AI and Human Rights in Retail

April, 2023

BSR®

This is an industry primer on how artificial intelligence (AI) technologies are driving change within the retail sector and the challenges and opportunities that trend brings from the perspective of human rights.

As the retail industry continues its digital transformation, retailers need to consider the impacts of AI for three main reasons:

Human Rights

Technological transformation brings complex, nuanced, and systemwide risks and opportunities for the realization of human rights. These risks and opportunities are related to both the **design** and **development** of technologies, as well as how technologies are **deployed** and **used** by companies, such as retailers.

Evolving Regulatory Environment

Changes in the regulatory landscape, including the EU's proposed Corporate Sustainability Due Diligence Directive and Artificial Intelligence Act, signal that companies outside of the technology industry will need to have a better understanding of the human rights impacts of the AI solutions they deploy. It is noteworthy that companies using AI, not just companies selling AI, are considered in scope for the proposed EU AI Act.

Lack of Company Processes

In initial engagements with retail companies, BSR has observed that most retailers do not have the internal processes to review the ethical dimensions of AI applications

that large technology companies have. Some retailers have started addressing AI ethics and have formed internal teams dedicated to responsible technology use, such as H&M Group's Responsible AI team. However, these are exceptions in an industry that is largely unaware of the emergent risks of algorithmic decision-making.

With this context, BSR has started engaging retail companies and the technology companies that provide AI services to them to better understand the current use cases of AI, associated human rights risks, and the processes and policies in place to address those risks. This primer summarizes our findings and observations from these engagements and makes preliminary recommendations to companies in the retail sector on how they can address the human rights impacts of AI in retail.

This primer is not intended to provide a comprehensive assessment of human rights impacts across the retail industry. Rather, it introduces salient human rights issues associated with the increased use of AI technology in the retail sector. The findings outlined in this primer are intended to be a starting point; retail companies that would like to further explore these issues should undertake more comprehensive human rights due diligence.[1]

BSR welcomes input from retail companies on this topic.

Please reach out to Lale Tekisalp or Hannah Darnton if you would like to join the conversation.

# The Use of AI in the Retail Industry

With the digital transformation of the retail industry, an increasing array of digital technologies are being used in combination to create automated processes, both in retail stores and in the retail supply chain.

The retail industry is among the top spenders in AI, with retail companies having spent over US$5 billion on AI technologies in 2020.[2] Retail companies use AI solutions to address a variety of business needs. According to a 2020 report, top use cases of AI in retail include customer care, quality control, inventory management, personalization of products and services, pricing, and fraud detection.[3]

AI use cases in retail

Recreated from Statista

Share of Respondents
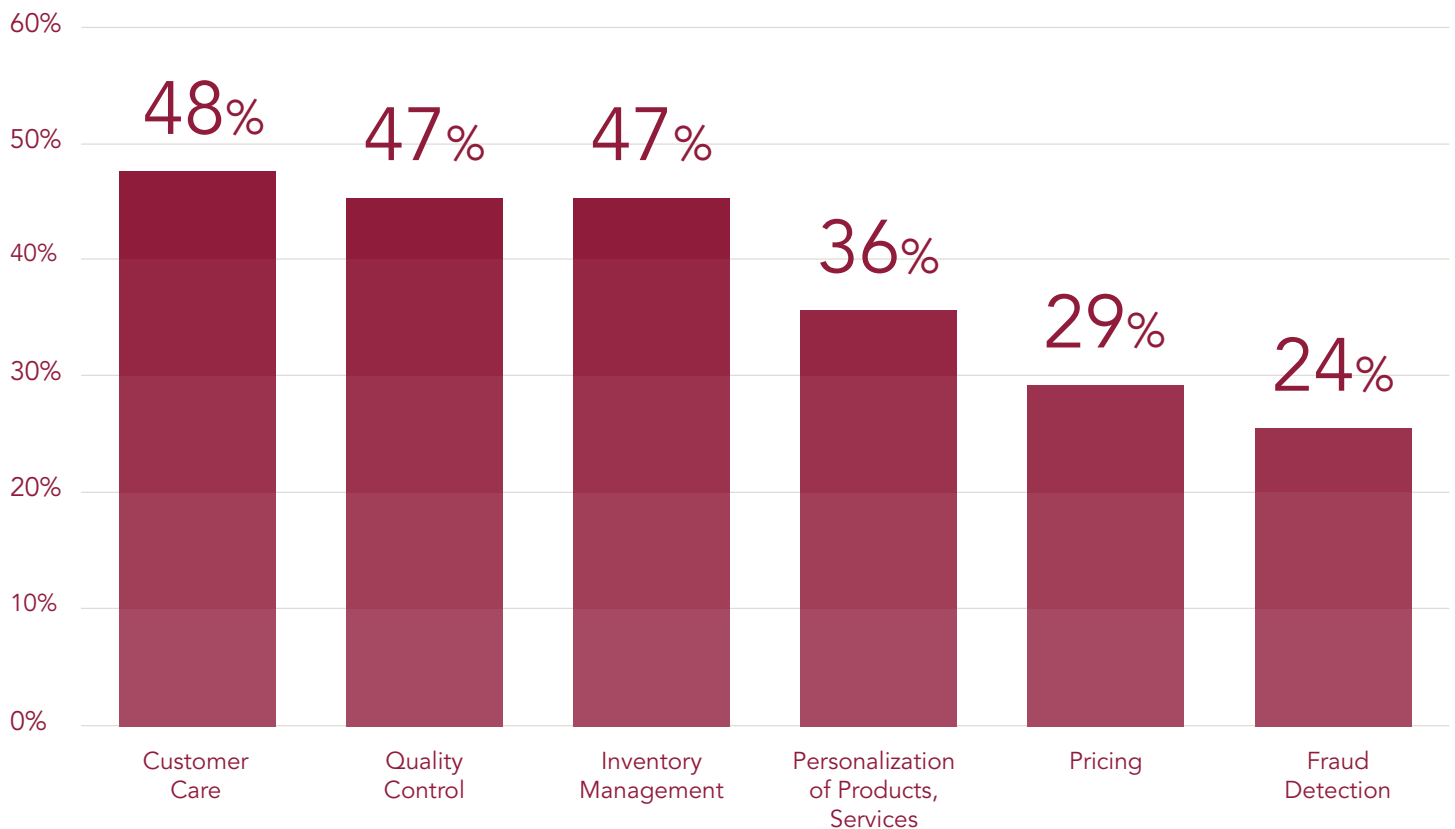
Details: Worldwide: January to February 2020: 1,000*: C suite executives, directors, heads of AI, heads of data or analytics; Questionnaire and personal interview

In our conversations with companies, we observed that a few use cases are becoming increasingly important in the retail business, especially in a post-COVID world.

In the supply chain, AI solutions help retailers forecast demand for their products and services, which in turn help them optimize inventory and make decisions on product assortment and pricing.

As e-commerce becomes more ubiquitous around the world, AI solutions help consumers find products on retailers' e-commerce websites through improved product search and personalized product recommendations.

At retail stores, AI solutions are used to automate self-checkout, provide in-store assistance to customers, track customer behavior, customize customer experience, and detect shoplifting. Facial recognition software is being used to identify customers and monitor social distancing measures. Video intelligence solutions are used to analyze occupancy or detect changes in stock and inventory.

Retail stores of all sizes are digitizing in various ways across the world — from small corner stores in India to superstores in the US. Walmart's Intelligent Retail Lab (IRL) provides examples of what the future of retail stores might look like, including intelligent cameras and sensors, as well as an in-store data center where data collected from these devices are analyzed.

The use cases of AI and its human rights impacts will continue to evolve as the retail industry continues to move towards automation. Beyond the use cases described above, retailers use AI solutions in business operations, including finance and human resources. However, since these are industry-agnostic use cases, we have not focused on them in this primer.

Human Rights Impacts of AI in the Retail Industry

The use of AI technologies may alleviate or exacerbate existing human rights impacts of the retail industry. In this primer, we focus mainly on the human rights risks that AI technologies may lead to and the ways in which AI technologies may exacerbate the adverse human rights conditions that are already present in the retail industry.

Through our engagements with retailers and the technology companies that provide AI services to them, we **identified six main categories of risk:**

1. Privacy and Surveillance

2. Non-Discrimination

3. Access to Goods and Services

4. Labor Rights

5. Human Autonomy

6. Access to a Healthy Environment

Below we list the salient human rights associated with these categories. However, it is important to note that all human rights are indivisible, interdependent, and interrelated. The improvement of one right facilitates advancement of the others; the deprivation of one right adversely affects others.

🎥 1. Privacy and Surveillance

With the use of AI solutions, retailers may collect, utilize, and share customer data in ways that infringe on the right to privacy. Especially when used in combination with other data (e.g., customer information that the retailer already has), AI solutions may provide insights that compromise the privacy of individuals or allow for use cases beyond those originally intended or agreed to by the customer.

For example, AI-powered video surveillance may include <u>facial recognition</u> that can be used to identify loyalty program customers and provide them with special promotions, or to identify potential shoplifters based on assumptions about how shoplifters look and

act. Even applications focused on object recognition (e.g., to track shelf stocking) indirectly involve the monitoring of people.

With the increasing use of data, retailers may receive a higher volume of demands from law enforcement agencies to share data or the results of analysis conducted over time by AI solutions. Law enforcement agencies may subsequently use this data to identify, track, or monitor individuals, which may result in a violation of individuals' rights. For example, video footage from retail stores can be used as part of <u>law enforcement and intelligence efforts.</u>

⚖️ HUMAN RIGHTS THAT MAY BE IMPACTED

- Right to privacy (Universal Declaration of Human Rights — UDHR Article 12)

- Note that the violation of privacy may have secondary impacts on other rights including the right to life, liberty and security, and freedom from arbitrary arrest.

2. Non-Discrimination

The use of AI solutions by retailers to personalize consumer experience may result in the discrimination of individuals by race, gender, age, disability, or other protected category. There are two main ways in which discrimination may manifest:

A) The AI solution may discriminate (e.g., due to biases present in historical data sets used to train the AI model). For example, targeted ads or product recommendations may discriminate against women by recommending cleaning supplies based on biased assumptions.

B) The information collected or generated by the AI solution may be used in discriminatory ways. For example, video surveillance data may be used by retail employees to discriminate against racial minorities.

Similarly, online price differentiation based on user information may lead to discriminatory outcomes for certain individuals or populations. On the other hand, the use of AI can help companies set prices more fairly based on consumer preferences.

Discrimination can also occur when customers are misidentified at retail stores. For example, flawed facial recognition software can lead to wrongful accusations of shoplifting.

HUMAN RIGHTS THAT MAY BE IMPACTED

- Right to non-discrimination and equal treatment (UDHR Article 2; ICCPR Articles 2(1) and 26)

HUMAN RIGHTS THAT MAY BE IMPACTED

- Right to adequate standard of living (UDHR Article 25; ICESCR Article 11)

- Right to health (ICESCR Article 12)

- Right to science and culture (UDHR Article 27, ICESCR Article 15)

3. Access to Goods and Services

The use of AI solutions by retailers to make supply chain decisions and provide product recommendations may lead to a more efficient and fair distribution of goods and services. For example, if a retailer knows that income levels are lower in a certain location, product assortments can be made more effectively to address customer preferences and budgets (or pocketbooks).

On the other hand, the same solutions may be used in ways that limit access to goods and services within certain communities. For example, retailers using demand forecasting solutions based on historical purchasing trends may continue to limit healthy grocery options in "food deserts" or provide access only to certain types of books in some communities.

⚖️ **HUMAN RIGHTS THAT MAY BE IMPACTED**

• Right to desirable work (UDHR Article 23)

• Right to freedom of association (UDHR Article 20)

🛞 4. Labor Rights

The use of AI solutions to improve the efficiency of retail operations may lead to improved labor planning. This may result in more stable work schedules/wages for workers throughout the retail value chain (e.g., product manufacturing and sourcing, fulfillment and delivery, store operations, etc.) For example, managers may better understand when a specific retail location has a high number of customers and plan staffing and shifts accordingly.

On the other hand, AI solutions may be used by retailers for automated labor scheduling, which may result in unstable work schedules/wages for workers throughout the retail value chain. For example, based on near-real-time demand forecasting insights, retailers may move toward automated or "just-in-time" scheduling to respond to granular fluctuations in demand, giving workers little time to adjust their schedules and leading to unstable work schedules and income uncertainty.[4]

At retail stores, solutions intended to monitor customers such as surveillance cameras may be used to monitor store employees. For example, cameras may be used to see how many times employees use the restroom or take breaks to pray during the day. The violation of employee privacy may result in adverse impacts to labor rights.
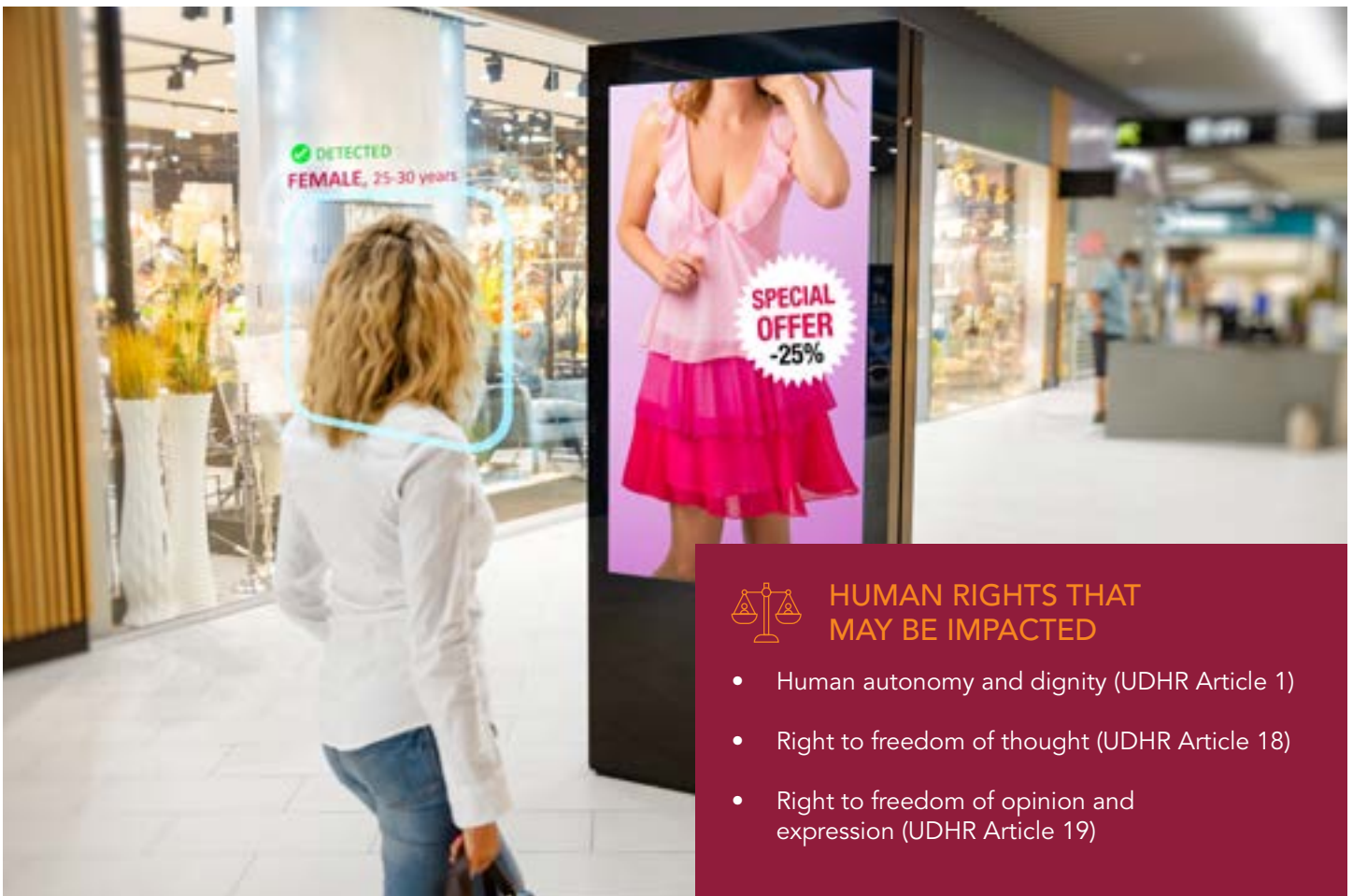
5. Human Autonomy

The use of AI solutions to forecast demand and personalize customer experience may lead to the behavioral profiling of customers to predict what they want or need and, as a result, to guide them down certain purchasing paths. The notion that an individual may only see certain options or experiences based on decisions made by the AI model signals a loss of human autonomy and a possible violation of the right to freedom of thought.

For example, in a fully autonomous store, retailers may track individuals across the store to predict what they will purchase or which aisle they will visit next. This information may subsequently be used for in-store advertisements based on customer behavior or personalized promotions based on predictions of what the customer will purchase next.

As companies are increasingly shaping their business models around the collection and monetization of consumer data (i.e., surveillance capitalism), there may be longer-term impacts on the freedom of thought, as well as on human autonomy and dignity.[5]

HUMAN RIGHTS THAT MAY BE IMPACTED

- Human autonomy and dignity (UDHR Article 1)

- Right to freedom of thought (UDHR Article 18)

- Right to freedom of opinion and expression (UDHR Article 19)

HUMAN RIGHTS THAT MAY BE IMPACTED

- Access to a healthy environment (UN HRC Resolution 48/13)

6. Access to a Healthy Environment

The use of AI solutions to improve supply chain operations may lead to increased efficiency along the retail value chain, leading to positive impacts on individuals' right to a healthy environment. For example, when using the demand forecasting model, retailers may optimize for the smallest amount of wasted products, or they may optimize delivery routes for energy efficiency.

The use of AI solutions to improve customer experience may either lead to the perpetuation of environmentally destructive purchasing practices, resulting in negative environmental impacts, or to the promotion of sustainable consumption habits, resulting in positive environmental impacts.

Recommendations

Responsible AI challenges typically need the involvement of various functions at a company. For companies who do not have a dedicated team addressing these issues yet, we recommend starting the process by involving the following functions:

A) Teams that can manage the issue from a central perspective, such as: Sustainability, Human Rights, Ethics, Legal Compliance

B) Teams that use AI technologies, such as: Supply Chain, Marketing, Customer Service, Human Resources

C) Teams that develop or purchase AI technologies, such as: Technology, Product, IT, Research and Development, Procurement

To mitigate any adverse human rights impacts, companies can take actions including but not limited to the ones listed below.

1. **Take inventory of the AI use cases within the company**
    An important first step is to understand how AI is being used by different functions across the business. Companies should reach out to the teams listed above and ask them how they are using or are planning to use AI technologies in their work. Companies should then make a list of these use cases and prioritize those that may be higher-risk.

2. **Undertake human rights due diligence**
    To identify and address the actual and potential human rights impacts of the AI solutions they are using, companies should start by undertaking human rights due diligence (*6), a process which specifically assesses risks to people (as opposed to other risks a company may face). Human rights due diligence should be undertaken on an ongoing basis since the ways in which the AI technologies are used may change over time. As well as continuous due diligence, companies should undertake specific human rights impact assessment when developing, using or procuring new AI technologies which are likely to pose risks to human rights. The results of these impact assessments should then be used, if necessary, to modify or adapt the technologies, or to ensure sufficient mitigation measures or safeguard are in place to address any risks identified.

3. **State purpose and use limitations**
    Companies should have a clearly defined purpose for the use of AI and consider setting use limitations within implementation guidelines. If the AI solution is going to be shared externally with other users, companies should establish acceptable use policies that define what users can and cannot do with the AI solution.

4. **Establish a governance mechanism for the responsible use of AI**
    There are important questions around how the ethical and human rights implications are identified, assessed, and addressed by the company. Some companies have added new expertise to existing ethics panels and/or developed guiding principles on their use of AI, whereas others have created bespoke councils to advise specifically on AI.

5. **Ensure a high level of data protection**
    Many of the human rights risks related to AI stem from the use of personal data. While it can be tempting to focus on compliance with relevant privacy and data protection frameworks, many of these put the focus on the rightsholder to assert their right to privacy, rather than requiring the integration of privacy and data protection by design. Companies should go beyond regulatory compliance and align their internal data protection and privacy commitments, policies and practices with the highest international standards.

6. **Test AI models for bias and externalities**
    AI models rely on data input, which can be biased and lead to potential adverse human rights impacts around discrimination and the unfair distribution of goods and services. Companies should continually review data inputs that are used by the AI models, through data audits and assessments.

7. **Undertake adversarial testing**
    AI solutions may lead to different impacts when used in different contexts or for different use cases. Companies should undertake adversarial testing to new risks as they arise, especially if the use of AI solutions expands to new functional areas or geographies. Adversarial testing refers to exercises where the AI system is stress tested to discover the ways in which the system might be misused or lead to harmful outcomes. Methodologies might include futures thinking or red team/blue team testing (traditionally used in the cybersecurity field).[7]

8. **Provide transparency about how the AI models work**
    Developers of AI models should communicate the details of the model to its users, including its training data sources, metrics that the model optimizes for, and key limitations of the model.[8] Companies that are using AI solutions should also consider how AI models can be explained to end users. For example, end users who interface with a product recommendation model should be provided with an explanation on why they are being recommended certain products.

9. **Integrate feedback**
    Establish a reporting channel where potential misuse and abuse of the AI solutions can be reported to the teams or third parties who have developed the solution. Workers' voices should be central when making decisions on how to deploy a new technology. Ensure that the necessary mechanisms are in place to integrate employee feedback into the way AI solutions are used by the company.

10. Prepare for upcoming regulation

Ensure that your company is prepared for upcoming regulation (e.g., <u>EU Corporate Sustainability Due Diligence Directive</u> (CSDDD), proposed <u>EU AI Act</u>). As a first step, companies can either 1) ensure that AI is included in company-wide human rights due diligence processes and/or 2) conduct due diligence on specific AI use cases to identify human rights risks.

11. Engage in dialogue with other industry players

As the use of AI solutions becomes more prevalent, companies are becoming more interested in understanding the impacts of AI in their respective industries. Through dialogue with other industry players, you can help advance the understanding of the human rights impacts of AI in your sector.

Our understanding of the human rights impacts of AI will evolve as the technology becomes more pervasive across the retail industry. Companies should start putting in place structures and processes to address the adverse impacts of the technologies they are using. However, these systems should be agile to meet future developments and concerns.

Endnotes

1. The UN Guiding Principles on Business and Human Rights (UNGPs) provide a framework for human rights due diligence (HRDD). The UN B-Tech Project provides further guidance on how HRDD can be applied to technology products and services.

2. Great promise but potential for peril, The Harvard Gazette, 2020.

3. The global AI agenda, MIT Technology Review Insights.

4. For a more detailed analysis on the impacts of automated labor scheduling, see Algorithmic Management in the Workplace, Data & Society, 2019.

5. For more exploration on the impacts of AI on the freedom of thought, see Losing the Freedom to Be Human by Evelyn Aswad.

6. The UN Guiding Principles on Business and Human Rights (UNGPs) provide a framework for human rights due diligence (HRDD). The UN B-Tech Project provides further guidance on how HRDD can be applied to technology products and services.

7. See Microsoft's Harms Modeling Tool and Omidyar's Ethical Explorer Pack as examples.

8. The 2019 academic paper Model Cards for Model Reporting proposes the use of "model cards" to provide information about an AI model's performance and limitations. Practical examples include Google's use of Model Cards, and Microsoft's Datasheets for Datasets tool to document the data sets used for training and evaluating machine learning models.

About BSR

BSR is a sustainable business network and consultancy focused on creating a world in which all people can thrive on a healthy planet. With offices in Asia, Europe, and North America, BSR provides its 300+ member companies with insight, advice, and collaborative initiatives to help them see a changing world more clearly, create long-term value, and scale impact.

www.bsr.org