

Risk Management of Research and Development Projects; Evidence from Insurance Sector in Kuwait

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Abstract

Research and development projects are a substantial feature of insurance companies' competitiveness and survival. However, these projects are developed in high-uncertainty environments, and risk management becomes a crucial tool for R&D project managers. Thus, this study focuses on the risk management of R&D projects and attempts to mitigate the risks in R&D projects in insurance companies. Data were collected from 15 insurance companies in Kuwait, and 30 online interviews were conducted. This study identified several risks related to R&D projects in the insurance sector. Those risks were grouped into three main sets: risks associated with the nature of the Research and development projects, risks related to the customer, and risks associated with the project's nature. The study finds that proactive and reactive risk management is critical to managing the R&D project's risks. Accordingly, the study developed an ongoing risk management model involving six steps: planning, identify risks, risk assessment, risk analysis, implementation, and monitoring.

Keywords: Insurance Sector; R&D Projects; Risk Management; Ongoing Risk Management Model

1. INTRODUCTION

Research and development (R&D) projects are no longer exclusively in the scientific pursuit domain and have become an activity undertaken by different sectors and organizations (Yüksel, 2017). In today's dynamic business environment, Research and Development projects play a critical role in organizational competitiveness and survival (Vieira et al., 2018; Das et al., 2020). Despite the critical strategic and competitive value that Research and Development (R&D) has, the decision to start a project introducing a new product, service, process, or refining an existing one (Li et al., 2020; Gómez et al., 2020). Nevertheless, research and development projects always involve uncertainty and risks (Mohanty et al., 2005; Das et al., 2020), and Insurance companies are not immune to those risks.

In recent decades, the risks associated with natural and unnatural threats to society have increased globally (Siwedza & Shava, 2020). Insurance companies work continuously to develop their products and services by heavily investing in R&D projects to commensurate with developments in the external environment (Serikova et al., 2019). This investment in research and development projects requires high financial investments, and the failure rate in the results of these projects is very high (Vieira et al., 2018). R&D projects' failure is an outcome of several risks of the R&D projects. Mainly, these projects strive to meet multiple customers' requirements, which are variable and difficult to satisfy. Besides, these R&D projects involve a set of phases with high dependencies and interactions where one phase's output is the next one's input (Choi & Contractor, 2019). It is worth mentioning that risks are relatively high during the project planning phase; however, the impacts of these risks are shallow (Zighan, 2020). From this perspective, De Bakker et al. (2010) emphasize the necessity to have risk management for R&D projects at an early stage. This risk management involves an analytical instrument that makes it possible to relate risk and uncertainty, to compare and classify, based on these two parameters, the bet that a company makes when it embarks on an R&D project. The primary purpose of risk management in R&D projects is to advance an R&D project's success rate by supporting a decision-making process while minimizing uncertainty. Effective risk management for insurance companies is necessary to counteract this trend, for which reliable information is essential (Berg, 2010).

Despite research examining risk management in R&D projects, there is still a gap in the literature regarding risk management in R&D projects in the insurance sector. Therefore, this paper investigates risks associated with R&D projects in insurance companies and determines the best risk mitigation strategies. This paper's fundamental questions are:

Q1. What types of risks insurance companies face in their R&D projects? And,

Q2. How could insurance companies mitigate that risks?

2. LITERATURE REVIEW

R&D is the process of searching for scientific and technical knowledge to develop new materials, products, services, or processes (Li et al., 2020). The objective pursued with investment in research and development is to develop an innovative idea that increases the company's competitiveness and survival (Rodriguez & Wiengarten, 2017). That is why its survival and continuity are strongly linked to research and development. Nevertheless, this is not a risk-free investment (De Bakker et al., 2010).

2.1 Risk and Risk Management

Risk is a situation involving exposure to danger resulted from the uncertainty that comes with no information and lack of knowledge to foretell the consequences or outcomes of a decision or an action (Simion, 2018). Nowadays, the level of high uncertainty has increased dramatically. It has become challenging for organizations to predict the consequences of their decisions and activities, and it became difficult to make an informed decision (supported by information) (George et al., 2019). Therefore, comprehensive risk management has become an articulating part of decent management practices and highly important in an organization's strategic direction (Berg, 2010).

The Committee of Sponsoring Organizations of the Standards Commission (COSO) (2004) defines enterprise risk management as "A process, carried out by an organization to identify potential events that may affect the organization" (COSO, 2004: p., 2). In the managerial field, the word "risk" has been linked to the risk's probability to occur and the expected effects of that risk (Simion, 2018), as shown in the figure below.

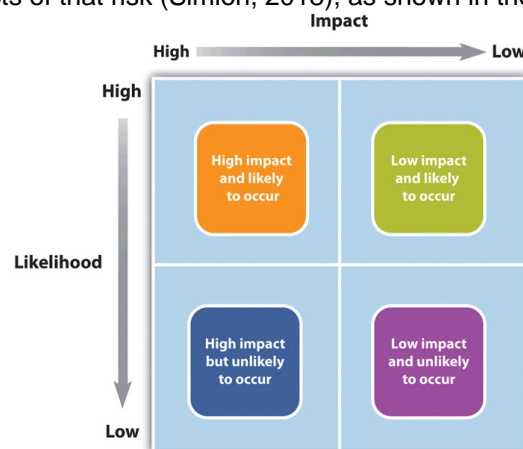


Figure 1: Types of risk based on risk's likelihood and impact

Thus, the risk management system is designed mainly to meet the risk with high probability and high effect (high impact and likely to occur risk). However, this does not imply or means ignoring other types of risks (Florio & Leoni, 2017). Fraser & Simkins (2016) described the essential characteristics of a risk management system. It should be an ongoing process of detecting, evaluating, and reacting to risk factors over the project lifecycle and its expected outcomes. An appropriate risk management system should also involve a monitoring system for likely future risk-events. It should be more proactive rather than reactive to identify potential risks, reduce risks or mitigate their effects.

According to Yilmaz & Flouris (2017), the risk is latent in all areas of an organization's economic connotation, which must be managed comprehensively. Florio & Leoni (2017) argue that the application of business risk management is a long-term process that encompasses many years of work and effort by organizations. Thompson (2018) links risk management with business strategy and decision-making process. For their part, Scarlat et al. (2012: 13) affirm: "it may be that certain key risk indicators that were relevant last year in an organization, may not be this year as well." This shows that organizational evolution is changing and dynamic, so that some performance indicators and risk metrics must be adjusted for the expected results, all depending on the adaptation and growth established in the strategic direction. That is why business models' changes began to incorporate risk management (Fraser & Simkins, 2016).

In the business field, the increase in risk management implementation as a managerial strategy has been notable. This boom began in the mid-1990s and was derived from two factors: a look at the rational economy and the notable change in the competitive environment. These factors are affirmed by the ever-changing strategies that organizations began to develop (Florio & Leoni, 2017). Faced with this, Saeidi et al. (2019) visualized a new trend in the production of scientific material in risk management, which has been energized from organizations' functional areas to the corporate level.

Bak (2018) maintains that the wide variety of investigative themes that have been developed over the last 20 years around business risk management, reflecting the diversity of perspectives that can be approached in this field of study. In this way, it is possible to appreciate the evolution and trends that have attracted researchers'

attention concerning conducting research involving business risk management issues. For the year 1996, the studies are oriented to general concepts on business risk management, dealing with issues such as risk aversion, which is a variable that affects corporate risk management policy the topics of risk analysis and the various techniques to carry it out, the architecture of risk management and the uncertainty generated by the environment are also highlighted (Tufano, 1996). Ten years later (2006), the topics that stand out the most in the research carried out on business risk management are Value at Risk (VaR) as a risk analysis tool, high-risk companies, and their importance to carry out adequate risk management, and "off-take" contracts that are used to generate certainty of price and quantity (Kuester et al., 2006). Besides, researchers' interest in topics associated with the risk of predation that exists when a competitor decides to attack, the Monte Carlo simulation to deal with risk analysis, and the theories of coverage and diversification to reduce risk were notorious (Jorion, 2007). Finally, for the year 2016, the most studied topics concerning business risk management can be observed, where the interest in investigating the different types of business risk stands out, such as reputational risk, health risk, fraud risk, and exchange risk. Likewise, derivatives are highlighted as a strategy for mitigating financial risks, and there is also interest in investigating how companies manage their refinancing risk by having a bond maturity structure (granularity) (Norden et al., 2016).

2.2 The Evolution of Risk Management

Anton & Nucu (2020) illustrate the evolution and trends around business risk management and the future research agenda:

1. Reputational risk is becoming more and more relevant in companies due to the importance of the perceptions and opinions that different interest groups have about the organization. Particularly during and after crises, companies see the need to take immediate action to carry out adequate reputational risk management; one way is to do it through social disclosures. Thus, researchers have been growing interested in studying the impact of reputational risk in the business world.
2. Exchange rate risk, since globalization has led companies to be exposed to the exchange rate. Based on this, the importance of properly managing the exchange risk of organizations has been highlighted in such a way as to avoid financial losses caused by fluctuations in exchange rates.
3. Currently, companies are facing the managing of diverse types of risks, among them is the "health risk," which has been considered as an integral part of Corporate Social Responsibility (CSR), in the sense that a company is responsible for health damage caused by its activities to people both internal and external to the organization. In this way, the growing interest of research in addressing the diverse types of risks to which organizations are exposed is reflected in a discriminatory way.

Business risk management has become a management strategy of significant impact for organizations. Organizations should have different tools, methodologies, and metrics that are part of business risk management (Shad et al., 2019). Likewise, it is of great relevance to understanding that the growth in business risk management research is articulated presently with applying different business risk management methodologies in organizations. It was generated from the technical application in organizations to manage more objectively the direction of research on the subject (Willumsen et al., 2019). Mazaheri et al. (2014) argue that the importance of the investigations being transversal to the organizations' management is visualized on this model. Thus, comprehensive risk management is developed to mitigate the different gaps between the investigation and the managerial application.

In risk management, evolution is an essential aspect, and it is thus that over time the research carried out on business risk management allows current executives to have at their disposal elements and mechanisms of business risk management that are quite broad and that can be addressed from different perspectives. In this way, researchers are directing research to various sub-themes, reflecting the breadth and depth with which it can be studied and, even more importantly, adopting the topic by organizations. However, as could be seen in this research, there are still many issues around business risk management.

2.3 Risk Management system

The management in any managerial aspect must be faced with different techniques to achieve the objectives set. Hence the risk management in its evolution also positively generated different techniques for applying the different methodologies in developing risk management in an organization (Anton & Nucu, 2020). According to Renn (2008), risk management is how an organization identifies, analyses, and responds to risk factors throughout its life to strive and fulfill its short, medium, and long-term objectives. Urbinati et al. (2020) argue that having a well-designed and efficient process for risk management allows identifying and treating risks and enables predicting and calculating potential damage. It is crucial a process for any organization. However, Prewett & Terry (2018) argue that managing to implement a system with these characteristics is a challenge due to its complexity. Thus, the risk management system is designed to identify risks, quantify them, and predict their impact on an organization. These risks are classified as acceptable or unacceptable depending on how feasible it is to work with them or not, or considering whether their resolution will imply, for example, a greater impact of the risk itself. In general, this classification is at the discretion of the project manager (Callahan & Soileau, 2017).

Zio (2018) argue that facing the various incremental or disruptive events -affecting the continuity of the operations that make up the organization- an organization should define forceful actions to strengthen itself in the three foci of business continuity:

1. Preparation: in this stage, organizations formulate and implement actions that protect themselves by defining, implementing, and carrying out exercises and tests. As a consequence of this, they increase their capacity for recovery under normal operating conditions.
2. Response: this stage is called "the moment of truth" because the risks materialize, and all the plans and protocols that were foreseen in the preparation stage are activated.
3. Recovery: once the contingency has been overcome, the organization must be taken to normal operation stages.

Galli (2017) argues that the risk management process involves four main steps, as shown in the figure below

RISK MANAGEMENT PROCESS



Figure 2: Risk Management Process

According to Clegg & Bailey (2007), within the framework of organizational resilience, various international institutions have developed methodological references that incorporate acceptable practices that are available to organizations to strengthen organizational management, within them: COSO ERM 2017, ISO 31000: 2018, ISO 31022: 2020, ISO / IEC 27005: 2018, ISO 22301: 2019.

Nevertheless, when implementing a Risk Management System, there are some challenges that an organization will have to face and that will need to be overcome to guarantee the success of the system implementation. The first crucial point is the generation of real risk culture (Soltanizadeh et al., 2016). For the Risk Management System to be successful, each individual must reflect and recognize their role within the process. Achieving awareness among all members about the essential of monitoring each process's risks, keeping a record of events, permanently reviewing the effectiveness of controls, and identifying which controls are critical for mitigating risks, is not a simple task. This task can be facilitated by implementing a Risk Management Software that allows a clear visualization and managers' assignment (Torabi et al., 2016). Another element that is very important to consider is the articulation between the areas when implementing the Risk Management System. All areas within an organization are vulnerable and exposed to risks. These risks are often related to each other and are consolidated into a risk for the entire organization (Bost, 2018). It is common to believe that the decentralization of processes allows streamlining them and making them more effective and efficient. However, decentralizing information can be a catastrophe for Risk Management System, as it can lead to processes not being assigned and distributed and, therefore, it is effortless for them to stop being monitored, and it becomes impossible to keep stocks up-to-date (Urbinati et al., 2020). According to Thompson (2018), when analyzing a sector or a particular context, having all the information in one place is essential to understand the importance of the processes involved and consider the risks as a whole and not as isolated cases spread among the units of the organization. Carrying out a reliable analysis becomes impractical when necessary to collect the information from each context (Galli, 2017).

3. METHODOLOGY

This research looks at the sources of risks in research and development projects and the mechanism for dealing with these risks in Kuwait's insurance companies. The nature of this research is exploratory, and therefore the qualitative study method was chosen to answer the questions of this research (see Zighan et al., 2018). Data were collected through personal online interviews from different insurance companies in Kuwait. The number of insurance companies in Kuwait currently stands at 39, 29 are national, and 10 are international (Arab and foreign).

In cooperation with the Kuwait Insurance Association, several letters were sent to insurance companies in Kuwait to participate in the research, and 15 companies responded, and then the response rate was 51.7%. from which, 30 interviews were conducted with executive managers at the rate of two interviews from each company (with the director of insurance and the director of research and development). The average of one hour and a half for the interview, during which the company's research and development projects were discussed, and the most critical challenges and risks facing these projects were discovered, and how it was possible to eliminate or reduce the impact of these risks in the future. The data was analyzed through thematic analysis (see Zighan & Ahmed, 2020), where each interview was unpacked into an incoming file, the answers were read several times, then the initial code was determined, and these codes were compiled into main themes.

4. FINDINGS

The findings section has been structured to answer the research questions.

Q.1 What are the types of risks insurance companies facing in their R&D projects?

The data analysis identified several risks facing R&D projects in the insurance sector. These risks were grouped into three main categories: risks related to the nature of the Research and development projects, risks related to the customer, and risks related to the project's nature.

- **Research and development Related Risks**

The data analysis identified several risks related to the nature of the R&D projects. These risks were grouped into four main risks as in Table 1 below.

Table 1: Research and development Related Risks

	Risk	Types / Causes	Impact
1.	Lack of Clear Vision	<ul style="list-style-type: none"> - Lack of Clarity - No transcendent goals - Difficult and Challenging long-term goals - Unclear mission and directions - Lack of leaders' commitment and support 	<ul style="list-style-type: none"> - Missing the market opportunity window
2.	Lack of Expert Managers	<ul style="list-style-type: none"> - No clear roles, responsibilities, or guidance - Lack of know-how - Lack of motivation - Priorities Juggling 	<ul style="list-style-type: none"> - Extra costs - Losing talent People - Juggling on technology focus
3.	High Uncertainty	<ul style="list-style-type: none"> - Dynamic business changes - Miscommunication - Low customer involvement - High competition 	<ul style="list-style-type: none"> - Scope creep - Exceeding time Exceeding Cost
4.	Lake of Innovative Idea	<ul style="list-style-type: none"> - Lack of creative thinking ability - Lack of thinking out of the box ability 	<ul style="list-style-type: none"> - Missing the market opportunity window - Customer dissatisfaction

One of the risks related to the research and development projects' nature was the lack of clear vision and expert managers. According to the data analysis, the lack of clear vision leads to many problems in R&D projects, such as missing the opportunity window and the project's scope creep.

- **Customer Related Risks**

The data analysis identified several risks related to the customer. These risks were grouped into three main risks as in Table 2 below.

Table 2: Customer Related Risks

	Risk	Types / Causes	Impact
1.	Low customer involvement	<ul style="list-style-type: none"> - Poor communication with customers - Failure to communicate with customers continuously - Lack of effective feedback system 	<ul style="list-style-type: none"> - Products or services that do not meet customers' needs - Scope creep - Extra cost
2.	Unclear Operational Requirements	<ul style="list-style-type: none"> - Lack of operational and technical - Lack of understanding customers' needs and specifications 	<ul style="list-style-type: none"> - Low quality - High cost
3.	Lack of Information	<ul style="list-style-type: none"> - Lack of effective feedback system - Lack of communication - Private and Sensitive information - Trust issues 	<ul style="list-style-type: none"> - Scope creep - Exceeding time - Exceeding Cost
4.	High Customer expectations	<ul style="list-style-type: none"> - Variety in customers' needs o - Customized needs 	<ul style="list-style-type: none"> - Project cancellation - No new project requests

The data analysis finds that customers are the focal point of Research and Development (R&D) projects. According to that data analysis, one of the leading technical risks was "unfeasible, unclear or untestable requirements, which have high likelihood impact causing difficulty understanding and implementing these requirements because of unclear syntactic description." Thus, Low customers' involvement and lack of information about customers' needs lead to a R&D project that produces products or services that do not meet customers' needs or low quality and high-cost products and services.

• **Project Related Risks**

The study participants argued that project management is challenging. Each project is goal-oriented towards producing a unique product or service within a specific scope, time, and cost. The data analysis identified several risks related to the nature of the project management. These risks were grouped into three critical risks, as shown in the table below

Table 3: Project Related Risks

	Risk	Types / Causes	Impact
1	Management difficulty	<ul style="list-style-type: none"> - Scope risks - Planning issues - Risks related to communication 	<ul style="list-style-type: none"> - Customer dissatisfaction - Project cancellation - Low quality - High cost - Scope creep - Exceeding time - Exceeding Cost
2	Risks related to resources	<ul style="list-style-type: none"> - Lack of resources - Technology obsolescence - Execution Difficulties 	
3	Budget Issues	<ul style="list-style-type: none"> - Misallocation of budget - Difficulty in acquiring the required 	

The risks are events that can happen during the project's lifecycle and jeopardize the success of the project's objectives. Risk management serves to accept, avoid, mitigate or transfer risks. Among the most common risks in managing R&D projects related to project management are scope, planning, communication, and resource risks.

- **Scope Risks:** the scope of a project can change as it progresses due to clients' addition of requirements. These requirements arise as a consequence of the needs of the market. This implies the need to inform the client of the steps to follow, consider expectations, and anticipate those changes. For this, project managers and project teams have follow-up meetings, kick-off, and review of the initial proposals.
- **Planning Risks:** Some risks affect project planning and whose cause can be found within the project team itself or outside, uncontrolled. Planning should try to foresee these situations, evaluate the probability that they arise, and affect the previously established planning. Planning can be affected by errors in estimates, insufficient resources, etc. In these cases, the teams have tools such as the risk matrix for evaluation.
- **Risks related to communication:** The communication problems between groups of a project can jeopardize completion. It is essential to have a communication plan.
- **Risks related to resources:** Just as a project's scope varies over time, the available resources can also change. These resources can be material and human. The company's situation or the sector in which it carries out its activity may affect the available resources. In these situations, the project manager must prioritize those most significant tasks to ensure compliance with the minimum requirements that allow the project to be completed successfully.

Furthermore, budget is an essential aspect of any project, the inability to secure sufficient resources for the project is one of the main risks related to the project and one of the causes of R&D projects failure, and most of the projects fail due to cost overrun or schedule overrun. Besides, financial risks such as shortage of funds have been ranked as the sixth important cause of projects' failure. the study has identified "Unrealistic Budget" as a risk factor in which has been defined as the estimated cost for the project may exceed the available budget if this was not mitigated the project may be out of fund early in the software development lifecycle and thus fails.

Q.2 How could insurance companies mitigate that risks?

The study finds that the advantages of carrying out adequate risk management of a project are not only to minimizing the impact of threats or reducing their adverse effects but also go through raising the levels of general motivation in the project teams by not being subjected to the extra pressure and achieve a higher rate of job satisfaction. It also reduces the project managers' stress levels by experiencing a better sense of control. The way to benefit from all these advantages is through proactive and reactive risk management.

- **Proactive**

- **Integrate project risk management into planning:** Risks are not a matter of reaction but for planning. Managers must try to act preventively to optimize the response and avoid the risk or

minimize its impact. The comprehensive approach is the one that allows enjoying the greatest advantages concerning the results obtained.

- **Identify risks from the beginning:** The first step in **project risk management** is to detect the project's risks or appear during its execution. It is crucial to involve the members of the most experienced teams, who will enrich the identification process with their contribution and vision, based on experience. Besides, it is convenient to review the lessons learned from previous projects and the project documentation for essential keys to improving management.

- **Reactive**

- **Analyze risks:** Understanding the nature of a risk is a precondition for a good response. Therefore, taking some time to give risks the attention they require without jumping to conclusions involves carrying out risk analysis at different levels. In this sense, simulations can provide a fascinating perspective.
- **Plan and implement the risk response:** Implementing a risk response is the activity that adds value to the project. It helps prevent a threat from materializing or, at the very least, minimize its adverse effects. Execution is critical at this point, but its robustness will depend on the existence of a risk response plan that includes either the influence on its causes or the methods to be applied to mitigate its consequences. In any case, the most critical aspect is that the answer is always a conscious decision and not an intuitive reaction, as far as possible. In order for the risk management results of a project to be even better, it is necessary to try to optimize the control that is made of them by:
 - An adequate establishment of priorities.
 - The necessary fluency in communication.
 - The creation of an updated risk register.
 - The monitoring of h risks and threats detected in the initial planning.

The study developed the risk management model, as shown in the figure below



Figure 3 :Risk management model for R&D projects

Each step has its activities; for instance, the main risks are identified in the project initiation processes. Those high-level risks are included in the project charter so that by analyzing those risks and their severity, it is decided whether the project is worth starting. With this use made of the project charter risks, a simple list of risks and a description of them are enough to assess their seriousness. When the project has already been approved and enters fully into the planning processes, it no longer serves you with a simple list of risks. Now project managers have to create a risk matrix capable of containing detailed information of each of the risks and, besides, be a tool that monitors each of the risks throughout the project. They also have to plan Risk Responses. This is where they develop options to attack the identified risks and benefit the project by increasing opportunities and reducing threats. In this process, it is also vital to generate contingency plans, which help to act more efficiently in the face of previously identified incidents or materialized threats. The objective is to mitigate, transfer or eliminate risks and enhance opportunities.

In terms of risks in the execution, monitoring, and control of the project. In the processes of execution and monitoring of the project, when the project managers are doing everything they have planned and are checking that what is executing conforms to what they had planned, they must control:

- The status of risks,
- They should be aware of whether new risks have appeared since the appearance of risk will affect the project execution's development.

For each risk that has identified, the project managers must:

- They must have their risk matrix updated,
- Updated the contingency plan against this risk,
- They must implement triggers capable of being activated if the activation of risk is imminent. In the event of its activation, immediately execute its associated contingency plan.

Nevertheless, risk monitoring is an integral part of R&D projects. It aids project managers in mitigating the impact of risks on the projects. Also, to ensure the effectiveness of risk management, it is necessary that risk response actions are monitored and that the identification and analysis of risks are carried out periodically throughout the life cycle of the project. Thus, in order to carry out effective and satisfactory risk management, it is necessary to consider the following critical factors:

- Recognize the value of Risk Management. Get the organization and the project stakeholders to recognize its actual value.
- Individual Commitment and Responsibility. Each stakeholder and team member must accept responsibility for carrying out activities related to the project's risks.
- Open and Honest Communication. During risk communication, truth and credibility are our best allies.
- Commitment by the organization. It is necessary to commit the organization, and the risk management must be aligned with the organization's objectives and goals.
- Adjust the effort that will be invested in risk management. The effort that will be made to carry out risk management must be consistent with the complexity, priority of the project, and organization restrictions.
- Integrate with the Project Administration. Risk management cannot be independent since it requires other PMI processes for project management to be carried out.
- Risk Monitoring and Control must continually review and reevaluate the risks identified and monitor the effectiveness of the responses and the risk management plan. Some risks are nullified, and new risks appear.

Finally, integrating customers into the R&D projects is applied to lessen risks. Customers' involvement is a critical aspect of any innovation project to develop the innovative idea within customer needs and expectations.

5. CONCLUSION AND RECOMMENDATIONS

Organizations are currently implementing risk management internally to prevent this from generating consequences in their structure and the managed processes. However, for this plan to be successful, it is vital to follow some steps to help its implementation be effective. This study identified several risks related to R&D projects in the insurance sector. These risks were arranged into three main groups: risks related to the nature of the Research and development projects, risks related to customers, and risks related to the project's nature. Thus, it is essential to understand that there must be a prior study and some background that will allow knowing the company's risks directly and indirectly. This will allow the plan to be put in place to be the one indicated. During the analysis stage, it was suggested to carry out a risk map, this must be continuously updated, and during this period, it must be done, as well as giving it adequate management to verify if the purpose is being fulfilled.

The environment of the R&D projects becomes increasingly complex. Thus, risk and, therefore, the organizations' leaders' attitude towards it constitutes a critical factor in developing business projects, especially in those that involve some innovation. However, what if the new product is so popular that the organization does not have enough staff on the sales team to serve consumers? In these cases, we want to maximize the probability that the risk will occur since it is an opportunity for more than a risk. The proper Risk Management strategy is to explore. The organization can train people within the management team, for example, to take on emergency business roles and be ready for demonstrations, thereby increasing interest in the new product. Exploring risk involves looking at both sides of the coin. All risks can represent a threat, for which the organization must also be prepared. However, exploring risk and creating a list of risks are only the initial steps. It is essential to prepare an action plan for each possible risk. Without an action plan, the organization's risk management capacity is limited to identification and recording. The action plan must consider some actions to be taken for risk identification. This includes, for instance, accepting risk through identifying and recording potential risks in the Risk Management System. When a risk represents high-negative impacts, risk-avoiding is preferable to modifying or eliminating the process that gives rise to that risk. Risk-avoiding maybe requires changing the project plan or scope. When the risk is enormous, a risk transfer strategy is preferable, where Mitigating risk and minimizing its impact or reducing the chances of its occurring is also the right action within an effective Risk Management process.

The study finds that for mitigating risks in R&D projects, the insurance companies should have:

- Risk management must be an integral part of the organizational culture.
- A risk management structure must be established within the organization.
- Top management commitment and support are vital for an effective risk management system.
- Risk management cost should be seen as an investment rather than a cost.

Organizations should also motivate ambitious project managers who are always looking for different methods and activities to achieve the project and do not tight themselves by existing approaches. Those managers have the best chance of encountering innovative approaches.

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