

Risk Management for Higher Education Institutions

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Abstract:

Higher education institutions (HEIs) are complex system particularly exposed to the society they belong, making them susceptible to its dynamics. The increasing presence of multicultural students underscores this complexity, posing unique needs and expectations. Managing, assessing, and raising awareness about this challenge lie at the heart of the risks HEIs currently and will continue to confront. Risks seldom manifest simultaneously within a single organization or across a sector. Collaborating with similar institutions can be advantageous in identifying and addressing potential and realized risks. Establishing a report, network of cooperation, characterized by openness, voluntarism, confidentiality, and a no-blame culture, can serve as a repository of data to be converted into knowledge to anticipate and manage risks, thereby enhancing the resilience and focus of HEIs. Media-highlighted events merely scratch the surface, failing to encompass the full spectrum of data vital for informed decision-making. Nevertheless, creating a poor image of the sector. Engaging complementary systems in risk management ensures a continuous flow of information, enhancing organizational understanding of past, present, and future risks.

HEIs have, in recent times, faced public scrutiny due to incidents ranging from intoxications, harassments, bullying, to cyberattacks. These visible risks represent only a fraction of the broader risk landscape. Establishing a comprehensive share taxonomy of risks is essential for effective risk management in higher education institutions.

Keywords: Higher Education Institutions; Risk Management; Risk taxonomy; Shared Knowledge base.

1. Introduction

Higher education institutions (HEIs) operate as complex systems intricately linked to the societal dynamics they are part of, making them particularly vulnerable to various risks. The

increasing presence of multicultural students adds layers of complexity, presenting unique needs and expectations that institutions must address. Effectively managing, assessing, and raising awareness about these challenges is crucial for HEIs as they navigate current and future risks.

Risk factors in higher education are diverse and often do not manifest simultaneously within a single organization or across the sector. Collaboration with similar institutions can be beneficial in identifying and addressing both potential and realized risks. Establishing a cooperative network characterized by openness, voluntarism, confidentiality, and a no-blame culture can create a valuable repository of data. This data can be transformed into actionable knowledge, enhancing the ability of HEIs to anticipate and manage risks, thereby increasing their resilience and maintaining their focus on educational excellence and improvement.

Media-highlighted events, such as incidents of intoxications, harassment, bullying, and cyberattacks, only scratch the surface of the broader risk landscape faced by HEIs. These visible risks often contribute to a poor public image of the sector. However, engaging complementary systems in risk management can ensure a continuous flow of information, enhancing organizational understanding of past, present, and future risks. A comprehensive shared taxonomy of risks is essential for effective risk management in higher education institutions.

Recent studies and literature highlight the importance of a structured approach to risk management in HEIs. For instance, Toma et al. (2014) emphasize the need for identifying risks specific to higher education institutions, while Huber (2009) discusses risk-based regulation in the sector. Wu, Nurhadi, and Zahro (2017) advocate for the development of new concepts in risk management tailored for HEIs. Moreover, Moloï (2016) and Sabri (2011) provide insights into the drivers of risks in private higher education institutions, highlighting the need for analytical approaches.

Information security remains a critical concern, as outlined by Hommel et al. (2015), who discuss the operationalization of risk management processes in HEIs. Newman, Couturier, and Scurry (2010) explore the future risks of the higher education market, emphasizing the need for proactive risk management strategies.

HEIs being people centre organizations with high mobility and concentrated events (e.g. classrooms, meetings, seminars, conferences) over long period (academic years) are particularly prompted to other risks as health and well-being issues (National Center for Immunization and Respiratory Diseases, 2021).

As a framework different models and theories of risk can be used. In particular, the James Reason's "Swiss Cheese Model" is valuable for understanding and mitigating the cumulative

effect of multiple, smaller risks that can lead to significant issues if not properly managed (Reason, 1990).

To effectively manage these diverse risks, HEIs can adopt frameworks such as ISO 31000, the risk management standard from the international organization for standardization. ISO 31000 provides a systematic and structured approach to risk management, integrating it into all aspects of an organisation. This ISO standard guides institutions in identifying, assessing, and mitigating risks, thereby enhancing their ability to achieve strategic objectives and maintain operational continuity. It not only addresses negative risks but also enables the management of positive risks, allowing institutions to capitalize on opportunities for improvement and growth (“ISO 31000:2018 Risk management—Guidelines”, 2018).

2. Methodology

The methodology outlines an approach to identifying, categorizing, and analysing risks associated with higher education. A literature review based on "higher education risks", "university challenges", "educational risks", "academic institutions risk management", "university data breach", "campus safety incident", "academic fraud cases" was performed on scientific publications and news that discuss various negative risks in the context of higher education. Databases such as PubMed, Scopus, Web of Science, Google Scholar and news were used, blogs or social media are excluded. Only studies published in the last ten years and those that explicitly address risk factors in higher education will be included. The collected literature was analysed to identify common themes and risks reported across different sources.

Once the risks were identified from the literature, the next step was to systematize them into logical categories and subcategories. This involved classifying (based on its nature and context), clustering (similar classification items to form categories) and subcategorizing the risks (to provide a more granular view).

After systematizing the risks, a summary description for each subcategory was produced. In addition to literature review, online archives as Arquivo.pt and search engines were used to identify real-world cases of risks associated with higher education. This involve:

The final step is to classify the real-world cases risks identified through online searches according to the previously developed taxonomy.

By combining literature review with real-world case analysis and news, we aim to provide an understanding of the risks facing higher education institutions today. The proposed

taxonomy and classifications will serve as a valuable framework for future research and risk management practices in this field.

3. Results

The taxonomy developed is presented in table 1, which is a first approach to the highly dynamic context of the risk framework in higher education.

Table 1 – Taxonomy of risks for Higher Education Institutions

Category	Subcategory	Description
Financial Risks	Revenue Generation	Risks associated with declining enrolment, reduced funding, or changes in government support.
	Budget Allocation	Risks related to misallocation of funds, unexpected expenses, or financial mismanagement.
	Endowment Management	Risks concerning investment performance, market volatility, or misappropriation of endowment funds.
	Funding and Budgeting	Risks associated economic downturns. Risks associated with declining funding, budget constraints, or rising operational costs.
Academic Risks	Accreditation	Risks related to accreditation status, compliance with standards, or failure to meet educational requirements.
	Academic Quality	Risks concerning curriculum development, teaching standards, or academic program effectiveness.
	Curriculum Development	Risks concerning outdated or insufficient curriculum, failure to meet accreditation requirements, or lack of alignment with industry needs.
	Research	Risks associated with research misconduct, intellectual property disputes, or funding cuts.
	Training and internships	Risks associated with inadequate experiences, lack of preceptor availability, or insufficient exposure to diverse real-world conditions.
	Faculty Qualifications	Risks related to faculty credentials, expertise, or turnover impacting teaching quality.
	Student Success	Risks related to student retention, graduation rates, academic support services, academic performance or licensure exam pass rates.
Operational Risks	Facilities Management	Risks concerning maintenance, safety, security, or infrastructure failures. Risks related to laboratory safety, equipment maintenance, or facility upgrades including evolving regulations
	Academic Community Health and Safety	Risks concerning community health issues, occupational hazards, or exposure to hazardous materials.
	Information Technology	Risks associated with outdated technology, evolving cybersecurity threats, or lack of IT infrastructure resilience.
	Professional Ethics	Risks associated with academic dishonesty, ethical misconduct, or breaches of professional conduct.
	Professional Development	Risks related to insufficient career guidance, networking opportunities, or post-graduation employment prospects.
	Regulatory Compliance	Risks associated with non-compliance with legal and regulatory requirements.
	Human Resources	Risks related to staffing issues, labor disputes, diversity and inclusion, or talent retention.
	Crisis Management	Risks associated with emergencies, natural disasters, pandemics, or reputational damage.
	Strategic Planning	Risks concerning ineffective strategic decision-making, lack of adaptability, or market competition.
Strategic Risks	Partnerships	Risks related to partnerships with other institutions, industry, regulatory bodies or government entities.
	Market Position	Risks associated with changes in student demographics, competition, geopolitical factors, immigration policies, market dynamics, or population demographics.
	Innovation	Risks related to failure to innovate, adapt to new trends, or capitalize on emerging opportunities.
	Regulatory Compliance	Risks concerning compliance with regulations, laws, or accreditation standards.
	Reputation Management	Risks related to negative publicity, legal disputes, or damage to the faculty's reputation.

An overview of real-world national and international risk events classified according to the proposed taxonomy is presented in table 2. The already mentioned complexity of higher education environment will imply that a specific event can be classified simultaneously in different categories. However, in this first approach, we adopted a single classification for each one. In future uses of this taxonomy, we anticipate that an “all that can apply” approach should be used.

Table 2 - Overview of real-world national and international risk events in Higher Education Institutions

Category	Subcategory	Event	Example Case	Data Source	Link
Financial Risks	Budget Allocation	Misallocation of funds leading to financial deficits and program cuts.	University of California overspent on IT projects leading to a \$200 million deficit.	Inside Higher Ed	https://www.insidehighered.com/news/2021/04/21/uc-davis-it-project-woes
Financial Risks	Revenue Generation	Decreased state funding leading to program closures and staff layoffs.	University of Alaska faced severe budget cuts resulting in program closures and layoffs.	Reuters	https://www.yahoo.com/news/deep-budget-cuts-put-university-220731758.html?fr=sycsrp_catchall
Financial Risks	Funding and Budgeting	University funding	The rector of the University of Lisbon finds it ‘incomprehensible’ that the funding formula does not include performance indicators for higher education institutions	Expresso	https://expresso.pt/opiniao/2023-08-14-O--sub--financiamento-do-Ensino-Superior-767128b8
Academic Risks	Accreditation	Loss of accreditation due to failure to meet educational standards.	City College of San Francisco nearly lost accreditation due to financial and administrative issues.	Inside Higher Ed	https://www.insidehighered.com/news/quick-takes/2024/01/19/sf-city-college-gets-warning-accreditor
Academic Risks	Research	Research misconduct leading to loss of grant funding and damage to institution's reputation.	Duke University settled research misconduct case for \$112.5 million over falsified data in grant applications.	Science	https://www.science.org/content/article/duke-university-settles-research-misconduct-lawsuit-1125-million
Academic Risks	Research	Plagiarism and academic fraud	University professor (UPorto) accused of plagiarism. At least 5 articles retracted	Observador	https://observador.pt/2019/11/26/professora-universitaria-acusada-de-plagio-pelo-menos-5-artigos-retirados/
Operational Risks	Facilities Management	Laboratory safety incident resulting in injuries to students.	UCLA faced chemical spill in lab resulting in severe injuries to a staff researcher.	NBC Los Angeles	https://www.nbclosangeles.com/news/local/ucla-prof-faces-charges-fatal-lab-fire/2060402/

Operational Risks	Information Technology	Data breach compromising personal information of students and faculty.	University of Maryland faced a data breach exposing 300,000 records of students and staff.	NPR	https://www.npr.org/sections/thetwo-way/2014/02/20/280195882/data-breach-at-university-of-maryland-exposes-309-000-records
Operational Risks	Information Technology	Cyber attack	Cyber-attack on Universidad Complutense de Madrid and possible compromised/exposed personal data	El País	https://elpais.com/espana/madrid/2024-05-10/la-universidad-complutense-de-madrid-sufre-un-ciberataque-y-avisa-de-que-se-han-podido-exponer-datos-personales-de-los-usuarios.html#
Operational Risks	Information Technology	Cyber attack	Computer Attack at the University of Lisbon	Universidade de Lisboa	https://www.ulisboa.pt/noticia/ataque-informatico-ulisboa-fase-final-de-recuperacao-da-informacao
Operational Risks	Facilities Management	Active shooter, security risk	Active shooter at Faculty of Sciences, University of Lisbon	Rádio Renascença	https://rr.sapo.pt/noticia/pais/2022/02/11/universidade-de-lisboa-o-que-sabemos-sobre-o-ataque-travado-a-fcul/271992/
Operational Risks	Academic Community Health and Safety	Mercury contamination	Building of the Faculty of Pharmacy of the University of Lisbon contaminated with mercury to be demolished	Público	https://www.publico.pt/2015/11/06/sociedade/noticia/edificio-da-faculdade-de-farmacia-de-lisboa-tinha-mercurio-e-vai-ser-demolido-1713504
Operational Risks	Academic Community Health and Safety	HEI evacuated due to strong smell of gas	Evacuation of the building of the Instituto Superior das Ciências do Trabalho e da Empresa (ISCTE) and some departments of the Faculty of Pharmacy	Público	https://arquivo.pt/wayback/20080119102309/http://ultimahora.publico.clix.pt/noticia.aspx?id=1316861&idCanal=76
Operational Risks	Facilities Management	Collapse of structures at the University Stadium	Stand collapses at the University Stadium, University of Lisbon	CNN Portugal	https://cnnportugal.iol.pt/estadio-universitario/lisboa/bancada-que-caiu-em-lisboa-foi-vistoriada-universidade-promete-investigar-acidente/20240602/665c38dcd34ebf9bbb3e2ded
Operational Risks	Facilities Management	Fire	Fire at the University of Coimbra's Fire Engineering Laboratory	Notícias de Coimbra	https://www.noticiasdecoimbra.pt/laboratorio-engenharia-fogo-da-universidade-coimbra/#google_vignette
Operational Risks	Academic Community Health and Safety	Food poisoning in university canteens	Reports of poisoning after a meal at the Federal Technological University of Paraná	UOL	https://noticias.uol.com.br/cotidiano/ultimas-noticias/2022/05/25/alunos-intoxicacao-alimentar-utfpr.htm

Operational Risks	Crisis Management	Social protests at universities	Students arrested during pro-Palestinian protest at the University of Lisbon	CNN Portugal	https://cnnportugal.iol.pt/universidade-de-lisboa/pro-palestina/oito-estudantes-detidos-durante-protesto-pro-palestina-na-universidade-de-lisboa/20240510/663db108d34e04989220ad40
Operational Risks	Academic Community Health and Safety	Contamination by Legionella	Building of the IST (University of Lisbon) closes due to legionella	RTP	https://www.rtp.pt/noticias/pais/torre-norte-do-instituto-superior-tecnico-fecha-por-cao-de-legionella_a1577275
Strategic Risks	Market Position	Decline in enrolment due to competition from nearby universities offering similar programs.	University of Maine System experienced a significant enrolment drop due to competition and demographic changes.	The Maine Campus	https://mainecampus.com/category/news/2023/09/umaine-faces-enrollment-decline/
Strategic Risks	Regulatory Compliance	Failure to comply with Title IX regulations resulting in loss of federal funding.	Michigan State University was fined \$4.5 million for failing to comply with Title IX in the Larry Nassar case.	NBC News	https://www.nbcnews.com/news/us-news/feds-hit-michigan-state-hit-record-4-5-million-fine-n1050096
Strategic Risks	Reputation Management	Alleged harassment and abuse of power	Abuse of power and harassment at the Centre for Social Studies (CES) of the University of Coimbra	Semanário Expresso	https://expresso.pt/sociedade/2024-03-13-Caso-Boaventura-Sousa-Santos-relatorio-admite-que-houve-padroes-de-conduta-de-abuso-de-poder-e-assedio-db90eebb
Strategic Risks	Reputation Management	Harassment complaint	Complaint of sexual harassment at the Faculty of Law of the University of Lisbon	Diário de Notícias	https://www.dn.pt/sociedade/10-dos-docentes-da-faculdade-de-direito-da-ul-denunciados-por-assedio-e-discriminacao-14740133.html/
Strategic Risks	Reputation Management	Independent evaluation of hygiene conditions of university canteens	University canteens fail in terms of hygiene and food quality (FCSH and IPTomar)	Público	https://www.publico.pt/2002/10/03/sociedade/noticia/cantinas-universitarias-falham-na-higiene-e-qualidade-alimentar-186749

4. Discussion and conclusions

This proposal of share knowledge implies a volume of institution and data quality, to be available in real-time. Only then we can have a practical and useful tool to foster resilient and objective pursuit in higher education institutions.

Since not all the risks happen at the same time and everywhere it's also important to have a geographic and over time diversified source of data. This approach enables us to address near misses, risks with fast onsets but also small, slow moving and low impact risks that can accumulate without acknowledge of the stakeholders.

Publicly disclosed risks in higher education often represent just the "tip of the iceberg." These disclosures typically cover the most visible or immediate issues but may not delve into underlying problems, systemic issues, or the root causes of these events. Additionally, they often do not include all the necessary data for detailed analyses of remissness. Here's where a shared knowledge among higher education institutions, including sharing data on potential underlying causes, is crucial for risk management.

In conclusion, an effectively manage risks in higher education institutions need to:

1. **Implement Robust Risk Management Frameworks:** Establish comprehensive risk management processes that include regular risk assessments, monitoring, and mitigation strategies.
2. **Conduct Root Cause Analysis:** Investigate underlying causes of incidents or near incidents to identify and address systemic issues rather than just the symptoms.
3. **Enhance Transparency and Reporting:** Improve transparency in reporting risks and incidents to stakeholders, including detailed analyses and action plans.
4. **Strengthen Oversight and Accountability:** Ensure strong governance structures and clear accountability mechanisms for managing risks.
5. **Promote a Culture of Compliance and Ethics:** Foster an institutional culture that prioritizes compliance, ethics, and continuous improvement in all areas.

This is better achieved by a share knowledge addressing these aspects, higher education institutions can better identify, understand, and mitigate risks, thus reducing the likelihood and/or impact of future incidents and improving overall institutional resilience.

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