Revue-IRS

Revue Internationale de la Recherche Scientifique
(Revue-IRS)
ISSN: 2958-8413
Vol. 1, No. 3, Juin 2023

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Creativity in the Banking Industry: Navigating the Fine Line between Resilience and Risk

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Abstract: This article examines the impact of the creativity of experts in the banking sector on operational risk and organizational resilience. The methodology includes a comprehensive search of Scopus database, followed by screening and selection based on pre-defined inclusion and exclusion criteria. The selected articles were then analyzed and synthesized using a thematic approach. The findings suggest that creativity can be both a source of risk and a source of resilience in the banking sector, depending on how it is managed and implemented. While creativity can lead to innovative and profitable strategies, it can also result in unethical and fraudulent practices. Therefore, it is important for banks to establish effective mechanisms to manage and monitor creativity, such as risk management systems and ethical codes of conduct. This review provides insights for academics, practitioners, and policymakers to better understand the role of creativity in the banking sector and its implications for operational risk and organizational resilience.

Keywords: creativity, experts, banks, systematic review.

Digital Object Identifier (DOI): https://doi.org/10.5281/zenodo.8093283

1. Introduction

The banking industry is a critical component of any economy, and it faces significant challenges in maintaining resilience while simultaneously managing risk. To navigate this complex environment, banks often rely on the expertise of their employees to make sound decisions that can mitigate risk and support resilience. However, the role of creativity in this process is often overlooked. Experts in the banking sector possess a unique blend of skills, knowledge, and experience that enable them to make informed decisions in a high-pressure environment. Moreover, their creativity can play a critical role in identifying innovative solutions to complex problems. However, the human factor in the form of an expert in the banking sector can cause significant operational risk due to their high level of autonomy, with their creativity sometimes leading to unintended consequences that may not be detectable by regulatory tools. Therefore, expertise can be considered as both a solution and a problem, and monitoring it is a crucial aspect of operational risk management.

Creativity entails the generation of ideas that are both original and valuable, whether in the short or long term. On the other hand, idea implementation refers to the process of transforming these ideas into new and improved products, services, or methods of operation. Consequently, innovation can be perceived as encompassing two distinct activities: the generation of novel, valuable ideas and their subsequent implementation (Baer, 2012). This perspective highlights the essential connection between creativity and its practical realization within organizations.

Indeed, in the banking sector, experts are expected to possess not only deep knowledge but also the ability to think creatively and come up with innovative solutions to complex problems. However, creativity and expertise should not be used interchangeably, as they have distinct meanings. Creativity refers to the ability to generate novel solutions to problems, while expertise refers to the mastery of knowledge in a particular field. The combination of these two elements can lead to the emergence of novel practices, which could bring benefits to the organization (Raynal et al., 2014). However, this can also result in significant operational risks, as the combination of knowledge can lead to unforeseen and large-scale consequences. Therefore, this article explores both the positive and negative aspects of experts' creativity in the banking sector.

In order to gain a deeper understanding of the dual nature of creativity in the banking sector, conducting a literature review is essential. This leads to the question: In what ways can the creativity of experts in the banking sector be both a risk and a factor of resilience?

The paper is structured as follows: The methodology section provides a brief overview of how we approached the research objective. In the results and discussion section, we begin by identifying and analyzing key articles that address our research question on whether creativity is a factor of risk or resilience. Subsequently, we focus on the most significant article to develop a conceptual model. Finally, the concluding section summarizes the findings of the paper and highlights potential avenues for future research.

2. Methodology

Our study utilized a purely qualitative approach. We began by clarifying the purpose of the study and formulating research questions. Next, appropriate keywords and search strings were selected. To identify all published and unpublished evidence related to creativity in the banking sector, we chose to establish a systematic literature review. This approach allowed for an objective and transparent overview of the subject.

To ensure consistency with other systematic reviews, we conducted a keyword search in Scopus database, which is a bibliographic database that indexes scientific, technical, medical, and social sciences literature from over 25,000 peer-reviewed journals, conference proceedings, and trade publications. . Search strings were formulated in both English and French, utilizing the terms 'creativity', 'expertise', 'banks', 'banking sector', 'resilient', 'resilience', and 'risk', connected by AND/OR connectors.

It is important to note that the present scientific research conducted a systematic review of the existing literature in accordance with the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. Additionally, the research team adopted the framework proposed by Xiao and Watson (2019) to ensure appropriate methodology for the literature review. Xiao and Watson (2019) provided guidance on how to conduct a systematic literature review by reviewing the publications on literature review methodology, summarizing the typology of literature review, describing the procedures for conducting the review, and offering guidance to planning specialists.

To ensure appropriate selection of articles for this study, the research team applied specific inclusion criteria, which included the following:

• Only articles published in English and French were included.

• A variety of article types were incorporated in this study, including empirical studies, literature reviews, and conceptual articles. This inclusive approach enabled a thorough and systematic review of the literature, which was crucial for investigating the role of creativity in the banking sector. As a result, we examined articles that utilized diverse research methods, such as statistical analysis, literature synthesis, qualitative approaches, and studies specifically addressing this topic.

In addition, we restricted our selection criteria to include only papers in the fields of economics, econometrics, finance, business, management, accounting, and social sciences. Papers from other fields, such as computer science, arts and humanities, or environmental science, were excluded as they did not fall within the scope of this study. After conducting a keyword search in the selected Scopus database, a total of 207 articles were retrieved. However, upon reviewing the titles of these articles, it became apparent that several were not relevant to the research topic as they explored areas beyond the scope of the study. To depict our article search and selection process, we have included a figure that outlines our strategy in accordance with the PRISMA guidelines.

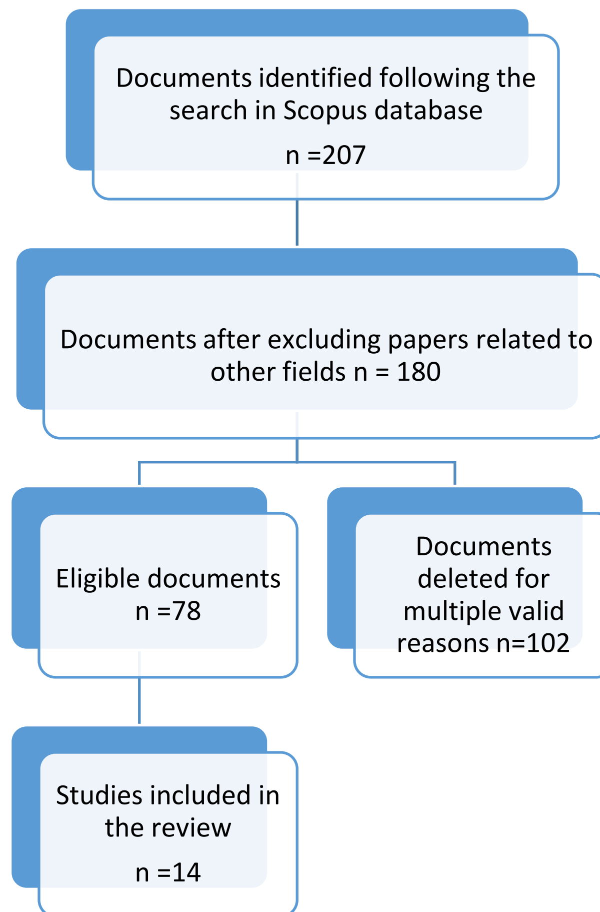

Figure 1 : Schematic representation of the search and selection strategy for articles according to the PRISMA guidelines.

As showing in the figure below the article's timeline indicates that research on this topic dates back to 1980, and the number of related articles increased steadily over the years. Specifically, there was a noticeable increase in the number of articles on this topic from 2004 onwards. The figure presented in the article shows that the highest number of articles was published in 2012 and 2020, suggesting that the interest in this topic continues to grow. The reasons for this increase in research could be due to the ever-changing landscape of the banking industry, where new technologies, financial instruments, and regulations require innovative approaches that balance creativity with risk management.

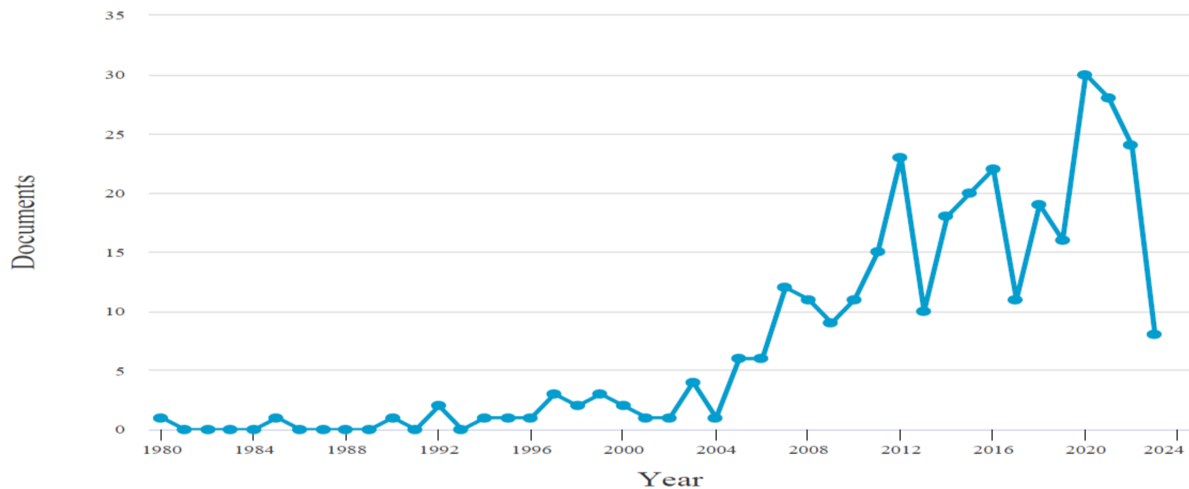

Figure 2 : The annual number of research articles on creativity in the banking sector indexed in Scopus from 1980 to January 2023

3. Results and discussion

The professional bureaucracy model appears to align with the "banking" organization's characteristics, which include relative autonomy and standardized qualifications governed by external structures. However, there is a mismatch between the professional bureaucracy model and the "bank" organization. According to Mintzberg's framework, professional bureaucracy is well-suited for standardization, but not for innovation. Therefore, it is possible to argue that the banking industry is undergoing a transformation from a professional bureaucracy model, towards an adhocracy. This change is primarily due to the innovation of experts within the industry. The experts' creativity and ability to combine different types of knowledge may have led banks to adopt a more flexible and innovative approach, which is more aligned with the adhocracy model (Mintzberg & Romelaer, 1982; Méric & Sfez, 2011).

Plihon (2003) argues that shareholders, whom we can consider as experts, have gained power in corporate governance at the expense of the state. However, the author perceives them as opportunistic and lacking concern for the company's long-term well-being. These experts tend to exhibit individualistic behaviors that can result in increased risks and undermine the organization's capacity to anticipate and mitigate them (Stul, 2016, p.12). The question then arises: How do these experts manage to evade the rules and standardization techniques that are mandated by regulators and the increasingly influential risk control departments?

It is worth noting that adhering to the standards set by the Basel Committee often entails a routine and repetitive procedure for banks, as they are subject to external control and bound by predefined rules that are now formalized. This means that intellectual expertise is reduced to a mere mechanical technique. To avoid predictability and standardization, experts tend to innovate and renew their expertise beyond regulated areas. As Méric and Sfez (2011) point out, a paradoxical situation arises where "external rules designed to control risks indirectly contribute to their increase". Thus, as a bureaucracy of experts, a bank becomes an unstable

organization that is both a threat to its sustainability and an opportunity to evolve into an adhocracy.

The prevalence of individualism in the finance industry can lead to employees pursuing their own interests at the expense of the institution. This behavior can be considered opportunistic and can be detrimental to the overall success of the company. However, it is important to note that the opposite scenario can also occur, where employees may act in the best interest of the company but at the expense of ethical principles. Regardless of the specific scenario, the human factor, whether it be a simple employee under pressure or a high-level expert, can be seen as a significant cause of operational risk within financial institutions. It is essential for companies to create a culture that promotes ethical behavior and discourages individualistic actions that could harm the organization in the long run. Effective risk management strategies should take into account the role of human behavior in generating operational risk and aim to mitigate this risk through training, monitoring, and incentives that align individual and institutional interests (Ruza & al., 2019).

3.1 The Role of Creativity as a Resilience Factor in the Banking Sector

By inventing new systems, creative workers within an organization have the potential to elevate and transform the organization to a higher level. Creating a supportive and autonomous work environment can enhance employee creativity in the banking industry (Kassa, 2021).

Creativity can be in this case a source of resilience in the banking sector, as demonstrated during the COVID-19 pandemic. The term "resilience" originates from the Latin verb "resilire," which translates to "to re-jump." It encompasses the notions of rebounding and elasticity that are reflected in the English terms "resilient" or "resiliency." This reactive meaning of "resilience" is found in various fields (Cuvelier, 2019). The literature on resilience is abundant with theories, models, and definitions, many of which are subjects of dispute and debate. This may be attributed to the fact that resilience is primarily a guiding concept utilized across diverse fields and research traditions, including physics, psychology, ecology, economics, and management, and applies to different contexts such as individuals, families, organizations, and societies. Furthermore, resilience has gained significance in security research. Over the past decade or so, the discipline of "resilience engineering" has emerged as a recognized field within security science, sparking considerable interest in exploring novel ways to comprehend work processes in complex adaptive socio-technical systems (Aase et al., 2020). Resilience is often understood as the ability to flex and withstand challenges without breaking, to recover, and possibly even thrive in the face of adverse life experiences. The American Psychological Association (2010) defines resilience as "the process of adapting well in the face of adversity, trauma, tragedy, threat, or significant sources of stress." While this definition offers valuable insights, it fails to capture the intricate nature of resilience. Resilience not only entails a group's capacity to withstand organizational shocks but also encompasses its ability to prevent them (de Bovis, 2009).

Many banks had to adapt quickly to the changing environment and find innovative ways to serve their customers while ensuring the safety of their employees. For instance, some firms allowed their employees to work from home and provided them with the necessary technology, while other created new digital products and services to help customers manage their finances

remotely. In these cases, the creativity of the employees allowed the banks to remain resilient in the face of a challenging environment.

After conducting a thorough review of the literature, we have successfully identified and compiled indicators of resilience, both in a general context and specifically within the banking sector. The findings have been organized in a table format, which provides a comprehensive overview of the different types of indicators along with the respective authors who have referenced each indicator (table 1). This compilation serves as a valuable resource for understanding and assessing resilience within the banking industry, providing a foundation for further analysis and exploration in this field.

Table 1 : Resilience indicators in bank industry

Resilience Indicators	Definition	Authors
Capital Adequacy Ratio (CAR):	Measures the proportion of a bank's capital to its risk-weighted assets and reflects its ability to absorb losses.	Danisman, G. & al. (2021).
Liquidity Coverage Ratio (LCR): LCR	Assesses a bank's short-term liquidity position by comparing its high-quality liquid assets with its net cash outflows over a 30-day stress scenario.	
Net Stable Funding Ratio (NSFR):	NSFR evaluates a bank's long-term stability by comparing its available stable funding to its required stable funding over a one-year period.	
Non-Performing Loans (NPL) Ratio:	NPL ratio represents the proportion of loans in a bank's portfolio that are not being serviced by borrowers.	
Loan Loss Provision (LLP) Ratio:	LLP ratio reflects the adequacy of a bank's provisions set aside to cover potential loan losses.	
Return on Assets (ROA):	ROA measures a bank's profitability by comparing its net income to its average total assets.	
Stress Testing Results:	Banks undergo stress tests to assess their resilience under adverse scenarios. Stress testing results provide insights into a bank's ability to withstand severe economic conditions and shocks	Aydin, N. Y., et al. (2018). Dua, P., & Kapur, H. (2018).
Workforce Resilience:	Assessing the bank's ability to adapt to changes, retain skilled employees, and ensure workforce continuity during disruptions.	Lim, D. H. & al. (2020). Madrigano, J. & al. (2017).
Employee Well-being:	Monitoring indicators such as job satisfaction, employee engagement, and mental health to evaluate the bank's capacity to support and maintain a resilient workforce.	

Environmental Management Practices:	Assessing the bank's adoption of environmentally responsible practices, such as energy efficiency measures, sustainable lending policies, and environmental impact assessments.	Gangi, F. & al. M. (2019). Biswas, N. (2011).
IT Resilience	Assessing the bank's ability to maintain critical IT systems and data security during disruptions, including cyber threats and system failures.	Marinagi, C. & al. (2023). Hassani, H. & al. (2018).
Physical Infrastructure Resilience	Evaluating the bank's preparedness to withstand physical disruptions, such as infrastructure failures, power outages, or physical security breaches.	World Bank. (2013)

As presented in the Table 1, the indicators encompass various dimensions of resilience, including economic factors such as Capital Adequacy Ratio (CAR), Liquidity Coverage Ratio (LCR), and Return on Assets (ROA). Additionally, environmental factors are represented by indicators like Environmental Management Practices. IT resilience is captured through indicators related to IT infrastructure, while physical infrastructure resilience is reflected in indicators assessing the robustness of a bank's physical infrastructure. Based on this theoretical overview, we assume that:

H0: There is a positive impact of creativity on the resilience of the banking sector.

H1: There is a positive relationship between employee creativity in the banking sector and the Capital Adequacy Ratio (CAR), indicating that banks with more creative employees exhibit higher levels of capital adequacy, which enhances their resilience.

H2: Employee creativity in the banking sector is positively associated with the Liquidity Coverage Ratio (LCR) and the LCR Net Stable Funding Ratio (NSFR), suggesting that banks with creative employees have better liquidity management practices, contributing to their resilience during liquidity stress situations.

H3: Banks with creative employees demonstrate a lower Non-Performing Loans (NPL) Ratio, indicating their ability to proactively manage credit risks and maintain a healthier loan portfolio, enhancing their overall resilience.

H4: Employee creativity in the banking sector is positively related to the Loan Loss Provision (LLP) Ratio, suggesting that banks with creative employees are more likely to have adequate provisions for potential loan losses, thereby increasing their resilience in times of economic downturns.

H5: There is a positive association between employee creativity and Return on Assets (ROA), indicating that banks with more creative employees tend to generate higher returns from their assets, which contributes to their overall resilience.

H6: Employee creativity is positively related to better performance in Stress Testing Results, implying that banks with creative employees are more prepared to withstand and recover from adverse scenarios, showcasing their resilience.

H7: Banks with creative employees exhibit higher levels of Workforce Resilience and Employee Well-being, indicating that employee creativity contributes to a resilient workforce, which can better handle challenges and disruptions.

H8, H9, and H10: Employee creativity in the banking sector is positively associated with Environmental Management Practices, IT Resilience, and Physical Infrastructure Resilience, suggesting that banks with creative employees are more likely to adopt sustainable practices and possess resilient IT systems and physical infrastructure, enhancing their overall resilience.

3.2 Creativity in the Banking Sector: Exploring its Role as a Risk Factor

In our current state of economic development, creativity has emerged as a crucial driver of productivity and innovation. It is through imagination that new ideas, products, and services are conceived and brought to life. Creativity fuels economic growth and allows societies to adapt and progress (Baer, 2012; Hirschhorn, 2013). As far as the banking sector is concerned, this sector traditionally being perceived as tightly supervised and controlled, but there is a growing recognition that creativity in this industry can lead to product and service innovation. This can result in the development of new banking solutions, improved customer experiences, and the adoption of advanced technologies. By encouraging employees to think outside the box, banks can find unique ways to maintain competitiveness and meet evolving customer needs in an increasingly digital landscape and be more resilient as shown in the previous section (Teymournejad, K., & Elghaei, R. (2017). However, the market's inherent nature also gives rise to systemic risks. As economic activities become more interconnected and interdependent, the actions of individual market participants can have widespread consequences. Unchecked creativity without proper regulation and oversight can lead to excessive risk-taking and the potential for market instability.

Human error in the banking sector can have severe consequences, whether they are intentional or unintentional. The role of employee creativity in influencing these errors is worth considering. Intentional errors can involve violations or transgressions where individuals deliberately deviate from established rules or procedures, either partially or completely. These violations may stem from professional conscience or competence, where employees creatively justify their actions based on the practices or values within their work collective. However, in extreme cases where the intent is to harm the financial institution, such creative actions are considered malicious. It is crucial to highlight that voluntary circumvention of rules is typically not an individual's sole initiative (Rapport, D. S. R. 2011; Lee, S. A., & Dow, G. T. 2011).

Numerous high-profile fraud cases, such as Enron, Kerviel, the Baring Banks, and Arthur Andersen, have resulted in significant financial losses. These companies became infamous due to their involvement in fraudulent accounting practices, which ultimately led to their downfall. The pivotal question arises: what was the root cause of their sudden failure? It becomes evident that a common factor in these catastrophic events was the occurrence of a trader mistakenly conflating billions and millions. In this particular case, the creativity of these employees played a detrimental role in disrupting the bank's operations (Körnert, 2003. Gilligan, 2011).

As we said earlier, in the banking sector, the creativity of employees can lead to the emergence of risks across various categories. In essence, risk can be defined as a potential uncertainty, threat, or opportunity that a system or activity must anticipate, understand, and manage to safeguard its assets, value, and achieve strategic objectives. Risk can manifest as either an

opportunity, presenting favorable conditions for significant financial returns, or as a threat, associated with negative situations that may lead to economic or financial losses. Additionally, risk encompasses the realm of uncertainty, encompassing all possible scenarios related to future events, whether they carry positive or negative implications. However, there is a lack of consensus regarding the definition of risk, with varying interpretations among individuals. According to the sociologist Luhmann (1993), it is considered a "problematic situation that lacks precise description within existing terminology." Nonetheless, risk is intrinsically linked to four key concepts: danger, opportunity, hazard, and uncertainty, which provide its fundamental connotations. (Knight, 1921; Le Ray 2006).

The main types of risks found in banks, including credit, operational, market, and liquidity risk, are defined by a combination of severity and probability or frequency. This allows banks to assess the potential impact and likelihood of each risk, enabling them to implement effective risk management strategies (Aven, 2015).

After conducting this literature review, we have developed hypotheses that will be tested in subsequent quantitative research.

H0’: Higher levels of employee creativity within the banking sector are positively associated with an increased emergence of the gravity and frequency risks.

Hypothesis 1’: Higher levels of employee creativity within the banking sector are positively associated with an increased emergence of credit risks.

Hypothesis 2’: Higher levels of employee creativity within the banking sector are positively associated with an increased emergence of operational risks.

Hypothesis 3’: Higher levels of employee creativity within the banking sector are positively associated with an increased emergence of market risks.

3.3 Proposition of a conceptual model for the research

The purpose of this section is to present a simple and practical model for managing the research problem addressed in this paper. The proposed model, as depicted in Figure N°3, elucidates the interactions among various variables derived from a theoretical discussion and expert opinions.

Regarding the direction of relationships between the variables, based on the hypotheses put forth, it is anticipated that there exists a causal relationship between creativity and the emergence of risks in the banking industry, or alternatively, the creation of a more resilient banking industry. This assertion will require empirical verification in future studies.

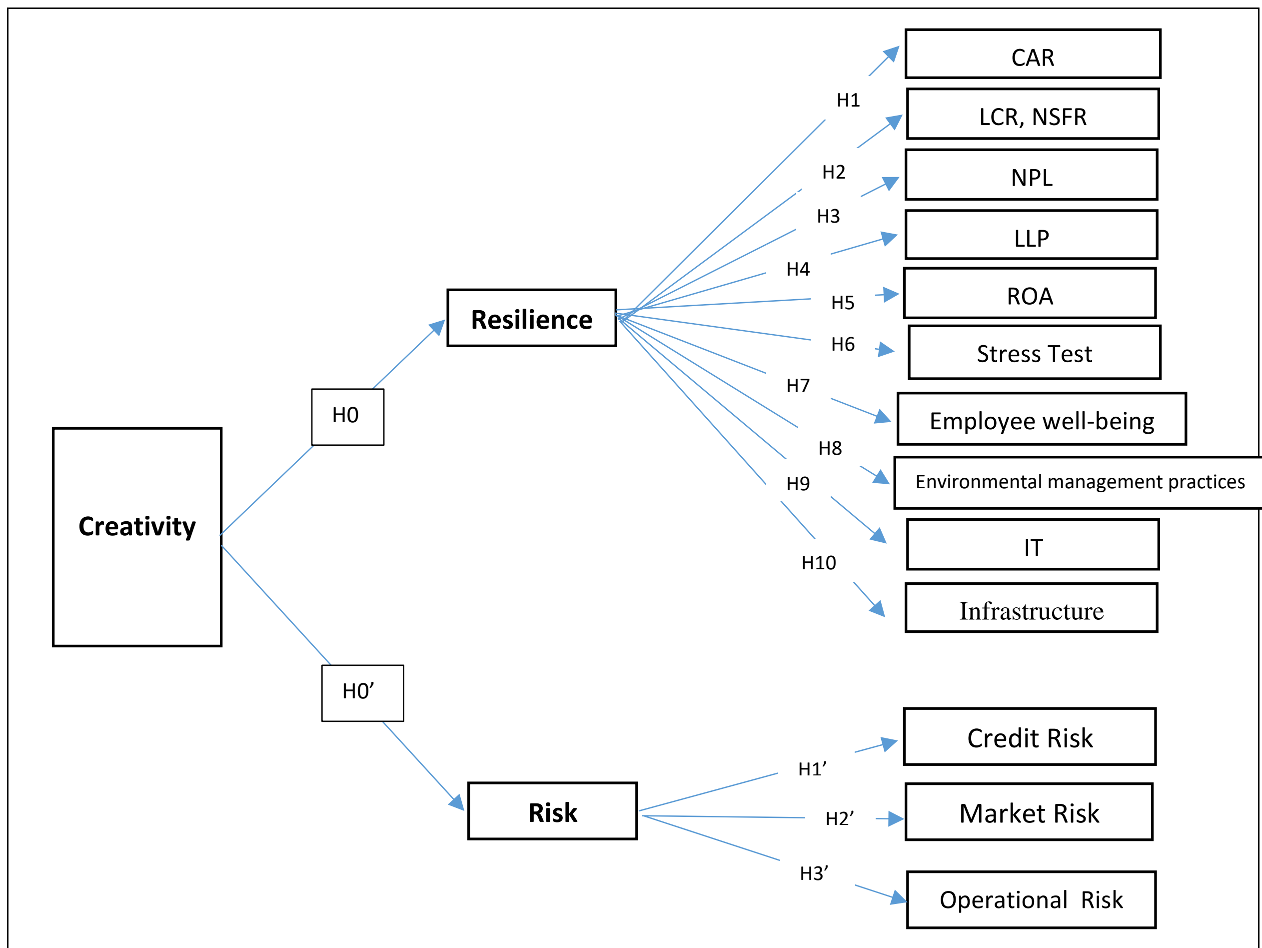

Figure 3 : The research conceptual model

4. Conclusion

It must be acknowledged that creativity is an inherent aspect of human behavior that cannot be fully harnessed over time. Should we hinder people from being creative out of fear of another financial scandal emerging?

On one hand, curbing creativity might appear as a prudent approach to minimize the possibility of fraudulent activities, reckless behaviors, or the emergence of unethical practices that can lead to financial misconduct. By imposing stringent controls and limitations, there is a perceived sense of reducing the potential for harm. However, it is important to recognize the significant benefits that creativity brings to various aspects of our lives, including the financial sector. Innovation often leads to the development of groundbreaking technologies, efficient processes, and novel strategies that drive economic growth and progress. Suppressing creativity may hinder advancements and limit the potential for positive change.

To mitigate these risks, the exercise of authority becomes necessary. Rules and regulations are put in place to guide and govern economic activities, ensuring that the market functions in a stable and sustainable manner. Authority provides a framework that helps manage the tension between imagination and risk by establishing boundaries and enforcing accountability.

When this tension between imagination and authority is poorly managed, crises can occur. If creativity is stifled by excessive regulation and rigid control, it may hinder innovation and limit economic growth. On the other hand, if imagination runs unchecked and regulatory oversight is insufficient, it can result in excessive risk-taking, market bubbles, and financial instability.

Instead of completely stifling creativity, a more balanced approach can be adopted. This involves implementing robust risk management frameworks, enhancing regulatory oversight, and fostering a culture of transparency and accountability within financial institutions. By encouraging responsible innovation and providing clear guidelines, it is possible to strike a balance between creativity and risk mitigation. Finding the right balance between creativity and regulation is crucial. Effective regulation should aim to foster an environment where creativity can flourish while also mitigating systemic risks. It should encourage responsible innovation, provide safeguards against harmful practices, and ensure that market participants act in the best interest of society as a whole.

To enhance the depth of our research, we plan to explore new perspectives that highlight creativity as a potential risk or resilience factor in the field. To accomplish this, we will conduct a quantitative empirical study utilizing a questionnaire. The questionnaire will be administered to a representative sample of creative experts in the banking sector at the national level,

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