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# Operational Risk In The Use of GenAI

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# RISKS IN USING GENAI WITHIN THE CONTEXT OF OPERATIONAL RISK

*TREO Paper*

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## Abstract

*Caution in the use of GenAI is warranted as it may have unexpected limitations, disrupt practices, threaten privacy and security, and bring many consequences from biases, misuse, and misinformation. Therefore, we ask: What are the risks of using GenAI and how can the risks be managed? In response, we categorize possible risks in using GenAI based upon reported uses and a review of literature. Drawing upon operational risk as the theoretical foundation, we devise a taxonomy of the types of GenAI operational risks to manage, within the context of IT operational risk and operational risk in general.*

*Keywords: Generative AI, Risks, Operational Risk, Taxonomy.*

## 1 Introduction

Generative artificial intelligence (GenAI) is expected to revolutionize the workforce (Thormundsson, 2024). About one-third of organizations are using GenAI regularly in at least one business function (McKinsey & Company, 2023). The potential of GenAI is demonstrated by ChatGPT-4 passing the CPA, CMA, CIA, and EA accounting exams (Eulerich et al., 2023), the bar exam, and the legal ethics exam (Ambrogi, 2023). While seemingly impressive, caution is warranted as GenAI may have unexpected limitations, disrupt practices, threaten privacy and security, and bring many consequences from biases, misuse, and misinformation (Dwivedi et al., 2023).

Our research question is: What are the risks of using GenAI and how can the risks be managed? To answer, we follow a taxonomy development approach (Nickerson et al., 2013), similar to that of Petrik et al. (2023), by drawing upon operational risk to which provides a solid theoretical foundation. We identify risks in using GenAI based upon example reported uses, presented in Table 1, and a review of literature. Our taxonomy makes two main contributions. First, it offers a categorization of possible risks of using GenAI and identifies the types of operational risks to manage, providing a basis for future research of risks. Second, it proposes risk management considerations specific to GenAI, which can be utilized in practice.

| **Example** | **Result** |
|---|---|
| Google Gemini generated images "bias[ed] against white people." | Gemini image generation suspended. |
| *Moffatt v. Air Canada* (2024). | Air Canada ordered to pay $812.02. |
| *Kruse v. Karlen* (2024). | Litigant ordered to pay $10,000. |
| *Smith v. Farwell* (2024). | Attorney sanctioned $2,000. |

| | |
|---|---|
| Attorney Jae Lee cited a fictitious case. | Attorney referred to grievance panel. |
| Attorney David Schwartz cited fictitious cases in a letter motion. | Schwartz asked not to be sanctioned. |
| *Mata v. Avianca* (2023). | Attorneys ordered to pay a $5,000 fine. |
| *People v. Zachariah C. Crabill* (2023). | Crabill suspended from practice. |

*Table 1. Examples of irresponsible use of / or incorrect responses from GenAI chatbots.*

## 2 Operational Risk and IT Operational Risk

Operational risk events are defined as "result[ing] from inadequate or failed internal processes, people, and systems or from external events" (BCBS, 2017, p. 128). Jordan and Silkock (2005, p. 48) define IT risk as "something that can go wrong with IT and cause a negative impact on the business." Firms may incur not only reputational loss but may also suffer significant declines in market value (Benaroch et al., 2012). IT operational risk has received little attention within the IS literature (Bauer and Bernroider, 2013; Goldstein et al., 2011; Hsu et al., 2014; Sipior et al., 2019) while technological instabilities are recognized as the fourth biggest global risk (World Economic Forum, 2019).

IT-related risks have traditionally been viewed as only a specialized subset of operational risk, but span all seven types of risk event categories of operational risk (Goldstein et al., 2011; Osken and Onay, 2016). Data-related risks and function-related risks were distinguished as two types of IT operational risk events (Goldstein et al., 2021), to which we add use-related IT operational risks. In our taxonomy, we conceptualize IT operational risk as a component, rather than a subset, of the overall operational risk of, spanning all seven types of risk events.

## 3 GenAI Operational Risk

The arrival of GenAI is expected to give rise to "unforeseen legal, ethical, and cultural questions" across applications and industries (Pazzanese, 2023, fourth paragraph). GenAI in particular was identified as a top concern for risk executives for the first time in 2023 (Gartner, 2023). We formulate GenAI operational risk as a component of IT operational risk, comprised of eight areas of risk events (see Table 2), spanning data-, function-, and use-related risks in our taxonomy.

| **Type of Risk** | **Description** |
|---|---|
| Hallucination | Results can be inaccurate due to the AI hallucinating. |
| | Could subsequently be included in input data, compounding incorrect results. |
| Bias | Incomplete, inaccurate, or biased input data could generate flawed results. |
| | Inadequate testing could result in incorrect results. |
| | Biases or human errors could be incorporated into developing and using AI. |
| Control of information | Biased AI can contribute to the control of information. |
| Opaqueness | Lack of transparency necessitates explainable AI. |
| Privacy and security | For example, prompts or cracking the AI with prompts result in data leakage. |
| Deception | Could deceive users without being trained to do so. |
| Adversarial machine learning | Could be used to perpetrate crime and other acts. |
| Trust and acceptance | Without transparency, users may not trust the output from GenAI. |

*Table 2. Risks associated with the use of GenAI.*

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