MBA Dissertation

“The effects of merger and acquisition strategies: a case study from the chemical sector”

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Patras, Greece, July 2024

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Abstract

Mergers and acquisitions have now evolved into an important tool used by companies in different industries for their growth or survival. Mergers and acquisitions can help both the survival of an underperforming company and the expansion of a company that wants to access new markets or achieve a greater level of innovation. The purpose of this thesis was to investigate whether mergers and acquisitions are important in the chemical sector. For this purpose, a quantitative survey was carried out on a sample of 101 employees, supervisors and owners of companies in the chemical sector who have experienced a merger or acquisition process. The data was collected using appropriate questionnaires. The results of the research showed that mergers and acquisitions can be an important tool for the development and evolution of companies in the chemical sector. Mergers and acquisitions can contribute to improving the financial position of a company in the chemical sector, they can contribute to access to new markets, to the development of innovative products and to the improvement of the company's position against the competition. Important reasons that lead to mergers and acquisitions in the chemical sector are to enhance shareholder value, achieve strategic goals, invest, enter new markets, and create vertical and horizontal synergies. More studies are needed on companies in the chemical sector regarding the factors that contribute to the success of mergers and acquisitions in the chemical sector.

Keywords

Merger and acquisition, motivation, benefits, causes, chemical sector

Περίληψη

Οι συγχωνεύσεις και εξαγορές έχουν εξελιχθεί πλέον σε ένα σημαντικό εργαλείο που χρησιμοποιούν οι εταιρείες σε διαφορετικούς κλάδους για την ανάπτυξη τους ή την επιβίωση τους. Οι συγχωνεύσεις και εξαγορές μπορεί να συμβάλουν τόσο στην επιβίωση μιας εταιρείας που δεν έχει τα επιθυμητά αποτελέσματα όσο και στην επέκταση μιας εταιρείας που θέλει να έχει πρόσβαση σε νέες αγορές ή να επιτύχει μεγαλύτερο επίπεδο καινοτομίας. Σκοπός της παρούσας διπλωματικής εργασίας ήταν να διερευνήσει το κατά πόσο οι συγχωνεύσεις και εξαγορές είναι σημαντικές στο χημικό τομέα. Για το σκοπό αυτό πραγματοποιήθηκε μια ποσοτική έρευνα σε δείγμα 101 εργαζομένων, supervisors και ιδιοκτητών εταιρειών στο χημικό τομέα που έχουν εμπειρία από μια διαδικασία συγχώνευσης ή εξαγοράς. Η συλλογή των δεδομένων έγινε με χρήση κατάλληλων ερωτηματολογίων. Τα αποτελέσματα της έρευνας έδειξαν πως οι συγχωνεύσεις και εξαγορές μπορούν να αποτελέσουν ένα σημαντικό εργαλείο ανάπτυξης και εξέλιξης των εταιρειών στο χημικό τομέα. Οι συγχωνεύσεις και εξαγορές μπορούν να συμβάλουν στην βελτίωση της οικονομικής θέσης μιας εταιρείας στο χημικό τομέα, μπορούν να συμβάλλουν στην πρόσβαση σε νέες αγορές, στην ανάπτυξη καινοτόμων προϊόντων και στην βελτίωση της θέσης της εταιρείας έναντι του ανταγωνισμού. Σημαντικοί λόγοι που οδηγούν σε συγχωνεύσεις και εξαγορές στο χημικό τομέα είναι η ενίσχυση της αξίας για τους μετόχους, η επίτευξη στρατηγικών στόχων, οι επενδύσεις, η είσοδος σε νέες αγορές και η δημιουργία κάθετων και οριζόντιων συνεργειών. Απαιτούνται περισσότερες μελέτες σε εταιρείες στο χημικό τομέα αναφορικά με τους παράγοντες που συμβάλλουν στην επιτυχία των συγχωνεύσεων και των εξαγορών στο χημικό τομέα.

Λέξεις – Κλειδιά

Συγχώνευση και εξαγορά, κίνητρα, οφέλη, αιτίες, επιχειρήσεων στον κλάδο των χημικών

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1. Introduction

1.1 Thesis objectives

Mergers and Acquisitions (M&As) historically began before the Second World War, but there was an intensification in the post-war period, mainly among multinational companies, which wished to expand their activities in new markets. This has resulted in the expansion of companies all over the planet and the internationalization of economies through the phenomenon of globalization and the continuous multiplication of consumer needs, now all over the world (King et al., 2018). Mergers and acquisitions are one of the most popular ways of corporate growth, as through them two or more companies come together in order to achieve certain strategic goals. Kling et al. (2013) state that mergers and acquisitions play a particularly important role in the corporate expansion of a company, as they act as a strategy that deals with the external restructuring of a company and has nothing to do with internal expansion decisions. In fact, Kling et al. (2013) report that mergers and acquisitions contribute to the faster growth of businesses while at the same time improving the efficiency of management and maximizing profits. For his part, Tang (2019) states that the goal of mergers and acquisitions is the transfer of control and ownership of a business to one or more companies. While according to Samitas and Kenourgios (2007), mergers and acquisitions are not only about acquiring the assets of a competitor, but also aim to acquire its experience, in order to create a new larger entity, increase the share of bitter in the market, as well as to increase its credibility and increase the performance of its shares.

The main objective of every organization is to earn maximum profit every year to increase the wealth of shareholders by giving them high dividends. Every organization adopts different techniques and tools to maximize their profit and be able to survive in the fast growing market. There is a specific event that every organization must spontaneously respond to in order to achieve maximum benefits, such as entering new markets, launching new products, increasing portfolio, and monopolizing the market, etc. These events and transactions create huge problems for those companies and organizations that do not have or have not been able to organize financing to meet the demands of the growing market. Smaller organizations or less profitable organizations have no choice but to exit the market or to be merged with other healthy organizations (Malik et al, 2014).

The sustainability of businesses today is the primary goal of the executives of every business. Due to the poor performance of the markets so far, company managements are trying to keep intact the ground their business has gained so far or even expand it (Malik et al., 2014). One of the most common strategies that companies follow in order to either develop or achieve economies of scale is the Merger and Acquisition of another company or companies (Vertakova et al., 2021). The reasons that lead companies to takeovers and mergers are many and multidimensional. They can come either from internal factors of the business (financial reasons, strategic reasons for development, manager's ambition or decision of the Board of Directors, etc.) or from external factors from the environment and the changes it undergoes (e.g. from changes in legislative environment, information, etc.) (Calipha et al., 2011; Thanos et al., 2020).

With an important motivation of the recent mergers that took place in the Greek area during the last years and especially those of the crisis, an attempt is made in this diplomatic work to examine the causes and results that this specific strategy can bring to both members of the agreement. Therefore, the subject with which we will deal in this thesis is the Mergers and Acquisitions of companies active in chemical sector. Mergers and Acquisitions are considered one of the modern ways of strategic business development and are described as a way in which two companies come together to achieve specific strategic goals. They are transactions of importance not only for the companies themselves but also for the entire economy since in most cases large find are invested internationally (Cumming et al., 2023). Therefore, the importance of the subject under consideration is evident.

1.2 Methodology

For the purpose of the thesis, a quantitative survey was carried out on a sample of 101 employees, managers and owners of companies active in the chemical sector. The data collection was carried out with a suitable questionnaire which recorded the perceptions of the participants on the benefits of merger and acquisition, the possible disadvantages of merger and acquisition and the reasons that lead a company in the chemical sector to make an acquisition or merge.

1.3 Dissertation structure

The thesis consists of a total of five chapters. In the second chapter that follows, the findings obtained from the literature review are given regarding the definition of the concept of mergers and acquisitions, the categories of mergers and acquisitions, the stages in which mergers and acquisitions take place, the benefits and disadvantages of mergers and acquisitions and the reasons why mergers and acquisitions fail. The third chapter presents the methodological framework of the thesis, while the fourth chapter presents the results obtained from the data analysis. Finally, in the fifth chapter the conclusions obtained from the research regarding effects of merger and acquisition strategies on chemical sector are given.

2. Literature review

2.1 Definition and conceptual framework of Mergers and Acquisitions (M&A)

Mergers and Acquisitions (M&A) are a way in which two companies come together in order to jointly have specific strategic goals. They are a form of complex transaction with great importance for the whole economy and society. M&As, in a broad sense, involve a number of different transactions between firms and organizations, ranging from buying and selling to joint ventures, corporate succession, conversion of legal form and shareholding restructuring (Caiazza & Volpe, 2015). However, the broad conceptual approach of the term could lead to confusion, as it can encompass a large number of transactions, which do not fall within the clear definition of M&A.

Every business is eager to increase its profits to the maximum extent possible. This can be implemented in two main ways: (a) by selling its products or services in the market in which it operates (expansion of business activities), and (b) by the foreign policy it follows, which concerns the stimulation of its monopoly power in relation to the competition that accepts and includes M&A as one of the moves that can be made in this direction (Chiaramonte et al., 2023). Additionally, according to Kang and Johansson (2000), the main causes of the appearance of the M&A phenomenon are the consolidation of the position of companies in the global or local economy and their diversification into new products and services, resulting in the creation of large economic units. The globalization of the economy, with the international competition it has brought about and the large number of reorganizations, acquisitions and mergers that have taken place, contributes to this development (Renneboog & Vansteenkiste, 2019).

Specifically, a acquisition is a transaction where a company can acquire part or all of the voting rights (shares or corporate shares) in another company against some monetary consideration. It is divided into simple and merging. In a simple one, the acquired company continues to exist as a subject of law, while on the contrary, in a merger acquisition the property of the acquired company is transferred to another for some price and ceases to exist as a subject of law (Christofi et al., 2017). On the other hand, a merger is an act in which one or more companies are dissolved without being liquidated while at the same time transferring all their assets, against some consideration, to another company (usually corporate shares), which is either pre-existing or created for this purpose (Bisin & Federico, 2021)

Malik et al. (2014), define acquisition as "*the obtainment of part or all of a business by another and may be full or minority*". When the acquisition is considered complete, it implies that a company is acquired by another by 100%, while minority, when it acquires a minority percentage of shares that does not exceed 50%. They define a merger as "the combination of two or more enterprises resulting in a new enterprise independent of the previous ones, to which the assets and liabilities (assets and liabilities) of the contracting enterprises are transferred". Therefore, the merging companies now operate as a business, which has a single legal entity.Thus, the acquisition of a larger share of the market where the business operates (e.g. the food industry), but also the attraction of new customers, entry into new markets, the acquisition of know-how or the reduction of competition (Eulerich et al., 2022)

Therefore, under a more clear conceptual approach, a merger is the combination of two or more companies with the purpose of creating a new one, while an acquisition refers to the purchase of shares or assets of a company with the purpose of achieving managerial influence, not necessarily by mutual agreement (Jagersma, 2005). More specifically, a merger is the joining of two or more companies into one and takes place when one company buys another, absorbing it into a single business structure, usually retaining the original corporate identity of the acquiring company. Of course, not all mergers lead to the same form of business integration, as the latter can be vertical, horizontal or a combination of activities (Caiazza & Volpe, 2015).

At the same time, the acquisition refers to the transfer of all or the majority of the ownership of the acquired company to the acquirer, which pays the corresponding consideration. The transfer during the acquisition is carried out by the payment of cash or the purchase of shares, while it is worth noting that in some cases even the acquisition of a minority part of the property can lead to substantial administrative control, either in the case of the acquisition of critical administrative options or in the case of a high degree of fragmentation of the remaining shares (Eulerich et al, 2022).

2.1.1 Historical Review of M&As

For a better analysis and understanding of mergers and acquisitions on the planet, it is customary for scientists to separate them into periods (merger waves), in which this activity is observed in full swing. In total to date there have been five waves of periods with intense mergers and acquisitions in various industries. The first four waves are defined between 1897-1904, between 1916-1929, between 1965-1969 and between 1984-1989. In 1992 the fifth wave begins and extends until 2000 (Papadakis, 2007).

The main seat of most mergers and acquisitions was and is the USA. The first wave (1897-1904) is characterized by many horizontal mergers and consolidations of industries. The industries that participated in the M&A boom in the first wave were mainly the minerals, food, petroleum, chemical, transportation equipment, textile equipment investment, machinery and coal mining industries. The mergers and acquisitions of this period were so large that they led to monopoly situations in the market.

The second wave (1916-1929) includes both horizontal and vertical consolidations. In this period, mergers and acquisitions this time lead to oligopolistic situations in the industries involved, because laws (e.g. Sherman Act) that prevent monopolies to protect consumers began to appear. The sectors affected by the second wave were primary metals, petroleum, food, chemicals and transport equipment. Another characteristic of the second wave is that debt was used as a source of financing for most deals. This meant more profits for investors but at the same time they took on higher risk in case the economy did not do well, which it did. The second wave ended with Black Thursday of 1929, when the great stock market crash in the USA took place and the economy collapsed (Kyriazis, 2016).

The third wave (1965-1969) is characterized by mergers and acquisitions of companies belonging to different industries (conglomerate mergers). During this period businesses had to deal with strict antitrust laws, so horizontal and vertical mergers and acquisitions were very difficult to carry out. Therefore, the only strategic way out for growth was the diversification and expansion of businesses in other industries. The deals of those times used (low-cost) debt exchangeable for equity in case the company defaulted. This fact favored stock market earnings (EPS) and financed acquisitions at low cost. In 1969, the Tax Reform Act put an end to the stock market's value game with high stock returns, bringing the previously "hidden" convertibles into the calculations. This is how the third wave of mergers and acquisitions ended (King et al., 2018)

The fourth wave (1984-1989) shows many hostile takeovers. The fourth wave also includes huge acquisitions in terms of value and has taken the name of the mega-mergers period. Unlike the third wave, where mergers and acquisitions took place in small and medium-sized companies, the fourth wave involves billion-dollar deals. The sectors that starred in this period are oil, banking, pharmaceuticals and medical equipment. A special feature of this wave is its special way of financing. The term corporate rider was used to describe companies that tried to buy out another in exchange for some junk bonds or assets, actually managing to pay far less than the agreed price. Furthermore, in the takeovers various opportunists profited by the method of arbitrage, who collected the shares of the target company and sold them to the company that offered the most, getting the difference. In this way, many hostile takeovers took place. An important role, also in this wave, was played by the large banks that had the role of adviser in acquisitions and mergers. Banks on the one hand helped companies to plan the financing of the takeover with financial instruments, on the other hand they advised the target companies how to avoid a hostile takeover. And in this wave, high debt was used to finance the acquisitions. This period ended with the stock market crisis of 1989, where the junk bond market collapsed (Kyriazis, 2016)

The fifth wave did not take long to start in 1992 and lasted until 2000. In this period many large deals (mega-mergers) were carried out, but this time it was driven by business strategy and the mistakes of the past were not repeated, where acquisitions were made for short-term profits and with non-net means. The industries that starred during this period were banking, telecommunications and Internet-related businesses. The fifth wave is also characterized by its international presence. In Europe, Asia, and Central and South America, many large corporate deals were made. In fact, during this period many companies appeared from emerging markets (e.g. from Dubai), which successfully carry out acquisitions in various countries, with the aim of expanding with strategic criteria. A negative of this period is that the companies that made mergers and acquisitions lost $240 billion in stock market value in the following years after the deal (1998-2001) and this price is considered high by scholars. (Kyriazis, 2016)

Newer authors argue that there is also a sixth wave of mergers and acquisitions and that it starts from 2003. At that time there was increased activity in mergers and acquisitions in the USA ($1 trillion deals - a 71% increase in 2004 compared to 2002), in Europe ($760 billion deals - 47% increase in 2004 compared to 2002) and Asia ($19 billion deals - 633% increase in 2005 compared to 2002) (Junni & Teerikangas, 2019; Mulherin et al., 2017)

2.1.2 Categories of M&As

The comparison between acquisitions and mergers shows that mergers are carried out with the will of two or more parties, while acquisitions do not require the will of all parties and can be carried out in a friendly or aggressive manner, with the acquiring company assuming all the responsibilities of the acquired business (Cumming et al., 2023). In the study compiled by the European Central Bank (2000) regarding the main distinctions of acquisitions and mergers in the European area, it distinguished mergers and acquisitions into domestic and international. Domestic mergers and acquisitions amounted to 80% of the total. The main purpose of acquisitions and mergers between small financial institutions was economies of scale achieved through the reduction of staff and operating costs, while for large financial institutions, the aim was to restructure the financial system with the aim of gaining a large share of the domestic market, achieving economies of scale, increasing their share price and profits as well as reducing costs by reducing their staff and branches. International mergers and acquisitions during the years studied were much less than domestic ones, although they showed an increase compared to previous years. European financial institutions were expanding into the emerging financial markets (Eastern and Central Europe, Latin America and part of South Asia) in order to increase their profit, to achieve economies of scale but mainly to expand their size and their international clientele (European Central Bank, 2000).

M&As are categorized according to various criteria. The most important are the following (King et al., 2018):

1. based on the mood of the acquired company's management:
    - hostile: When the takeover is "forced" or against the will of the target company, then the takeover is called a hostile takeover. Hostile M&A takes the form of an offer that is made directly to the target company's shareholders avoiding any interaction with the target company's management.

- Friendly: When the management of the target company agrees mutually and willingly with the target company to carry out the acquisition, this form of acquisition is called a friendly acquisition

2. based on the correlation of the sector of activity or degree of integration:
    - Correlated which concern a strategy of correlated diversification and are distinguished into:
        - horizontal, concerning companies in the same sector: mainly concerns the combination of two or more companies engaged in similar activities. More specifically, horizontal mergers occur when a company merges with another company that offers the same or similar products and services to end consumers, i.e. they are in the same industry and at the same stage of production. The companies, in these cases, are usually direct competitors. For example, if a company from the chemical sector merges with another company in the same industry, this type of merger is called a horizontal merger. The advantage of this type of merger is that competition is eliminated, which helps the company increase its market share, revenue and profits. In addition, it offers economies of scale due to its increased size while simultaneously reducing costs due to higher production volumes. Also, through horizontal mergers and acquisitions, efficiency increases while unnecessary activities and costs are reduced
        - vertical, which concern companies operating in different parts of the value chain (forward vertical integration, backward vertical integration): A vertical merger or acquisition takes place between two companies belonging to the same industry (producing the same good and service), but the stage of production in which they operate is different. For example, if a clothing store merges with a textile factory, it will be classified as a vertical merger since the industry is the same, i.e. clothing industry, but the stage of production is different. These types of mergers and acquisitions achieve greater market share, leading to increased revenue and profits.
    - Non-related related to activities that are not directly related to each other.

In addition to these categorizations, there are others linked to a form of corporate transformation, divestments, which appear after M&As and aim to optimize the financial performance of companies subject to M&As based on financial or strategic criteria. In particular, they are distinguished in ((Lambrecht, 2004; Papadakis, 2007):

1. Sell-off (sales of departments or businesses),
2. Spin-offs (separation of a subsidiary from the parent company for create new),
3. Split-offs (transfer of shares of the subsidiary to some shareholders of the parent company, usually through an exchange of the shares they have in the parent company),
4. Split-ups (partitioning of a parent company through a series of spin-offs),
5. Carve-outs (the parent company reduces its percentage of ownership in a subsidiary company, giving up its rights to increase share capital).

In addition, there are other forms of M&As that concern business transformations (Kyriazis, 2016):

1. Management Buy-Outs (MBOs), which concern the acquisition of control of a company by a group of Management or investors and its conversion into a non-listed company.
2. LBOs (Leveraged Buy-Outs), which refers to the previous category that utilizes borrowing as a means of financing.
3. Reverse LBOs, a company that has become an LBO is re-listed through an IPO to the general investing public.

Also, there are several empirical studies that show the effects of M&As. What is established is mainly that (Kyriazis, 2016):

1. in large markets (eg USA) there is a transfer of wealth from the buyer to the acquired, while the shareholders of the companies that make a takeover offer (bidders) record small losses or, in the best of cases, their wealth does not change.
2. there is a balance regarding the destruction or creation of value by M&As.

2.2 Motivation for M&As

In the literature it is usually stated that the motivations of mergers and acquisitions are basically financial. A key incentive for shareholders is considered to be value/wealth creation after the M&A. Mergers and acquisitions contribute to this goal, but only if they create synergies and continue to improve their efficiency thereafter. The maximization of shareholder wealth can come either through the increase in efficiency (efficiency gains) or from the increase in market power (increase in market theory) (Kyriazis, 2016). More specifically, after a merger-acquisition, increased efficiency is achieved through the achievement of operational, administrative and financial synergies (Hossain, 2021). Operational synergies can arise from economies of scale, scope or product scope, and economies of learning and experience. Administrative synergies refer to the division of responsibilities of administrative units. Financial synergies can be created from increased borrowing capacity, from the difference between excess cash flow to the business and tax savings. An increase in market power is one way that can lead to increased profitability as it leads to monopoly profits (Hassan et al., 2018).

Another motivation may be due to the arrogance of management (hubris hypothesis). Business management tends to pay a heavy price for businesses it wants to buy by making valuation mistakes due to over-optimism and confidence in their abilities (Jansen et al., 2012). Large diversified business groups are created, which are able to respond to new future acquisitions and mergers. In this way, companies respond to the ever-increasing competitive conditions, while at the same time, they are able to manage situations of unsolicited cooperation/aggressive takeover proposals (from another competitor company). Thus, the firm effectively achieves volatility-risk reduction in an unintended acquisition (Kyriazis, 2016).

Mergers and acquisitions are also affected by the external environment, which is why they appear more often in industries with a dynamic and changing environment (technology, software, medicines, etc.). Mergers and acquisitions still seem to be influenced by the information asymmetric hypothesis. Well-informed prospective buyers are more likely to close a deal than those who are less informed. This is because uninformed prospective buyers fear (winner's curse) closing a deal with too high an offer, so they may more easily break off negotiations. In contrast, firms that held up to 5% of the stock before the acquisition or had prior partnerships are more likely to reach an M&A deal. Also, many times, companies target other companies with weak profitability in order to earn more from the deal they will close, appearing as saviors. More generally, synergies, before and after, and better information help mergers and acquisitions succeed (Dionne et al., 2015).

In summary, the reasons of a financial nature that lead companies to mergers and acquisitions are (Alexandridis et al., 2017; King et al., 2018; Kyriazis, 2016):

- Economies of scale and scope created by reducing production costs and expanding into new markets and new industries.
- The future expected increase in the value of the new business.
- Utilization of the company's liquidity. Large liquidity through mergers and acquisitions is channeled for further growth
- of the business.
- The utilization of human resources. After a merger or acquisition, the operation of the business is redefined and the quality and quantity of human resources are evaluated. Sometimes mergers and acquisitions signal a period of layoffs, sometimes it means new staff hires.
- Reducing the cost of time and new product development. After a merger-acquisition portfolio of products or services increases.
- The greatest financing possibilities.
- The elimination of reduced business efficiency.
- Tax benefits, as companies with very high profitability buy companies with losses to reduce the tax burden. A company that has tax exemptions, which arose due to its accumulated losses in previous years, is unable to make use of them due to its inability to realize profits. By merging with a profitable business, the combined business shows lower taxable income in its financial statements and will therefore have lower tax burdens.
- The increase in the ratio of market value per share to net profits. The share price reflects the image of the market for the company. If the market believes that a merger will add additional value to the merging company, then the share price is set higher, improving the index.
- The readjustment of depreciation. This increases the basis on which the depreciation of the fixed assets of the business is calculated. So the future tax relief is lower.
- The creation of monopoly or oligopoly profits.

After all, according to Porter's 5 forces theory, economies of scale combined with product differentiation are the main factor for success. Other reasons may be the personal expectations of the managers, strengthening the power in the domestic and international market. According to (Mulherin et al., 2017) and Yaghoubi et al. (2016) the reasons for carrying out mergers and acquisitions are as follows:

- the exploitation of economies of scale
- the exploitation of economies of spectrum
- the combination and complementarity of resources
- increasing market share
- overcoming barriers to entry into a new market
- the increase in business dynamics
- reducing the time and cost of developing new products
- the expansion of diversification
- the avoidance of excessive competition
- improving the efficiency of the target company
- the reduction of excess liquidity
- administrative arrogance

Cortés et al. (2017) and Rani et al. (2020) categorizes the motivations behind mergers into seven categories:

- Monopoly theory: to gain market share.
- Efficiency theory: synergies (operational, financial and administrative) bring efficiency.
- Valuation theory: the managers of the bidding companies have better information about the financial performance of the target company than the market.
- Empire Theory: Designed and executed by managers who maximize their own utility rather than maximizing the value of
- their shareholders.
- Theory of evolution: Managers have only limited information and make decisions based on incomplete information.
- Raid theory: Managers generate wealth transfers from the shareholders of the firms they are bidding for.
- Turbulence Theory: Merger waves are caused by economic disturbances and other exogenous factors.

Motivations can be categorized according to Brouthers et al. (1998) into 3 categories:

- Economic incentives: these incentives include economies of scale, increasing profitability, increasing value, spreading risk and reducing costs
- Personal motivations of management: Increase sales, Buy out weak management, increase the prestige of managers
- Strategic motives: Increasing market power, acquiring a competitor, acquiring a supplier, creating barriers to entry.

2.3 Process stages of M&As

Although the process of mergers and acquisitions is now something common in the business world, research shows that many of them may fail to give the expected result, especially for the buyer's side. The steps in the process of an acquisition or merger are as follows (Bhagwan et al., 2018; Kyriazis, 2016; Papadakis, 2007):

- Stage 1 Configuration: The first stage of the merger and acquisition process is the configuration stage. More specifically, this stage includes defining the business objectives and development strategies, which are defined in a clear and rational way. Companies in general should avoid vague and general goals, instead, they should set specific goals according to various criteria. These criteria include: market share, geographic location, new products or technologies, amount of money, etc. In fact, a company should evaluate a target company based on certain factors such as:
    - What will the cost be?
    - Which new market segments will be accessed?
    - In which countries will it be possible to access?
    - There are large customers who are given access via of the new company?
    - What is the optimal capital structure?
    - Is the possibility for new acquisitions provided? etc.
- Stage 2 Detection: Once business goals and growth strategies are defined, the search for desired businesses should focus on financial and operational analysis. In fact, in addition to the financial and operational analysis, an analysis should be made of how the acquisition will be made, but also the target company should be identified. It is worth

noting that, according to Kyriatzis (2007), in order to consider the acquisition strategy successful, the target should be evaluated based on the following criteria, which are: the appropriate strategy of the target in terms of resources and capabilities and the value created by the merger.

- Stage 3 Investigation: The target company is then investigated before the final deal is made. Specifically, a thorough analysis of the financial, operational, legal, environmental, cultural and strategic areas of the target company is carried out. Furthermore, a valuation of the target company is carried out and a possible merger plan is defined with a simultaneous analysis of the possible problems that may arise.
- Stage 4 Negotiation: The fourth stage includes everything required to successfully complete the final agreement. Essentially, the final negotiation strategy is formulated at this stage.
- Stage 5 Integration: In the fifth and final stage, the integration of the target company into bitter takes place. This stage is of particular importance, as problems that were predicted to occur or new problems may arise. In fact, during the process of integration it is important to identify solutions to the problems that arise, while it should not be omitted to mention that problems can also be identified with human resources.

2.4 Advantages, disadvantages and risks of M&As

2.4.1 Advantages of M&As

More specifically, the advantages resulting from mergers and acquisitions concern firstly the shareholders and secondly the management of the involved financial institutions and organizations. The benefits of mergers and acquisitions for the shareholders, concern the maximization of the performance of the shares and the increase of the value of the share, which is one of the motivations for the said mergers and acquisitions. The increase in the value of the share may increase further in the event that a share capital increase follows. An increase in the value of the stock in the long term is achieved by expanding the profits of the organization over time (Alexandridis et al., 2017).

Additionally, mergers and acquisitions lead to a reduction in competition and an increase in market share, as well as potential cost reduction through economies of scale and scope and better and more efficient use of the financial organization's assets, such as human resources, assets, the technology and expertise of coke. Mergers and acquisitions entail financial and tax benefits, improvement of product quality, creation and offering of new products (especially in the case of horizontal mergers), as well as administrative benefits from the more efficient use of know-how, but also employment benefits, through the more efficient use of human capital (Felker et al., 2023).

Mergers and Acquisitions are an opportune way for a company to immediately acquire new competitive advantages that it considers vital to its future as it sees the clouds of competition gathering on the horizon, but does not have the ability or time to develop them on its own. With Mergers and Acquisitions, the company gains access to new technologies and know-how, to new countries, to new markets, to new knowledge and skills, to additional production capacity. And in fact, it achieves all this without adding new, additional capacity to its business sector and changing its competitive structure. But the most important result that today's companies seek with mergers is to secure large economies of scale. By definition, the merger unifies the two organizational structures. The new enterprise does not need two departments of general management or administrative hierarchy, two complete research laboratories, two IT systems or two sales organization departments or two entire production units. It is therefore clear that the integration of departments and processes allows for dramatic improvements in the exploitation of resources in both administrative and production processes. Economies of scale are springing up everywhere. The new business is armed with greater bargaining power vis-à-vis its suppliers, distributors and customers (Kyriazis, 2016). The main benefits of Mergers and Acquisitions are the following:

1. Maximizing business profits and shareholder wealth. This hypothesis is based on the neoclassical economic approach, according to which, in order to survive in a competitive environment, companies try to maximize their profits and, by extension, the wealth of shareholders. Thus, corporate managements view acquisitions as an investment plan, which they will implement when its net present value is positive and maximizes shareholder wealth (Kyriazis, 2016). The maximization of profits from Mergers and Acquisitions results from:
    a. increasing efficiency by reducing the cost of products and at the same time by achieving synergies at the operational, administrative and financial level.

b. consolidation in the market, mainly through horizontal merger, which can lead to monopoly profits, i.e. an increase in prices due to the absence of competing products. In the case of vertical mergers, this can happen as the acquisition of a key supplier raises the barriers to entry for other firms in the market (Zaremba & Płotnicki, 2014).

2. When organizations carry out mergers and acquisitions then they enjoy some tax exemptions. In particular, when it comes to a merger between a large and a loss-making financial unit, the tax benefits are magnified because the institutional framework gives special tax incentives to encourage the profitable unit to absorb the loss. (Todtenhaupt et al., 2020).
3. The strategy of mergers and acquisitions of companies is, on the other hand, a way of survival and strengthening them in the face of systemic risk as well as aggressive proposals of mergers and acquisitions by foreign companies. At the same time, publicity is an important advantage that acquisitions and mergers entail (Arvanitis & Stucki, 2014). A merger contributes to the strengthening of the Brand name which in turn brings multiple benefits in many areas and in particular to its sales and financial transactions, but also to its credibility in general. Also, a merger can contribute to the saving of resources, the reduction of operating costs and especially of staff payroll costs, and the general exploitation of economies of scale. (Malik et al., 2014).
4. Productive diversification: Productive diversification takes place when companies take actions to expand their production capabilities by providing new services and/or products. Through the diversification of the products of the companies, the stability of their revenues is achieved, which do not change strongly in times of crisis (Rahman & Lambkin, 2015).
5. A strong company resulting from a Mergers and Acquisitions has greater potential to face the intensifying domestic and international competition (Ang et al., 2019). Acquisitions and mergers contribute to the growth of market share and the acquisition of oligopolistic power, giving it the ability to control and set the prices it wants in the market through the pricing power it acquires. (Renneboog & Vansteenkiste, 2019)
6. Benefits also arise in the technology and know-how that are an asset of the business. The enlargement contributes to the faster development and exploitation of technology in production and, in general, to the exploitation of the strong points of the two

companies. The introduction of new technology is in most cases expensive and beneficial only to large groups. Economies of scope occur when the cost of producing several products together in a single firm is lower than the cost of producing the products separately in specialized firms (Orsi et al., 2015).

7. Acquisitions and mergers also lead to greater financial stability. Its cash flows and profits are more stable and predictable which can lead to better financial management and more success. Finally, tax reliefs and exemptions can arise from mergers and acquisitions, such as in the case of the acquisition of profits through the reinvestment of excess capital reserves, or through the appearance of reduced profits from the acquisition/merger with loss-making companies. (Papadakis, 2007).
8. Reduction of cost and development time of new products. It is known that, an innovation or production differentiation takes a considerable period of time before it pays off and yields substantial profits. Consequently, it carries a high risk. That's why executives often prefer to pay a high price to acquire a business, avoiding the risk of building a product from scratch. It is possible for some to claim that acquisitions and mergers could replace the company's need for innovation, because usually the company has limited resources, which it does not risk, for the development of a new product (Jang & Yehuda,. 2021).

2.4.2 Disadvantages of M&As

Mergers and acquisitions involve disadvantages as well as benefits. The reduction of competition through the possession of a larger market share also implies a reduction of the operating costs of the financial institution, and more specifically of the labor costs, especially in the event that the institution wants to provide high quality products. Cost cuts through economies of scale and scope are limited, while cuts to the financial institution's operating costs and labor costs are usually high and have long-term human resource implications. In addition, adjustment difficulties are observed between the financial institutions involved regarding the human resource factor, and more specifically, there may be different philosophies regarding payroll, benefits, employee development and work culture (Thanos & Papadakis, 2012)

In addition, mergers and acquisitions of financial institutions may cause instability of the country's financial and wider financial system, due to the new financial map being formed, but also due to the size of the new financial institutions, as well as problems due to the now oligopolistic composition of the financial sector (King et al., 2018).

2.4.3 Risk of M&As

Every M&A process involves risks both before and after the M&A process. Based on the international literature, before the merger or acquisition process, the main risk is the latent pricing of the acquired organization. The success of the merger is determined by the value of the acquisition, which implies that the value of the acquisition needs to be at least offset by the present value of the expected revenue that will result from this process (Koerniadi et al., 2015). The main risk after the merger period is the functionality of the newly formed organization, which includes both organizational and technical issues, such as the integration of information systems, accounting systems and risk management systems, the redesign of internal control systems, the integration of customer data as well as communication with customers, but also the integration of the human resources that came from the merged or acquired organization as well as the process of redefining the needs and the appropriate internal movements and placements of employees in the required jobs (Zhou et al., 2016). Another risk arising from mergers and acquisitions is the change they bring to the financial map of financial institutions, which may lead to an increase in systematic risk in the financial and economic system (Eulerich et al., 2022).

2.5 Success Factors of M&As

Many analysts have attempted to explain the success or failure of mergers in terms of the strategic match between the merging firms. While some analysts have suggested that similarity between the merging units probably creates more value, others argue that complementarity between the merging units is more likely to lead to value for the merged firm. The general conclusion, however, is that having a strategy plays an important role as well as dealing with the merger or acquisition in practice (Galpin, 2021; Venema, 2011)

According to the article by De Noble et al. (1988), there are 8 determinants for the failure or success of a merger and they are as follows:

- The negotiation stage. At this stage, the target company is often under significant pressure to close the deal quickly, leaving important factors undefined and unregulated. At the same time, the terms of the agreement should be determined and the parity of the two partners should be ensured.
- In formulating the integration strategy and the terms, all management should take part, as they will be responsible for its implementation.
- All employees should consider that they are now a common team with the other company and work together for common goals.
- An important problem after every acquisition is the smooth integration of the human resources of the two companies and it should be dealt with in the best possible way.
- There may be significant costs hidden behind a merger, which have not been factored into the planning and decision-making stage.
- Culture can be an important factor in a successful acquisition or merger. Different mindsets can lead to problems that will have an impact on the value of the business.
- The organizational structure should be uniform and the functions of the companies should be redefined in order to create a single company.
- Also, it is considered that a variety of problems can arise, so the initial strategy should be flexible so that it can deal with them.

However, Zagelmeyer et al. (2016) considers that the failure of mergers and acquisitions is due to errors and omissions mainly in the initial objectives, planning, the post-merger integration process and the external environment. He considers that thoughtless and hasty movements in the first phase of preparation are the main causes of failure. He believes that there should be a unified strategy from the companies, communication between management and employees, speed in the integration process and the existence of specific goals.

From another perspective, according to Kyriazis (2016), there are six determinants of a successful merger and they are as follows:

Strategic vision. The strategic vision must lead to a merger logic that is focused on creating long-term competitive advantages and not just short-term improvements in operational efficiency with the sole achievement of cost reduction. In this way, value is created for shareholders.

2. Structure of the agreement - Method of financing. A successful merger requires careful attention to two areas of deal structure: the type of financing and the price premium.
3. Due diligence and dedication. Merging businesses must exercise due diligence to ensure that the deal can succeed in implementing the proposed strategic vision. The due diligence team should include executives from both businesses, in different functional areas and also include accountants, lawyers, technical disciplines and other experts.

   Pre-acquisition/merger planning. Preparation during the period leading up to the merger announcement is critical to success, as it is essential to present the merger to the right people with confidence.
5. Completion after acquisition/merger. Businesses often encounter difficulties in mergers during the integration process. If the previous four factors are met, the business is on its way to a successful merger. The strategy of the new business and the integration process must be clear and the new organizational must be well defined.
6. External factors. All the factors that affect the success of mergers are not controllable by the company itself. The changing economic environment, for example, can create unexpected consequences in terms of employment or customer retention.

In summary, for the success of a merger or acquisition there are several factors that play a critical role. In addition to financial terms, an important role is played by the dedication and commitment of executives, good communication both inside and outside the company, the staffing of key positions with the best executives, the quick implementation of the transition plan, the immediate response to any reactions from employees, customers and suppliers. Finally, the A's and Z's of a merger or acquisition is the conception and implementation of the strategic vision and the creation of value from it.

2.6 Reasons for Failure of M&As

Despite the many reasons that drive businesses to mergers and acquisitions, it is important to mention that some growth strategies are not always smooth sailing. Researches highlighted critical factors that reduce the effectiveness - success of M&As (Renneboog & Vansteenkiste, 2019; Zagelmeyer et al., 2016):

1. the employees' fear of losing their job and their labor rights,

2. the (often violent or piecemeal) changes in Human Resources Management and existing work practice,
3. the ambiguity and insecurity of the staff and executives regarding the prospects of the new business structure, their position in the hierarchy and the evolution of their responsibilities.

Noting that employment is not, as a rule, the main reason that causes mergers, but constitutes a variable that is significantly influenced by them, the same surveys identify significant quantitative and mainly qualitative effects of M&As on employment, among which (Friedman et al., 2015):

1. reduction of employment in the categories with lower specialization,
2. significant changes in the role and duties of executives, in the direction of greater complexity and flexibility
3. relative increase in the employment of specialized and younger executives
4. "liberation" of the company from excess potential of lower expertise or even from older executives, with various early retirement or voluntary exit programs,
5. serious problems of integration and harmonization of different Management, labor relations and work organization systems, which require serious preparation and can be critical for the success of the merger, if they start from different systems of negotiation, collective regulation and formation of remuneration and working conditions.

Also, important reasons that create failures, as well as disincentives in acquisitions and mergers are (Marks & Mirvis, 2011; Papadakis, 2007; Renneboog & Vansteenkiste, 2019):

- Inadequate evaluation – overestimation of expected synergies. When a company considers a target for acquisition, it usually enters into a process of screening the target company in which it assesses the benefits it will bring to it and the costs that may be created. However, any estimates of achieving synergies may turn out to be wrong. And this is because the assessment of the predicted e.g. revenue growth is often dauntingly difficult to calculate because it depends on external parameters that are often beyond management's control.

- The decision of an M&A can go hand in hand with high costs for its implementation. The increased cost may result from inaccurate analyses, due to an incomplete analysis of the target company's finances, or due to overconfidence by the management staff in their decision. So if during the negotiation period the shares of the target company are traded on the stock exchange and during the negotiation of the transaction the price of its stock increases, then the acquiring company ends up paying a large premium to the shareholders of the former. Furthermore, there are many cases where the presence of more interested parties as well as the use of defensive tactics on the part of the acquired company, lead to a higher premium than the buyers are willing to pay. Finally, unorthodox ways of financing may be chosen, such as allocating funds that were originally intended for other investment activities
- Consolidation is a particularly time-consuming process with dubious results. While, the effort to unite two companies is related to the union of two different types of corporate culture, financial systems, control systems, it also concerns the effort to create effective cooperation between the management staff of the unified companies. It is understandable, based on the above, that the lack of quick and successful integration of two companies is a key reason for the failure of M&A, while the compatibility of the corporate culture is considered decisive for the success of these ventures.
- Excessive debt. A firm that believes that a move to acquire another firm will bring it a large profit is willing to pay large sums to make it happen. However, companies before closing the deal are not able to know the exact value of its "target", either because of overconfidence of its management in this decision, or because of insufficient control of the target company's finances. The result of the above is excessive debt. Because in order to secure the target company it is willing to pay a high premium to its shareholders, which means high costs.
- Another reason for the failure of an M&A is the difficulty in quickly and successfully integrating the two businesses. Trying to join two companies with different operating methods, corporate culture, implementation of financial monitoring and control systems is particularly difficult. Although corporate culture compatibility is an important success factor for M&A s, it tends to be overlooked several times when evaluating proposals. Often the acquiring company does not realize the extent of the uncertainty that exists among the employees of the acquired company, as they do not know whether they will

retain their position or be fired after the M&A is completed. Uncertainty among employees leads to low morale, stress, absenteeism and reduced productivity as employees feel fearful and betrayed.

- Executive role: Problems can also arise in the course of negotiations for acquisitions or mergers. The executives of the buyer company and a number of other people with various specialties participate in the negotiations, either from the company itself or independently of it.
- The economic situation prevailing in the market is an important factor for the final outcome of an M&A. Unforeseen economic and political developments within the country cause instability and risks, which in turn make the company insolvent and unable to pay the purchase price. In addition, in a case where the M&A concerns cross-border companies, the legislative framework of both countries should be thoroughly checked and constantly changing data such as exchange rates should be monitored.
- Insufficient rating: When a company is considering an acquisition or merger it usually enters into a process of vetting the target company. However, the process often proves to be insufficient since a large number of companies, after the acquisition or merger, discover that they overestimated the benefits they would receive or underestimated the costs that would arise.
- However, part of the failure can be linked to a lack of knowledge and understanding of the integration process. According to the traditional view, the CEOs and the Boards of Directors of the firms turn their attention only to the achievement of the deal and not to the post-merger performance. It has also been observed that managers underestimate the value of so-called non-serious "soft issues", such as differences in culture and "resistance to change" on the part of the staff of the merging company.

According to research by Renneboog and Vansteenkiste (2019), M&As success factors are a benchmark for a large body of international research, emphasizing that a variety of administrative and organizational factors are generally associated with E&S success, such as, for example, partners, the participation of managers, the culture, but also a number of organizational and structural issues.

2.7 The Efficiency of M&As and evaluation methods

In recent decades the number of M&As has increased dramatically. The surge observed in both the number and size of companies involved in such activities reflects their effort to follow the rapid technological developments in order to survive in the fierce market competition. Despite the large number of studies of the M&A phenomenon that have been carried out, no generally accepted conclusions have been established that define the success and failure of an acquisition and merger. This happens because of the various criteria, the different judgment of the participants in such an activity and the subjective criteria. Despite the dichotomy that prevails on this subject, financial data enjoys the greatest acceptance of the parties involved. This is reflected in most surveys, where they report on the creation of financial benefit for shareholders. The benefit comes from the increase in the price of the shares that are transferred between the two merging companies and their shareholders. (Yaghoubi et al., 2016). In addition to the evaluation of the economic criteria that affect the shareholders, whose main objective is to increase the value of the shares, it is necessary to evaluate the benefits that accrue to the other interested members. More specifically, an M&A has social implications in terms of the creation of oligopolies or monopolies, the intensity of competition, technology and the impact it has on productivity and employment. (Grigorieva & Petrunina, 2015).

Evaluating an M&A is a complex process which necessitates the existence of methods capable of extracting correct and acceptable contributions. There are several methods of evaluating the performance of acquisitions and mergers. The literature divides the methods according to sample size into case studies, involving up to five companies, and large sample studies where the M&A assessment draws a conclusion for a business sector. The main methodologies used are (Francis et al., 2015):

- The accounting method
- The method of analyzing business events
- The use of subjective assessments of managers
- The evaluation of information provided by special experts such as consulting companies
- Method of disinvestment

The accounting method of evaluating M&A precedes the others in time. It is based on the comparison of financial indicators and other actual data resulting from the analysis of financial statements, before and after the act of consolidation. In this method the researcher can evaluate the performance by examining various indicators such as:

1. Profitability ratio
2. Liquidity ratio
3. Efficiency index
4. Capital breakdown and sustainability index
5. Growth rate (Francis et al., 2015).

However, many scholars argue that return on assets and operating cash flows are the most appropriate tools to calculate the performance of an M&A. There are two ways of comparing the data that will result from the analysis of the financial statements (Yaghoubi et al., 2016):

1) Comparison of recorded results with management's forecasts in the event that M&A was not carried out
2) Comparison of post-merger figures with the figures of the industry or the main competitor representing the industry.

The business event analysis method is very famous in recent decades. It assesses the stock market's reaction to announcements of business events by comparing the returns generated with the expected returns in the event that no other event takes place. In other words, it calculates the difference between realized returns and expected returns, which is called abnormal return and represents the value created by the acquisition or merger (Fama et al. (1969; Rossi & Gunardi, 2018). Abnormal returns are calculated for a time period close to the event announcement date (event period). The date of the announcement that two companies have agreed to proceed with an acquisition or merger is called the event date. The determination of this day is very important for the study to be considered reliable. Equally important is the choice of the period around the announcement. It needs special attention as if it is too small it may not incorporate useful information about the event, while if it is too large it may incorporate information unrelated to the event and lead to wrong conclusions (Rossi & Gunardi, 2018).

The use of subjective assessments of managers it is mainly based on subjective perceptions since it studies human characters. The views of business managers are examined through interviews and questionnaires a few years after the implementation of M&A.

Essentially, it collects the opinion of the managers who participated in this activity as to how effective it was in relation to their initial expectations. To extract reliable results, the researcher needs to be experienced and able to structure the interview or questionnaire appropriately. This method presents data that is not reflected in the companies' financial statements or has not been disclosed to the press (Hosketn et al., 2016).

The evaluation of information provided by special experts such as consulting companies it is similar to the previous one with the difference that the researcher relies on data he receives from special experts through interviews or questionnaires. It presents fewer risks, as the experts are not related to the company being examined and therefore the subjectivity of the company's executives does not exist (Haleblian et al., 2009).

Finally, scholars argue that it is possible to assess the performance of an M&A by examining whether or not the start-up has been divested after the acquisition or merger has been executed. This method is not particularly complicated to apply, but the basic assumption that a divestment automatically means a negative return on the acquisition or merger is not always correct. Divestment is sometimes synonymous with a successful restructuring of resources due to overlaps or changes in the market environment (Hosketn et al., 2016).

3. Methodology

3.1 Research method

The most appropriate type of research was quantitative research, which is often used, especially when the researcher's goal is to gather opinions around a topic (such as mergers and acquisitions). At the same time, it was preferred to conduct quantitative research, since it is a research method characterized by ease of collecting primary research data, usually numerical, in a short period of time, in contrast to qualitative research, which is more time-consuming and more complicated to conduct. Additionally, quantitative research serves purposes of generalizability, while being associated with deriving descriptive and inductive results, which can provide useful information about the attitudes and opinions of a specific population. Finally, for the purposes of time constraints, it was decided that the research would be synchronous, that is, to be conducted at a specific moment in time, without re-measurement as is done in longitudinal studies.

3.2 Questionnaire

The data was collected by administering a questionnaire to the sample, which was prepared by the researcher. The questionnaire consisted of 2 sections. The first section had questions about the demographic and work details of the participants and consisted of 5 closed-ended questions. The second section of the questionnaire was intended to record the opinions of people working in companies in the chemical sector regarding the benefits and disadvantages of mergers and acquisitions as well as the reasons that lead companies to carry out mergers and acquisitions. The second section of the questionnaire contained 53 questions on a Likert scale from 1 = Strongly Disagree to 5 = Strongly Agree. The questions were based on questionnaires that have been used in research by Larsson and Lubatkin (2001), Aristos et al. (2018) and Sanda and Adjei-Benin (2011).

3.3 Participants

The research sample consisted of 101 people, working in companies in the chemical sector. The selection of the sample was based on the methodology of purposive sampling. Convenience sampling allows the researcher to select the sample based on accessibility and cost and time savings. An important limitation of a study based on a convenience sample is that the sample is not fully representative of the population and, by extension, the results obtained from this sample cannot be reliably generalized to the entire population.

3.4 Data collection

The questionnaire was completed anonymously. The participants did not provide any personal information (name, address, contact phone number, email, etc.) and therefore their identification is impossible. Before completing the questionnaire, an appropriate information form and research consent form were created. The information form was intended to inform participants about the purpose of the study as well as issues of anonymity and confidentiality. The consent form was aimed at obtaining the consent of each participant.

3.5 Statistical analysis

For the analysis of the data collected from the research sample, the statistical analysis software Statistical Package for Social Science (SPSS) version 26 was used. For the purposes of the thesis, an analysis was carried out by calculating both descriptive statistics indicators to capture the trend in sample as well as inductive statistical tests to test for differences in participant demographic and occupational characteristics. In more detail, percentage distributions were calculated as well as indices of central tendency and variability, mean (M) and standard deviation (SD). Descriptive statistics indicators were used to explore the attitudes of employees in the chemical industry regarding mergers and acquisitions. Then comparisons were made regarding the demographic characteristics of the participants. Comparisons were based on t-tests and one-way ANOVA. The t-test was used to compare two independent groups (eg comparing men and women) while the one-way

ANOVA was used to compare three or more independent groups (eg comparing between age groups) All analyzes were performed at the α significance level =5%.

4. Results

4.1 Sample demographics

The demographic characteristics of the sample are given in Table 1. Overall, 55.4% (n = 56) of the sample were male and 44.6% (n = 45) were female. The largest percentage of the sample was between 41 and 50 years old (n = 48, 47.5%) while a significant percentage of participants were between 31 and 40 years old (n = 27, 26.7%) and over 50 years old (n = 23 , 22.8%). A smaller percentage of the sample was aged up to 30 years (n = 3.3%). The majority of the participants were masters/doctorate holders (n = 78, 77.2%) while 44.6% (n = 45) had a working experience in this company of more than 16 years. Accordingly, 32.7% (n = 33) of participants had worked for this company from 6 to 15 years and 22.8% (n = 23) had worked for up to 5 years. Finally, of the 101 participants, 48 (47.5%) were employees, 34 (33.7%) were managers/company owners and 19 (18.8%) were supervisors.

Table 1. Sample demographics (N = 101)

		n	%
Gender	Male	56	55.4%
	Female	45	44.6%
Age	Up to 30	3	3.0%
	31-40	27	26.7%
	41-50	48	47.5%
	51+	23	22.8%
Education	Up to high school	11	10.9%
	Undergraduate	12	11.9%
	Postgraduate/Doctoral	78	77.2%
How long have you been working with this company:	1-5	23	22.8%
	6-15	33	32.7%
	16+	45	44.6%
Employment category:	Manager/ Company owner	34	33.7%
	Supervisor	19	18.8%
	Employee	48	47.5%

4.2 Attitude toward mergers and acquisitions

The results regarding the perceptions of the participants regarding how merger/acquisition can strengthen the companies in the chemical sector are presented in Table 2 (in descending order of agreement). The findings indicate that the participants agree to a very large extent that merger/acquisition can help companies in the chemical sector to explore new markets (M = 4.5, SD = 0.8), to strengthen innovativeness (M = 4.4, SD = 0.9), to improve their portfolio (M = 4.3, SD = 0.7), to access to new vendors (M = 4.2, SD = 0.6) and to create and exploited economies of scale, which occur in large enterprises (M = 4.2, SD = 0.8). Also, the findings show that merger/acquisition can help companies in the chemical sector to differentiate themselves from the competition (M = 4.0, SD = 0.7), to increase the borrowing capacity of the business (better financing options) (M = 4.0, SD = 0.9), to have access to knowledge (M = 3.9, SD = 0.9) and to grow faster (M = 3.9, SD = 0.6). Moreover, the results indicate that merger/acquisition is important in diversification of risk (M = 3.7, SD = 0.7), financial stability (M = 3.6, SD = 1.1), access to talent (M = 3.6, SD = 1.0), product uniqueness (M = 3.6, SD = 0.7) and lower cost of capital (M = 3.6, SD = 1.0). From the responses of the participants it emerged that merger/acquisition to a lesser extent contribute to favorable taxes (M = 2.7, SD = 0.9), reduce competition (M = 2.8, SD = 0.9), improve on time delivery (M = 2.7, SD = 0.8) and improve existing customer relationship (M = 2.9, SD = 0.7).

Table 2. Participants' attitudes on how merger/acquisition can strengthen the company they work for

	1	2	3	4	5	M	SD
Exploring New Markets	1.0%	2.0%	5.0%	30.7%	61.4%	4.5	0.8
Innovativeness	1.0%	4.0%	7.9%	29.7%	57.4%	4.4	0.9
Portfolio	0.0%	3.0%	7.9%	43.6%	45.5%	4.3	0.7
Access to new vendors	0.0%	1.0%	8.9%	57.4%	32.7%	4.2	0.6
Creating and exploiting economies of scale and scope, which occur in large enterprises	0.0%	1.0%	17.8%	37.6%	43.6%	4.2	0.8
Diversification	0.0%	3.0%	13.9%	66.3%	16.8%	4.0	0.7
Increasing the borrowing capacity of the business/ Better financing options	0.0%	4.0%	25.7%	32.7%	37.6%	4.0	0.9
Access to knowledge	0.0%	4.0%	29.7%	36.6%	29.7%	3.9	0.9
Opportunities for faster growth	0.0%	2.0%	16.8%	72.3%	8.9%	3.9	0.6
Diversification of Risk	0.0%	4.0%	31.7%	54.5%	9.9%	3.7	0.7
Financial Stability	0.0%	20.8%	23.8%	30.7%	24.8%	3.6	1.1

Access to Talent	3.0%	9.9%	21.8%	50.5%	14.9%	3.6	1.0
Product uniqueness	0.0%	6.9%	32.7%	55.4%	5.0%	3.6	0.7
Lower cost of capital	3.0%	10.9%	24.8%	46.5%	14.9%	3.6	1.0
Service improvement	3.0%	6.9%	30.7%	59.4%	0.0%	3.5	0.8
Quality & standards	0.0%	5.0%	42.6%	46.5%	5.9%	3.5	0.7
Improved brand reputation	1.0%	5.9%	49.5%	30.7%	12.9%	3.5	0.8
Access to best practices	0.0%	22.8%	17.8%	41.6%	17.8%	3.5	1.0
Efficiency	1.0%	18.8%	33.7%	41.6%	5.0%	3.3	0.9
Improved asset leverage	0.0%	17.8%	34.7%	45.5%	2.0%	3.3	0.8
Pricing optimization	0.0%	17.8%	51.5%	25.7%	5.0%	3.2	0.8
Product quality	2.0%	23.8%	50.5%	20.8%	3.0%	3.0	0.8
Better utilization of human resources	0.0%	19.8%	65.3%	6.9%	7.9%	3.0	0.8
Existing customer relationship	3.0%	22.8%	59.4%	13.9%	1.0%	2.9	0.7
Reduction in competition	1.0%	47.5%	29.7%	17.8%	4.0%	2.8	0.9
On time delivery	2.0%	38.6%	44.6%	13.9%	1.0%	2.7	0.8
Favorable Taxes	5.0%	45.5%	21.8%	27.7%	0.0%	2.7	0.9

4.3 Merger/acquisition potential benefits and potential risks/ threats

The results regarding the perceptions of the participants regarding benefits and possible risks of merger/acquisition in the chemical sector are presented in Table 3 (in descending order of agreement). The findings indicate that the most important benefit from the merger/acquisition in a company in the chemical sector is that it creates opportunity in terms of new innovation (M = 4.4, SD = 0.8). Also, quite an important benefit is that merger/acquisition create opportunity to firm in terms of robust solutions (M = 3.8 SD = 0.7). Moreover, the participants recognize to a moderate extent that merger/acquisition in the chemical sector create opportunity in terms of cost effectiveness (M = 3.4, SD = 1.1) and in Quick Service Response (M = 3.0, SD = 0.7). Also, participants recognize to a moderate extent that merger/acquisition in the chemical sector improve customer satisfaction (M = 3.0, SD = 0.8) while they consider that merger/acquisition create threats to pricing strategy (M = 3.0, SD = 0.9), depreciation cost (M = 2.8, SD = 0.8), healthy competitions (M = 2.7, SD = 1.0) and sustainability (M = 2.7, SD = 0.8).

Table 3. Participants' attitudes about merger/acquisition potential benefits and potential risks/ threats

	1	2	3	4	5	M	SD
Do you agree merger/ acquisition will create opportunity to your Company in terms of New Innovation?	0.0%	5.0%	5.9%	29.7%	59.4%	4.4	0.8
Do you agree merger/ acquisition will create opportunity to your firm in terms of Robust solutions?	0.0%	2.0%	29.7%	50.5%	17.8%	3.8	0.7

Do you agree merger/ acquisition will create opportunity to your company in terms of Cost effectiveness?	1.0%	24.8%	28.7%	27.7%	17.8%	3.4	1.1
Do you agree merger/ acquisition will create opportunity to your firm in terms of Quick Service Response?	1.0%	23.8%	52.5%	21.8%	1.0%	3.0	0.7
Do you agree merger/ acquisition will improves your Customer satisfaction?	1.0%	21.8%	50.5%	24.8%	2.0%	3.0	0.8
Do you agree merger/ acquisition will create threats to pricing strategy of your company?	5.0%	20.8%	42.6%	28.7%	3.0%	3.0	0.9
Do you agree merger/ acquisition will create threats to availability of spare parts/service to your firm?	5.0%	42.6%	11.9%	40.6%	0.0%	2.9	1.0
Do you agree merger/ acquisition will create threats to your company by increasing depreciation cost?	0.0%	44.6%	26.7%	28.7%	0.0%	2.8	0.8
Do you agree merger/ acquisition will create threats to your company in terms of healthy competitions?	6.9%	42.6%	25.7%	22.8%	2.0%	2.7	1.0
Do you agree merger/ acquisition will create threats to your sustainability & Operations of your company?	5.0%	30.7%	55.4%	6.9%	2.0%	2.7	0.8

4.4 Merger/acquisition causes

The results regarding the perceptions of the participants regarding causes for merger/acquisition in the chemical sector are presented in Table 4 (in descending order of agreement). The findings indicate that the most important cause for merger/acquisition in the chemical sector is value enhancement for shareholders (M = 4.4, SD = 0.8), achieve strategic goals (M = 4.3, SD = 0.8) and that it is a potentially profitable investment (M = 4.2, SD = 0.7). In addition, an important reason for merger/acquisition in the chemical sector is the entry into new markets (M = 4.1, SD = 1.0), vertical and horizontal synergies (M = 3.8, SD = 0.9) and the need for market dominance and Economies Of Scale (ES) (M = 3.7, SD = 1.2). Of the causes for merger/acquisition, the least important are unfavorable economic conditions in Greece (M = 1.7, SD = 1.0), failure of the administration (M = 2.5, SD = 1.4) and change in Corporate Identity (CI) (M = 2.8, SD = 1.0).

Table 4. Participants' attitudes about merger/acquisition causes

	1	2	3	4	5	M	SD
To what extent do you think that value enhancement for shareholders was the factor that caused the recent merger?	0.0%	1.0%	13.9%	30.7%	54.5%	4.4	0.8
The recent merger was mainly an action plan for these two companies to achieve strategic goals.	1.0%	1.0%	8.9%	45.5%	43.6%	4.3	0.8
The recent merger was carried out because it was a potentially profitable investment.	0.0%	3.0%	6.9%	53.5%	36.6%	4.2	0.7
To what extent do you think that entering new markets was the factor that caused the recent merger?	4.0%	4.0%	12.9%	34.7%	44.6%	4.1	1.0
To what extent do you think that vertical and horizontal synergies were the factors that caused the recent merger?	0.0%	5.9%	29.7%	38.6%	25.7%	3.8	0.9
To what extent do you think that the need for market dominance and Economies Of Scale (ES) were the factors that caused the recent merger?	4.0%	16.8%	14.9%	33.7%	30.7%	3.7	1.2
After the recent merger, shareholders' returns were achieved.	3.0%	5.9%	48.5%	15.8%	26.7%	3.6	1.0
After the recent merger, high economic profits were achieved.	4.0%	19.8%	29.7%	18.8%	27.7%	3.5	1.2
The recent merger has led companies to exploit their competitive advantages.	1.0%	12.9%	26.7%	55.4%	4.0%	3.5	0.8
The recent merger has been a useful tool against a constantly changing strategic environment.	0.0%	15.8%	43.6%	28.7%	11.9%	3.4	0.9
After the recent merger, it was possible to gain a significantly larger market share.	4.0%	8.9%	43.6%	37.6%	5.9%	3.3	0.9
To what extent do you think that the spread of risk was the factor that caused the recent merger?	5.0%	12.9%	52.5%	29.7%	0.0%	3.1	0.8
To what extent do you think that change in Corporate Identity (CI) was the factor that caused the recent merger?	5.0%	39.6%	21.8%	33.7%	0.0%	2.8	1.0
The recent merger was the only way for these two companies.	15.8%	23.8%	31.7%	27.7%	1.0%	2.7	1.1
The recent merger was inevitable due to the failure of the administration.	27.7%	30.7%	18.8%	5.9%	16.8%	2.5	1.4

The recent merger is the result of the unfavourable economic conditions in Greece.	55.4%	31.7%	5.0%	5.9%	2.0%	1.7	1.0

4.5 Attitude toward mergers and acquisitions regarding employees' demographics

In the next section of the chapter, the results are presented on whether the attitudes of employees in the chemical sector regarding mergers and acquisitions differ in terms of their demographic characteristics. For convenience, the results in which a statistically significant difference was recorded at the 5% significance level ($p < 0.05$) are given.

From the statistical criterion t-test it emerged that women recognize to a greater extent than men that mergers and acquisitions have strengthened the company they work for to reduce the cost of capital ($t(99) = -2.600$, $p < 0.05$), to have access to knowledge ($t(99) = -2.005$, $p < 0.05$) and achieve a reduction in competition ($t(99) = -3.197$, $p < 0.05$). Additionally, women agreed to a greater extent than men that merger/acquisition will improve customer satisfaction ($t(99) = -2.063$, $p < 0.05$), will create opportunity in terms of robust solutions ($t(99) = -2.271$, $p < 0.05$), will create threats company in terms of healthy competitions ($t(99) = -5.213$, $p < 0.05$), will create threats by increasing depreciation cost ($t(99) = -5.395$, $p < 0.05$) and will create threats to availability of spare parts/service ($t(99) = -3.397$, $p < 0.05$). On the contrary, men agreed more than women with that entering new markets was the factor that caused the recent merger ($t(99) = 2.430$, $p < 0.05$), with that recent merger was carried out because it was a potentially profitable investment ($t(99) = 2.214$, $p < 0.05$) and that the recent merger was inevitable due to the failure of the administration ($t(99) = 2.509$, $p < 0.05$). Finally, women agreed more than men that change in Corporate Identity was the factor that caused the recent merger ($t(99) = -3.081$, $p < 0.05$) and that after the recent merger, it was possible to gain a significantly larger market share ($t(99) = -2.171$, $p < 0.05$).

Table 5. Significant differences resulting from the t-test statistical criterion in terms of employees' gender

		N	M	SD	t(99)	p
Lower cost of capital	Male	56	3.4	0.9	-2.600	0.011

	Female	45	3.9	1.0		
Access to knowledge	Male	56	3.8	0.8	-2.005	0.048
	Female	45	4.1	0.9		
Reduction in competition	Male	56	2.5	0.9	-3.197	0.002
	Female	45	3.1	0.9		
Do you agree merger/ acquisition will improves your Customer satisfaction?	Male	56	2.9	0.7	-2.063	0.042
	Female	45	3.2	0.8		
Do you agree merger/ acquisition will create opportunity to your firm in terms of Robust solutions?	Male	56	3.7	0.7	-2.271	0.025
	Female	45	4.0	0.8		
Do you agree merger/ acquisition will create threats to your company in terms of healthy competitions?	Male	56	2.3	0.7	-5.213	0.000
	Female	45	3.2	1.0		
Do you agree merger/ acquisition will create threats to your company by increasing depreciation cost?	Male	56	2.5	0.6	-5.395	0.000
	Female	45	3.3	0.9		
Do you agree merger/ acquisition will create threats to availability of spare parts/service to your firm?	Male	56	2.6	0.9	-3.397	0.001
	Female	45	3.2	1.0		
To what extent do you think that entering new markets was the factor that caused the recent merger?	Male	56	4.3	1.0	2.430	0.017
	Female	45	3.8	1.0		
To what extent do you think that change in Corporate Identity (CI) was the factor that caused the recent merger?	Male	56	2.6	0.8	-3.081	0.003
	Female	45	3.2	1.0		
After the recent merger, it was possible to gain a significantly larger market share.	Male	56	3.2	0.9	-2.171	0.032
	Female	45	3.5	0.8		
The recent merger was carried out because it was a potentially profitable investment.	Male	56	4.4	0.7	2.214	0.029
	Female	45	4.1	0.7		
The recent merger was inevitable due to the failure of the administration.	Male	56	2.8	1.5	2.509	0.014
	Female	45	2.2	1.2		

The results from the comparisons made according to the age group of the participants are presented in Table 6. The one-way ANOVA indicate that the participants aged up to 40 recognize to a greater extent that mergers and acquisitions have strengthened the company they work to achieve a reduction in competition ($F(2,98) = 4,581$, $p < 0.05$), have better utilization of human resources ($F(2,98) = 3,349$, $p < 0.05$) and in pricing optimization ($F(2,98) = 4,400$, $p < 0.05$). On the contrary, employees aged up to 40 agree to a lesser extent that value enhancement for shareholders was the factor that caused the recent merger ($F(2,98) = 4.556$, $p < 0.05$) while they agree to a greater extent that recent merger is the result of the unfavorable economic conditions in Greece ($F(2,98) = 8.733$, $p < 0.05$). Finally, employees over the age of 51 agree to a greater extent that the recent merger was inevitable due to the failure of the administration ($F(2,98) = 3.885$, $p < 0.05$).

Table 6. Significant differences resulting from the one-way ANOVA statistical criterion in terms of employees’ age

		N	M	SD	F(2,98)	p
Pricing optimization	Up to 40	30	3.5	0.7	4.400	0.015
	41-50	48	3.0	0.6		
	51+	23	3.2	1.0		
Reduction in competition	Up to 40	30	3.1	0.9	4.581	0.013
	41-50	48	2.7	0.9		
	51+	23	2.4	0.7		
Better utilization of human resources	Up to 40	30	3.3	0.6	3.349	0.039
	41-50	48	2.8	0.6		
	51+	23	3.1	1.1		
To what extent do you think that value enhancement for shareholders was the factor that caused the recent merger?	Up to 40	30	4.1	0.8	4.556	0.013
	41-50	48	4.6	0.6		
	51+	23	4.4	0.8		
The recent merger was mainly an action plan for these two companies to achieve strategic goals.	Up to 40	30	4.2	0.7	4.645	0.012
	41-50	48	4.5	0.5		
	51+	23	4.0	1.0		
The recent merger was inevitable due to the failure of the administration.	Up to 40	30	2.7	1.4	3.885	0.024
	41-50	48	2.2	1.2		
	51+	23	3.1	1.6		
The recent merger is the result of the unfavourable economic conditions in Greece.	Up to 40	30	2.2	1.3	8.733	0.000
	41-50	48	1.4	0.5		
	51+	23	1.6	0.9		

The results from the comparisons made according to the educational level of the participants are presented in Table 7. The one-way ANOVA indicates that the participants who are graduates of master's / doctoral studies recognize to a greater extent that mergers and acquisitions have strengthened the company they work to achieve better quality & standards ($F(2,98) = 3.144$, $p < 0.05$), to improve innovativeness ($F(2,98) = 9.055$, $p < 0.05$), to achieve better customer relationship ($F(2,98) = 7.941$, $p < 0.05$), to provide unique products ($F(2, 98) = 7.563$, $p < 0.05$), to achieve risk diversification ($F(2,98) = 12,835$, $p < 0.05$), to achieve a lower cost of capital ($F(2,98) = 4,329$ $p < 0.05$) and achieve a reduction in competition ($F(2,98) =5.139$, $p < 0.05$). Also, participants who are graduates of master's / doctoral studies recognize to a greater extent that mergers and acquisitions have strengthened the company they work to increase the borrowing capacity of the business/ Better financing options ($F(2,98) = 6.746$, $p < 0.05$) and creating and exploiting economies of scale and scope, which occur in large enterprises ($F(2,98) = 10.972$, $p < 0.05$). On the contrary, the participants who are graduates of master's / doctoral studies recognize to a lesser extent that mergers and acquisitions have strengthened the company they work to improve its reputation ($F(2,98) = 9.202$, $p < 0.05$).

From the analysis of the data it emerged that participants who are graduates of master's / doctoral studies agree to a greater extent that vertical and horizontal synergies were the factors that caused the recent merger ($F(2,98) = 9.593$, $p < 0.05$) and that the need for market dominance and economies of scale were the factors that caused the recent merger ($F(2,98) = 12.238$, $p < 0.05$).

Finally, the results show that people who are high school graduates (or have a lower level of education) disagree with the fact that merger/acquisition improved customer satisfaction ($F(2,98) = 11.847$, $p < 0.05$), improved economic profits ($F(2,98) = 12.212$, $p < 0.05$), improved shareholders' returns ($F(2,98) = 4.672$, $p < 0.05$) and led company to exploit their competitive advantages ($F(2,98) = 10.917$, $p < 0.05$).

Table 7. Significant differences resulting from the one-way ANOVA statistical criterion in terms of employees' education

		N	M	SD	F(2,98)	p
Quality & standards	Up to high school	11	3.1	0.3	3.144	0.047
	Undergraduate	12	3.4	0.9		
	Postgraduate/Doctoral	78	3.6	0.7		
Innovativeness	Up to high school	11	4.0	0.8	9.055	0.000
	Undergraduate	12	3.6	1.0		
	Postgraduate/Doctoral	78	4.6	0.8		
Existing customer relationship	Up to high school	11	2.3	0.6	7.941	0.001
	Undergraduate	12	2.5	0.7		
	Postgraduate/Doctoral	78	3.0	0.7		
Product uniqueness	Up to high school	11	3.0	0.4	7.563	0.001
	Undergraduate	12	3.3	0.9		
	Postgraduate/Doctoral	78	3.7	0.6		
Diversification of Risk	Up to high school	11	3.3	0.6	12.835	0.000
	Undergraduate	12	3.0	0.7		
	Postgraduate/Doctoral	78	3.9	0.6		
Lower cost of capital	Up to high school	11	3.1	0.8	4.329	0.016
	Undergraduate	12	3.1	0.9		
	Postgraduate/Doctoral	78	3.7	1.0		
Improved brand reputation	Up to high school	11	4.0	0.4	9.202	0.000
	Undergraduate	12	4.2	0.6		
	Postgraduate/Doctoral	78	3.3	0.8		
Reduction in competition	Up to high school	11	2.2	0.4	5.139	0.008
	Undergraduate	12	2.3	0.9		

	Postgraduate/Doctoral	78	2.9	0.9		
Increasing the borrowing capacity of the business/ Better financing options	Up to high school	11	3.4	0.7	6.746	0.002
	Undergraduate	12	3.6	0.5		
	Postgraduate/Doctoral	78	4.2	0.9		
Creating and exploiting economies of scale and scope, which occur in large enterprises	Up to high school	11	3.5	0.7	10.972	0.000
	Undergraduate	12	3.8	0.6		
	Postgraduate/Doctoral	78	4.4	0.7		
Do you agree merger/ acquisition will improves your Customer satisfaction?	Up to high school	11	2.1	0.3	11.847	0.000
	Undergraduate	12	3.1	0.8		
	Postgraduate/Doctoral	78	3.2	0.7		
Do you agree merger/ acquisition will create opportunity to your firm in terms of Robust solutions?	Up to high school	11	3.0	0.4	9.593	0.000
	Undergraduate	12	3.9	0.8		
	Postgraduate/Doctoral	78	3.9	0.7		
To what extent do you think that vertical and horizontal synergies were the factors that caused the recent merger?	Up to high school	11	3.1	0.5	11.859	0.000
	Undergraduate	12	3.2	0.7		
	Postgraduate/Doctoral	78	4.1	0.8		
To what extent do you think that the need for market dominance and Economies Of Scale (ES) were the factors that caused the recent merger?	Up to high school	11	2.3	0.9	12.238	0.000
	Undergraduate	12	3.4	1.0		
	Postgraduate/Doctoral	78	3.9	1.1		
After the recent merger, high economic profits were achieved.	Up to high school	11	2.2	0.4	12.212	0.000
	Undergraduate	12	2.8	1.1		
	Postgraduate/Doctoral	78	3.7	1.1		
After the recent merger, shareholders' returns were achieved.	Up to high school	11	2.8	0.4	4.672	0.012
	Undergraduate	12	3.3	1.0		
	Postgraduate/Doctoral	78	3.7	1.1		
The recent merger has led companies to exploit their competitive advantages.	Up to high school	11	2.5	0.8	10.917	0.000
	Undergraduate	12	3.3	0.8		
	Postgraduate/Doctoral	78	3.6	0.7		

The results from the comparisons made according to the work experience of the participants, are presented in Table 8. The one-way ANOVA indicates that the participants who have more than 16 years of work experience agree to a greater extent that mergers and acquisitions have strengthened the company they work to achieve financial Stability ($F(2,98) = 3.117$, $p < 0.05$), on time delivery ($F(2,98) = 11.040$, $p < 0.05$), access to talent ($F(2,98) = 3.973$, $p < 0.05$), lower cost of capital ($F(2,98) = 5.171$, $p < 0.05$), diversification ($F(2,98) = 3.589$, $p < 0.05$) and better asset leverage ($F(2 .98) = 6.426$, $p < 0.05$).

Moreover, results indicate that participants who have less than 5 years of work experience recognize to a greater extent that merger/acquisition will create threats in terms of healthy competitions ($F(2,98) = 5.526$, $p < 0.05$) and will increase depreciation cost ($F(2,98) = 8.470$, $p < 0.05$). Furthermore, participants who have more than 16 years of work experience agree to a greater extent that vertical and horizontal synergies ($F(2,98) = 4.044$, $p < 0.05$), need for market dominance and Economies Of Scale ($F(2,98) = 3.815$, $p < 0.05$) and potentially profitable investment ($F(2,98) = 4.219$, $p < 0.05$) and were the factors that caused the recent merger. Αντίθετα, participants who have less than 5 years of work experience recognize to a greater extent that recent merger is the result of the unfavourable economic conditions in Greece ($F(2,98) = 11.352$, $p < 0.05$).

Table 8. Significant differences resulting from the one-way ANOVA statistical criterion in terms of employees' work experience

		N	M	SD	F(2,98)	p
Financial Stability	1-5	23	3.2	0.9	3.117	0.049
	6-15	33	3.5	1.1		
	16+	45	3.8	1.1		
On time delivery	1-5	23	2.2	0.5	11.040	0.000
	6-15	33	2.7	0.7		
	16+	45	3.0	0.8		
Access to Talent	1-5	23	3.4	0.8	3.973	0.022
	6-15	33	3.4	1.0		
	16+	45	3.9	1.0		
Lower cost of capital	1-5	23	4.1	1.1	5.171	0.007
	6-15	33	3.3	0.9		
	16+	45	3.6	0.9		
Diversification	1-5	23	4.3	0.7	3.589	0.031
	6-15	33	4.0	0.6		
	16+	45	3.8	0.6		
Improved asset leverage	1-5	23	2.9	0.9	6.426	0.002
	6-15	33	3.3	0.7		
	16+	45	3.6	0.7		
Do you agree merger/ acquisition will create threats to your company in terms of healthy competitions?	1-5	23	3.3	1.0	5.526	0.005
	6-15	33	2.5	1.0		
	16+	45	2.6	0.8		
Do you agree merger/ acquisition will create threats to your company by increasing depreciation cost?	1-5	23	3.4	0.7	8.470	0.000
	6-15	33	2.7	0.8		
	16+	45	2.6	0.8		
To what extent do you think that vertical and horizontal synergies were the factors that caused the recent merger?	1-5	23	3.6	0.7	4.044	0.021
	6-15	33	3.6	0.8		
	16+	45	4.1	1.0		
To what extent do you think that the need for market dominance and Economies Of Scale (ES) were the factors that caused the recent merger?	1-5	23	3.6	1.0	3.815	0.025
	6-15	33	3.3	1.1		
	16+	45	4.0	1.2		
The recent merger has been a useful tool against a constantly changing strategic environment.	1-5	23	2.8	0.9	8.365	0.000
	6-15	33	3.7	0.9		
	16+	45	3.4	0.8		

The recent merger was carried out because it was a potentially profitable investment.	1-5	23	4.0	0.8	4.219	0.017
	6-15	33	4.2	0.4		
	16+	45	4.4	.8		
The recent merger is the result of the unfavourable economic conditions in Greece.	1-5	23	2.4	1.1	11.352	0.000
	6-15	33	1.5	0.6		
	16+	45	1.4	0.9		

Finally, in Table 9 are presented the findings of the analysis regarding the differences in opinions between managers / company owners, supervisors and employees. The results show that managers / companies owners and supervisors recognize to a greater extent that merger / acquisition can contribute to the improvement of the portfolio ($F(2,98) = 4.897$, $p < 0.05$), to the improvement of service ($F(2,98) = 11,465$, $p < 0.05$), in improving innovation ($F(2,98) = 9,395$, $p < 0.05$), in accessing talent ($F(2,98) = 11,609$, $p < 0.05$) and in improving customer relationship ($F(2,98) = 7.213$, $p < 0.05$). Also, the managers / company owners recognize to a greater extent that merger/acquisition can contribute to the improvement of quality ($F(2,98) = 3.318$, $p < 0.05$), to the improvement of delivery times ($F(2, 98) = 6.209$, $p < 0.05$), to improve general efficiency ($F(2,98) = 7.659$, $p < 0.05$), to create unique products ($F(2,98) = 5.083$, $p < 0.05$), to access to best practices ($F(2,98) = 5.833$, $p < 0.05$) in improving asset leverage ($F(2,98) = 14.112$, $p < 0.05$) and in increasing the borrowing capacity of the business/ Better financing options ($F(2.98) = 8.384$, $p < 0.05$). On the contrary, employees recognize to a greater extent that merger/acquisition can contribute to the improvement of brand reputation ($F(2,98) = 3.478$, $p < 0.05$).

Furthermore, managers / companies owners and supervisors agree to a greater extent that merger / acquisition will create opportunity in terms of new innovation ($F(2,98) = 5.474$, $p < 0.05$) and in terms of cost effectiveness ($F(2, 98) = 10.151$, $p < 0.05$). Also, managers / companies owners agree to a greater extent that entering new markets ($F(2, 98) = 4.779$, $p < 0.05$), value enhancement for shareholders ($F(2, 98) = 4.034$, $p < 0.05$), vertical and horizontal synergies ($F(2, 98) = 40.672$, $p < 0.05$), need for market dominance and economies of scale ($F(2, 98) = 30.649$, $p < 0.05$) were the factors that caused the recent merger. Furthermore, managers / companies owners agree to a greater extent that after the recent merger it was possible to gain a significantly larger market share ($F(2,98) = 4.168$, $p < 0.05$), high economic profits were achieved ($F(2 ,98) = 36.449$, $p < 0.05$) and shareholders' returns were achieved ($F(2,98) = 35.492$, $p < 0.05$). Finally, managers / companies owners agree to a greater extent that recent merger was mainly an action plan for these two companies to achieve strategic goals ($F(2,98) = 8.660$, $p < 0.05$) and that recent merger was carried out because it was a potentially profitable investment ($F(2,98) = 12.021$, $p < 0.05$). On the contrary, the employees agree to a greater extent that recent merger is the result of the unfavorable economic conditions in Greece ($F(2,98) = 4.527$, $p < 0.05$).

Table 9. Significant differences resulting from the one-way ANOVA statistical criterion in terms of employees' category

		N	M	SD	F(2,98)	p
Portfolio	Manager/ Company owner	34	4.6	0.8	4.897	0.009
	Supervisor	19	4.5	0.5		
	Employee	48	4.1	0.7		
Service improvement	Manager/ Company owner	34	3.8	0.5	11.465	0.000
	Supervisor	19	3.7	0.6		
	Employee	48	3.1	0.8		
Quality & standards	Manager/ Company owner	34	3.8	0.6	3.318	0.040
	Supervisor	19	3.3	0.6		
	Employee	48	3.5	0.7		
On time delivery	Manager/ Company owner	34	3.1	0.7	6.209	0.003
	Supervisor	19	2.6	0.7		
	Employee	48	2.5	0.8		
Innovativeness	Manager/ Company owner	34	4.7	0.9	9.395	0.000
	Supervisor	19	4.7	0.6		
	Employee	48	4.0	0.8		
Efficiency	Manager/ Company owner	34	3.7	0.7	7.659	0.001
	Supervisor	19	3.3	0.5		
	Employee	48	3.0	1.0		
Access to Talent	Manager/ Company owner	34	4.0	0.7	11.609	0.000
	Supervisor	19	4.1	0.5		
	Employee	48	3.2	1.1		
Existing customer relationship	Manager/ Company owner	34	3.1	0.6	7.213	0.001
	Supervisor	19	3.2	0.4		
	Employee	48	2.6	0.8		
Product uniqueness	Manager/ Company owner	34	3.9	0.6	5.083	0.008
	Supervisor	19	3.4	0.6		
	Employee	48	3.4	0.7		
Improved brand reputation	Manager/ Company owner	34	3.3	0.7	3.478	0.035
	Supervisor	19	3.3	0.6		
	Employee	48	3.7	0.9		
Access to best practices	Manager/ Company owner	34	3.9	0.9	5.833	0.004
	Supervisor	19	2.9	1.1		
	Employee	48	3.5	1.0		
Improved asset leverage	Manager/ Company owner	34	3.8	0.5	14.112	0.000
	Supervisor	19	2.8	0.9		
	Employee	48	3.2	0.7		

Increasing the borrowing capacity of the business/ Better financing options	Manager/ Company owner Supervisor Employee	34 19 48	4.5 4.1 3.7	0.8 0.7 0.9	8.384	0.000
Do you agree merger/ acquisition will create opportunity to your Company in terms of New Innovation?	Manager/ Company owner Supervisor Employee	34 19 48	4.6 4.7 4.2	0.7 0.5 0.9	5.474	0.006
Do you agree merger/ acquisition will create opportunity to your company in terms of Cost effectiveness?	Manager/ Company owner Supervisor Employee	34 19 48	4.0 3.3 3.0	1.2 0.8 0.9	10.151	0.000
To what extent do you think that entering new markets was the factor that caused the recent merger?	Manager/ Company owner Supervisor Employee	34 19 48	4.5 4.1 3.8	0.9 0.6 1.2	4.779	0.010
To what extent do you think that value enhancement for shareholders was the factor that caused the recent merger?	Manager/ Company owner Supervisor Employee	34 19 48	4.6 4.6 4.2	0.6 0.6 0.9	4.034	0.021
To what extent do yothink that vertical and horizontal synergies were the factors that caused the recent merger?	Manager/ Company owner Supervisor Employee	34 19 48	4.6 4.1 3.3	0.7 0.6 0.7	40.672	0.000
To what extent do you think that the need for market dominance and Economies Of Scale (ES) were the factors that caused the recent merger?	Manager/ Company owner Supervisor Employee	34 19 48	4.6 3.9 3.0	0.8 0.7 1.1	30.649	0.000
The recent merger was the only way for these two companies.	Manager/ Company owner Supervisor Employee	34 19 48	3.5 2.8 2.2	0.8 0.8 1.0	23.771	0.000
After the recent merger, high economic profits were achieved.	Manager/ Company owner Supervisor Employee	34 19 48	4.4 3.8 2.7	1.0 0.8 0.9	36.449	0.000
After the recent merger, shareholders' returns were achieved.	Manager/ Company owner Supervisor Employee	34 19 48	4.4 3.8 2.9	0.9 0.7 0.8	35.492	0.000
The recent merger was mainly an action plan for these two companies to achieve strategic goals.	Manager/ Company owner Supervisor Employee	34 19 48	4.7 4.1 4.1	0.6 0.7 0.8	8.660	0.000
The recent merger was carried out because it was a potentially profitable investment.	Manager/ Company owner Supervisor Employee	34 19 48	4.7 4.1 4.0	0.6 0.5 0.7	12.021	0.000
The recent merger is the result of the unfavourable economic conditions in Greece.	Manager/ Company owner Supervisor Employee	34 19 48	1.4 1.5 2.0	0.8 0.5 1.1	4.527	0.013

5. Conclusions

The globalization of the economy combined with the development of technology especially during the last decades, has created a constantly changing environment for businesses in which they must constantly adapt to ensure their long-term growth and profitability (Borodin et al., 2020). In this business effort, corporate consolidations in the form of mergers and acquisitions are one of the fastest growing growth strategies, given the opportunities created by the liberalization of markets and technological development (Chiaramonte et al., 2023). The growth of mergers and acquisitions has been particularly intense during the last decades. From large acquisitions and mergers between giants to acquisitions and mergers taking place in medium and smaller companies, mergers and acquisitions have increased significantly. The reason for their increase comes because of the companies' effort to prosper in the fiercely competitive market (Renneboog & Vansteenkiste, 2019). The purpose of this thesis was to investigate the opinions and attitudes of employees, supervisors and owners of companies in the chemical sector that have experienced the merger or acquisition process.

The results of the research showed that mergers/acquisitions in the chemical sector are important as they can contribute to get in touch with new markets, strengthen the innovation of their products, improve their portfolio, have access to new vendors, achieve economies of scale and to differentiate themselves against the competition. In addition, merger/acquisition can help companies in the chemical sector increase the borrowing capacity of the business and have better financing options and achieve financial stability, lower cost of capital and have access to new talents. Additionally, it emerged that merger/acquisition create opportunity to firm in terms of robust solutions and cost effectiveness and can contribute to improving customer satisfaction. On the contrary, according to the participants, merger/acquisition may have certain risks in the area of pricing strategy and sustainability. These results confirm that in the chemical sector M&As can be an important tool that will bring significant benefits both at the financial level (increase in revenue, improve the level of competition, achieve economies of scale) and at the level of new product development, achieving a better level of innovation and access in talents (Ang et al., 2019; Arvanitis & Stucki, 2014; Malik et al., 2014; Renneboog & Vansteenkiste, 2019; Jang & Yehuda, 2021; Todtenhaupt et al., 2020; Zaremba & Płotnicki, 2014).

Regarding the reasons that a company in the chemical sector carries out a merger/acquisition for reasons related to value enhancement for shareholders, achieve strategic goals, investment, entry into new markets and creation vertical and horizontal synergies. To a lesser extent, a company in the chemical sector carries out a merger/acquisition due to the economic situation in Greece, due to failure of the administration. These findings confirm the findings of related research that state that the reasons for M&As are either strategic or to achieve greater profitability or to improve the products provided (innovation) (Alexandridis et al., 2017; Dionne et al., 2015; Hassan et al., 2018; King et al., 2018; Yaghoubi et al., 2016).

Based on the findings of the thesis we would suggest that managers and decision makers in the chemical industry when planning and implementing successful M&A strategies take into account the reasons for doing a merger or acquisition and evaluate any possible benefits compared to every possible risk. This research found that a merger/acquisition can help a company in the chemical industry to access new markets, enhance product innovation, optimize costs, and expand into new markets faster. But an ineffective merger or acquisition can cause an increase in depreciation cost, cause problems in matters of healthy competition and harm the sustainability of a company. Essentially, the findings of the thesis show that managers and decision makers in the chemical industry should carry out a comprehensive assessment before undertaking a merger or acquisition, which will include the reasons for their decision, the benefits to be gained and the possible disadvantages.

The research is also characterized by certain limitations that mainly concern the methodological framework and the research design of the research. Initially, a key limitation is the fact that the research sample consisted of 101 people, working in companies in the chemical sector. The specific sample size is particularly small, especially if compared to the total number of employees in companies in the chemical sector in Greece. Additionally, the selection of participants was not based on any probability sampling technique but was done by applying a convenience sampling plan. The specific form of sampling combined with the small sample size reduces the degree of representativeness of the sample. Consequently, based on the reduced degree of representativeness, there is also a reduction in the level of external validity of the research. Apart from the sample selection method and the sample size, an important limitation of the study is that the evaluation of M&A effectiveness was based on a self-report instrument (questionnaire). Tools based on participants' self-reports are associated with bias problems as participants sometimes do not give answers that represent the truth and how they experience a situation but tend to embellish a situation by giving "socially desirable" answers. Finally, an important limitation of the research is that it did not analyze other factors that may be related to the effectiveness of mergers and acquisitions.

Research limitations can lead to suggestions for future research aimed at eliminating them and drawing more reliable conclusions. The proposals presented below are a consequence of the limitations presented above. It is considered appropriate to conduct a future survey, the primary data of which will be collected using the random sampling technique. All employees will have the same chance of being selected, which will significantly increase the external validity of the survey. It is considered appropriate to conduct a future study whose sample will be significantly larger, so that the statistical error can be limited. The sample size should be determined as a result of the number of employees in chemical companies in Greece and the sampling technique to be chosen. It is considered appropriate to conduct a future survey whose sample will come from different countries. In this way it will be possible to compare companies in Greece and companies abroad

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Appendix A: Questionnaire

Demographics

1. Gender
   - ☐ Male
   - ☐ Female
   - ☐ Other
2. Age
   - ☐ Up to 30
   - ☐ 31-40
   - ☐ 41-50
   - ☐ 51+
3. Education level:
   - ☐ Up to high school
   - ☐ Undergraduate
   - ☐ Postgraduate/Doctoral
4. How long have you been working with this company:
   - ☐ 1-5
   - ☐ 6-15
   - ☐ 16+
5. Employment category:
   - ☐ Manager/ Company owner
   - ☐ Supervisor
   - ☐ Employee

Attitude toward mergers and acquisitions

Please answer the following questions on a scale from 1 = Strongly Disagree, 2 = Disagree, 3= Neither disagree or agree, 4 = Agree, 5 = Strongly Agree.

Do you believe merger/ acquisition will strengthen your company	**1**	**2**	**3**	**4**	**5**

Portfolio					
Service improvement					
Financial Stability					
Quality & standards					
On time delivery					
Product quality					
Innovativeness					
Efficiency					
Access to Talent					
Existing customer relationship					
Product uniqueness					
Diversification of Risk					
Exploring New Markets					
Favorable Taxes					
Lower cost of capital					
Diversification					
Access to knowledge					
Improved brand reputation					
Access to new vendors					
Access to best practices					
Pricing optimization					
Improved asset leverage					
Reduction in competition					
Increasing the borrowing capacity of the business/ Better financing options					
Creating and exploiting economies of scale and scope, which occur in large enterprises					
Opportunities for faster growth					
Better utilization of human resources					

Please answer the following questions on a scale from 1 = Strongly Disagree, 2 = Disagree, 3= Neither disagree or agree, 4 = Agree, 5 = Strongly Agree.

	1	**2**	**3**	**4**	**5**
Do you agree merger/ acquisition will create opportunity to your Company in terms of New Innovation?					
Do you agree merger/ acquisition will create opportunity to your company in terms of Cost effectiveness?					
Do you agree merger/ acquisition will create opportunity to your firm in terms of Quick Service Response?					
Do you agree merger/ acquisition will improves your Customer satisfaction?					
Do you agree merger/ acquisition will create opportunity to your firm in terms of Robust solutions?					
Do you agree merger/ acquisition will create threats to your company in terms of healthy competitions?					
Do you agree merger/ acquisition will create threats to your company by increasing depreciation cost?					
Do you agree merger/ acquisition will create threats to your sustainability & Operations of your company?					
Do you agree merger/ acquisition will create threats to availability of spare parts/service to your firm?					
Do you agree merger/ acquisition will create threats to pricing strategy of your company?					

Please answer the following questions on a scale from 1 = Not at all, 2 = A little bit, 3= To a moderate extent, 4 = To a large extent , 5 = To a very large extent.

	1	**2**	**3**	**4**	**5**
To what extent do you think that entering new markets was the factor that caused the recent merger?					

To what extent do you think that value enhancement for shareholders was the factor that caused the recent merger?					
To what extent do you think that change in Corporate Identity (CI) was the factor that caused the recent merger?					
To what extent do you think that the spread of risk was the factor that caused the recent merger?					
To what extent do you think that vertical and horizontal synergies were the factors that caused the recent merger?					
To what extent do you think that the need for market dominance and Economies Of Scale (ES) were the factors that caused the recent merger?					
The recent merger has been a useful tool against a constantly changing strategic environment.					
The recent merger was the only way for these two companies.					
After the recent merger, it was possible to gain a significantly larger market share.					
After the recent merger, high economic profits were achieved.					
After the recent merger, shareholders' returns were achieved.					
The recent merger has led companies to exploit their competitive advantages.					
The recent merger was mainly an action plan for these two companies to achieve strategic goals.					
The recent merger was carried out because it was a potentially profitable investment.					
The recent merger was inevitable due to the failure of the administration.					

The recent merger is the result of the unfavourable economic conditions in Greece.					

Author’s Statement:

I hereby declare that, in accordance with article 8 of Law 1599/1986 and article 2.4.6 par. 3 of Law 1256/1982, this thesis/dissertation is solely a product of personal work and does not infringe any intellectual property rights of third parties and is not the product of a partial or total plagiarism, and the sources used are strictly limited to the bibliographic references.