Czech University of Life Sciences Prague

Faculty of Economics and Management

Department of Management

Bachelor Thesis: Crisis Managment

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CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

BACHELOR THESIS ASSIGNMENT

Valeriia Trofimova

Business Administration

Thesis title

Crisis Management

Objectives of thesis

The Bachelor thesis aims to apply the methods of crisis management on the company's selected business processes and then develop the anti-crisis measurements for this company, focused on a diversification strategy.

Methodology

The theoretical part is based on the study and analysis of professional literary sources relating to modern methods of crisis management. The knowledge from the first part will be used in the following design part of the diploma thesis. The practical part will include the analysis of the situation of the selected company and the definition of the risks. In the next part, the evaluation will be performed using the methodology described in the theoretical part. Possible ways of solving the crisis and remedying the situation focused on diversification strategies will be proposed for the selected company.

1. Introduction. 2. Objectives and methodology. 3. Theoretical part. 4. Practical part. 5. Evaluation of the results and recommendations. 6. Conclusion. 7. References. 8. Appendix

The proposed extent of the thesis

40-60 pages

Keywords

corrective action, prevention, subsequent liquidation, diversification, random vector, consistency, contradiction, rational choice

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Recommended information sources

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Prague on 14. 03. 2023

Declaration

I declare that I have worked on my bachelor thesis titled "Crisis Managment" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break any copyrights.

In Prague on 13.03.2023 Valeriia Trofimova

Acknowledgement

I would like to thank prof. Tomáš Macák for all advices and big support he gave me during my work on this thesis.

Crisis Management

Abstract

The main goal of the following thesis lies in conducting a case study of SAP and to be more precise, their headquarter in Prague, for which the author analyses the effectivity of the company's crisis management based on the quantitative analysis of the questionnaire distributed between the workers of the selected organization. In conclusion, the author characterizes the degree to which the organization managed to tackle the problem and what were the most troubled components. As for the methodology of the bachelor thesis, the author primarily relies on the quantitative analysis and a hypothesis testing, where the author will analyze the key tendencies and patterns related to crisis management, such as the way how the company's actions are perceived by people belonging to different groups, such as gender, age, working experience. Research is based on the primary data collected with the use of a questionnaire based on Google Forms. Author primarily uses Chi-Square tests and paired t-tests. To finish, the author repeats the most essential assumptions that were confirmed through hypothesis testing: After the pandemic, employees' views of SAP's management and crisis management changed. The pandemic period had a worse overall rating, showing employees were dissatisfied with SAP's reaction; The association between age and the thoughts variable was significant, suggesting younger workers were more likely to consider resigning; Two indicators were linked to a higher percentage of women than men considering quitting the organization, showing that women were more vulnerable to such thoughts. The final recommendation is that SAP has learned enough from this event to conduct additional in-depth assessments that will reveal the most problematic parts of the company's crisis management plan by meticulously analyzing pandemic reports and conducting additional research with SAP employees who worked during the pandemic.

Keywords: risk management, business diversification, crisis aspects, stabilization in crisis management

Krizové řízení

Abstrakt

Hlavním cílem následující práce je provedení případové studie společnosti SAP a přesněji její centrály v Praze, pro kterou autor analyzuje efektivitu krizového řízení společnosti na základě kvantitativní analýzy dotazníku rozděleného mezi pracovníky vybrané organizace. Na závěr autor charakterizuje, do jaké míry se organizaci podařilo problém vyřešit a jaké byly nejproblematičtější složky. Pokud jde o metodologii bakalářské práce, autor se opírá především o kvantitativní analýzu a testování hypotéz, kde bude analyzovat klíčové tendence a vzorce související s krizovým řízením, jako je způsob, jakým jsou kroky společnosti vnímány lidmi patřícími do různých skupin, jako je pohlaví, věk, pracovní zkušenosti. Výzkum je založen na primárních datech shromážděných pomocí dotazníku založeného na formulářích Google. Autor primárně používá Chí-Kvadrátové testy a spárované t-testy. Na závěr autor opakuje nejdůležitější předpoklady, které byly potvrzeny testováním hypotéz: po pandemii se změnily názory zaměstnanců na řízení SAP a krizové řízení. Pandemické období mělo horší Celkové hodnocení, což ukazuje, že zaměstnanci nebyli spokojeni s reakcí SAP; souvislost mezi věkem a proměnnou myšlenek byla významná, což naznačuje, že mladší pracovníci s větší pravděpodobností uvažovali o rezignaci; Dva ukazatele byly spojeny s vyšším procentem žen než mužů, kteří uvažovali o ukončení organizace, což ukazuje, že ženy byly vůči takovým myšlenkám zranitelnější. Konečným doporučením je, aby se SAP z této události dostatečně poučil, aby provedl další hloubková hodnocení, která odhalí nejproblematičtější části plánu krizového řízení společnosti pečlivou analýzou pandemických zpráv a provedením dalšího výzkumu se zaměstnanci SAP, kteří pracovali během pandemie.

Klíčová slova: řízení rizik, diverzifikace podnikání, krizové aspekty, stabilizace v krizovém řízení

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1 Introduction

Information networks, like any other system, are in a permanent state of development and expansion due to factors such as the development of more precise technologies and processes, as well as the expansion of opportunities for and risks associated with mistakes and other difficulties. What people call "crisis management" is really just a field of study that explains and assists in locating the most effective methods for resolving such situations and restoring the affected system or business. It is also essential to remember that any management is a system for information and asset data that contributes to the settlement of the enterprise resource planning issue.

The birth and development of the SAP corporation is one of the most remarkable representations of the information processing and analysis program and its technologies; this is because of the significance of controlling and correctly managing these resources. Since so much of the company's crisis-response infrastructure relies on its information systems, disabling them is an impossibility.

2 Objectives and Methodology

2.1 Objectives

The main goal of the following thesis lies in conducting a case study of SAP and to be more precise, their headquarter in Prague, for which the author analyses the effectivity of the company's crisis management based on the quantitative analysis of the questionnaire distributed between the workers of the selected organization. In conclusion, the author characterizes the degree to which the organization managed to tackle the problem and what were the most troubled components.

2.2 Methodology

As for the methodology of the bachelor thesis, the author primarily relies on the quantitative analysis and a hypothesis testing, where the author will analyze the key tendencies and patterns related to crisis management, such as the way how the company's actions are perceived by people belonging to different groups, such as gender, age, working experience. Research is based on the primary data collected with the use of a questionnaire based on Google Forms. Author primarily uses Chi-Square tests and paired t-tests.

3 Literature Review

3.1 Crisis Management

3.1.1 Concept

"The Chinese use two brush strokes to write the word 'crisis'. One brush stroke stands for danger; the other for opportunity. In a crisis, be aware of the danger - but recognize the opportunity". John F. Kennedy (Dwivedi, 2020).

Before proceeding to the description of the problem and ways to solve it, it is important to describe the terms that will be used in this paper.

Management is a continuous process of influence of the subject of management (leader or group of leaders) on the object of management (company, group, or individuals) in order to coordinate and organize their activities using modern technologies, principles, methods and means to improve work efficiency.

Crisis (translated from Latin) is a decisive situation, a turning point. It is the "turning point" in the sense of the word "crisis" that indicates that the situation can be changed from destruction to restoration and development if appropriate decisions are made.

Anti-crisis management, or **crisis management**, is the process of saving an organization (object of management) from destructive influences and creating conditions for its development.

When the acceptable level of risk for a business is exceeded, a crisis occurs. Of different depth and polarity - from the opportunity to make a breakthrough in development to the restructuring and closing of the company. There are many classifications of crises, but the author would like to consider the one that has the maximum practical application for overcoming the crisis. Based on the cause of occurrence, crises are of two types: internal and external.

- Internal crises occur due to:

- cost overruns;
- lack of management accounting and control;
- errors in the organization of the business cycle, processes, and sub-processes;
- loss or lack of reliable information during the passage of each stage of the business cycle;
- business model imbalances.

- External crises occur due to:

- global economic and financial turmoil;
- extraordinary natural, man-made, environmental, biological, and social (for example, a pandemic) and other events.

To overcome each type of crisis, specialists are needed who can act in harsh conditions - crisis managers. The effectiveness of this type of crisis management directly depends on the level of professionalism, volitional and organizational abilities of a manager or manager, therefore, in many cases, a new leader, called a crisis leader, is involved in saving a collapsing system. A crisis manager is a temporary manager who conducts a set of measures to bring the system out of a rapidly developing crisis process.

The crisis manager begins his work with an express analysis of the state of the system, after which he develops an approach and implements measures to stabilize the situation. At this stage, all available resources (administrative, financial, and labor) are mobilized, and special attention is paid to increasing staff loyalty to ongoing activities. When the critical situation has been successfully stabilized, a detailed diagnosis is carried out in order to identify the key problems and causes of the crisis, as a result of which the best way to overcome the crisis situation as a whole is determined.

The activity of a crisis manager is always temporary and stops as a result of a favorable overcoming of the crisis, or vice versa - the destruction of the system. Therefore, the criterion for the success of the leader's activity in the conditions of emergency crisis management is effectiveness as an absolute measure of the presence or absence of a result - it either exists or it does not.

But before getting into it, the author would like to provide some background on the concept of "crisis management." After the military-political struggle that took place between the Soviet Union and the United States in 1962, which is often referred to as the Caribbean or Cuban crisis, this phrase made its debut appearance for the very first time in the international press (Leighton, 1978). The Soviet Union had begun to station medium-range missiles in Cuba, which posed a potential threat to the safety of the entire United States territory. This was the major issue that caused the crisis. In response, the government of the United States established a naval blockade of Cuba in an effort to prevent the actualization of the threat that had been made. They also made the announcement that all Soviet ships that were headed for Cuba would be inspected, and that ships carrying missiles would be stopped and, if necessary, sunk. As a reaction, the Soviet Union issued a statement stating that an attack on at least one Soviet ship would constitute the start of a third global war. US President John F. Kennedy established a special panel that would be led by his brother R. Kennedy with the mission of formulating suggestions on how the United States government should extract itself from this highly perilous scenario while minimizing the risk to its national security. After many days of round-the-clock talks and deliberations, the committee led by R. Kennedy was able to come up with some recommendations that ended up being acceptable to both the United States of America and the Soviet Union. The issue was resolved, and the action that R. Kennedy's group had been engaging in was referred to as "crisis management" (Blackman, 2011). Only after the release of Stephen Fink's monograph "Crisis Management. Planning for the inevitable" in 1986 did people start using the phrase "crisis management" in reference to business (Rozanov, 2020). Since that time, this phrase has evolved from a journalistic cliché into a scientific notion. Additionally, its concept, theory, and technique have started to develop.

As was seen before, historically speaking, the earliest form of crisis management was emergency management. This style of crisis management was targeted at escaping an unanticipated crisis scenario, when delaying action may result in significant repercussions. Since emergency crisis management is an activity that has a beginning and an end in time, aimed at achieving a predetermined result with given resource and time constraints, then it is nothing more than a project and the methods and tools of project management are fully applicable to it.

Later on, the expanding field of economic science shed light on the patterns of actual economic activity and uncovered cyclical sequences, which the economist's dubbed waves. Both social scientists and systems theorists have spotted waves with very similar characteristics. It turns out that the crisis is an essential part in the growth of any self-organizing system, and there is no way to stop it from happening. The use of crisis management as a preventative tool also emerged about this time when it became recognized as an essential component of routine management. This method of handling crisis situations is known as regular preventative management.

Repetitive and preventative measures crisis management is a series of behavior that aim to reduce the possibility of future implications of the scenario in a direction that it is necessary to take extraordinary measures. The phrase "routine and preventive crisis management" was coined by the American Society of Safety Engineers (ASSE) (Bahr, 2014).

The permanent leader of the firm is the one who is responsible for carrying out this kind of crisis management. It entails actions that have been planned, instructions for preventing the development of crises, and training for people on how to behave in a crisis scenario. The organization implements monitoring, control, and analysis of the signals of an impending crisis, in addition to steps to lessen the likelihood of any potential dangers. Fire safety measures are a classic example of regular and preventative crisis management. These measures include the creation of instructions, the familiarization of personnel with the evacuation plan, and periodic training in steps to take in the case of a fire.

Efficiency, as a relative assessment category that is based on a comparison of the result gained and the resources invested, serves as the yardstick for determining whether or not regular preventative crisis management was successful. At this stage, it is important to explain not only who and how assumes the responsibilities of working and moving against a crisis situation, but it is also important to highlight the ways and detailed methods of action.

3.1.2 Approaches

It has been shown that the reasons for a crisis in a corporation are frequently internal factors related to the processes of growth and development of an organization as a self-

organizing system. These factors can manifest themselves in a number of different ways. In order to categorize these types of crises, some authors draw parallels between the growth of an organization and the growth of a person, and they identify the stages of an organization's existence that are referred to as its "life cycle" (Dodge, 1994). When businesses are struggling, the CEOs of those businesses will frequently point the finger of blame at a too competitive market or an excessively expensive cost. Everything that said is correct, however these are only the indicators.

The primary explanation is frequently found inside oneself. When a corporation, government, or other institution is experiencing difficulties, it is critical to look within to determine the root causes of those difficulties. Those who are knowledgeable refer to the underlying causes of difficult times as drivers of change. The people, the process, the incentives, and the structure are the four drives.

Before beginning to look at each factor, it is important to remember that it is crucial to concentrate on fixing the system in order to create a situation in which people, most of the time, will perform the correct thing using as little control as possible, irrespective of the external threats. This environment must be created before beginning to look at each individual driver.

People are the primary cause of the issue, and they are also likely the most challenging factor. It is critical to communicate the standards of conduct in an open and transparent manner to all members of the organization and to make certain that they are aware of the implications of failing to do so. People that perform their jobs well ought to be rewarded with constructive feedback that is timely, detailed, and pleasant. On the other hand, individuals of the team who don't want to follow the rules should be subjected to a painful dialogue that should be timed appropriately and should be laser focused. Although it is hard to ignore the impact that each individual has on the situation, crisis management must always focus on the larger and more far-reaching repercussions and causes of the problem.

There is another technique that has garnered the approval of a significant number of people. The American Institute of Crisis Management was established in 1990, and one of

its first proposals was to classify all of the potential causes of crises into one of two categories: sudden or smoldering (Buchanan, 2013).

Unanticipated and sudden disruptions in the economic activities of a firm, resulting from natural or man-made events, as well as harm to the company's reputation, are examples of sudden crises. Natural disasters and terrorist attacks are other examples of sudden crises.

Smoldering crises are typically the result of problems that have been developing covertly within the company for some time but have not been brought to anyone's attention, either within or outside the company, until they have become manifest. These problems have the potential to result in serious threats or losses.

The firm is compelled to reduce expenses and build up a "financial cushion" when the economy is unstable, but this is by no means the only factor that determines whether or not it will be successful. Organizational agility, defined as the capacity of managers to think creatively and rapidly reconstruct business processes inside the organization, is the deciding element in whether or not the business will emerge from the crisis successfully.

Only those businesses that are able to be adaptable and proactive in the face of a shifting marketplace will be able to maintain their competitive edge in the current business climate. Organizational agility is one of the ways in which a company may endure challenging times and grow as a result.

A number of components make up organizational agility, including the following:

1. In today's environment, the ability to be agile as an organization is an essential talent. The quickness with which decisions are made and the promptness with which they are carried out are not only vital in and of themselves, but also essential qualities of a firm that is competitive.
2. Because the inertia of managers is detrimental to competitiveness in a market that is continually changing, success may be achieved via adaptability in times of crisis.

3. Both the pace and efficacy of change are hampered within the firm by reasons such as the fear of taking chances and the fragmentation of information. As a direct result of these variables, the progress of the business is exceedingly sluggish, thus internal forces must contribute to productivity.
4. One of the essential elements that make change management possible is technology. Access to crucial data may be made easier and organizational change can be driven by having a method that is both quick and trustworthy for exchanging information within an organization.

Therefore, in today's circumstances, the only way for a business to be effective and competitive is for it to be in a state of continuous change and development. The administration of a contemporary business needs to be founded on the tenets of strategy development and proactive control as its foundational tenets. This indicates that both the production and administration processes are open to ongoing enhancement. Managers, especially middle and managerial capacity, are required to innovate on a continuous basis, which means they must continually try new ideas and do existing tasks in new ways. When conditions outside quickly change, it is also important to quickly respond to these changes within the company, because taking preemptive measures is far more efficient than the effect of eradicating the repercussions of a massive failure. In other words, the strategy of the company should be based on the principle of effective adaptation to changes in the environment. This means that the performance appraisal process must be based on the concept of effective adaptation to environmental changes.

It is also crucial to note that while there are many different principles for the strategic management of an organization during a crisis, the majority of these principles involve actions to prevent a liquidity crisis, also known as a loss of solvency. This is something that should be noted. Under these conditions, cutting costs may seem like an obvious objective, but this is not only one step that the management of the firm takes to solve the challenges that have emerged. A corporation cannot secure its competitiveness and, ultimately, its survival in the ever-shifting conditions of the modern market without a long-term development plan and without a change in its attitude to operations. A narrow minded method to quick making plans and the government's willingness to conquer intense crisis manifestations as quickly as possible, by lowering expenses to the detriment of a remaining

workforce, just gives the illusion of conquering the crisis, which also will eventually return with renewed vigor due to the myopic approach's brief strategy to short-term organizing.

3.1.3 Application

In light of what was discussed earlier by the author, it is essential to place emphasis on specific aspects of the unique application of certain methodologies. Management strategies during times when there is no crisis should not be very different from management strategies implemented during times of crisis since both sets of strategies are founded on the ideas of adaptability, development, and ongoing improvement. Deviation from this paradigm results in challenges that necessitate the use of stringent emergency management strategies in order to affect a shift in the status quo. The flexibility that is required for the firm to effectively adjust to quickly changing external conditions and, as a consequence, prevent business difficulties can only be achieved via the consistent inventive activity of managers at all levels of the organization.

An attempt to keep the firm solvent just by cutting the salary fund might render the entire organization ineffective when, as a result of a lack of available human resources, the preceding procedures are unable to guarantee that the business will continue to operate normally. The occurrence of a crisis scenario, in and of itself, is evidence that the management of the organization has taken inappropriate measures in the past, and it calls for a revision, which must include the creation of non-standard solutions to the issues that have been disclosed.

In periods of economic unpredictability, there is a financial restriction, which can lead to a scarcity of workers due to the inability to pay them. By focusing only on resolving their financial issues, many businesses waste valuable time that might be used into improving their internal operations and, as a consequence, reducing the likelihood that they will face a crisis of the same nature in the foreseeable future. Large corporations will be able to make it through challenging times by cutting expenses, streamlining payroll operations, and reallocating resources among different initiatives. However, small, and medium-sized enterprises will not be able to make it through these times without making significant adjustments.

But regardless of how well prepared the corporation or the state is for the crisis, a situation similar to a pandemic will arise, which the author will continue to write about in the following paragraphs.

3.2 Coronavirus Pandemic

3.2.1 History

The new coronavirus 2019-nCoV, which was later designated SARS-CoV2 and is the cause of COVID-19, was responsible for the pandemic that was announced by the World Health Organization (WHO) on March 11, 2020. In late 2019, a human strain of this coronavirus was discovered for the first time in Wuhan, China. The warnings of Dr. Li Wenlian, the Wuhan physician who was the first to sound the alarm about the new coronavirus, were not only disregarded, but the Chinese authorities also later accused him of disseminating fake information. One month later, he became infected with COVID-19, which ultimately led to his death at the age of 34 (Li, 2020).

At the moment, there are around 675 million people all over the world who are afflicted with the virus. Almost 7 million people died (Statista, 2023). The United States, Brazil, Great Britain, India, and Italy, which was the first European nation to come into contact with the virus, each reported the highest number of casualties. The list of these countries is in declining order. COVID-19 often causes self-limiting symptoms that are similar to those of the flu, but it has the potential to be lethal since it can escalate to pneumonia with acute respiratory syndrome and disseminated vasculitis in immunocompromised individuals, the elderly, and persons who have other diseases. This sickness is self-limiting in youngsters and is comparable to the common cold in its symptoms. There is currently no treatment that has been shown to be effective for COVID-19 disease; however, there is treatment available that is primarily supportive and involves the use of antiviral drugs. These antiviral drugs include antiretroviral drugs used in the treatment of HIV/AIDS, chloroquine, and immunomodulatory drugs. The use of a vaccination as a preventative measure against the coronavirus, an infection for which there is now no treatment that is successful, appears to be the tactic that has the most promise.

3.2.2 Pandemic in Russia

Russia has been actively preparing to face the virus from the beginning of 2020. Early detection technologies were developed and deployed, and a command center for the fight against COVID was established.

Commercial flights linking Russia and China were halted and restrictions placed as of January 2020, thus banning the admission of Chinese tour groups. After a short delay, the Russian Chinese frontier was sealed owing to the fast spread of the virus.

On January 31, 2020, Russia reported its first two instances of illness; both patients were Chinese nationals who had just returned to Russia from outside travels. Both individuals were diagnosed with a minor form of the condition and made full recoveries. In an attempt to contain the coronavirus pandemic, health officials have instituted quarantine (required isolation) for the ill and anyone who came into contact with them since the first instances were discovered. First set at 14 days, the period of self-isolation for contacts was shortened to 7 days in January 2022. Additional methods to regulate self-isolation were implemented in different parts of the country; for example, in Moscow, residents were obligated to download and use a set of control apps on their smartphones.

As a result of the increased demand for healthcare facilities, prescheduled medical treatment and checkups had to be temporarily suspended. Although certain groups of Russian nationals returning from overseas were quarantined in facilities modified for this purpose, the practice of putting diagnosis coronavirus in observation has not become prevalent in Russia (rest homes, sanatoriums). All Russians arriving back from South Africa in December 2021 were consequently quarantined in sanatoriums close to the capital for a period of two weeks.

Cancelling large-scale events was one of the first measures taken by authorities in reaction to COVID-19. They were outlawed in major cities and other areas in March of 2020. The May 9 parade on Red Square, as well as voting on amendments to the Russian Federation's Constitution, and various other sports competitions, live shows, festivals, etc., have all been canceled or delayed for 2020 by the Russian Federation (Mälksoo, 2021).

Theatrical and musical performances will once again be held as of August 1, 2020. Moscow and regional authorities once again prohibited or authorized large gatherings as the epidemic circumstances shifted, however such activities often needed the approval of the sanitation inspectors. Prohibitions on gatherings of a large number of people, such as political rallies, will continue to be enforced as of July 2022.

Vaccination regulations against coronavirus were in effect throughout the Russian Federation from the middle of 2021 until the beginning of 2022, impacting workers in retail, food service, transportation, healthcare, and other sectors (Logunov, 2021). With more and better coronavirus vaccines becoming available, local governments pushed the immunization drive in several directions. Seniors were forced to obey the self-isolation rule and faced limits on priority travel in public transportation since they had not been vaccinated. No hotel could accept an unvaccinated guest, and visitors were barred from participating in any tourist activities. From November 2020 to January 2021, all organizations in Moscow whose activity is tied to the attendance of individuals will use the QR entry system for allowing guests, and from June 2020 to July 2021, restaurants and cafés will use the system (Gudkov, 2021).

To date, the position regarding COVID-19 in Russia has indeed been reported by Rospotrebnazdor as steady, although quite tense. It's possible that the "fourth wave" will begin with a spike in cases that were documented in the second part of September 2022 on state territory (Akimkin, 2022).

3.3 SAP

3.3.1 Recent development

At this point in time, it is already quite difficult to conceive of a future in which there would be no enterprise resource planning systems or software (ERP). Today, virtually all big businesses have adopted some kind of enterprise resource planning system. But the vast majority of smaller businesses do not often invest in ERP systems, and the majority of developers presumably have not witnessed them in operation. However, it is important to keep in mind that the market for ERP systems is now projected to be over $50 billion, and it is expected to reach a level of approximately $130 billion by the year 2030 (Globe Newswire, 2023).

ERP systems are where businesses save their most important operational data. In this particular instance, the author discusses sales projections, purchase orders, and inventories, in addition to the procedures that are triggered depending on this data (for example, payments to suppliers when placing orders). An enterprise resource planning system (ERP) is sometimes referred to as a company's "brain" since it is responsible for storing all of the essential data as well as the workflows of activities that are triggered by that data.

How did this software ever come into being in the first place, before it totally took over the current corporate world? The 1960s saw the beginning of significant work on office automation, which is considered to be the genesis of ERP. Payroll and invoice processing were the first aspects of a company's operations to be computerized and automated. It used to take entire armies of office personnel to physically tally employee hours in the ledgers, multiply that number by the hourly rate, and then manually reduce deductions for things like taxes, benefits, and so on (Jacobs, 2007). This laborious task, which involves a lot of repetition and is prone to errors caused by humans, is an excellent candidate for computer

automation. By the 1960s, many businesses had automated their payroll and billing processes with the help of IBM computers.

Figure 1, IBM Computers, 1960

Source: IBM, 1960

After ten years, five engineers (Dietmar Hopp, Hasso Plattner, Hans-Werner Hector, Klaus Tschira, and Claus Wellenreuther) decided to leave IBM in order to negotiate a software contract with a huge chemical company (Pugh, 1995). They established a new business under the name SAP, which stands for "Systemanalyse und Programmentwicklung," which translates to "System Analysis and Program Development" (Lehrer, 2006). SAP is a program that is used to manage the business operations of a firm. These activities include the procurement of products, the introduction of a client base, the control and management of inventories, and the reporting of financial information. The system is made up of different pieces of software. Each is in charge of a different operational procedure for the company. The aim of the company is to provide not individualized answers but rather comprehensive help all at once. Therefore, in order to make a purchase of specialized software, users will either need to have specialist expertise or at the very least understand why it was important to introduce this specific SAP program, what benefits it would bring to the business, and so on.

Figure 2, Engineers that created SAP

Source: SAP, 2022

As was the case with the vast majority of software developers at the time, their primary focus was on advising. As a result, SAP personnel traveled to the locations of their clients and produced software on their computers, mostly in the area of logistics management.

There were several reasons why SAP software was exceptional. When people were growing up, most computer programs would run overnight and then print the results onto paper cassettes, which would then examine the following morning. Instead, SAP systems operated in real time, and the results were shown not on paper but on monitors, which therefore cost an exorbitant amount of money (Baader, 2018).

Even yet, SAP has gone a long way, and it should come as no surprise that even after all this time, it continues to be one of the most dependable and popular enterprise software options among businesses of all sorts and levels. Oracle and SAP are the most significant competitors at the moment (Balodi, 2022). Despite the fact that both companies are industry leaders, their ERP offerings couldn't be more dissimilar. It should come as no surprise that both firms are so dominant that even Microsoft utilizes SAP rather than its own Microsoft Dynamics ERP solution.

Oracle and SAP provide preset settings for various sectors such as food, automotive, and chemicals, as well as vertical configurations such as sales processes, as a result of the fact that the majority of businesses have rather particular ERP requirements. Revenue for SAP reached €27.84 billion in 2021, and the company's market value has now surpassed €140 billion (SAP, 2022).

At this point, it is essential to provide specific details on the many varieties of the BRT system, its benefits, and the services that it offers. If the author is talking about any type of universal option, SAP ERP emerges as the clear winner. The program enables the creation of a unified workplace in which employees are able to communicate and collaborate in the most efficient manner possible, as well as optimizing the planning of both internal and external business resources. It takes on the function of a control center, making it easier for the administrator to keep track of the activities taking place online and to implement any necessary adjustments in a timely manner (update old information, add new information, etc.).

To make things more obvious, the author explained how to operate within the SAP ERP application, which comprises of the following three components in a conditional sense:

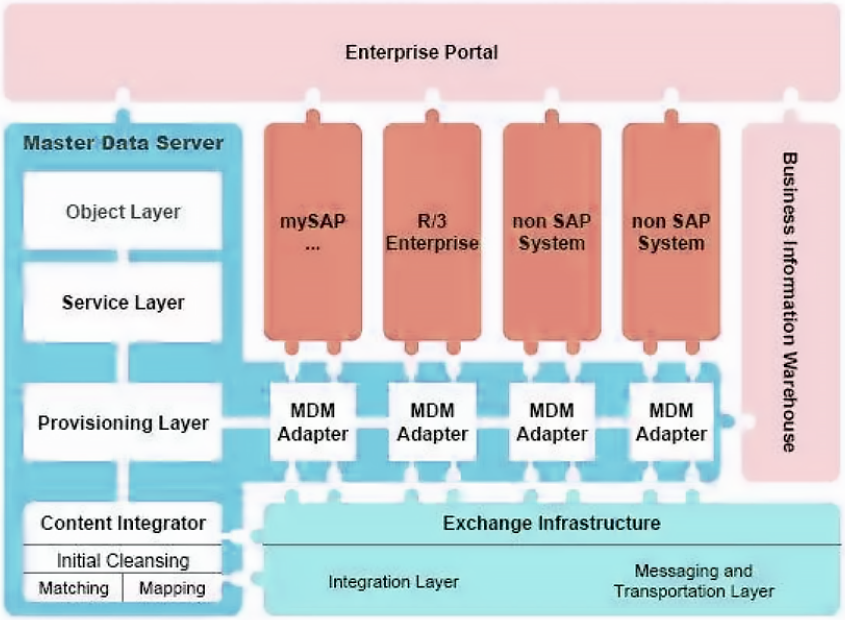
"*Accounting and reporting*" give one the ability to become familiar with all transactions that are currently taking place and to correct finances at each level. It features two layered modules:

1. ***FI***, which includes extensive data on the accounts that have recently been moved;
2. ***CO***, which includes tools for creating quarterly and yearly paperwork, monitoring money, and calculating losses and profits. Both of these modules are nested within each other (Hufgard, 2011).

A flexible control of the processes of procurement, search, and selection of suppliers, as well as the drawing up and implementation of a production plan, taking timely measures to care for the equipment in use (inspection, repair, replacement), setting prices, selling products, and receiving receipts are all made possible through the use of the term "*logistics."*

The word "*Personnel*" makes the work of the personnel department easier to do. This department is responsible for the selection of workers according to vacant positions and general needs. Additionally, it is responsible for the computation of wages and control over their payments (Ringling, 2009).

Figure 3, Master data management in SAP



Source: Knolmayer, 2006

In the process of evaluating the products, it is important to explain what the SAP SRM system is. This is the actual piece of software, and its full name, Supplier Relationship Management, refers to the fact that it was developed with the intention of making interaction with the entire group of suppliers more efficient. The Master data management system and its components are shown above (Fig. 3). It is a key component of Business Suite, which is software that streamlines the process of acquiring resources and cuts the expenses associated with doing so. It does this by rating and properly analyzing counterparties, developing a long-term plan, and using a variety of other tools (Helms, 2010). This program has a significant number of distinguishing characteristics, some of which are beneficial while others are not the handiest.

The following is a list of benefits:

- Simple to set up.
- Do your job online.
- There is a nearly nonexistent requirement for any changes.

- An immediate and continuous improvement in the effectiveness of the task performed by subordinates.
- Help cut down on both the quantity of mistakes and even the possibility of making them.
- Includes support for a diverse array of activities; meets all of the requirements of a sizable business.
- Combining with other office apps in a way that is both convenient and intuitive.
- The user interface may be completely customized "for yourself," allowing users to apply even the minutest of changes in the product's underlying structure.
- A strong emphasis placed on more recent standards and outcomes, and hence relevance.

Among the disadvantages:

- It is important to have specialized knowledge in order to configure the most adaptable settings. Employees have to be familiar with AFE in SAP and grasp a variety of different codes and modules.
- Despite the somewhat hefty initial investment, purchasing this program will prove to be profitable in the long term.
- Only via individual debugging is adaptability feasible; if some functions do not correlate with the operations of the organization, users will need to spend additional money reorienting them. Adaptability is only achievable with individual debugging (Shang, 2000).
- It is not possible to switch to another vendor free of charge until the present contract with that vendor ends; renegotiation would result in considerable expenditures, which is problematic for a business that is spending its budget intelligently.
- The utilization of a product does not yet ensure the success of a product that was developed with the assistance of that product (although this is typical for any software, therefore this minus is very conditional).

At this point, it should be obvious that the drawbacks are relative and strongly reliant on the type of organization that will use the same ERP. If this is a person who has received training, the majority of the drawbacks may be avoided, and the rate of return on investment

will be better. The author provided a description of what the SAP accounting program is, and the author also provided a clear description of how the program appears; however, in order to get the full picture, users also need to figure out how the program is configured to meet the requirements of a specific business and how it is put into operation. In order to get the SAP software up and running and begin using it, there are four distinct stages that need to be taken:

1. Getting familiar with the project and preparing for it - during this step, all of the essential papers are reviewed, gathered, and prepared, and the calendar for all of the activities is planned. So, need to be conscious of giving careful consideration not only to the directives of the management but also to the suggestions made by the creators of the product.
2. Collecting the essential information, which includes finding out what credentials those workers who will directly use the program have, as well as how informed they are of future duties; decisions on the configuration of the software are made based on this information.
3. Design: After examining all of the information that is accessible, the developers give their approval to the structure (perhaps making alterations, tweaks, or upgrades) and adopt the final plan, which is something that they will continue to stick to.
4. Implementation entails carrying out all of the scenarios that are pertinent to the business, making modifications in line with the particular responsibilities of the organization, and providing training for the workforce. After then, assistance is offered, along with frequent reviews to ensure that faults have been eliminated and that the system is functioning appropriately.

Naturally, it is essential for a manager to grasp not only how to decode SAP, how to deploy it in the organization, and how to utilize it, but also what the purpose of the software is. Companies install it with the intention of achieving two worldwide goals:

1. To be updated with correct information on the present state of affairs in a timely way and to be able to monitor any ongoing developments via the internet.
2. To gradually optimize company processes, with the elimination of those that are unproductive, too complicated, or unneeded and the improvement of efficiency as the top priority, respectively.

The SAP system, which is used by a significant number of businesses, is, without a doubt, a well-known and dependable tool for assisting with accounting tasks; however, it remains to be seen how this system will react and whether or not it will be able to withstand and adjust to unforeseen developments like the coronavirus and the pandemic. In spite of this, many businesses have made the transition to conducting their operations entirely online, which has unquestionably increased the amount of strain placed on all computer systems during this time period.

3.3.2 Operations during Pandemic

The need for information technology did not decrease at all throughout the epidemic; in fact, just the opposite occurred: it actually soared. However, there is less money available on the market as a result of consumers' shift away from long-term projects and toward rapid short implementations that tackle current needs. Products that produce an impact quickly and cost effectively are in high demand right now.

Still, the transition to a remote form of work was challenging for many businesses. On the other hand, SAP was able to make the transition rather smoothly since the pandemic struck so fast; the company's employees just stayed at home with their computers. Because all of the systems had previously been configured to function remotely, several IT organizations have operated without any difficulties. However, author must not lose sight of the fact that not all nations have business organizations organized in the same way, and despite this, every organization has its own document flow, including letters and contracts that need to be agreed upon, signed, stamped, and registered. Because this is such a significant problem in Russia, the movement of a significant portion of the documents is, in principle, only conceivable in the form of paper, and this component unquestionably required reform.

The relationship with consumers was the next component essential to the continued existence of businesses, including the IT industry. They rapidly acclimated to working remotely and began communicating often through the use of technologies that enabled video conferencing. As a result, the SAP organization was able to successfully handle communication between technical teams, as well as meetings and product demos (Madsen,

2022). Even the company's consultants were able to complete installations without being physically present.

If the author talks about shifts on a worldwide scale, the management team took the matter very seriously. SAP has made significant contributions toward the fight against COVID-19. For instance, a software program was built in Germany to facilitate the speedy repatriation of German residents who, as a result of the lockdown, found themselves in another country. More than 200,000 people were able to successfully relocate back to their birthplace because of this tool (SAP, 2020).

Regarding the pandemic, the corporation has both worldwide rules from management as well as regional guidelines, although in general, more decision-making power has been delegated to the regional offices. In this particular instance, it is essential to have a clear understanding that the pandemic scenario in each country and area was distinct from one another. There are a lot of distinctions, and if author is talking about Russia and how it has withstood the epidemic, then the Russian people, in general, are all well prepared in crisis situations. However, there are a lot of similarities. This provided the office with some degree of consistency. Russian business responds more quickly, and it experiences a collapse at the very beginning of the crisis, which exacerbates the effect of the crisis. However, as soon as the essence of the crisis and the phenomena that it causes become clear, the economy starts to spin up faster, and Russian business returns to normal more quickly. SAP saw a decrease in revenue in traditional sectors, such as the sale of licenses for the on-premises model, during the first half of the year 2020 (Schreieck, 2022). However, there has been a dramatic increase in both the demand for and the requirement of cloud storage for information. When compared to the first half of the year, the Russian SAP had a more productive third quarter than they had in the first half of the year. It is possible to say that the corporation has eliminated a sizeable portion of the backlog that resulted from its ambitions.

It is essential to keep in mind that the epidemic persisted into the following year, at which point more limitations were imposed. Because the crisis is having such a profound impact on the economy, it is only natural that reductions have been made to the budgets for the year 2021. If one sector of the economy has a decline, then the domino effect takes place, and all other areas of the economy are affected in some manner. On the one hand, SAP is an

information technology corporation, and as such, it is not much affected by the crisis. However, on the other side, it is dependent on the consumers' available financial resources. Additionally, if there is less money available in the market, it will be more challenging for the firm to keep its volume levels stable. Even though demand for the company's expertise and skills has remained robust, it has dramatically changed toward more utilitarian solutions that can be rapidly deployed and have an immediate impact on the economy.

After doing an analysis of the situation, SAP management candidly addressed the market that it was necessary to alter the prediction for 2021 and up until the middle of the following year. This is probably not something that should come as a surprise to anybody. Because it is impossible to act as if nothing has changed, the author feels that it was the best choice to make the decision to communicate about the standards of the company immediately.

The people that work for the firm are likely the most valuable asset, thus management decided against making any layoffs because of this priority. At the same time, SAP was undergoing some organizational changes; a brand-new go-to-market strategy was introduced at the beginning of the new year (Vina System, 2017). The business started concentrating more of its efforts on expanding into new market niches, on gaining clients with whom it had not previously collaborated, and on developing new items that are not yet as widespread as more conventional options. Concerning the merchandise, the administration declared that going forward it would not be quite as active as it had been in the past with regard to acquiring other businesses in the sector. Users are going to concentrate on what is already present. Because of this, the goal that arose was to expand their engagement with one other and their level of integration. The epidemic has had a significant impact on society. Those businesses who had planned their digitization initiatives for the next five to 10 years started putting them into action right this very second. It became apparent if businesses did not have an internet presence. People have rapidly adjusted to this, from the delivery of food to internet shopping to the interaction between firms. If a company has the appropriate procedures, a strong staff, and solid management, it will be able to deal with any crisis.

The author may also emphasize the new opportunities and tools that SAP has supplied exactly as a result of the fact that it is nearly impossible to find a nation that has not been

severely impacted by the COVID-19 epidemic. Students, teachers, and industry professionals have had access to a secure learning environment supplied by SAP so that they may continue their education online without putting themselves or others in danger. On the road to innovation, SAP offers them the necessary assistance by giving them access to the most advanced digital services in order to maintain the integrity of the information they have acquired. The effort focused on three primary areas: massive open online courses (MOOC), access to educational resources for major institutions and participants in the SAP University Alliance and SAP Young Thinkers program (SAP, 2022).

4 Practical Part

4.1 Concept and Hypotheses

The idea of the author's work lies in identifying if the overall quality of the working processes in SAP office based in Prague has deteriorated during the pandemic of the coronavirus, whose outbreak was significantly influencing and halting all business and governmental processes in the whole world. For the purpose of identifying if the pandemic had significant effect on the way how ordinary employees of an international organization experienced a fair amount of anxiety and decrease in the working performance, the author creates a questionnaire for the purpose of collecting quantitative data that will later on be tested.

However, before proceeding to the hypothesis testing, it is first vital to compose the hypothesis that will be tested by the author in her bachelor thesis:

- There is a relationship between thoughts about leaving the organization during the pandemic and gender. The author's assumption is that women will be more willing to leave the organization after encountering difficulties or crisis.
- There is a relationship between thoughts about leaving the organization during the pandemic and age. The author's assumption is that younger employees were more willing to leave the organization during the outbreak of the coronavirus.
- There is a relationship between thoughts about leaving the organization during the pandemic and being satisfied with the managerial processes during the pandemic in SAP. The author's assumption is that employees less satisfied with the managerial processes and crisis handling by the organization are more prone to having thoughts about leaving the organization.
- There is a relationship between gender and preferences for work. The author's assumption is that women will be more willing to work in home office.
- There is a difference in the way how employees evaluate managerial processes before and during the pandemic. The author's assumption is that there is a significant degradation of the score of evaluation during the pandemic compared to the pre-pandemic evaluation.

- There is a relationship between preferences for home/ordinary office and feeling decrease in the working performance. The author's assumption is that people preferring to work from home are more likely to experience a decrease in their working performance.
- There is a relationship between satisfaction about management during the crisis and gender. The author's assumption is that there is a direct relationship between being satisfied with the crisis management and gender.

The total number of eight tests will be applied, where 7 of them are Chi-Square tests for categorical variables and 1 of them is paired t test, where the means for evaluation before and during the pandemic will be compared.

4.2 Participants

The goal of the author lies in creating random sample of people who fall under the following list of criteria:

- Actively working for SAP's office in Prague.
- Being a part of the working environment during the pandemic of coronavirus.

For the purpose of ensuring that criteria are being met by people who participate in the survey, the author distributes the survey that is based on the Google Form platform with the help of the author's acquaintances actively engaged in working with SAP, so that they will distribute the questionnaire among seniors and juniors who have a history of working for SAP during the pandemic.

4.3 Data

The author includes the following list of questions and options into her questionnaire:

- **What is your gender?**
  a) Male
  b) Female
- **What is your age?**

a) 18-25
b) 26-41
c) >41

- **What is your working experience?**
  a) 1-3 years
  b) 3-5 years
  c) 5-8 years
- **How will you evaluate the way how working processes were organized in SAP before the pandemic?**
  a) Scale from 1 to 5 is used where 5 is the highest score
- **How will you evaluate the way how working processes were organized in SAP during the pandemic?**
  a) Scale from 1 to 5 is used where 5 is the highest score
- **Have you thought about leaving the organization during the pandemic?**
  a) Yes
  b) No
- **Would you improve any aspect of the management in your organization during the pandemic crisis?**
  a) Yes
  b) No
- **Which form of working do you prefer more?**
  a) Home office
  b) Regular office
- **Have you experienced any decrease in your working performance during the pandemic according to your perception?**
  a) Yes
  b) No
- **Were you satisfied with the managerial processes in SAP during the pandemic?**
  a) Yes
  b) No

Consequently, the author was able to collect the following dataset from the questionnaire:

Figure 4, snapshot of the collected dataset

What is your gender?	What is your age?	What is your working experience?	How will you evaluate the way how working processes were organized in SAP before the pandemic?	How will you evaluate the way how working processes were organized in SAP during the pandemic?
Male	>41	5-8 years	4	2
Male	26-41	3-5 years	3	2
Male	>41	3-5 years	3	2
Male	26-41	1-3 years	3	1
Female	18-25	1-3 years	5	2
Female	26-41	3-5 years	5	3
Male	18-25	1-3 years	2	1
Female	>41	5-8 years	3	1
Male	18-25	1-3 years	4	2
Male	18-25	1-3 years	3	2
Female	26-41	3-5 years	4	2
Female	>41	5-8 years	5	2
Male	18-25	3-5 years	4	2
Male	26-41	3-5 years	4	3
Male	26-41	1-3 years	5	3
Female	18-25	1-3 years	3	2
Female	26-41	3-5 years	3	1
Male	26-41	3-5 years	3	2
Male	26-41	3-5 years	4	2

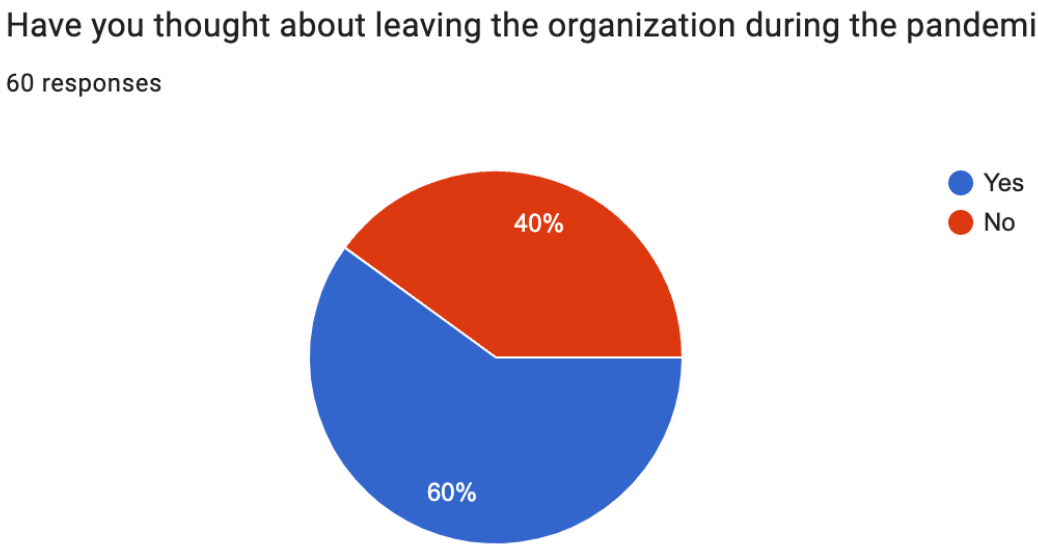
Source: own research

4.4 Hypothesis Testing

4.4.1 First Hypothesis

First, the very first hypothesis tested by the author in her thesis is related to two variables – thoughts about leaving the organization and gender. The author's assumption is that two variables are statistically related to each other and the key explanation behind this relatedness is the fact that women are more vulnerable to stress. Below, the author presents the distribution of answers for the first variable:

Figure 5, distribution of answers for the variable related to thoughts

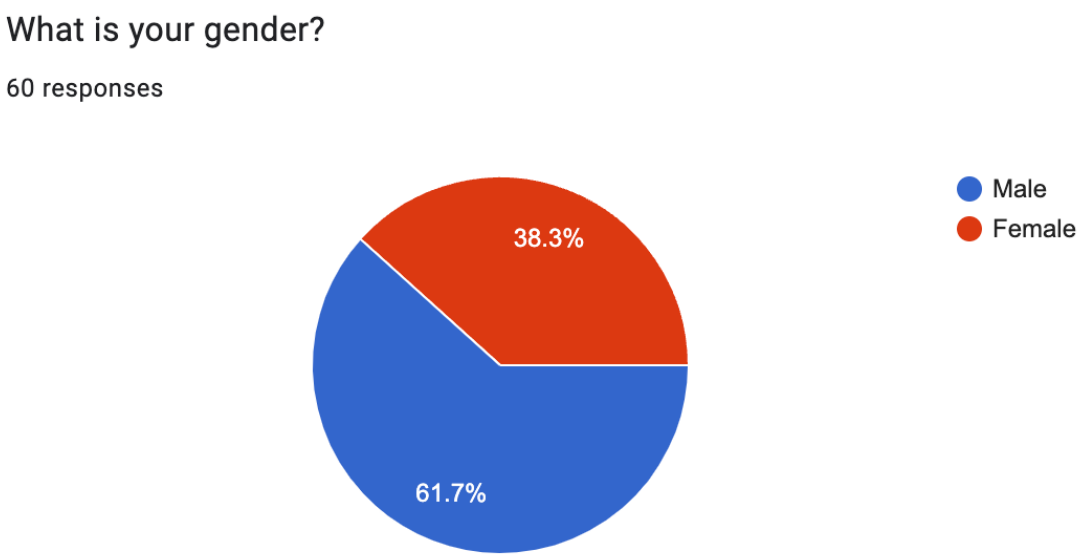


Source: own research

It is visible that the proportion of people who wanted to leave the organization slightly exceeds the proportion of people not having similar thoughts, which can suggest that the pandemic took a serious toll on employees of SAP.

Then, the author presents the overview of the distribution of answers for the gender variable:

Figure 6, distribution of answers for the gender variable



Source: own research

The number of male participants slightly exceeds the number of females who participated in the survey.

Then, the author uses SPSS application for computing test parameters:

Figure 7, the first test

Have you thought about leaving the organization during the pandemic? * What is your gender? Crosstabulation

			What is your gender?		
			Female	Male	Total
Have you thought about leaving the organization during the pandemic?	No	Count	2	22	24
		Expected Count	9.2	14.8	24.0
	Yes	Count	21	15	36
		Expected Count	13.8	22.2	36.0
Total		Count	23	37	60
		Expected Count	23.0	37.0	60.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	15.229[a]	1	<.001		
Continuity Correction[b]	13.187	1	<.001		
Likelihood Ratio	17.211	1	<.001		
Fisher's Exact Test				<.001	<.001
N of Valid Cases	60				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.20.

b. Computed only for a 2x2 table

Source: own processing

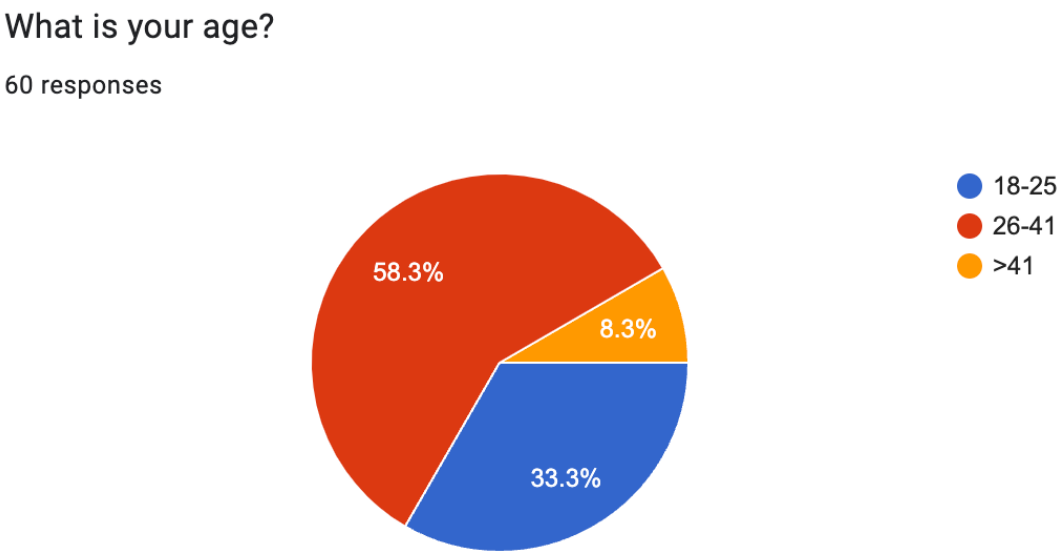
The testing procedure is done according to the following steps:

- Ho: the variable of thoughts about leaving the organization and gender are not related
- Ha: the variable of thoughts about leaving the organization and gender are related
- A = 0.05
- Chi-Square test
- P = 0.001
- 0.001 < 0.05 => Ho is rejected. Ha is assumed, two variables are related and it becomes apparent that women were more prone to thinking about leaving the organization during the pandemic.

4.4.2 Second Hypothesis

For the second hypothesis, the author analyzes if presence of thoughts about leaving the organization during the pandemic and age are related. Given the fact that the variable of thoughts was already discussed, the author will present only the overview of the age variable:

Figure 8, distribution of answers for the age variable



Source: own research

Clearly, the overwhelming majority of people participating in the survey are adults, according to the distribution of answers for the question.

The author presents the output of the testing done in SPSS below:

Figure 9, the second test

Have you thought about leaving the organization during the pandemic? * What is your age? Crosstabulation

			What is your age?			
			>41	18-25	26-41	Total
Have you thought about leaving the organization during the pandemic?	No	Count	3	3	18	24
		Expected Count	2.0	8.0	14.0	24.0
	Yes	Count	2	17	17	36
		Expected Count	3.0	12.0	21.0	36.0
Total		Count	5	20	35	60
		Expected Count	5.0	20.0	35.0	60.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	7.946[a]	2	.019
Likelihood Ratio	8.631	2	.013
N of Valid Cases	60		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 2.00.

Source: own processing

The testing procedure is done according to the following steps:

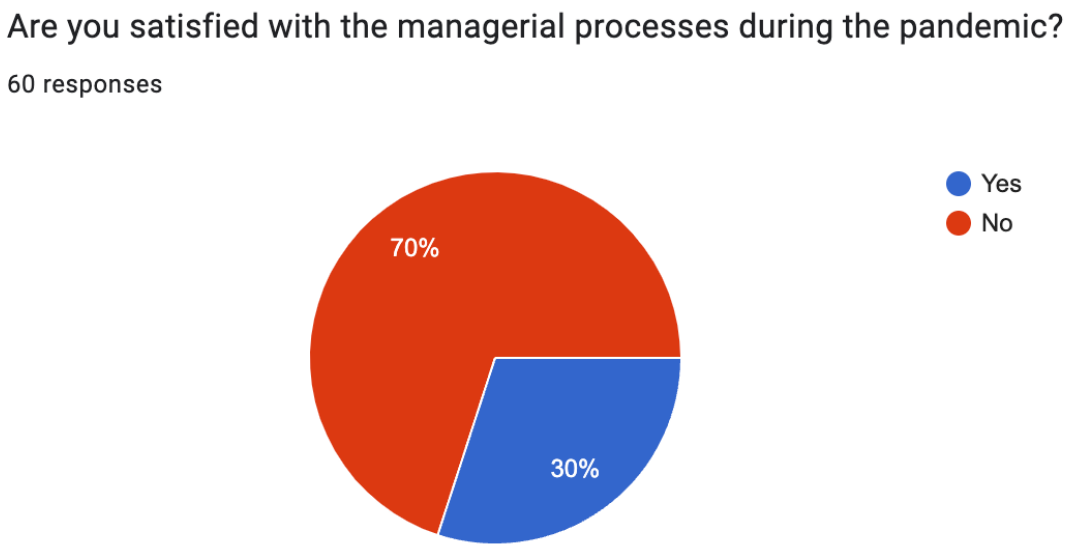
- Ho: the variable of thoughts about leaving the organization and age are not related
- Ha: the variable of thoughts about leaving the organization and age are related
- A = 0.05
- Chi-Square test
- P = 0.019
- 0.019 < 0.05 => Ho is rejected. Ha is assumed, two variables are related, and it becomes apparent that younger employees were more vulnerable to the shock generated by the crisis and they started to think more about leaving the organization during the pandemic.

4.4.3 Third Hypothesis

For the third hypothesis, the author analyzes if there is a statistically significant relationship between the variable of having thoughts about leaving the organization and being satisfied with the managerial processes and crisis management of SAP during the pandemic of coronavirus in SAP's Prague office. The overview of the thoughts variable was

already presented, so the author will focus on presenting the distribution of answers for the satisfaction variable below:

Figure 10, distribution of answers for the satisfaction variable



Source: own research

Based on the distribution of answers, it can be surely said that the degree of dissatisfaction among employees was prevailing over the degree of satisfaction with the crisis handling within SAP's office in Prague. Then, the author conducts a hypothesis testing, whose steps and results are presented below:

Figure 11, the third test

Have you thought about leaving the organization during the pandemic? * Are you satisfied with the managerial processes during the pandemic? Crosstabulation

			Are you satisfied with the managerial processes during the pandemic?		
			No	Yes	Total
Have you thought about leaving the organization during the pandemic?	No	Count	19	5	24
		Expected Count	16.8	7.2	24.0
	Yes	Count	23	13	36
		Expected Count	25.2	10.8	36.0
Total		Count	42	18	60
		Expected Count	42.0	18.0	60.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.601[a]	1	.206		
Continuity Correction[b]	.956	1	.328		
Likelihood Ratio	1.648	1	.199		
Fisher's Exact Test				.258	.164
N of Valid Cases	60				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.20.

b. Computed only for a 2x2 table

Source: own processing

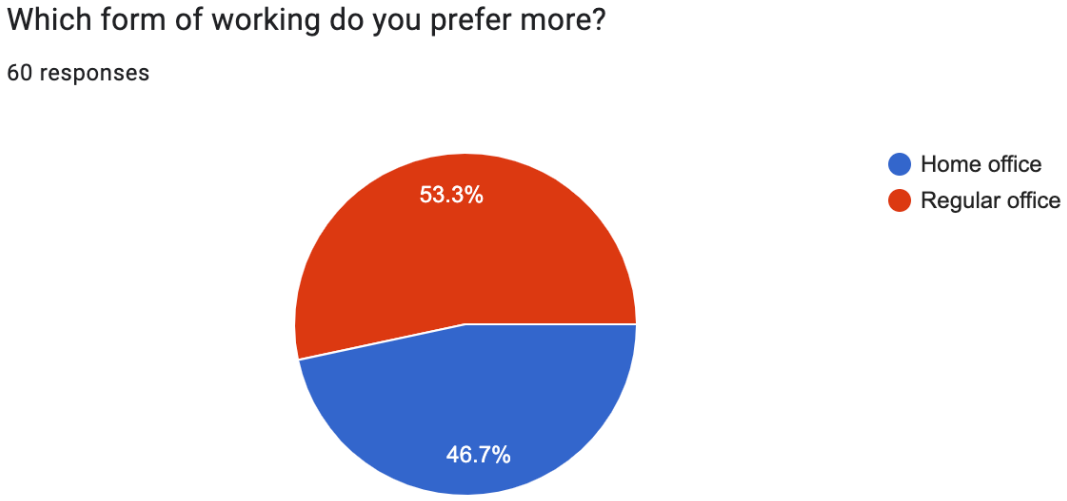
The testing procedure is done according to the following steps:

- Ho: the variable of thoughts about leaving the organization and satisfaction are not related
- Ha: the variable of thoughts about leaving the organization and satisfaction are related
- A = 0.05
- Chi-Square test
- P = 0.019
- 0.206 > 0.05 => Ho is not rejected. Two variables are not related, and the author's assumption about the fact that people less satisfied with the organization of internal processes and crisis management are more vulnerable to pessimistic thoughts about leaving the organization

4.4.4 Fourth Hypothesis

The fourth hypothesis is related to the question of whether there is a strong statistical relationship between gender and preference for working office (home or physical one). Since the gender variable was already presented earlier by the author, she focuses on presenting the distribution of the workplace preference variable below:

Figure 12, distribution of answers for the preference variable



Source: own research

According to the distribution of answers, the author can conclude that SAP workers who were engaged in active working process even during the pandemic period more prefer regular office. Then, the author conducts a hypothesis test:

Figure 13, the fourth test

What is your gender? * Which form of working do you prefer more? Crosstabulation

			Which form of working do you prefer more?		
			Home office	Regular office	Total
What is your gender?	Female	Count	10	13	23
		Expected Count	10.7	12.3	23.0
	Male	Count	18	19	37
		Expected Count	17.3	19.7	37.0
Total		Count	28	32	60
		Expected Count	28.0	32.0	60.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.152[a]	1	.696		
Continuity Correction[b]	.015	1	.901		
Likelihood Ratio	.153	1	.696		
Fisher's Exact Test				.793	.451
N of Valid Cases	60				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.73.

b. Computed only for a 2x2 table

Source: own processing

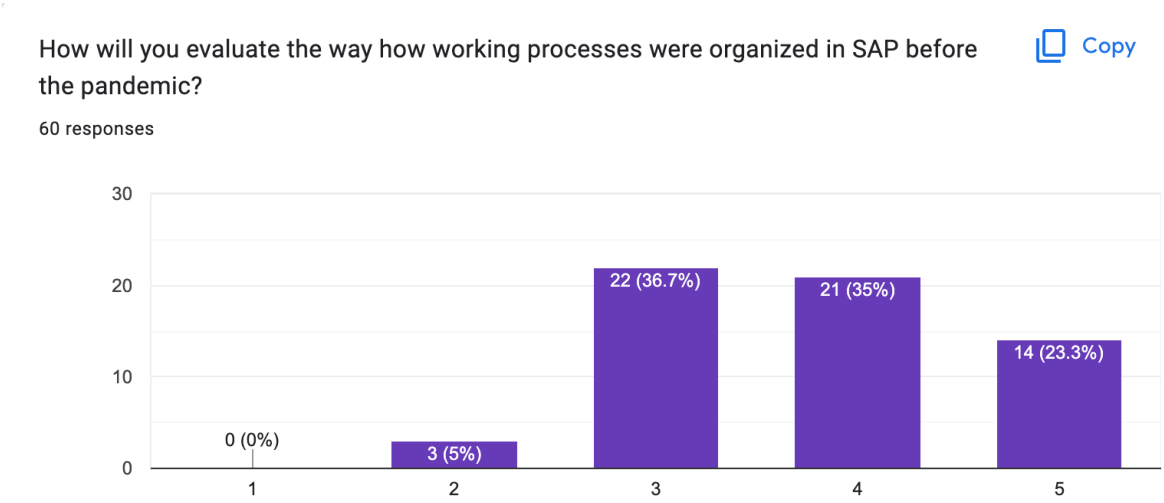
The testing procedure is done according to the following steps:

- Ho: the office preferences and gender are not related
- Ha: the office preferences and gender are related
- A = 0.05
- Chi-Square test
- P = 0.696
- 0.696 > 0.05 => Ho is not rejected. Two variables are not related, and the author's assumption about the fact that men are more prone to working in a physical office did not turn out to be true as both categories return more or less similar results.

4.4.5 Fifth Hypothesis

For the fifth hypothesis, the author tests if there is a difference in the way how employees evaluate managerial processes before and during the pandemic. For this purpose, a slightly different kind of test is used. Since the author compares mean values, the author relies on two-sample t test and given that the answers of the same person are taken into consideration, the author goes for the paired t-test. First, the author presents the distribution of answers for the evaluation of managerial processes before the pandemic:

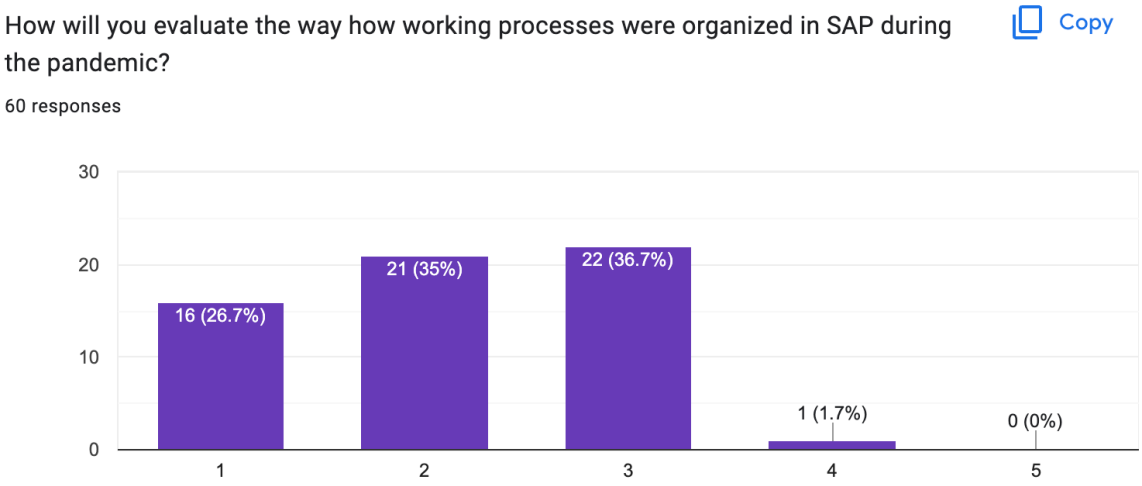
Figure 14, evaluation of managerial processes before the pandemic



Source: own research

Clearly, positive evaluation is prevailing as there were just 3 evaluations lower than 3, which suggests that employees had been happy with the way how everything in terms of management was organized prior to March and the events that followed throughout 2020-2021. Then, the author presents the evaluation according to employees during the pandemic:

Figure 15, evaluation of managerial processes during the pandemic



Source: own research

Contrary to the pre-pandemic evaluation, it is visible that employees for certain became less satisfied with the way how the crisis management was being organized as the evaluation's average score has degraded significantly with the majority of votes being allocated to 1 and 2, which correspond to the lowest level of evaluation. Then, the author conducts the test in SPSS, the output for which can be found below:

Figure 16, the fifth test

Paired Samples Test

		Paired Differences					t	df	Significance	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			One-Sided p	Two-Sided p
Pair 1	How will you evaluate the way how working processes were organized in SAP before the pandemic? - How will you evaluate the way how working processes were organized in SAP during the pandemic?	1.633	1.207	.156	1.322	1.945	10.483	59	<.001	<.001

Source: own processing

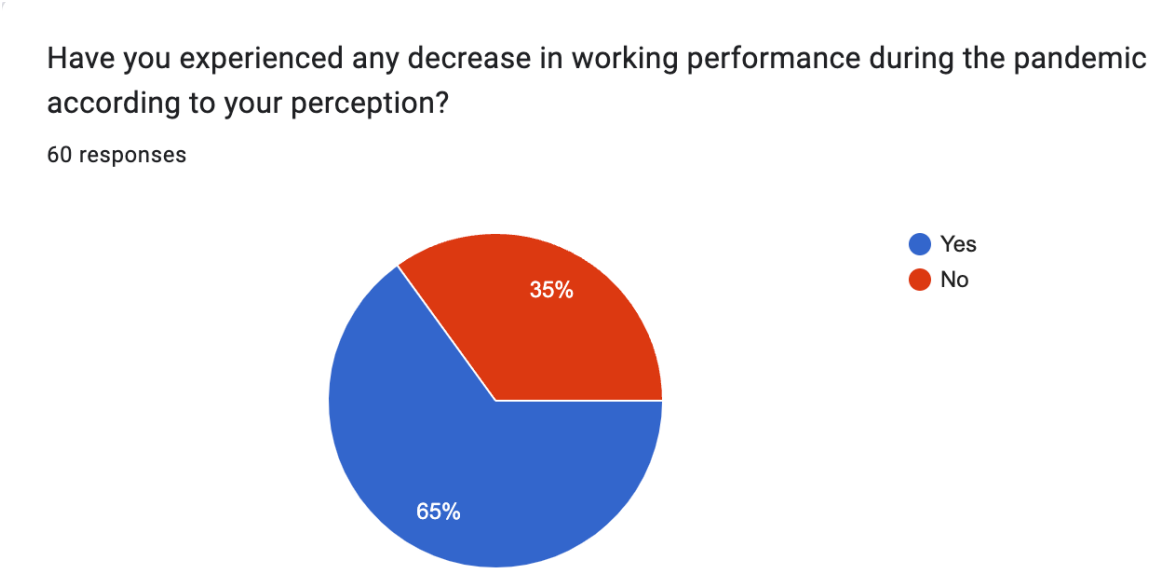
- Ho: the evaluation before and during the pandemic is the same
- Ha: there is a difference in the evaluation before and during the pandemic
- A = 0.05
- Paired t-test
- P = 0.001

- 0.001 < 0.05 => Ho is rejected. Ha is assumed, so there is in fact a significant difference in the evaluation and perception of managerial processes before and during the pandemic with worse results for the period during the pandemic according to employees of SAP's Prague office.

4.4.6 Sixth Hypothesis

Continuing to the sixth hypothesis, the author is testing if there is a relationship between the following variables: preferences for either physical or home office and feeling an overall decrease in the working performance as a consequence of the pandemic. The first variable was already presented, so the author will present the distribution of answers of employees below:

Figure 17, distribution of answers for the decrease in the working performance variable



Source: own research

Based on the distribution, it can be concluded that the majority of workers have felt a seemingly visible decrease in the working performance during the pandemic, according to their own evaluation. Then, the author conducts a hypothesis testing:

Figure 18, the sixth test

Which form of working do you prefer more? * Have you experienced any decrease in working performance during the pandemic according to your perception? Crosstabulation

			Have you experienced any decrease in working performance during the pandemic according to your perception?		
			No	Yes	Total
Which form of working do you prefer more?	Home office	Count	11	17	28
		Expected Count	9.8	18.2	28.0
	Regular office	Count	10	22	32
		Expected Count	11.2	20.8	32.0
Total		Count	21	39	60
		Expected Count	21.0	39.0	60.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.424[a]	1	.515		
Continuity Correction[b]	.144	1	.704		
Likelihood Ratio	.424	1	.515		
Fisher's Exact Test				.593	.352
N of Valid Cases	60				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.80.

b. Computed only for a 2x2 table

Source: own processing

The testing procedure is done according to the following steps:

- Ho: the office preferences and decrease in the working performance are not related
- Ha: the office preferences and decrease in the working performance are related
- A = 0.05
- Chi-Square test
- P = 0.515
- 0.515 > 0.05 => Ho is not rejected. Two variables are not related, so there is no relationship between preferences and potential decrease in the working performance.

4.4.7 Seventh Hypothesis

The seventh hypothesis is related to the assumption about statistical significance between the variables of satisfaction and gender, the overview of which was already presented in the thesis. Hence, the author directly proceeds to the hypothesis testing with the output from SPSS, as well as steps presented below:

Figure 19, the seventh test

What is your gender? * Are you satisfied with the managerial processes during the pandemic? Crosstabulation

			Are you satisfied with the managerial processes during the pandemic?		
			No	Yes	Total
What is your gender?	Female	Count	17	6	23
		Expected Count	16.1	6.9	23.0
	Male	Count	25	12	37
		Expected Count	25.9	11.1	37.0
Total		Count	42	18	60
		Expected Count	42.0	18.0	60.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.272[a]	1	.602		
Continuity Correction[b]	.054	1	.817		
Likelihood Ratio	.275	1	.600		
Fisher's Exact Test				.773	.412
N of Valid Cases	60				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.90.

b. Computed only for a 2x2 table

Source: own processing

- Ho: gender and satisfaction about managerial processes during the pandemic are not related
- Ha: gender and satisfaction about managerial processes during the pandemic are not related
- A = 0.05
- Chi-Square test

- P = 0.602
- 0.602 > 0.05 => Ho is not rejected. Two variables are not related, so there is no relationship between feeling satisfaction with the managerial processes and gender. The author will continue the elaboration on the results in the results and discussion chapter.

5 Results and Discussion

5.1 Crisis Management in SAP

To begin with, before going into a detailed analysis of the results and elaborating on them, it is first wise to recall what was found out by the author in her practical part, the chapter presented earlier. When it comes to the series of hypotheses, the following assumptions were concluded to be **true**, according to the hypothesis testing results:

1) There is in fact a significant difference in the employees' evaluation of the managerial processes and administration, including crisis management delivered on the part of SAP before and during the pandemic. The evaluation is lower for the time period during the pandemic, so it can be assumed that workers were not particularly happy about the way how SAP handled the crisis.

2) There is in fact enough evidence to suggest that younger employees were more prone to thoughts about leaving the organization, which came out as the relationship between the age and thoughts variables was characterized as a significant one.

3) Women were more vulnerable to thoughts about leaving the organization, as there was enough statistical evidence to support the claim that two variables are related with seemingly high number of women compared to men considering such an idea.

Contrary to the list consisting of three assumptions, the following assumptions were categorized as **false** ones for the sample of workers from SAP:

1) Employees less satisfied with the managerial processes and crisis handling by the organization **are not** more prone to having thoughts about leaving the organization, which might arise as a consequence of having personal reasons for staying in SAP during the times of the crisis to maintain one's household and daily needs.

2) Women **will not** be more willing to work in the home office mode, as there was no relationship between gender and organization of work office, which suggests that both genders are equally accustomed to both types.

3) People preferring to work from home **are not** more likely to experience a decrease in their working performance, which suggests that home office was not the main cause for the troubles experienced by employees during the crisis times.

4) There **is no** direct relationship between being satisfied with the crisis management and gender. This practically means that both genders equally perceive managerial processes and practices applied to their teams and departments.

Consequently, the author can suggest that women in general are more likely to take impulsive decision, which was scientifically proven by Lucas, 2014 and also by Dittmar, 1996 who both concluded that gender does not really set significant differences between men and women in general aspects, but when it comes to emotional side and the way how oneself actually perceives crisis, gender is a crucial factor, where women on the scientific level are proven to be more vulnerable to repeated stress exposures, which was concluded by Schmaus, 2008. Evidently, absolutely new conditions of work in addition to drastic structural changes in society are factors that directly inflict a significant amount of damage on women's perception and stress handling as a whole.

Also, the same tendency is noted with the age variable, where younger employees were more willing to think about quitting and escaping from all problems, while the tendency for older ones – adults and seniors was on the opposite to the one expressed by younger employees of SAP's office in Prague. All in all, other studies, such as Jackson, 2013 suggest that there is in fact a significant difference in the way how crisis management and crises are generally perceived by younger people with significant vulnerability and increased anxiety due to the natural lack of experience.

Yet, the most important goal of the author was to find out if the crisis management was effective, which cannot be achieved by the author without having access to internal documents and reports from managers. For this purpose, the author decided to rely on the personal opinion of people who were inside of the organization during the times of the crisis and as the hypothesis testing revealed, there is a significant statistical difference in the way how employees perceive managerial during the pandemic and how they had been perceiving it before with a significant decrease in the total score for the post-pandemic period. Of course, the author can surely say that it suggests that some deterioration might have taken place, but the author does not recommend focusing on just one interpretation of the result. Hence, the author believes that this outcome might prove the fact that whenever a given amount of pressure is being put on employees, especially in the case of pressure that is simply unprecedented, such was the pandemic of the coronavirus, it is believed that employees are more prone to notice negative sides of their routine rather than concentrating on the positive ones. Somewhat similar results were achieved by Weisaeth, 2002, who empathized that the level of stress increases during almost all crises and it makes the managerial processes as well as the crisis management a very complicated task since employees are more willing to exploit negative sides of operations that had been seeming normal to them.

5.2 Recommendations

As for the recommendation for SAP, the author believes that the company has already prepared itself for all new potential new crises that might occur, and their crisis management technique is somewhat more complete than it had been before the pandemic. Obviously, when talking about the pandemic that happened in 2020-2021, it was something that was downright unprecedented without any alternative situation in the recent history of humankind so by undergoing through the crisis and eventually making it until the end with no potentially devastating consequences, SAP managed to prepare not only the internal system of crisis management, but it also helped to somewhat shape the company's culture and also helped employees in their fight against stress. In fact, there might have been some problems, which is proven by the author, but she believes that this situation has surely enough taught SAP a valuable lesson, so the recommendation of the author will be learning from their previous experience and conducting more complex analyses that will reveal the most troubled components of the company's crisis management strategy.

6 Conclusion

To conclude, the author ones again highlight the most important assumptions that were proven to be true as a consequence of the hypothesis testing conducted by the author:

- Employees' opinions of SAP's managerial procedures and administration, including crisis management, before and after the pandemic are very different. The pandemic period had a worse overall rating, suggesting that employees were unhappy with SAP's response to the situation.

- The link between age and the thoughts variable was categorized as significant, suggesting that younger workers were more prone to thoughts about quitting the business.

- There was sufficient statistical evidence to support the argument that two factors are connected with an apparently greater proportion of women relative to males contemplating leaving the organization, suggesting that women were more susceptible to ideas about leaving the organization.

As for the final recommendation, she suggests that SAP has been sufficiently taught a lesson by this event, and that the firm should use this knowledge to undertake additional in-depth assessments that will expose the most troublesome parts of the company's crisis management plan by meticulously analyzing reports from the pandemic times and conducting additional research with employees working for SAP during the pandemic as participants.

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