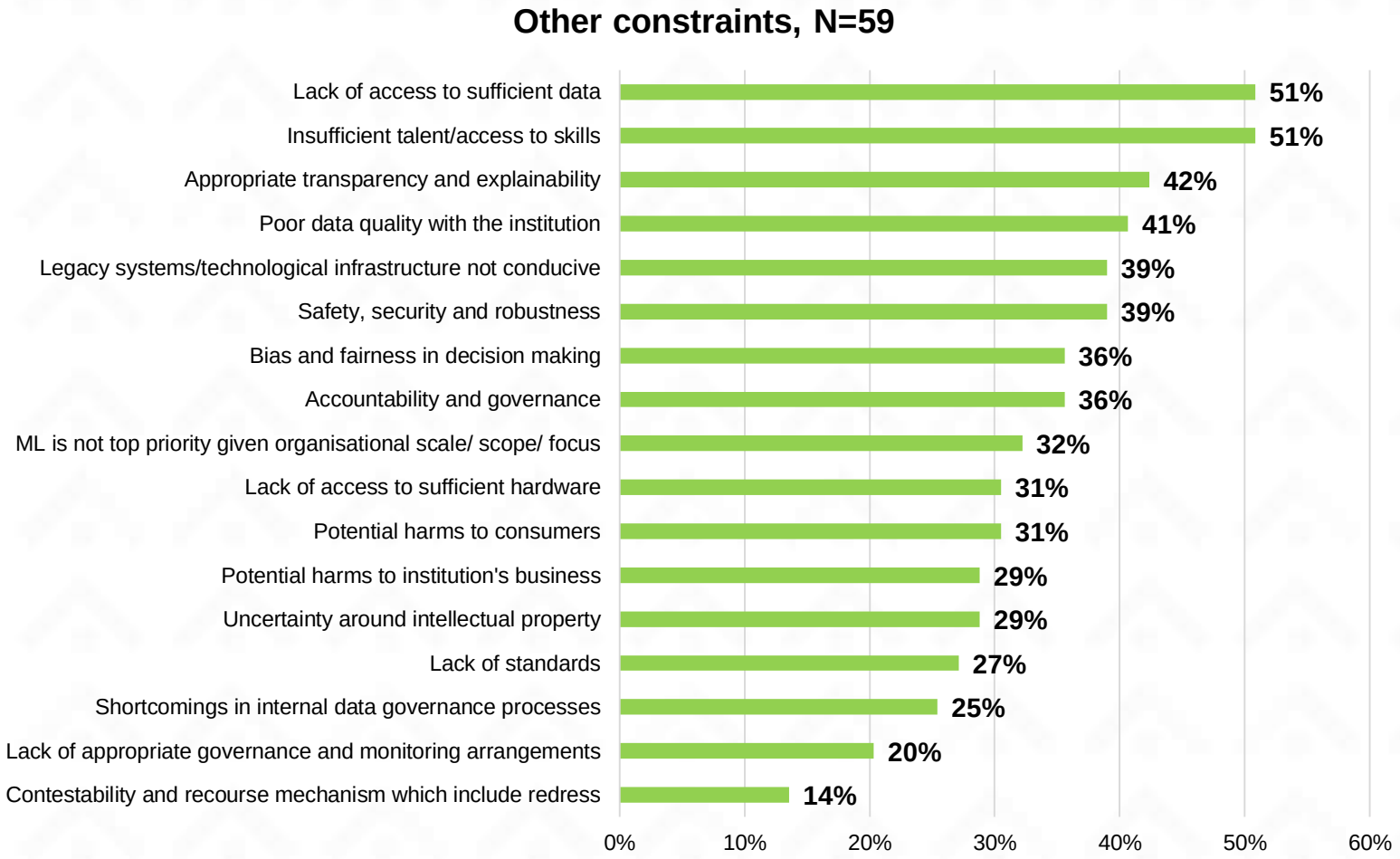
The leading regulatory constraint is data protection and privacy law



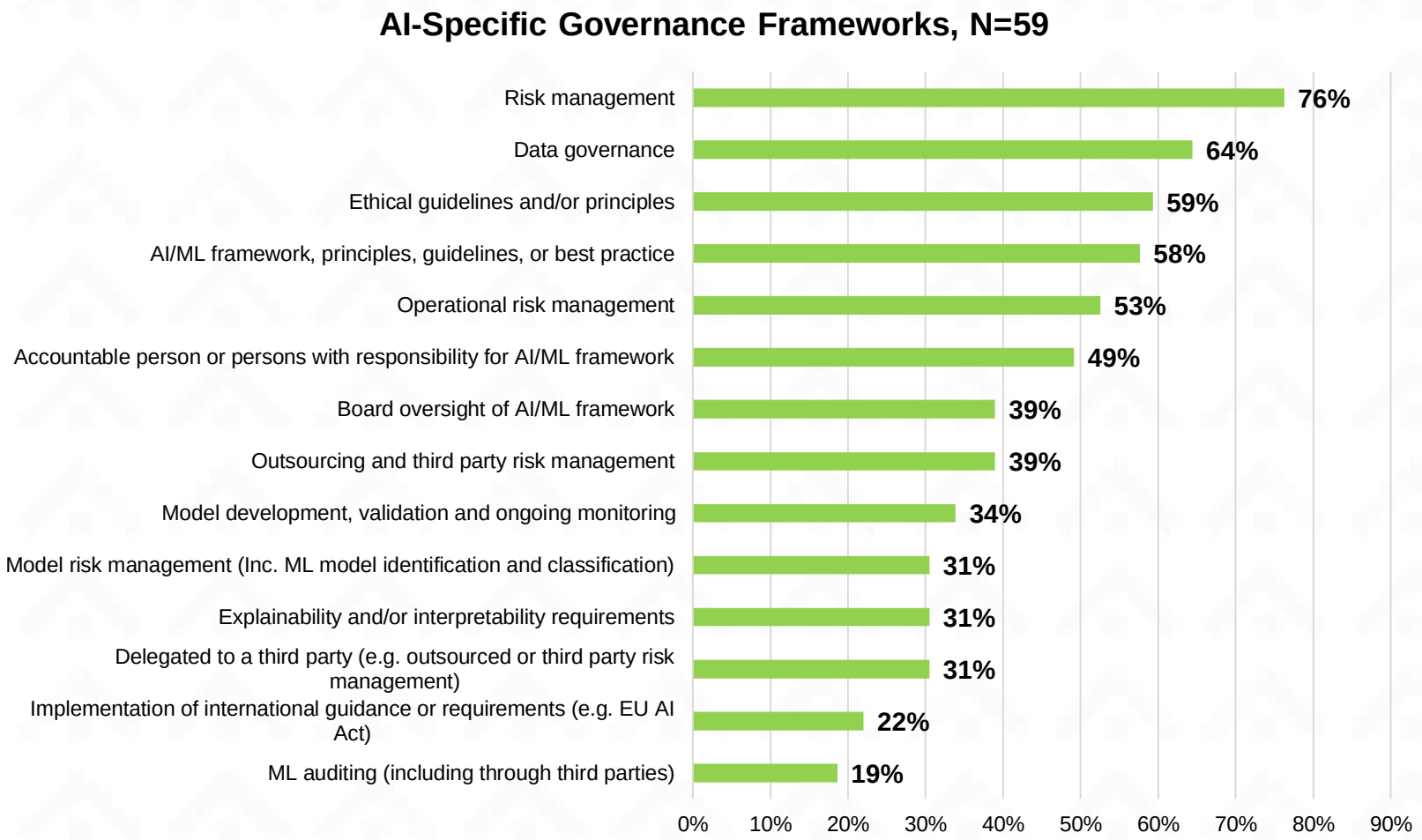
Data protection and privacy laws are the leading regulatory constraints for insurers. These laws require stringent data security measures, explicit consent for data processing, and transparency in data usage. Effective compliance ensures data integrity, enhances customer relationships, and strengthens the entire insurance value chain.

Other constraints include lack of access to sufficient data and insufficient talent/access to skills



Insurers face constraints like insufficient data access and talent shortages. **Limited data hampers accurate risk assessment and pricing, while talent gaps hinder innovation and digital transformation**. These challenges lead to operational inefficiencies and competitive disadvantages across the value chain, from underwriting to claims processing. Investing in data governance and talent development is essential to overcome these barriers.

Data governance and ethical guidelines and/or principles are the leading established governance frameworks



Data governance and ethical guidelines **ensure proper management, security, and ethical use of data throughout its lifecycle**. Compliance with these frameworks maintains data integrity, protects customer privacy, and avoids legal issues. **Effective data governance enhances decision-making, operational efficiency, and customer trust, strengthening the insurance value chain from underwriting to claims processing**.

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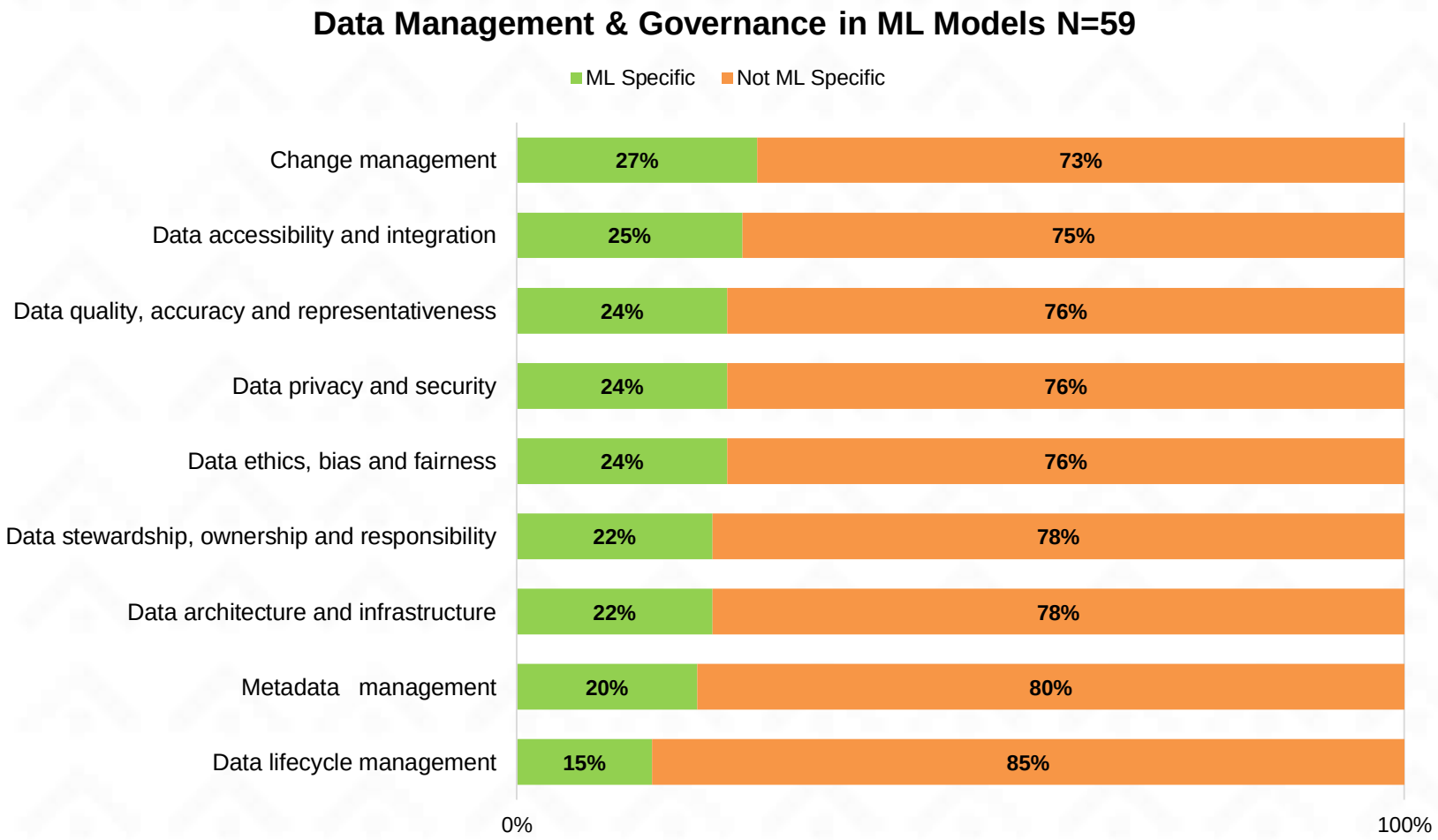
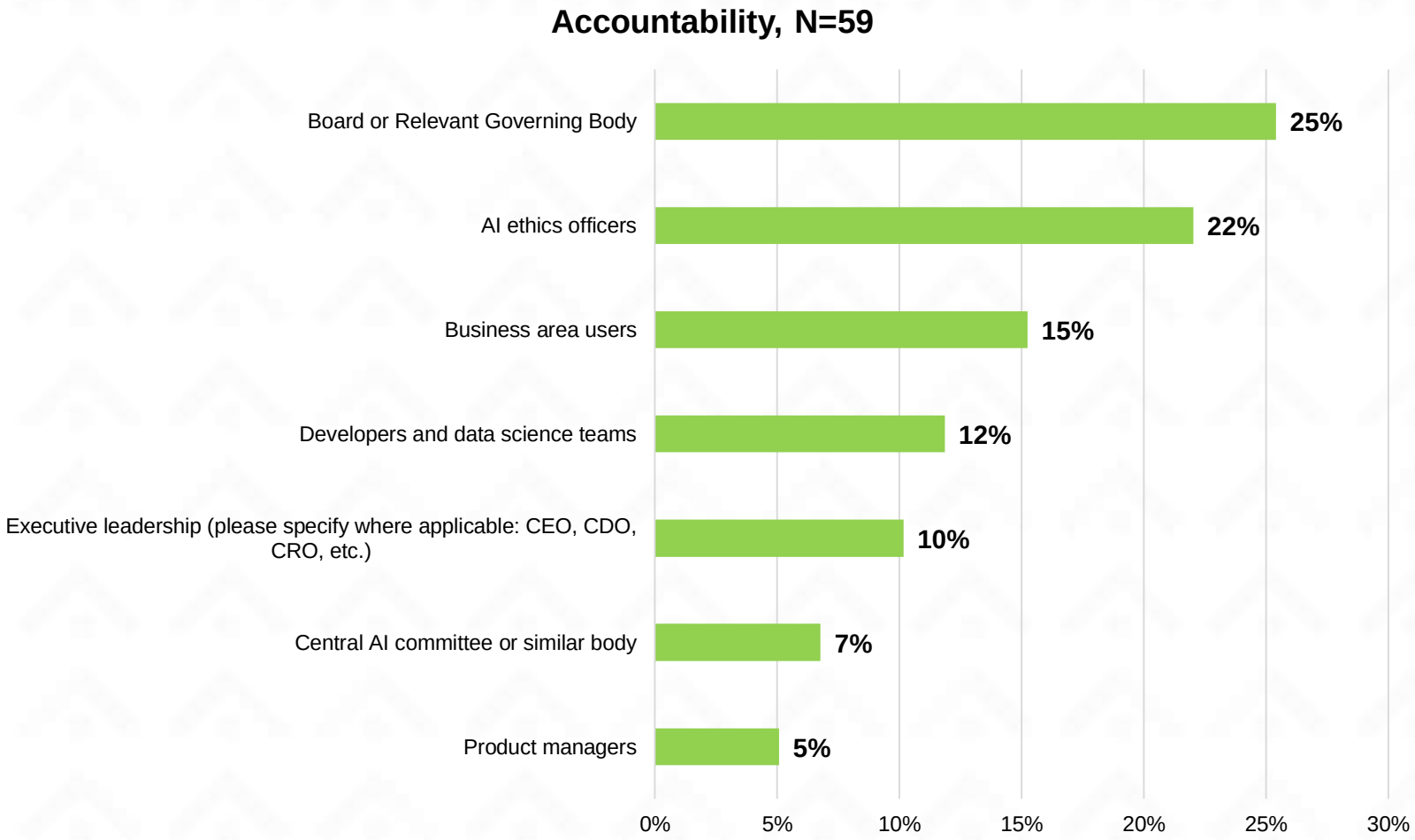
ML specific data management & governance is mainly focused on change management



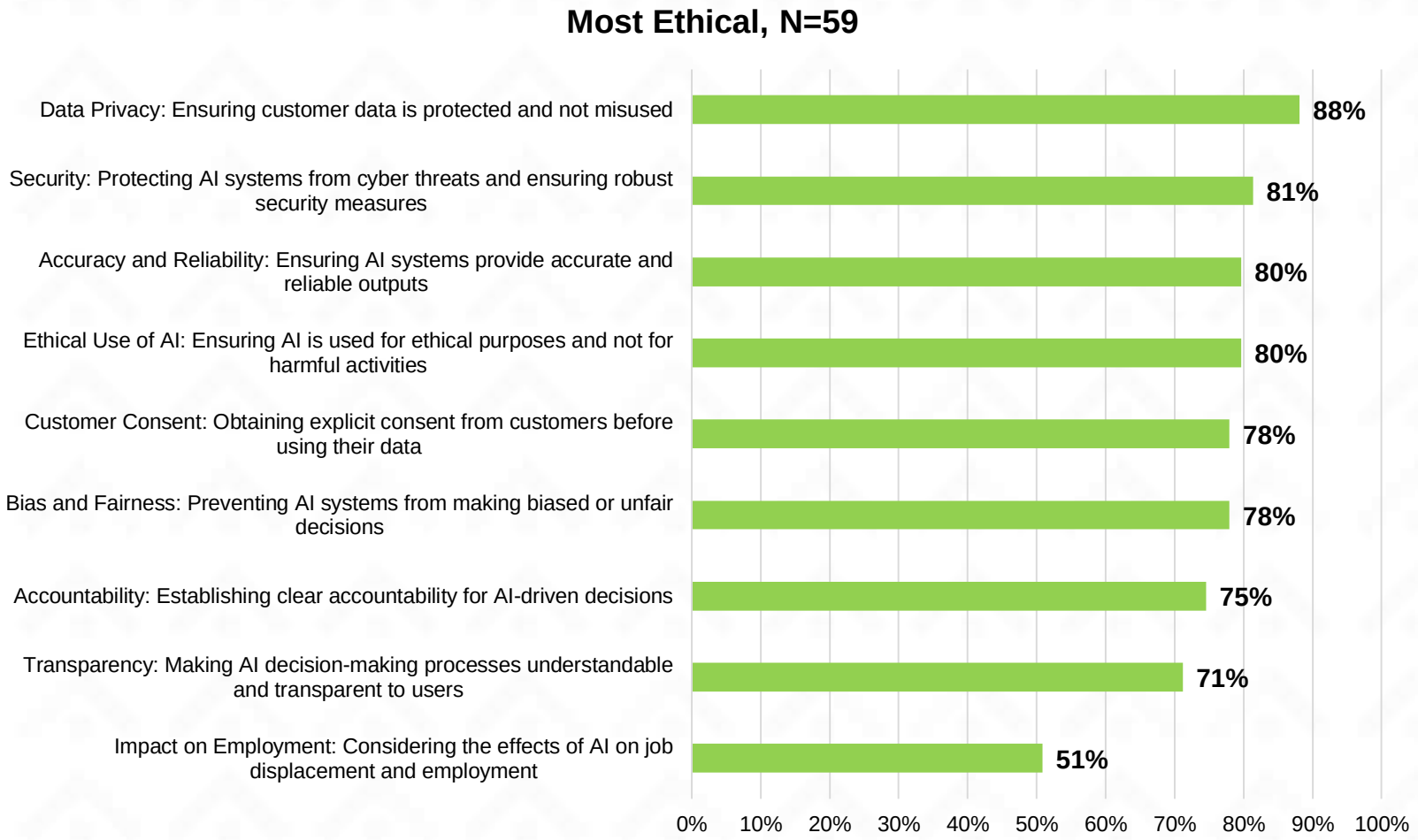
ML-specific data management and governance in insurance focus on change management to ensure data integrity. **This impacts claims management, pricing, segmentation, and underwriting by adapting to evolving standards and regulations**. Effective change management enhances data quality, supports accurate risk assessment, and improves decision-making, leading to more efficient and fair processes across the insurance value chain.

Accountability for AI usage mainly sits with the Board or the relevant governing body



Accountability for AI usage in insurance rests with the Board or governing body, ensuring oversight and compliance. This impacts claims management, pricing, segmentation, and underwriting by enforcing ethical standards and transparency. **Effective governance mitigates risks, enhances decision-making, and maintains customer trust, leading to more accurate and fair processes across the insurance value chain**.

Data privacy is the leading ethical consideration



Data privacy is the top ethical consideration for insurers, impacting the entire value chain. **Protecting customer data ensures compliance, maintains trust, and prevents legal issues**. This leads to more accurate risk assessments, fair pricing, and ethical decision-making in claims management, segmentation, and underwriting. Prioritizing data privacy strengthens customer relationships and enhances operational efficiency across the insurance value chain.

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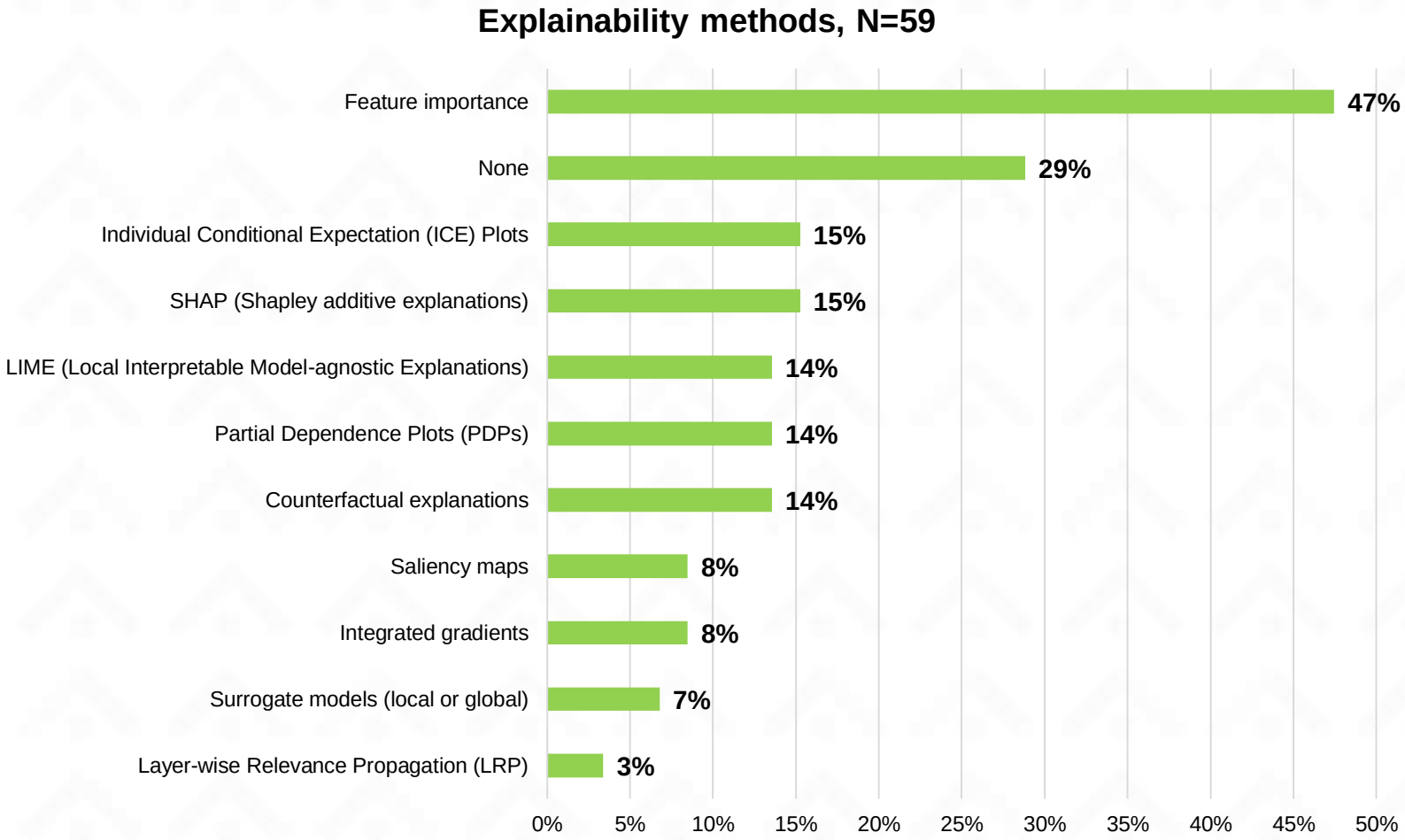
Feature importance is the leading explainability method employed



Feature importance is the leading explainability method for insurers, enhancing transparency in AI models. It helps identify key factors influencing decisions in claims management, pricing, segmentation, and underwriting. **This improves risk assessment, ensures fair pricing, and supports ethical decision-making**. Employing feature importance strengthens trust and operational efficiency across the insurance value chain.

What type of disclosures are there for customer-facing AI applications? For example, do you disclose that the application uses AI?



General Disclosure Practices:

- Many respondents indicated that they do not have customer-facing AI applications.
- AI is primarily used for back-end processes and to assist service and sales staff.
- Some respondents are conducting internal tests and experiments with AI before deploying customer-facing applications.

Transparency and Trust:

- Disclosures are essential for transparency, building trust, and complying with legal or ethical guidelines.
- Explicit opt-in consent is obtained where required.
- Disclaimers note the use of AI/ML in applications.

Regulatory Compliance:

- Regulatory compliance and data usage/privacy are key considerations.
- Companies ensure that AI-generated work products are not distributed externally.

Types of Disclosures:

- Behavioral Signals: Indicating AI interaction through chatbots or virtual assistants.
- Verbal Signals: Clear statements or notifications to users about AI usage.
- Technical Signals: Machine-readable statements embedded in content.
- Data Usage Disclosures: Information about data collection, processing, and usage.
- Algorithmic Transparency: Details about algorithms, their purpose, functionality, and potential biases.
- Ethical Considerations: Statements about ethical guidelines and principles.

Current Usage:

- AI is used internally for better communication, sentence construction, and paragraph modifications.
- Some companies have not yet implemented AI in customer-facing applications but plan to provide full disclosure and consent when they do.

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How does your organisation ensure that testing and validation of AI models is performed to guarantee the accuracy and reliability of their outputs?



Testing Environments:

- Extensive experimentation in sandbox environments before implementation into production.
- Testing occurs in non-production environments first before bringing to production.

Model Governance and Controls:

- Model governance and controls define how bias, quality performance, and assurance of models are managed.
- AI ethical framework guides what will and will not be done in AI.

External Validation:

- Models are built, trained, and validated by external vendors.
- External oversight on all material items from an independent third party.

Continuous Monitoring and Updating:

- Continuous monitoring of AI outputs and implementing changes as soon as possible.
- Regular testing before deployment and continuous checking of formulas and models.

Data Quality Assessment:

- Ensuring the quality of data used for training AI models by checking for completeness, accuracy, and consistency.
- Cross-validation techniques to assess model performance and generalization capability.

Error Analysis and Stress Testing:

- Analyzing errors made by the model to understand weaknesses and areas for improvement.
- Subjecting the model to challenging scenarios to evaluate robustness and reliability.

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How does your organisation ensure that testing and validation of AI models is performed to guarantee the accuracy and reliability of their outputs?



Bias and Fairness Testing:

- Ensuring that the model does not exhibit unfair biases and performs equitably across different demographic groups.

Explainability and Interpretability:

- Developing methods to make the model's decisions understandable to humans.
- Building trust by ensuring that the model's decisions are based on logical and transparent criteria.

Regulatory Compliance:

- Following standard SDLC methodologies that incorporate testing strategies at each stage of development.
- Implementing frameworks like the EU AI-Act for ethical and compliance audits.

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Are there effective approaches/methods to support the safe, sound, and responsible adoption of AI? If so, what are they and which approaches are most suitable for the financial sector?



AI Ethical Standards:

- Respondents indicated that they require strict AI ethical standards that define and box in AI usage to conform to values and objectives.
- Embedding safety and procedures within standards and setting controls against defined standards.

Governance and Oversight:

- Diligent governance at corporate level and individual models.
- AI governance processes must be firmly defined and addressed within an organization.
- Ethical review must be part of the process with oversight from an AI Governance Committee.

Regulatory Compliance:

- Regulatory oversight providing regulations and guidelines for the ethical use of AI.
- Implementing frameworks like the EU AI-Act for ethical and compliance audits.

Risk Management:

- Having a risk management framework, training and awareness programs, ethical guidelines, governance around model usage and outputs.
- Sound risk governance and oversight processes, sound data management practices.

Training and Awareness:

- Internal communication, awareness, and training.
- Development of principles and guidelines for safe AI adoption.

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Are there effective approaches/methods to support the safe, sound, and responsible adoption of AI? If so, what are they and which approaches are most suitable for the financial sector?



Human-in-the-Loop:

- Having a human-in-the-loop to ensure responsible AI adoption.
- Ensuring human oversight in AI processes.

Bias Mitigation:

- Using diverse and representative data sets to train AI models to minimize biases.
- Conducting bias and fairness audits.

Continuous Monitoring and Updating:

- Continuous monitoring of AI outputs and implementing changes as soon as possible.
- Regular testing before deployment and continuous checking of formulas and models.

Security and Privacy:

- Protecting sensitive financial data and systems.
- Ensuring security and privacy in AI processes.

Industry Standards:

- Following industry standards, guidelines, and regulations for responsible AI adoption.
- Adherence to policies, guidelines, and risk frameworks.

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How could the regulation be simplified, strengthened and/or extended to better encompass AI and address potential risks and harms?



Principle-Based Regulation:
- Regulation should be principle-based rather than rules-based.
- Building on existing regulations and governance principles.

Human Oversight and Education:
- Human oversight is imperative.
- Education and training methods to onboard AI effectively.

Risk-Based Frameworks:
- Implementing a risk-based approach where AI systems are categorized based on their potential impact.
- Stricter regulations for high-risk applications.

Transparency and Accountability:
- Mandating transparency in AI operations and decision-making processes.
- Requiring companies to disclose how their AI systems work, the data they use, and potential biases.

Ethical Guidelines and Best Practices:
- Establishing clear ethical guidelines and best practices for AI development and deployment.
- Focus on fairness, accountability, and non-discrimination.

Collaboration with Industry Players:
- Ongoing collaboration with industry players.
- Joint standards and guidelines issued by authorities.

Global Frameworks:
- Standardizing global frameworks for accountability.
- Aligning with international regulators.

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How are you using AI/ML across your value chain? Please give one example of your banking institution's application of AI across your institution's value chain and explain how AI and machine learning are used.



Security and Fraud Detection:

- AI is used in security endpoint tools to protect against cyber threats.
- Fraud detection is a critical application of AI/ML in insurers, implemented in risk management and transaction monitoring.

Operational Efficiency:

- AI is used to improve operational efficiency through automation of routine tasks.
- AI tools are used for operational risk monitoring and populating dashboards.

Customer Interaction:

- Chatbots are used to address customers' basic, frequent, repetitive requests.
- AI is used to allocate premium receipt transactions and replace repetitive tasks.

Data Analysis and Segmentation:

- AI is used for data segmentation and analysis.
- Auto-claims assessing based on data and customer behavioral analysis.

Digital Marketing:

- AI is used to tailor digital marketing campaigns.

Productivity Enhancement:

- AI tools like Microsoft Copilot and ZebraGPT are used to increase productivity, assist with drafting emails, etc.

How are you using AI/ML across your value chain? Please give one example of your banking institution's application of AI across your institution's value chain and explain how AI and machine learning are used.



Predictive Modeling:

Predictive modeling techniques are used to assess the probability of fraud on claims based on historical patterns.
Predictive modeling is also used to determine optimal auto-body repairer allocation.

Experimentation and POCs:

Organizations are experimenting with AI and conducting Proof of Concepts (POCs).
AI is used in test models for portfolio management strategies.

Cybersecurity:

AI is embedded in cybersecurity processes to ensure privacy, safety, and security of personal, private, and sensitive information.

Sentiment Analysis:

AI is used for sentiment analysis of client communications for customer care teams.

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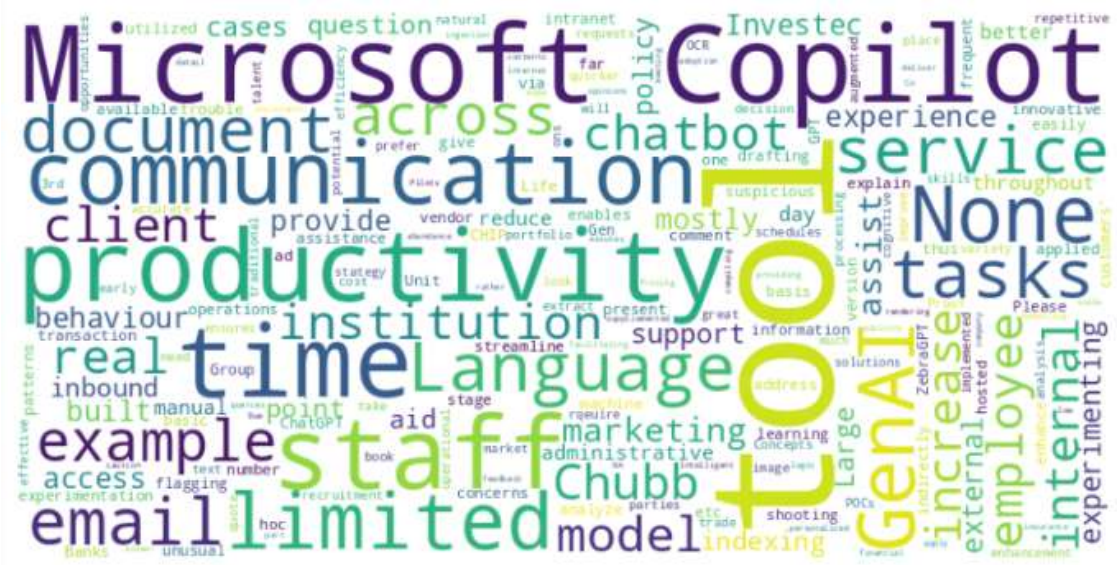
How are you using GenAI across your value chain? Please give one example of your banking institution's application of AI across your institution's value chain and explain how GenAI is used.



Productivity Tools:

- Microsoft Copilot and ZebraGPT are used to increase productivity, assist with drafting emails, and reduce manual administrative tasks.
- Internal GenAI chatbots enable staff to easily access information.

Experimentation and POCs:

- Organizations are experimenting with generative AI and conducting Proof of Concepts (POCs).
- Some 3rd parties are using and experimenting with generative AI.

Customer Interaction:

- Chatbots are used to address customers' basic, frequent, repetitive requests.
- Generative AI is used for document ingestion and providing feedback on the contents of documents to answer staff queries.

Operational Efficiency:

- Generative AI is used to improve operational efficiency.
- AI tools like Chubb GPT and CHIP are used for productivity and troubleshooting IT concerns.

Data Extraction and Analysis:

- Generative AI is used to extract data from external policy schedules for quote or book take-ons.
- Large Language Models and other AI tools are more accurate and cost-effective than traditional OCR tools.

Source:

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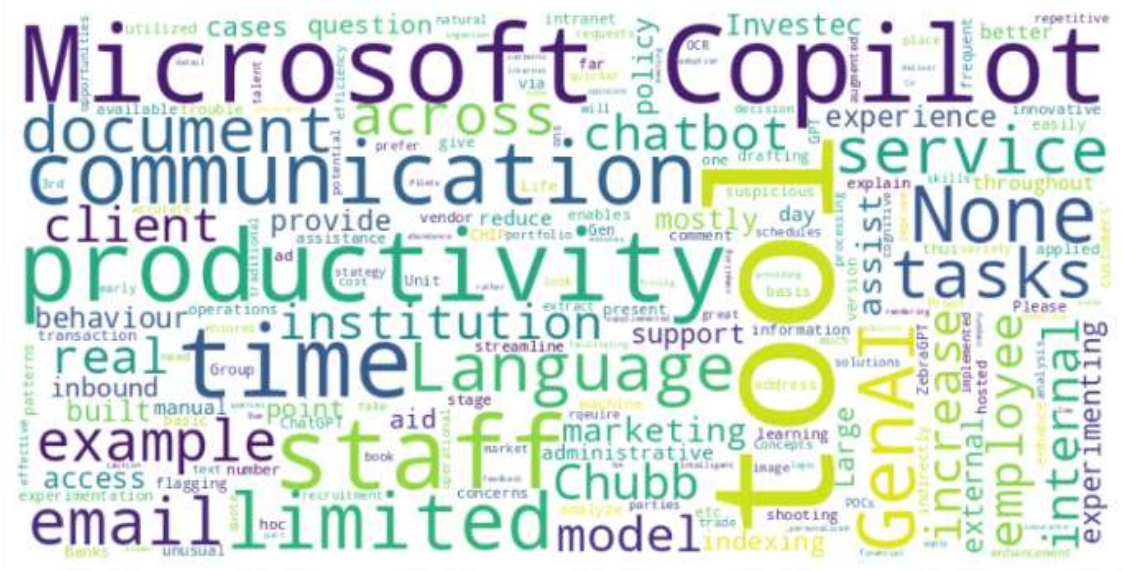

Marketing and Education:

- Generative AI is used to assist in generating sales and marketing collateral in the form of articles, artwork, and videos.
- AI is used to deliver personalized financial advisory services as part of the customer relationship management (CRM) process.

Security and Fraud Detection:

- Generative AI is used to analyze transaction patterns and customer behavior in real time, flagging unusual or suspicious behavior.

Document Compilation:

- Generative AI tools are used for compiling documents, rendering opinions, and facilitating meeting minutes.

Customer Experience:

- Generative AI is used to improve customer experience through real-time support and personalized interaction.

Investments Sector

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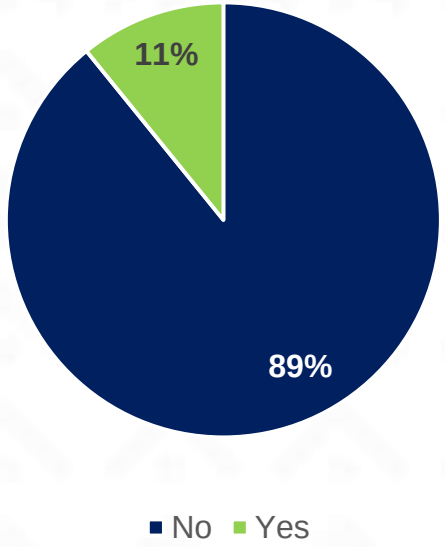
About the data

AI adoption in the investment sector N=1107



- 1107 investment institution responded to the survey.
- 120 institutions have adopted AI (11%).

Source:

Summary of the findings



- Over 60% of investment institutions intend to invest less than R1 million on AI adoption. The highest materiality of AI/ML application is in research. The highest materiality of GenAI application is in sales and marketing.
- The highest benefit of AI/ML usage is in data and analytics. The highest benefit of using GenAI is productivity followed by operational efficiency. Overall, the highest benefits of AI/ML/GenAI are data and analytics followed by productivity.
- The leading use/planned use of ML is in optimisation of internal processes. The leading use/planned use of GenAI is in productivity.
- The leading risks of AI/ML/GenAI usage include data privacy and protection, data security and data quality. They are followed by cybersecurity and data bias and representativeness.
- The most prominent regulatory constraint is data protection and privacy law. Other constraints include the insufficient talent/access to skills as well as ML not being a top priority given the organisational scale/scope/focus.
- Established governance frameworks include data governance, accountable person, and risk management. Accountability for AI/ML/GenAI sits with the Executive leadership. The most ML specific data management and governance in ML models is data privacy and security.
- The key ethical considerations is in data privacy through ensuring customer data us protected and not misused.
- Most investment institutions use no explainability methods, however, they are followed by institutions that use feature importance.

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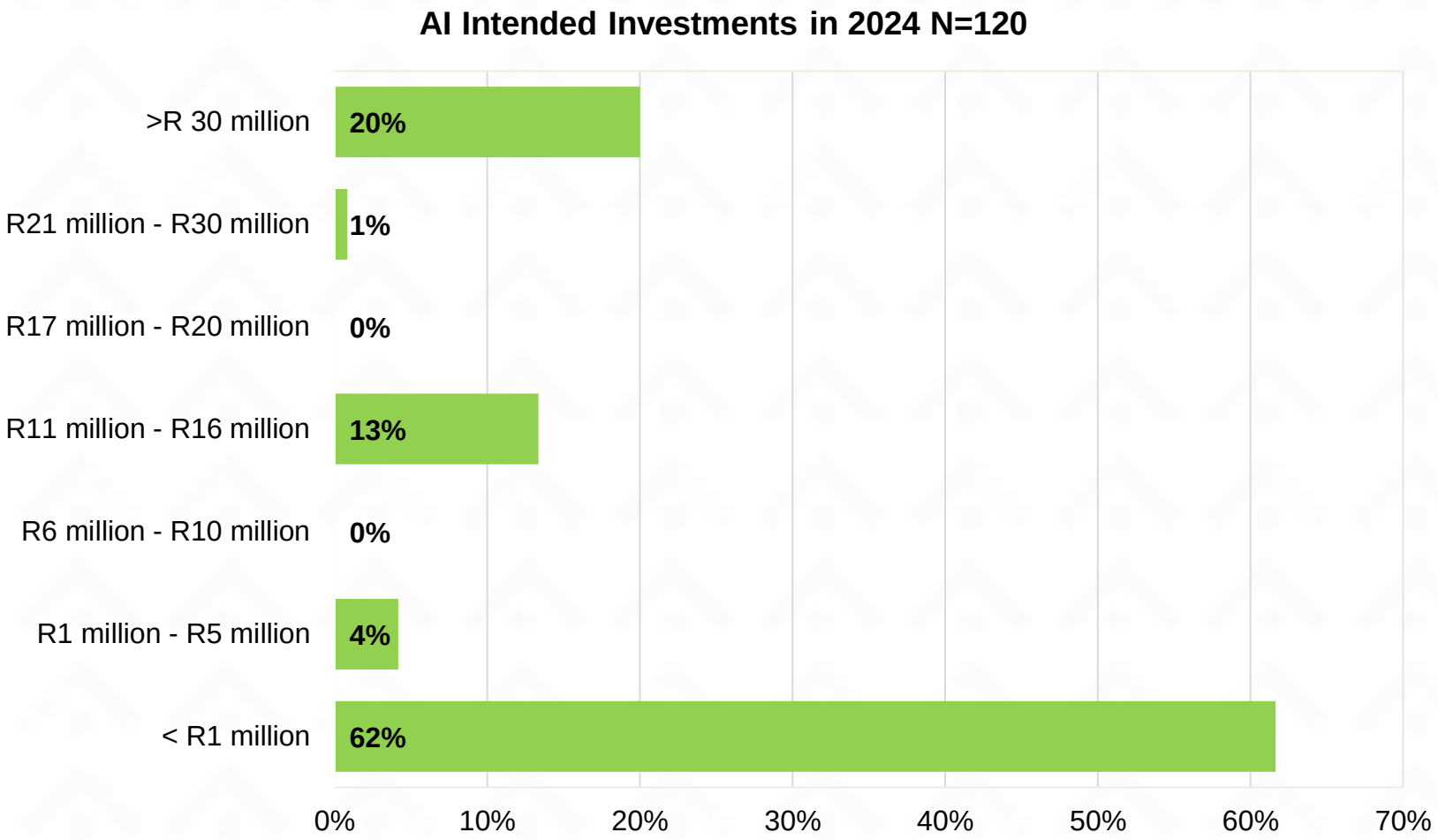
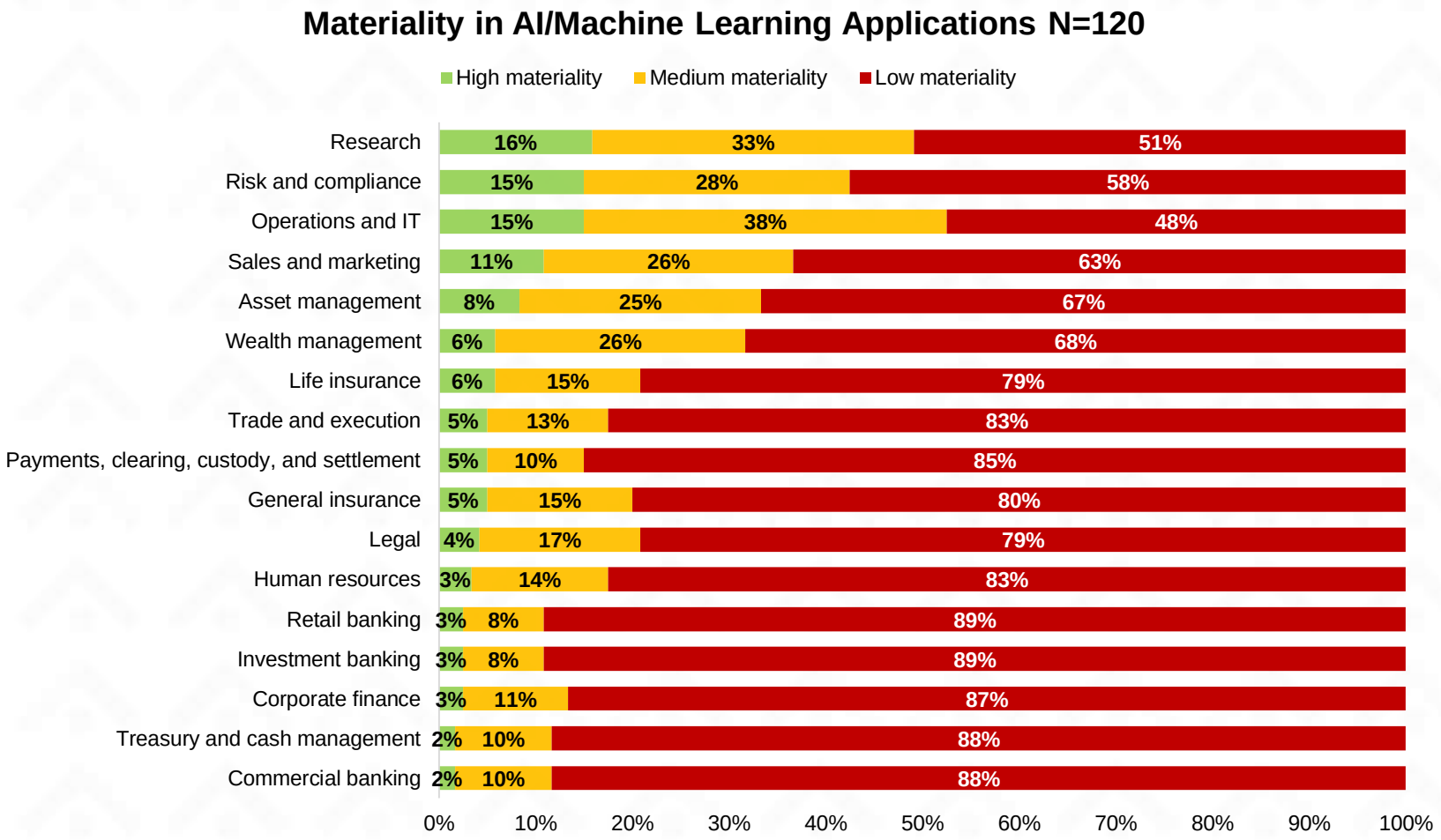
Over 60% of investment institutions intend to invest less than R1 million on AI adoption



Over 60% of investment institutions plan to invest less than R1 million in AI adoption, reflecting cautious spending. This conservative approach may stem from budget constraints, risk aversion, or a focus on incremental implementation. Despite limited investment, AI's potential for significant returns remains a compelling incentive.

Source:

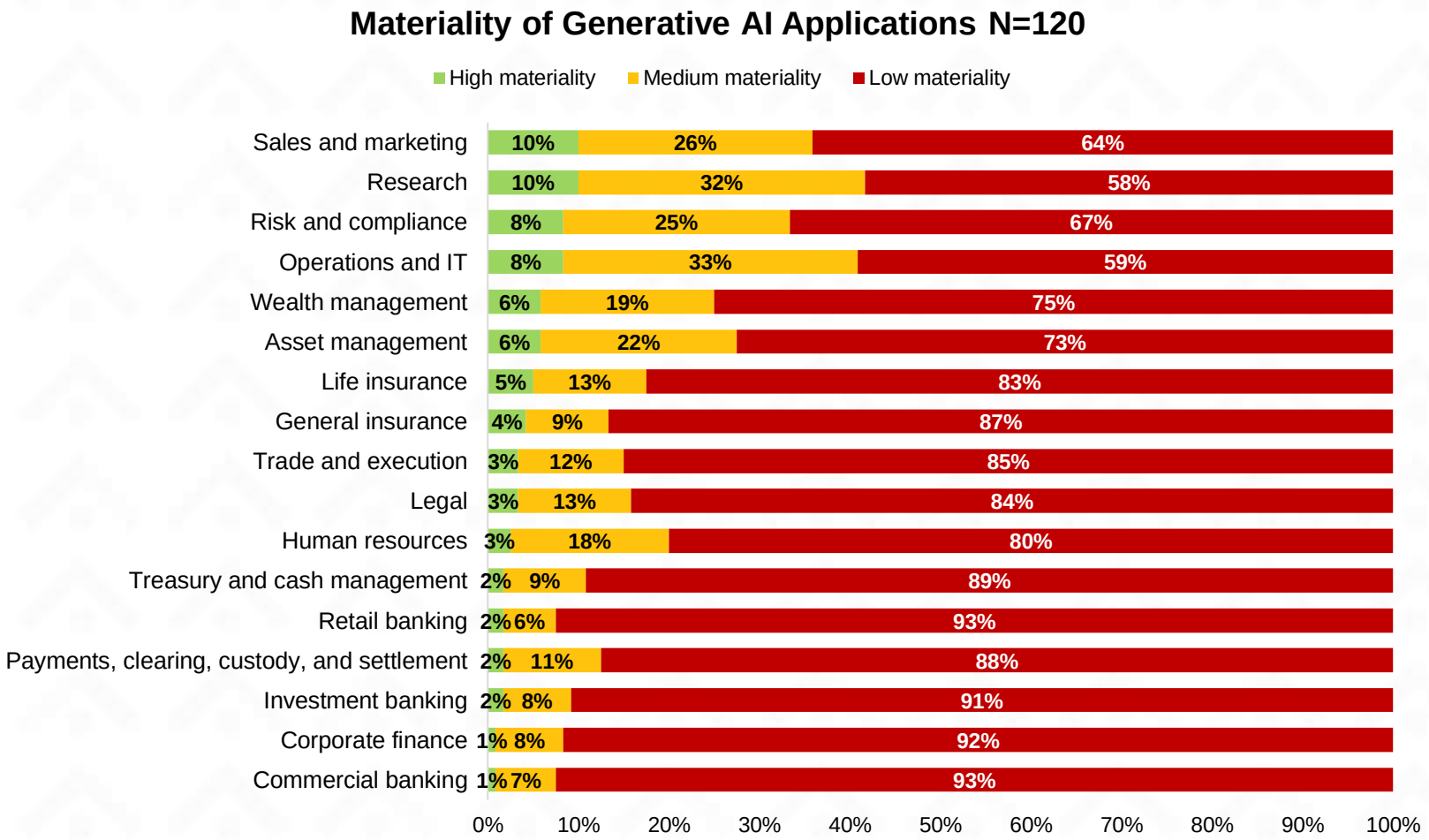
The highest materiality of AI/ML application is in research



AI/ML significantly enhances research in investment institutions by analyzing vast datasets, predicting market trends, and optimizing investment strategies. These technologies improve accuracy, speed, and depth of research, leading to more informed decisions and better risk management. This makes research a critical area for AI/ML application.

Source:

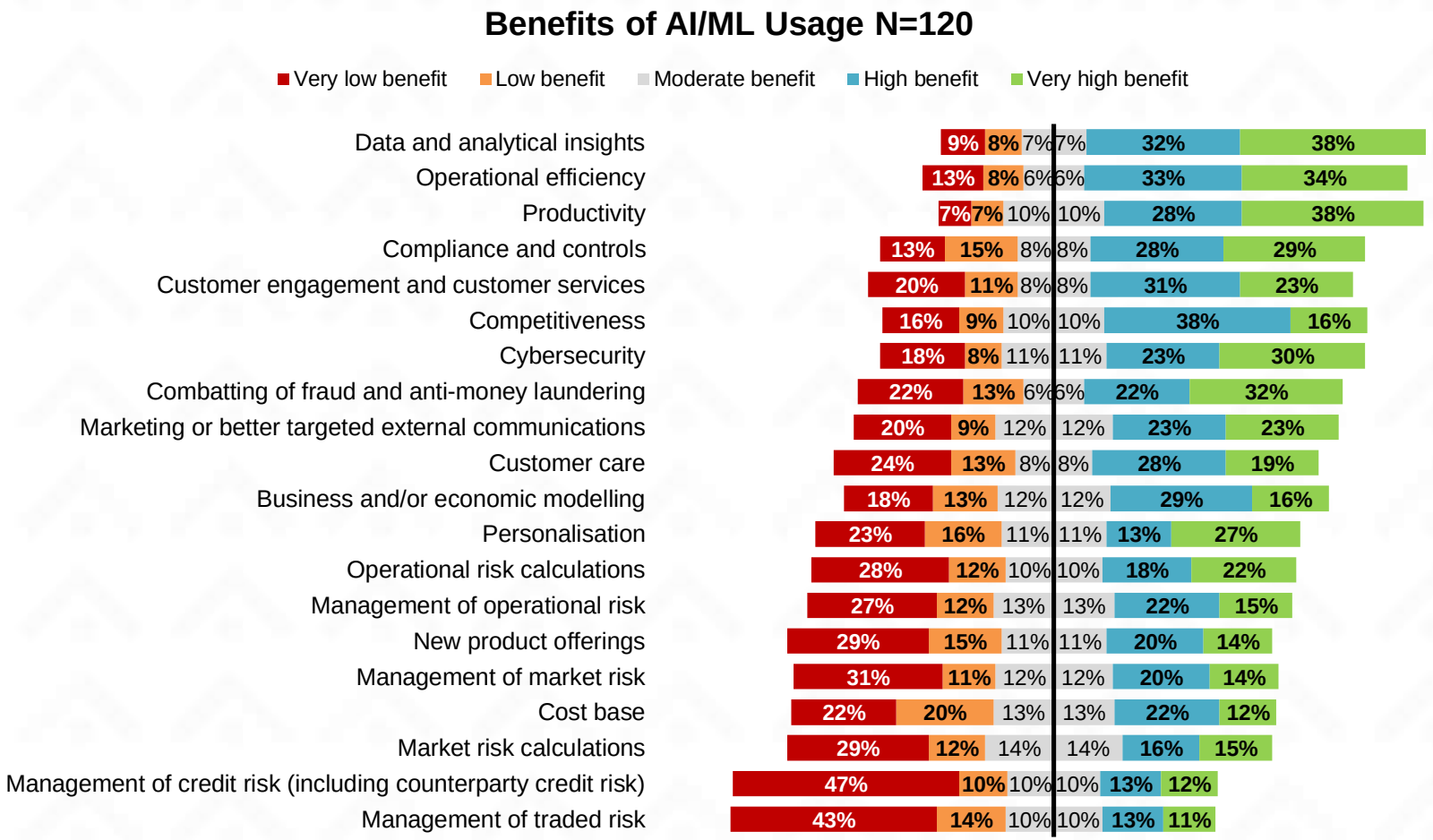
The highest materiality of GenAI application is in sales and marketing



GenAI's greatest impact in investment institutions is in sales and marketing. It personalizes customer interactions, optimizes campaigns, and generates insights, enhancing lead generation and customer segmentation. This boosts efficiency and effectiveness, driving better client engagement and higher conversion rates.

Source:

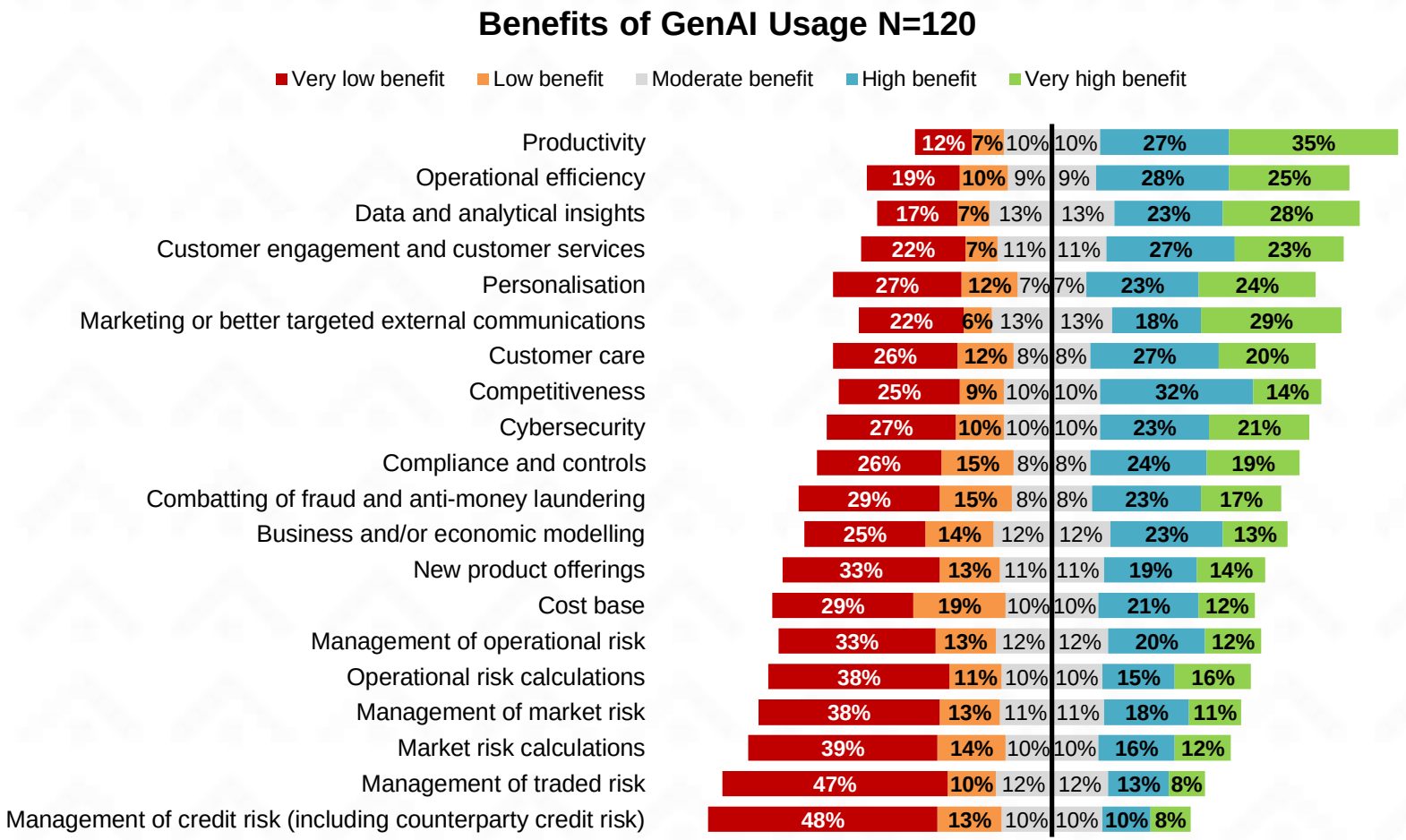
The highest benefit of AI/ML usage is in data and analytics



AI/ML's greatest benefit for investment institutions lies in data and analytics. These technologies analyze vast datasets, uncover patterns, and predict trends, enhancing decision-making and risk management. This leads to more accurate insights, optimized i.

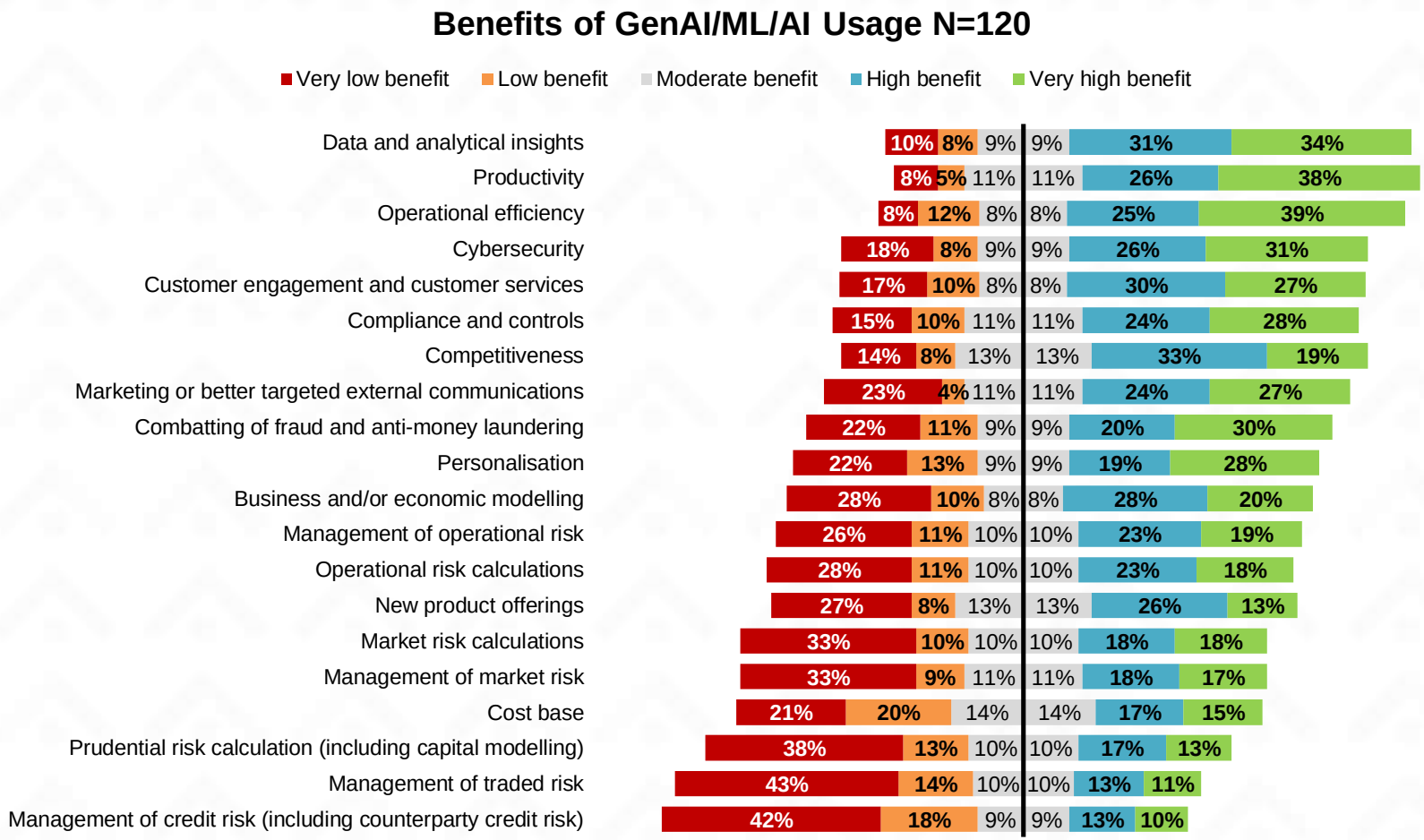
Source:

The highest benefit of using GenAI is productivity followed by operational efficiency

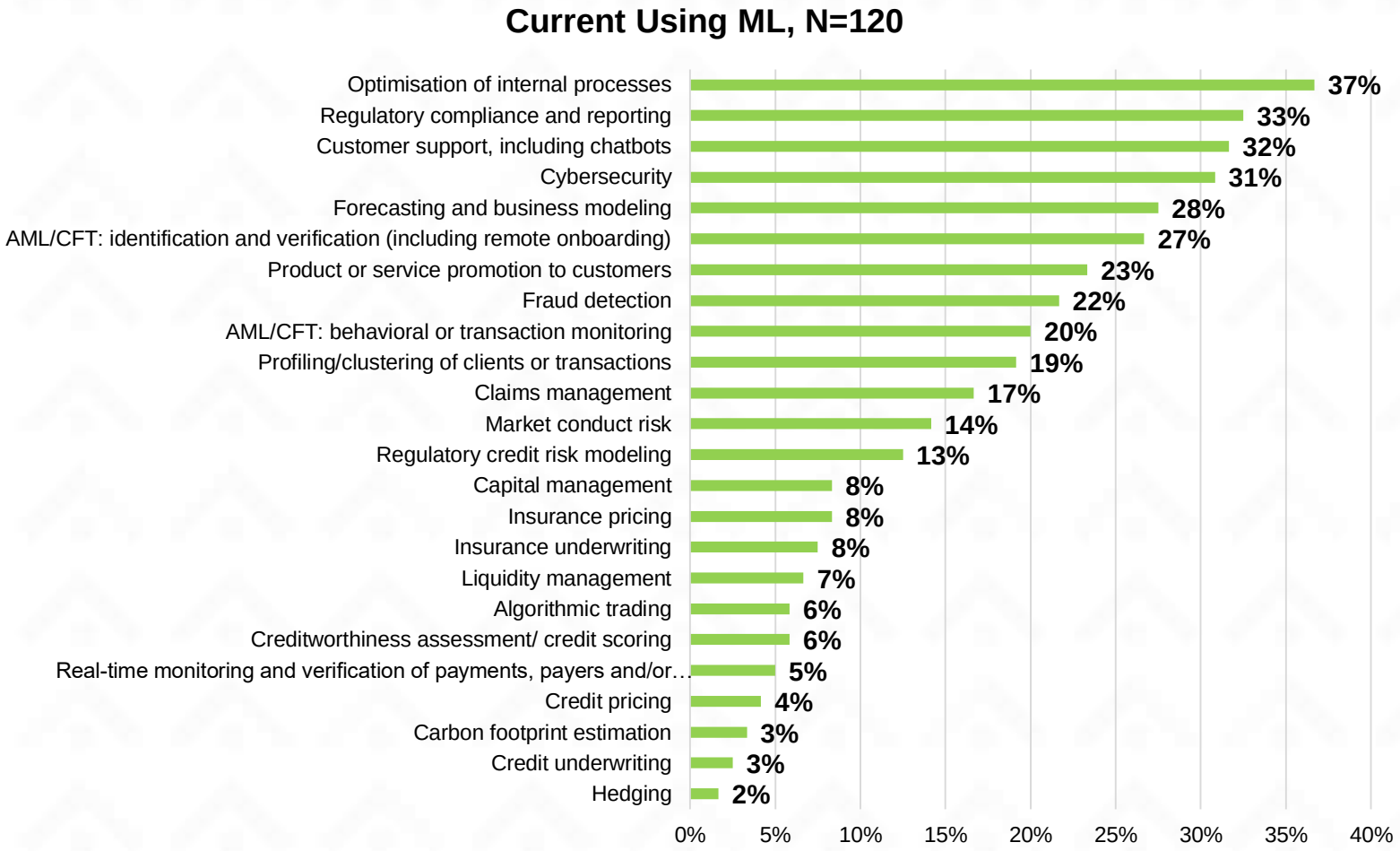


GenAI boosts productivity in investment institutions by automating tasks, generating insights, and streamlining workflows. This leads to faster decision-making and improved efficiency. Operational efficiency follows, with GenAI optimizing processes, reducing costs, and enhancing resource management, ultimately driving better performance and profitability.

Overall, the highest benefits of AI/ML/GenAI are data and analytics followed by productivity



The leading use/planned use of ML is in optimisation of internal processes



Investment institutions use ML to optimize internal processes, enhancing efficiency and reducing costs. ML automates tasks, improves workflows, and speeds up decision-making by quickly analyzing data and generating insights. This leads to better resource allocation, faster responses to market changes, and overall improved performance, making it a critical area for ML application.

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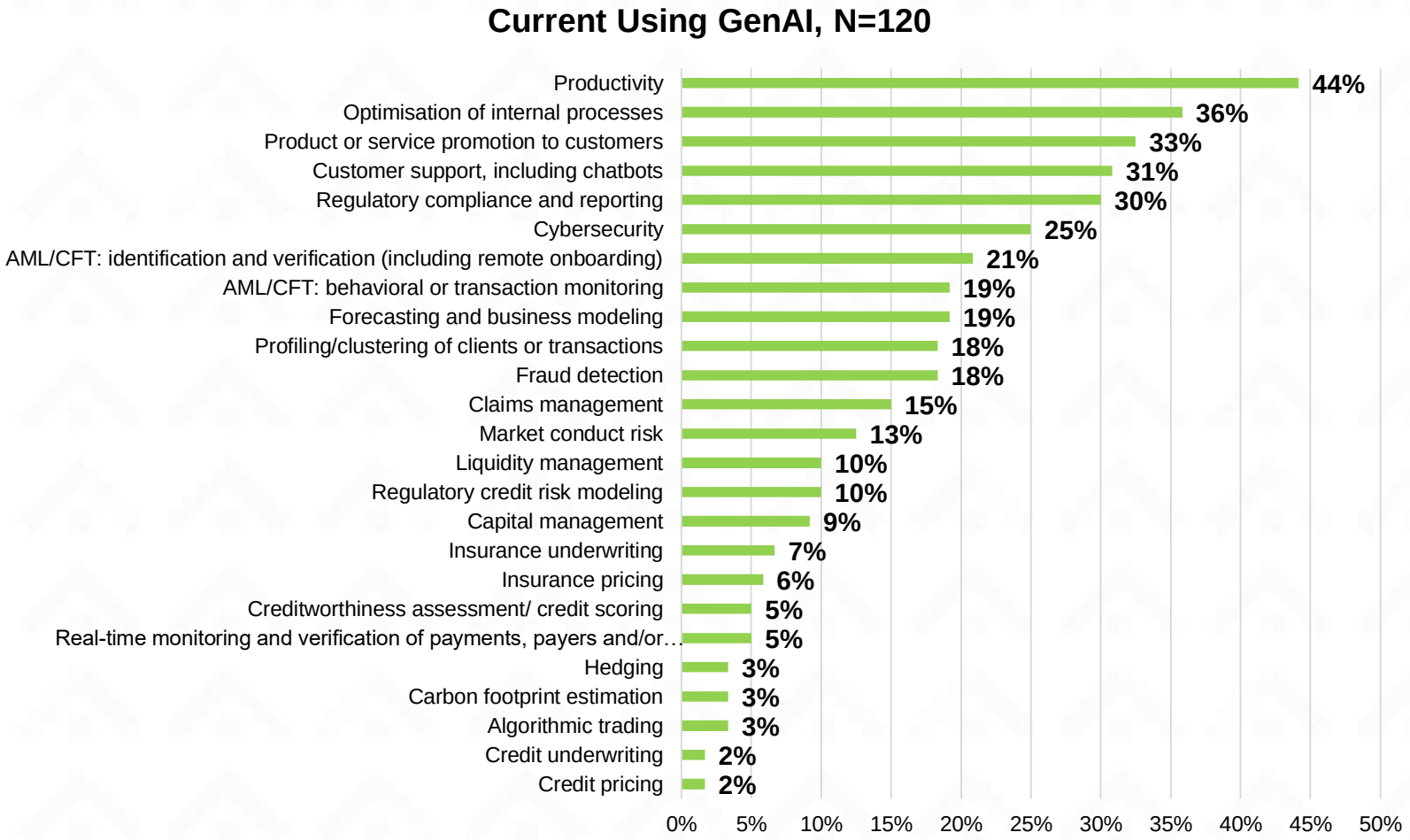
The leading use/planned use of GenAI is in productivity



GenAI enhances productivity in investment institutions by automating tasks, generating insights, and streamlining workflows. This leads to faster decision-making and improved efficiency. The implications include better resource allocation, reduced operational costs, and increased profitability, making GenAI a critical tool for maintaining competitive advantage.

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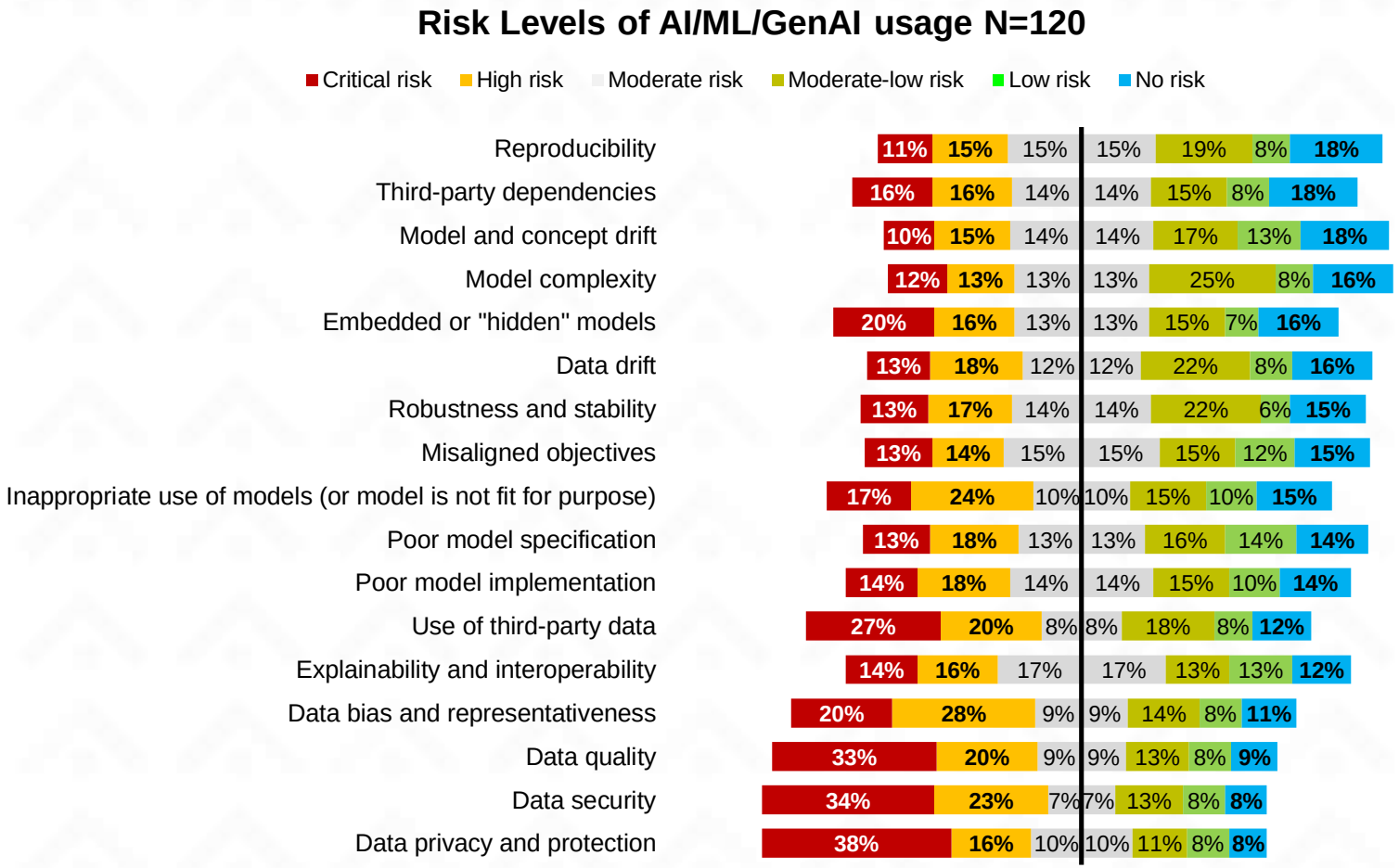
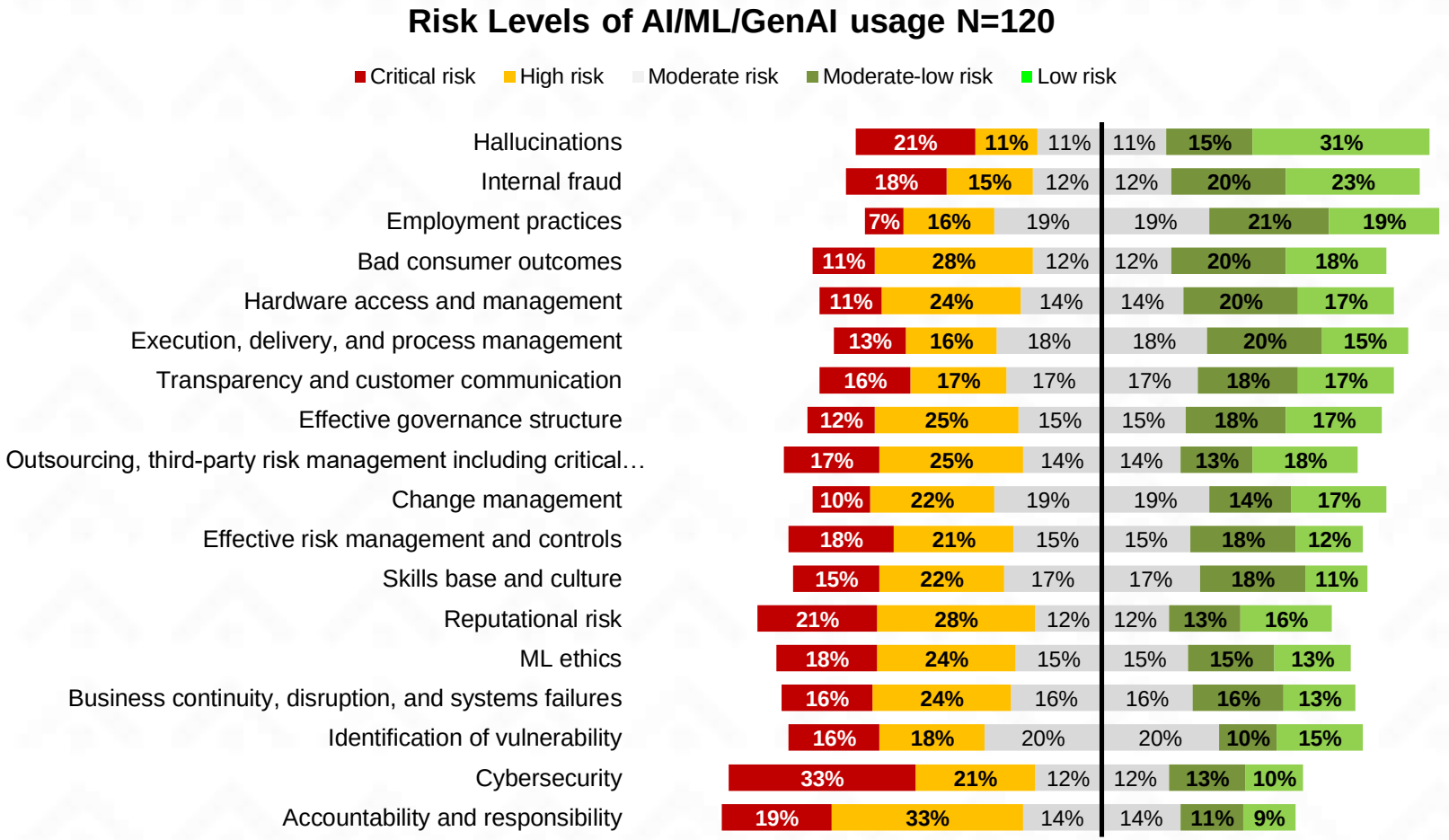
The leading risks include data privacy and protection, data security and data quality



Leading risks in AI/ML for investment institutions include data privacy, data security, and data quality. Ensuring data protection and accuracy is crucial to prevent breaches, maintain trust, and comply with regulations. Poor data quality can lead to flawed decisions, financial losses, and reputational damage.

Source: OECD (2023)

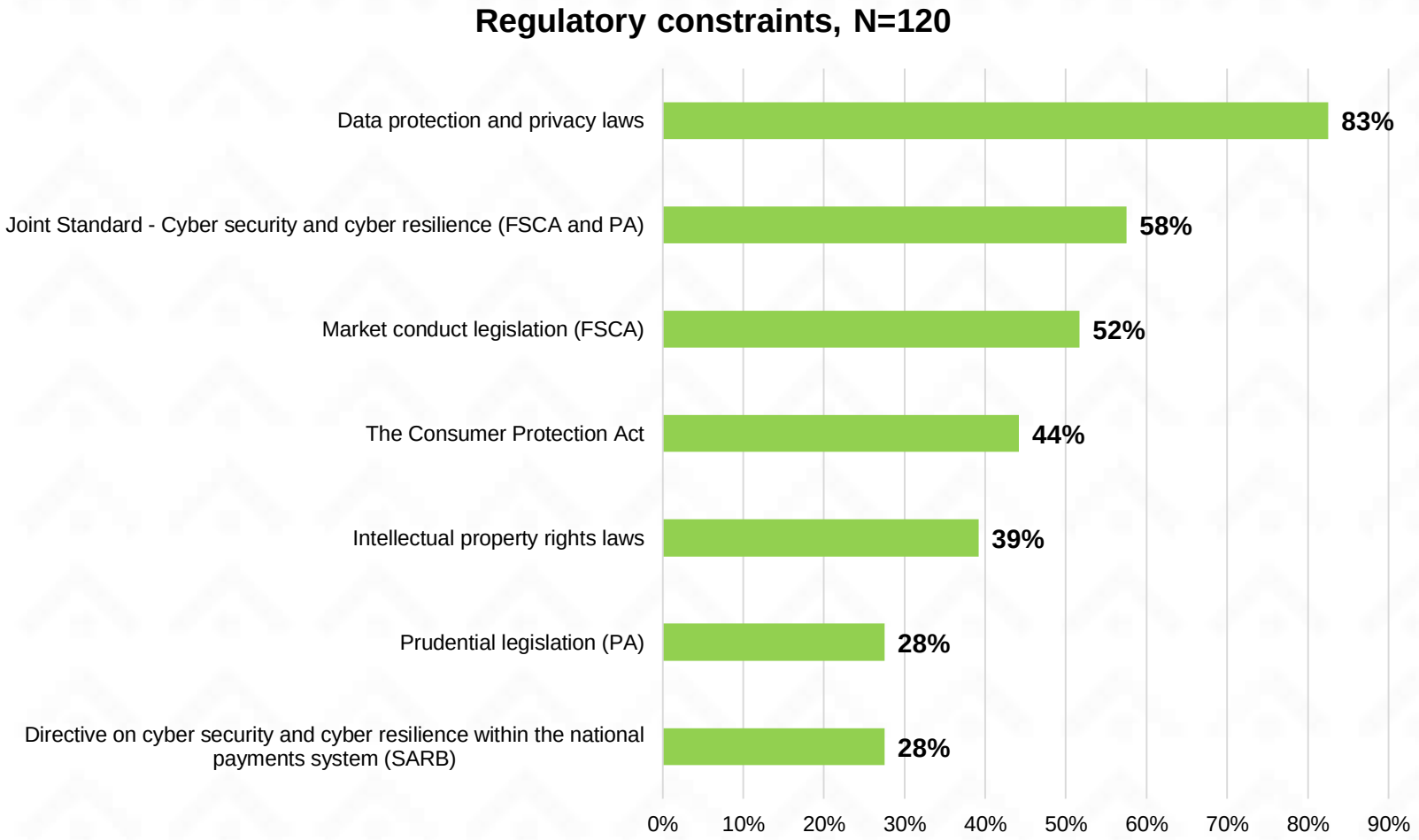
The highest risks also include cybersecurity and data bias and representativeness



AI systems can reinforce biases and exclusion, disproportionately affecting vulnerable and underrepresented groups like ethnic minorities, children, the elderly, and individuals with lower education or skills. The lack of representation of women in certain training datasets can also lead to biased results. **This issue is particularly pronounced in low- and middle-income countries**, where insufficient data to train AI systems on local specifics and overall lower representation in the AI industry exacerbate the disparate impact.

Source: OECD (2023)

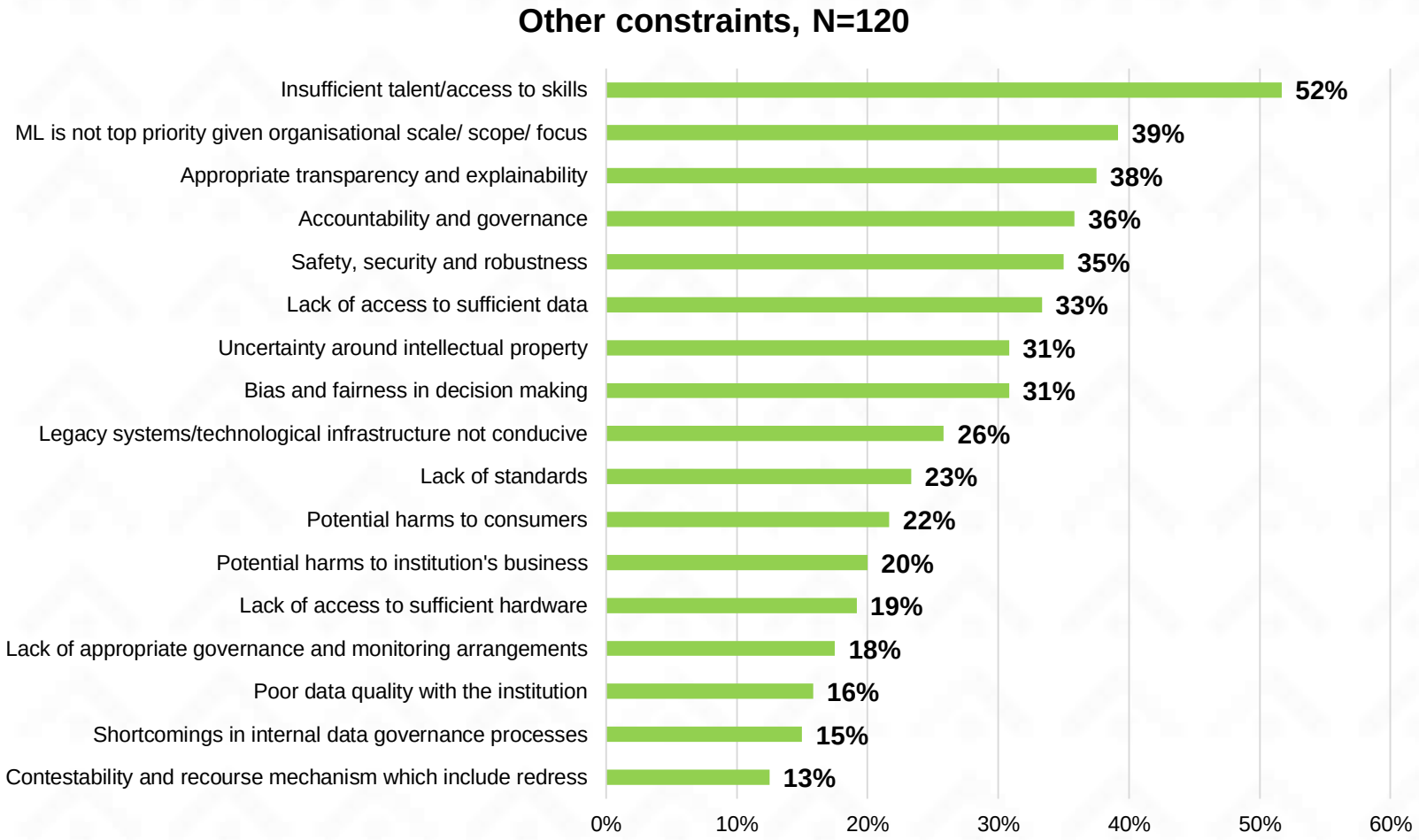
The most prominent regulatory constraint is data protection and privacy law



Data protection and privacy laws, such as POPIA, GDPR and CCPA, impose stringent requirements on investment institutions. These regulations ensure the safeguarding of sensitive financial data, requiring robust compliance frameworks. Non-compliance can lead to severe penalties, reputational damage, and legal liabilities, making adherence essential for maintaining trust and operational integrity.

Source: Redress Compliance (2025)

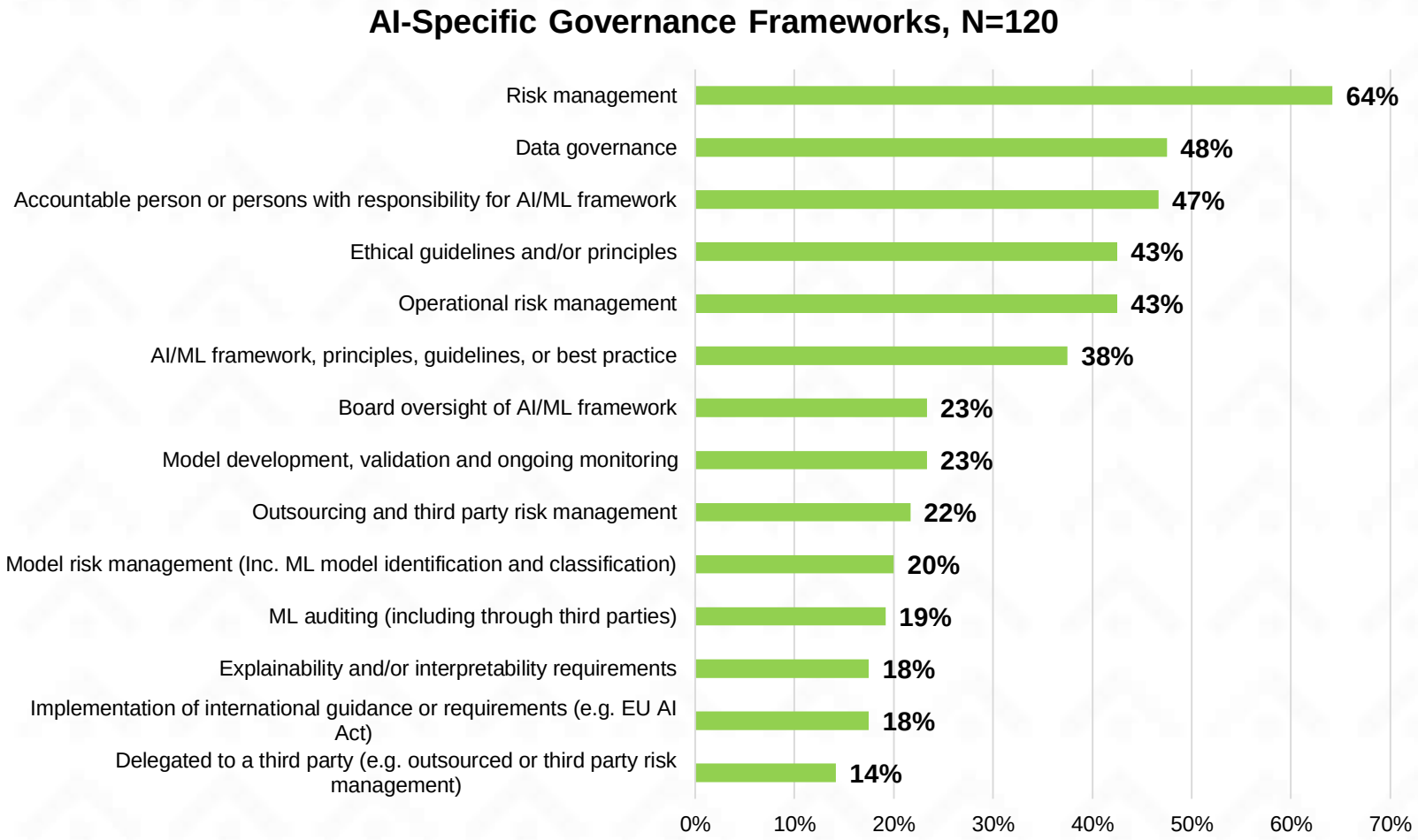
Other constraints include the insufficient talent/access to skills as well as ML not being a top priority given the organisational scale/scope/focus



Investment institutions face constraints like insufficient talent and ML not being a top priority due to organizational scale and focus. This limits their ability to fully leverage AI/ML, potentially hindering innovation and competitive advantage. Addressing these gaps is crucial for maximizing AI/ML benefits and driving growth

Source: Investment Banking Council of America (2023)

Established governance frameworks include risk management and data governance



Investment institutions use established governance frameworks like risk management and data governance to ensure data integrity, compliance, and operational stability. These frameworks mitigate risks, enhance decision-making, and maintain regulatory adherence, crucial for protecting sensitive data, maintaining trust, and optimizing performance.

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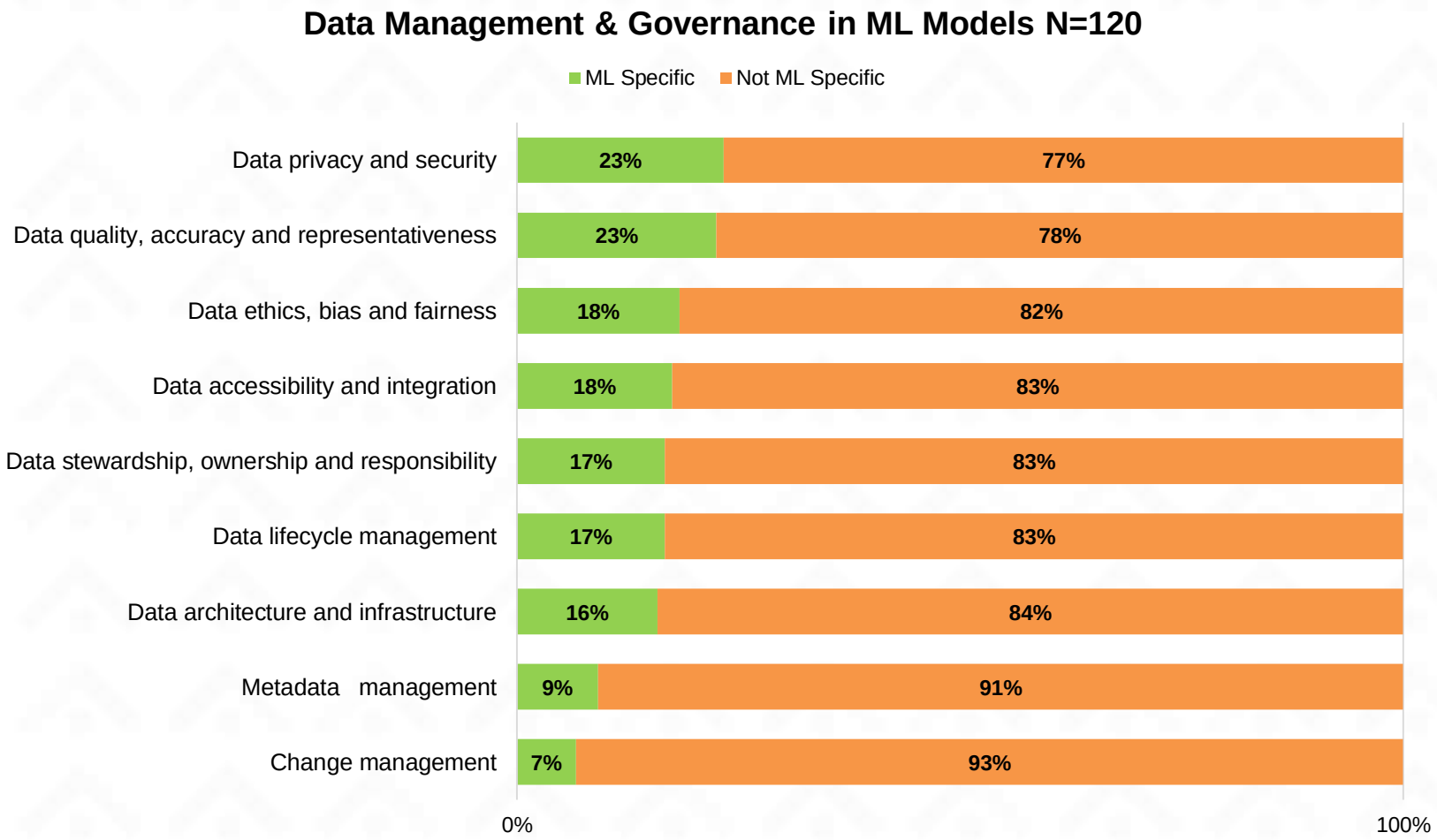
The most ML specific data management and governance in ML models is data privacy and security



Data privacy and security are paramount in ML models for investment institutions. Ensuring robust protection prevents breaches and maintains trust. Implications include compliance with regulations, safeguarding sensitive financial data, and mitigating risks. Poor data security can lead to financial losses, reputational damage, and legal penalties.

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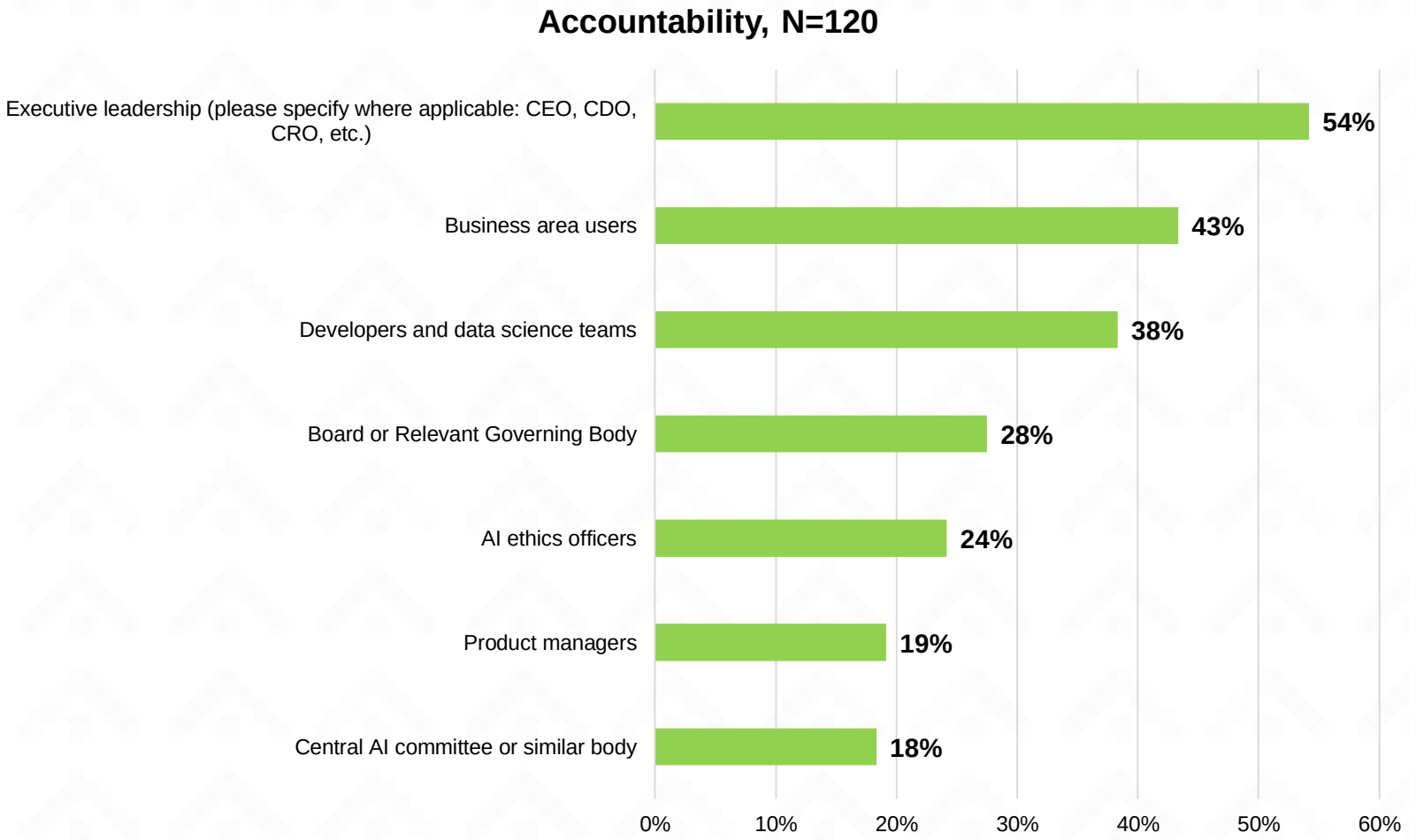
Accountability for AI/ML/GenAI sits with the Executive leadership



Executive leadership is accountable for AI/ML/GenAI in investment institutions, ensuring ethical practices, regulatory compliance, and strategic alignment. This responsibility includes overseeing implementation, addressing risks, and fostering transparency. Implications involve maintaining trust, mitigating legal liabilities, and optimizing AI benefits while safeguarding against potential harms.

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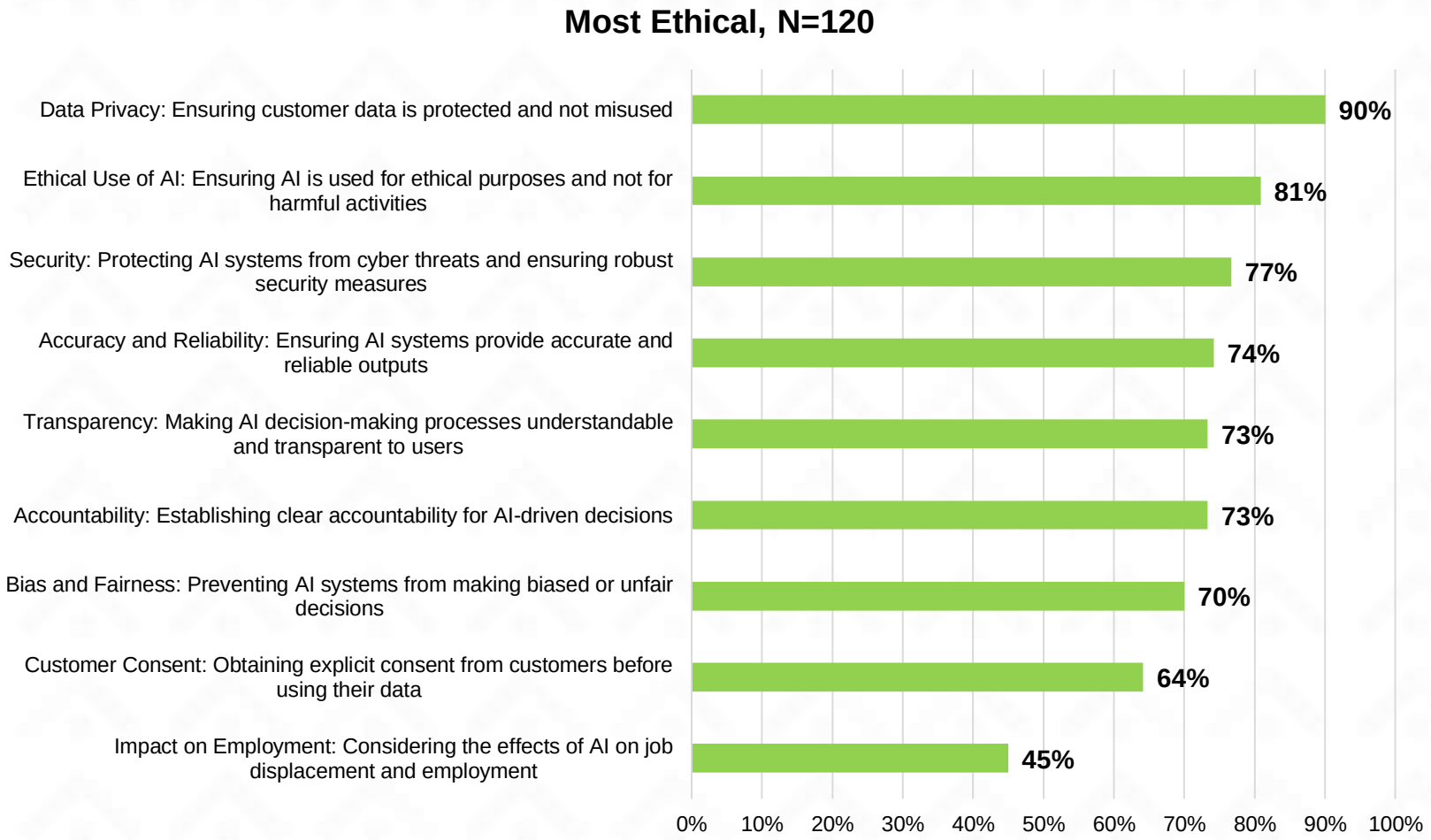
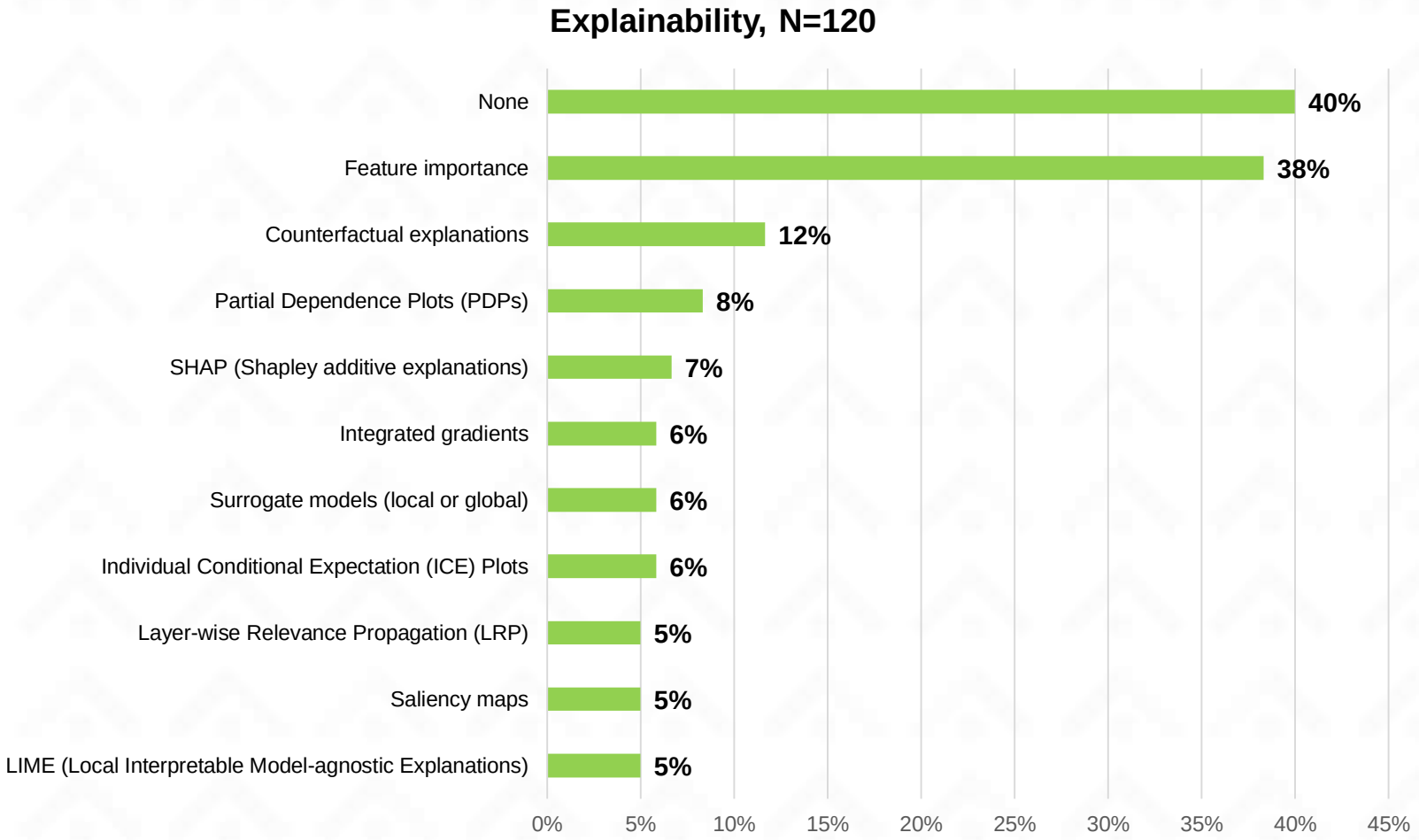
The key ethical considerations is in data privacy through ensuring customer data us protected and not misused



Data privacy is crucial for investment institutions, ensuring customer data is protected and not misused. This builds trust, complies with regulations, and prevents breaches. Implications include maintaining customer confidence, avoiding legal penalties, and safeguarding the institution's reputation.

Source:

Most investment institutions use no explainability methods, however, they are followed by institutions that use feature importance



Many investment institutions lack explainability methods for AI models, leading to potential trust and compliance issues. Those that do often use feature importance to interpret model decisions. This enhances transparency and accountability, helping institutions meet regulatory requirements and build customer trust

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What type of disclosures are there for customer-facing AI applications? For example, do you disclose that the application uses AI?



General Disclosure Practices:

- Many respondents indicated that they do not have customer-facing AI applications.
- AI is primarily used for internal processes and decision-making.
- Some companies are conducting internal tests and experiments with AI before deploying customer-facing applications.

Transparency and Trust:

- Disclosures are essential for transparency, building trust, and complying with legal or ethical guidelines.
- Explicit opt-in consent is obtained where required.
- Disclaimers note the use of AI/ML in applications.

Regulatory Compliance:

- Regulatory compliance and data usage/privacy are key considerations.
- Companies ensure that AI-generated work products are not distributed externally.
- Ethical Considerations: Statements about ethical guidelines and principles.

Current Usage:

- AI is used internally for better communication, sentence construction, and paragraph modifications.
- Some companies have not yet implemented AI in customer-facing applications but plan to provide full disclosure and consent when they do.

How does your organisation ensure that testing and validation of AI models is performed to guarantee the accuracy and reliability of their outputs?



Continuous Monitoring:

- Continuous back testing and verification.
- Monitoring outputs against delivered results.
- Regular quality assurance testing.

Internal and External Validation:

- Thorough internal testing, including A/B testing and staggered rollouts.
- Independent model validation and review.
- Due diligence questionnaires and third-party reviews.

Human Oversight:

- Human-in-the-loop validation.
- Senior staff checks for marketing materials.
- Manual processes and four-eye checks.

Structured Testing Frameworks:

- Effective testing protocols in line with local and global policies.
- Stress testing against edge cases and adversarial inputs.
- Cross-validation and performance metrics.

Data Quality and Preprocessing:

- Ensuring data quality and cleanliness.
- Preprocessing steps like handling missing data and normalizing features.
- Use of sanitized and checked historical data.

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How does your organisation ensure that testing and validation of AI models is performed to guarantee the accuracy and reliability of their outputs?



Compliance and Ethical Considerations:

- Adhering to regulatory standards such as GDPR.
- Bias and fairness testing to detect discriminatory behavior.
- Structured testing and validation frameworks.

Limited Use and Development:

- Some respondents are still in the development phase.
- AI models used primarily for internal purposes or specific functions like marketing.
- Limited use for client-facing applications.
- These insights highlight the importance of rigorous testing, human oversight, and adherence to regulatory standards to ensure the reliability and accuracy of AI models.

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Are there effective approaches/methods to support the safe, sound, and responsible adoption of AI? If so, what are they and which approaches are most suitable for the financial sector?



Ethical and Regulatory Measures:

- Emphasis on ethical, regulatory, and technological measures.
- Compliance with local and global AI governance standards.
- Adherence to regulations such as South Africa's POPIA.

Human Oversight and Education:

- Human-in-the-loop validation.
- Education and training of employees and customers.
- Senior staff checks for marketing materials.

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Limited Use and Development:

- Some organizations are in the development phase.
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- Limited use for client-facing applications.

Governance Frameworks:

- Establishing regulatory compliance frameworks.
- Publishing guidance notices.
- AI Governance Committee oversight.

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How could the regulation be simplified, strengthened and/or extended to better encompass AI and address potential risks and harms?



Ethical and Regulatory Measures:

- Emphasis on ethical, regulatory, and technological measures.
- Compliance with local and global AI governance standards.
- Adherence to regulations such as the EU Artificial Intelligence Act and South Africa's POPIA.

Human Oversight and Education:

- Human-in-the-loop validation.
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How are you using AI/ML across your value chain? Please give one example of your banking institution's application of AI across your institution's value chain and explain how AI and machine learning are used.



Administrative and Operational Uses:

- AI tools for operational risk monitoring and populating dashboards.
- Reducing margin of error in probability-driven forecasting.
- AI in risk analysis and risk management.

Customer Interaction:

- Chatbots to assist members or potential members with products and processes.
- AI for writing letters and assisting with emails to difficult clients.

Research and Analysis:

- AI for summarizing large data sets into digestible bites.
- AI for inflation forecasting and data classifications based on historic data.

Human Resources and Compliance:

- AI in HR for drawing up policies and procedures.
- AI tools for operational risk monitoring.

Marketing and Presentations:

- AI for presentations and IT virus software on machines and servers.
- AI for generating meeting notes and summaries.

Financial Applications:

- AI for credit risk assessment and research.
- AI for assessing market opportunities and risks.

These insights highlight the diverse applications of AI across various sectors, emphasizing their role in enhancing productivity, improving customer interactions, supporting research and analysis, and ensuring compliance.

Source:

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How are you using GenAI across your value chain? Please give one example of your banking institution's application of AI across your institution's value chain and explain how GenAI is used.



Administrative and Operational Uses:

- Internal chatbots to enable staff to easily access information.
- Automatically minuting meetings and reviewing documents.

Customer Interaction:

- Chatbots to inform members or potential members about products and processes.
- Generating pictures for marketing material.

Software Development:

- Leveraging GitHub Copilot for coding assistance.
- Using ChatGPT for brainstorming initial suggestions for strategic patterns.

Research and Analysis:

- Summarizing data sets into digestible bites.
- Generating content from vast amounts of data.

Human Resources and Compliance:

- Drawing up policies and procedures.
- Extracting data from documents and populating paperwork.

Marketing and Presentations:

- Generating pictures for marketing material.
- Creating presentations for clients or audiences.

Financial Applications:

- Risk scoring in relation to clients (AML screening and payment monitoring).
- Generating financial reports and client communication drafts.

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Payments Sector

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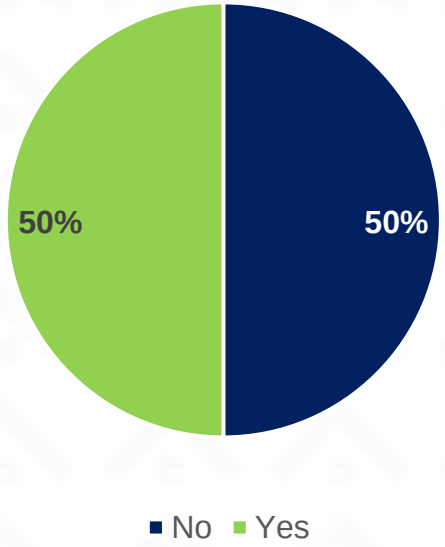
About the data

AI adoption in the payments sector, N=54



- 54 payments institution responded to the survey.
- 27 institutions have adopted AI (50%).

Source:

Summary of the findings



- Over 30% of payment institutions intend to invest between R6 million – R10 million on AI adoption.
- The highest materiality of AI/ML application is in operations and IT, followed by sales and marketing, risk and compliance. The highest materiality of GenAI application is in sales and marketing and operations and IT.
- The highest benefit of using GenAI is in cybersecurity and data and analytical insights. Overall, the highest benefits of AI/ML are combating fraud and money laundering, productivity, data and analytical insights, cybersecurity.
- The leading use/planned use of ML is in fraud detection and real-time monitoring. The leading use/planned use of GenAI is in customer support, real-time transaction monitoring and productivity.
- The leading risks include third party dependencies, misaligned objectives and robustness and stability. The highest risks also include cybersecurity, ML ethics and reputational risk.
- The most prominent regulatory constraint is data protection and privacy laws and the Consumer Protection Act. Other constraints include insufficient talent/access to skills, ML is not a top priority and lack of access to sufficient data and lack of standards.
- Established governance frameworks include data governance, ethical guidelines and accountable persons. Accountability in AI/ML/GenAI sits with the Executive leadership.
- The key ethical considerations is in accuracy and reliability, accountability, transparency and data privacy.
- Feature importance is the leading explainability method employed.

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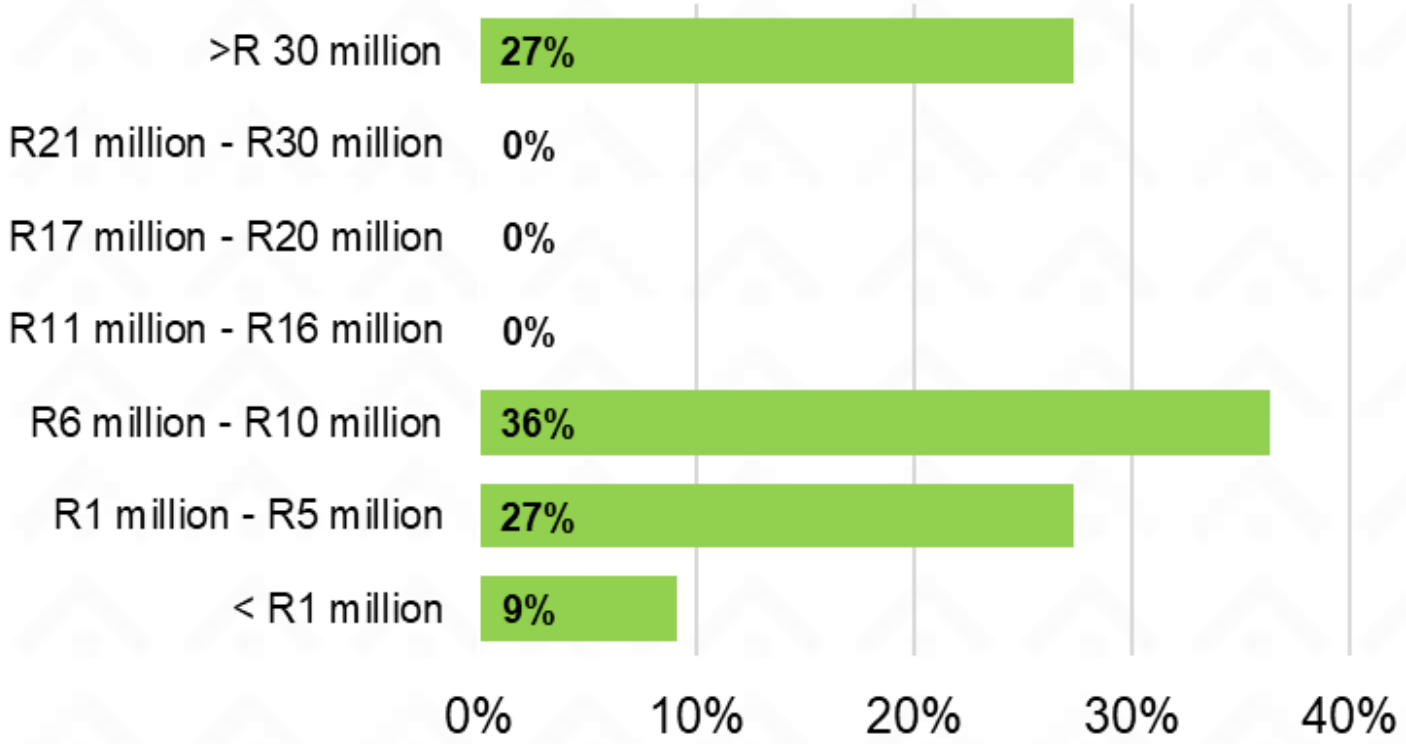
Over 30% of payment institutions intend to invest between R6 million – R10 million on AI adoption



Over 40% of payments institutions plan to invest between R1 million and R10 million in AI adoption, reflecting cautious spending. This conservative approach may stem from budget constraints, risk aversion, or a focus on incremental implementation. Despite limited investment, AI's potential for significant returns remains a compelling incentive.

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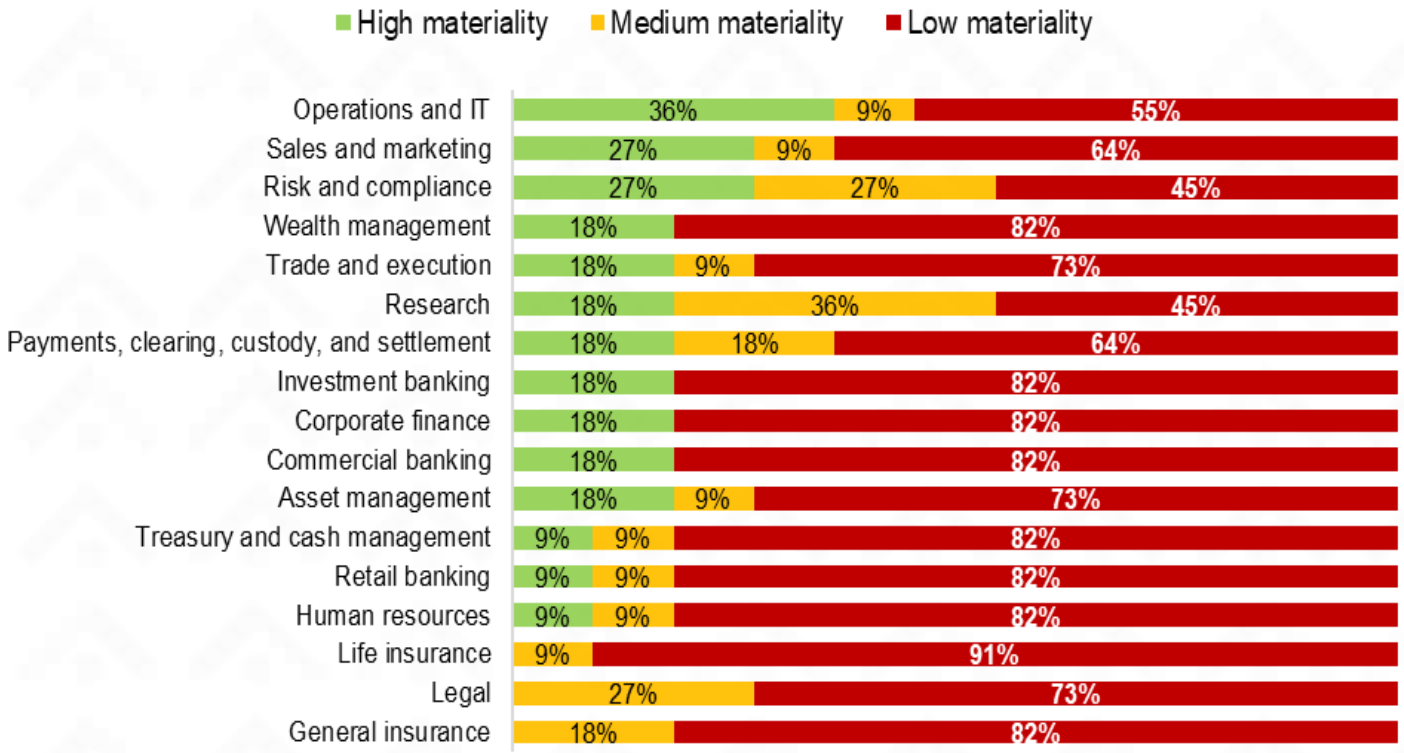
The highest materiality of AI/ML application is in operations and IT, followed by sales and marketing, risk and compliance



AI/ML transforms the payments sector through real-time fraud detection, automated AML/KYC, and secure transaction authentication. Lending institutions use AI to boosts efficient, reduce fraud, and deliver faster, safer, and smarter payments solutions.

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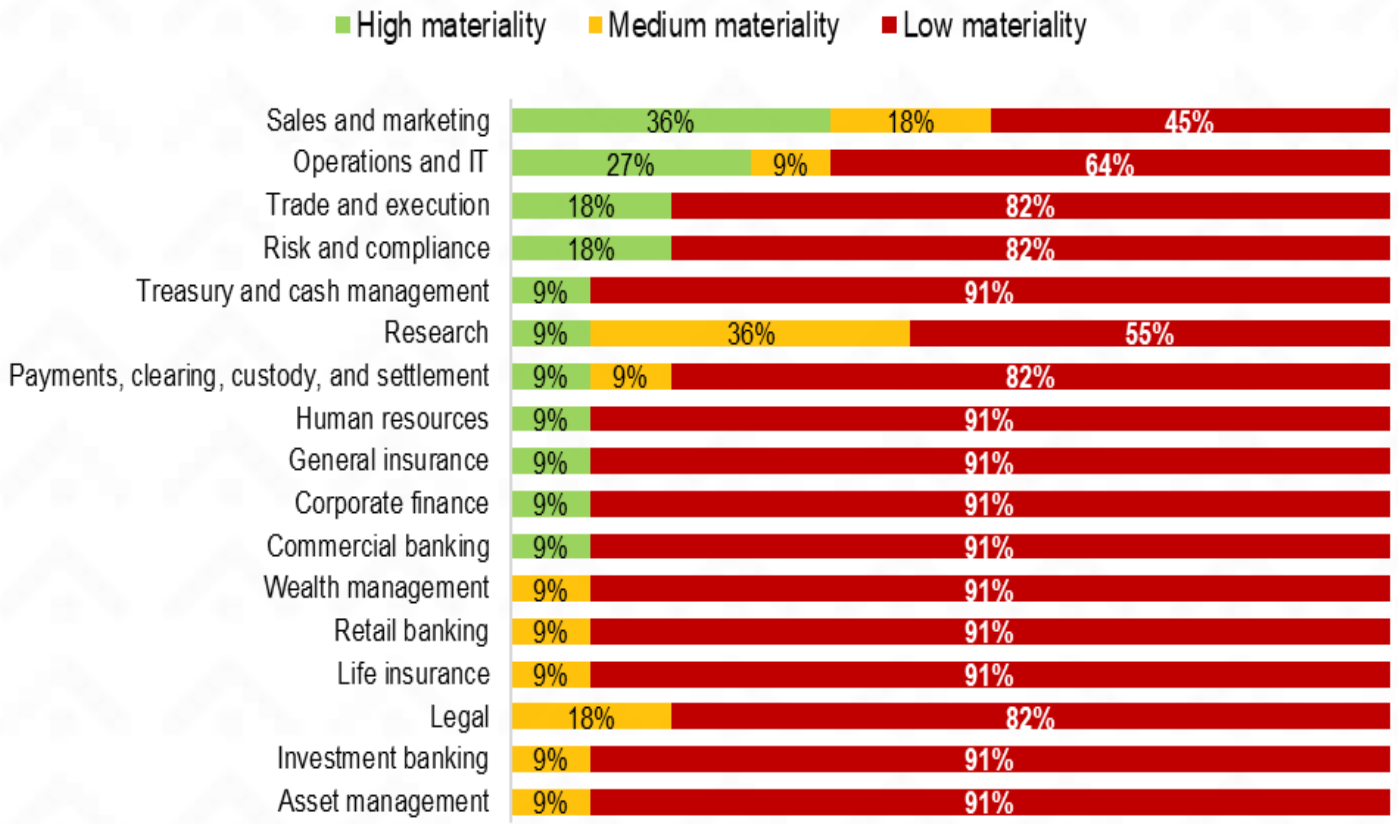
The highest materiality of GenAI application is in sales and marketing and operations and IT



GenAI's greatest impact on payments institutions is enhancing fraud detection, automating customer support, streamlining KYC, and improving operational efficiency . It personalizes customer interactions, enhancing lead generation and customer segmentation. This boosts efficiency and effectiveness, driving better client engagement and higher conversion rates.

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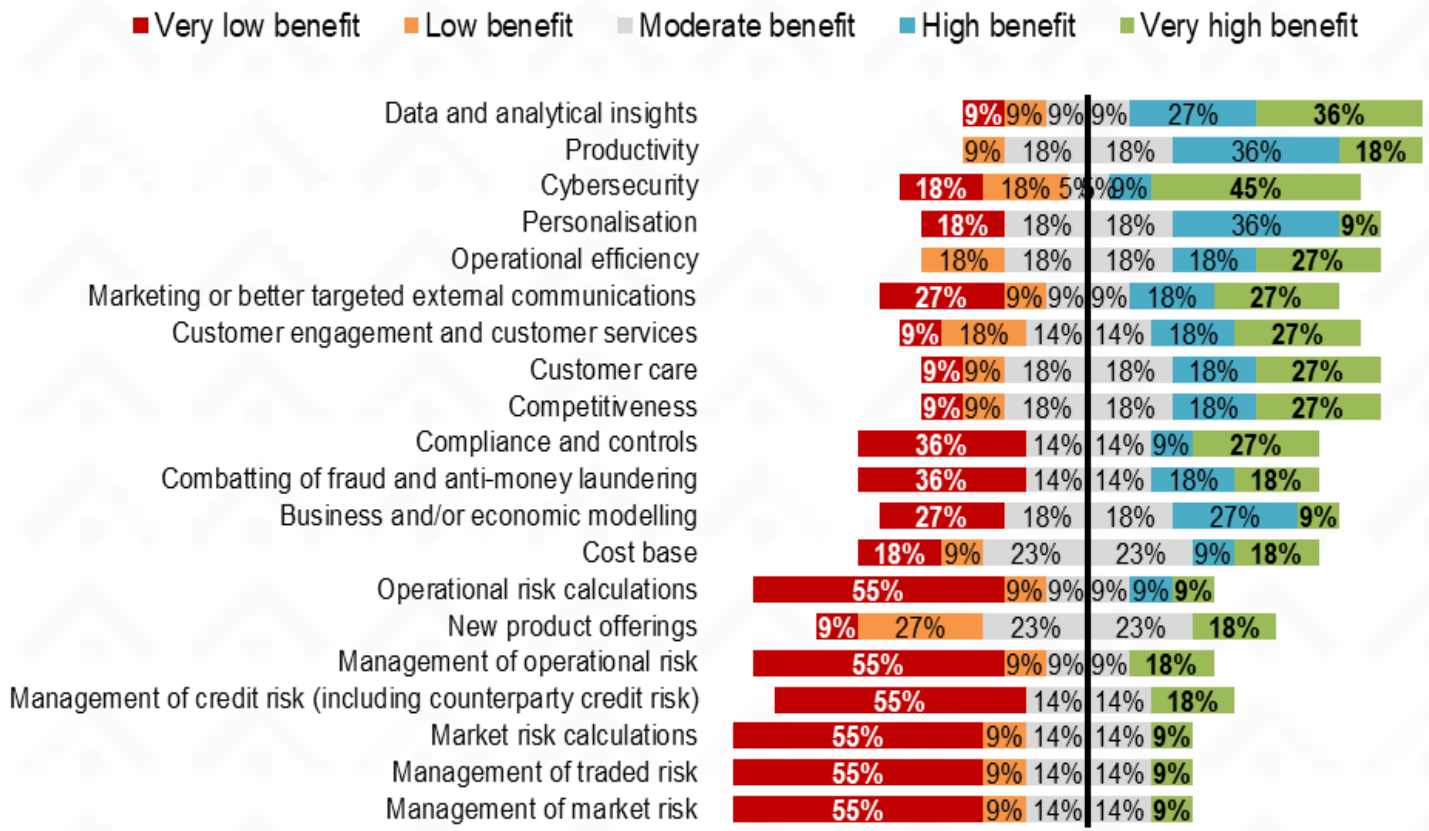
The highest benefit of using GenAI is in cybersecurity and data and analytical insights



GenAI boosts cybersecurity in payment institutions by improving fraud detection with intelligent pattern analysis. It boosts operational efficiency through co-pilots that generate reports, and process documents and enables personalized user experiences via chatbots and predictive insights. Overall, it improves accuracy, reduces costs, enhances security, and delivers faster, more engaging customer interactions in digital payments.

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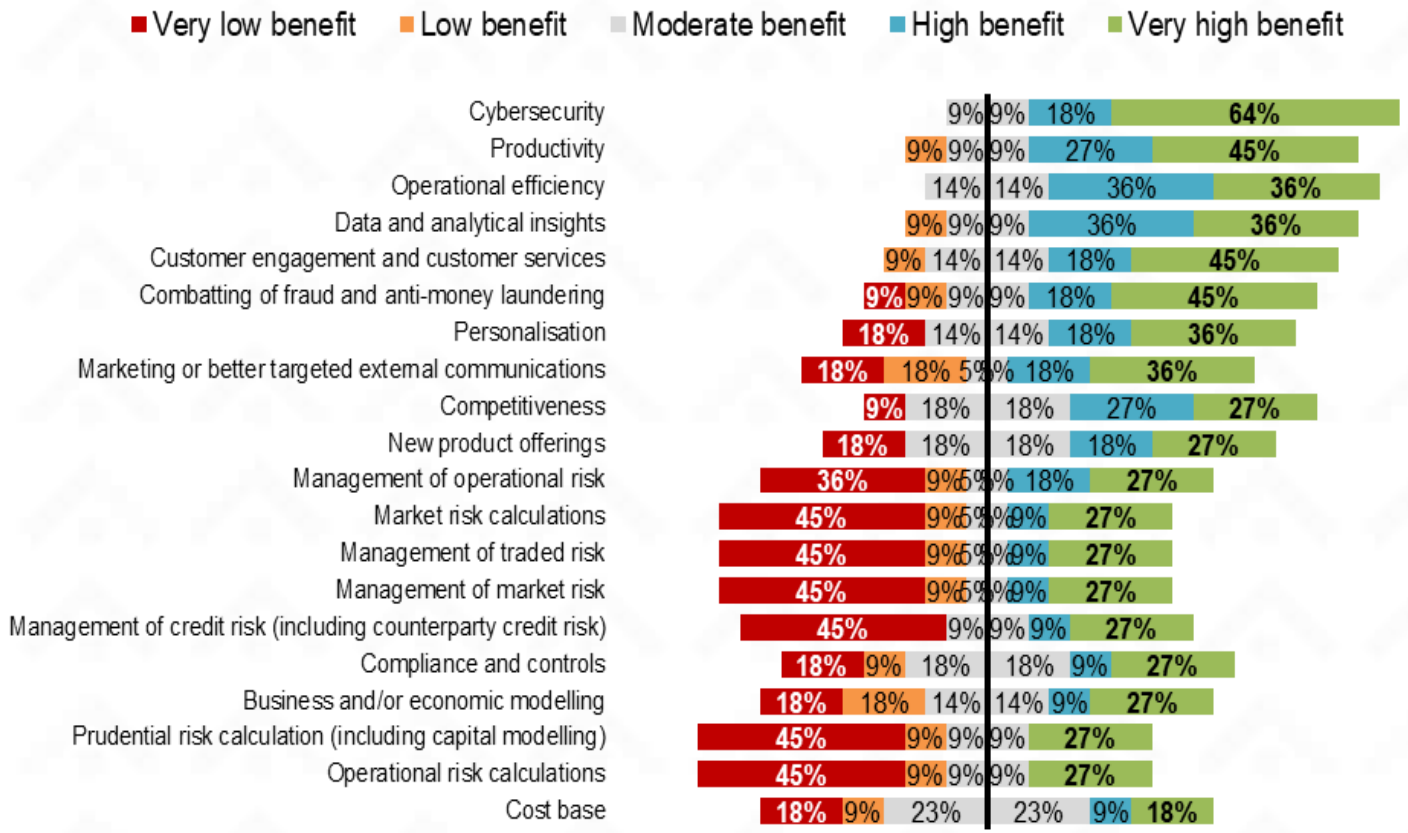
Overall, the highest benefits of AI/ML/GenAI are cybersecurity



Leveraging AI/ML/GenAI helps payment institutions enhance cybersecurity by detecting threats in real time, identifying fraud patterns, and strengthening system defenses. It also boosts productivity by automating routine tasks, streamlining operations, and improving decision-making with data-driven insights. These technologies enable faster responses, reduced manual errors, and greater operational efficiency, helping institutions remain secure, agile, and competitive in a fast-evolving digital payments landscape.

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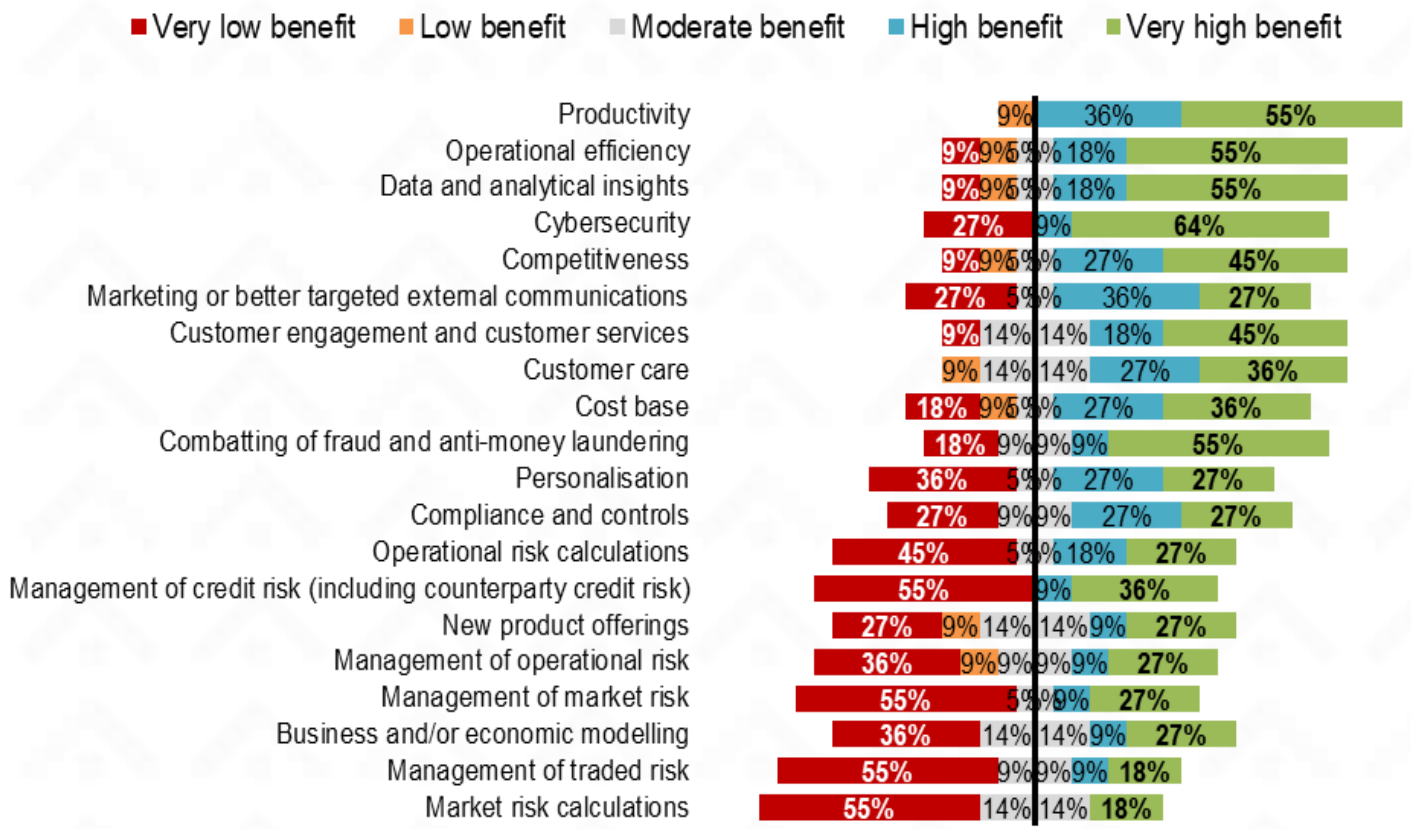
Overall, the highest benefits of AI/ML are combating fraud and money laundering, productivity, data and analytical insights, cybersecurity



AI/ML in the payments sector delivers real-time fraud detection, automated KYC/AML compliance, and personalized customer experiences. Boosts transaction success via smart routing and improves operational efficiency by automating back-office tasks. Overall, AI/ML helps reduce fraud, lower costs, speed up processing, and deliver safer, more efficient, and user-friendly payment systems

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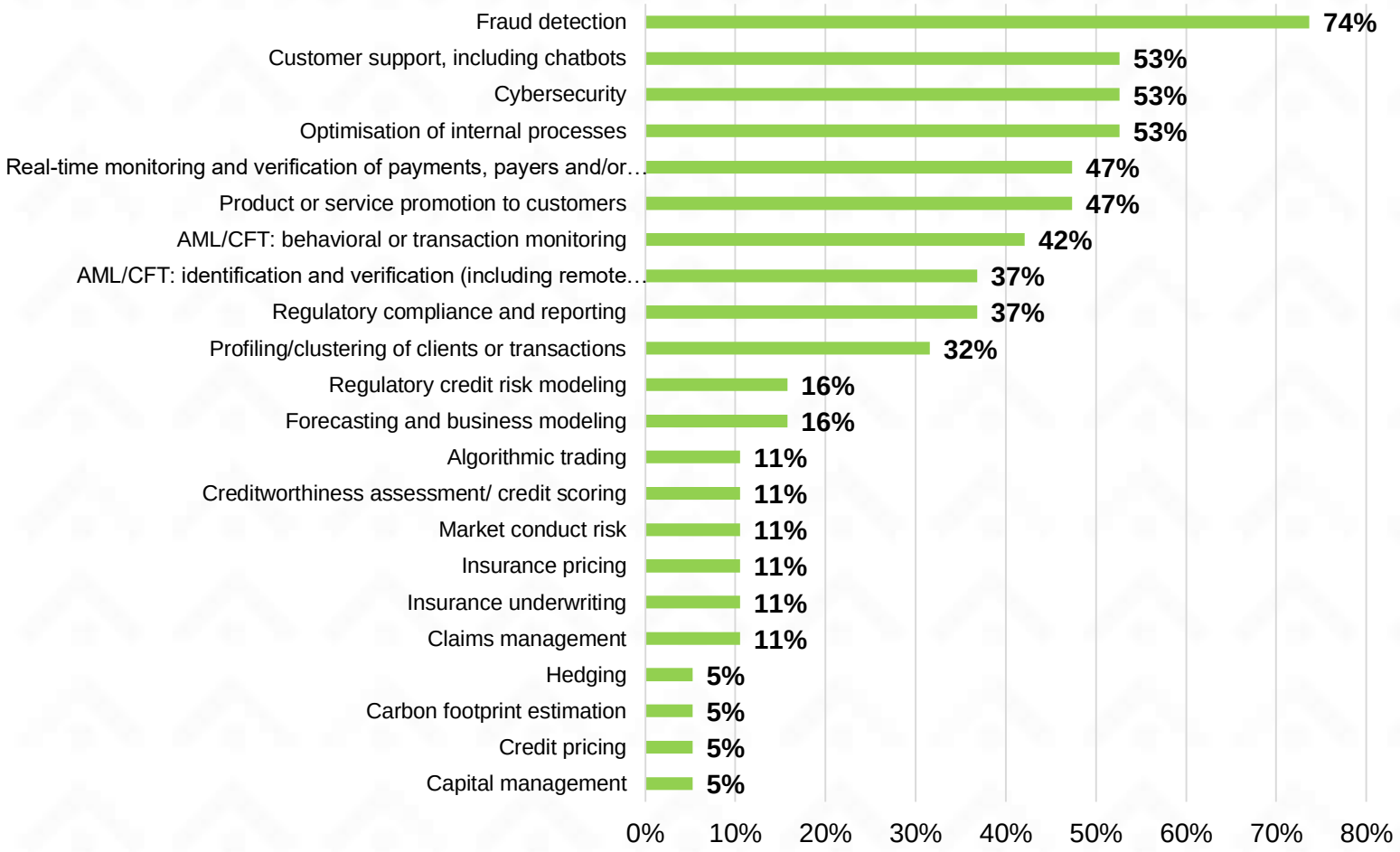
The leading use/planned use of ML is in fraud detection and real-time monitoring.



Payment institutions use ML to enhance their fraud detection, detecting anomalies as they occur, secondly enhancing real-time transaction monitoring and streamlining KYC/AML compliance. Together, these capabilities support safer, more efficient, and customer-friendly digital payment systems while proactively managing risk and reducing fraud-related disruptions.

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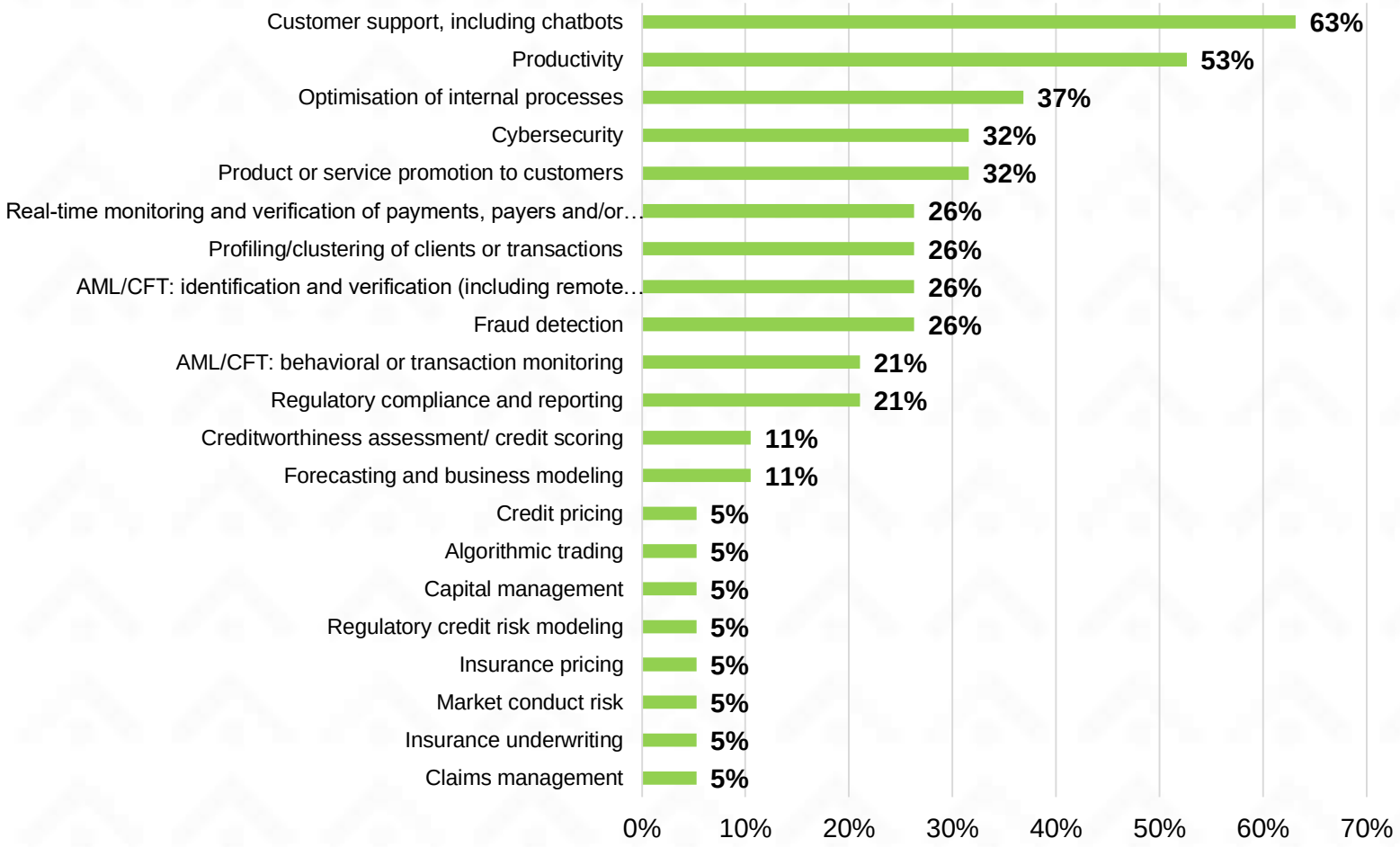
The leading use/planned use of GenAI is in customer support, real-time transaction monitoring and productivity



GenAI impact on the payment sector has led to automation of processes and improved customer experience through chatbots. GenAI plays a role in real-time monitoring and verification of payments taking place allowing for better allocation of resources. Productivity levels have also improved.

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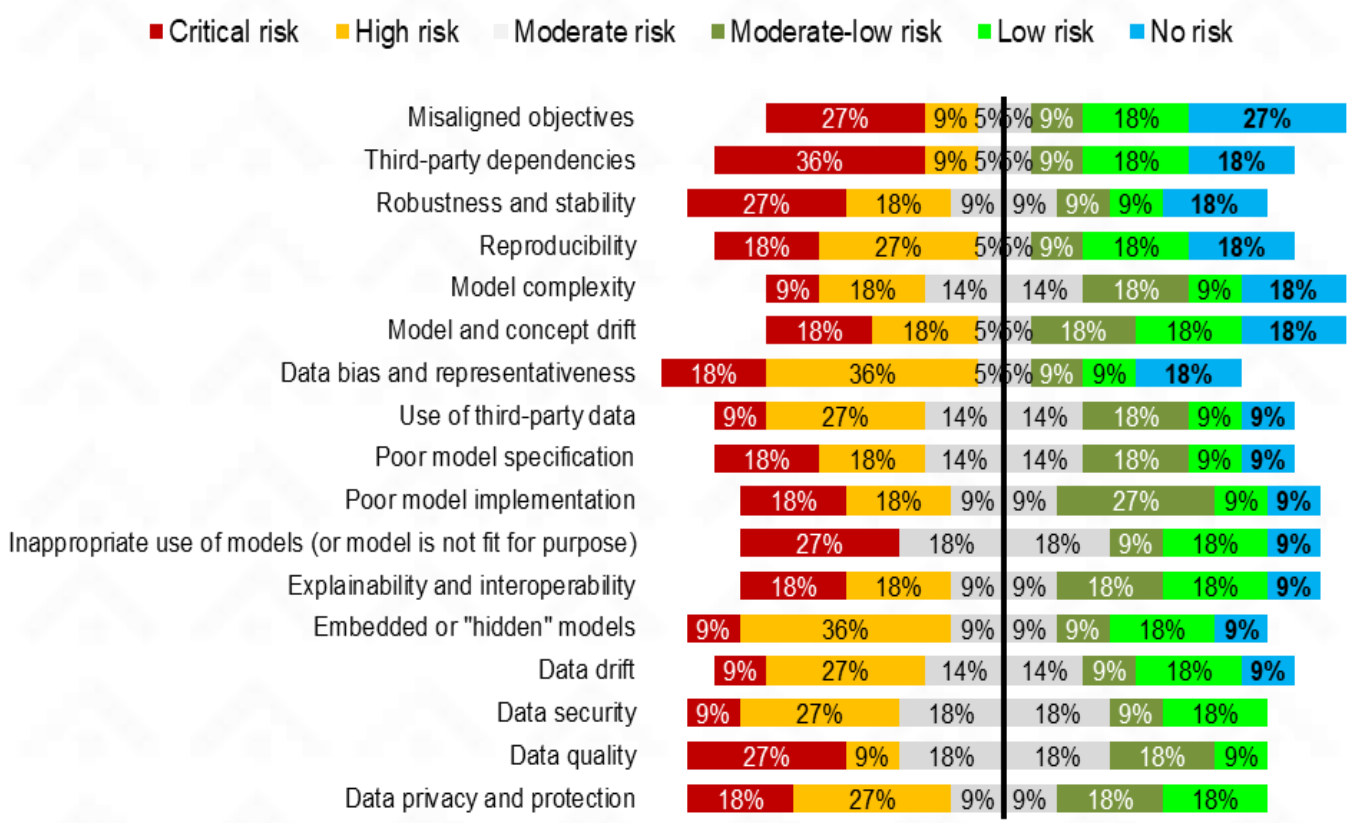
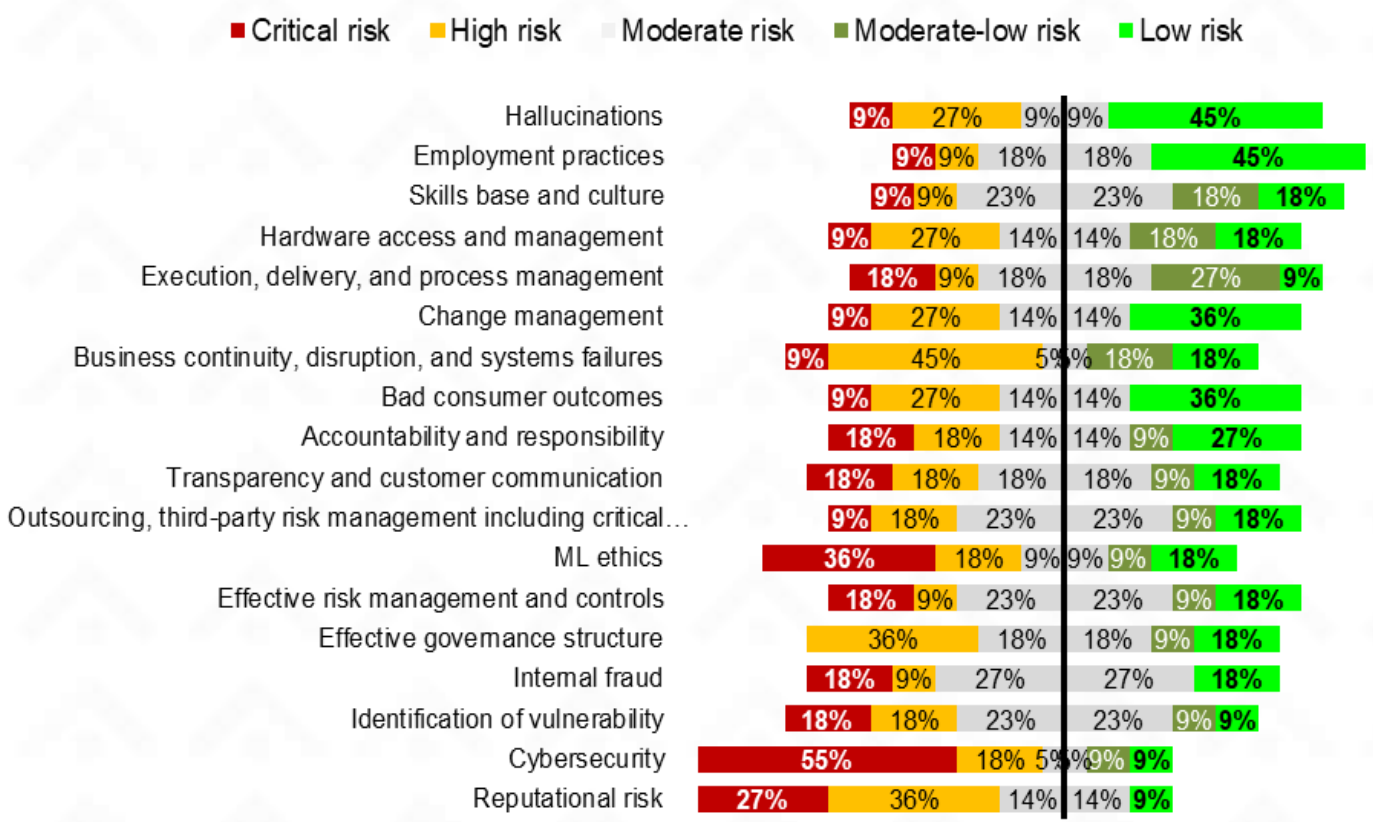
The leading risks include third party dependencies, misaligned objectives and robustness and stability



Leading risks in AI/ML for payment institutions include third-party dependency, data bias, and embedded models. Third party reliance poses key risks including data breaches, service outages, and regulatory non-compliance. It also reduces control over data privacy and security, increasing exposure to cyber threats, and complicates risk management.

The highest risks also include cybersecurity, ML ethics and reputational risk



Cybersecurity is a core risk for payment institutions, followed by ML ethics as use of AI on decision making needs to be communicated with clients. Systems failures are a risk especially in countries lacking talent pool in areas of AI,ML and GenAI. Failing to keep systems running smoothly can results in data breaches, loss of funds and reputational damage.

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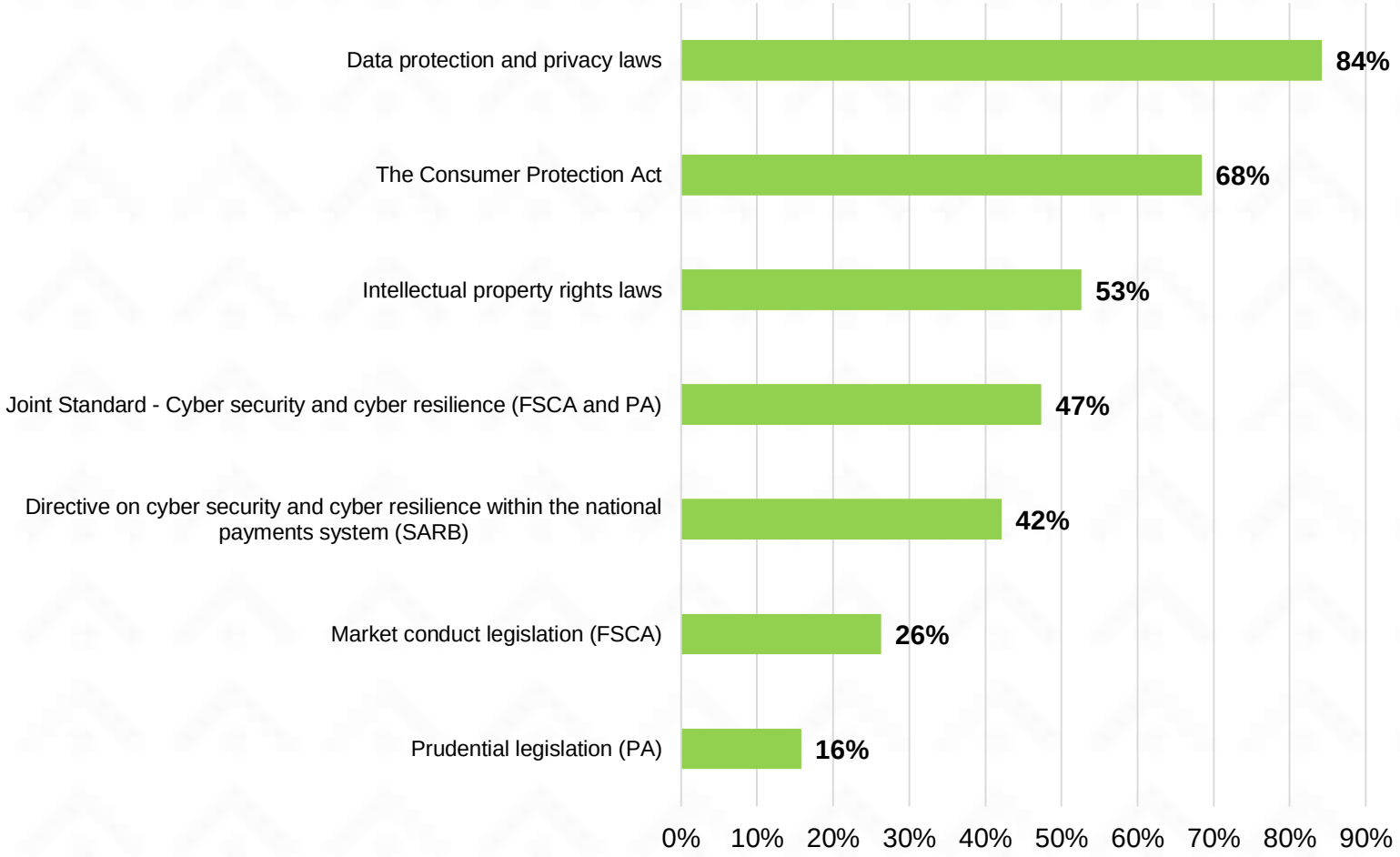
The most prominent regulatory constraint is data protection and privacy laws followed by consumer protection act



Data protection and privacy laws, such as POPIA, GDPR and CCPA, impose stringent requirements on payment institutions. These regulations ensure the safeguarding of sensitive financial data, requiring robust compliance frameworks. Non-compliance can lead to severe penalties, reputational damage, and legal liabilities, making adherence essential for maintaining trust and operational integrity.

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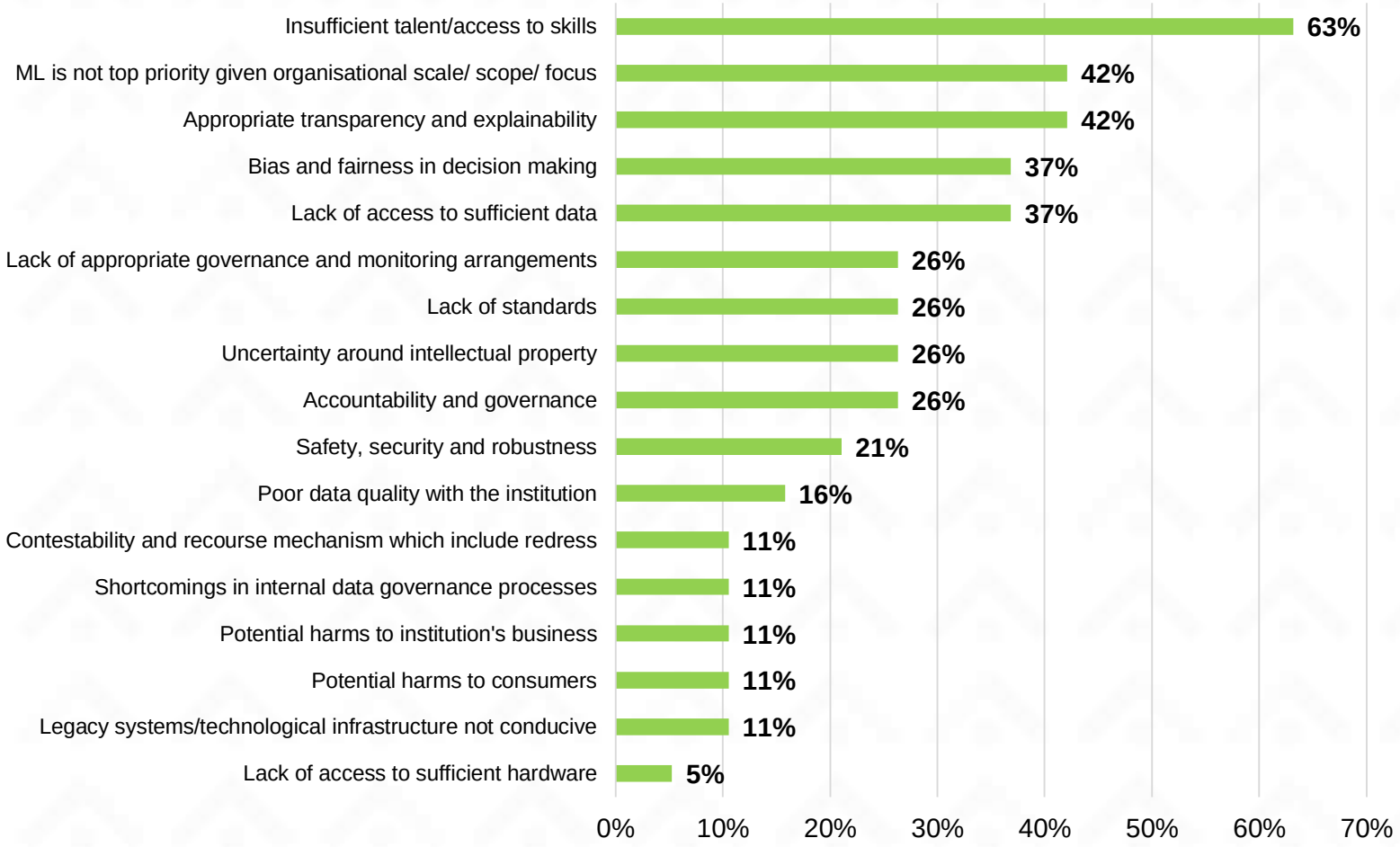
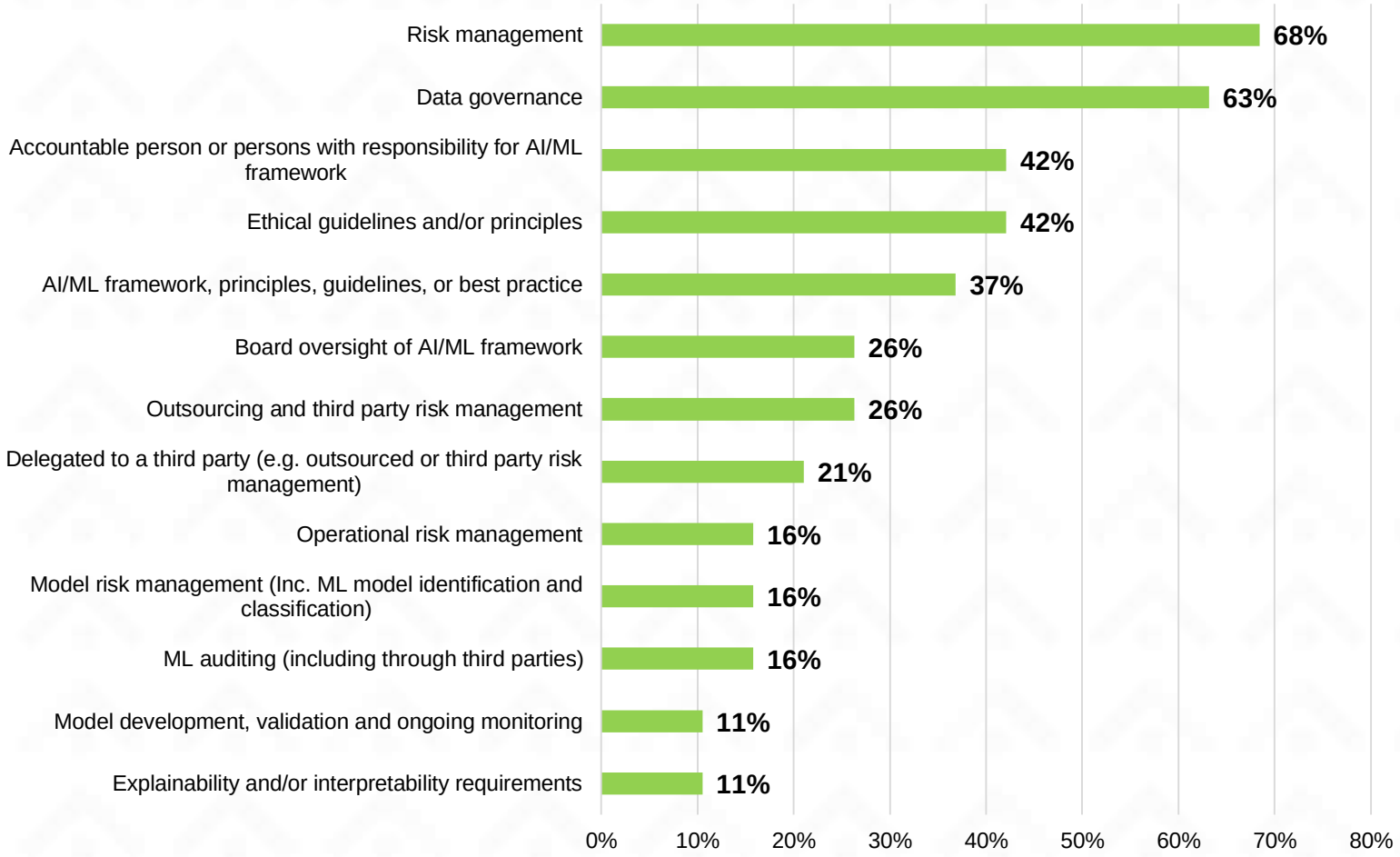
Other constraints include insufficient talent/access to skills, ML is not a top priority and appropriate transparency and explainability



Payment institutions face constraints like insufficient talent and ML not being a top priority due to organizational scale and focus. This limits their ability to fully leverage AI/ML, potentially hindering innovation and competitive advantage. Addressing these gaps is crucial for maximizing AI/ML benefits and driving growth

Established governance frameworks include risk management followed by data governance



Payment institutions use established governance frameworks like risk management and data governance to ensure data integrity, compliance, and operational stability. These frameworks mitigate risks, enhance decision-making, and maintain regulatory adherence, crucial for protecting sensitive data, maintaining trust, and optimizing performance.

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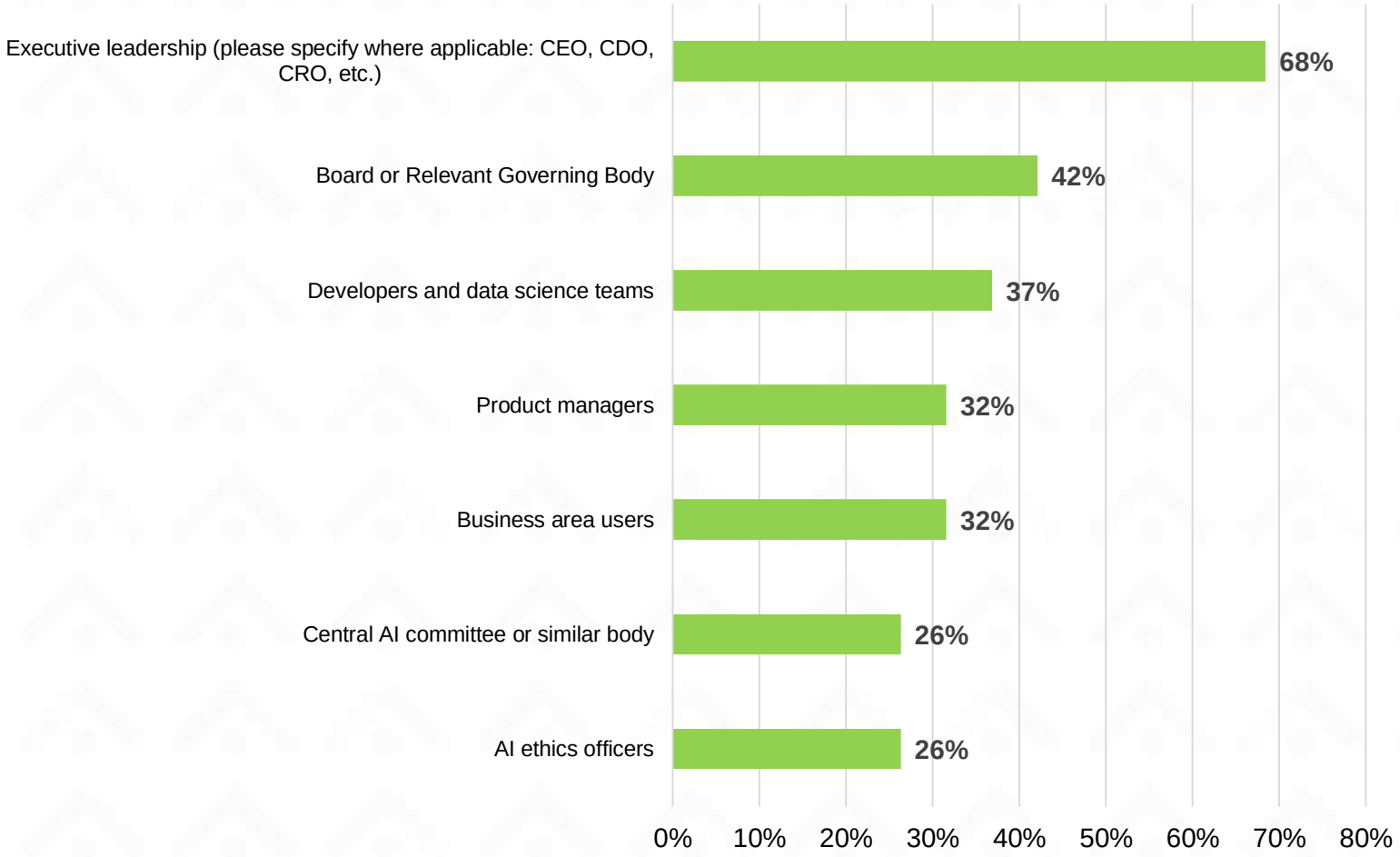
Accountability in AI/ML/GenAI sits with the Executive leadership



Executive leadership is accountable for AI/ML/GenAI in payment institutions, ensuring ethical practices, regulatory compliance, and strategic alignment. This responsibility includes overseeing implementation, addressing risks, and fostering transparency. Implications involve maintaining trust, mitigating legal liabilities, and optimizing AI benefits while safeguarding against potential harms.

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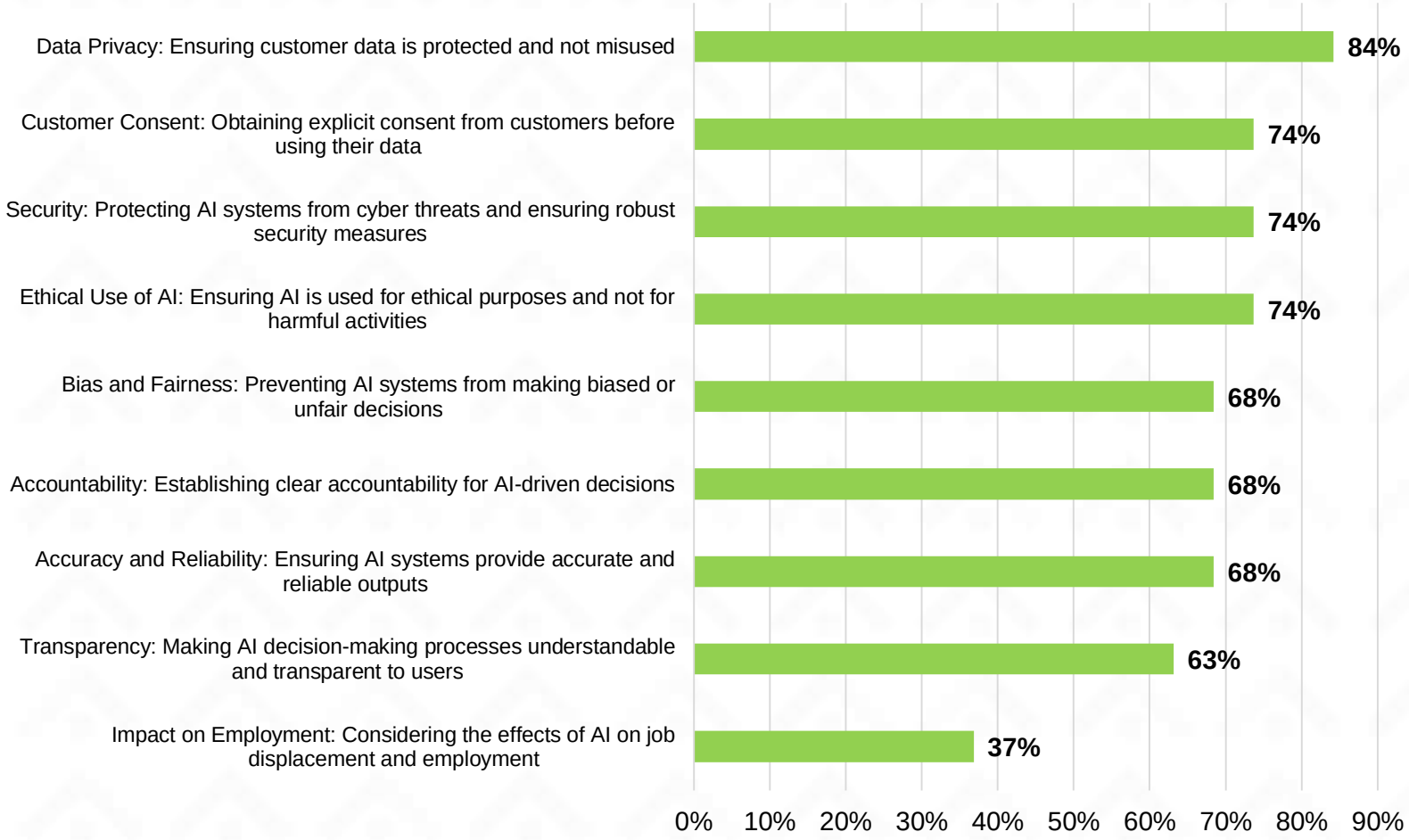
The key ethical considerations is in Data Privacy closely followed by customer consent and security



Data privacy is crucial for payment institutions, ensuring customer data is protected and not misused. This builds trust, complies with regulations, and prevents breaches. Implications include maintaining customer confidence, avoiding legal penalties, and safeguarding the institution's reputation.

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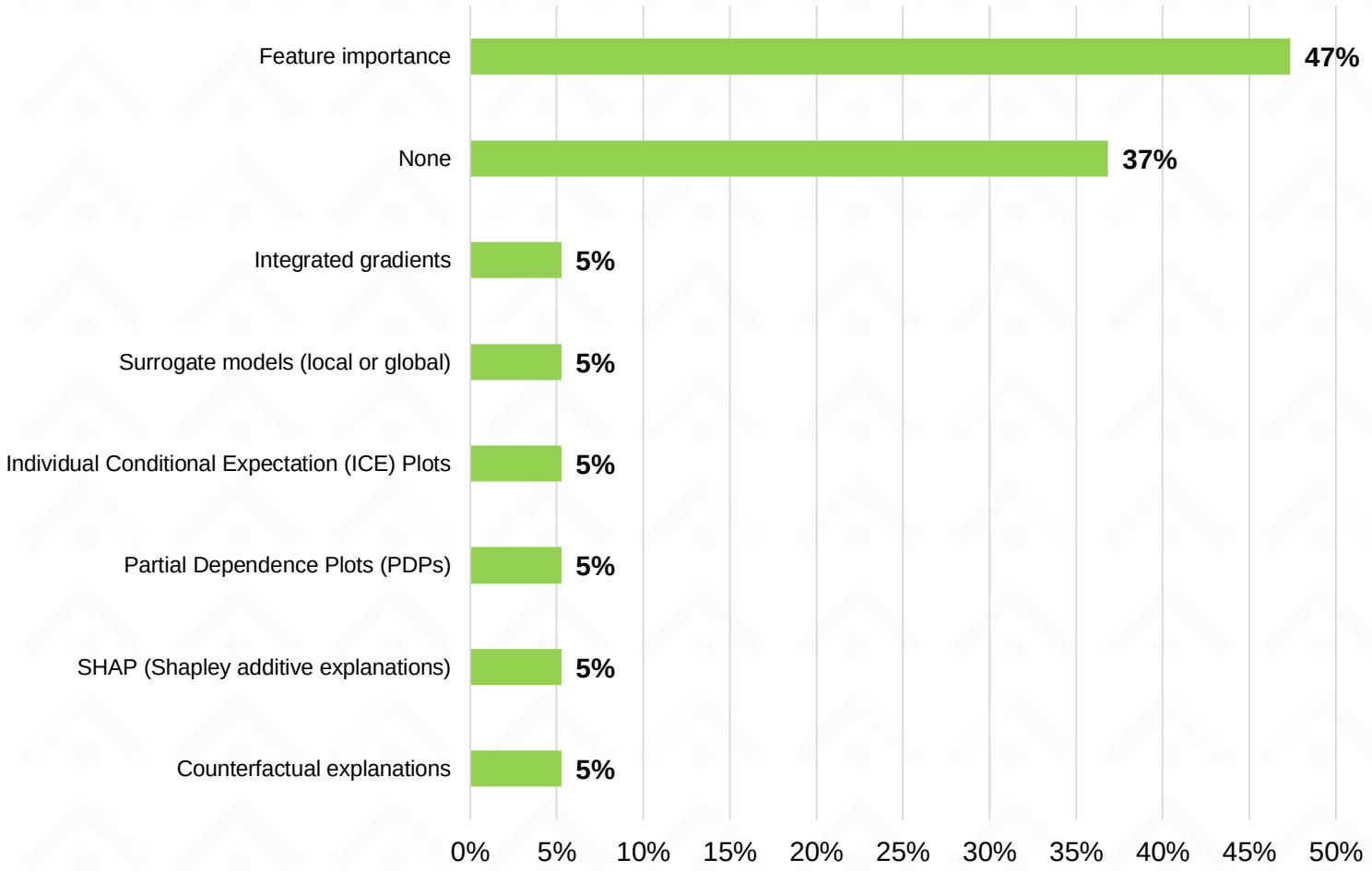
Feature importance is the leading explainability method employed



Many payment institutions lack explainability methods for AI models, leading to potential trust and compliance issues. Those that do often use feature importance to interpret model decisions. This enhances transparency and accountability, helping institutions meet regulatory requirements and build customer trust

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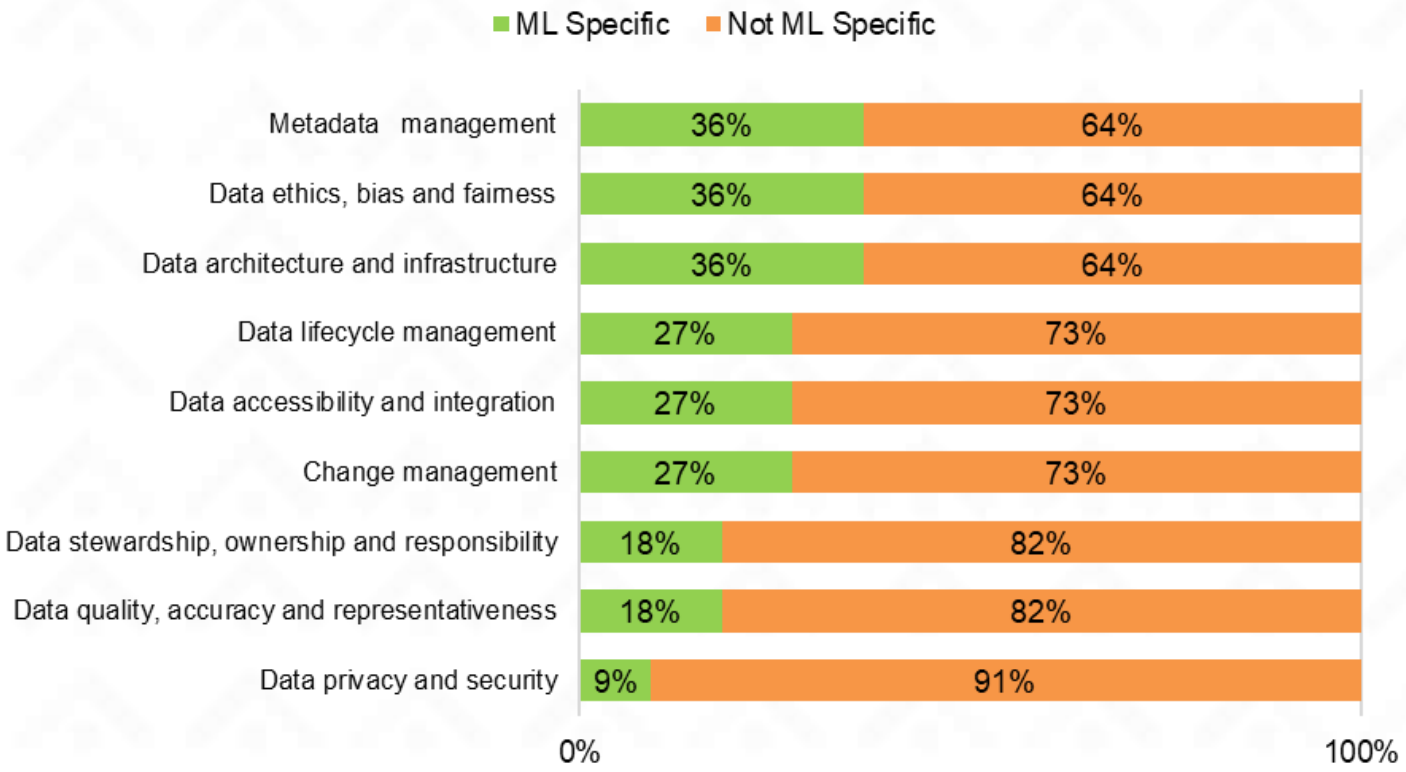
The most ML specific data management and governance in ML models metadata management and data ethics, bias and fairness.



ML models involve effective metadata management, which ensures data lineage, quality, and traceability for transparency and model validation. Data ethics is addressed by promoting responsible data use, protecting individual rights, and ensuring accountability. To support bias and fairness, governance frameworks include processes for identifying and mitigating bias, ensuring datasets are representative, and applying fairness checks, helping build ethical and trustworthy AI systems..

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Lending Sector

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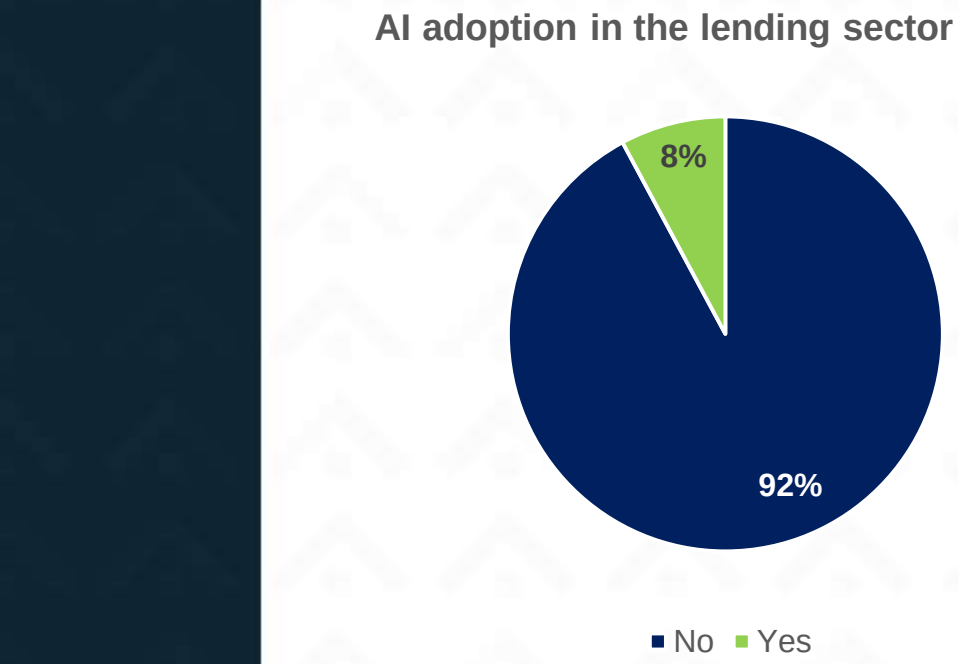
About the data



- 102 lending institutions responded to the survey.
- 8 institutions have adopted AI (8%).

Source:

Summary of the findings



- Approximately, 50% of lending institutions intend to invest less than R1 million on AI adoption.
- The highest materiality of traditional AI application is in sales and marketing and research.
- The highest materiality of GenAI application is in sales and marketing, risk and compliance, research and operations and IT.
- Overall, the highest benefits of AI/ML are combating fraud and money laundering, economic modelling and productivity.
- The highest benefit of using GenAI is in economic modelling and productivity.
- The leading use/planned use of traditional AI is in AML/CTF: identification and verification, regulatory compliance and reporting and customer support. The leading use/planned use of GenAI is in fraud detection.
- Overall, the highest benefits of traditional AI and GenAI are personalization, productivity and cybersecurity.
- The leading risks include third party dependencies, poor model implementation and data privacy and protection. The highest risks also include effective risk management and controls.
- The most prominent regulatory constraint is data protection and privacy laws followed by market conduct legislation, intellectual property rights laws and Consumer Protection Act. Other constraints include insufficient talent/access to skills.
- Established governance frameworks include accountable persons, ethical guidelines and risk management.

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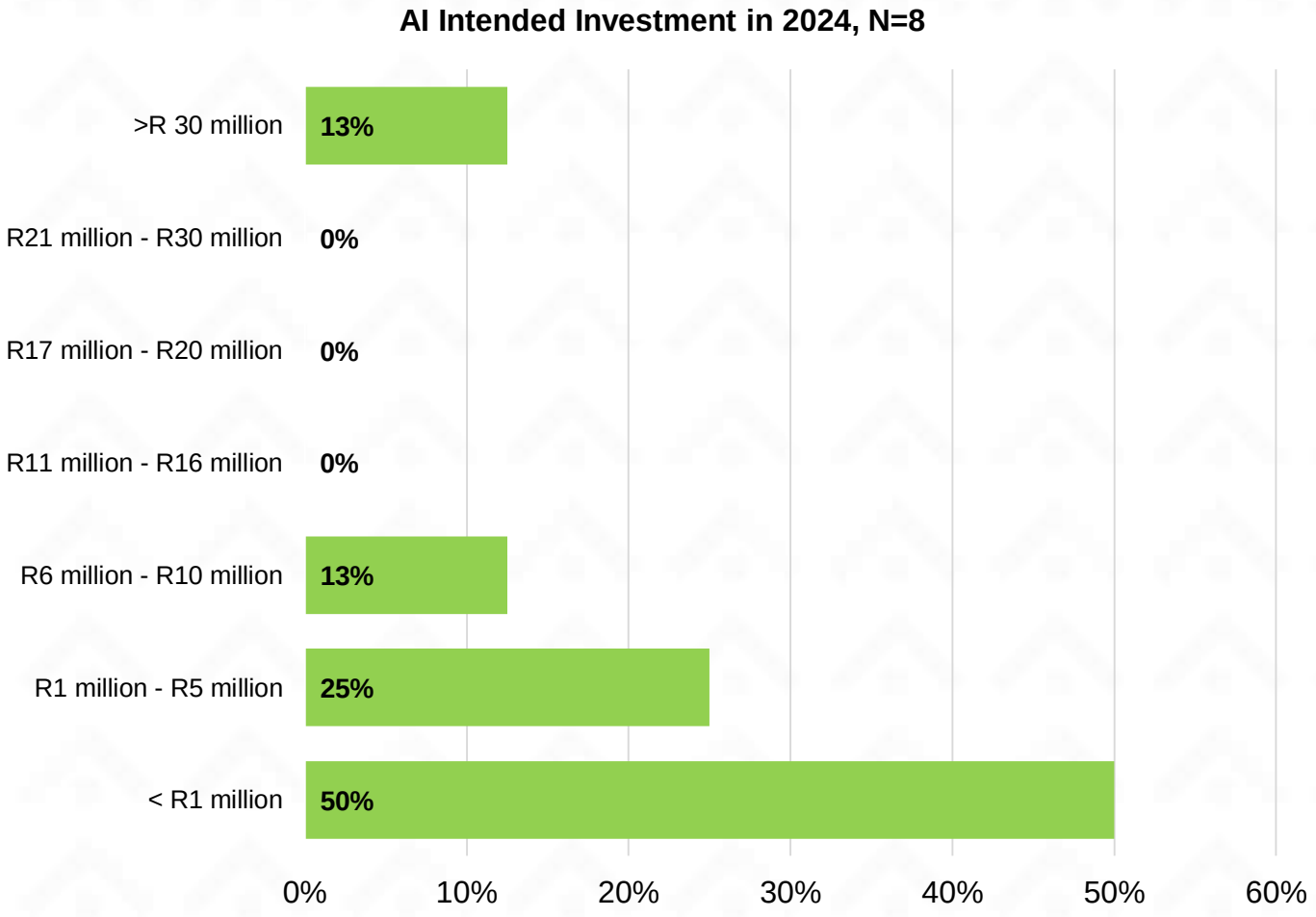
Summary of the findings



- Accountability in AI/ML/GenAI sits with the Executive leadership.
- The key ethical considerations is in accuracy and reliability, accountability, transparency and data privacy.
- The most ML specific data management and governance in ML models is data accessibility and integration, data ethics, bias and fairness.

About 50% of lending institutions intend to invest less than R1 million on AI adoption



50% of lending institutions plan to invest less than R1 million in AI adoption, reflecting cautious spending. This conservative approach may stem from budget constraints, risk aversion, or a focus on incremental implementation. Despite limited investment, AI's potential for significant returns remains a compelling incentive.

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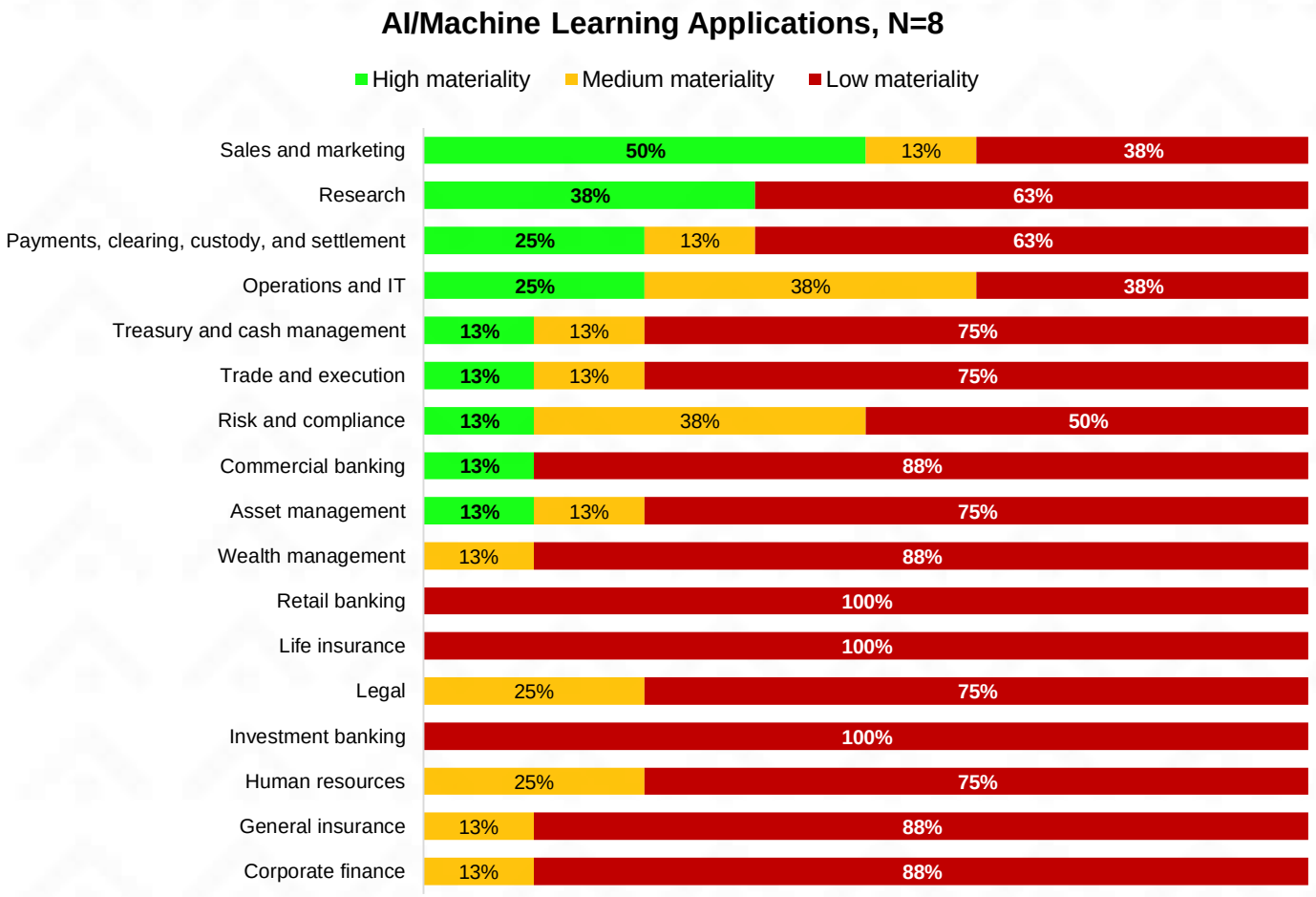
The highest materiality of traditional AI application is in sales and marketing and research



The lending sector leverages AI/ML applications to increase their sales through personalized loan offers. AI/ML helps identify eligible customers, personalize offers, score leads, and optimize campaigns in real time. This boosts loan uptake, improves customer experience, and lowers acquisition costs by delivering the right loan offers to the right people through the right channels.

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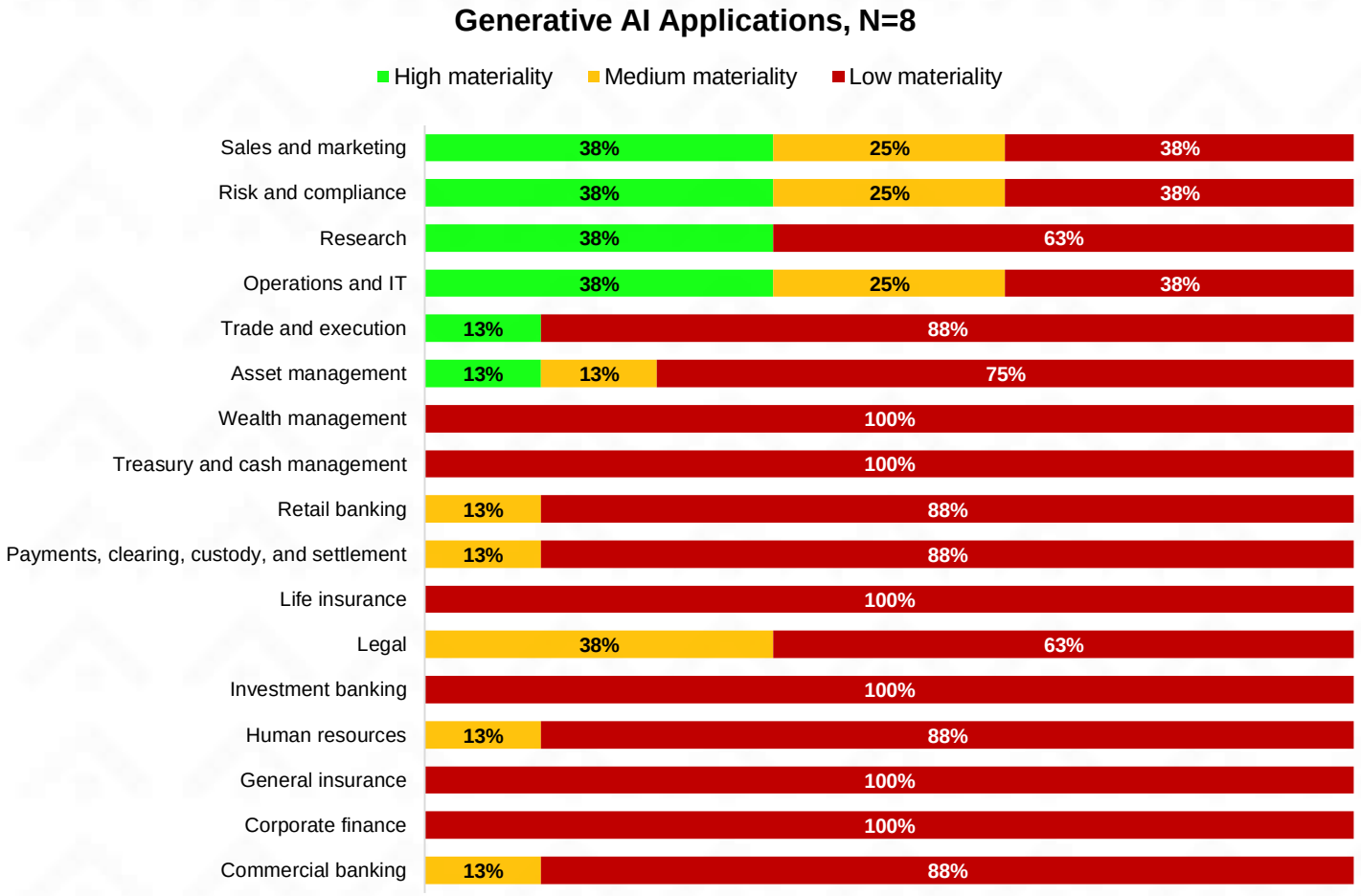
The highest materiality of GenAI application is in sales and marketing, risk and compliance, research and operations and IT



GenAI has high materiality in sales and marketing by boosting personalization and engagement, and in risk and compliance through automated reporting and fraud analysis. It has moderate to high impact in research and operations by streamlining analysis and reporting, and in IT by accelerating development and documentation. GenAI enhances efficiency and decision-making across functions, with strong governance needed to manage associated risks.

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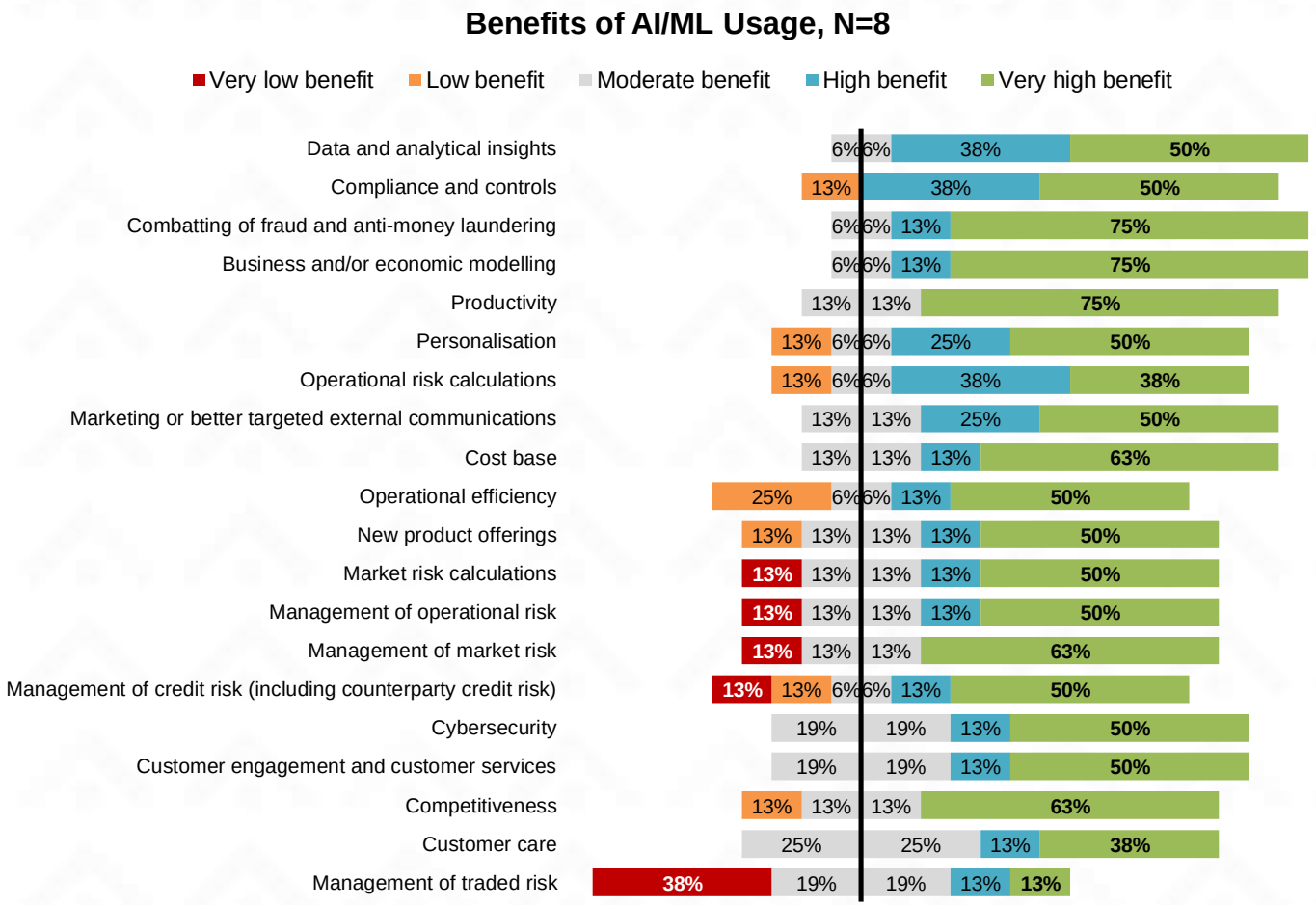
Overall, the highest benefits of AI/ML are combating fraud and money laundering, economic modelling and productivity



Impact of AI/ML usage on the lending sector has enhanced business modeling and combating of money laundering. Productivity has also spiked leading to more competitiveness. The adoption of AI/ML has streamline operations, lower costs, and support regulatory compliance, driving safer, more efficient, and inclusive lending across the financial ecosystem.

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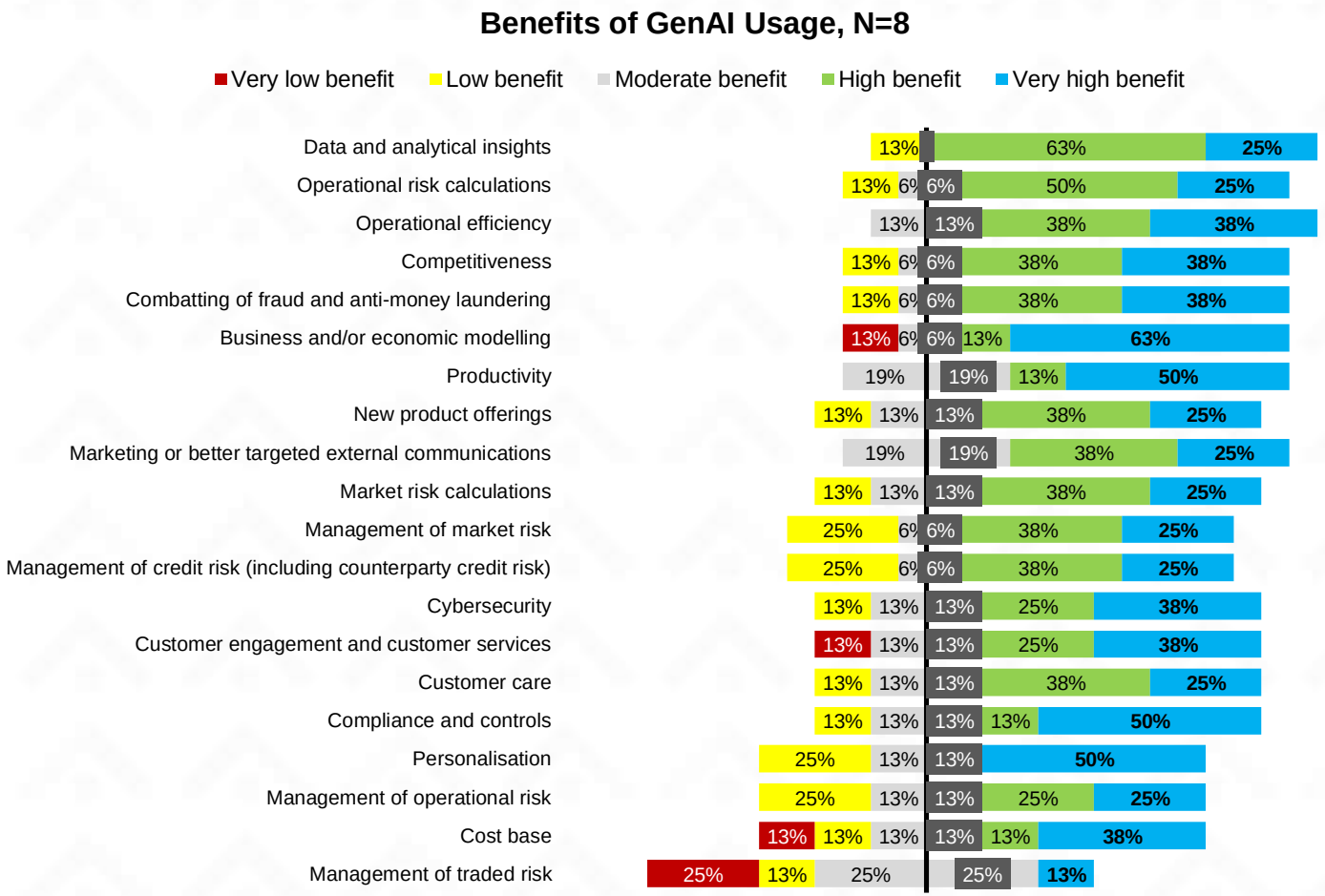
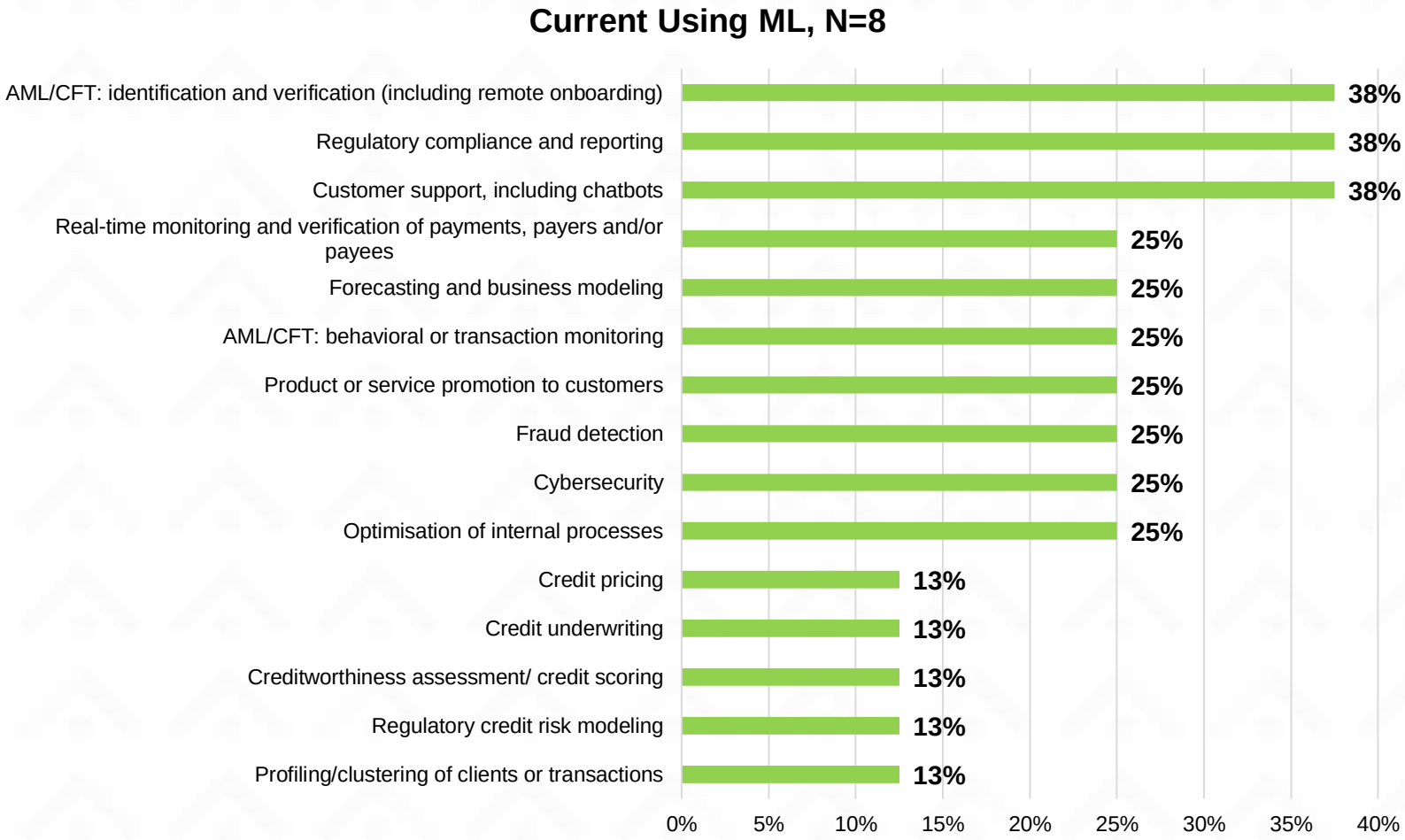
The highest benefit of using GenAI is in economic modelling and productivity



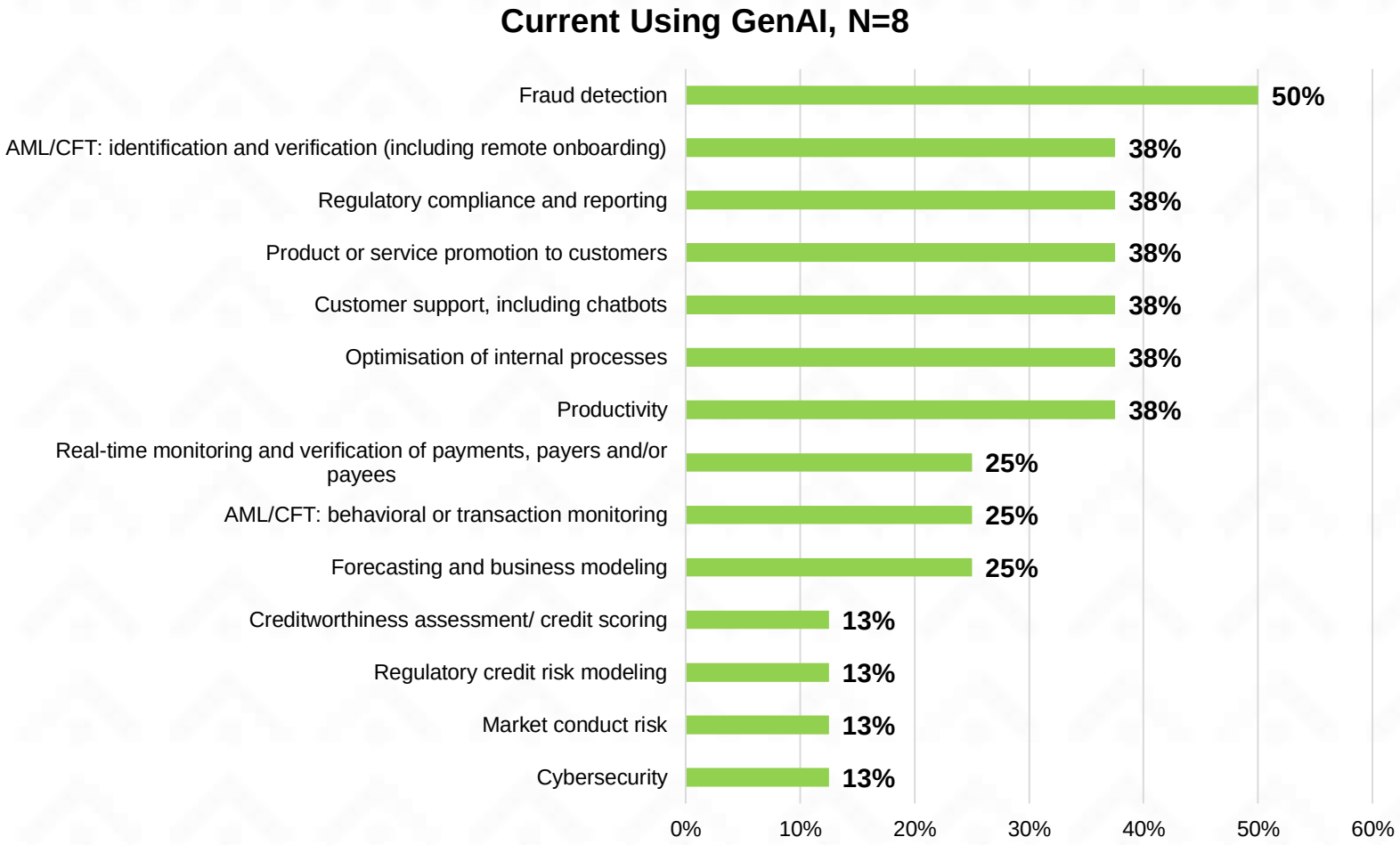
GenAI in the lending sector has enhanced loan processing, costumer engagements and personalized loan offers. GenAI also aids in fraud detection and generates risk reports, helping lenders improve efficiency, expand access, and manage risk more effectively across diverse customer segments.

The leading use/planned use of ML is in AML/CTF: identification and verification, regulatory compliance and reporting and customer support



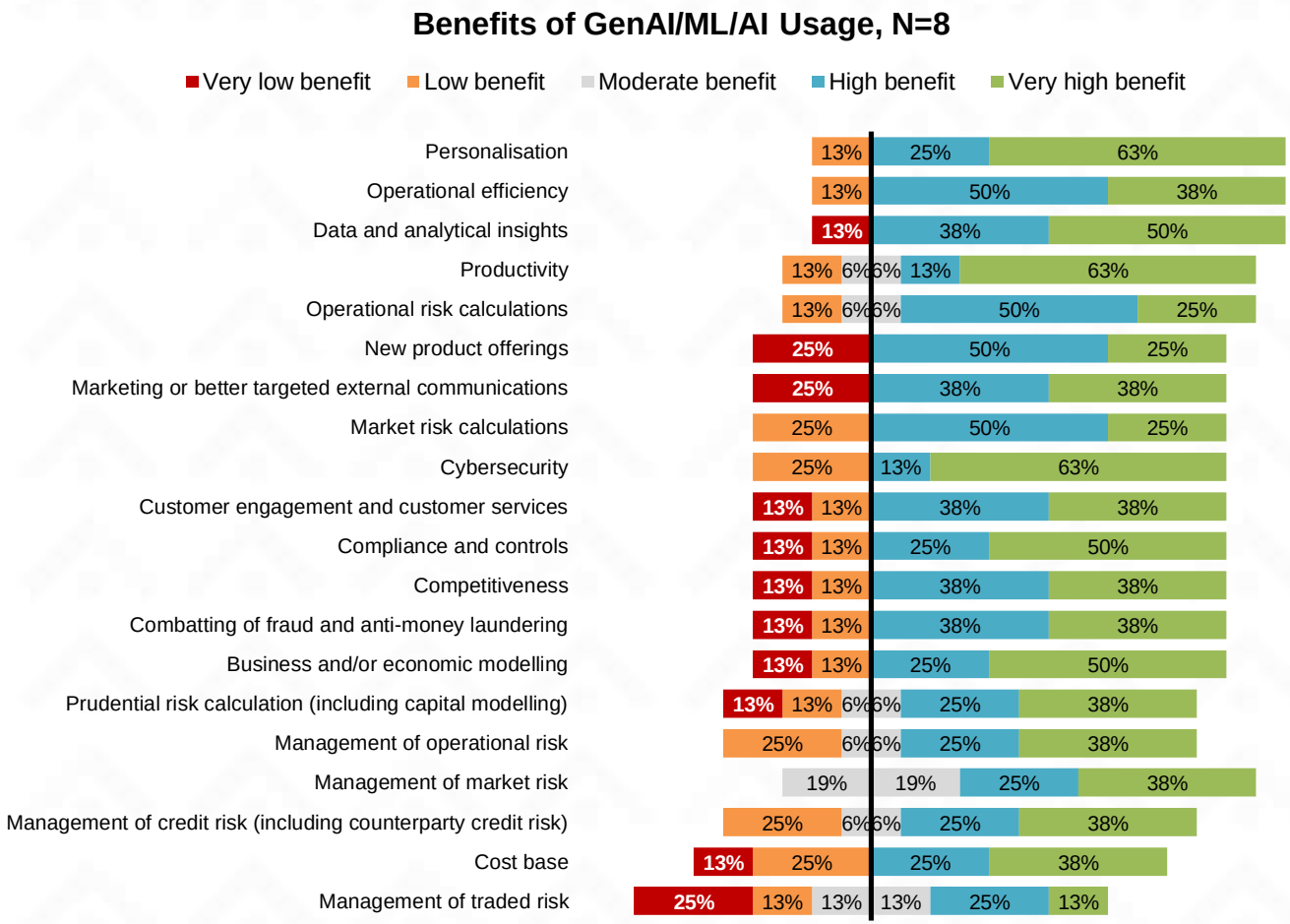
Institutions in the lending industry use ML application for AML/CFT identification and verification, regulatory compliance and reporting, streamlining onboarding processes while ensuring AML/CFT compliance. This approach ensures this institutions are compliant and builds trust with stakeholders.

The leading use/planned use of GenAI is in fraud detection



Lending sector leverages GenAI for fraud detection and optimizing internal processes enhancing the productivity of the institutions and competitiveness while ensuring compliance.

Overall, the highest benefits of AI/ML/GenAI are personalization, productivity and cybersecurity



GenAI, ML and AI hold immense potential in the personalization, compliance controls, data and analytics insights and cybersecurity withing the lending sector. These technologies will help lenders improve efficiency, expand access, and manage risk more effectively across diverse customer segments.

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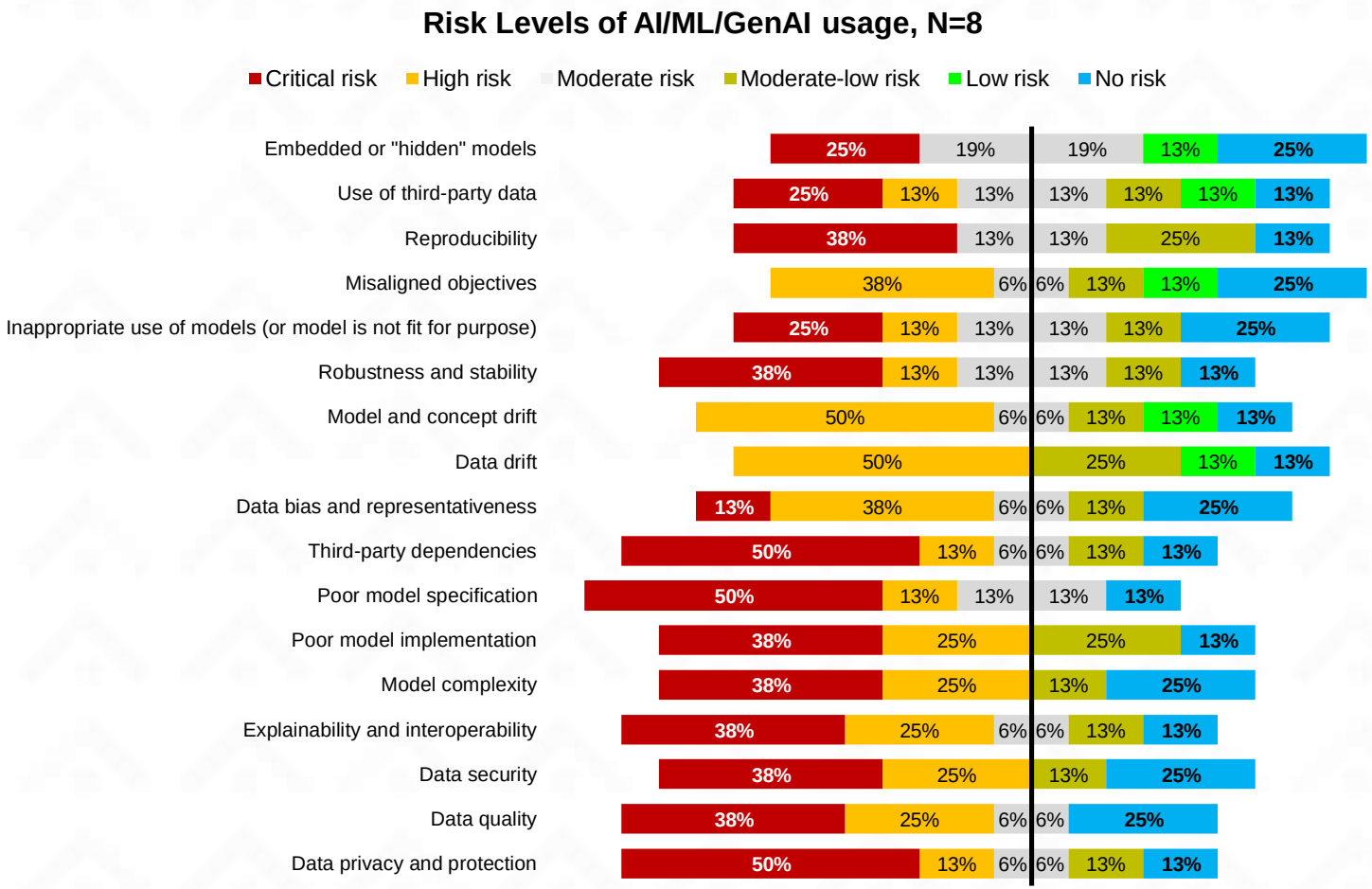
The leading risks include third party dependencies, poor model implementation and data privacy and protection



Data privacy protection, third party dependencies and poor model specification remain critical risks for the lending sector. Over dependency on third party services providers opens gaps that could lead to cyber security breaches, loss of sensitive data resulting in reputational damage.

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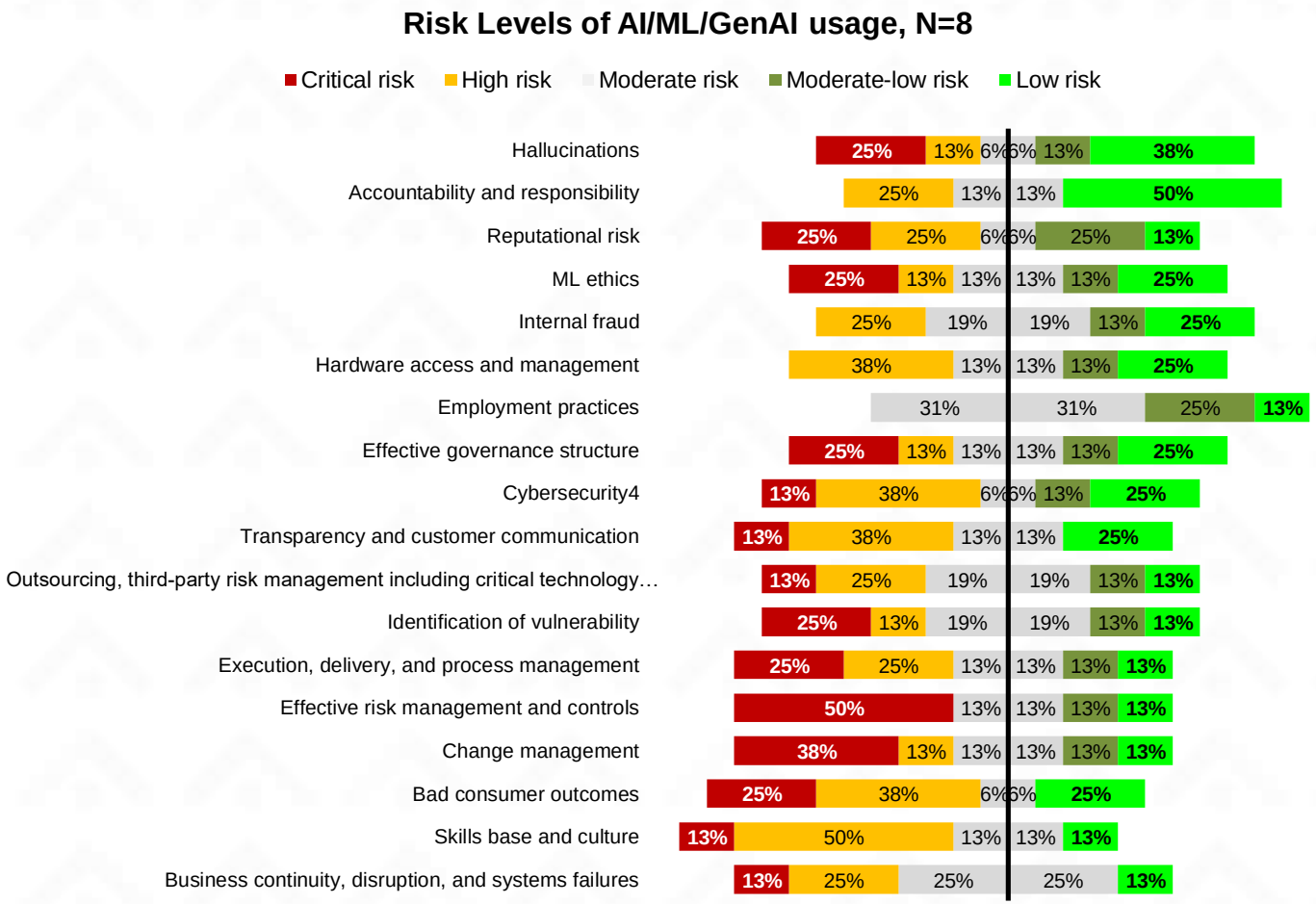
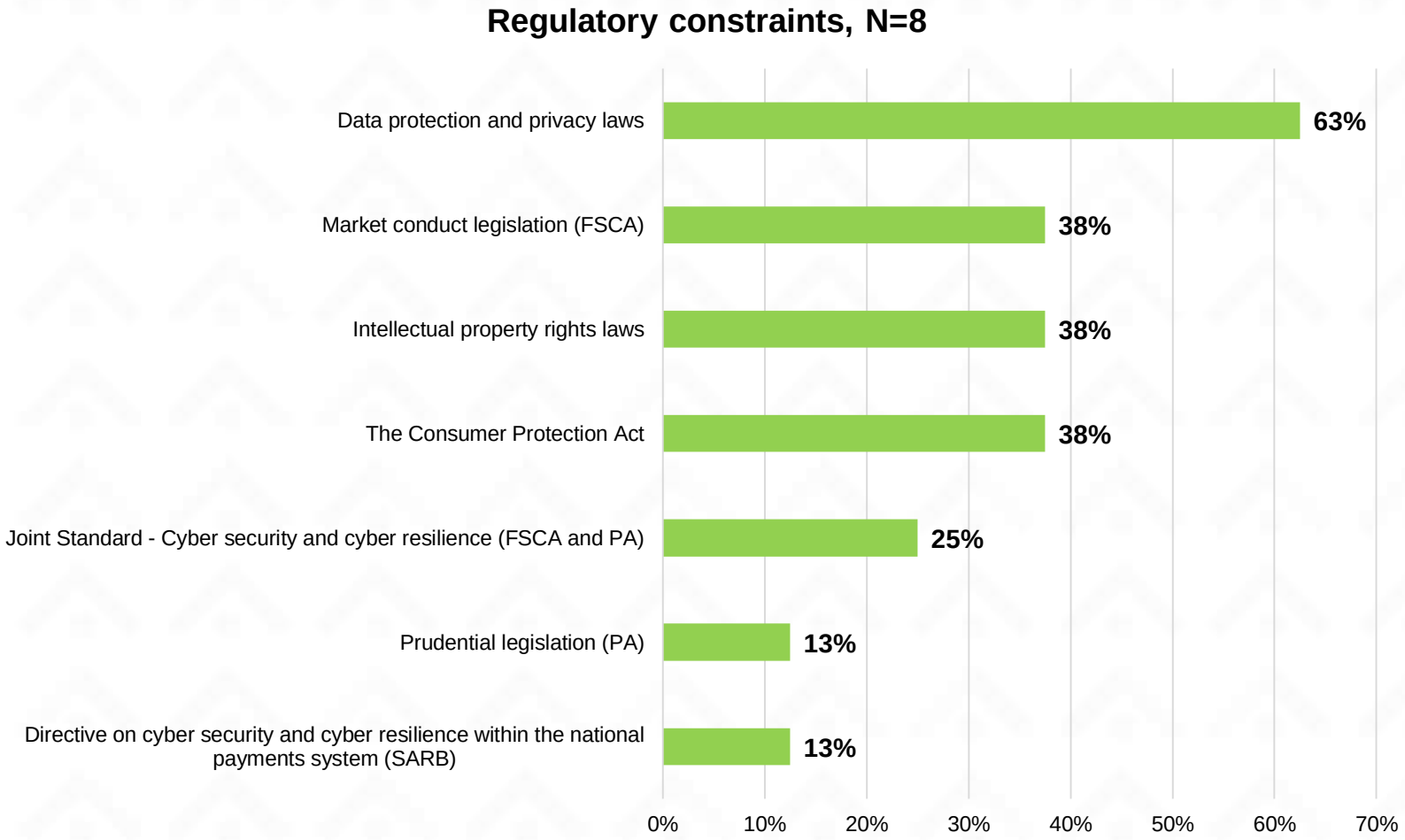
The highest risks also include effective risk management and controls



Skills and base culture together with effective risk management controls are challenges that exists especially in lower class countries as there is a lack of skills and resources to bring up the necessary skill in the market.

The most prominent regulatory constraint is data protection and privacy laws followed by market conduct legislation, intellectual property rights laws and consumer protection act



Data protection and privacy laws, such as POPIA, GDPR and CCPA, impose stringent requirements on lending institutions. These regulations ensure the safeguarding of sensitive financial data, requiring robust compliance frameworks. Non-compliance can lead to severe penalties, reputational damage, and legal liabilities, making adherence essential for maintaining trust and operational integrity.

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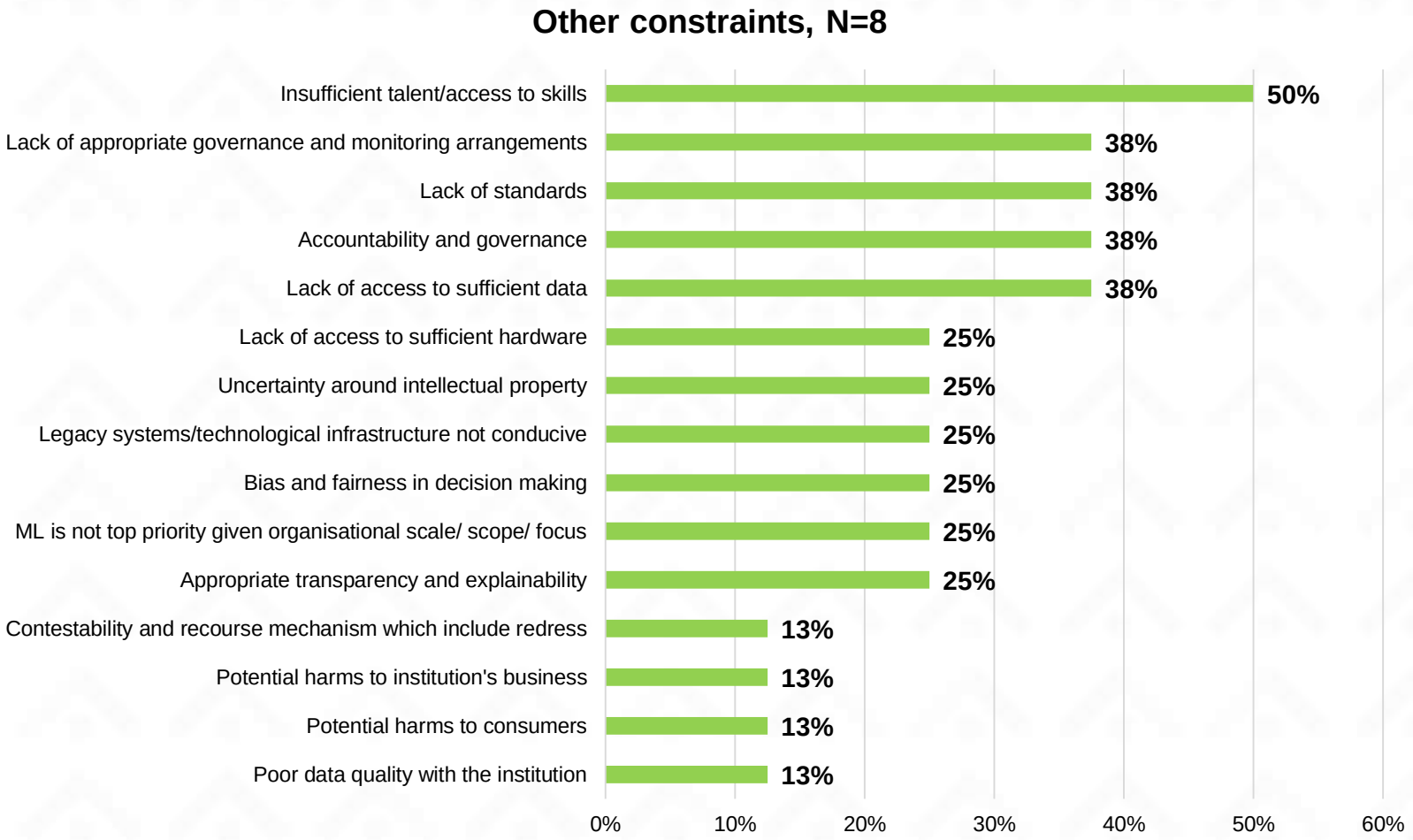
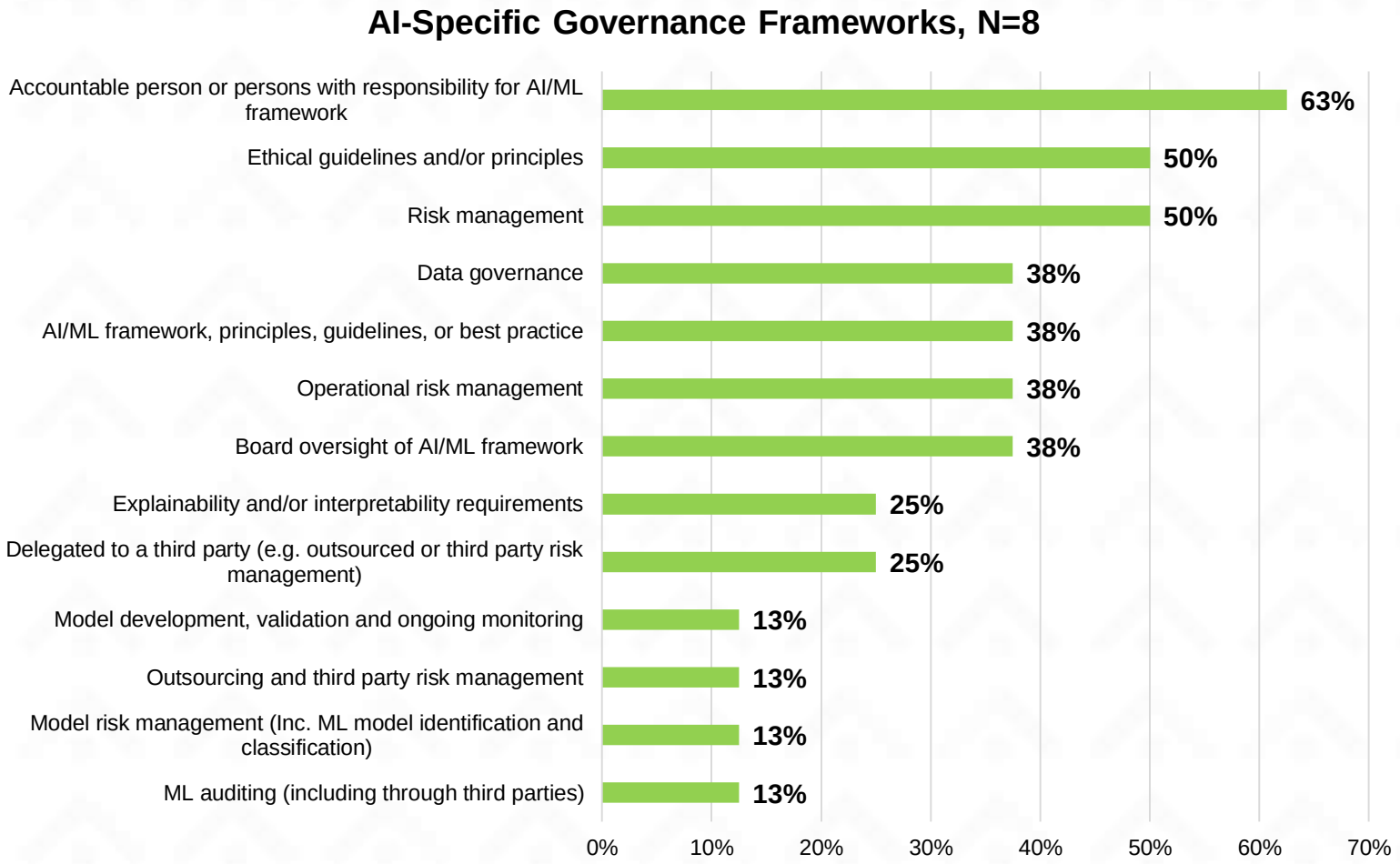
Other constraints include insufficient talent/access to skills



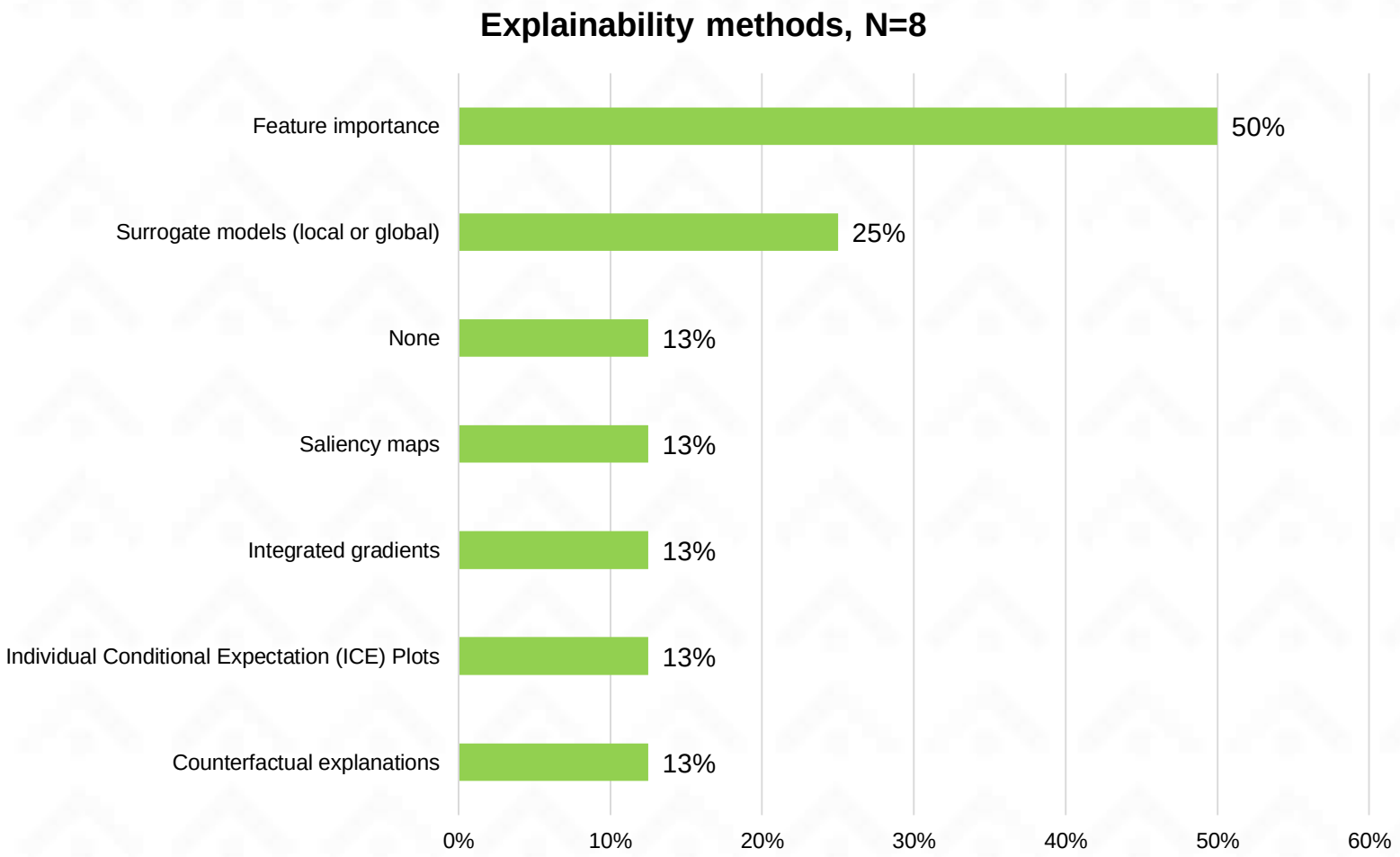
Insufficient talent remains a critical element that is lacking in South Africa constraining the adoption of AI/ML and GenAI. This limits their ability to fully leverage AI/ML, potentially hindering innovation and competitive advantage.

Established governance frameworks include accountable persons, ethical guidelines and risk management



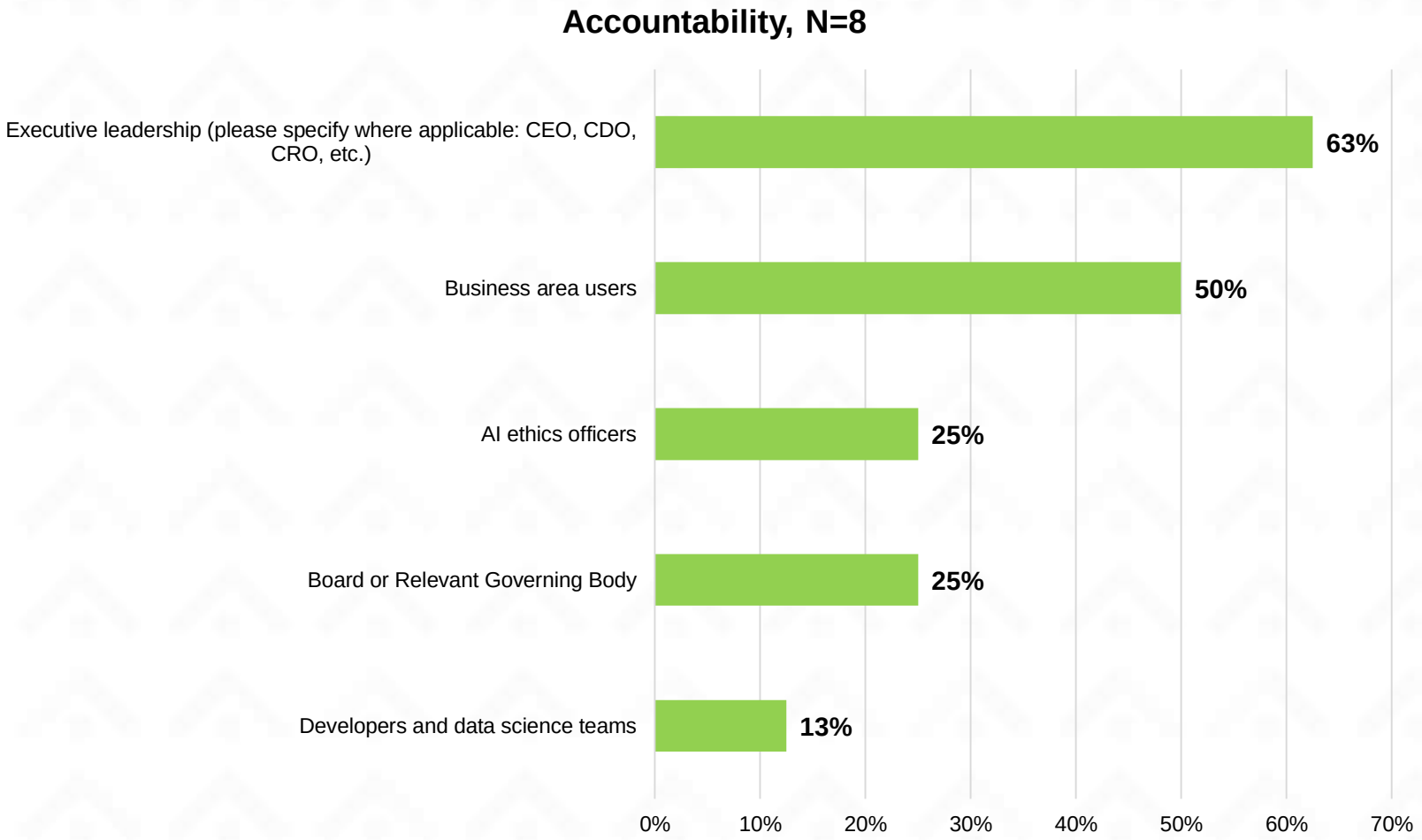
Lending institutions use established governance frameworks like data governance, ethical guidelines, and risk management to ensure data integrity, compliance, and operational stability. These frameworks mitigate risks, enhance decision-making, and maintain regulatory adherence, crucial for protecting sensitive data, maintaining trust, and optimizing performance.

Feature importance is the leading explainability method employed



Lending institutions lack explainability methods for AI models, leading to potential trust and compliance issues. Those that do often use feature importance to interpret model decisions. This enhances transparency and accountability, helping institutions meet regulatory requirements and build customer trust

Accountability in AI/ML/GenAI sits with the Executive leadership



Executive leadership is accountable for AI/ML/GenAI in lending institutions, ensuring ethical practices, regulatory compliance, and strategic alignment. This responsibility includes overseeing implementation, addressing risks, and fostering transparency. Implications involve maintaining trust, mitigating legal liabilities, and optimizing AI benefits while safeguarding against potential harms.

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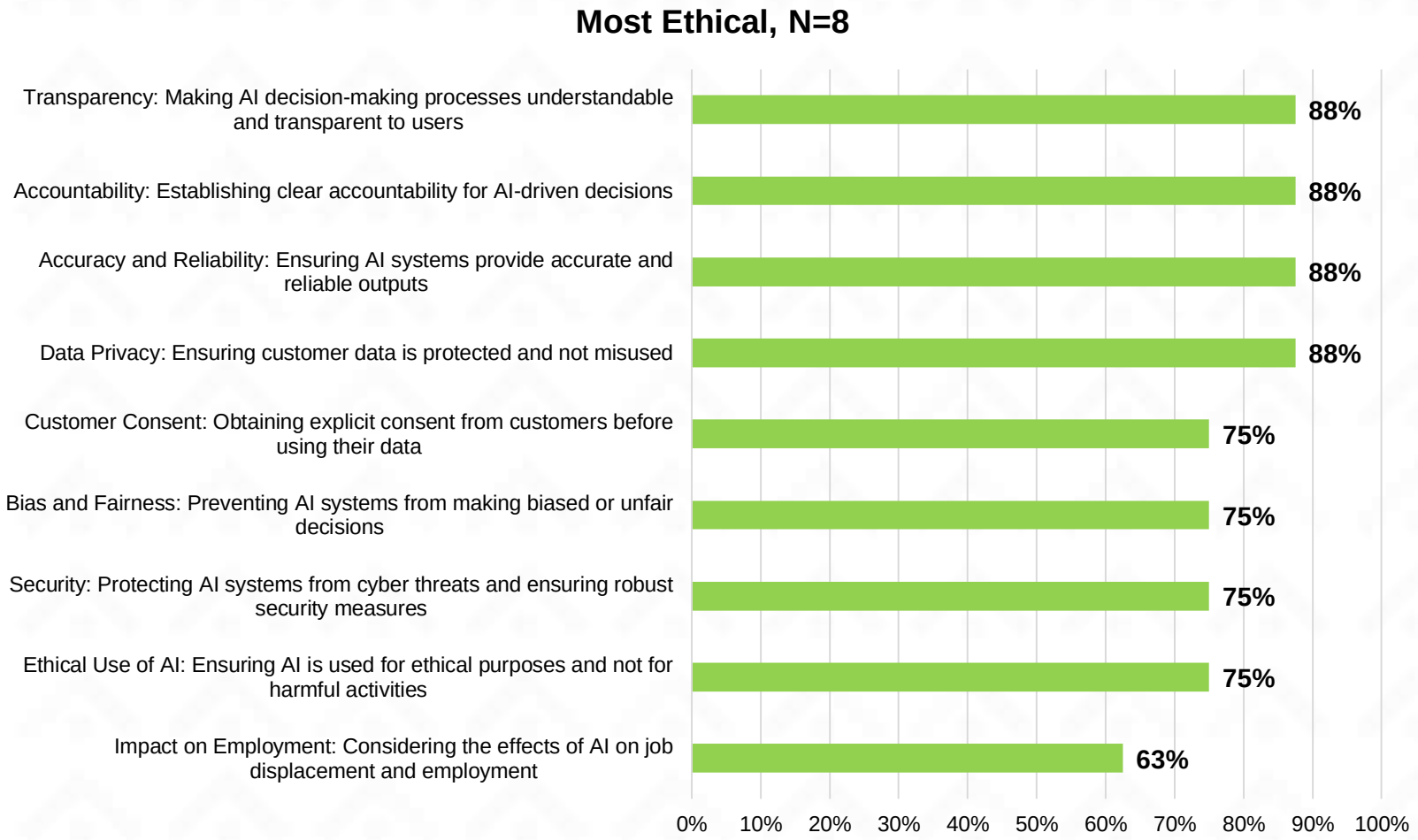
The key ethical considerations is in accuracy and reliability, accountability, transparency and data privacy



Accuracy and reliability is crucial for lending institutions, ensuring systems are fully operational. Data privacy crucial as it builds trust, complies with regulations, and prevents breaches. Implications include maintaining customer confidence, avoiding legal penalties, and safeguarding the institution's reputation.

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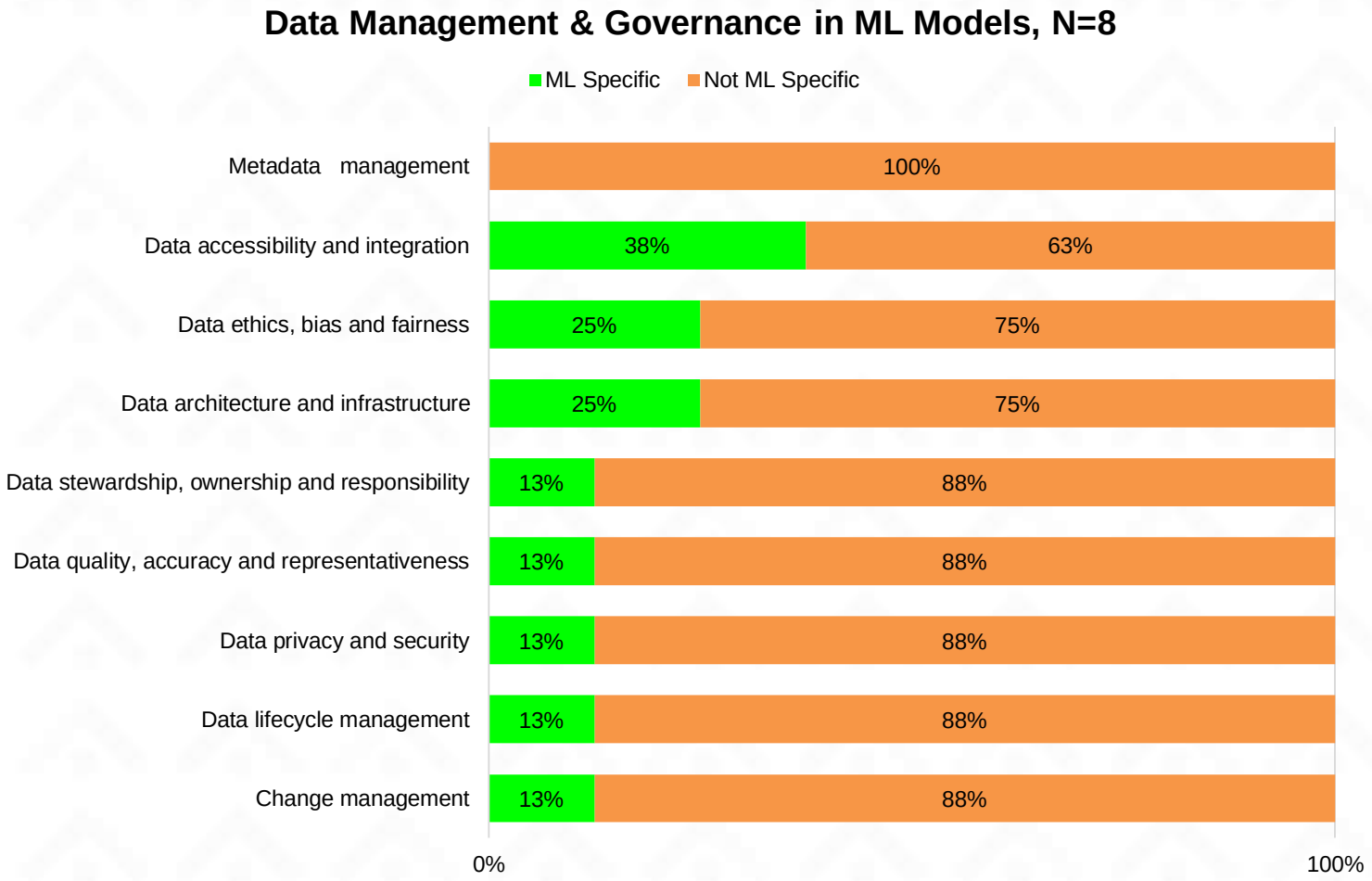
The most ML specific data management and governance in ML models is data accessibility and integration, data ethics, bias and fairness.



Data accessibility and integration are critical for effective ML models in lending sector. They improve credit decision accuracy, enable real-time processing, and support financial inclusion by incorporating diverse data sources. Integrated data enhances model performance, ensures regulatory compliance through transparency and traceability, and reduces operational risks by eliminating silos

Pensions Sector

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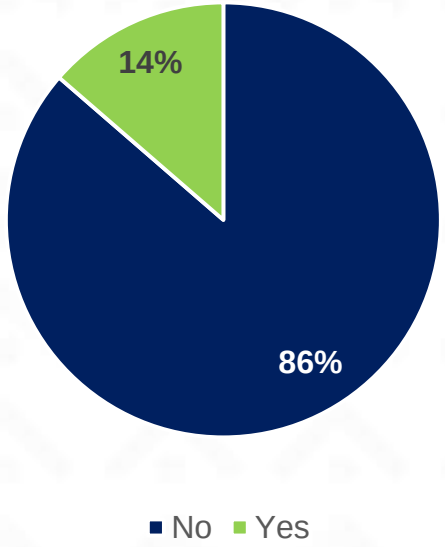
About the data

AI adoption in the pensions sector, N=31



- 22 pensions institution responded to the survey.
- 3 institutions have adopted AI (14%).

Summary of the findings



- Nearly 40% of pensions institutions intend to invest less than R1 million on AI adoption. The highest materiality of AI/ML application is in wealth management, treasury and cash ,management and trade execution . The highest materiality of GenAI application is in wealth management, treasury, cash management and research.
- The highest benefit of AI/ML usage is in productivity and personalization. The highest benefit of using GenAI is operational efficiency. Overall, the highest benefits of AI/ML/GenAI are productivity, operational risk calculations and operational efficiency.
- The leading use/planned use of ML is in AML/CTF: behavioral or transactional monitoring, fraud detection, customer support, cybersecurity and optimisation of internal processes. The leading use/planned use of GenAI is in customer support, including chatbots.
- Risk Levels of AI/ML/GenAI include reproducibility and the use of third-party data.
- The most prominent regulatory constraint is data protection and privacy law. Other constraints include the insufficient talent/access to skills as well as shortcomings in internal data governance.
- Established governance frameworks include data governance, accountable person, and risk management. Accountability for AI/ML/GenAI sits with Business area users. There is no ML specific data management and governance in ML models even in metadata management, data quality, accuracy and representatives.
- The key ethical considerations is in data privacy followed by accuracy and reliability and security ensuring customer data is protected and not misused.
- Most pensions institutions use feature importance; however, they are followed by institutions that use no explainability methods.

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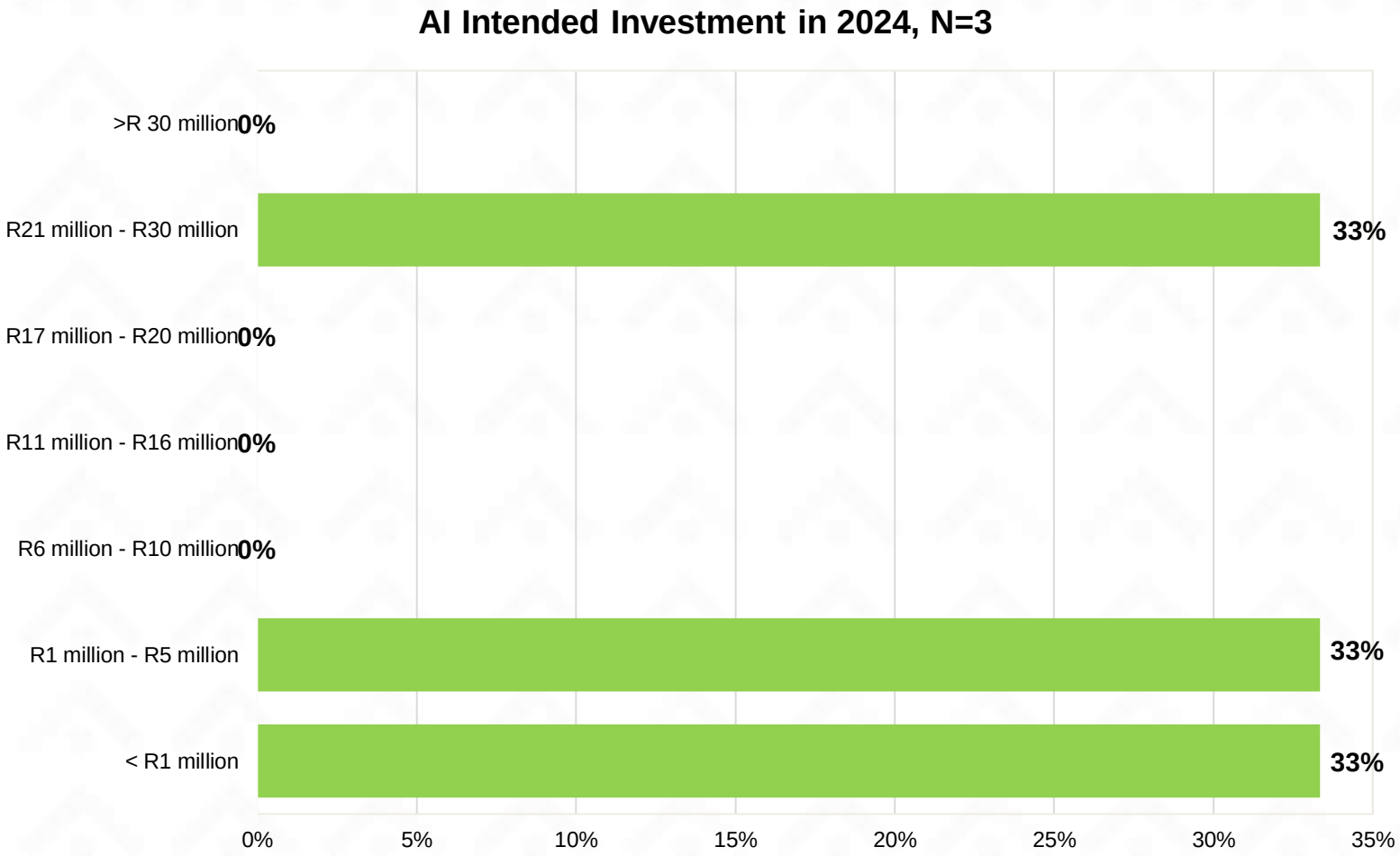
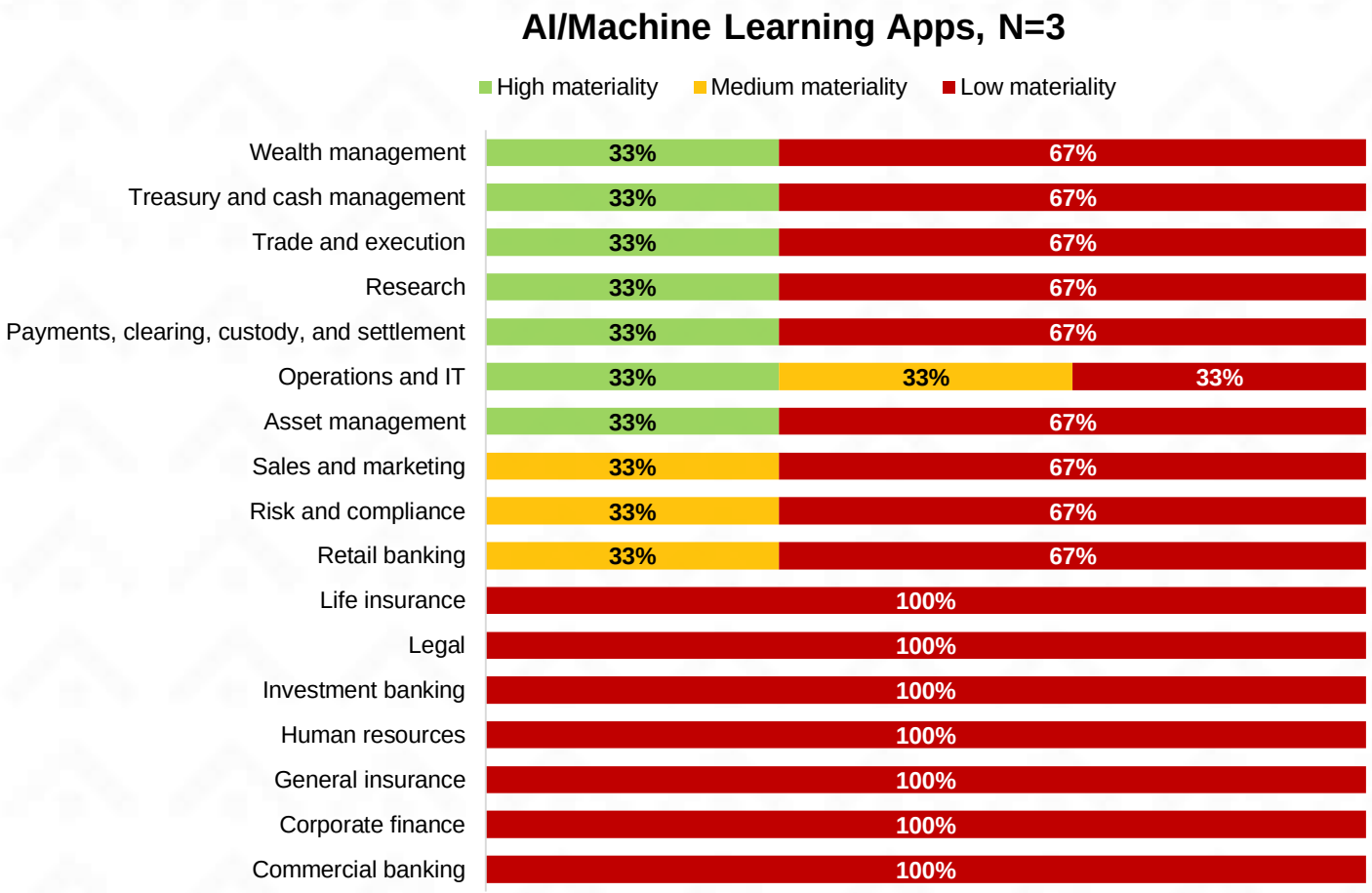
Nearly 40% of Pensions institutions intend to invest less than R1 million on AI adoption



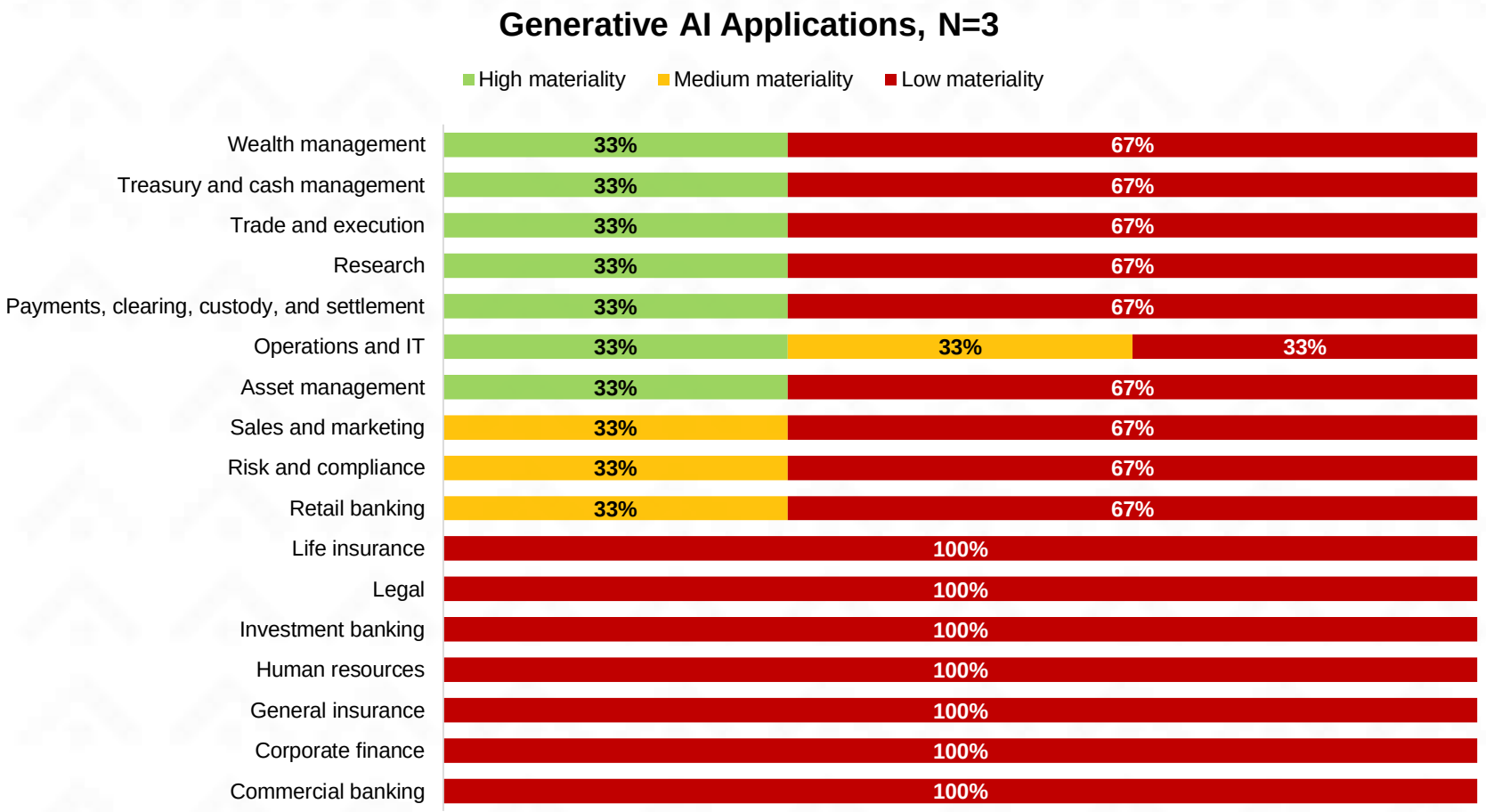
Nearly 40% of pension institutions intend to spend R1 million in AI adoption, reflecting cautious spending. This conservative approach may stem from budget constraints, risk aversion, or a focus on incremental implementation. Despite limited investment, AI's potential for significant returns remains a compelling incentive.

The highest materiality of AI/ML application is in wealth management, treasury and cash ,management and trade execution



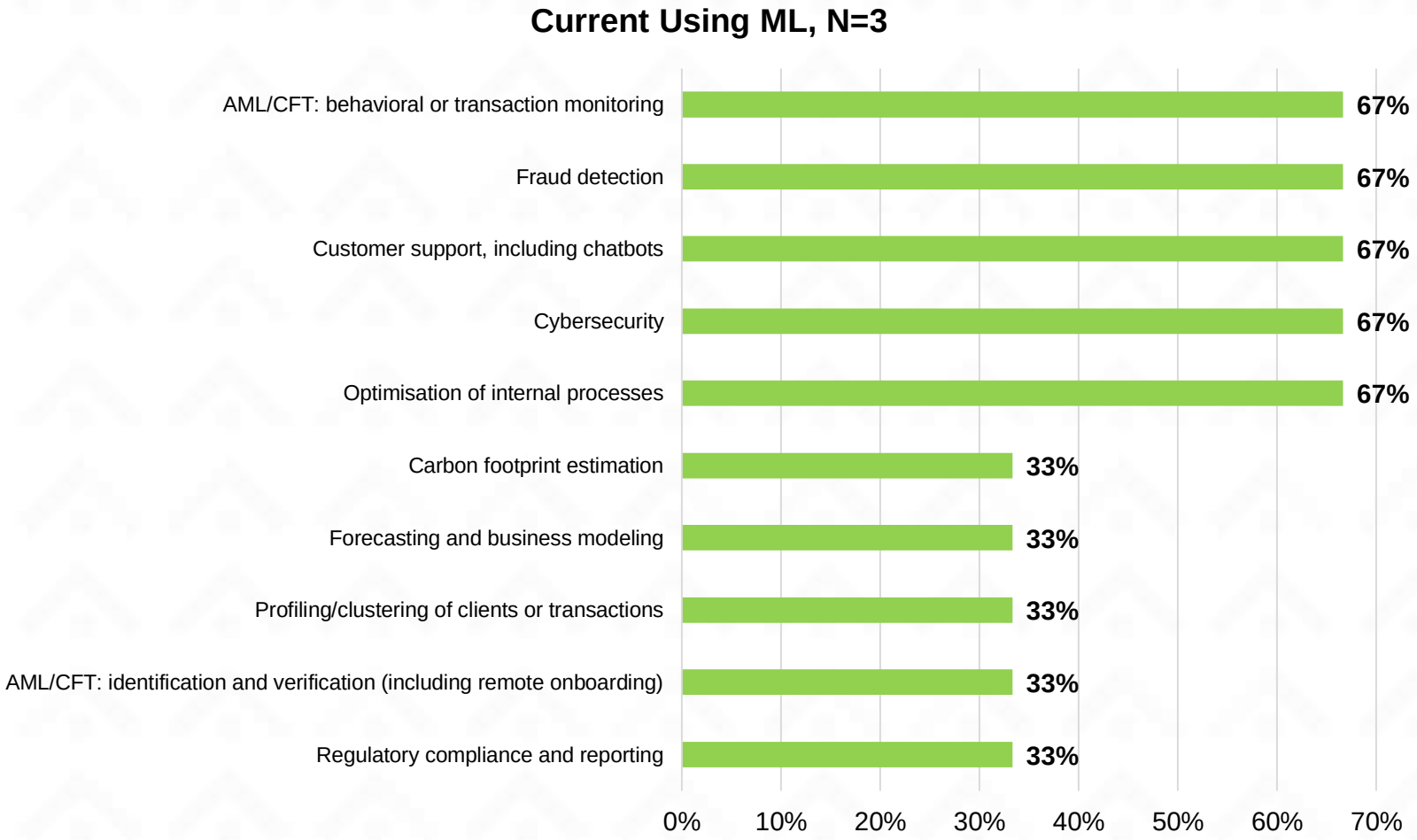
The pensions sector leverages AI/ML applications for wealth management, trade executions, research and cash management. It improves operational efficiency and encourages better performance.

The highest materiality of GenAI application is in wealth management, treasury and cash management and research



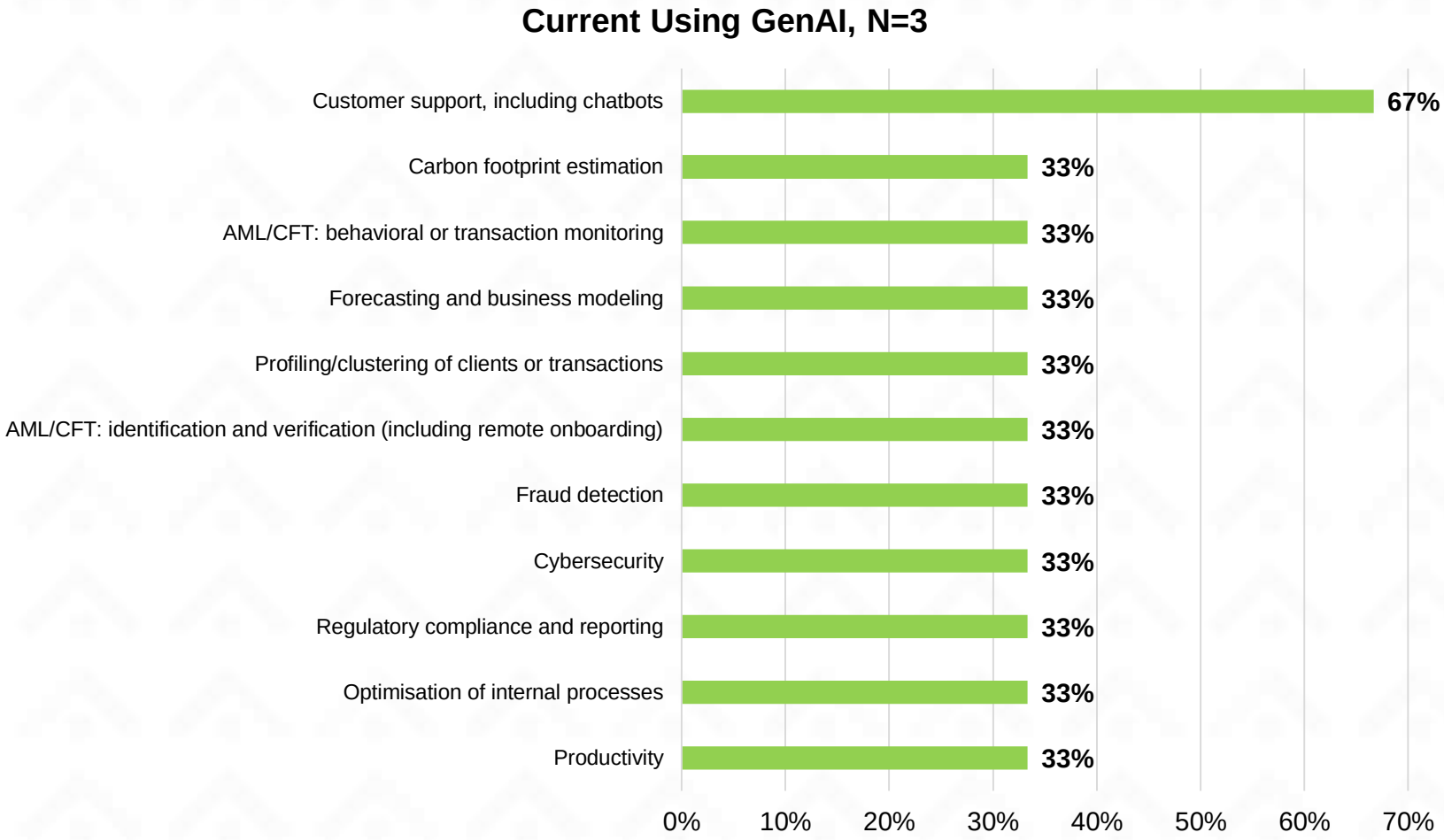
GenAI has high materiality in wealth management, cash management, trade execution, research and payments, clearing custody and settlement. GenAI enhances efficiency and decision-making across functions, with strong governance needed to manage associated risks.

The leading use/planned use of ML is in AML/CTF: behavioral or transactional monitoring, fraud detection, customer and support.



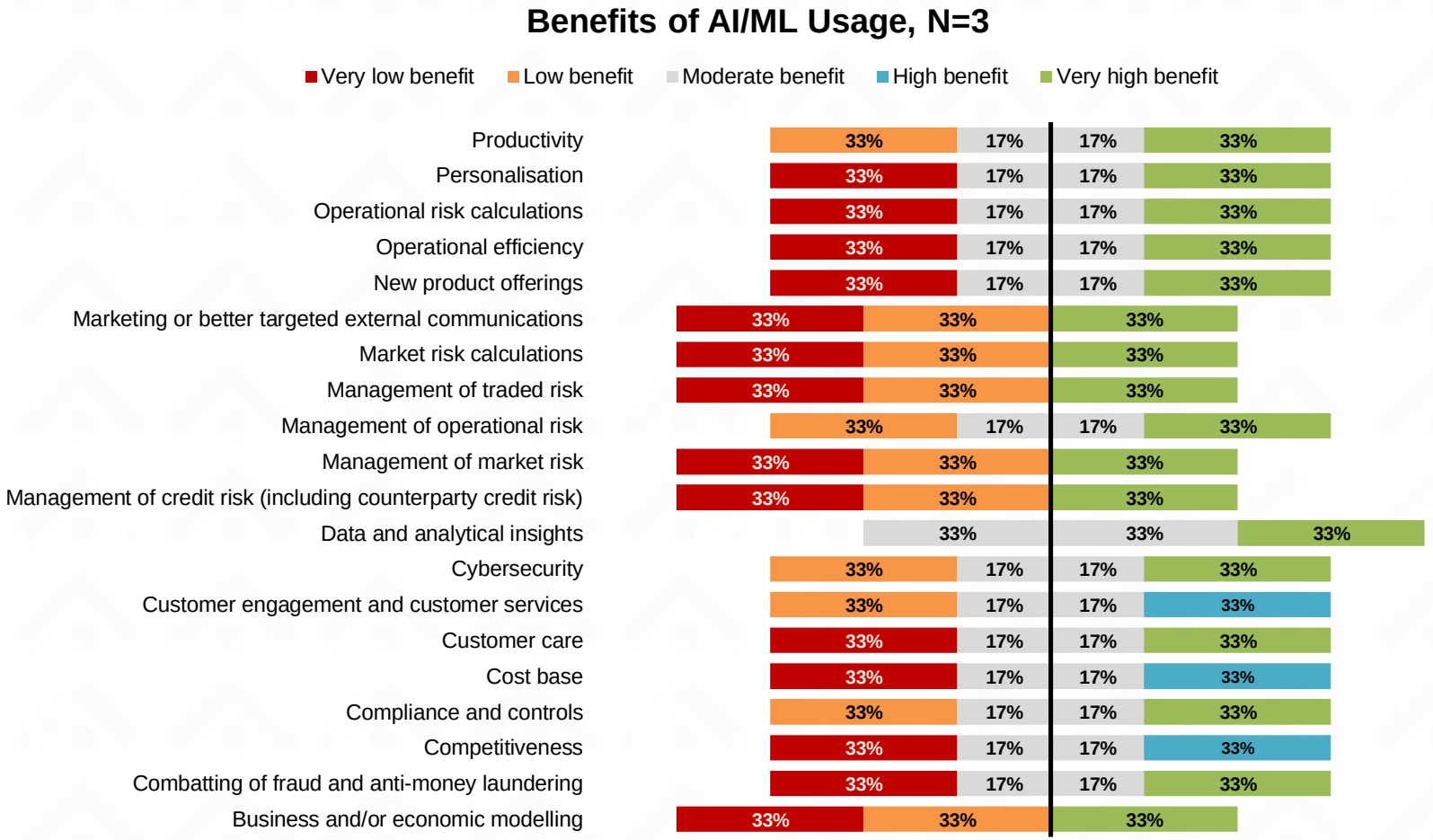
Institutions in the pensions industry use ML application for AML/CFT: behavioral or transactional monitoring, fraud detection. This approach ensures this institutions are compliant and builds trust with stakeholders.

The leading use/planned use of GenAI is in customer support, including chatbots



Pensions sector leverages GenAI for customer support and chatbots and optimizing member engagements, personalized interactions and streamlined onboarding and account management.

Overall, the highest benefits of AI/ML are in productivity, personalization and operational risk calculations



Impact of AI/ML usage on the pensions sector is productivity leading to more competitiveness. The adoption of AI/ML has streamline operations, lower costs, and support regulatory compliance, driving safer, more efficient, and inclusive lending across the financial ecosystem.

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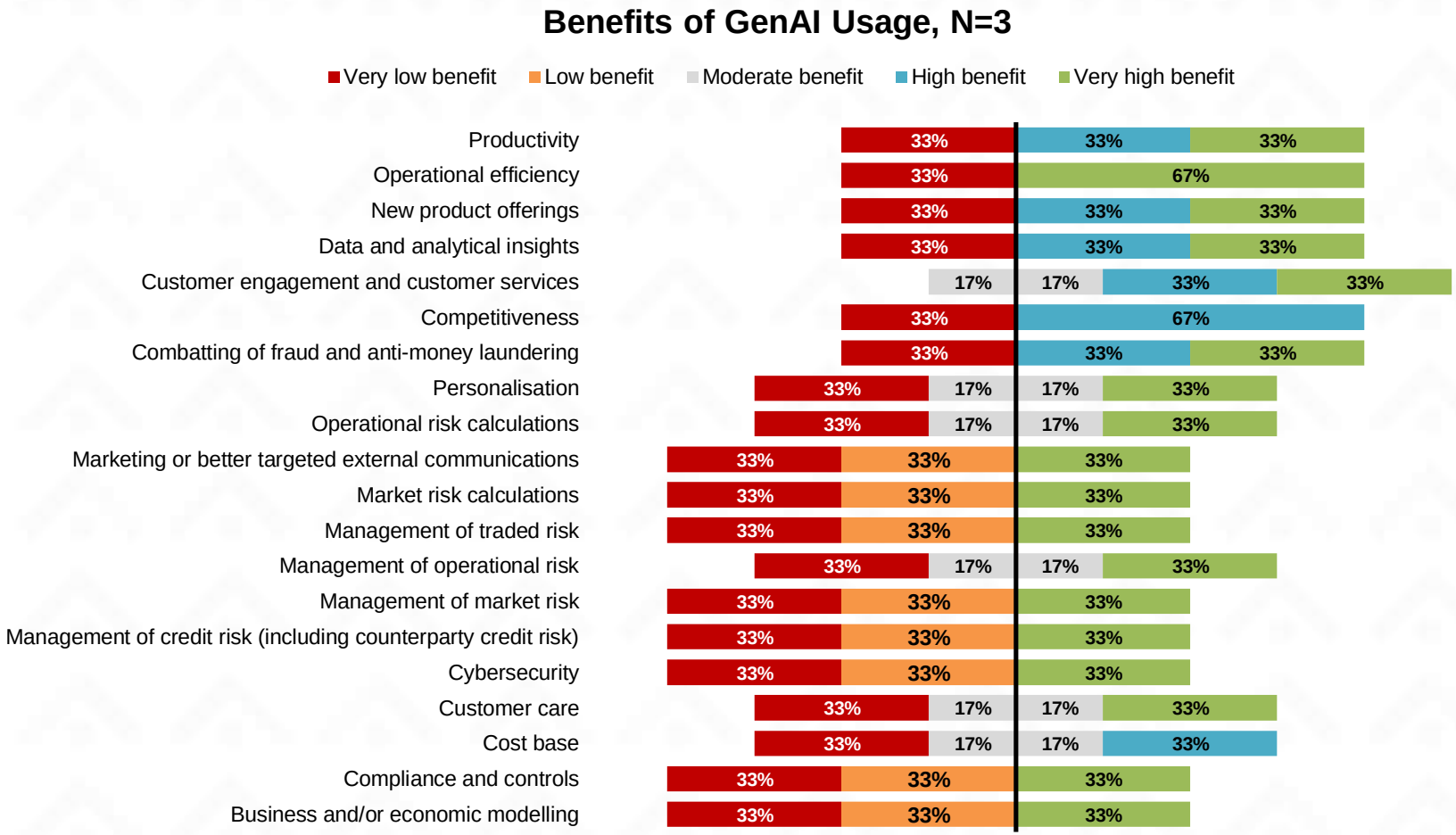
The highest benefit of using GenAI is operational efficiency followed by productivity and new product offering.



GenAI in the pensions sector provides major benefits in enhancing operational efficiency fueling better performance, compliance and competition.

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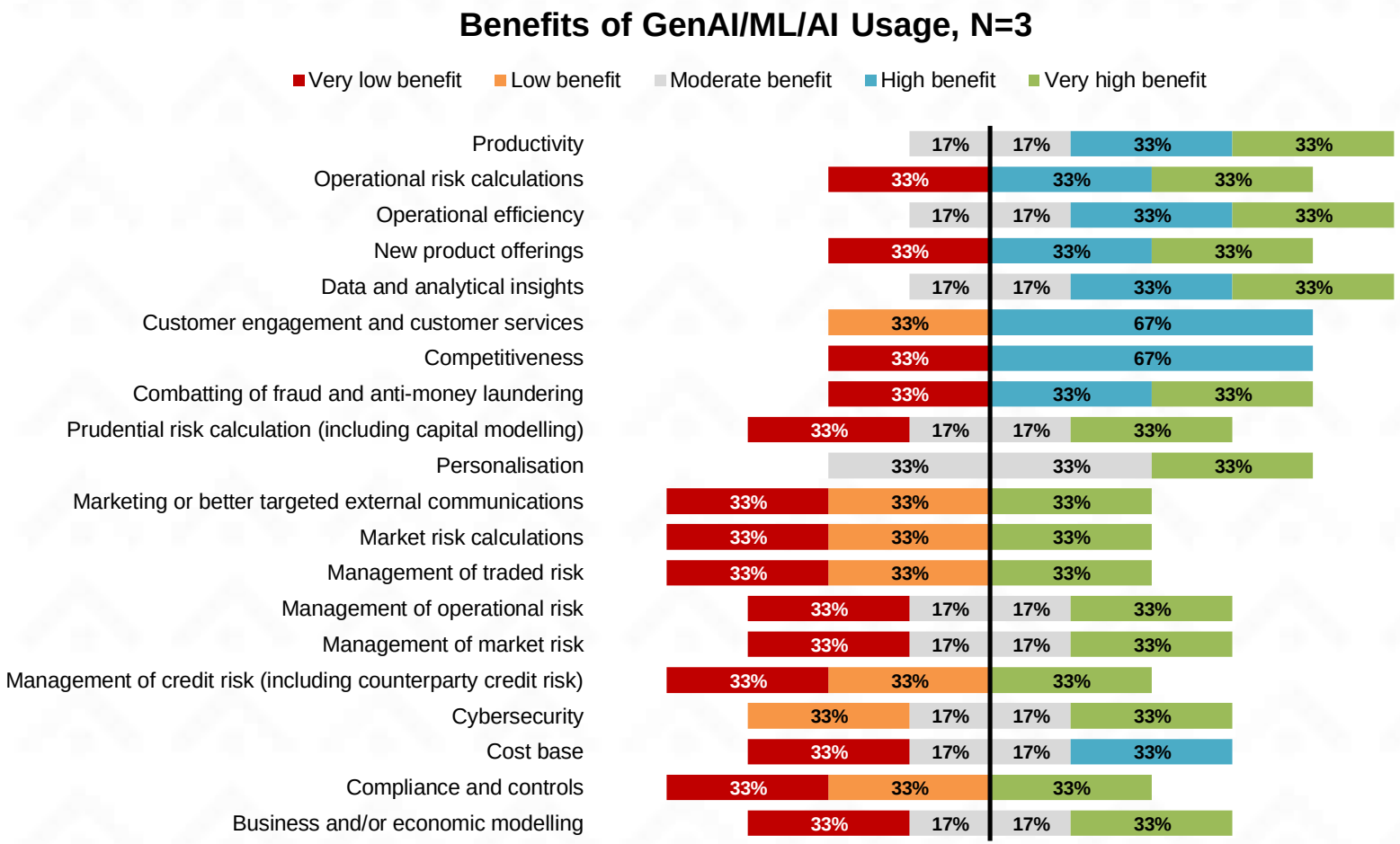
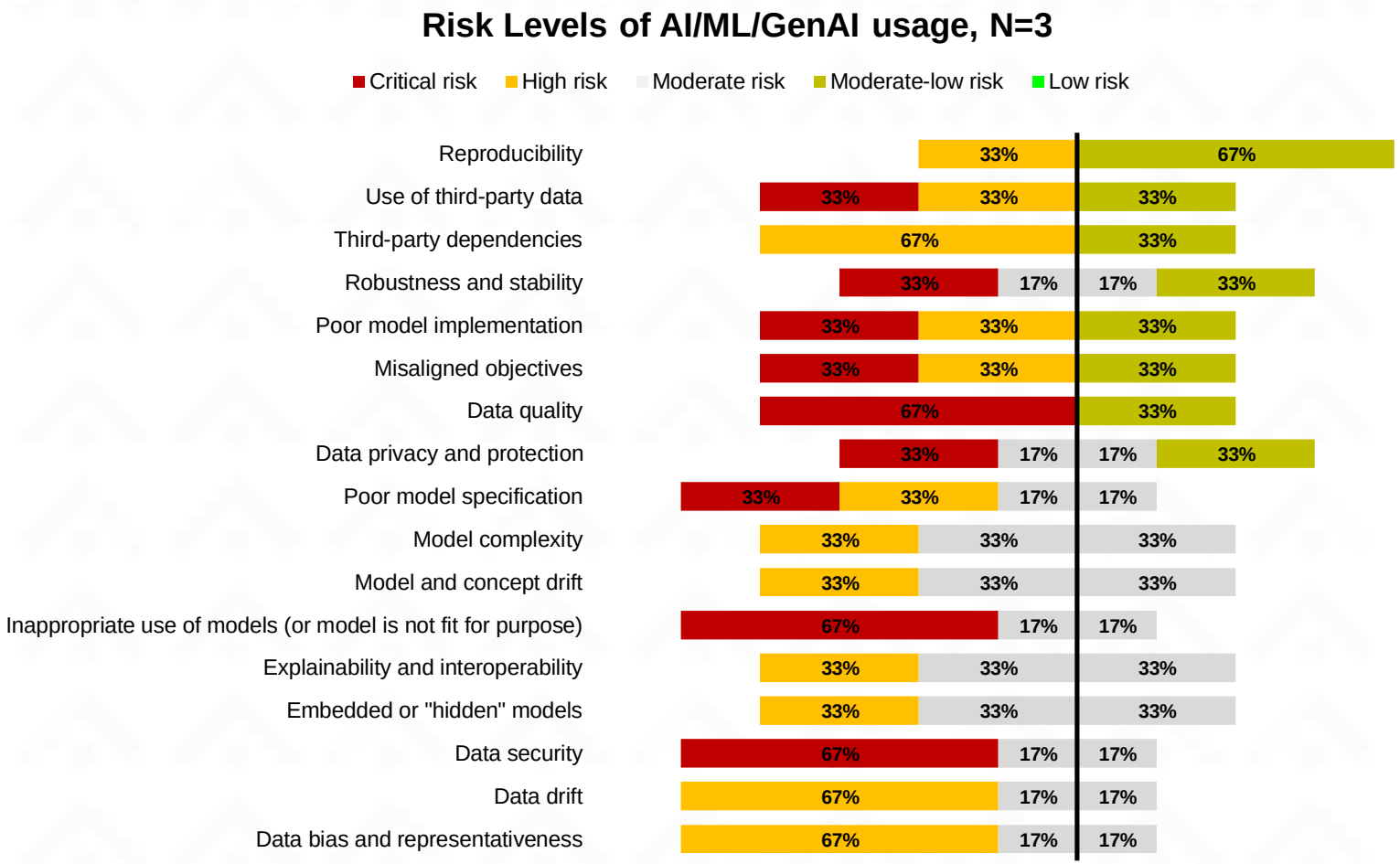
Benefits of GenAI/ML/AI usage include productivity, operational risk calculations and operational efficiency



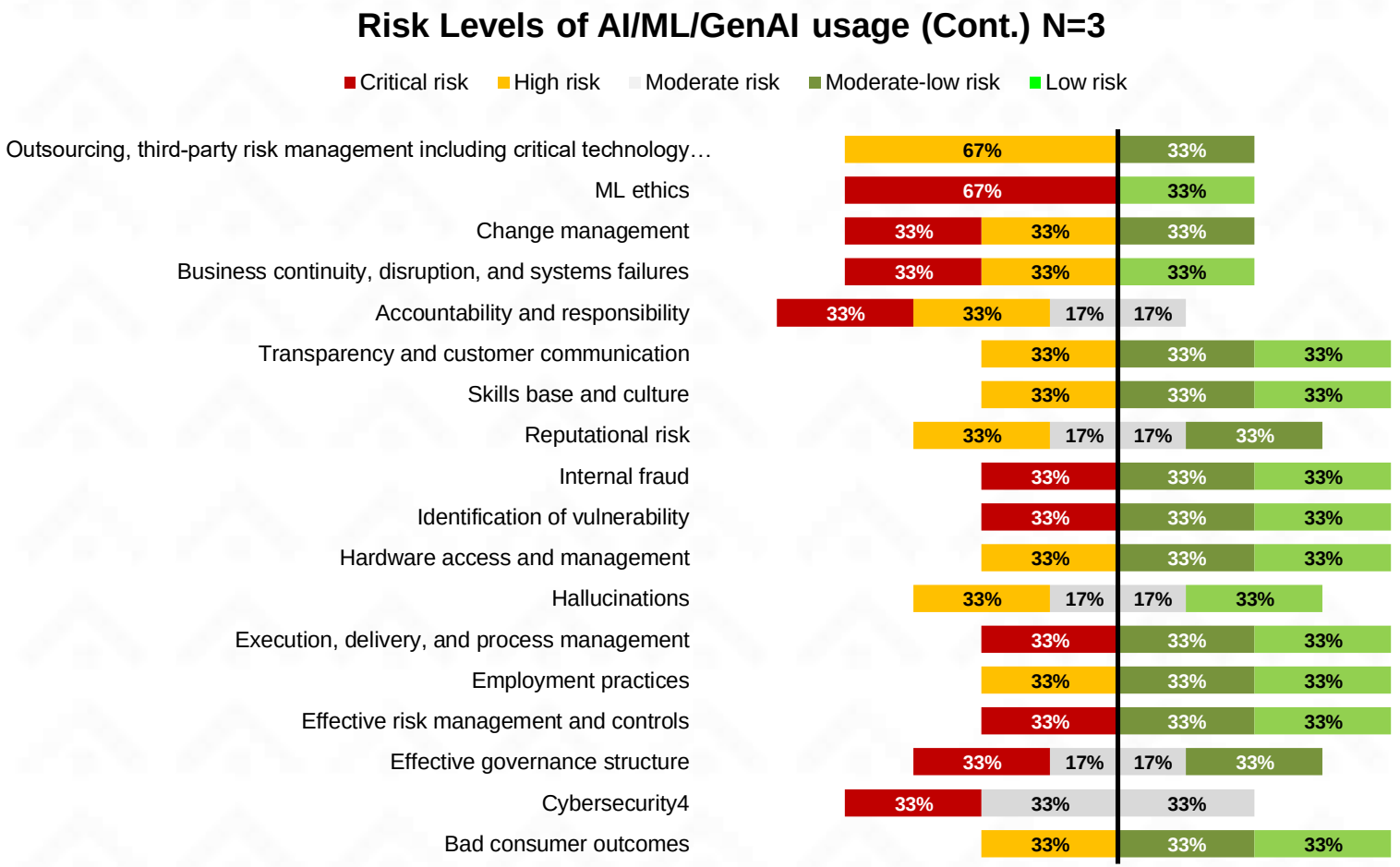
The pension sector experiences major benefits of AI usage mainly for productivity, product offering enhancing competition and customer engagements and customer services.

Risk Levels of AI/ML/GenAI include reproducibility and the use of third-party data



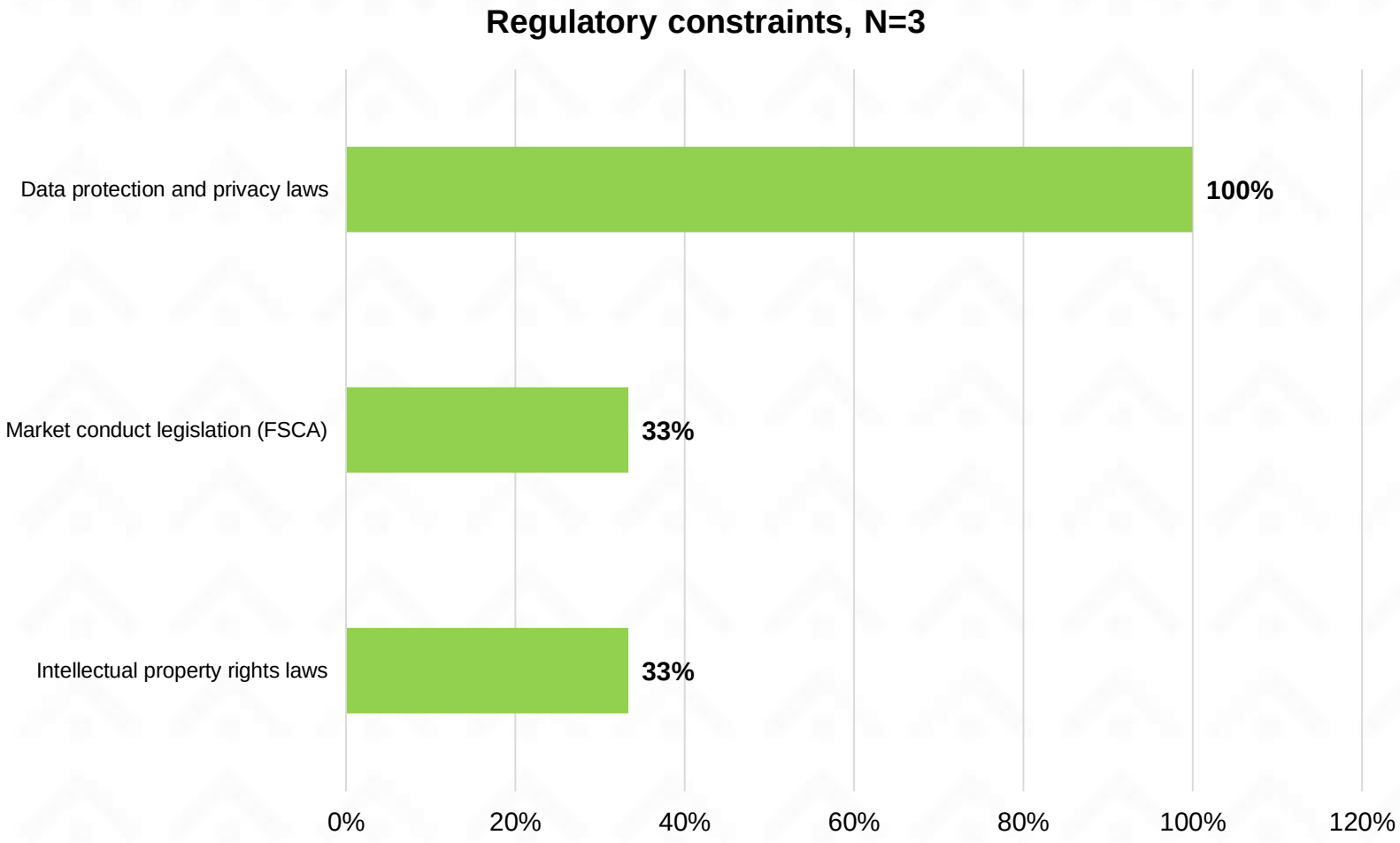
The critical risks that exists within the pensions sector is data security, inappropriate use of models and data quality. These factors have poor protection can result in heavy financial losses, compliance issues and data breaches.

The highest risks also include outsourcing and ML ethics (cont.)



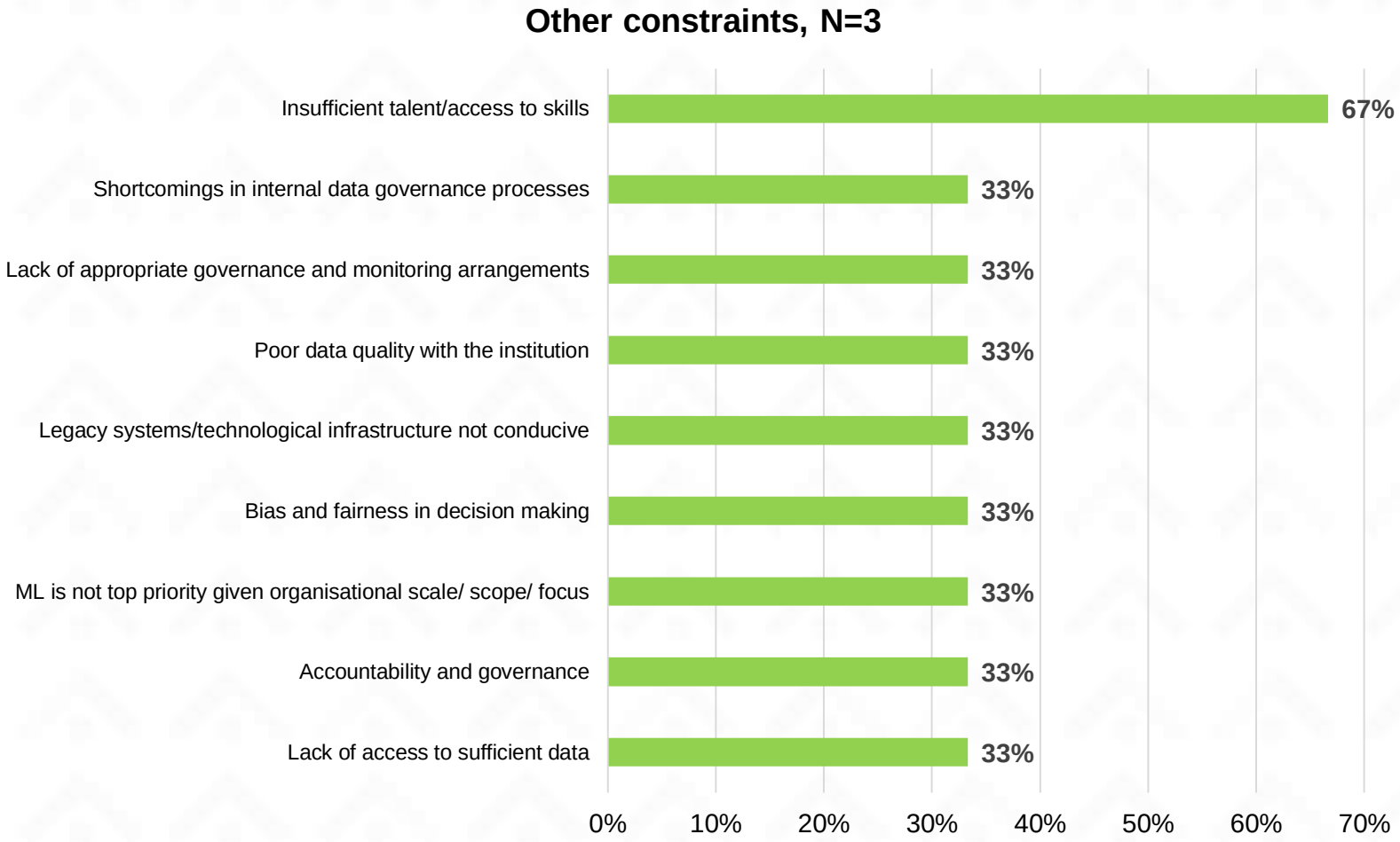
ML ethics and outsourcing remain a challenges that exists especially in lower class countries as there is a lack of skills and resources to bring up the necessary skill in the market.

The most prominent regulatory constraint is data protection and privacy laws



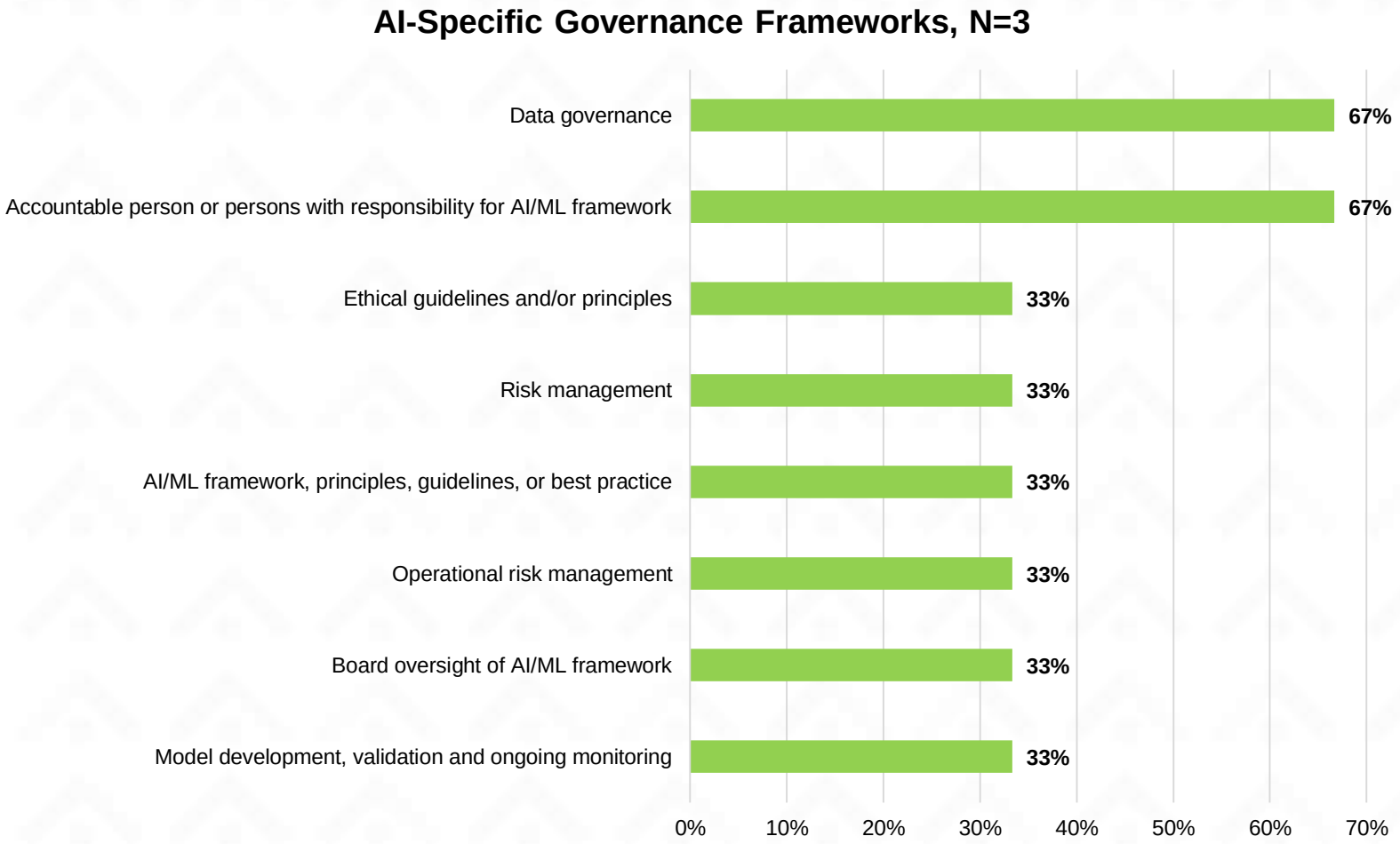
Data protection and privacy laws, such as POPIA, GDPR and CCPA, impose stringent requirements on pensions institutions. These regulations ensure the safeguarding of sensitive financial data, requiring robust compliance frameworks. Non-compliance can lead to severe penalties, reputational damage, and legal liabilities, making adherence essential for maintaining trust and operational integrity.

Other constraints include insufficient talent/access to skills



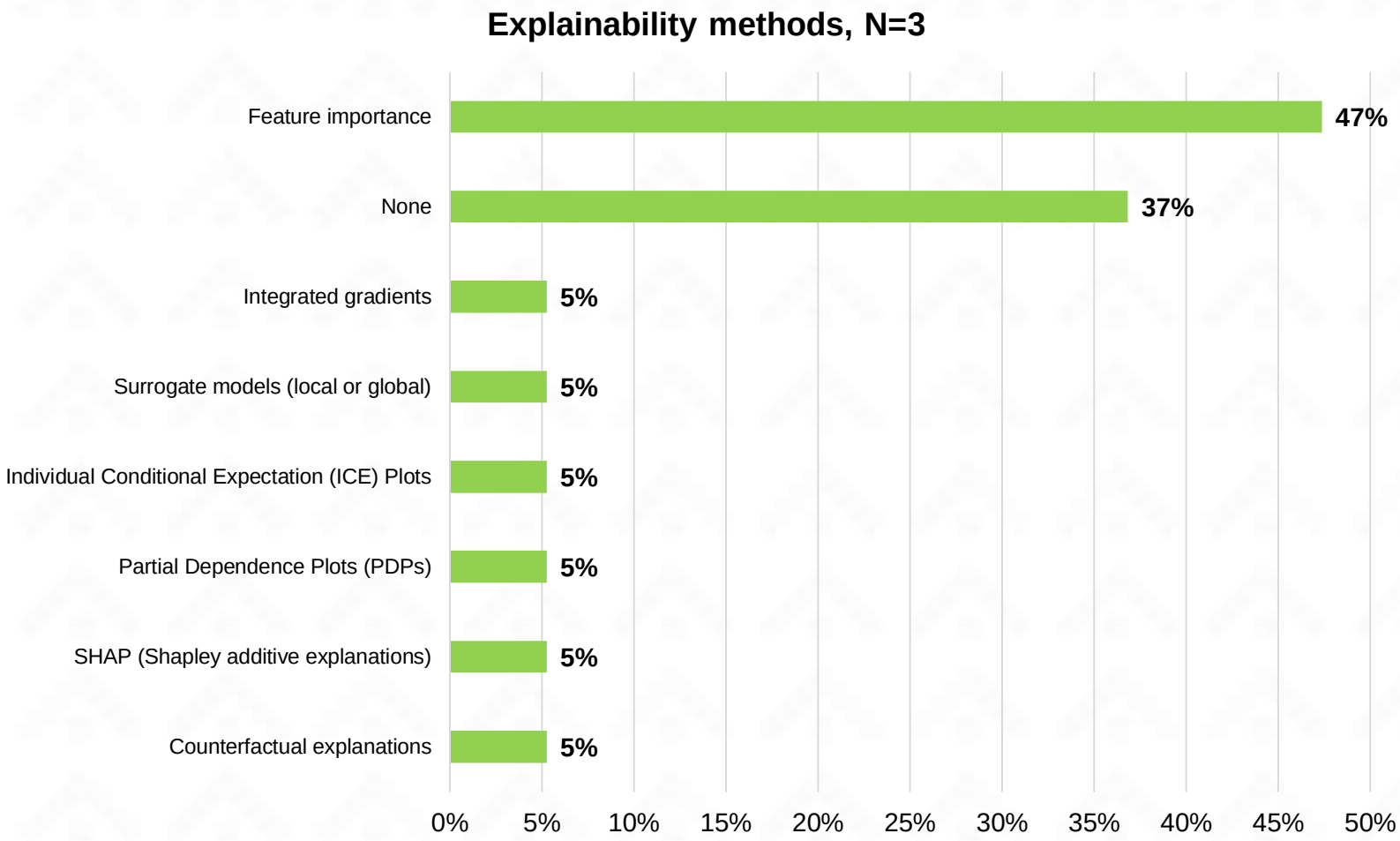
Insufficient talent remains a critical element that is lacking in South Africa constraining the adoption of AI/ML and GenAI. This limits their ability to fully leverage AI/ML, potentially hindering innovation and competitive advantage.

Established governance frameworks include data governance and accountable persons for AI/ML framework



Pensions institutions use established governance frameworks like data governance and accountable persons. These frameworks mitigate risks, enhance decision-making, and maintain regulatory adherence, crucial for protecting sensitive data, maintaining trust, and optimizing performance.

Feature importance is the leading explainability method employed by Pensions institutions



Pensions institutions lack explainability methods for AI models, leading to potential trust and compliance issues. Those that do often use feature importance to interpret model decisions enhances transparency and accountability, helping institutions meet regulatory requirements and build customer trust

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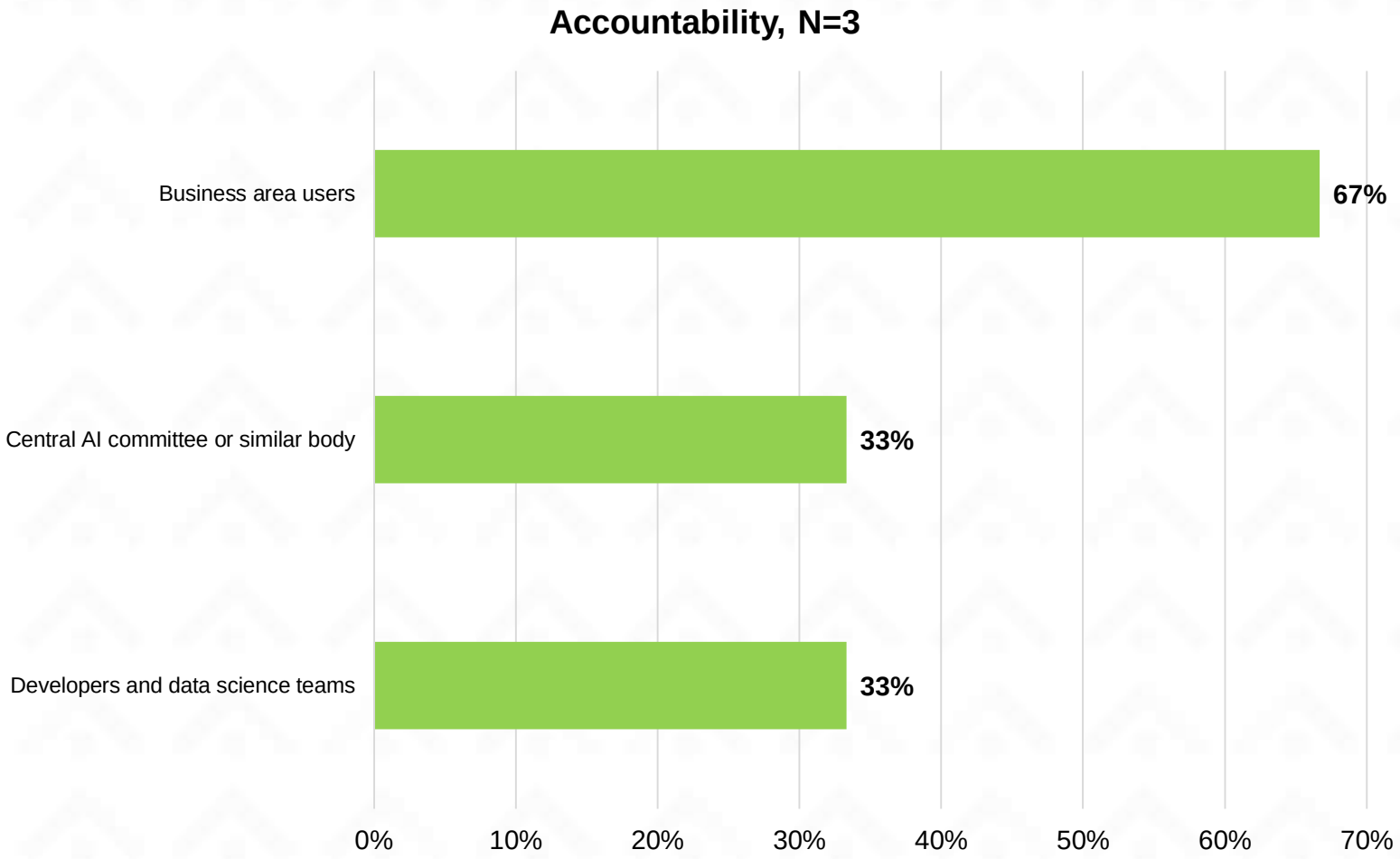
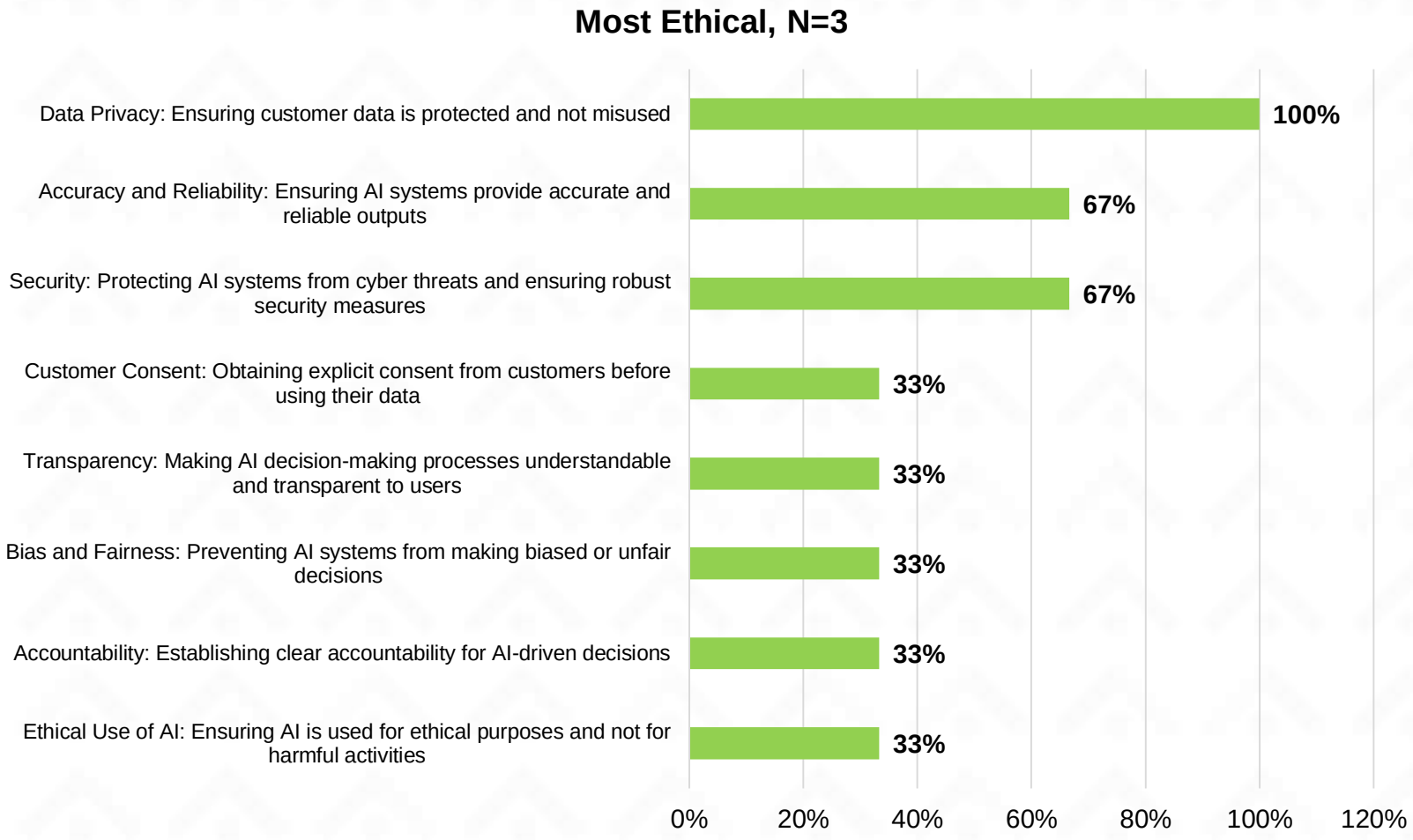
Accountability in AI/ML/GenAI sits with Business area users



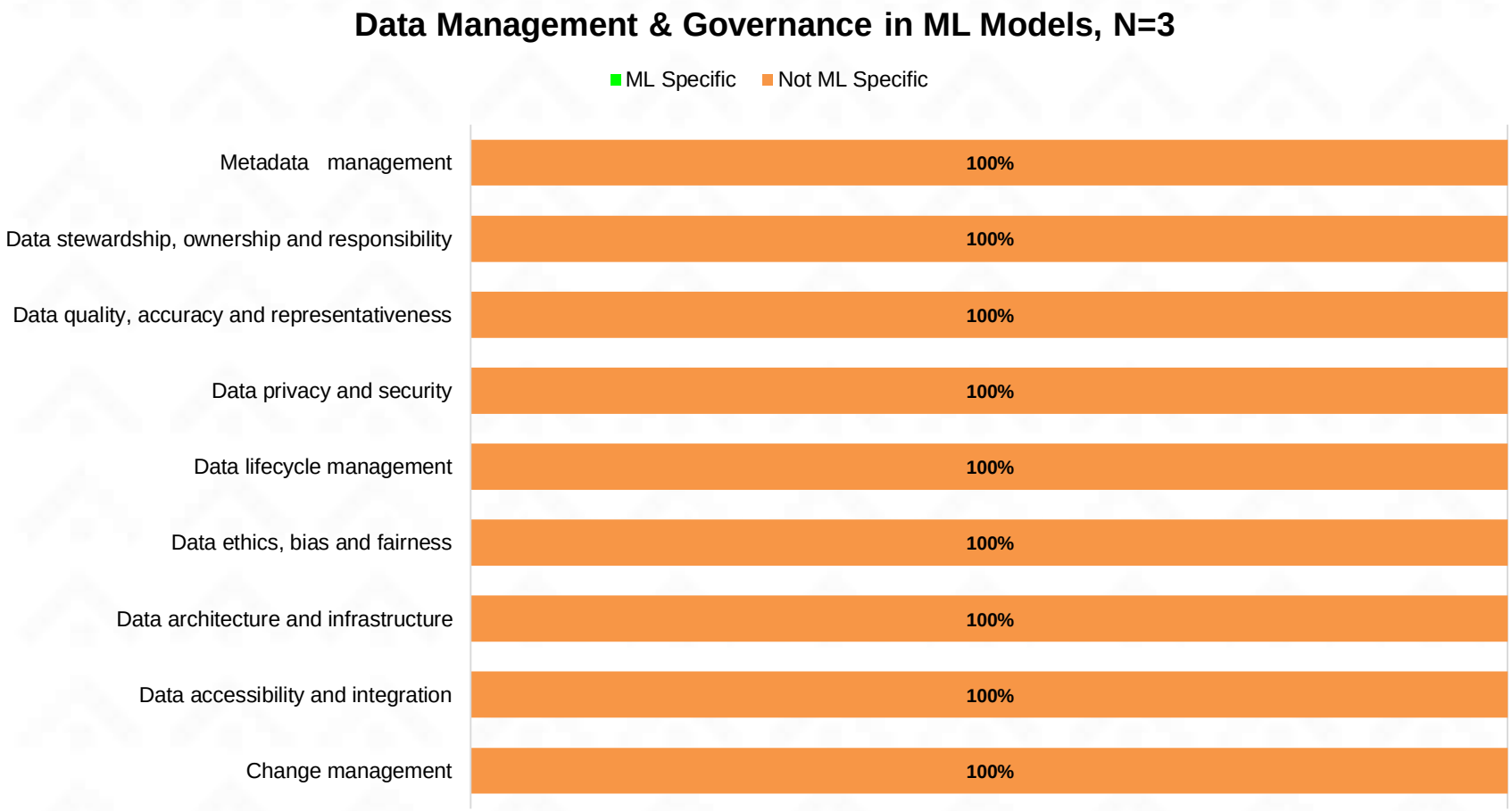
Business area use is accountable for AI/ML/GenAI in pensions institutions, ensuring ethical practices, regulatory compliance, and strategic alignment. This responsibility includes overseeing implementation, addressing risks, and fostering transparency. Implications involve maintaining trust, mitigating legal liabilities, and optimizing AI benefits while safeguarding against potential harms.

The key ethical considerations is in data privacy followed by accuracy and reliability and security.



Data privacy, accuracy and reliability is crucial for pensions institutions, ensuring systems are fully operational. Data privacy crucial as it builds trust, complies with regulations, and prevents breaches. Implications include maintaining customer confidence, avoiding legal penalties, and safeguarding the institution's reputation.

There is no ML specific data management and governance in ML even in Meta data management, data quality, accuracy and representatives.



Data privacy, data accessibility and integration are not ML specific in the pensions sector.

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