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MASTER'S THESIS

RISK CULTURE IN FINANCIAL INSTITUTIONS – A COMPARISON WITH AUTOMOTIVE AND PHARMACEUTICAL INDUSTRIES

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INTRODUCTION

Culture is the unwritten rulebook, which will be transmitted through generations and acquired by new joiners (Hofstede, Hofstede & Minkov, 2010). There is a lot of theory regarding culture and risk management. However, there is very little theory within the framework of risk culture. Risk culture could be explained as a matter of risk management, governance and risk taking. This topic has developed over time and with much emphasis since the last financial crisis of 2008. Many banks in the wake of the financial crisis faced financial penalties for misconduct by workers as well as the executive staff, which resulted in a general weakening of the industry and a reduction in customer confidence (Holland, 2010). Notably the crisis was not only related to the way in which banks handled risk, but also to the culture that existed within these institutions and the way in which employees reacted when they were exposed to risks. In this way, the “human behavior” factor has gained more space within the central topics and interests of companies, since it is correlated with the degree of risk to which financial institutions are exposed. Therefore, the term "risk culture" increased its relevance over time by both institutions and regulators, which today require compliance with standards defined to achieve an appropriate risk culture.

The main objective of this study is to be able to contribute to the scarce academic research on risk culture in financial institutions and the effect of risk culture on perception, understanding, ways of measurement and the approach that German banks apply. In the same way, the aim is to check whether these factors are perceived in a similar ways by the automotive and pharmaceutical industry. To this effect, an exhaustive literary review will be conducted regarding risk culture in financial institutions, which subsequently will serve as a basis for a survey, which will not only analyze risk culture in financial institutions but also will address the topic within pharmaceutical and automotive industries.

On this manner, challenges within the existing risk culture in the financial industry will be addressed and compared with these additional industries. The point of view of regulators and authorities with regard to risk culture will be also discussed. This aspect is considered to be of great relevance and will be developed within the document in detail, since today German financial institutions are under a lot of pressure to fulfill various requirements. The obtained results from the survey addressed to leaders and senior leaders of German financial, automotive and pharma industries are very enriching. Although the additional industries deal with risk management, there are no regulations for those sectors, which explicitly talk about risk culture, even though they have to deal with similar corporate challenges. The comparison of the three industries is considered a benefit to analyze similarities and differences they possess to manage risk, since those facts will lead the study to recognize the complexity of understanding risk culture and the different approaches that companies apply to assess it.

This thesis will collect relevant information about risk culture and analyze if the available literature about addressing risk culture in financial institutions can be proved and compared with two additional industries. Similarly, a less exhaustive analysis of available information about the pharmaceutical and automotive industries will be provided to verify in the same way some existing theories about risk culture. The selection of the two additional industries for the methodological part will be done for comparable reasons but the focus and previous discussion will be centered on the financial institutions. With the results, the reader will acquire information on the value of risk culture within the selected sectors and if it implies an applicable issue for them now.

Considering the research purpose, three key research questions are analyzed:

- How do companies understand, operationalize and measure risk culture? Do they assess it in similar ways?
- How do financial regulators influence conceptions of risk culture?
- Is there a single appropriate risk culture or are there different approaches?

The thesis will comprise five chapters, in which, the research questions will be systematically addressed. First, an introduction will be presented, where the reader will find the justification of the topic, the research questions as well as the general information for each chapter. This chapter will be followed by a definition of culture and risk culture for achieving an aligned understanding of the topic. Information about Germany and the three industries will be provided with the aim to understand the economic and cultural characteristics of the country and the most outstanding aspects of the chosen industries. In the following chapter, the regulator and authorities' importance and view of risk culture for the financial institutions will be presented and discussed. The next chapter will present the methodology used for conducting the survey. First, a short definition of the selected industries will be provided. Second, it will present the results collected from the online survey and structured interviews. Furthermore, institutions data analysis will be done for proving theories mentioned in previous chapters as well as for answering the research questions presented at the introduction. Conclusions, limitations and further research, will be presented at the last chapter.

1 LITERATURE REVIEW

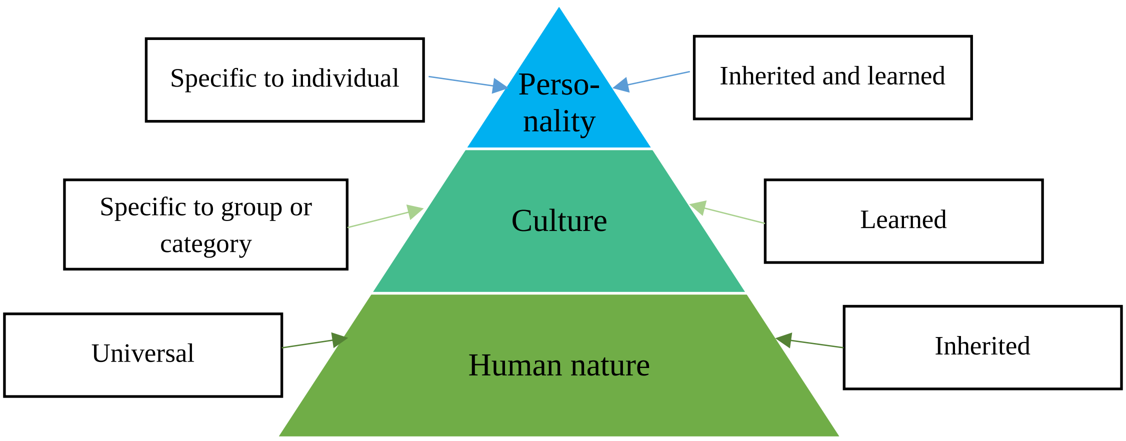
1.1 What is Culture?

General Information

Many definitions can be found about culture in the literature, however, one of the most representative comes from Geert Hofstede, a psychologist who conducted a PHD in organizational behavior and who formulated the idea of cultural dimensions. In 2010, by the publication of culture in organizations, Hofstede, his son and Michael Minkow define culture as “the collective programming of the mind that distinguishes the members of one group or category of people from others”. Regarding corporations, the authors argue that culture is the set of attitudes, norms, customs, beliefs, traditions, shared values and convictions, which will outline any organizational member’s behavior. Indeed the authors outline culture’s dimensions as not visible because they englobe ways of thinking, feelings, interpretations and meanings, among others (Hofstede, Hofstede & Minkov, 2010). According to List (2017), culture is a mental programming, which is assimilated rather than hereditary that allows the differentiation between two groups. In fact, culture will consist of traditional thoughts and their attached values.

Therefore, Hofstede, Hofstede and Minkow (2010) propose that each individual have their own mental programming, which will be defined by three factors that are explained in the following figure:

Figure 1: Three levels of uniqueness in mental programming



Source: Hofstede, Hofstesde & Mikow (2010).

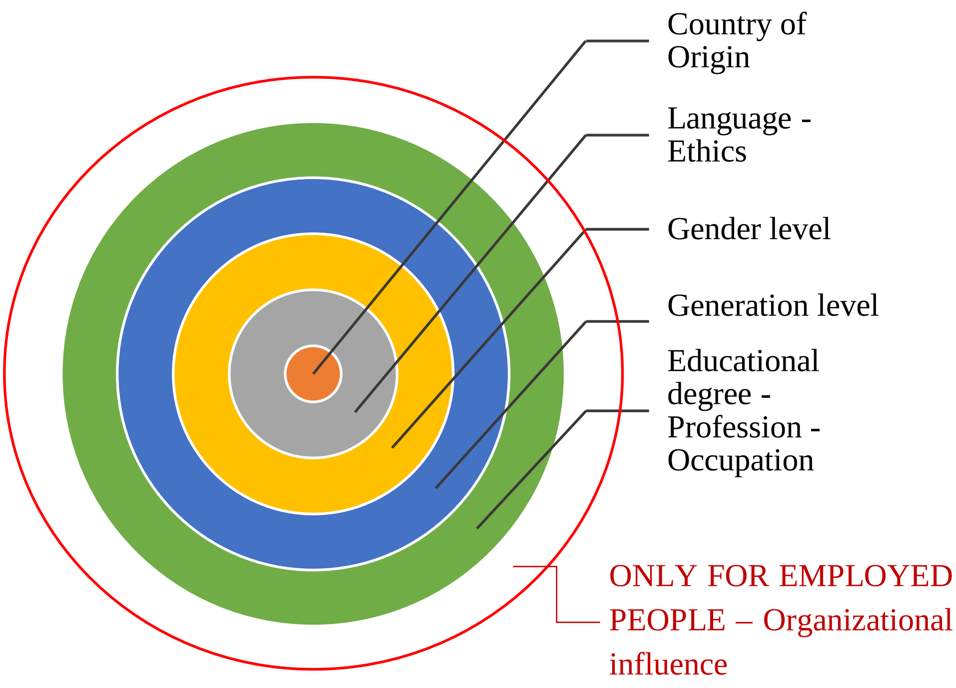
Culture will be learned within the environment the person is growing in. As revealed by Figure 1 Hofstede, Hofestede and Minkow (2010) suggest that culture needs to be differentiated from human nature and the personality of a person.

Initially human nature is what people have in common independently where they come from or what they do. It refers to the human capacity of feeling emotions as well as the basic human needs to socialize with other people, etc. (Hofstede, Hofstede & Minkov, 2010). Nonetheless, culture will be the tool for defining how people express their feelings or what they do with them. Subsequently comes the personality of a human that characterizes itself for belonging to a person in particular without the need to be shared with other human being. In another words, it will englobe the set of mental programs that a person possess, which

will be partly inherited and learned by personal experiences and the modification of the influence of the culture that surrounds that person (Hofstede, Hofstede & Minkov, 2010).
On the other hand, Pan and Wang (2017) mention different approaches of determining culture. First, they affirm that the country of origin of a person will influence in the determination of their culture, so even people who raised up in a different country would show a tendency of possessing similar cultural characteristics with people from their country of origin. National culture according to Hofstede, Hofstede and Minkow (2010) can be divided in six dimensions, which are individualism, power distance, long-term orientation, masculinity, indulgence and uncertainty avoidance. This tool is used for understanding core cultural characteristics from a country, as well as for comparing cultural aspects of different countries. For many studies, national culture will be a core indicator for understanding specific cases within a country or even an organization.

In the following figure, Hofstede, Hofstede and Minkow (2010) state the existence of specific factors that can explain culture in a clearer way:

Figure 2: Culture explained by mental programming



Adapted from Hofstede, Hofstede & Minkow (2010).

Hofstede, Hofstede and Minkov (2010), explain that culture will reproduce itself through the years, since new generations will acquire the previous learned culture by their predecessors. In addition, they describe that each person has their own mental programming, which will be defined first by the country of origin as well as the other countries the person lived in depending if the individual migrated during its lifetime. Second, the language and ethics will also be determinant by defining someone's culture followed by the gender level conditioned by the society the person finds in. In fourth place comes the generation level that refers to the age of the person. Social class level comes as the fifth layer that denotes the educational degree of the person as well as its profession and occupation. As for the last layer, the authors talk about the employed people that will have a direct influence from the organization, department or corporate levels, to which they are exposed every day.

However, there is another theory that contradicts the one proposed by Hofstede, called Yin Yang. Tony Fang, a professor at the Stockholm University School of Business, proposes the Yin Yang approach to comprehending cultural dynamics. This theory is derived from the indigenous Chinese thought, which states that all universal phenomena are composed of two opposing energies. He affirms the existence of different cultures that although possessing different characteristics own the same potentials in value orientations, which comprehend paradoxical cultural values (Fang, 2012). The author defines Hofstede's theory as static and he proposes a dynamic theory, where variables such as globalization and time defines culture as a unique dynamic portfolio. Therefore, it means that people have a determined culture but because of the globalization, the interaction with people from different countries and the learning over time, consequently there will be the possibility of selecting over the time different value orientations. For instance, the author compares culture with the ocean, which first has no limits; the different waters are separated and shared at the same time, with differences and similarities (Fang, 2014).

1.2 Understanding Corporate Culture

Corporate Culture (hereinafter: CC) is the most powerful tool a company has, undeniably complex by nature and diverse (Whiteley, Price & Palmer, 2013). According to Cox and Soobiah (2018), corporate culture is understood as an evolutionary process. A strong and well-defined corporate culture will be reached by having extensive social networks, cooperation and interactions within the company. In this way, it will help firms to predict outcomes in different situations and confront better unpredictable circumstances. Furthermore, corporate culture proved to have a durable effect on business performance, which means they are positively correlated to each other (Cox & Soobiah, 2018). Corporate culture defers from national culture since the people who conform the institution come from different backgrounds. Therefore, it is a culture that employees belong to during the working hours until the moment they decide to leave the institution (Hofstede, Hofstede & Minkov, 2010).

Additionally, Whiteley, Price and Palmer (2013) comment that CC is mainly ruled by values, fact that promotes the unity. They refer that companies can reach corporate culture sustainability by integrating their employees at such a level that they identify themselves with the cultural values of the firm (Whiteley, Price & Palmer, 2013). Nevertheless, if companies are vulnerable to external or internal variations, it may happen that loyal employees lose their commitment by exposing themselves to risks, therefore, a strong corporate culture will be elemental.

Furthermore, Thomas (2015) notes that an effective corporate culture not only needs well defined values, visions and missions. Notably many companies encourage their employees to commit with the company's values by hanging them on the walls, but a high percentage of senior leaders and regular employees will have problems to provide the same definitions and understandings of what it is written. It appears that tangible objects will achieve a higher understanding between the employees of a firm. Hence, it will be easier for them to understand what defines the corporate culture of the institution they work for (Thomas, 2015). In addition, English, Hammond, Kovas and Parry (2018) highlight that for reducing misconduct risks, institutions need to have a proper corporate culture aligned with their incentive systems. In this way, they affirm that the customer trust will increase sustainably through time.

Thus, corporate culture starts when the company begins with the selection of its staff, by selecting employees with similar ideas and preferences as the firm (Pan, Siegel & Yue Wang, 2017). Evidently, empirical research about corporate culture is scarce according the authors.

Measurement of Values

It has been said that the core tool for measuring culture will be the values a person has, for instance people´s actions cannot be measured in isolation, as the results would be very uncertain (Hofstede, Hofstede & Minkov, 2010). The authors mention the importance of conducting questionnaires when measuring culture, even though people may not act in real life exactly as they reflect in their answers, it can be helpful for defining differences between groups.

People´s values are measured by what is desirable and desired. As revealed by Hofstede, Hofstede and Minkov (2010) people have a perception about how the general environment should be and what they want as individuals for themselves independently the previous fact. In another words, the desirable will defer from the desired, since the first one implies an ideology, what should be done and the second one infers on the practical matters from the individuals.

Compensation Models

Another tool for understanding culture in an institution will be the compensation models, the companies put into practice. Institutions need to apply compensation models to encourage their employees to stay at the company. For instance, hierarchy and money are the core incentives to reach this goal, nevertheless the approach will need to be adapted to the different institutions, since the meaning for money will defer in each institution (Leroch, 2014).

1.3 Understanding Enterprise Risk Management (ERM)

ERM is a term that appeared at the end of 1990´s due to the need of improving the approach of assessing companies with the management, classification and mitigation of risks they were confronting (Barton & MacArthur, 2015). Certainly, ERM was created for better evaluating all type of risks inside the company, which before were separately considered and analyzed. Previously the term ERM appeared, the current management of risks was leading leaders either to ignore or to improperly measure risks in a company. Therefore, ERM was created with the idea to improve such deficiencies (Barton & MacArthur, 2015). Certainly, a strong ERM will require that the management level compromise itself with the process for achieving an effective implementation.

There have been many cases, in which companies guaranteed to have a proper ERM, which in fact was discovered to not be truth after many companies failed to manage the effects of the financial crisis of 2008 (Barton & MacArthur, 2015). Cox and Sobbiah (2018, page 3) mention that in the recent years banks paid high fines due to improper conduct that led to increase the risks for investing in banks. Barton and MacArthur (2015) remark that JP Morgan Chase & Co was known because of its accurate risk management since it survived the financial crisis of 2008 but years after in 2012, it confronted a loss of about $6 billion caused by a single trader in England. This issue reflects the problematic of understanding the meaning of risk management by the institutions. Therefore, providing a false impression of proper risk management can lead to important losses or even a disintegration of the company.

As Barton and MacArthur mention, a reflection of a proper implementation of ERM is the culture of the organization. Subsequently a company will be successful with their ERM if they promote risk transparency, performance evaluations and compensation systems (Barton & MacArthur, 2015). Nevertheless, the authors emphasize the challenge that companies meet for the application of effective compensation systems, based on the risks they confront, especially because such compensation systems are significant for the success of the company. As a result, the involvement of all managers and employees will be critical for a proper implementation (Barton & MacArthur, 2015). Moreover, they sustain that culture is an important part for reaching a successful ERM application, which is why Whiteley, Price and Palmer (2013) confirm that companies will be successful in periods of change and adaption when employees easily adapt and commit to new values.

1.4 Understanding Risk Culture

Risk culture is considered the answer for many questions that appeared after the financial crisis of 2008. For example, according the financial regulators, reasons, which conducted the crisis and facts contemplated for reaching again trust and stability in a long run are nowadays, correlated with risk culture (Jansen & Schiwietz, 2018).
In particular, this new term discussed by regulators has gained more importance during the last years after the financial crisis. As Power, Ashby and Palermo (2013) declare, there was a lack of understanding about the correlation between risk management, risk-taking behavior and ethics as for companies and regulators. For instance, the authors affirm that the term Risk Culture appeared by the need of reconnecting management, governance and risk-taking processes to a single term that has a single purpose. In other words, it tries to address all risk and cultural topics without separating them. In this manner, risk culture will be a continuous process that repeats and renovates itself with the time.

In the 1980`s the business policy was focused in maximizing short run earnings. The development of different financial products made financial institutions put aside the main social mission. There was a lack of focus on the client`s interest or a long run vision of a good approach to risk. It was more important to achieve the institution´s financial goals rather than analyzing the risk they could be confronting. This is why risk culture became a topic of interest after the financial crisis. As the authors Jansen and Schiwietz (2018) say, it should be an explanation behind; which can explain all vague reasons that led to a huge financial impact.

Risk culture became a new stablished term that have been acquired by different regulators and financial institutions. In this manner, corporate risk culture is defined by Pan, Siegel and Yue Wang (2017) as the shared aims for risk and uncertainty preferences of senior leaders of a firm. Another definition provided by The Institute of Risk Management (2012) describes risk culture as a set of values, knowledge, and understanding about risk that the employees of an organization have, independently if they are private, public, not-for-profit or their location. The importance of risk culture within a company will be measured by the way the firm manages its risks (The Institute of Risk Management, 2012). Even though there is no uniform definition of risk culture, many improvements and new considerations on that topic have been developed (The Institute of Risk Management, 2012). Similarly, Pan, Siegel and Yue Wang (2017) affirm the existence of less theory about certain attitudes towards risk, how they evolve within the time and the effect it has on corporate decisions.

Nonetheless, regulators provide risk culture several definitions. According to the Chartered Institute of Internal Auditors, risk culture is the combination of strategies and results. Inside the Mindestanforderungen an das Risikomanagement (MaRisk)[1] it was added a section in October 2017, where it mentions that it is the responsibility of the management to develop, promote and integrate an appropriate risk culture within institutions. The Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin)[2] expects that institutions use their risk culture as an active tool to manage their risks.

A proper risk culture is showed through a credible commitment of the management´s behavior towards risk, a transparent communication on risk-relevant issues, clear responsibilities as well as incentive mechanisms that promote risk-aware behaviors (Jansen & Schiwietz, 2018).

Risk culture is not a new risk management approach. Risk culture should be seeing as the decisive link between the existing operational and methodological procedures of risk management and their effectiveness and sustainability in practice (Jansen & Schiwietz, 2018). Barton and MacArthur mention as well that risk culture or how they call it "challenge culture" should start at the management level, so companies will achieve success by effectively integrating the whole firm. Furthermore, the authors refer to the existence of two types of management levels. On one hand the top management level that will be capable to identify the potential risks at a strategic corporate level, while the lower management level will be capable to identify risks at a tactical level, which will affect their area.

Recent studies about neuroscience mention that anxiety and neuroticism are correlated with the measurement of taking risks (Pan, Siegel & Yue Wang, 2017). Therefore, Hofestede's Uncertainty Avoidance Index (hereinafter: UAI) scale will predict the attitude of individuals by confronting risks.

1.4.1 Corporate Risk Culture

Pan, Siegel and Yue Wang (2017) remark that the staff selection process in a company will determine their culture. For example the selection of authorities such as managers, CEOs are based on their risk preferences and the similarity of their preferences with founders or past authorities. Similarly, they confirm that the preliminary risk culture in a company will be the prediction of the company's future risk culture, even if the founder has left the firm already. Therefore, UAI may be an important variable for protecting and making sustainable the culture within the institution.

[1] The MaRisk offers a risk management principle-based framework, which can assess all significant risks based on section 25a inside the German Banking Act, allowing institutions to implement solutions in a flexible manner.
[2] The BaFin rearranges under the same roof the supervision of banks, financial services providers, insurance undertakings and securities trading. It is a public institution, supervised by the Federal Ministry of Finance regarding technical and legal topics.

A firm could have some differences in UAI between leaders from different areas but this issue can be improved by the time CEOs spend at the office that means the strategies they implement at the company such as promotion of employees and alignment of their risk preferences with other leaders (Pan, Siegel & Yue Wang, 2017). Thus, the authors suggest adding as an important variable of study the role of risk attitudes if not only CEOs as the theory says but also the role of corporate leaders. In addition, they sustain that such authorities within the institutions extremely influence on how risk culture is conducted within the institution. Furthermore, the authors prove with their study that new entering leaders will have less similar risk culture characteristics in comparison with corporate leaders with more years within the institution.

Moreover, Research and Development (R&D) and acquisitions will have more weight in a company, where the existence of uncertainty avoidance is high, so, those companies will save more cash and show a small volatility of cash-flow (Pan, Siegel & Yue Wang, 2017). For instance, companies that are globally operating are proved to reach better performances and financial results when they adapt the managing practices to the local culture, since they diminish the risk of failure and therefore they achieve success (Leroch, 2014).

Corporate Risk Culture Structure

Corporate Risk Culture as mentioned before will begin with the selection of the institution's leaders. First of all, founders will have a big influence on the type of culture that the institution want to achieve by contributing with the selection of CEOs and other leaders for maintaining and developing the initial institution's risk culture (Pan, Siegel & Yue Wang, 2017).

The authors mention that the selection of new CEOs will depend on the strategy of the company. There could be a selection based on their preferences, which will need to be similar to the previous CEOs. Similarly, CEOs will select senior leaders based on their own preferences, so they can adapt the risk culture of the company if they want to change it (Pan, Siegel & Yue Wang, 2017). For example, CEOs could adapt the new CEOs or corporate leaders risk culture by looking for people with same preferences but also by offering better incentives, which can modify people's behavior. In this sense, CEOs will choose to take higher risks (Pan, Siegel & Yue Wang, 2017).

Corporate Risk Culture and their Policies

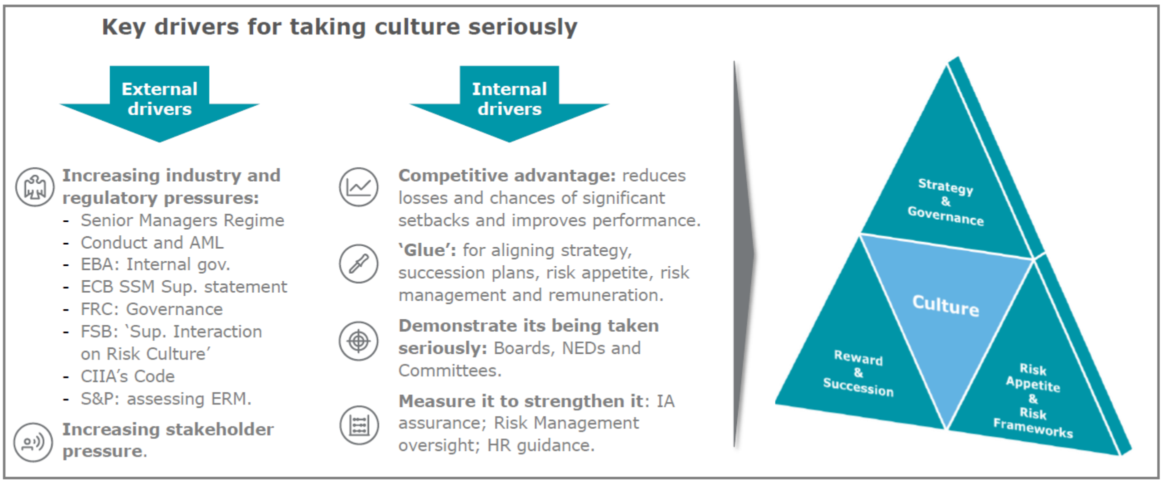
Talking about investments within the institutions, there will be a higher tendency to avoid partially or completely the investments, if the institution possess a higher uncertainty averse. For example, Pan and Wang (2017) say that there are two outstanding types of investment firms that are primarily confronted, on one hand are the acquisitions and on the other hand the R&D (Research and Development). For the second example, institutions need to have a higher commitment with their future expectations; this means that the investment in achieving expertise will be the base to expand future products as well. The uncertainty for the company will be higher, in the case of their productivity if they choose to invest in R&D (Pan, Siegel & Yue Wang, 2017). Therefore, it is important for the corporations to implement clear policies and strategies, which define the attitude they will have regarding risk-taking and management of risks.

1.4.2 Risk culture in financial institutions

Deloitte Touche Tohmatsu Services, Inc. (2018) provides its own definition for risk culture based on its own experience with financial institutions. They affirm that risk culture englobes standards, attitudes and the behavior of a bank with regard to risk awareness, risk appetite, risk management and controls that shape risk decisions. From their point of view, risk culture is subject to formal and informal factors, which have a direct or indirect impact on employees' decisions in their daily work. Additionally, the development and promotion of an appropriate risk culture is the primary task of management, expressed in a special role model function and open communication.

Risk culture is acquiring more importance with the time because of the external and internal drivers as figure 3 presents. For instance, as external drivers it is known that regulations are increasing their pressure regarding risk culture with emphasis towards banks. Similarly, stakeholders from their side make pressure regarding the institution’s profit expectations. On the other hand, there are the internal drivers, which promote the enhancement of the institution’s competitive advantage, the alignment of the institution’s strategy, succession plans, risk appetite, risk management and remuneration.

Figure 3: Key drivers for taking culture seriously



Adapted from Deloitte (2018).

As reveal by Cox and Soobiah (2018), culture is a representative topic for banks since business performance, reliability and reputation over time can be effectively measured through culture. Since culture conducts financial institutions to positive outcomes, it is important to properly incorporate it within them. As for banks, after the financial crisis of 2008, Holland (2010) mentions that there has been found that failing banks had the characteristics of misunderstanding their business strategies, which led them to expand their services without taking the proper considerations for doing that. For example, commercial banks were offering services as investment banks, fact that created an environment focused on sales rather than risk management culture (Holland, 2010). Cautious banks survived the financial crisis because they concentrated on essential areas, such as organization, intermediation and risk management (Holland, 2010). Evidently prior 2008, many financial institutions were not transparent with the levels of risks they were exposing themselves by overpassing their limits and general accepted risk appetitive levels (Power, Ashby & Palermo, 2013).

Intellectual Capital (IC) is a variable, which can be measure in different institutions, Holland (2010) mentions that it is very difficult to achieve a single model or tool to measure banks as well as the manufacturing industry. Indeed, there is the belief that banks will still present their human capital on their own way (Holland, 2010).

As revealed by Power, Ashby and Palermo (2013) banks experienced risk management failures during the last years. To show that, they mention the Barclays LIBOR scandal and JP Morgan Whale trading case. It is said that even though Barclays was compromised on complying with the regulations, they were not committed with them. Hence, the institution was focused on short-term financial performance and compensating their employees based on its business goals, instead of prioritizing the expectations of its clients. Problems or mistakes were not openly discussed in all areas within the institution. In the case of JP Morgan, known as one of the best banks in managing risks, demonstrated that it did not have a solid risk culture because of its regular failure to comply with their risk limits, manipulation of risk measurements, among others (Power, Ashby & Palermo, 2013).

It is a fact that financial economists focused more on risk culture during the recent years, what they did not do before due to the difficultness it implies to measure that variable within an institution, which still may not be understood by many institutions nowadays (Pan, Siegel & Yue Wang, 2017). As Holland (2010) mentions, bank's knowledge will not resolve issues if the Board management does not constantly commit themselves with the institution. He adds that it is proved that banks will only be able to learn or implement incentives for learning and knowledge at the top of the institutions by having effective regulations and strong sanctions. The author also remarks that even though banks possess a good knowledge, learning and regulations, they will not be able to fully control the nature of humans, which means that they can limit the failure inside the company by making the Board accountable of those problems (Holland, 2010).

1.4.3 Risk Culture in automotive and pharmaceutical industries

It is undoubtedly expected that the automotive and pharmaceutical industries also face similar situations related to risk management and culture, whereas they need to effectively fulfil their strategies and goals, as well as comply with external regulations. In this section, insights about risk culture in both industries are discussed. In addition, examples from those industries are given to better understand the context, in which those industries are developing.

Although each industry possesses its own characteristics, commonalities and differences between them can be found regarding the way they assess risk culture. First, all three industries, including financial institutions operate in extremely regulated environments with high compliance risks. Similarly, the three industries are exposed to risks that cut across sectors, like quality risks, geopolitical exposures, cyber threats, among others. Therefore, it is of great importance to have a clear image of how these other two industries are confronting risk culture and which aspects stand out in each one.

Automotive Industry

Aspects related to risk culture were identified over time within this industry. For example, in year 2014, General Motors (hereinafter: GM) experienced a challenging situation, where the company lost billions of dollars in an important reputational damage as for its ignition switch recall (Barton & MacArthur, 2015). GM had a late recall of their ignition switch problem that was identified in 2001 but was only considered as a real issue by the beginning of 2014. At an early stage, GM could have revert the issue saving costs but as the firm's culture didn't classify the switch problem as a safety consideration but as a client's suitability; they reacted late and therefore confronted bigger losses (Barton & MacArthur, 2015). By the end of 2013, the liabilities recorded for the ignition switch problem were zero, while for the end of 2014 they reached $315 million. Indeed, there was a significant cost of opportunity for detecting that issue late, causing reputation damages. Clearly, this example shows the importance for GM of having a proper risk culture, showing as well the potential risk that smaller companies can confront.

Thus, in 2014 the CEO of GM affirmed the existence of material weaknesses and significant deficiencies by the time of bankruptcy, which was a proof of lack of an appropriate risk culture in that company. By 2015 GM added in its webpage a section dedicated to "Ignition safety recall information", where the importance of this topic is published (Barton & MacArthur, 2015).

Another example discusses Volkswagen (VW) scandal. By the year of 2015, VW one of the biggest and successful carmakers in the world, confronted a huge scandal known as "diesel dupe" in United States. By September of that year, Volkswagen accepted being cheating about the emission their cars were producing in US after the Environmental Protection Agency (EPA)[3] found out about this irregularity (Hotten, 2015). The problem took place when VW started a huge marketing campaign emphasizing its car low emissions and EPA finding out that those 480.000 cars were presenting the same characteristics. Afterwards, VW admitted and explained that the real amount actually covered 11 million cars around the world.

The problematic was that cars were changing its status to safe mode while being tested, whose engine was running below normal standards, which in reality was much higher, overpassing the allowed limits in US. Some of the immediate results of the scandal were the resignation of the group's chief executive, who was replaced by the former boss of Porsche, as well as the increase in questioning the legitimacy of VW's emissions testing worldwide and the fall of carmakers' shares. The recovery process implied to confront financial losses and to react effectively in order to win back customer's trust (Hotten, 2015). Evidently, VW confronted challenges with its internal risk culture, where its risk appetite framework was not properly implemented. Clearly, the company's risk awareness as well as risk appetite were not taken into account as important and decisive facts before determining to expose the company's brand and position inside the market. According to Willis Tower Watson (2017), misconduct, defects in processes and the acceptance of rule breaking in some areas drove VW to have fragile risk culture and governance.

Nevertheless, Toyota, another car producer shows a positive implementation regarding the improvement of its organization's risk culture. As revealed by Thomas (2015), nowadays Toyota, known as the world's largest car manufacturer, has implemented a successful way of improving its corporate risk culture. The company hanged a rope along the production line with the aim to give all workers the allowance to stop the production at any time if a defect is identified. Thus, all employees are stimulated to manage the problem as a team. Certainly, this new strategy achieved to improve the culture between front-line workers and management leaders that has been failing in the past years within the automotive industry. According to the author, workers within the company are more aware of the importance of their role on the final product, so they commit themselves in a higher level, since they receive the same attention as the senior leaders of the company.

Comparing Toyota's positive change in its corporate risk culture, the author references how Ford, known also as the pioneer of car manufacturing, implement a different way of managing its production. For instance, the company had encouraged their employees to be responsible only for their tasks not for the quality of the final product (Thomas, 2015). In other words, a quality control will be done and if a defect is discovered, the car will be separated for being fixed or rebuilt, depending on the gravity of the case. Thomas (2015)

[3] EPA is an independent body within the United States federal government for environmental protection. They are in charge of writing regulations to help companies to comply with and understand the requirements.

sustains that the advantage of this method is that the production line will be moving independently if a problem is detected.

As observed, the automotive industry confronts different risks, which make companies vulnerable if they do not have an appropriate risk culture. For instance, it is observed that the role of each worker, regardless of his or her grade, is very important. Hence, workers must understand the function of their role within the company and the risk involved.

Pharmaceutical Industry

When talking about the pharmaceutical industry, people may find many unique characteristics such as its R&D practices applied for facing its medical challenges, which distinguishes this industry from others (Van Arnum, 2017). It is observed that the pharmaceutical industry has an obvious institutional purpose focused on their customers by promoting health and lifesaving with crucial medicines instead on making profit (O'Brien, Gilligan & Miller, 2014). Notably, the compensations systems composed of salaries, bonuses or dividends will be steered to ensure that the industry reaches its core purpose mentioned before.

During the recent years, risk management within the pharma industry has acquired a higher importance for C-suits and Board members like by financial institutions. Due to the unstable economy and the political situation, there is an increment in risks, which pharma institutions confront. Notably in clinical-trial design and its implementation, cybersecurity, product quality, drug characteristics approval and international commercial performs (Dhankhar, Ganguly, Govindarajan & Thun, 2018). It is said that many pharmaceutical companies acknowledge their lack of preparation for analyzing and managing risks as well as the results they achieve.

In fact, by 2016 through a survey conducted by PwC, it is stated that pharmaceutical companies have well developed risk agility that means they quickly react and adapt to customer preferences, changing markets, nevertheless, they have difficulties by applying risk resilience. Risk resilience is defined as the way companies confront an interruption in their business by the proper application of risk management tools, concrete processes and a well-stablished corporate culture as well as an outstanding brand (PricewaterhouseCoopers, 2016). A similar idea is stablished by CHEManager, Germany’s leading journal for the chemical and pharmaceutical industries, who mention that pharmaceutical companies need to focus on simplifying their businesses by applying long run strategies rather than focusing on parts of the whole simplification only needed when market disruptions appear. They support this statement by assuring that agile companies and simplified company will not have the same impact as a company, whose strategies englobe reestablishing their corporate culture, government mechanisms among others (Philipp & Hettinger, 2017).

According to Cox and Soobiah (2018), pharmaceutical companies generally have a clear corporate purpose, which is to provide crucial medicines, however banks tend to show their core purpose by discussing the client's needs first and the way they can accomplish them. In addition, it is to be expected that people from the same bank deliver a different purpose of the institution based on their respective tasks.

In this way, deficiencies within risk culture management became present throughout the years for the pharmaceutical industry. Significant events were observed in different pharmaceutical companies, especially large and important ones, which have generated a great impact within the industry. For example in year 2011, Merck, one of the biggest pharmaceutical companies worldwide had to pay a fine, corresponding to the promotion and sale of a painkiller called "Vioxx", which caused an increase in heart attacks and still had no approval for its utilization (Husten, 2011). This product was in the market from 1999 until 2002, which was approved by the Food Drug Administration (FDA)[4] for three other indications. However, the product just received the approval for the use against rheumatoid arthritis in 2002, which was already supplied without a license to patients and covering up the side effects, such as the danger of increasing the likelihood of heart attacks due to its consumption.

Johnson & Johnson experienced during the last years different situations regarding improper risk management. The company, another big one inside the pharmaceutical industry, had to pay one of the biggest fines in his history by the year of 2013. In that year, the company was able to put an end to a trial initiated against the company for the sale of depression products, which were unauthorized. Investigations took place regarding bribes to pharmacists as well as the application of an improper marketing that was promoting misleading messages about those products (Ingram & Krasny, 2013).

Another recent incident within the pharmaceutical industry happened in 2016, where GlaxoSmithKline (GSK), another giant company had to pay an important amount for promoting the delay of a cheap generic reproduction of its antidepressant called Seroxant (Hirschler, 2016). The British pharmaceutical non-ministerial governmental department Competition and Markets Authority (CMA)[5] realized by the year of 2013 that GSK was paying different generic drug companies money for delaying the entrance of new competitors. Nevertheless, the fine was promulgated three years after (Hirschler, 2016).

Evidently, the pharmaceutical industry confronts risks and is exposed to an erroneous approach of its risk culture. The constant changes within the market and regulatory expectations places the industry under stress and forces it to react quickly, as well as to

[4] FDA is an agency that started its functions in March 31, 2019, which aim goal is to promote and protect public health and to assess innovation challenges within the organizations regulated by FDA.
[5] CMA is a non-ministerial governmental department in UK that works for strengthening business competition and preventing and diminish anti-competitive activities.

constantly maintain its competitive power in the market. For this reason, companies with a weak risk culture can commit greater errors and face greater risks.

2 IMPORTANCE AND CHALLENGES OF RISK CULTURE IN GERMANY

According to the authors Hofstede, Hofstede and Minkov (2010), one basic way to differentiate culture is the nationality, which should be carefully used as a measurement tool. For example, they refer how people build wrong concepts or ideas about others, only because of their country of origin. Even though a country already defines a human's culture, they notice that people coming from different cultural backgrounds can fusion in a single group, with a single identity. This means that people within a company can achieve a single distinctiveness. Nevertheless, it is important to mention that the identity of a group or a person will defer with its culture.

Furthermore, it is said that countries will defer from others based on the growth of their institutions through the time or the regulations, rules, etc., specially implemented in the country (Hofstede, Hofstede & Minkov, 2010). It is noted that similar laws will have different impacts between countries, for example, the European Union experienced that countries were reacting differently by the application or compliance of certain regulations because of their cultural background.

Therefore, it is said that senior leaders such as managers, CEOs, etc. and the people they work with will be understood if there is a comprehension of their societies, since they belong to national societies (Hofstede, Hofstede & Minkov, 2010). The authors sustain that when talking about culture within the business world, there will never be a short way to address the issue.

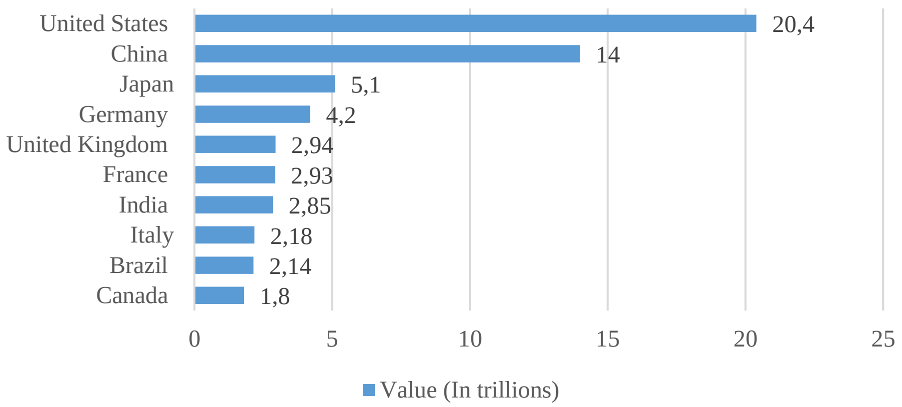
In this section, information about the country and its economical, as well as cultural characteristics will be discussed. Additionally, facts about the selected industries within the country will be provided.

2.1 Information about Germany

Germany, geographically well located, the largest economy in Europe with the biggest population in the European Union (EU) comprising more than 82million inhabitants and with the most spoken language in the EU; is one of the pioneers in the formation of the EU, of which it has been a member since 1958. Worldwide, Germany is the third largest economy by the production of automobiles, electronics, communications equipment, pharmaceuticals, and chemicals, among others (EUbusiness, 2018).

According the International Monetary Fund (IMF) 2018 ranking, Germany is the fourth largest economy worldwide, based on its Gross Domestic Product (GDP) in current prices. This means that this country contributes to the world's economy in 4.5% from the total. The following figure presents the mentioned results of the IFM ranking.

Figure 4: GDP – 2018 (Current Prices in U.S. dollars)



Adapted from IFM (International Monetary Fund) (2018).

Through the years, more foreign companies are moving its headquarters to Germany because of the high levels of productivity and outstanding business framework. In addition, the country is excellent in its professional education, owning highly skilled workforce, engineering superiority and a high innovation rate (Germany Trade & Invest, 2018b).

Investment Climate in Germany

According to Germany Trade & Invest (2018), the country possess a stable society, economy and government. It is a world's prominent country for intellectual property, operating security as well as protection from organized crime. Regulatory authorities in this country are highly correct in their established processes and in the manner they enforce the laws.

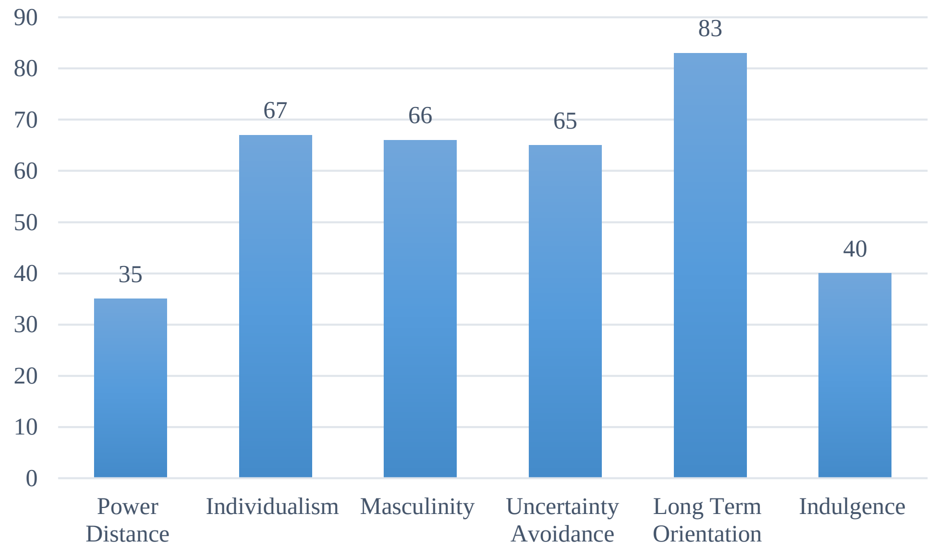
Regarding the Foreign Direct Investment (FDI), the country is acknowledge by having an open position with regard to this topic no matter the industry. As revealed by Germany Trade & Invest (2018) the national law does not underline any difference between foreign or nationals with respect to investments for forming new companies. Equally important are the workforce considered to have high levels of preparation that guarantees the achievement of high-qualified standards.

The country is also known as an international logistic hub, since it is the major performer inside EU, Norway and Switzerland. Definitely, Germany owns a logistic proficiency by having a proper transport infrastructure, a good quality of trade, additionally the quality of the roads, port infrastructure and air transportation (Germany Trade & Invest, 2018a).

Cultural Profile of Germany

Since Germany is selected as the country of interest to implement the study, it is considered relevant to recognize Germany's cultural characteristics. For this purpose Hofstede's six cultural dimensions results will be taken into account, which are considered the most relevant for understanding culture within a nation.

Figure 5: Germany National Culture Dimensions (in %)



Source: Hofstede Insights (n.d.).

Initially as we can see in figure 5, *Power Distance* will be the first dimension to be discussed, which refers to the inequality between individuals within a society. It appears that in Germany this fact ranks as one of the lowest power distance among other countries (Hofstede Insights, n.d). Indeed, it has a grade of 35/100, which means that the inequality and the distribution of power between people is low. Wealthy nations will reduce power distance scores only if they benefit the entire society and not a group inside the population (Hofstede, Hofstede & Minkov, 2010).

Individualism is another dimension, which explains how collectivism works inside a society, this means if people think more as an "I" or a "We". As we can observe in the results Germany scores as an individualist country with 67/100. For instance, Hofstede Insights affirms that people's loyalty will be reached by the responsibility and duty the others have. German population is distinguished by talking openly about what they think with others.

Masculinity will measure how societies identify and approach success. Germany for example scores 66/100 meaning it is a masculine society that is driven by competing with others for achieving success. According to Hofstede Insights, performance is highly appreciated because students at an early age are divided in different schools systems based on their performances. For instance, in corporations, managers are estimated to be crucial and assertive.

Uncertainty Avoidance measures how societies perceive unknown situations, which are about to happen and the approach they apply to avoid them. It is important to not confuse this term with risk avoidance, since uncertainty has no probabilities involved to it because it is a situation that people is not aware of and they cannot easily predict (Hofstede, Hofsted & Minkov, 2010). Germany scores 65/100, showing a clear tendency for the country to avoid uncertainty. This means that this country will prefer to plan and have precise rules and as many details as possible to reach certainty that a planned project or job is being well executed. They will prefer experts, when dealing with unknown situations (Hofstede Insights, n.d). It is said that these type of societies prefer structured organizations and predictable and clear interpretable situations (Hofstede, Hofstede & Minkov, 2010).

Furthermore, *Long Term Orientation* refers to the manner people prepare or project themselves to the future. Germany has a high score of 83/100 showing the capability of its society to adapt their traditions to the current or upcoming situations. Therefore, they have a tendency to persevere in achieving results by saving and investing for their future (Hofstede Insights, n.d).

Finally, *Indulgence*, which measures the control that societies have on desires and impulses. For instance, Germany scores 40/100 indicating they are not indulgent but restrained. This means that they tend to be pessimists and cynical, especially their behavior will depend on internal social norms. Therefore, being indulgent is perceived by these individuals as an erroneous behavior (Hofstede Insights, n.d).

2.2 Banking industry in Germany

German banking industry, which has the best score for quality, security standards and authenticity, has three pillars that make up the industry (Statista, 2018c). For instance, there are the commercial banks, the public banking sector and the cooperative banks that are distinguished by ownership structure and legal form. Frankfurt is Germany’s major banking location, followed by Düsseldorf, München and Hamburg (Germany Trade & Invest, n.a.). According to the European Banking Federation (2018), 40% of the total banking industry is conformed by the private commercial banks. In recent years, the number of banks has enormously decreased since economies of scale were applied, in many cases due to stress rather than planned business considerations.

In order to understand the actual situation of this industry, Statista (2018c) performed a SWOT analysis, describing key topics within the industry that should be kept in mind. Such information is presented in the following figure:

Figure 6: SWOT Analysis – Banking Industry in Germany

Adapted from Statista (2018c).

As for the opportunities that the banking industry can exploit are the investments in technology that nowadays many banks as well as central banks are performing (Statista, 2018c). Notably, mobile banking and other online transactions can help them significantly reduce costs. Another important point is that banks can achieve lower write-downs and so better favorable credit terms for corporations in comparison with other countries within the Eurozone.

Weaknesses found are that the industry has a focus on the shareholder, which means that cost and staff reduction are applied. Similarly, the number of suspicious transaction reports on instruments like unauthorized phone orders increased during the last time that derived in a reduction in the consumer confidence (Statista, 2018c). Opportunities found in the German banking industry are the growth of business with interest-free investment and challenging and changing the customer's expectations by offering better options regarding e-private banking.

Threats detected are the probability of having problems with computer based trading systems causing major disruption in the stock exchange trading. Furthermore, the increase of guidelines and new or further developed regulations expect new challenges within the industry (Statista, 2018c).

In addition, the development of new FinTech companies, represent new challenges for German banks because they increased their presence in the market and optimized processes and products proper of a bank. Therefore, banks must allocate a portion of their budget to invest in technology and keep updated with the latest innovations. Indeed Statista performed a survey, whose results affirm that more than 70% of people under 30 years old utilize online payment services as well as mobile or online banking services. There is a clear tendency that the young population and upcoming generations will have expectations related the technological trends.

2.3 Automotive Industry in Germany

Germany is considered as one of the solidest countries regarding high-tech automotive products together with autonomous driving technology (Germany Trade & Invest, 2018c). This country also stands out for being one of the biggest car manufacturer worldwide, technology leader, with a strong brand image, an outstanding international reputation and an extremely variety of consumer regions (Statista, 2018a). According to German Trade & Invest (2018c), 16 of 100 top automotive companies come from Germany.

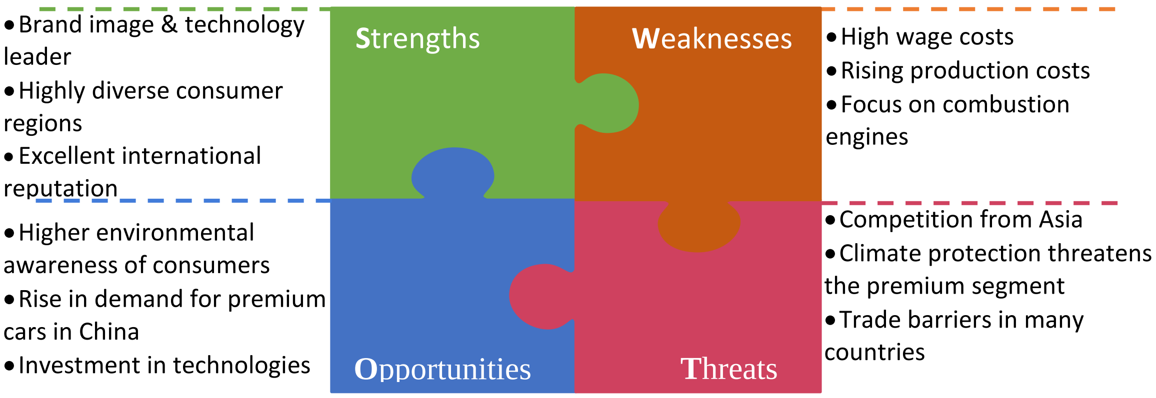
As shown in Figure 7 the automotive industry shows positive and negative aspects, summarized in a SWOT analysis. As for 2018, Germany achieved 66,2% of all premium cars sold with German procedure, element considered as one of the most important strengths for this industry. Another strength is the percentage of number of car exports is fairly high and distributed in many countries, fact that helps this country during crises (Statista, 2018a).

Weaknesses found within the German automotive industry concentrate on the high wage costs in comparison with other countries. The volatility of the resources represent pressure on the production costs. Additionally, Germany is not developing research within alternative drive systems, for instance USA and Asia focus more on that topic (Statista, 2018a).

Likewise, the potential opportunities addressed by Statista are the likely market for economical compact, electric and hybrid cars. China is considered as a potential market for the German automotive industry since their premium cars demand raised. Another significant opportunity is the possible investments they can do, particularly in the field of alternative drive systems (Statista, 2018a).

Threats, the last feature measured in the SWOT analysis, mentions three key aspects for consideration (Statista, 2018a). First, Asian car manufacturers are improving and positioning themselves worldwide. Second, climate protection can shrink the expansion of the traditional premium segment and third, there can be obstacles within exports because of trade barriers.

Figure 7: SWOT Analysis - Automotive Industry in Germany



Adapted from Statista (2018a).

Notably, Germany is experiencing new trends regarding carsharing, circumstance that has a direct impact on the quantity of new cars. According to Statista, one shared car reduces 11 personal cars from driving on the streets, since they are easy to access, affordable and nowadays a millennials' choice. The biggest carsharing providers in Germany belong to Daimler and BMW (Statista, 2018a). Carsharing is still minor inside Germany therefore it should not represent a threat to car sales.

Revenues within the German automotive industry have risen positively by 2.2% in 2018 and are expected to grow in an average growth of 0.8% until 2022. Accordingly, in 2017 the industry was selected as the leader among manufacturing industries in 2017. Exports exceeded imports by the year of 2017, where exports growth in 2.9%. As for 2018, R&D growth in Europe was composed of 60% from the German automotive industry. Aside, German Trade and Invest (2018c) ads that recently this industry have been allocating money for developing its R&D and maintaining its competitiveness worldwide.

In comparison with other European countries, Germany represents the highest turnover by the year of 2016, followed by France achieving only 27% of Germany's total turnover. Significantly, the German automotive industry has the most employees within Europe (Statista, 2018a). This industry is also expecting changes due to Brexit's repercussions mainly because of trade and consumption changes and currency valuations, which could affect negatively this industry.

2.4 Pharmaceutical Industry in Germany

Germany, recognized as the world's pharmacy, is the world's fourth largest and Europe's largest pharmaceutical market. It is known as the second leader (after USA) for producing biopharmaceuticals. This country characterizes for the industry as a well-developed nation and an outstanding global industry player in the research area, production that has a direct market access to this industry globally (Germany Trade & Invest, 2018a). The fact that the global demand for pharmaceuticals and research advances are growing due to a population growth, promotes the pharmaceutical industry to enhance their processes, research methods and general quality.

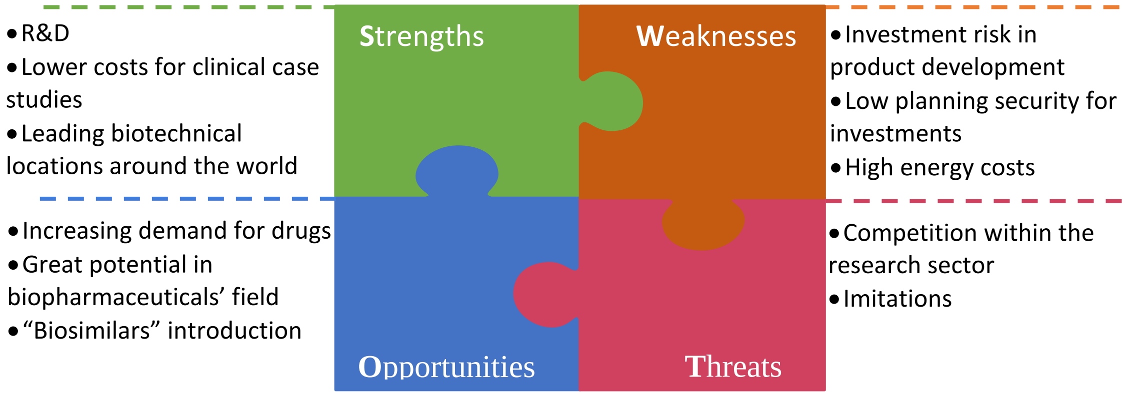
A SWOT analysis is developed in figure 8 to identify the industry's positive and negative characteristics. Strengths found within the industry are the constant investment on innovation, even though the financial crisis as well as the Euro crisis. For instance, in 2017 the country spent 9 billion Euros in R&D (Statista, 2018b). Another strength mentioned by Statista (2018b) is that costs for data quality of clinical studies is 50% lower than in USA despite having the same high data quality of clinical studies. Notably, Germany is a leading biotechnical location around the world, which possess 391 corporations.

As for the weaknesses within the German pharmaceutical industry, Statista identifies three factors. For instance, product development within the industry takes between 8 to 12 years, which represents not only time but also costs that may retard the process. Another important point is the potential law focused on reducing drug prices that has direct effect in planning security for investments. Finally, rising energy costs remain prejudice German pharmaceutical companies' competitiveness since it has a big importance for the industry's costs (Statista, 2018b).

Opportunities found in the industry are related with the demographic growth, which has direct effect on the demand of drugs, as well as the lately scientific findings representing great potential within the biopharmaceutical's field. Nowadays, "biosimilars" are molecules that have variances that require new approval test. So, by their introduction, pharmaceutical companies can avoid price reductions (Statista, 2018b).

Finally, threats identified for the German pharmaceutical industry are the increase of competitors in India, China, Brasil and Russia. Furthermore, imitations can cause losses in the global trade and German pharmaceutical companies (Statista, 2018b).

Figure 8: SWOT Analysis - Pharmaceutical Industry in Germany



Adapted from Statista (2018b).

Furthermore, Germany Trade & Invest (2018) add that the country has a big population that enhanced its life expectancy levels and health awareness, which derived that around 11% of the GDP is spent in healthcare. The increase in biopharmaceuticals production and new drug approvals is due to the increase in people's awareness of health, therefore the value of them has grown over time. It is said that Germany is acknowledged as the top five pharmaceutical production locations that doesn't have a direct competence within European Union since no other country reach Germany's production levels, just Italy, which finds itself in second place with 1.4 billion Euro less for 2016. As for 2014, the country spent an equivalent of 13% in Research & Development (R&D) more than all other existent industries inside the country. According to VfA (2019), through the years Germany has been the pioneer and leading country for applying effective research methods on the discovery of medicines for combating the pain, blood pressure, HIV, diabetes, strokes and cancer. In another words, Germany has deservedly reached its position as one of the best locations for conducting research and development.

It is worth to mention that Bayer AG places itself as first for Over the Counter (OTC) pharmaceuticals in Germany. OTC in this case will refer to medicines that does not need a prescription to be bought on the market. Regarding the safety in the pharmaceutical market, Germany applies an initiative for controlling counterfeit medicinal products, whose name is securPharm. This initiative was started by BAH[6] and other associations of the pharmaceutical industry that implemented a system with the capability to recognize the authenticity of medical products in pharmacies before they distribute to the consumers. EU-countries have to apply similar control systems starting as from 9 February of this year (B.A.H. - Bundesverband der Arzneimittel Hersteller e.V., 2018a).

[6] B.A.H.: Is the leading trade organization of the pharmaceutical industry in Germany. The company covers self-medication medicines (OTC) as well as prescription drugs (Rx) and medical devices.

With respect to the regulatory aspect, Regulatory Fitness and Performance (REFIT) will be applied in the pharmaceutical industry. B.A.H. (2018a). Undoubtedly the pharmaceutical industry is one of the most regulated industries in Germany, for instance SMEs and small companies are the most affected since they cannot cope new regulations due to monetary restrictions or resources (B.A.H. - Bundesverband der Arzneimittel Hersteller e.V., 2018b). A good example is the requirements that Good Manufacturing Practice (GMP) has. During the years it became more severe forcing companies to acquire more manufacturing personnel that converts the manufacturing process more expensive (B.A.H. - Bundesverband der Arzneimittel Hersteller e. V., 2018d).B B.A.H. (2018b) mentions that it is very important that European legislation focuses on protecting the consumers, patients and to ensure that all patients can have access to the required medicines. With the time, regulations have been restricting pharmaceutical companies on producing new medicines since the process for acceptance of new medicines has become more strict, which means that several of the companies stopped their research on new medical products. Pharmacovigilance package, a regulation implemented in 2010 requires that pharmaceutical companies apply a risk management plan with every application for a marketing approval. For example, stakeholders believe that fees charged for pharmacovigilance, do not necessarily ensure the safety of medicines and only imply more monetary and time effort from the pharmaceutical industry (B.A.H. - Bundesverband der Arzneimittel Hersteller e.V., 2018c).

3 SUPERVISOR AND AUTHORITIES’ VIEW OF RISK CULTURE IN FINANCIAL INSTITUTIONS

3.1 Financial background and expectations

Culture matters is the lesson many institutions have learned after the financial crisis of 2008, especially financial institutions that were the most affected (Lo, 2016). After the fourth largest investment bank in the United States called Lehman Brothers failed in September 2008, caused a contagion on other banks and institutions. This circumstance showed internal flaws, which led to their inability to cope successfully with that crisis. This event weakened the financial system, caused by a reduction of the confidence on financial institutions and its regulators. Similarly, it derived on a credit freeze and a decrease on transactions (Holland, 2010). In fact, since the financial crisis covered aspects at a global level, it was difficult to expect that individual reactions or measures would reach an effective impact. Therefore, it is said that regulators, European Central Banks were not able to act quickly in comparison to past crisis (Holland, 2010).

Holland (2010) recognizes in his paper that the major aspects, which led to the financial crisis, were a high securitization, leverage and broad market trading, as well as the bonus culture. In addition, the authors remark that C-Board and management didn’t perceive that the application of their fast growth models, emphasis on sales, trading culture and pay scheme, among others; derived on having very risky Universal Banks (UB), trading new, untested products on the market (Holland, 2010). Similarly, it is found that board members were concentrated in applying their general knowledge of business strategy for managing banks, which reflected that the majority of the failing banks were led by board members with prior non-banking knowledge (Holland, 2010). As O’Brien, Gilligan and Miller (2014) mention that expertise and specialization are considered as key tools for ensuring a fair, transparent and orderly market for risk-taking decisions. As for C-Board members, they were not completely aware of the difficulty and the characteristics of complex derivative products, their employees were using, indeed regulators did not understand as well what was going on within the banks by generating money (Holland, 2010).

Moreover, there is evidence about bank’s learning skills, which reveal that usually they learn actively after a crisis or upcoming regulations (Holland, 2010). HSBC is an example of a surviving bank after the financial crisis of 2008 that in general was applying cautious actions and explicit policies (Holland, 2010). In particular, O’Brien, Gilligan and Miller (2014) highlight that culture needs to be understood inside each institution since it cannot be regulated only because it needs to comply with some requirements but also leaders need to compromise themselves with the company’s values and strategies. It is responsibility of the board members from the institutions of properly internalize it with the required ethics, sustainability and occupational purposes. Culture based on professionalism and integrity should be taught by the board and senior management of the institutions (O’Brien, Gilligan & Miller, 2014).

Regulators among other organizations saw the need to adjust and to strengthen the requirements for those institutions to prevent similar incidents in the future (Power, Ashby & Palermo, 2013). Therefore, Barton and MacArthur (2015) mention that regulators apply standardized rules and guidance to achieve a homogenized goal and transparency within the institutions, for better addressing complications. From 2013 until today, FSB, Group of 30, ECB, EBA and MaRisk within others regulators and authorities published different guidelines and requirements to increase the pressure on financial institutions regarding the assessment and approach of risk culture.

In this way, with the years regulators put more weight on boards and senior leaders with responsibilities regarding culture, it is also less clear for senior leaders how they can effectively assess an institution’s culture (Deloitte, 2018). Therefore, nowadays the problematic is to either obtain from the regulator’s side, detailed requirements regarding risk culture or regulatory documentation presenting only principles. Notably, prescriptive and detailed regulations will prompt people to analyze and think less about their actions and care more about accomplishing what is written. On the other hand, principle-based regulations will provide more room to individuals to align their actions with the principles (English, Hammond, Kovas & Parry, 2018). It cannot be expected that regulations guarantee a zero-failure systems since failure is an inevitable factor of risk but it can be expected a proper commitment from the intermediation services regarding the interest of the clients (O'Brien, Gilligan & Miller, 2014). The authors add that regulators should care about the outcomes that culture produces within the institutions and ensure that proper culture programs are implemented for assessing and making it sustainable.

Similarly, for reaching a suitable operationalization of risk culture, it is very important that senior leaders build a comprehensive model that will be periodically tested to ensure its effectiveness. Evidently, as English, Hammond, Kovas and Parry suggest that regulators perceive culture within financial institutions as a very important topic. However, they affirm that the responsibility on how institutions address risk culture will be on their side, since regulators cannot specify the kind of culture a company needs to have since culture is the pillar for each institutions, which will define how the employees think and perform. Indeed as any new regulation or improvement of previous ones will have intended and unintended consequences but the aim will simply be for financial institutions to understand better their internal risk cultures. In the same way, regulators will have the task to understand their influence on how institutions operationalize risk culture and the risk appetite or behavior institutions will have towards the image they want to project (Power, Ashby & Palerm, 2013).

3.2 Think Tanks

Nowadays, financial institutions are under the gaze of different organizations. There are the so-called think tanks, which are important research institutions, whose main goal is to play a key role in developing and influencing global as well as regional and national policies. In resume, they seek to improve their sectors. Those institutions develop their studies by researching, meeting key policy makers, as well as government and business leaders. Therefore, senior leaders within think tanks are considered as leading experts and their studies reflect relevant documentation to be considered. In this way, the think tank considered important for risk culture in German financial institutions is:

G30 (Group of Thirty) - Banking Conduct and Culture

Group of Thirty, composed by senior people, representing public sectors as well as academia, address the necessity of financial institutions to achieve a proper culture within banks (Group of Thirty, 2018). G30 (2018), affirms that financial institutions were supposed to improve their culture since last financial crisis. Nevertheless, in the recent years many banks, clients and supervisors have mentioned that there are no big changes and have expressed their fear.

According to G30, there are certain areas discovered by them that can explain the problematic about culture and conduct. For example, as figure 9 shows; *mindset of culture* have experienced a positive change by defining the institution’s values by the so-called term Tone from the top. Nevertheless, the problematic is that tone from the above should be taken into account as well, since big institutions have the necessity to apply a permanent and constant change in their culture awareness and administration trough all levels at the institution. Therefore, middle management and frontline businesses should be considered, according to G30.

Figure 9: G30's observations of progress in focus areas

Adapted from G30 (2018).

Another important area is the *senior accountability and governance* that refers to senior management and board members, who increased their participation in topics related with conduct and culture. There is a clear improve with the reorganization of the internal governance and the reporting structures that provide a clearer view of the management of areas. Nonetheless, there is still a lack of clarity in many institutions regarding which could be the best way of addressing culture by providing to a single committee the accountability of managing those topics (Group of Thirty, 2018).

As a third focus area, G30 mentions *performance management and incentives* as another important area to be considered. The development of behavioral and cultural metrics has improved through the years, where employee’s scorecards measure cultural aspects. Therefore, it is identified that the middle management layer needs to be further developed. As a fourth area of focus, *staff development* focus on the training programs that were developed during the last years for preparing employees to confront unexpected situations as well as providing them with safe channels for expressing their concerns.

Another important area of concern is the *effectiveness of the three line of defense* since it has been difficult to implement culture and conduct within the first line of defense; hence, nowadays it is difficult for institutions to ensure a functional three line of defense. As the last focus area, G30 mentions *regulators, supervisors, enforcement authorities and industry standards*. They observe that they play an important role for providing proper guidance to banks regarding culture and conduct since institutions create expectations about the supervision they can receive from them. Thus, they possess an important role for financial institutions and they have as well pressure regarding risk culture because they are expected to develop some new industry experience and skillsets (Group of Thirty, 2018).

In this manner, G30 makes the following recommendations regarding risk culture in the banking industry and the challenges banks are still confronting or improving.

1. There should be a revaluation of the governance structure in banks in order to implement a board of conduct and culture.
2. There is a need for improvement a close cooperation between boards and senior management and business units and international heads for enhancing the data quality and availability.
3. Outsized incentives should be considered in the bank's compensation mechanisms.
4. Banks should focus on meeting the client's needs by removing quantitative sales targets and the compensation for sale staff in order to reduce the pressure for the employees and lead them to misconduct.
5. Middle management needs to be considered as well for promoting values trough the different business lines.
6. Banks need to provide their employees safe channels of communication for speaking up their concerns and issues.
7. Banks need to be the first effective filter for hiring people that are aligned with the bank's purpose and values.
8. Conduct risk should be clear through all lines of defense, with emphasis in the second one (Human resources and compliance).

3.3 Standard Setter

Certainly, standard-setters play also an important role for the financial institutions, they generally are international groups focused on developing standards inside the sector they focus on. The following standard setter institutions are considered significant for addressing risk culture in financial institutions:

Basel Committee on Banking Standards BCBS - Guidelines Corporate Governance Principles for Banks

BCBS is a very important standard setter that focuses on achieving a cautious regulation of banks and whose members encompass central banks and bank supervisors. In the year 2009 the organization, declares that culture has a very high importance within risk management. For instance, this fact was reflected in the post-crisis reforms of Basel II, in which it stated that risk management should be integrated into the culture of each bank (Power, Ashby & Palermo, 2013).

Similarly in 2010, in the governance report that the Committee issued, it is mention that there should be a development of corporate cultures, which have adequate standards and incentives to ensure healthy and professional behavior as well as a better definition of values inside banks. Relevant incentives will make possible for employees within organizations to better distinguish between appropriate and inappropriate behavior (Power, Ashby, & Palermo, 2013). Furthermore, by the year of 2011, the Committee recognizes the same importance in relation to what was said in 2010 and name ethical business practices as important facts to link with risk management culture in banks.

By the year of 2015, BCBS publishes its guidelines regarding corporate governance principles for banks, which underlines the importance for banks to maintain a healthy and proper governance within the institution. The report provides 13 principles for achieving a suitable governance framework. Risk culture is an issue that BCBS places considerable emphasis on this report. Therefore, it discusses the importance of defining the board's responsibilities regarding risk culture, where the definition of the bank's risk appetite, as well as the risk limits are some of the key functions they need to apply and transmit within the institution (Basel Committee on Banking Supervision , 2015).

In this report, board's role is considered the key for implementing, and promoting a sound risk culture for banks. It is expected that boards apply tone from the top within the institution and for that; they are supposed to define and transmit the institution's expected culture. Senior leaders as well as employees are supposed to reflect the bank's existing culture by being accountable for their actions and aware of their consequences (Basel Committee on Banking Supervision , 2015). An ongoing communication is another key tenet for achieving a strong risk culture according to BCBS as well as appropriate remuneration systems promoting an appropriate risk-taking behavior that will be defined by board members.

Financial Stability Board (FSB) - Guidance on Supervisory Interaction with Financial Institutions on Risk Culture

This organization is an international entity that develops recommendations about the global financial system by monitoring it. Their efforts focus on promoting the sustainability of financial stability worldwide by enforcing the regulations with the combination of national financial authorities and international standard-setters. In 2012 and 2013, the organization publishes the idea of connecting a strong risk culture with a good governance. To reach that goal they suggest metrics like employee survey results and unclosed audit issues. Similarly, they suggest the involvement of supervisors by the assessment of risk culture. In this way, FSB affirm that risk appetite plays an important role for reaching a strong risk culture; likewise, that risk culture can help the institutions by deciding the level of risk they want to take. In conclusion, both features complement each other (Power, Ashby & Palermo, 2013).

In 2014, FSB publishes a guidance about the effectiveness in risk culture assessment in financial institutions, with a focus on Systemically Important Financial Institutions (SIFIs)[7]. This guidance is one of the most complete and important within the existing documentations. Therefore, FSB recognize the importance of culture within an institution and recommends taking due care of its effective recognition for preventing the institution's health.

In addition, FSB (2014) mentions initial tenets that promotes a healthy risk culture within financial institutions. In this manner, it assists supervisors by identifying behaviors, attitudes that affect the institution's risk culture. It does not define what the cultural goal for institutions may be but it provides tools and guidance to assess it. To show that, figure 10 summarizes FSB's four indicators considered as appropriate for assessing risk culture.

[7] SIFI is an important bank, or other financial institution, which possess the power of producing a financial crisis or affecting the economy due to its failure or collapse.

Figure 10: FSB - Risk culture indicators

Adapted from FSB (2014).

Tone from the Top will be the first indicator, which focus on values and expectations that senior leaders are supposed to have and transmit within the institution. *Accountability* is defined as the understanding of employees regarding risk culture inside the institution. The third indicator FSB refers is *Effective Communication and Challenge* that guarantees the institution to have a well communicational environment and effective challenges. *Incentives*, which is the last indicator, refers to the financial and non-financial motivations inside the company for better achieving desired risk management behavior.

According to FSB (2014), the assessment of risk culture cannot be applied through a compliance approach because of its complexity by understanding behaviors and attitudes, where different skills, approaches and tools are needed. Therefore, the four chosen indicators should not represent a checklist for supervisors. FSB recommend that each institution should develop its own evaluation process about the relevance of each indicator. Similarly, they suggest conducting discussions between senior leaders and board members within the institutions to achieve a similar understanding about the type of risk culture they want to reach. FSB refers to the senior leaders and board members as the accountable for risk culture, since they can promote change inside the company by implementing new strategies. By the year 2017, the FSB announces a supplementary guidance on better implementing compensations based on (mis) conduct (English, Hammond, Kovas & Parry, 2018).

Similarly, in 2018 FSB publishes a new guideline dedicated to deeper analyze the misconduct behavior by enhancing the governance frameworks of a company. For instance, FSB suggests that accountability is a priority for firms. According to this document, the financial crisis caused global banks more than $320.000 billion in legal costs, which clearly shows the necessity of strengthening governance frameworks.

3.4 Regulators & Authorities

European Central Bank (ECB) - SSM supervisory statement on governance and risk appetite

The European Central Bank created the Single Supervisory Mechanism body to avoid the application of different standards within the countries of the European Union when assessing banks as well as permanently monitor the EU's financial stability. In addition, it works very close with the national supervisors of countries that use the Euro, nevertheless in the case of non-EU countries; they are allowed to be part if they wish to. The SSM supervises the largest banks while national supervisors monitor the remaining banks (European Central Bank, n.d.).

Hence, the main tasks of the SSM are to make sure that banks comply with the EU banking rules and tackle problems on time. Additionally, it has the power of requiring banks to increase the amount of reserves and it is entitled to grant or terminate banking licenses. In some cases, it is empowered to sanction banks if they break the rules (European Central Bank, n.d.).

In 2016, SSM publishes its supervisory statement regarding governance and risk appetite for financial institutions. For this body, the internal governance is one of the most important priorities since its impact on the overall risk profile and business model sustainability within banks (European Central Bank (ECB), 2016). Consequently, the SSM expects banks to establish proper Risk Appetite Framework (RAF), which is a key aspect to ensure risk awareness and a sound risk culture to their employees, boards and senior leaders. Notably, risk culture is mentioned with frequency trough the SSM's statement as a crucial feature to be consider for banks. For that reason, the importance of developing a suitable RAF is acknowledged as a strategic tool and the path for achieving both a sound governance framework and a strong risk culture (ECB, 2016).

As a final point, SSM remarks the significance of applying processes of communication from the financial institutions with their employees. In this manner, employees can be aware of the institution's risk appetite, risk culture and its effect on their job. Training programs on risk appetite together with tests and certifications are some of the recent tools institutions are using to monitor employee's understanding regarding the topic (ECB, 2016).

European Banking Authority (EBA) - Guidelines on Internal Governance

EBA is an EU autonomous authority, which works for guaranteeing the effectiveness and reasonable supervision and regulations through the European banking sector. Its main tasks is to support the development of the European Single Rulebook for banks, whose goal is to accomplish single rules for EU financial institutions.

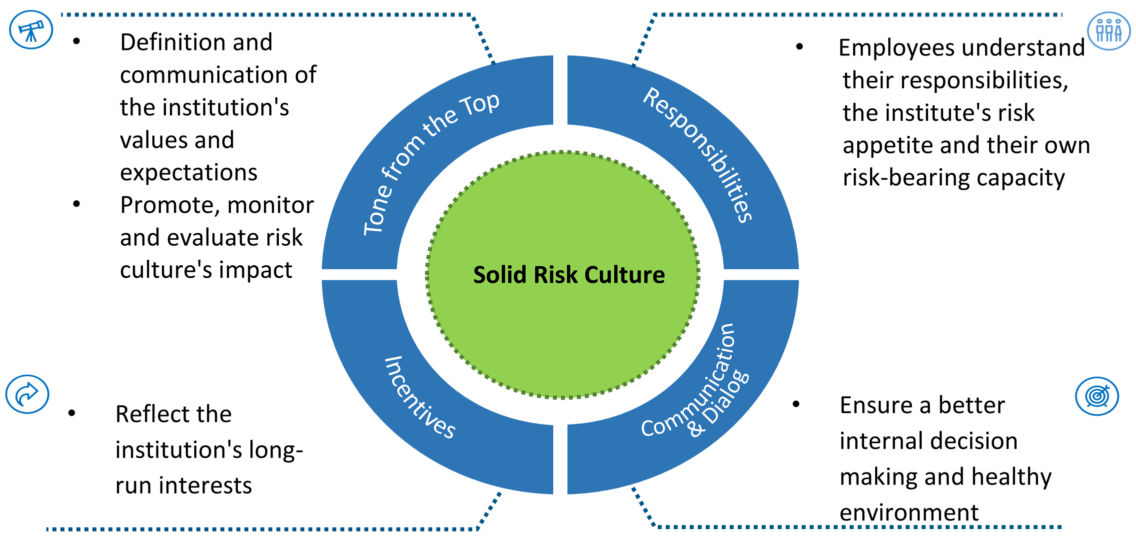
In 2011, EBA releases guidelines for internal governance with requirements for risk management, board oversight and internal control areas. Lately, according to Deloitte, EBA improved its guidelines in order to reach that the management level focus itself on risks derived from opaque corporate structures for enhancing transparency in financial institutions. Similarly, guidance is also provided for senior leaders regarding that topic.

In 2018, EBA publishes further guidelines regarding the internal governance of financial institutions. The regulator highlights the importance of reporting the general status of the institution, referring as well to risk culture. Significantly, chapter 5 refers exclusively to risk culture and business conduct, where EBA presents the main aspects to consider from its point of view.

According to EBA, it is important to reach a solid and consistent risk culture within a financial institution by having a proper risk management, which facilitates the decision-making procedures. The general understanding and vision from all employees is very important when measuring risk culture because risk appetite needs to be equally understood and transmitted no matter the area. In order to achieve those characteristics, EBA suggests implementing policies, communication and capacitation for employees to achieve a correct understanding of their activities, obligations, among others. In addition, employees are expected to understand and take responsibility of their actions. EBA mentions that risk specialists do not need to be the only responsible of managing risks. The responsibility needs to rely on every employee at the institution.

As a result, EBA suggests four important elements for accomplishing a solid risk culture within a financial institution, which are shown in the following figure:

Figure 11: Elements to consider for a sound risk culture



Adapted from EBA (2017).

As figure 11 shows, Tone from the Top is identified by EBA as one of the core 4 elements to reach a solid culture within the institutions. It is important that leaders define and develop a proper communication of the values and expectations from the institution, which are reflected through their actions. Senior leaders are expected to promote, monitor and evaluate risk culture's impact in the financial stability of the institution, as well as ensure a proper management.

As for Responsibilities, the second element, it is expected that the institution's employees, no matter their position understand their responsibilities and connection with the risk appetite of the institution in order to prevent misconduct. The third element called effective communication and critical dialogue refers to the capacity of the institution to ensure an effective communication, where decision-making processes will reflect a range point of viewpoints. Similarly, through a suitable communication there will be a promotion of constructive critical attitude from employees and a constructive engagement environment through the organization.

Furthermore, incentives within an institution should stimulate adequate risk behavior that will be aligned with the institution's profile and perspectives for the long run.

EU-Commission - Capital Requirements Directive CRDIV/CRR – Paragraph 54

In 2013, this organization published new regulatory requirements regarding risk culture. They mentioned that all EU member states should have standards and principles to promote financial institutions to have a solid risk culture and so guarantee the effectiveness of its implementation (Power, Ashby & Palermo, 2013). Thus, they suggest that credit institutions as well as investment firms enhance the design of the governance they implement by applying a sound risk culture, enabling qualified authorities to monitor the effectiveness of the internal governance measures.

Regulatory Fitness and Performance (REFIT)

REFIT belongs to the European Commission's better regulation agenda that promotes the simplification and reduction of costs by reviewing regulations that stakeholders put under consideration and propose modifications on those aspects as well as the understanding EU laws to meet everyone's expectations. Since 2002, the European Commission has been working for enhancing the quality of their regulatory requirements by reducing the quantity of regulations and properly adapting them to all market players. For example in many cases small and SMEs were the most affected with some regulatory requirements, which caused in many cases the retirement of those companies from the market (B.A.H. - Bundesverband der Arzneimittel Hersteller e.V., 2018b)).

For example European Market Infrastructure Regulation (EMIR), a regulation created to regulate OTC derivatives and reduce systemic risk, was taken into consideration by the European Commission to implement a REFIT with the aim to cut operational costs by €2.6 billion to market participants (European Commission, 2017). By the first quarter of this year, it is expected to achieve the approval of EMIR REFIT.

The REFIT program has been mentioned in this document to create awareness on the regulatory increase that has led financial institutions to request their reconsideration in order to implement a better approach by taking into account the case of each stakeholder. It could be inferred that such regulatory improvements would positively affect the development and adaptation of risk culture within financial institutions. Indeed, as financial institutions may have clearer rules that adapt to their reality and expectations, they can create a much more conscious risk culture within institutions and thus clearly promote their mission and objectives.

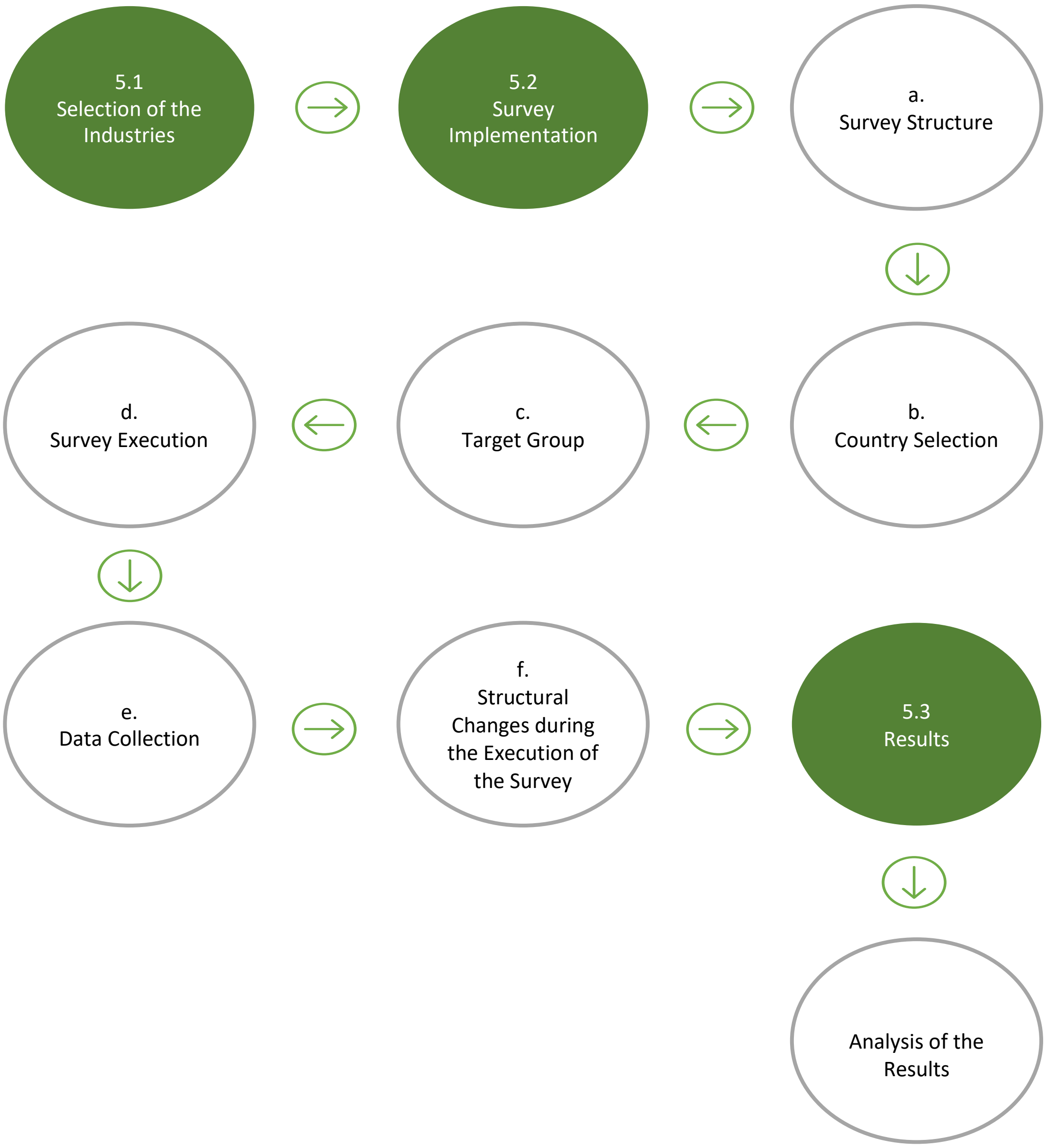
4 DATA AND METHODOLOGY

The aim of this section is to enhance the understanding regarding risk culture by leaders and senior leaders, for which an empirical test is performed. In this way, the theory presented in previous chapters is proved and new results about risk culture are evaluated based on the outcomes established from the conducted survey.

The methodology comprises an online survey to a selected number of banks, pharmaceutical and automotive institutions in Germany. Similarly telephone structured interviews with three open questions are conducted to expand the information and insights of the respondents. The institutions are selected based on their balance sheet volume and the rankings available on the industries and companies. The questions in the survey allow measuring different aspects from risk culture, such as the understanding of risk culture operationalization, the measurement institutions apply, the awareness of regulatory requirements, the institution's values, the internal management and governance of the institutions, incentives and assessment of risk culture.

In figure 12, the process implemented for the methodology is presented. Three main steps and seven complementary steps are identified as relevant for conducting the survey and structured interviews, as well as for collecting the information and results.

Figure 12: Methodology process



Source: Own work.

4.1 Selection and Definition of Industries

Three industries are selected for conducting the online surveys and the structured interviews. Financial institutions are considered the core focus for the literature review since they were the most affected industry after the financial crisis of 2008 worldwide and because risk culture in financial institutions may affect the most to the economy's health in comparison to other sectors according to Power, Ashby and Palermo (2013). In particular, banking industry within the country is regulated and experiments pressure because of recent IT innovations and new upcoming regulations that derive those institutions to have less resources for maintaining their regular profit or to reduce costs. The selection of the two additional industries is based on the importance they have within the country and the contribution they have to Germany's economy. In particular, both, automotive and pharmaceutical are ranked as the top major industries in Germany (Ikbal, 2017).

Germany is recognized worldwide for its exceptional automotive industry as well as the superiority in engineering. It is ranked fourth largest automotive manufacturer globally. It is the leader inside the European automotive industry in production and sales. There are at least 125 years that this country has been constantly investing in this industry, both in research and training of proficient professionals (Worldatlas, 2018). In particular, the industry is strongly regulated in Germany.

As for the pharmaceutical industry, it belongs to the top 10 German exports with medical equipment and chemicals (Worldatlas, 2018). It has a strong presence inside the country and is known worldwide as one of the strongest pharmaceutical manufacturers. Germany for example, is a recognized because of the quality of its medical product, the variety of them and the accuracy of those products by their effects. Similarly, the industry is strongly regulated, which during the last time is exposed to pressure from the regulator's side.

Notably the selection of the industries have its meaning for the analysis of results. First of all the comparison between the banking industry and the two other industries will derive in understanding the similarities or differences by the perception and understanding of risk culture.

4.2 Survey Implementation

Survey Structure

The study consists of an anonymous survey that comprises 36 multiple-choice questions, whereof 24 questions have 5-point Likert scale format, all chosen to answer the three hypotheses of the study. Additionally, three open-ended questions are added for conducting the structured interviews. In the initial part of the survey, general information about the participants and institutions is collected, such as gender, age, number of employees, years of life of the company as well as years of service of the surveyed person in the institution.

Subsequently, the questions are classified based on the following topics: the *understanding of risk culture* by the sense and the conceptual understanding the respondents have regarding that topic, then the *operationalization of risk culture* in order to recognize the management, governance, strategies, values and integration program the institutions apply. Likewise, the *measurement of risk culture* is the third core topic evaluated within the survey with the aim of evaluating the risk culture performance and measurement techniques the institutions apply. Questions related to regulations are conducted as well as the approach the institutions have regarding risk culture.
As for the structured interviews, the same structure as the online interview was maintained but additionally three open-ended questions were included to capture the point of view of the people interviewed.

Country Selection

Germany was the selected country to conduct the online survey and the structured interviews because it is consider a key financial country for the European Union and nowadays a financial center with a growing potential since Brexit. Similarly, it is the largest economy in EU and the fourth largest worldwide.

Target Group

As for the target population, available rankings of the biggest companies from each industry are considered. In addition, the balance sheet volume for those companies are taken into account and the listed companies that are operating on the German stock exchange.

For the creation of the list of banks, the ranking published by Bankverband[8] in November 2017 is selected. Similarly, the list of pharmaceutical companies is created based on the ranking that Pharma Trend[9] published in September of 2018. Finally, for the creation of the

8 The "Bankverband" (Association of German Banks) was founded in Cologne in 1951. It succeeds the former "Centralverband des deutschen Bank- und Bankiergewerbes" (Central Association of the German Banking and Banking Industry). It was founded in 1901 on the initiative of banker Jakob Riesser of the "Bank für Handel und Industrie" in Berlin. His aim was to bundle the interests of the banks in the Empire, to form an assertive lobby and above all to advance a reform of the Stock Exchange Act of 1896.

9 The Pharma Trend is the survey on innovation and sustainability of pharmaceutical companies. Since 2000, the survey has been conducted annually in Germany in the category Rx among general practitioners and since 2018 in the categories OTC (pharmacists and patients), orphan drugs (clinicians) and start-ups. With the expansion of the Pharma Trend, pharmaceutical companies are evaluated on innovation and sustainability by their most important stakeholders (doctors, pharmacists and patients).

list of companies belonging to the automotive industry, Statista's[10] and Gevestor's[11] rankings are considered.

During the period of data collection, 3 small companies within the pharmaceutical industry are added since direct contacts were found and structured interviews could be conducted with them.

As regulators emphasize the importance of implementing tone from the top, where senior leaders are the key for building a proper strategy, ensuring a good governance and risk culture; the population interviewed are senior leaders such as managers, senior managers and CEOs. Therefore, it is considered important to get their view since they are leaders who identify risks through tactics applied to the affected area or through a corporate strategic vision. In other words, they are key people within the companies that make decisions with high institutional impact.

Survey Execution

An online survey was sent to the 30 largest companies in each industry, taking into account the above-mentioned rankings and expecting a minimum of 10 responses per industry. Moreover telephone structured interviews were conducted with managers from all three industries.

An email addressed to the company's general mail was sent to invite the completion of the survey, requesting the survey to be completed by managers, general directors or founders of the company. Similarly, some senior leaders were directly contacted to fill the online survey or conduct a telephone interview. At executive level, leaders of human resources, managers of compliance, sales, risk management and the director of human resources were met. At non-executive level, the remuneration committee chair and directors responsible for risk, internal control, ethics and conduct were met.

Data Collection

The period to collect the surveys was 2 months, to give a proper time to the contacted companies to answer the online surveys, as well as to schedule the telephone interviews.

10 Within a few years, Statista established itself as a leading provider of market and consumer data. More than 500 visionaries, experts and doers in the company are constantly reinventing Statista and are thus constantly successfully developing new products and business models.

11 For more than 25 years, the GeVestor Financial Publishing Group has stood for reliable, high-quality and proven financial information for the stock exchange, real estate, finance and business sectors. All GeVestor services are audited by an independent investment controlling company.

Structural Changes during the Execution of the Survey

Initially, two pilot structured surveys were conducted in order to measure the degree of acceptance about the survey and the understanding of the questions. Based on the perceived reactions it was decided to conduct anonymous online surveys and to adapt all questions to multiple-choice format. In addition, some questions were excluded to reduce the time for answering the questions. Three open questions were additionally added for the telephone-structured interviews to generate debate and acquire further information. No additional changes were made to both online surveys and structured interviews maintaining the same format until the final stage of the survey.

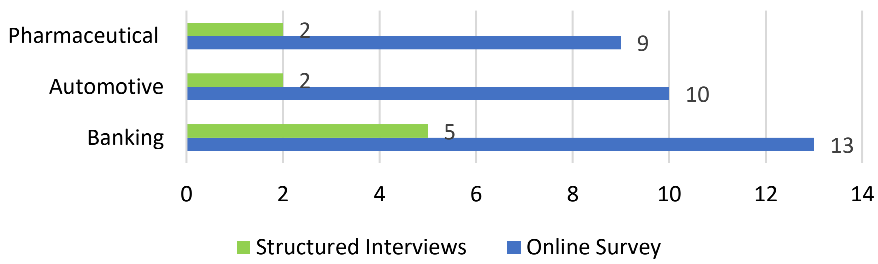
The final version of the online interview and the three open-ended questions can be find at the Appendix 1 of this document.

4.3 Results

General Results

After collecting, more than the defined number of surveys, the results of the structured interviews and the online surveys are transcribed in the same statistical system. The chosen tool for examining the data, creation of graphs and tables is SPSS. Figure 13 shows the classification of the results by industry, whose total is 41 responses. From them, 18 belong to the banking industry, 12 to the automotive industry and 11 to the pharmaceutical industry. As shown, the highest percentage of responses are collected from online surveys.

Figure 13: Classification of results by industry

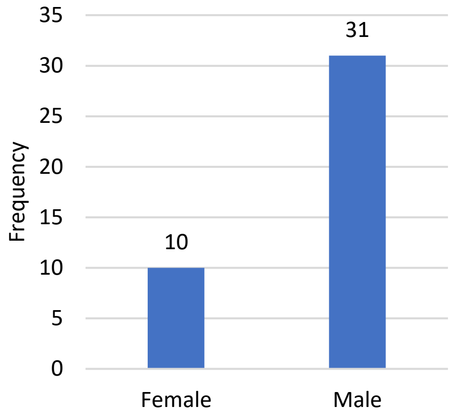


Source: Own work.

As for the gender of the respondents (figure 14), 76% are men and 24% are women. The highest percentage of female is found in the automotive industry, where 33% belong to women and 67% to men.

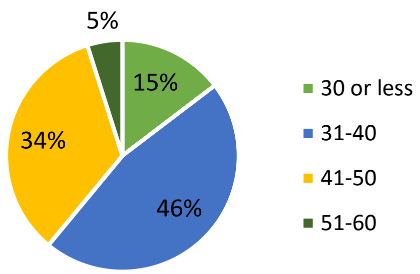
Figure 15 shows that the highest percentage of respondents are between 31 and 40 years old, corresponding to 19 individuals, which means 46% of the total. In second place are the respondents that are between 41-50 years old representing 34% of the total and then the people with 30 or less with 15%. Nonetheless, 5%, equivalent to two respondents are between 51 and 60 years old.

Figure 14: Gender of respondents



Source: Own work.

Figure 15: Age of respondents

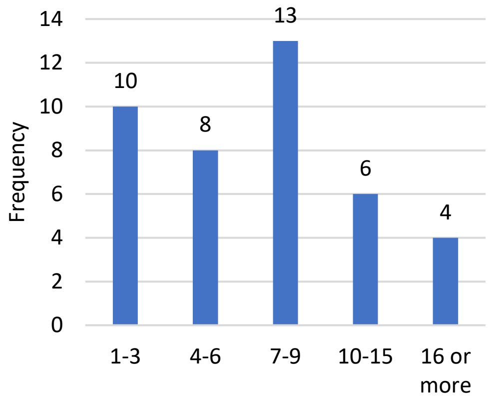


Source: Own work.

In figure 16, it is observed that 32% of the respondents work in the institutions for about 7 to 9 years, followed by a 24%, who work for 1 to 3 years and 20% working at their companies for 4 to 6 years. The rest, which constitute 24% is represented by people working for 10 or more years at their companies. It is concluded that 76% of the respondents have work experience in the institution for over 3 years, fact that can reflect that the majority of the respondents possess a proper understanding of the company´s structure and its risk culture characteristics.

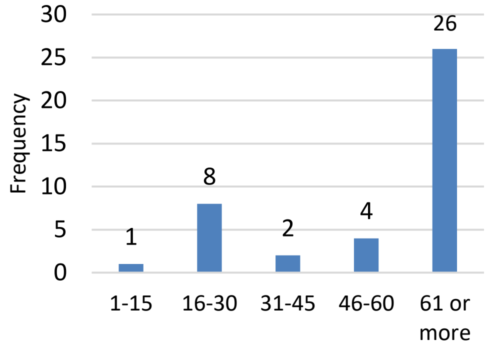
In figure 17, referring to the amount of years that the institutions have, it is observed that 63% correspond to the institutions with several years in the market equivalent to 61 years or more. 20% belong to institutions that have from 16 to 30 years on the market. Just 2% of the population finds itself in the first category with 1 to 15 years of life. Similarly, in figure 18 it is seen that 83% of the institutions have more than 1000 workers, which defines the majority as big companies.

Figure 16: Working years in the company



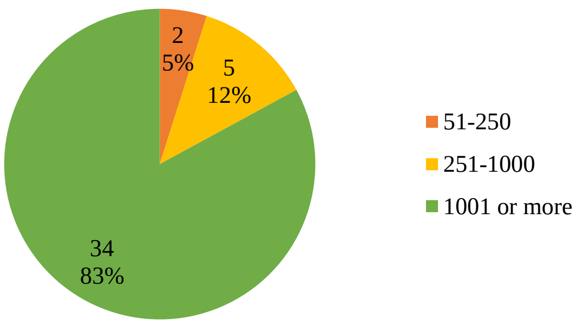
Source: Own work.

Figure 17: Number of years of the company



Source: Own work.

Figure 18: Total workers in the company



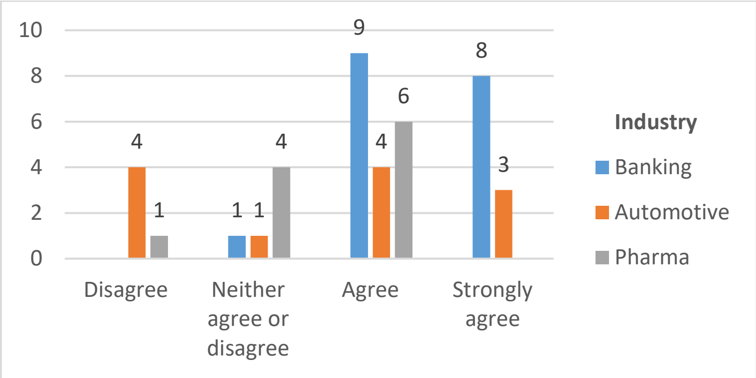
Source: Own work.

Understanding Risk Culture Results

As noted in the theory presented previously, the literature and information regarding risk culture is quite limited. It is for this reason that the following part of the survey collects information on senior leaders and executives' understanding and perception of this topic. In this manner, the respondent's level of understanding of risk culture, related topics and its implications within the companies the respondents work, will be addressed.

As for the first question URC1 shown in figure 19, it is observed that the majority of the respondents agree that there is a change regarding the perception of dealing with risks within each industry. Noteworthy that the banking sector agrees on a much higher percentage (98%), than the other two industries, where opinions are more varied. For example, just 58% in the automotive sector agrees with the existence of change of perception, while 33% deny the existence of this change. Similarly, 55% in the pharmaceutical industry recognize a change, while just 9% deny such statement but 36% neither agree nor deny the change.

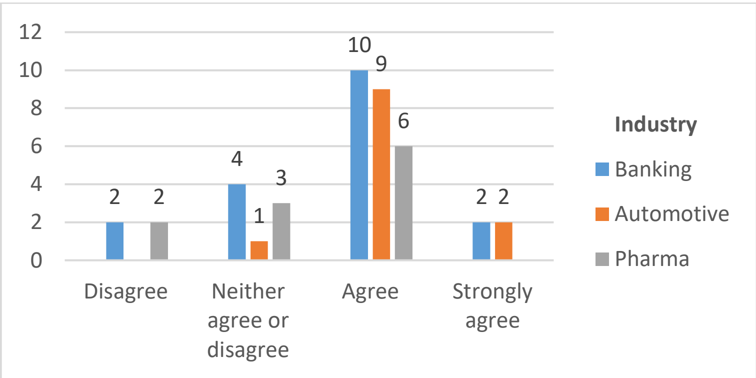
*Figure 19: Change in the perception of dealing with risks**



** Question URC1: During the recent years, do you observe a change in the perception of dealing with risks within the industry?*
Source: Own work.

Interestingly, it is observed (Figure 20) that the automotive respondents affirm to have full understanding about risk culture; in fact, 92% agree or strongly agree with the statement. On the other hand, both banking and pharmaceutical respondents confirm the statement with 67% and 55% each.

*Figure 20: Concrete understanding about the concept risk culture**



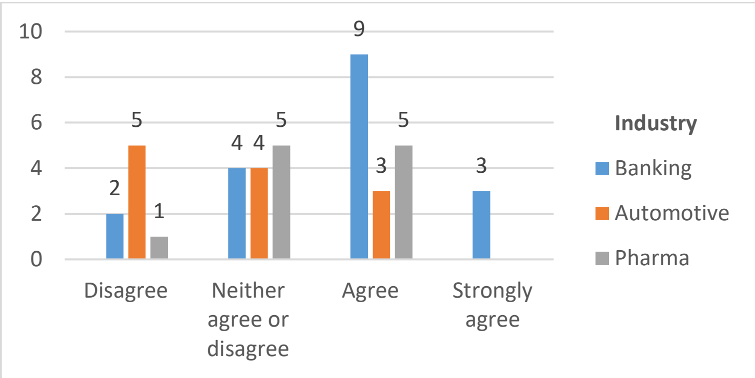
** Question URC4: Would you affirm that you have a concrete understanding about the concept of risk culture?*
Source: Own work.

It is important to mention that the majority of respondents confirm that culture has a direct effect on corporations. In addition, they ratify as well the increase in corporation's risks by the implementation of compensation models. The majority of respondents within each industry, with at least 64%, believe that it is possible to achieve a unique risk culture inside corporations. It should be noted that there is a percentage within each industry that neither confirms nor denies the statements.

In figure 21, the results obtained in question six are of great interest, since when assessing risk culture in each industry, very different results are obtained between industries. For instance, the only industry that affirms this statement is banking with 67%, while automotive

25% and pharmaceutical 45% industries agree that the institutions where they work possess a proper risk culture. It is evident from these findings that the topic must be treated with greater emphasis within the industries, since there is a disagreement for many executives or senior leaders with the current risk culture their companies have. Also noteworthy is that there is a significant percentage, who cannot define whether their risk culture within their institutions is effective or not. Particularly in the pharmaceutical industry, 45% of respondents show that position, while the other industries present a percentage less than 30%.

*Figure 21: Appropriate risk culture within institutions**

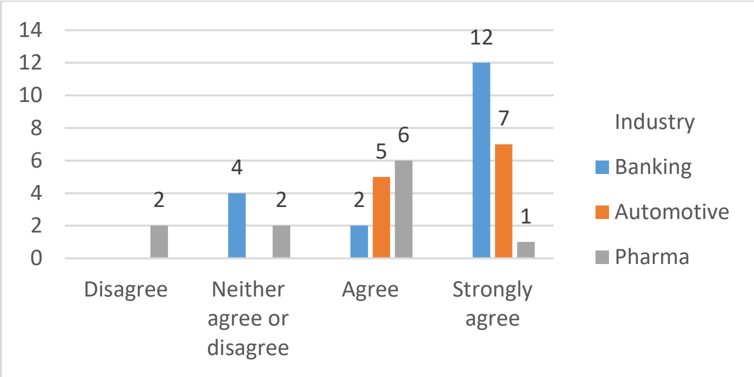


** Question URC6: Does your institution have a proper risk culture?*
Source: Own work.

Risk Culture Operationalization Results

The operationalization of risk culture is another section discussed in the survey. As revealed by the results in figure 22, there is a clear agreement that CEOs have a direct effect on the institution's culture. Turning to the theory, it is observed in the previous chapters how regulators define senior leaders as responsible for structuring, defining and transmitting the risk culture through the application of tone from the top. Clearly, the leaders surveyed acknowledge this and confirm the approach of the authorities and regulators.

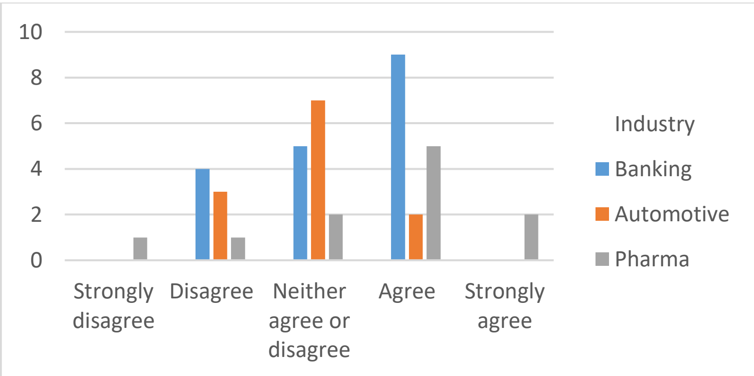
*Figure 22: Direct influence of the executives on the institution's culture**



** Question RCO1: Do CEOs and other decision-making leaders directly affect the institution's culture?*
Source: Own work.

As for the type of communication that the companies apply (Figure 23), there is no tendency within the answers by all three industries. For example, at the banking industry nine respondents (50%) accept the existence of a bottom-up feedback but there is a 28% that do not agree or disagree and a 20% that disagrees with the statement. Nevertheless, at the automotive industry just two respondents (17%) agrees with the statement and a majority (58%) neither agrees nor disagrees. The pharmaceutical industry on its side agrees or strongly agrees with the statement with 64%. It can be deducted that by some companies the communication needs to be improved to achieve not only a top-down communication but also a bottom-up.

*Figure 23: Application of a bottom-up feedback within the institutions**



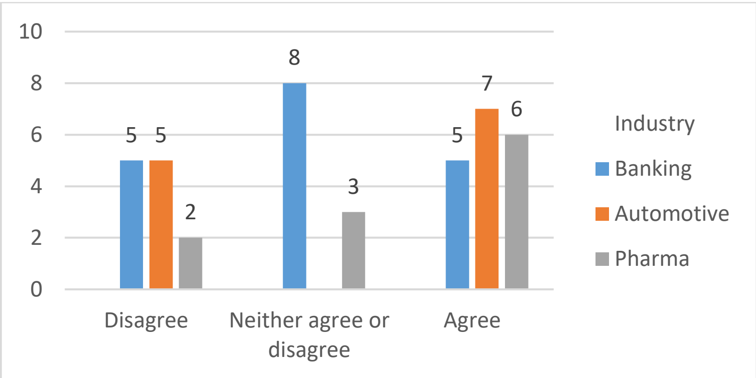
** Question RCO2: Does the institution apply a bottom-up feedback?*
Source: Own work.

By question ORC4, about the application of incentives, the automotive and pharmaceutical industries deny the existence of a relationship with the institution's internal culture with 67% and 55% each. Nevertheless, the banking industry denies the statement with only 28%, meaning that 58% affirm the above-mentioned relationship. Incentives, mention by regulators; should be taken into account and analyzed to avoid exposing employees to expose to risks due to high expected goals.

When asking about the implementation of a proper risk culture program within the companies, interesting results come out, which deviate from question URC6 of the first section and lead to some interpretations. As illustrated in figure 24, 28% in the banking industry affirm the existence of a proper program, while in question six, a 67% affirm having a proper risk culture within their institutions. Nevertheless, the reduction of positive answers may be explained by the increase of respondents (44%), which cannot define if the program is appropriate or not. It could be deduced that although there is a high percentage of respondents that affirms the existence of a sound risk culture, they have doubts as to whether such a program currently being implemented is really effective.

With regard to the automotive industry, 58% affirm the statement, which in comparison with question URC6 increased in 33%, whose percentage corresponds to respondents that neither agree nor disagree with URC6. The percentage of agreement with the question RCO5 for the pharmaceutical industry, increased as well in 10%, diminishing the number of people that neither agree nor disagree with URC6.

*Figure 24: Proper risk culture program within institutions**

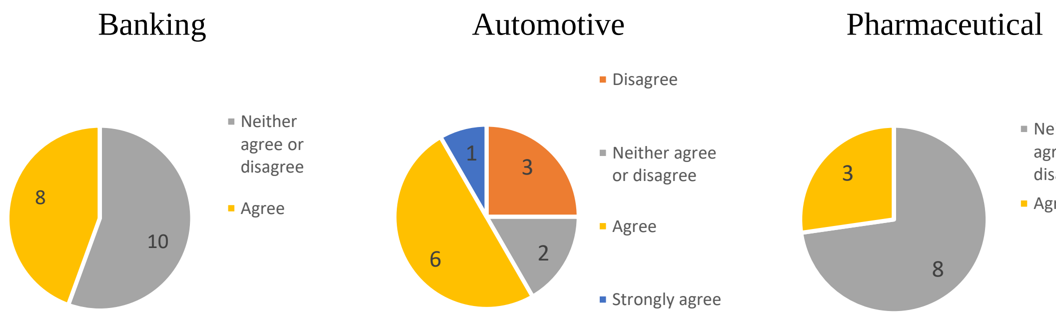


** Question RCO5: Does the institution implement a proper risk culture within it?*
Source: Own work.

By the question regarding the institutions' values (ORC6), it is observed that in the three industries there is a majority that affirms the existence of the definition of values. However, as Figure 24 shows, 44% of the banking sector states that there is a good measurement of the acquisition of values within the banks. Therefore 56% remain neutral. The automotive industry, on the other hand, states the question with 58%, remains neutral with 17% and denies it with 25%. In the same way, the pharmaceutical industry confirms the question with only 27% and remains neutral with 73%.

Clearly, in figure 25 the majority of respondents are not informed or doubt about the effectiveness of the current measurement and control regarding the acquirement of values by the employees.

Figure 25: Measurement of the acquirement of values within the institutions*



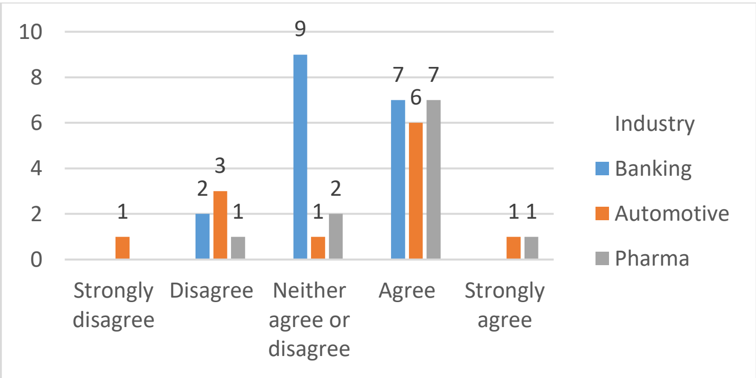
** Question RCO7: Does the institution properly measure the acquirement of values within the company?*
Source: Own work.

Regarding figure 26, the majority of respondents say that mistakes can openly be discussed within their institutions. For example respondents of the pharmaceutical industry agree with the statement with 73%, in the case of the automotive industry, 58% agree, moreover there are 3 respondents (25%) that disagree. At the banking industry, seven respondents (39%) agree with the statement but nine neither agree nor disagree.

"In our area we encourage the employees to speak up their concerns and possible or current mistake they have made… Sometimes this approach is hard to follow within the bank, there are certain areas that apply other rules that impede a sound communication"

Manager of a German Bank

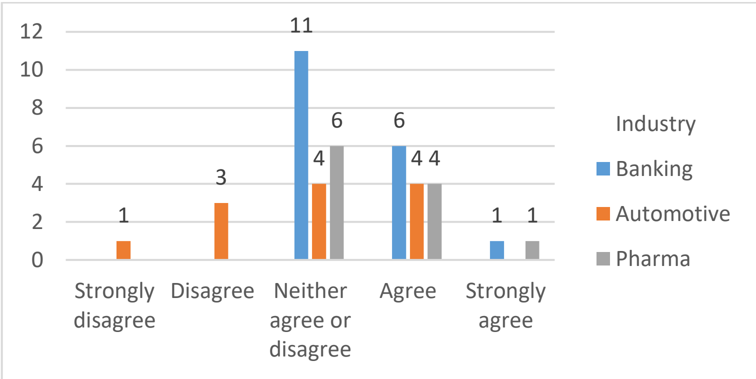
*Figure 26: Dialogue on mistakes made within the institutions**



** Question RCO8: Mistakes can be openly discussed within the institution.*
Source: Own work.

Moreover, in figure 27 most respondents show a neutral position as to whether the company they work for gives an appropriate value to their employees. For example, 61% corresponds to the banking industry, 55% to the pharmaceutical industry and 33% the automotive industry. However, referring to the automotive industry, there is 25% who disagree with the question and 8% who totally disagree. Therefore, it is clear that the automotive industry is evenly divided between those in favor, those against and those who remain neutral. In the other industries there are no negative responses found.

*Figure 27: Adequate valuation of employees within the institutions**



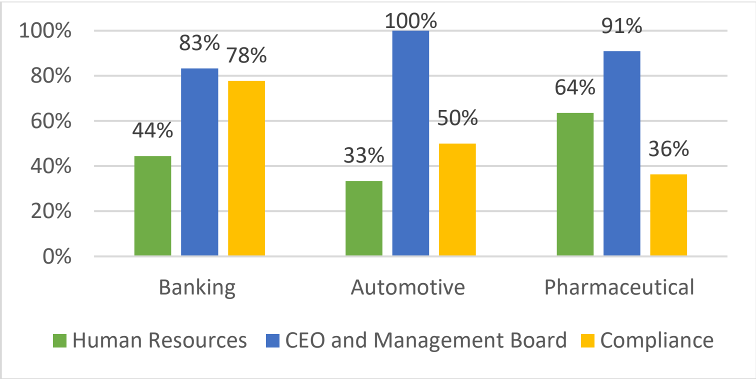
** Question ORC10: Do you believe the company provides the proper value to their employees?*
Source: Own work.

As mentioned in previous chapters, risk culture continues to be a new topic for financial institutions, so the issue as such is not addressed by a specific risk culture area within the institutions. This is why the dilemma exists as to whether or not this area should be addressed by a single area or by several. Both the RCO11 question from the survey and the open-ended questions posed in the structured surveys provided interesting insights.

For this question illustrated in figure 28, the respondents are provided with three possibilities; nonetheless, they are not restricted to choosing only one option, also they can even propose an extra alternative. Hence, the results show that the involvement of CEOs and Senior Management Board are the most relevant for all three industries. When conducting the structured interviews, two senior leaders from the banking industry, as well as one of the automotive industry agreed on the idea of starting the implementation of a risk culture area in charge of CEOs. CEOs should define a strategy, where progressively all areas of the bank will assume more responsibility for transmitting and implementing the risk culture in an assertive way. In the future, the CEOs will only be the head and exercise control to ensure that all areas understand and apply effective pre-established processes.

In the case of banking industry, 78% support as well the idea that compliance take the responsibility regarding risk culture, conversely 64% of the respondents in the pharmaceutical industry agree with the idea that Human Resources should be responsible of for risk culture. Additionally, 20% of all respondents add risk management as an alternative area, which can be in charge of risk culture.

*Figure 28: Responsible area for risk culture within institutions**

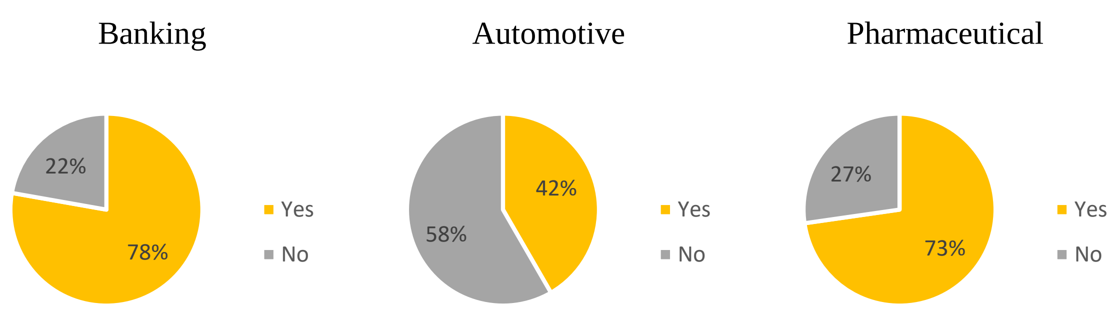


** Question RCO11: Which area should be responsible for risk culture in your institution?*
Source: Own work.

In particular, senior leaders comment that the ideal would be to make all areas responsible for the management and implementation of the risk culture. The optimal would be to ensure that companies are able to implement proper communication, incentive systems and strategies that other employees from their workplace understand and apply.

Furthermore, respondents are asked whether their company plans to implement a risk culture framework within institutions in the near future. Figure 29 reveals that both baking and pharmaceutical industries in its majority are planning to do it. Nevertheless, the automotive industry shows that just a 42% are planning to implement a risk culture framework.

*Figure 29: Implementation of risk culture framework in the upcoming future**



** Question RCO 12: Does the institution plan to implement a risk culture framework in the upcoming future?*
Source: Own work.

Measurement of Risk Culture Results

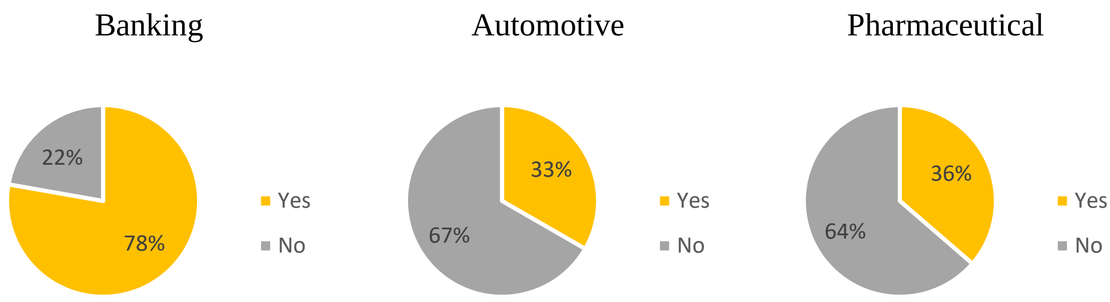
In the third section, the perception of executives with respect to the measurement of risk culture is analyzed. Notably, 78% of the respondents in the banking industry affirms that they properly assess risk culture performance, while the majority of the other two industries denies the statement presented in figure 30. To complement this information, some executives of German banks were spoken with, who assert that nowadays there is a good evaluation of the performance of the risk culture, since after the crisis they had to make several adjustments within the institutions. It is said that the fact that there are new and strict regulations, makes them be more careful with the management of risks and the awareness they transmit to their employees with respect the institution's risk appetite.

Nevertheless, they confirm that risk culture is still a topic, which needs to be developed and clarified by regulators providing additional guidance.

"Since I started working at the banking sector, culture wasn't a topic bankers wanted to discuss, we knew it was there but we assumed it was understood… Nevertheless, globalization, recent crisis and many regulatory changes made our focus and point of view turn to enhance the understanding of risk management and the culture that our bank wanted to transmit, with regard to our employees as well as our customers… I believe that our bank is following the right path regarding risk culture and we are proud of our achievements"

Director of one of the biggest German banks

*Figure 30: Proper assessment of risk culture within institutions**



** Question MRC1: Does the institution properly assess risk culture performance?*
Source: Own work.

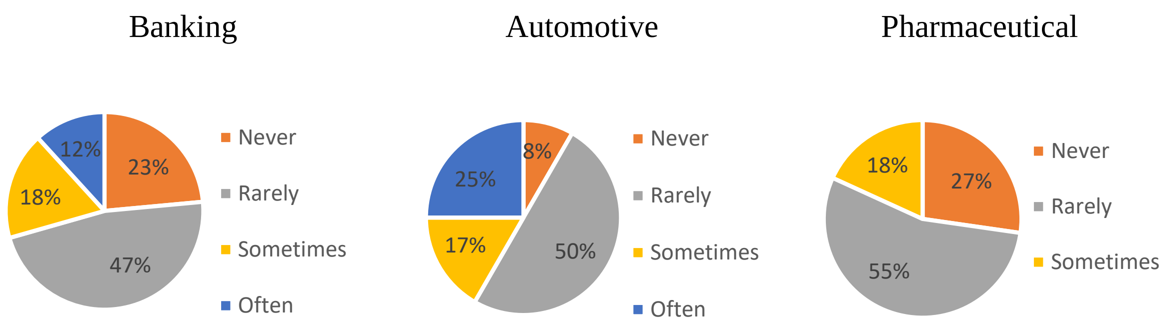
On the contrary, senior leaders within the automotive and pharmaceutical industry asseverate that the lack of communication between areas and the awareness of the accountability employees have, are aspects that are still present within some institutions. They affirm that there is a necessity of improving the assessment of risk culture performance, which can help them to react faster under different adverse circumstances.

"It is hard to say if all risk culture aspects are covered by our company as there are no guidelines elaborated for our industry… Deficiencies at the company must be addressed by area... In our area we place a lot of effort internally on risk exposure reduction but some improvements require more time to be accomplished"

Manager of a German automotive company

In terms of the frequency with which institutions measure the performance of risk culture (Figure 31), the majority of respondents state that such measurement is rarely performed. It is interesting to note that there is a percentage of respondents, who claim that the companies where they work do not measure the performance of the risk culture.

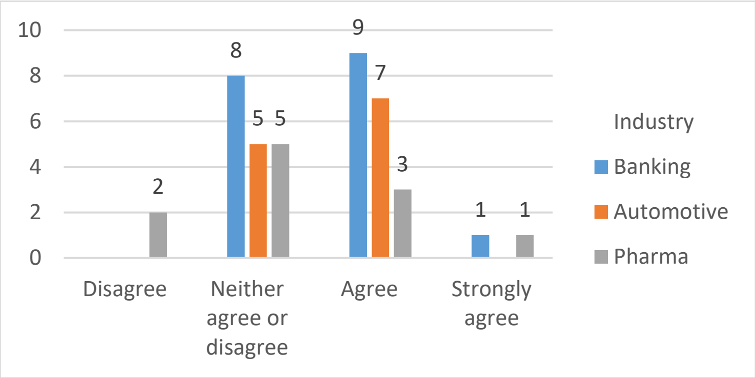
*Figure 31: Frequency of measurement of risk culture performance**



** Question MRC2: How often does the company measure risk culture performance?*
Source: Own work.

Complementing the understanding of risk culture measurement, 50% of the respondents in the banking industry agree and 6% strongly agree with the statement MRC3 in figure 32, whereas the rest remain a neutral opinion. In the case of the automotive sector, 58% agree and 42% remain neutral. However, the respondents within the pharmaceutical industry show a different opinion. To show that, it is seeing that a 9% strongly agrees, 27% agrees with the statement, 45% remains neutral and 18% disagrees with the statement. In this case is not clear which is the tendency regarding this topic.

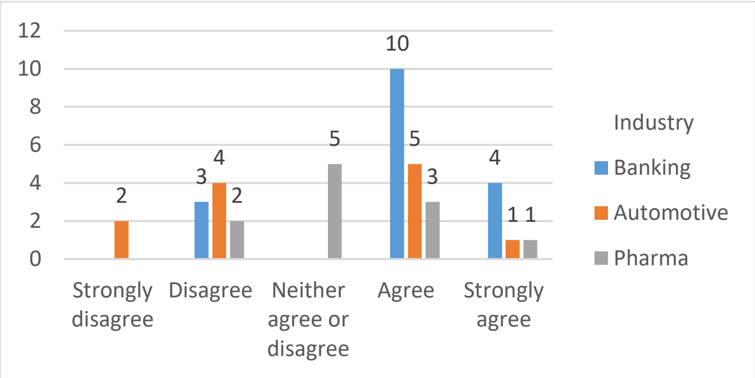
*Figure 32: The impact of risk culture measurement within institutions**



** Question MRC3: The measurement of risk culture has a big impact within the institutions*
Source: Own work.

Another important fact is asked by question MRC4 in figure 33, where senior leaders are asked if the measurement of risk culture is difficult. Clearly, respondents in the banking industry claim that risk culture measurement is difficult. In contrast, the automotive industry shows an unclear tendency, where 50% agrees with the statement and 50% disagrees. In the case of the pharmaceutical industry, the majority remains neutral with 45%, whereas 36% agrees with the statement.

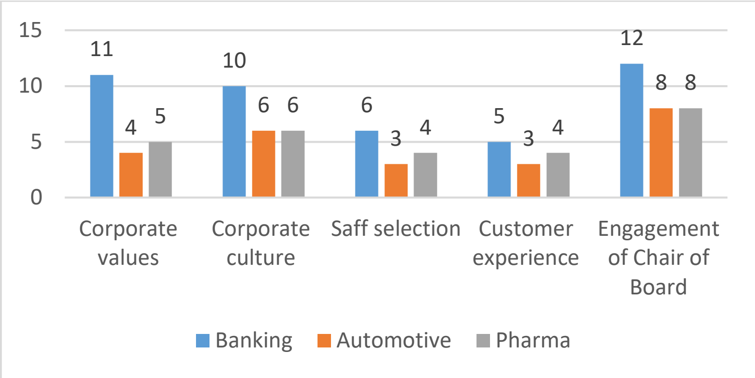
*Figure 33: Difficulty in measuring risk culture**



** Question MRC4: The measurement of risk culture is very difficult*
Source: Own work.

In figure 34, the aim was to find out where do senior leaders put their focus when risk culture improvements are required. Hence they were able to choose more than one option and propose additional aspects if needed. As for the three industries, three options stand out. The engagement of Chair of Board, corporate values and corporate culture have greater relevance within those industries.

*Figure 34: Aspects considered for improving risk culture within institutions**



** Question MRC6: Which of these aspects do you consider important to improve risk culture in your company?*
Source: Own work.

As seeing in table 1, supplementary aspects are suggested by senior leaders as important for improving risk culture in their companies. Implicitly senior leaders mention the four FSB's and EBA's risk culture indicators. For instance, business strategy is mentioned by all industries, which is directly related with tone from the top. The engagement of managers is an aspect mentioned by a banking senior leader, who is interviewed by telephone. He alleged that sometimes managers apply own strategies that deviate from the bank's strategy, which expose them to risks. He mentioned that managers should be equally engaged as board members, CEOs and other senior leaders.

The respondents mention incentives as another key factor to consider. For example, trainings are incentives for the employees, which will encourage them to develop additional skills and commitment with their roles and the management of risks within their areas. Another important aspect proposed by the respondents is to achieve a common understanding of the risk culture within institutions. This factor is mentioned both by leaders in the banking sector and in the automotive industry.

"To achieve a unique understanding of risk culture, we need to improve the communication at banks… I firmly believe this is the ideal way to integrate this somewhat unknown but familiar term… Nowadays, issues that were of little complexity or minor importance in the past are the key to achieving greater change."

Banking Manager

"Nowadays it can't be accepted that areas don't communicate with each other."

Senior leader of a German Bank

Thus, one feature that stands out in the suggested points in the table was the word "engagement". In particular, for achieving changes and a sound risk culture, staff and leaders of all levels should possess this quality when performing daily tasks.

Table 1: Aspects considered for improving risk culture within institutions

	Banking	**Automotive**	**Pharmaceutical**
Business strategy	x	x	x
Continuous trainings for employees	x	x	x
Achieve a general understanding of what is risk culture	x	x	
Have a department in charge of managing risk culture	x		
Engagement with quality not only profit			x
Engagement of new staff			x
Engagement of all employees	x		
Executive compensations		x	
Awareness of other areas responsibilities			x
Managers engagement			x
Sales commissions			x
Diminish conflict of interests	x		
Communication between areas	x		

Source: Own work.

Regulations and Risk Culture

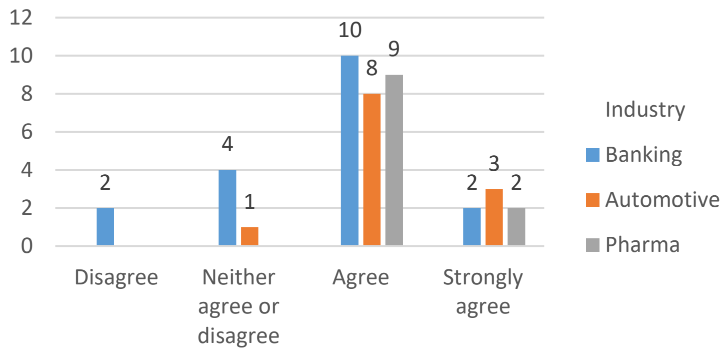
Certainly regulatory authorities have their expectations regarding the way risk culture has to be implemented and improved in banks. As mentioned in chapter four, four indicators are mentioned and explained by different authorities.

As figure 35 shows, the trend is consistent and clear, where all three industries agree or strongly agree that the establishment of risk culture should be a top-down exercise. Nevertheless, two respondents by the banking industry disagree. For instance, a senior leader of a bank agrees with the question but mentions that such establishment of risk culture should be parallel worked by middle-level, since those changes can only be achieved if all leaders work in unison.

"If the executives and leaders of a company are not sources of motivation and inspiration for their employees, there are very few changes that can be achieved."

Director pharmaceutical company

*Figure 35: Establishment of risk culture within institutions**



** Question RRC1: Do you agree with the regulators that the establishment of risk culture is necessarily a top down exercise?*
Source: Own work.

Reviewing question RRC3 shown in figure 36, the tendency of the answers is that the respondents agree that their industry should be regulated with respect to risk culture.

"To have a guideline about risk culture will align all vague ideas about this topic within the companies… Various companies and even workers of the same company interpret risk culture differently."

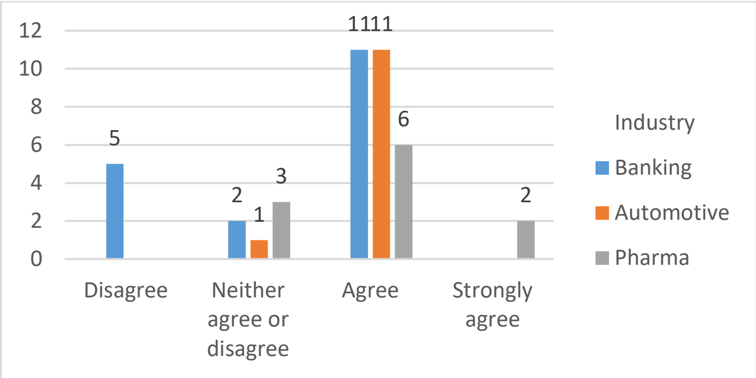
Manager of an automotive company

28% of the respondents of the banking industry prefer to not regulate or supervise risk culture within their companies. Some of them confirmed to acquiring some guidelines regarding that topic but they question the scope that these regulations should have on banks.

"Guidelines regarding risk culture will help to understand what do really regulators expect from us… We cannot forget that the more regulations, the less creativity… for me the institution lose its power of decision making… there is a problematic as to how well it makes us to have so many regulations."

Senior leader of a bank

*Figure 36: Regulation of risk culture within industries**



** Question RRC3: Do you consider that risk culture should be regulated and supervised in your industry?*
Source: Own work.

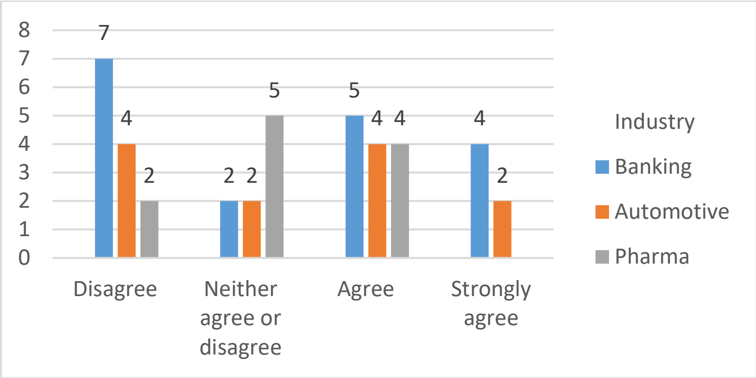
Clearly, between question RRC3 and RRC4 (Figure 37) there is a dispute about the scope that regulations should have within each industry. On one hand a majority agrees with regulating risk culture within their industries, on the other hand, it is observed that many companies support the idea of receiving more information about the regulators and stricter regulations on the subject. But a significant percentage per industry do not agree to increase regulations and pressure from regulators regarding risk culture.

"We are working on this topic for about three years, we want to be prepared for confronting future crisis… and we understood that anticipating regulators gives us an advantage, as we foresee new requirements. Brexit has been an issue that has also opened our eyes to improving our risk management and our bank's culture."

Director of a German bank

"The regulations we have under our sights are sufficient, however the increase in regulations leaves us little air to adapt our own ideas and initiatives on the playground".
Manager of a pharmaceutical company

*Figure 37: Necessity to increase regulations regarding risk culture**



** Question RRC4: Would you like to have more strict and clear regulatory requirements with respect to risk culture?*
Source: Own work.

Risk Culture Approach

An important fact about understanding how the three industries are implementing their risk culture is the approach that they are following. Therefore, two additional questions are made to comprehend it better. For instance, in figure 38, it is evident that the approach that banks are nowadays applying is mainly driven by regulatory requirements. Banks agree with 61% that regulatory authorities have a high effect on the way they define their risk culture approach.

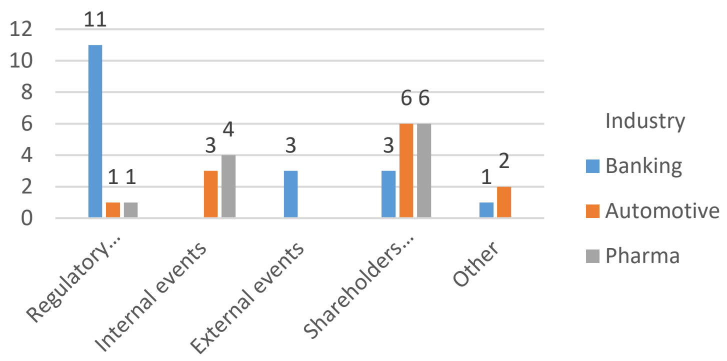
"Recent financial crisis affected us to such an extent that banks needed to build up their reputation and react quickly so that the damage wouldn't be so great… On the other hand, we have the pressure from the regulator side, which led us to reformulate our strategies."

Director of a German bank

External events and shareholders expectations, with 17% each are considered important. One of the respondents affirms by the structured interview that they need to define their risk culture approach focus not only regulatory expectations, but also on shareholders expectations as well as external factors. "If we don't consider the appropriate drivers, we can lose significant input."

As for the automotive industry, the main driver is the shareholders expectations with 50%. Senior leaders emphasize that at their companies, shareholders play a big role when defining strategies, risk appetite. Some areas have big pressure to generate profit and therefore they tend to expose themselves more to risks. Similarly, the pharmaceutical industry answered in a similar way as the automotive industry, by affirming with 55% that shareholder expectations is the main driver for their institutions' risk culture approach. As second place for both industries are the internal events, with 25% for the automotive industry and 36% for the pharmaceutical industry.

*Figure 38: Drivers of risk culture approach within institutions**



** Question RCA1: Your organizational risk culture approach is mainly driven by:*
Source: Own work.

The respondents mention additional drivers, which can be find at figure 39. Some of them are collected from the structured surveys with some senior leaders. For example, one manager from the automotive industry comment that the revision of the yearly financial statements is a driver for restructuring their risk culture approach. Profit is a concept mentioned by a senior leader from a pharmaceutical company, who remarks that this financial aspect has weight at his company and that workers' incentives are affected periodically. The same senior leader of that pharmaceutical company also mentions innovations. For instance, he tells that there is more pressure regarding technology and product innovations. Therefore, they need to keep updated to be able to compete in the market. That makes them as well define their risk culture approach.

Figure 39: Additional drivers of risk culture approach within institutions

Source: Own work.

Based on the answers to the three additional open-ended questions in the structured interviews, it was possible to provide further information on some of the questions asked in the survey. In the same way, supplementary information gathered from the three questions will be presented below.

A director of a German bank mentions that one of the challenges he experienced recently regarding risk culture, is the creation of a new position that can be in charge of culture and conduct risk. At that bank, there is a necessity of a responsible leader that can focus and specialize on that topic and develop together with the executive board members strategies that propose new methods to achieve a greater commitment from workers. He adds as well that during the recent years, financial institutions defined a separate working definition for conduct risk in order to align their internal understanding and tasks to achieve a proper conduct risk. Although human entrepreneurial development is an important consideration these days, the bank must concentrate on developing new technologies, as competition is increasing.

As for the automotive industry, a sales manager tells about his experience by dealing with risk culture. He explains that he started working at the company as an analyst, so he possess a brighter view of how the company grew and developed. He mentions that the main driver of the automotive industry is sales, which is often restricted by the area of risk controlling. He explains that operational risk is the main risk to which the industry is exposed and points out that the area of risk controlling does not consider the business and restricts much to the sales area, putting them under pressure. Therefore, his impression is that both areas are focusing on their job and not working together. Such factor is reflected by the incentive system that the company applies since risk controlling and sales areas become an unfavorable combination for implementing effective and realistic incentives. In particular, he adds that those incentives within the company lead to apply short run rather than long run goals.

As revealed by a senior leader of a pharmaceutical company, risk culture is quite a new topic. Nevertheless, he agrees that companies only focused on generating profit and managing financial risks will not survive the future and constant changes that the industry is experiencing. He affirms that the concept risk culture will win more importance with the years therefore, it is necessary to be prepared for that. By his experience, this industry is one of the most regulated industries in the market, for example, nowadays the launch of new products is an almost impossible task, which implies the investment of considerable amount of money, whose returns will be seen in several years. He mentions: “In our case, we reduce the budget for research and increase investment in new technologies, another point that must be taken into account for the survival of our company”.

Some similar aspects mentioned by the interviewed leaders are that the costs and time dedicated to risk culture will increase and they need to be prepared to confront those events in a long run. They mention the necessity to approach this topic in a short run in order not to be surprised in a future with financial losses or new strict regulations. They mentioned that it is important to be selective and define well in which aspects they need to invest. For example, one CEO mentions the importance to invest in operational managers, who operate and manage risks. Second investing in aspects involving risks and compliance are also another key feature to consider. As a third important fact, an internal audit may be another way to improve risk culture within the institutions. Risk maturity across the industries may show different performances, but it is clear that those industries with higher regulatory pressures show a higher maturity as well.

Based on the collected information, it is necessary to re-address the three research questions posed at the beginning of this document.

Addressing the first research question, about the understanding, operationalization and measurement of risk culture. It is found that the understanding of risk culture remains varied within not only the industries but also between them. As for the results, the automotive industry shows to possess a clear understanding of the topic and its meaning, while the remaining industries show varied opinions. Additionally, it is observed that because of the few available information and lack of standard measurement systems regarding risk culture, it is hard for the leaders and senior leaders to know if their companies have a proper risk culture.

Nevertheless, the three industries show a similar tendency by confirming that CEOs as well as Board members should be the responsible for the operationalization of risk culture within the companies. Therefore, many leaders and senior leaders agree that their companies are planning to implement a risk culture framework, but they don't talk about a specific approach for achieving that.

With respect to the measurement of risk culture that the industries want to apply, it is seeing that banks show more security with respect to the measurement they want to apply, while the remaining industries present a hesitant position. Generally, all three industries rarely measure their risk culture within the institutions.

Proceeding with the second research question, related to the influence of regulators on the conception of risk culture; it is concluded that the main key conceptual drivers are FSB and EBA. These regulatory bodies present documents related to risk culture, which for the moment are the most exhaustive and comprehensive. Currently, financial institutions are expanding their understanding through that regulatory documentation. Furthermore, additional findings show that all three industries agree in regulating risk culture but they do not support the increase of regulations since that diminishes the power of decision making that they have.

Therefore, talking about the last research question related to the existence of a single approach or different approaches to address risk culture; it is found that nowadays there is no single approach for risk culture between industries as well as within them. On one hand, there is the approach discussed by the regulator and on the other hand there is what the company and its leaders apply as approaches to address this issue.

CONCLUSIONS, LIMITATIONS AND FUTURE RESEARCH

As a first instance, this research collects and provides information about risk culture. From the literary revision presented in previous chapters, it is observed that risk culture is a new topic, which is not supported with much theory. Nevertheless, after reviewing regulatory and supervisor's documentation, the understanding of what risk culture is for financial institutions becomes clearer. For instance, four risk culture indicators are suggested as important by the regulator EBA and the standard setter FSB, which are tone from the top, communication, accountability and incentives. Group of 30 and additional authorities mention as well further aspects that helped to perform and assess the survey.

Moreover, a literary review informs the reader about the analyzed industries. Similarly, the research mentions the important aspects that happened regarding risk management within those industries. In addition, Germany is analyzed based on its economical, as well as its cultural aspects with the aim of achieving a common comprehension about the country and its characteristics. Based on the found information, it is confirmed that all three industries have a high importance within the country and are recognized worldwide. Therefore, the selection of the additional industries is pertinent for the analysis.

With respect to the survey, there are interesting findings. For instance, there is a higher awareness within the banking sector regarding changes in the management of risks, while the additional two industries show a varied point of view regarding the topic. This fact is explained due to the increase of regulations for the financial institutions that are pressuring this industry to comply with more requirements and guidelines. As revealed by the results, leaders and senior leaders affirm the importance of culture within the institutions; nevertheless, they do not show the same tendency about their understanding of risk culture. For example, the automotive industry affirms to have a good understanding about the topic but the other two industries show variable answers. Similarly, respondents have a varied opinion about risk culture within the institutions they work. Certainly, more information regarding risk culture has to be developed and accessible to the executives and leaders in order to achieve a greater number of respondents, who understand this new term. The fact of not having evidence about risk culture, leads many respondents to not being able to define if their company has a good risk culture or not, therefore many respondents do not agree or disagree with the statement.

Talking about the operationalization of risk culture within the institutions, valuable information is collected. CEOs and Board members are considered as the key for defining an institution's culture. Consequently, they are chosen as the best option for operationalize risk culture within the institutions. Many interviewed leaders and senior leaders agree that all areas need to be responsible as well of the implementation and operationalization of risk culture. Regarding the communication, it is seeing that it needs to be improved, since different appreciations are collected about how easily employees can talk about problems or mistakes. Incentives, another important aspect, are related with the internal approach of the majority of the respondents corresponding to the banking industry, whereas the automotive and pharmaceutical industries disagree with the statement.

For instance, leaders and senior leaders of the banking and pharmaceutical industries affirm that their institutions are planning to implement a risk culture-framework, while the automotive industry showed different opinions. Nevertheless, all three industries show insecurity regarding if the current risk culture program at their companies is appropriate or not, as well as the current measurement and control regarding the acquirement of values by the employees. This may result from the lack of information about the new term.

Another relevant topic discussed in the survey is the measurement of risk culture. Regarding the impact of the measurement of risk culture, leaders and senior leaders of the banking and automotive industries agree with the statement, whereas the pharmaceutical industry does not show a clear tendency. Additionally, the banking industry shows a clear positive tendency, while the automotive and pharmaceutical industries do not agree with the application of an appropriate risk culture assessment within their institutions. However all industries rarely or even never measure their risk culture performance within the industries. Furthermore, the respondents affirm that the most important aspects to consider for improving risk culture are the engagement of Chair of Board, corporate values and corporate culture. They suggest additional aspects, which are related with the four indicators, mentioned by the regulators. Nevertheless, there is a term that remarks within all and is *Engagement* that not only senior leaders should have but all employees. Indeed, they agree that it is the key to achieve changes and improve risk culture.

Besides leaders and senior leaders are asked about the influence that regulators have on the conception of risk culture. In this case, all industries agree that the establishment of risk culture is a top-down exercise; therefore, all respondents accept the indicator tone from the top. An interesting finding is that all industries in a majority agree that risk culture needs to be regulated but the positive tendency diminishes when asking if they consider appropriate to have more strict regulations. Clearly, they agree on receiving clearer guidance, but they argue that having more regulations, derive on having less power of decision and creativity.
Finally, the risk culture approach that the industries apply differ between each other at some extent. For instance, at the banking industry, regulators, shareholder expectations and external events are chosen as the most important drivers. In contrast, at the automotive industry and pharmaceutical industries, shareholder expectations and internal events are the most important drivers for their risk culture approach. Therefore, there is no single approach to risk culture since all industries may choose theirs based on their personal drivers.

For achieving a proper implementation of risk culture within the institutions, it is important to find a right balance between controls the companies apply and remuneration systems to reduce risks employees may incur. Companies, no matter the industry need to experience some kind of freedom on their business decisions to continue generating value. It would be recommended that for the automotive as well as the pharmacy industries, the risk management practices of financial institutions should be taken into account as a guide, as they are regulated with greater severity. In this way, both could acquire valuable comprehensions and apply similar approaches.

Limitations and Future Research

To achieve a clearer and valid appreciation regarding risk culture within the industries, more answers and appreciations are needed. It is difficult to make a judgement of value without taking into account more opinions from different job positions. Opinions may vary from the point of view of an employee and an executive.

The results of the research present more questions or derive to new hypothesis that future studies need to address due to the constantly evolving field that risk culture represents within the financial industry as well as other industries.

The research briefly mentions the national culture dimensions of Germany, nevertheless, it does not analyze the country of origin of the interviewed people as well as the influence the country may have on the people´s uncertainty avoidance or their risk perception, which according to Hofstede is a good way to measure culture within companies. Therefore, for future studies it is suggested to take into account the influence of the national culture on the business culture of an institution, for reaching a better understanding of the risk culture of a company. Hence, it will require analyzing a larger population to prove such theory.

The understanding of risk culture becomes clearer; nevertheless, there is a need of further studies with focus on risk culture. Nowadays, it is essential to achieve a more aligned understanding on the topic, for this, more documentation and studies must be developed to properly guide companies in the processes of transformation and implementation of strategies.

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APPENDIXES

Appendix 1: Povzetek (Executive summary in Slovenian language)

Kultura je nenapisana pravilnica, ki se bo prenašala skozi generacije in pridobivala z novimi mizarji (Hofstede, Hofstede, & Minkov, 2010). Obstaja veliko teorije o kulturi in obvladovanju tveganj. Vendar pa je v okviru kulture tveganja zelo malo teorije. Ta tema se je sčasoma razvila in s poudarkom od zadnje finančne krize leta 2008. Številne banke po finančni krizi so se soočale s finančnimi kaznimi za kršitve tako delavcev kot izvršnega osebja, kar je povzročilo splošno slabitev industrije. in zmanjšanje zaupanja strank (Holland, 2010). Zlasti kriza ni bila povezana le z načinom obvladovanja tveganj v bankah, temveč tudi s kulturo, ki je obstajala v teh institucijah, in načinom, kako so bili zaposleni izpostavljeni tveganju. Faktor »človeškega vedenja« je tako pridobil več prostora znotraj osrednjih tem in interesov podjetij, saj je povezan s stopnjo tveganja, ki so mu izpostavljene finančne institucije. Zato je izraz "kultura tveganja" sčasoma povečal njegovo pomembnost s strani institucij in regulatorjev, ki danes zahtevajo skladnost z opredeljenimi standardi za doseganje ustrezne kulture tveganja.

Glavni cilj te študije je prispevati k skromnim akademskim raziskavam o kulturi tveganja v finančnih institucijah in vplivu kulture na zaznavanje, razumevanje, načine merjenja in pristop, ki ga uporabljajo nemške banke. Prav tako je cilj preveriti, ali avtomobilsko in farmacevtsko industrijo na podoben način dojemajo te dejavnike. V ta namen bo izveden izčrpen literarni pregled v zvezi s kulturo tveganja v finančnih institucijah, ki bo kasneje služil kot podlaga za raziskavo, ki ne bo le analizirala kulture tveganja v finančnih institucijah, temveč bo obravnavala tudi temo v farmacevtski in avtomobilski industriji.

Na ta način bodo obravnavani izzivi znotraj obstoječe kulture tveganja v finančni industriji in primerjani s temi dodatnimi industrijami. Razpravljalo se bo tudi o stališču regulatorjev in organov v zvezi s kulturo tveganja. Ta vidik je zelo pomemben in bo podrobno razvit v dokumentu, saj so danes nemške finančne institucije pod velikim pritiskom, da izpolnijo različne zahteve. Dobljeni rezultati ankete, naslovljene na voditelje in višje vodje nemške finančne, avtomobilske in farmacevtske industrije, so zelo bogati. Čeprav se dodatne industrije ukvarjajo z obvladovanjem tveganj, ni predpisov za tiste sektorje, ki izrecno govorijo o kulturi tveganja, čeprav se morajo ukvarjati s podobnimi izzivi podjetij. Primerjava treh panog se šteje za koristno za analizo podobnosti in razlik, ki jih imajo pri obvladovanju tveganja, saj bodo ta dejstva vodila študijo v prepoznavanje zapletenosti razumevanja kulture tveganja in različnih pristopov, ki jih podjetja uporabljajo za oceno.

V diplomskem delu bomo zbrali ustrezne informacije o kulturi tveganja in analizirali, ali je mogoče dokazati razpoložljivo literaturo o obravnavanju kulture tveganja v finančnih institucijah in jo primerjati z dvema dodatnima industrijama. Podobno bo zagotovljena manj izčrpna analiza razpoložljivih informacij o farmacevtski in avtomobilski industriji, da se na enak način preverijo nekatere obstoječe teorije o kulturi tveganja. Izbira dveh dodatnih panog za metodološki del bo izvedena iz primerljivih razlogov, osredotočenost in predhodna razprava pa bosta osredotočena na finančne institucije. Z rezultati bo bralec pridobil informacije o vrednosti kulture tveganja v izbranih sektorjih in ali bo za njih zdaj veljalo ustrezno vprašanje.

Appendix 2: Online Survey and Structure Interview Questions

Gender

- ◯ Female ◯ Male

Age

30 or less	31-40	41-50	51-60	61 or more
◯	◯	◯	◯	◯

Please specify the industry of the institution you work in

- ◯ Banking
- ◯ Automotive
- ◯ Pharmaceutical

For how many years do you work at the company?

- ◯ less than one year
- ◯ 1-3
- ◯ 4-6
- ◯ 7-9
- ◯ 10-15
- ◯ 16 or more

How many workers does the institution have?

- ◯ 1-10
- ◯ 11-50
- ◯ 51-250
- ◯ 251-1000
- ◯ 1001 or more

How many years does the institution have?

- ◯ 1-15
- ◯ 16-30
- ◯ 31-45
- ◯ 46-60
- ◯ 61 or more

URC – Questions

Understanding Risk Culture - Please indicate if you agree with the following statements/questions

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
Following the financial crisis of 2008 , corporate culture with respect to risk caught the attention of regulators, firms and media. During the recent years, do you observe a change in the perception of dealing with risks within the industry?	◯	◯	◯	◯	◯
Compensation models can lead employees to increase the institution's risks?	◯	◯	◯	◯	◯
Do you agree that culture directly affect corporations?	◯	◯	◯	◯	◯
Would you affirm that you have a concrete understanding about the concept of risk culture?	◯	◯	◯	◯	◯
Do you think that it is possible to achieve a unique risk culture within the institution?	◯	◯	◯	◯	◯
Does your institution have a proper risk culture?	◯	◯	◯	◯	◯

RCO – Questions

Risk Culture Operationalization - Please indicate if you agree with the following statements/questions

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
Do CEOs and other decision making leaders directly affect the institution's culture?	○	○	○	○	○
Does the institution apply a bottom-up feedback?	○	○	○	○	○
Does the process of selection of the staff determine the corporate culture?	○	○	○	○	○
Does your company apply incentives and relate that approach with your internal culture?	○	○	○	○	○
Does the institution implement a proper risk culture program within it?	○	○	○	○	○
Does the institution have a defined set of values?	○	○	○	○	○
Does the institution properly measure the acquirement of values within the company?	○	○	○	○	○
Mistakes can be openly discussed within the institution?	○	○	○	○	○
Does the company have a clear structure of integration?	○	○	○	○	○
Do you believe the company provides the proper value to their employees?	○	○	○	○	○

Risk Culture Operationalization - Which area should be responsible for risk culture in your institution? (multiple answers can be given)

- ☐ Human Resources
- ☐ CEO and Senior Management Board
- ☐ Compliance
- ☐ Other please specify ________
- ☐ I don´t know

Risk Culture Operationalization - Does the institution plan to implement a risk culture framework in the upcoming future?

- ○ Yes
- ○ No

MRC – Questions

Measurement of Risk Culture - Does the institution properly assess risk culture performance?

- ○ Yes
- ○ No

Measurement of Risk Culture - How often does the company measure risk culture performance?

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Always

Measurement of Risk Culture - Please indicate if you agree with the following statements/questions

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
The measurement of risk culture has a big impact within the institution?	○	○	○	○	○
The measurement of risk culture is very difficult?	○	○	○	○	○
Would be easier to implement risk culture with an external assessment? e.g. consultancy	○	○	○	○	○

Measurement of Risk Culture - Which of these aspects do you consider important to improve risk culture in your company? (select up to two options)

- ☐ Corporate values
- ☐ Corporate culture
- ☐ Staff selection
- ☐ Customer experience
- ☐ Engagement of Chair of Board
- ☐ Other ____________

RRC – Questions

Regulations and Risk Culture - Please indicate if you agree with the following statements/questions

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
Do you agree with the regulators that the establishment of risk culture is necessarily a top down exercise?	○	○	○	○	○
Do you consider that the company is aware of the existence of new regulations related with risk culture?	○	○	○	○	○
Do you consider that risk culture should be regulated and supervised in your industry?	○	○	○	○	○
Would you like to have more strict and clear regulatory requirements with respect to risk culture?	○	○	○	○	○

RCA – Questions

Risk Culture Approach - Your organizational risk culture approach is mainly driven by:

○ Regulatory requirements

○ Internal events

○ External events

○ Shareholders expectations

○ Others

Risk Culture Approach - How often do you reflect on possible adjustments on this approach

○ It has not been reviewed yet

○ Once in a year

○ Twice in a year

○ Occasionally if we identy the necessity

○ I don't know

Structured Interview - Additional Questions

- Please tell us an unexpected / funny / memorable story that happened to you when dealing with risk culture?
- Considering the questions that have just been discussed, what impression do you have of the risk culture in general?
- Finally share with us if you consider the existence of other issues that should be considered by dealing with risk culture, which we didn't discuss enough or not at all.