

Risk Management in a Public University in Central Mexico

Research Article

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Abstract

The relationship between risk management and university governance as institutional responses to risks has not been addressed or made explicit. The objective of this work was to guide the establishment of a predictive model of the routes that would explain the interaction between the risk management determinants on the institutional recognition that reflects university governance. The results indicate that campus security management is an indirect determinant of institutional recognition, although this relationship is mediated by campus norms. It is recommended to extend the study towards the relationship with the identity, reputation and image of the public university in order to be able to anticipate its governance based on internal management in a scenario of contingencies, threats, dangers and imponderables.

Keywords: Risk Management; Corporate Governance; Campus Security; Institutional Standards; Technology Acceptance

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Introduction

Risk management is a crucial aspect in various areas of the world, whether in the business, financial, health, environmental or even geopolitical spheres [1].

Business: Businesses are exposed to a variety of risks, including financial, operational, legal, reputation al, and market risks [2]. Enterprise risk management involves identifying, evaluating and mitigating these risks to protect the interests of the company and its stakeholders [3]. Common strategies include the use of insurance, portfolio diversification, implementation of sound operating practices, and crisis preparation.

Financial: Financial markets are subject to risks such as volatility, liquidity, credit risk and systemic risk [4]. Financial institutions employ risk management to ensure system stability and protect investors' assets [5]. Regulators and supervisors play an important role in establishing standards and requirements for risk management in the financial sector.

Health: Risk management in the health sector involves the identification and mitigation of risks associated with the delivery of health

care, patient safety, staff safety, and public health crisis management [6]. Pandemics, extreme weather events and other challenges can have a significant impact on health system infrastructure and response capacity.

Environmental: Environmental risk management focuses on addressing threats to the environment, such as pollution, climate change, and biodiversity loss. Organizations adopt sustainable approaches, implement conservation practices and seek to reduce their environmental footprint to mitigate risks associated with environmental degradation.

Geopolitical: In the geopolitical sphere, risks include international tensions, armed conflicts, economic sanctions and changes in government policies [7]. Multinational companies and governments should be alert to geopolitical risks that could affect their operations and take steps to mitigate these risks. In all of these contexts, risk management involves a proactive approach to anticipate and address potential threats [8]. This includes identifying and assessing risks, implementing mitigation strategies, and preparing to deal with unforeseen situations. In addition, technology, such as data analytic and artificial intelligence, also plays an increasingly important role in improving the ability to anticipate and manage risks effectively. Risk management in higher education institutions is essential to ensure continuity of operations, protect students, staff and assets, and meet institutional responsibilities [9]. Here are some key aspects of risk management in higher education:

Campus Safety: Physical safety on campus is a priority, and risk management involves addressing threats such as violence, natural disasters, accidents, and other events that may jeopardize the safety of students and staff [10]. Security plans, emergency drills and the implementation of security technologies are important components of risk management in this context.

Crisis Management: Institutions should have crisis response plans that address scenarios such as pandemics, natural disasters, security incidents, and other unforeseen events [11]. Effective communication during crisis situations, both internally and externally, is crucial to minimize the impact and protect the reputation of the institution.

Financial Risks: Higher education institutions face financial risks, such as volatility in enrollment, dependence on specific funding sources, and budget challenges [12]. Prudent financial management, diversification of income sources, and long-term budget planning are common strategies to mitigate financial risks.

Regulatory Compliance: Risk management includes ensuring compliance with standards and regulations, such as those related to data protection, equal opportunities, campus security and other legal and ethical aspects [13]. Establishing clear policies and training programs for staff and students is essential to comply with regulations.

Information Technology and Cybersecurity: The increasing dependence on technology makes higher education institutions vulnerable to cyber threats [14]. Risk management involves protecting the integrity, confidentiality and availability of information. Strategies such as Cybersecurity training, implementation of protective measures and planning for data recovery are essential in this context.

Human Resource Management: Risk management includes addressing personnel-related issues such as turnover, talent retention, diversity and inclusion, as well as conflict management and succession planning [15].

Internationalization: Institutions participating in international programs face risks associated with cultural diversity, differences in legislation, and global reputation management [16]. Risk management in this context involves understanding and addressing these complexities. Implementing a comprehensive risk management approach in higher education institutions helps create a safer, more sustainable and resilient environment, allowing these institutions to effectively fulfill their educational and social mission [17]. However, the risk management approach considers the recipients without assuming their participation in the process [18]. Consequently, it is necessary to include in the analysis the items of resilience in the face of risk, threat, danger or catastrophe scenarios [19]. Consequently, it is necessary to analyze the resilient participation of citizens in the face of public risk management. The objective of this work is to discuss the phases of disaster risk management around resilience in the face of threat, exposure or imminent impact, considering the dialogue between authors who postulate perverse consequences of modernity, authors who allude to Disaster Risk

Management. Comprehensive Disaster Risk Assessment (GIRD) and authors who propose a complexity paradigm. What are the differences and similarities in the analysis of risks and disasters related to the resilience of potential victims from the comprehensive management paradigm versus the complexity paradigm?

- **Hypothesis 1:** Given that the comprehensive risk management paradigm suggests instances consistent with the problem, it is expected that when compared with the complexity paradigm, more differences than similarities will be distinguished [20].
- **Hypothesis 2:** If the exposure to risks by resilient people is in the face of emerging events such as rains, floods and landslides, then the complexity paradigm will tend to differ from the comprehensive risk management paradigm [21]. On the contrary, if the event is expected like droughts and fires, then the similarity between both paradigms will deepen their differences in exceptional situations, contexts or scenarios.
- **Hypothesis 3:** The main difference between the risk management paradigm that focuses attention on expected profit and loss decisions with respect to the complexity paradigm that suggests the self-organization of events and risk exposure lies in the degrees of costs and benefits [22].

Methods

A cross-sectional, exploratory and psychometric study was carried out with a sample of 100 students ($M = 21.2$ $SD = 3.4$ age and $M = 8'893.00$ $SD = 893.00$ USD monthly income) considering their participation in the internship and social service system in public security institutions. The Risk Management Scale was used, which includes six dimensions related to finances (“My university will allocate a sufficient budget for any contingency”), Crisis (“My university has a protocol for damage control in emergencies”), and Security (“My university follows federal guidelines for the protection of the community against pedestrian robbery”), Standards (“My university has a code of ethics to guide academic life in the face of disasters”), Technology (“My university has the application to report any threat in real time”) and Internationalization (“My university will be recognized for its resilience in risk management”). Respondents were contacted through their personal email, indicating the objectives and those responsible for the project, as well as the non-remuneration for their participation and no impact on their academic status. In the first phase, focus groups were organized to discuss and agree on the meaning of the concepts. In a second phase, the items of the instrument were evaluated in order to verify their understanding. In the third phase, the final instrument was applied with the purpose of contrasting the hypotheses. The data were captured in Excel and processed in JASP version 14 in order to estimate the reliability coefficients (general alpha of 0.784 and specific between 0.764 and 0.778), adequacy (KMO 0.678), sphericity ($X^2 = 234.35$ (23df) $p = 0.001$) and validity with factor weights ranging between 0.567 and 0.690. Values close to unity were assumed as evidence of non-rejection of the null hypothesis.

Results

The relationship between security and internationalization is negative and significant ($\beta = -0.080$; $p = 0.054$). In other words, risk management in the public university depends on the relationship between security and internationalization, since if the university meets security standards it can be recognized for its resilient capacity [Table 1].

							95% Confidence Interval	
			Estimate	Std . Mistake	z-value	p	Lower	Upper
Security	→	Internationalization	-0.08	0.042	-1,930	0.054	-0.162	0.001
Crisis	→	Internationalization	0.01	0.032	0.326	0.744	-0.052	0.072
Finance	→	Internationalization	-4.130e - 4	0.038	-0.011	0.991	-0.074	0.073

Note: Delta method standard errors, normal theory confidence intervals, ML estimator.

Table 1: Direct effects

In the area of indirect effects, no significant relationships were found, although the norms turned out to be mediating factors of the independent variables. That is, the generality of the independent variables does not seem to have a direct or indirect impact on the international recognition of the university, but when interacting with institutional norms they increase their predictive power [Table 2].

									95% Confidence Interval	
					Estimate	Std . Mistake	z-value	p	Lower	Upper
Security	→	Technology	→	Internationalization	1.610e -4	0.002	0.099	0.921	-0.003	0.003
Security	→	Norms	→	Internationalization	0.004	0.008	0.502	0.616	-0.011	0.019
Crisis	→	Technology	→	Internationalization	0.001	0.004	0.358	0.721	-0.006	0.009
Crisis	→	Norms	→	Internationalization	-0.001	0.006	-0.245	0.807	-0.012	0.01
Finance	→	Technology	→	Internationalization	0.003	0.009	0.372	0.71	-0.014	0.021
Finance	→	Norms	→	Internationalization	0.003	0.007	0.404	0.686	-0.01	0.016

Table 2: Direct Effects

The relationship between security and internationalization is negative and significant ($\beta = -0.076$; $p = 0.071$). Risk management depends on security protocols as determinants of internal rather than external recognition. In this sense, the reputation and image of the university would be linked to insecurity, but its internal resilience to security within the campus [Table 3].

							95% Confidence Interval	
			Estimate	Std . Mistake	z-value	p	Lower	Upper
Security	→	Internationalization	-0.076	0.042	-1,807	0.071	-0.159	0.006
Crisis	→	Internationalization	0.01	0.032	0.323	0.747	-0.052	0.073
Finance	→	Internationalization	0.006	0.037	0.15	0.881	-0.067	0.078

Note: Delta method standard errors, normal theory confidence intervals, ML estimator.

Table 3: Total effects

The total indirect effects do not present significant relationships because the determinants are not significantly related to the mediating factors, although in the case of norms it can be seen that they regulate the determining variables while increasing their anticipatory power over internationalization [Table 4].

							95% Confidence Interval	
			Estimate	Std . Mistake	z-value	p	Lower	Upper
Security	→	Internationalization	0.004	0.008	0.515	0.607	-0.011	0.019
Crisis	→	Internationalization	-4.738e - 6	0.007	-7.049e - 4	0.999	-0.013	0.013
Finance	→	Internationalization	0.006	0.011	0.539	0.59	-0.016	0.028

Note: Delta method standard errors, normal theory confidence intervals, ML estimator.

Table 4: Total indirect effects

The residuals of the covariance indicating the inclusion of other factors in the model are not significant. Consequently, the inclusion of other factors such as training, training and qualification of human resources could increase the anticipatory capacity of the model when explaining risk management [Table 5].

							95% Confidence Interval	
			Estimate	Std . Mistake	z- value	p	Lower	Upper
Technology	↔	Norms	-0.028	0.095	-0.299	0.765	-0.215	0.158

Note: Delta method standard errors, normal theory confidence intervals, ML estimator.

Table 5: Residual co variances

Re-squared values indicate the percentage of total variance explained for the path in the observed model. Technology explained the highest percentage ($R^2 = 0.06$), followed by internationalization ($R^2 = 0.064$) and standards ($R^2 = 0.005$). In other words, the observed model explains up to 13.8% of the total variance. It then means that the area of opportunity for the model lies in the inclusion of other variables that increase its predictive and explanatory capacity for risk management [Table 6].

	R^2
Internationalization	0.064
Technology	0.069
Norms	0.005

Table 6: R- Square

The observed and standardized model suggests that the relationship between the determinants and the mediating factors is not less than the direct relationship with the dependent variable. Furthermore, it indicates that although the mediating factor that explains the variance of the model is technology, the norms stand out as mediating factors that increase the prediction of the determining variables on the target variable ($\beta = 0.17$)[Figure 1].

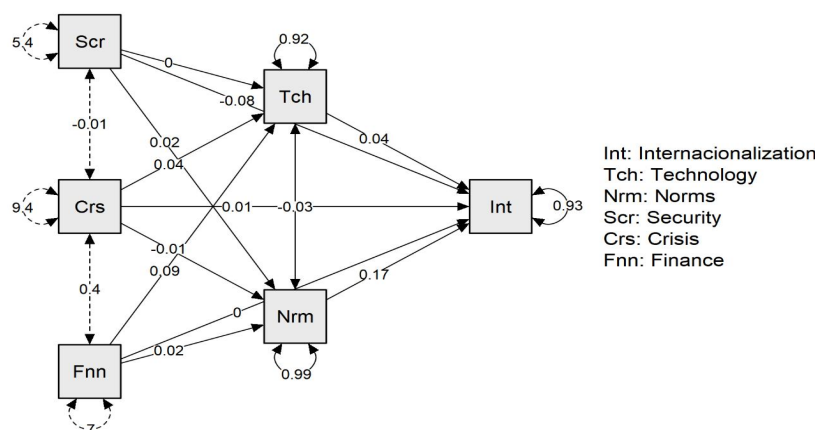


Figure 1: Standardized trajectory model

Discussion

The contribution of this work to the state of the art consists of the demonstration of an explanatory route for university risk management. The results suggest that the path of finance, crises and security when interacting with institutional norms predict the recognition of the institution as resilient in the face of threats, contingencies, dangers and disasters. The literature corroborates this finding by stating that universities configure a corporate system of negotiations, agreements and co-responsibilities in the face of risks [23]. Corporate governance emerges when these imponderables increase and aggravate [24]. Consequently, the administration of public universities depends on the recognition of their identity, image and reputation in the face of crises [25]. In the present work it was found that crises, security and finances oriented towards international recognition are favorably regulated by institutional norms. It is this internal risk management process that anticipates external recognition that demands a security strategy on campus in order to achieve image, reputation and identity standards sufficient to achieve institutional resilience in the face of contingencies [26]. The extension of the model is recommended in order to observe university governance based on internal risk management [27].

Conclusion

Prospective management (risky decisions with high benefits) [28], corrective (non-risky decisions with low profits), reactive (immediate decisions in the face of emerging risks) and transformative (decisions with low risk and minimal gradual benefits) when implemented in threats suggest: reactive management; transformative management; corrective actions; prospective efforts, although this work only appreciates the translation and transfer of knowledge, transformative efforts.

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